2021 Hazardous Waste Scanning Project

File Form Naming Convention.

(*File_Type*).(*Program*).(*Site_Number*).(*YYYY-MM-DD*).(*File_Name*).pdf

Note 1: Each category is separated by a period "."
Note 2: Each word within category is separated by an underscore "_"

Specific File Naming Convention Label:

report. Hw. 932099. 1986-06-01. Phase_1_Investigation.pdf

932099

ENGINEERING INVESTIGATIONS AT INACTIVE HAZARDOUS WASTE SITES

PHASE I INVESTIGATION

Schreck's Scrapyard **Site No. 932099**
North Tonawanda **Niagara County**

DATE: June 1986

Prepared for:

New York State Department of Environmental Conservation

50 Wolf Road, Albany, New York 12233
Henry G. Williams, *Commissioner*

Division of Solid and Hazardous Waste
Norman H. Nosenchuck, P.E., *Director*

By:

Recra Environmental, Inc.

1/3548

ENGINEERING INVESTIGATIONS AT INACTIVE HAZARDOUS WASTE SITES IN THE STATE OF NEW YORK PHASE I INVESTIGATIONS FOURTH ROUND

Schreck's Scrapyard
55 Schenck Street
City of North Tonawanda
Niagara County, New York
Site #932099

DRAFT

Prepared For:

Division of Solid and Hazardous Waste
New York State Department of Environmental Conservation
50 Wolf Road
Albany, NY 12233-0001

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3/3548

SCHRECK'S SCRAPYARD

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SECTION 1

1.0 EXECUTIVE SUMMARY

The Schreck's Scrapyard site is located at 55 Schenck Street in the City of North Tonawanda, Niagara County, New York (Figures 1 and 2). The site is approximately one acre in size and is presently operated as a junkyard by VJT Salvage, Inc.

In 1951, Tennis Schreckengost (Schreck) started a scrap iron business called Schreck's Iron and Metal Company. In 1953 the business was sold to Bengart and Memel, Inc., who reportedly operated until 1977. In addition to the metal salvage operation, the site was used as a transfer station for the hauling of phenolic waste from Occidental - Durez to local waste disposal facilities between 1951 and 1975. In 1965, approximately 50-60 drums of phenolic waste were landfilled in a hydraulic press pit located in the rear (south end) of the property. The drums were confined in the concrete walls of the 18 foot deep pit.

From 1960 to 1975, transformers from Niagara Mohawk Power Corporation were routinely brought to the site for salvage. The metal casings were sheared and oil was allowed to spill on the ground. The oil soaked ground was periodically excavated by a dozer and pushed towards the eastern property boundary.

In 1983, the Lawless Container Corporation contracted with Recra Research, Inc. (Recra) to perform a site evaluation. Two composite surface and near-surface soil samples were collected and analyzed for metals, cyanide, phenol and PCBs and scanned for volatile organics, volatile halogenated organics and halogenated organics. Analytical results indicated concentrations of heavy metals in excess of background levels for Buffalo and Tonawanda undisturbed soils. Detectable levels were found for arsenic, phenol and cyanide and concentrations of PCBs ranged from 18 to 66 ppm. The organic scans indicated the presence of volatile organics, halogenated organics and volatile halogenated organics.

The Phase I effort included a compiling of information gathered from the New York State Department of Environmental Conservation (NYSDEC), the New York State Department of Health and personnel associated with site operations.

The intent of the Hazard Ranking System (HRS) is to provide a method by which uncontrolled hazardous waste sites may be systematically assessed as to the potential risk that a site may pose to human health and the environment. The HRS is designed to provide a numerical value through an assessment of technical data and information, and relating that information with respect to:

- o migration of hazardous substances from the site (Sm)
- o risk involved with direct contact (Sdc)
- o the potential for fire and explosion (Sfe).

The risks involved with direct contact (Sdc) and the potential for fire and explosion (Sfe) are evaluated according to site specific information including toxicity of waste, quantity, site demographics, location with respect to sensitive habitats of wildlife, etc. Migration potential (Sm) is evaluated through the rating of factors associated with three routing modes: groundwater (Sgw), surface water (Ssw) and Air (Sa). The scored value for each route is composited to determine the risk to humans and/or the environment from the migration of hazardous substances from the site

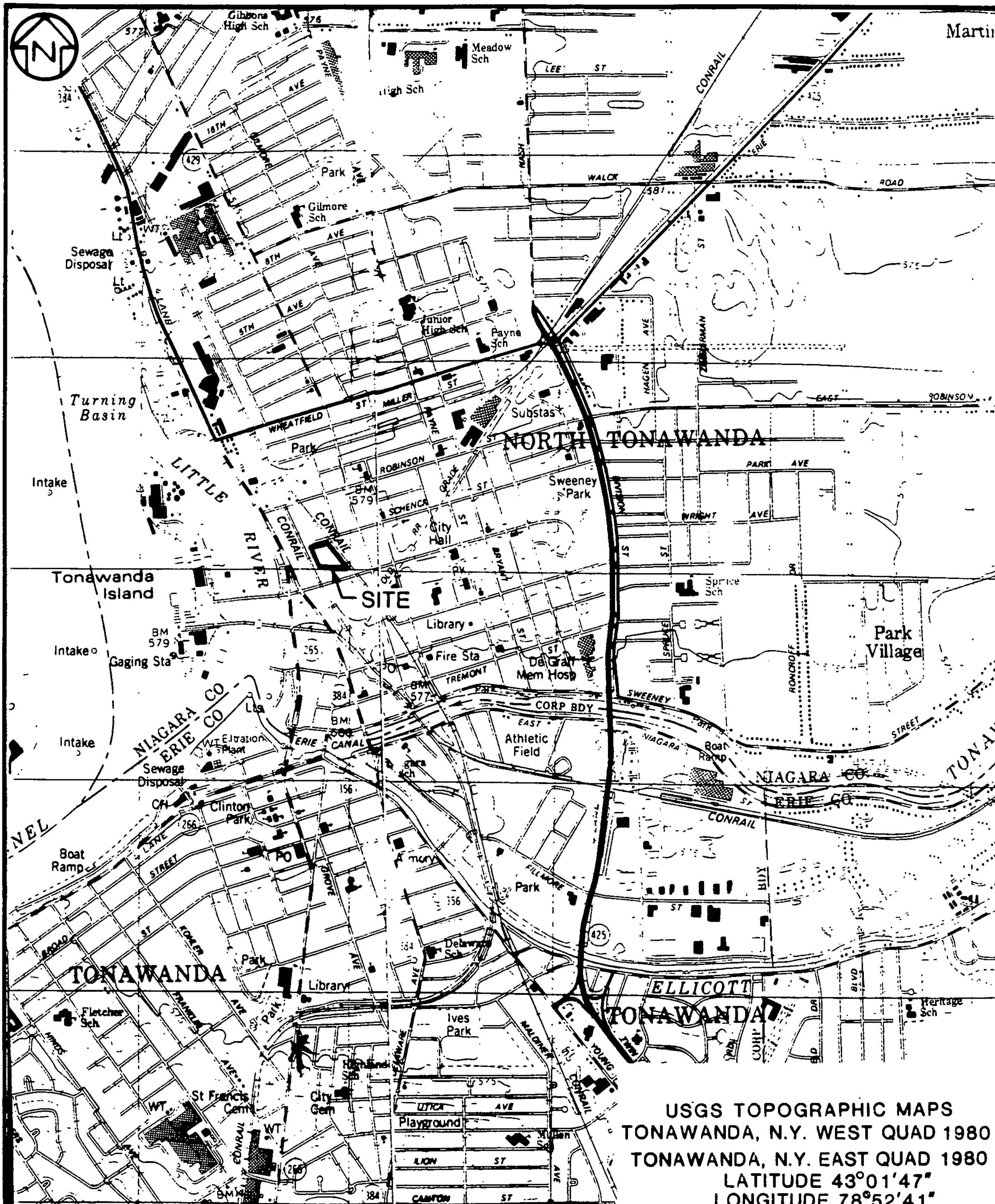
(Sm).

Based on information gathered during this investigation, the Schreck's Scrapyard was scored according to the Mitre Corporation Hazard Ranking System (HRS) and the following scores were obtained:

Sm	=	1.54 (Sgw = 0; Ssw = 2.67; Sa = 0)
Sfe	=	N/A
Sdc	=	33.33

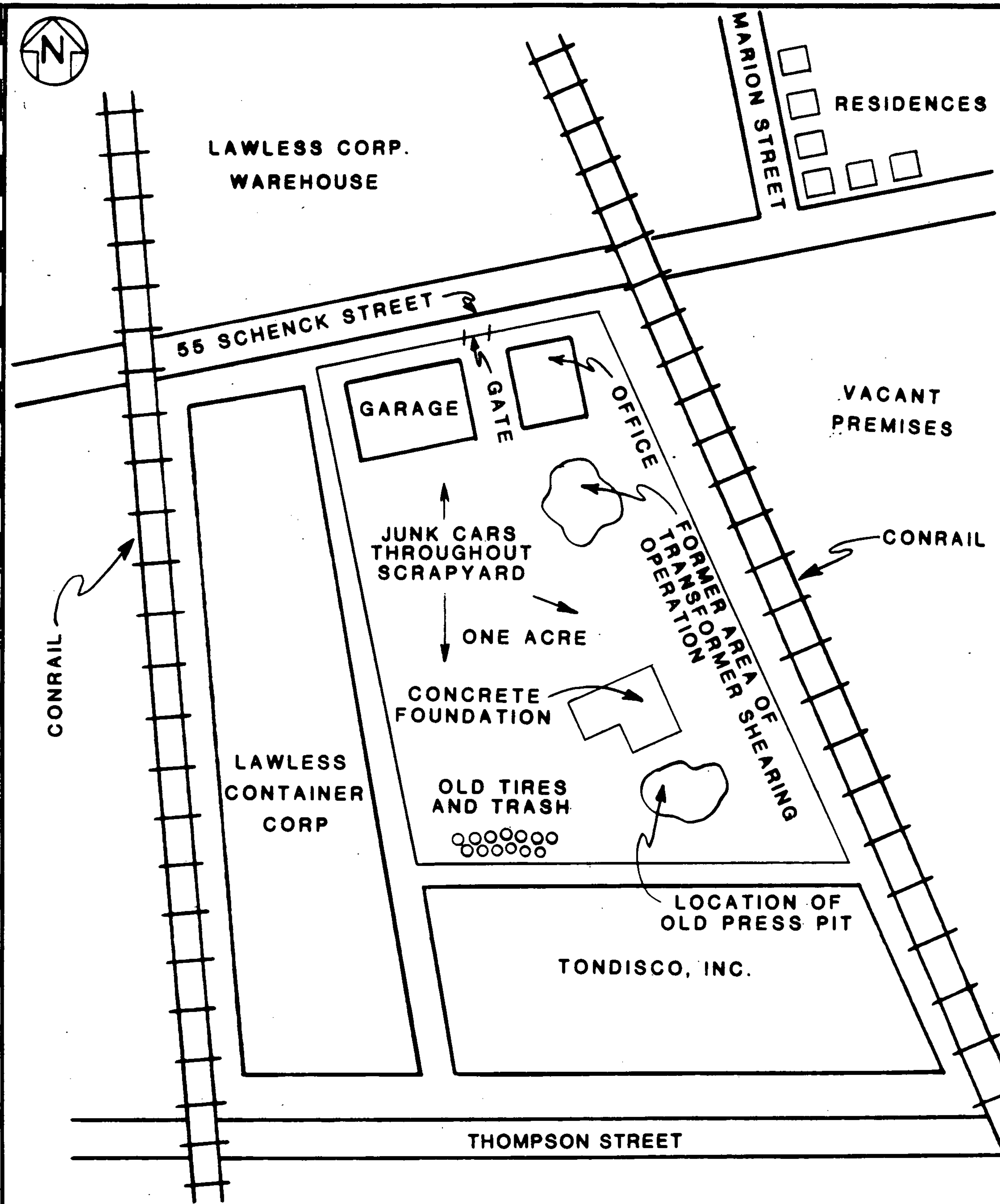
Additional sampling of soils at the site will be necessary to determine the extent of contamination. A proposed Phase II investigation designed to provide subsurface information including groundwater quality is described in Section 7.0. The proposed Phase II investigation includes the following scope of work:

- o air monitoring
- o surface geophysics
- o test bore drilling
- o monitoring well installation
- o in-situ permeability testing
- o groundwater and soil sampling
- o surveying and mapping
- o chemical analytical testing, and
- o laboratory geotechnical testing.



RECRA RESEARCH INC. BUFFALO, NEW YORK	Scale: 1:25000			SCHRECK'S SCRAPYARD NORTH TONAWANDA, N.Y. N.Y.S. SUPERFUND PHASE I	VICINITY MAP
		By	Date		
	Dwn.	MJS	12/85		
	Ckd.				
	Ap'vd.				
	Rev.			Project No. 5C280419	A — FIGURE 1

BRUNING 61160-1



RECRA RESEARCH INC. BUFFALO, NEW YORK	Scale: NTS			SCHRECK'S SCRAPYARD N. TONAWANDA, N.Y. N.Y.S. SUPERFUND PHASE 1	SITE MAP
		By	Date		
	Dwn.	DLS	5/86		
	Ckd.				
	Ap'vd.				
	Rev.			Project No. 5C280419	A FIGURE 2

SECTION 2

2.0 PURPOSE

The objective of this Phase I investigation is to prepare a report for the Schreck's Scrapyard site that provides a history and preliminary assessment of the site based on a review of available data, assigns a numerical value to the site through the use of the Hazard Ranking System (HRS) and develops a proposed Phase II work plan designed to address the data inadequacies identified during report preparation. The purpose of developing a Phase I report in this manner is to provide a preliminary assessment of the site and the potential impact it may pose to human health and the environment.

The Phase I objective was met through the following activities:

- site inspection.
- collection and review of available data for report preparation and preliminary scoring of the HRS.
- evaluation of data for completeness and identification of data inadequacies.
- development of a proposed Phase II work plan to address the data inadequacies identified.

A site inspection is an integral part of the Phase I report preparation and is conducted to confirm actual site conditions. Typically, the site visit is designed to note the general topography and geology of the site, evidence of waste disposal, form of waste disposal, visible signs of contaminant release to the environment (e.g. leachate), access to the site, and location of water supplies, population centers, and sensitive environments such as wetlands.

SECTION 3

3.0 SCOPE OF WORK

In order to provide an accurate and thorough preliminary assessment of the Schreck's Scrapyard site, Recra personnel conducted an intensive search of state and county office files, a review of available general information concerning regional geography, geology and hydrogeology, and a site visit that included an interview with personnel associated with site operations.

Much of the data comprising this report was obtained from NYSDEC Region 9 located at 600 Delaware Avenue, Buffalo, New York (716-847-4600). NYSDEC Region 9 also provided floodplain information and the location of wetlands and critical habitats of endangered species in the vicinity of the site.

Recra personnel conducted a telephone interview with James Allen Carrol, a former employee at Schreck's Scrapyard. Recra personnel performed a site inspection on March 27, 1986 to identify the present condition of the site. Weather during the inspection was partly cloudy and 37°F with no snow cover on the ground. No air monitoring was conducted during the site inspection.

SECTION 4

4.0 SITE ASSESSMENT

4.1 Site History

The Schreck's Scrapyard site is currently owned and operated as a junkyard by VJT Salvage, Inc. Past owners of the site have included Tonawandas Distributing Corporation, Melvin F. Wagenschuetz, Schreck's Iron and Metal Corporation, Milton J. Kulak and Jane B. Kulak (Ref. 13). The dates and duration of ownership concerning these parties was not available.

The following information was obtained during a telephone interview with a former employee at Schreck's Scrapyard, James Allen Carrol (Ref. 12).

Tennis Schreckengost started a scrap iron business called Schreck's Scrap Iron and Metal at 55 Schenck Street in 1951. Bengart and Memel bought out Schreck's Scrap Iron and Metal in 1953 and operated until 1977. From 1951 to 1975, Schreck's Scrapyard was used as a transfer station for the hauling of phenolic waste from Occidental-Durez to various waste disposal facilities in Erie and Niagara Counties.

In 1965, approximately 50-60 drums of phenolic waste were landfilled in an old hydraulic press pit located approximately 30 feet in from the rear property boundary (Tondisco, Inc.) and 70 feet in from the railroad spur to the east of the site. The press pit was part of a hydraulic bailing operation in which scrap metal was pressed, bailed, and then recycled at local steel making facilities. The drums containing waste were used to fill in the old press pit which was 18 feet deep. The drums were confined within the concrete walls of the press pit.

From 1960 to 1975, transformers from Niagara Mohawk Power Corporation were routinely brought to the site for salvage. The metal casings of the transformers were sheared for foundry steel. During the shearing process, oil from the transformers was spilled on the ground. The shearing operation took place in the center of the yard behind the office. Periodically, a dozer was used to push oil soaked soil towards the eastern property boundary.

In 1983, the Lawless Container Corporation, located adjacent to the Schreck's Scrapyard site, contracted with Recra to prepare a sampling and analytical report for the site (Ref. 9). This sampling program included the collection of surface and near-surface soil samples from two areas of the site. Analytical results are summarized in Section 4.4.4 of this report.

4.2 Site Area Surface Features

4.2.1 Topography and Drainage

Topography in the area including the site is generally flat with a grade of less than one percent (Ref. 1). Elevation of the site is approximately 575 feet above sea level. The Niagara River (Little River section) is located 700 feet to the west and the confluence of Tonawanda and Ellicott Creeks is approximately 2500 feet to the south.

The site is located in a very urbanized setting and run-off from the area is directed towards municipal storm sewers. Most precipitation at the site probably infiltrates the ground surface.

4.2.2 Environmental Setting

The area surrounding the site is primarily residential to the north and east and industrial/commercial to the west and south (Ref. 1). Lawless Container Corporation borders the site to the west and across Schenck Street to the north. Tondisco, Inc. borders the site on the south side and a vacant lot lies east of the site across a Conrail Railroad spur. Population within a one mile radius of the site is greater than 20,000 (Ref. 1). All residents of the Tonawandas are connected to public water supply (Ref. 14). There is no known groundwater usage within a three mile radius of the site (Ref. 14 and 15). Water intakes serving the City of Tonawanda, the City of North Tonawanda and the City of Lockport are located approximately one mile west of the site in the Niagara River (Ref. 1 and 2).

The branch of the Niagara River called Little River is located approximately 700 feet west of the site (Ref. 1). The Niagara River is a Class A Special (international boundary waters) water resource suitable for drinking, culinary or food processing purposes and any other usages (Ref. 5 and 6). The confluence of Tonawanda and Ellicott Creeks is located approximately 2500 feet south of the site (Ref. 1). Tonawanda Creek in this location is a Class C waterway suitable for fishing and secondary contact recreation (Ref. 5 and 6). Ellicott Creek is a Class D waterway suitable for secondary contact recreation (Ref. 5 and 6).

New York State regulated wetlands TE-15 and TE-12 are located over one mile north and east of the site respectively (Ref. 10). Wetland TW-12 lies less than a mile west of the site across the Niagara River on Grand

Island. There are no known critical habitats of endangered species within one mile of the site (Ref. 10). The site is not situated in a 100-year floodplain (Ref. 11).

4.3 Site Hydrogeology

4.3.1 Geology

Bedrock first encountered underlying the site is the Camillus Shale of Silurian age (Ref. 7). This unit is described as a gray, red and green thin-bedded shale. Limestone and dolomite interbed with the shale and beds and lenses of gypsum up to five feet thick are found in the unit. The Camillus Shale is estimated to be about 400 feet thick but the thickness is known to decrease to the north near the contact with the Lockport Dolomite. The unit dips southward at approximately 40 feet per mile (Ref. 4 and 7).

Unconsolidated materials in the area are of glacial origin and consist primarily of lacustrine clays with stringers of sand and silt (Ref. 16). The U.S. Geological Survey drilled a test boring approximately three miles northeast of the site in 1982. Unconsolidated deposits consisted mostly of pink to gray-green clay with some sandy pink clay. Bedrock was encountered at 27 feet below ground surface (Ref. 16, p.42).

4.3.2 Soils

Soils in the area including the site have been classified by the Soil Conservation Service as the Canandaigua-Raynham-Rhinebeck association (Ref. 8). These are somewhat poorly drained and moderately well-drained soils having a dominantly medium-textured to fine-textured subsoil. These soils formed in glacial lacustrine deposits of silt, very fine sand and clay. The seasonal high water table rises to within one foot of the ground surface in spring and in other excessively wet periods.

As the site has been a scrapyard for almost 40 years, original soils have been greatly disturbed or removed. During the Recra site evaluation in 1983, site soils were characterized as black, cindery fill with assorted glass, slag, metal pieces and automotive debris and having an oily odor (Ref. 9).

4.3.3 Groundwater

The hydrologic system in the area of the site probably consists of a bedrock aquifer in the Camillus Shale overlain by an aquifer in the unconsolidated deposits (Ref. 15). Where gypsum has been dissolved in the Camillus Shale, openings exist for the passage and storage of water. Water within the bedrock flows through solution zones, joints, and fractures. The Camillus Shale is estimated to have a transmissivity ranging from 7000 to 70,000 gallons per day per foot (Ref. 4). Groundwater in shallow bedrock discharges to Tonawanda Creek and the Niagara River (Ref. 16).

The low permeability of the glacial lacustrine deposits results in a seasonal high water table following wet periods (Ref. 8 and 16). This perched water table discharges into areas of low topography and eventually into nearby surface water bodies (Ref. 16).

4.4 Previous Sampling and Analysis

4.4.1 Groundwater Quality Data

No groundwater quality data is available for the site.

4.4.2 Surface Water Quality Data

No surface water quality data is available for the site.

4.4.3 Air Quality Data

No air quality data is available for the site.

4.4.4 Other Analytical Data

In 1983, Recra was contracted by Lawless Container Corporation to collect and analyze surface (0-1 feet) and near-surface (1-3 feet) soil samples from two locations at the site (Ref. 9). The samples were scanned for halogenated organics, volatile halogenated organics, and volatile organics and analyzed for PCBs, phenol, oil and grease, total cyanide, lead, zinc, nickel, arsenic, selenium, copper, chromium, cadmium and mercury. Analytical results are found in Table 1 of Reference 9. Concentrations of lead, zinc, nickel, copper, chromium, cadmium and mercury in both samples exceeded background levels in undisturbed soil samples from the Buffalo and Tonawanda areas (Ref. 16, p. 40 and 45). Arsenic concentrations in the two samples were 17 and 90 ppm and cyanide concentrations were 5.7 and 10 ppm. The organic scans indicated detectable levels of volatile organics, halogenated organics and volatile halogenated organics. Total recoverable phenolic levels were 4.9 and 36 ppm, and total PCBs ranged between 18 and 66 ppm. According to Federal Regulation 40 CFR 761.60 and New York State Regulation 6NYCRR 371.4, soils containing greater than 50 ppm PCBs are considered a hazardous waste and must be disposed of as required under law.

Narrative

5.0 PRELIMINARY APPLICATION OF THE HAZARD RANKING SYSTEM

5.1 Narrative

The Schreck's Scrapyard site is located at 55 Schenck Street in the City of North Tonawanda, Niagara County, New York (Figures 1 and 2). The site is approximately one acre in size and is presently operated as a junkyard by VJT, Inc.

In 1951, Tennis Schreckengost (Schreck) started a scrap iron business called Schreck's Iron and Metal Company. In 1953 the business was sold to Bengart and Memel, Inc., who reportedly operated until 1977. In addition to the metal salvage operation, between 1951 and 1975 the site was used as a transfer station for the hauling of phenolic waste from Occidental - Durez to local waste disposal facilities. In 1965, approximately 50-60 drums of phenolic waste were landfilled in a hydraulic press pit located in the rear (south end) of the property. The drums were confined in the concrete walls of the 18 feet deep pit.

From 1960 to 1975, transformers from Niagara Mohawk Power Corporation were routinely brought to the site for salvage (Ref. 12). The metal casings were sheared and oil was allowed to spill on the ground. The oil soaked ground was periodically excavated by a dozer and pushed towards the eastern property boundary.

In 1983, the Lawless Container Corporation contracted with Recra Research, Inc. to perform a site evaluation (Ref. 9). Two composite surface and near-surface soil samples were collected and analyzed for metals, cyanide, phenol and PCBs and scanned for volatile organics, volatile halogenated organics and halogenated organics. Analytical results indicate metals in excess of background levels from Buffalo and Tonawanda undisturbed soils. Detectable levels were found for arsenic, phenol and cyanide and concentrations of PCBs ranged from 18 to 66 ppm. The organic scans indicated the presence of volatile organics, halogenated organics and volatile halogenated organics.

No groundwater, surface water or air quality monitoring has been conducted at the site.

The area surrounding the site is largely residential with a commercial/ industrial mix (Ref. 1). All residents within a three mile radius of the site are connected to a municipal water supply and there is no known groundwater usage in the area (Ref. 2, 4, 14 and 15). Municipal water intakes for the Tonawandas are located in the Niagara River approximately one mile west of the site (Ref. 1 and 2). The confluence of Tonawanda and Ellicott Creeks is located 2500 feet south of the site (Ref. 1).

New York State regulated wetland TW-12 is located less than one mile west of the site across the Niagara River on Grand Island (Ref. 10). The site is not situated in a 100-year floodplain (Ref. 11).

HRS WORKSHEETS

5.2 HRS WORKSHEET

Facility name: Schreck's Scrapyard

Location: 55 Schenck Street, North Tonawanda, Niagara County, New York

EPA Region: II

Person(s) in charge of the facility: Red Harms (VJT Salvage)

55 Schenck Street

North Tonawanda, New York

Name of Reviewer: Recra

Date: May 17, 1986

General description of the facility:

(For example: landfill, surface impoundment, pile, container; types of hazardous substances; location of the facility; contamination route of major concern; types of information needed for rating; agency action, etc.)

Schreck's Scrapyard was operated as a metal salvage operation from 1951 to 1977. From 1951 to 1975 the site served as a transfer station for phenolic wastes hauled from Occidental-Durez to various waste disposal facilities. In 1965, 50-60 drums of phenolic waste were landfilled on site. From 1960 to 1975, transformers from Niagara Mohawk Power Corporation were dismantled on-site resulting in oil spillage to the ground.

Scores: S_M = 1.54 (S_{gw} = 0 S_{sw} = 2.67 S_a = 0)

S_{FE} = N/A

S_{DC} = 33.33

FIGURE 1
HRS COVER SHEET

Ground Water Route Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multiplier	Score	Max. Score	Ref. (Section)
[1] Observed Release	(0) 45	1	0	45	3.1
If observed release is given a score of 45, proceed to line [4]. If observed release is given a score of 0, proceed to line [2].					
[2] Route Characteristics					3.2
Depth to Aquifer of Concern	0 1 (2) 3	2	4	6	
Net Precipitation	0 1 (2) 3	1	2	3	
Permeability of the Unsaturated Zone	0 1 (2) 3	1	2	3	
Physical State	0 1 2 (3)	1	3	3	
	Total Route Characteristics Score		11	15	
[3] Containment	0 1 2 (3)	1	3	3	3.3
[4] Waste Characteristics					3.4
Toxicity/Persistence	0 3 6 9 12 15 (18)	1	18	18	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 (8)	1	8	8	
	Total Waste Characteristics Score		26	26	
[5] Targets					3.5
Ground Water Use	(0) 1 2 3	3	0	9	
Distance to Nearest Well/Population Served	(0) 4 6 8 10 12 16 18 20 24 30 32 35 40	1	0	40	
	Total Targets Score		0	49	
[6] If line [1] is 45, multiply [1] x [4] x [5] If line [1] is 0, multiply [2] x [3] x [4] x [5]			0	57,330	
[7] Divide line [6] by 57,330 and multiply by 100		S_{gw} =	0		

FIGURE 2
GROUND WATER ROUTE WORK SHEET

Surface Water Route Work Sheet					
Rating Factor	**Assigned Value (Circle One)**	**Multiplier**	**Score**	**Max. Score**	**Ref. (Section)**
1 Observed Release	(0) 45	1	0	45	4.1
If observed release is given a value of 45, proceed to line 4. If observed release is given a value of 0, proceed to line 2.					
2 Route Characteristics					4.2
Facility Slope and Intervening Terrain	(0) 1 2 3	1	0	3	
1-yr. 24-hr. Rainfall	0 1 (2) 3	1	2	3	
Distance to Nearest Surface Water	0 1 2 (3)	2	6	6	
Physical State	0 1 2 (3)	1	3	3	
Total Route Characteristics Score			11	15	
3 Containment	0 1 2 (3)	1	3	3	4.3
4 Waste Characteristics					4.4
Toxicity/Persistence	0 3 6 9 12 15 (18)	1	18	18	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 (8)	1	8	8	
Total Waste Characteristics Score			26	26	
5 Targets					4.5
Surface Water Use	(0) 1 2 3	3	0	9	
Distance to a Sensitive Environment	0 (1) 2 3	2	2	6	
Population Served/Distance to Water Intake Downstream	(0) 4 6 8 10 12 16 18 20 24 30 32 35 40	1	0	40	
Total Targets Score			2	55	
6 If line 1 is 45, multiply 1 x 4 x 5 If line 1 is 0, multiply 2 x 3 x 4 x 5			1716	64,350	
7 Divide line 6 by 64,350 and multiply by 100	S_{sw} = 2.67				

FIGURE 7

SURFACE WATER ROUTE WORK SHEET

Air Route Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multiplier	Score	Max. Score	Ref. (Section)
[1] Observed Release	(0) 45	1	0	45	5.1
Date and Location:					
Sampling Protocol:					
If line [1] is 0, the S_a = 0. Enter on line [5]. If line [1] is 45, then proceed to line [2].					
[2] Waste Characteristics					5.2
Reactivity and Incompatibility	(0) 1 2 3	1	0	3	
Toxicity	0 1 2 (3)	3	9	9	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 (8)	1	8	8	
	Total Waste Characteristics Score		17	20	
[3] Targets					5.3
Population Within 4-Mile Radius	0 9 12 15 18 (21) 24 27 30	1	21	30	
Distance to Sensitive Environment	0 (1) 2 3	2	2	6	
Land Use	0 1 2 (3)	1	3	3	
	Total Targets Score		26	39	
[4] Multiply [1] x [2] x [3]			0	35,100	
[5] Divide line [4] by 35,100 and multiply by 100		S_a =	0		

FIGURE 9
AIR ROUTE WORK SHEET

	s	s^2
Groundwater Route Score (S_{gw})	0	0
Surface Water Route Score (S_{sw})	2.67	7.13
Air Route Score (S_a)	0	0
$S_{gw}^2 + S_{sw}^2 + S_a^2$		7.13
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2}$		2.67
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2} / 1.73 = S_M =$		1.54

FIGURE 10
WORKSHEET FOR COMPUTING S_M

Fire and Explosion Work Sheet N/A					
Rating Factor	Assigned Value (Circle One)	Multiplier	Score	Max. Score	Ref. (Section)
1 Containment	(1) 3	1	1	3	7.1
2 Waste Characteristics					7.2
Direct Evidence	(0) 3	1	0	3	
Ignitability	(0) 1 2 3	1	0	3	
Reactivity	(0) 1 2 3	1	0	3	
Incompatibility	(0) 1 2 3	1	0	3	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 (8)	1	8	8	
Total Waste Characteristics Score			8	20	
3 Targets					7.3
Distance to Nearest Population	0 1 2 3 (4) 5	1	4	5	
Distance to Nearest Building	0 1 (2) 3	1	2	3	
Distance to Sensitive Environment	(0) 1 2 3	1	0	3	
Land Use	0 1 2 (3)	1	3	3	
Population Within 2-Mile Radius	0 1 2 3 4 (5)	1	5	5	
Buildings Within 2-Mile Radius	0 1 2 3 4 (5)	1	5	5	
Total Targets Score			19	24	
4 Multiply 1 x 2 x 3			152	1,440	
5 Divide line 4 by 1,440 and multiply by 100	S_{FE} = N/A				

FIGURE 11
FIRE AND EXPLOSION WORK SHEET

Direct Contact Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)
[1] Observed Incident	(0) 45	1	0	45	8.1
If line [1] is 45, proceed to line [4] If line [1] is 0, proceed to line [2]					
[2] Accessibility	0 1 (2) 3	1	2	3	8.2
[3] Containment	0 (15)	1	15	15	8.3
[4] Waste Characteristics Toxicity	0 1 2 (3)	5	15	15	8.4
[5] Targets					8.5
Population Within a 1-Mile Radius	0 1 2 3 (4) 5	4	16	20	
Distance to a Critical Habitat	(0) 1 2 3	4	0	12	
Total Targets Score			16	32	
[6] If line [1] is 45, multiply [1] x [4] x [5] If line [1] is 0, multiply [2] x [3] x [4] x [5]			7200	21,600	
[7] Divide line [6] by 21,600 and multiply by 100	S_{DC} = 33.33				

FIGURE 12
DIRECT CONTACT WORK SHEET

HRS DOCUMENTATION RECORDS

5.3 HRS DOCUMENTATION RECORDS

DOCUMENTATION RECORDS FOR HAZARD RANKING SYSTEM

INSTRUCTIONS: The purpose of these records is to provide a convenient way to prepare an auditable record of the data and documentation used to apply the Hazard Ranking System to a given facility. As briefly as possible summarize the information you used to assign the score for each factor (e.g., "Waste quantity = 4,230 drums plus 800 cubic yards of sludges"). The source of information should be provided for each entry and should be a bibliographic-type reference that will make the document used for a given data point easier to find. Include the location of the document and consider appending a copy of the relevant page(s) for ease in review.

FACILITY NAME: Schreck's Scrapyard

LOCATION: 55 Schenck Street, North Tonawanda, New York

DATE SCORED: 5/17/86

PERSON SCORING: Thomas P. Connare

GROUND WATER ROUTE

1 OBSERVED RELEASE

Contaminants detected (5 maximum):

No analytical data

Rationale for attributing the contaminants to the facility:

N/A

* * *

2 ROUTE CHARACTERISTICS

Depth to Aquifer of Concern

Name/description of aquifers(s) of concern:

Camillus Shale (References 4, 7, and 16)

Depth(s) from the ground surface to the highest seasonal level of the saturated zone [water table(s)] of the aquifer of concern:

Estimated between 20 and 75 feet; based on U.S. Geological Survey test drilling in the area. (Reference 16)

Depth from the ground surface to the lowest point of waste disposal/storage:

18 feet (Reference 12)

Net Precipitation

Mean annual or seasonal precipitation (list months for seasonal):

36 inches (Reference 3)

Mean annual lake or seasonal evaporation (list months for seasonal):

27 inches (Reference 3)

Net precipitation (subtract the above figures):

9 inches

Permeability of Unsaturated Zone

Soil type in unsaturated zone:

Glacial lacustrine deposits of silt, very fine sand, and clay. (Reference 8)

Permeability associated with soil type:

$< 10^{-3} \geq 10^{-7}$ cm/sec (Reference 3)

Physical State

Physical state of substances at time of disposal (or at present time for generated gases):

Liquid, sludge, solid (Reference 12)

* * *

3 CONTAINMENT

Containment

Method(s) of waste or leachate containment evaluated:

Landfill

Method with highest score:

No liner (Reference 3)

4 WASTE CHARACTERISTICS

Toxicity and Persistence

Compound(s) evaluated:

Metals - lead, chromium, cadmium, mercury
PCBs (Reference 9)

Compound with highest score:

Metals and PCBs (Reference 3)

Hazardous Waste Quantity

Total quantity of hazardous substances at the facility, excluding those with a containment score of 0 (Give a reasonable estimate even if quantity is above maximum):

4840 cubic yards

Basis of estimating and/or computing waste quantity:

1 acre (4840 square yards) x 1 foot soil depth (Reference 9)

* * *

5 TARGETS

Ground Water Use

Use(s) of aquifer(s) of concern within a 3-mile radius of the facility:

No usage (References 14 and 15)

Distance to Nearest Well

Location of nearest well drawing from aquifer of concern or occupied building not served by a public water supply:

N/A

Distance to above well or building:

N/A

Population Served by Ground Water Wells Within a 3-Mile Radius

Identified water-supply well(s) drawing from aquifer(s) of concern within a 3-mile radius and populations served by each:

None identified (References 14 and 15)

Computation of land area irrigated by supply well(s) drawing from aquifer(s) of concern within a 3-mile radius, and conversion to population (1.5 people per acre):

N/A

Total population served by ground water within a 3-mile radius:

0 (References 14 and 15)

SURFACE WATER ROUTE

1 OBSERVED RELEASE

Contaminants detected in surface water at the facility or downhill from it (5 maximum):

No analytical data

Rationale for attributing the contaminants to the facility:

N/A

* * *

2 ROUTE CHARACTERISTICS

<u>Facility Slope and Intervening Terrain</u>

Average slope of facility in percent:

Less than 1% (Reference 1)

Name/description of nearest downslope surface water:

Niagara River

Average slope of terrain between facility and above-cited surface water body in percent:

Less than 1% (Reference 1)

Is the facility located either totally or partially in surface water?

No

Is the facility completely surrounded by areas of higher elevation?

No (Reference 1)

1-Year 24-Hour Rainfall in Inches

2.1 inches (Reference 3)

Distance to Nearest Downslope Surface Water

700 feet

Physical State of Waste

Liquid, sludge, solid (Reference 12)

* * *

3 CONTAINMENT

Containment

Method(s) of waste or leachate containment evaluated:

Landfill

Method with highest score:

No cover, no diversion system (Reference 3)

4 WASTE CHARACTERISTICS

Toxicity and Persistence

Compound(s) evaluated

Metals - lead, chromium, cadmium, mercury
PCBs (Reference 9)

Compound with highest score:

Metals and PCBs

Hazardous Waste Quantity

Total quantity of hazardous substances at the facility, excluding those with a containment score of 0 (Give a reasonable estimate even if quantity is above maximum):

4840 cubic yards

Basis of estimating and/or computing waste quantity:

1 acre (4840 square yards) x 1 foot soil depth

(Reference 9)

* * *

5 TARGETS

Surface Water Use

Use(s) of surface water within 3 miles downstream of the hazardous substance:

For HRS scoring purposes, run-off from the site enters municipal sewers.

Is there tidal influence?

No

Distance to a Sensitive Environment

Distance to 5-acre (minimum) coastal wetland, if 2 miles or less:

N/A

Distance to 5-acre (minimum) fresh-water wetland, if 1 mile or less:

4000 feet (Reference 10)

Distance to critical habitat of an endangered species or national wildlife refuge, if 1 mile or less:

N/A (Reference 10)

Population Served by Surface Water

Location(s) of water-supply intake(s) within 3 miles (free-flowing bodies) or 1 mile (static water bodies) downstream of the hazardous substance and population served by each intake:

Three water-supply intakes are located in the Niagara River less than a mile from the site but they are not downstream.
(References 1 and 2)

Computation of land area irrigated by above-cited intake(s) and conversion to population (1.5 people per acre):

N/A

Total population served:

N/A

Name/description of nearest of above water bodies:

N/A

Distance to above-cited intakes, measured in stream miles.

N/A

AIR ROUTE

1 OBSERVED RELEASE

Contaminants detected:

No analytical data

Date and location of detection of contaminants

N/A

Methods used to detect the contaminants:

N/A

Rationale for attributing the contaminants to the site:

N/A

* * *

2 WASTE CHARACTERISTICS

<u>Reactivity and Incompatibility</u>

Most reactive compound:

N/A

Most incompatible pair of compounds:

N/A

Toxicity

Most toxic compound:

Metals
PCBs

Hazardous Waste Quantity

Total quantity of hazardous waste:

4840 cubic yards

Basis of estimating and/or computing waste quantity:

1 acre (4840 square yards) x 1 foot soil depth

(Reference 9)

* * *

3 TARGETS

Population Within 4-Mile Radius

Circle radius used, give population, and indicate how determined:

0 to 4 mi (circled) 0 to 1 mi 0 to 1/2 mi 0 to 1/4 mi

Greater than 50,000 (Reference 1)

Distance to a Sensitive Environment

Distance to 5-acre (minimum) coastal wetland, if 2 miles or less:

N/A

Distance to 5-acre (minimum) fresh-water wetland, if 1 mile or less:

4000 feet (Reference 10)

Distance to critical habitat of an endangered species, if 1 mile or less:

N/A (Reference 10)

Land Use

Distance to commercial/industrial area, if 1 mile or less:

Adjacent to site (less than 100 feet) (Reference 1 and Recra site visit 3/27/86)

Distance to national or state park, forest, or wildlife reserve, if 2 miles or less:

N/A

Distance to residential area, if 2 miles or less:

Less than 500 feet (Reference 1)

Distance to agricultural land in production within past 5 years, if 1 mile or less:

N/A

Distance to prime agricultural land in production within past 5 years, if 2 miles or less:

N/A

Is a historic or landmark site (National Register or Historic Places and National Natural Landmarks) within the view of the site?

No

FIRE AND EXPLOSION

1 CONTAINMENT

Hazardous substances present:

No hazardous substances that are ignitable or explosive are documented to be present at the site.

Type of containment, if applicable:

N/A

* * *

2 WASTE CHARACTERISTICS

<u>Direct Evidence</u>

Type of instrument and measurements:

N/A

<u>Ignitability</u>

Compound used:

N/A

<u>Reactivity</u>

Most reactive compound:

N/A

<u>Incompatibility</u>

Most incompatible pair of compounds:

N/A

* * *

Hazardous Waste Quantity

Total quantity of hazardous substances at the facility:

4840 cubic yards

Basis of estimating and/or computing waste quantity:

1 acre (4840 square yards) x 1 foot soil depth

(Reference 9)

* * *

3 TARGETS

Distance to Nearest Population

Adjacent to site (less than 100 feet)

(Reference 1 and Recra site visit 3/27/86)

Distance to Nearest Building

Adjacent to site (less than 100 feet)

(Reference 1 and Recra site visit 3/27/86)

Distance to Sensitive Environment

Distance to wetlands:

4,000 feet (Reference 10)

Distance to critical habitat:

N/A (Reference 10)

Land Use

Distance to commercial/industrial area, if 1 mile or less:

Adjacent to site (less than 100 feet)

(Reference 1 and Recra site visit 3/27/86)

Distance to national or state park, forest, or wildlife reserve, if 2 miles or less:

N/A (Reference 1)

Distance to residential area, if 2 miles or less:

Less than 500 feet (Reference 1)

Distance to agricultural land in production within past 5 years, if 1 mile or less:

N/A (Reference 1)

Distance to prime agricultural land in production within past 5 years, if 2 miles or less:

N/A (Reference 1)

Is a historic or landmark site (National Register or Historic Places and National Natural Landmarks) within the view of the site?

No

Population Within 2-Mile Radius

Greater than 10,000 (Reference 1)

Buildings Within 2-Mile Radius

Greater than 2,600 (Reference 1)

DIRECT CONTACT

1 OBSERVED INCIDENT

Date, location, and pertinent details of incident:

N/A

* * *

2 ACCESSIBILITY

Describe type of barrier(s):

Fence and locked gate

(Reference Recra site visit 3/27/86)

* * *

3 CONTAINMENT

Type of containment, if applicable:

None; site is used as scrapyard

(Reference Recra site visit 3/27/86)

* * *

4 WASTE CHARACTERISTICS

Toxicity

Compounds evaluated:

Metals - lead, chromium, cadmium, mercury; PCBs

(Reference 9)

Compound with highest score:

Metals and PCBs

(Reference 3)

* * *

5 TARGETS

Population within one-mile radius

Between 3,001 and 10,000 (Reference 1)

Distance to critical habitat (of endangered species)

N/A (Reference 10)

EPA 2070-12

EPA

POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT
PART 1 - SITE INFORMATION AND ASSESSMENT

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	932099

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site)	02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER
SCHRECK'S SCRAPYARD	55 SCHENCK STREET

03 CITY	04 STATE	05 ZIP CODE	06 COUNTY	07 COUNTY CODE	08 CONG DIST
NORTH TONAWANDA	NY	14120	NIAGARA		

09 COORDINATES LATITUDE 43°01'47". LONGITUDE 78°52'41".

10 DIRECTIONS TO SITE (Starting from nearest public road)
INTERSTATE 290 TO COLVIN EXTENSION, NORTH TO ROBINSON, LEFT TO OLIVER, RIGHT TO 55 SCHENCK STREET

III. RESPONSIBLE PARTIES

01 OWNER (if known)	02 STREET (Business, mailing, residential)
VJT SALVAGE	55 SCHENCK STREET

03 CITY	04 STATE	05 ZIP CODE	06 TELEPHONE NUMBER
NORTH TONAWANDA			(716) 694-652X

07 OPERATOR (If known and different from owner)	08 STREET (Business, mailing, residential)
SAME	

09 CITY	10 STATE	11 ZIP CODE	12 TELEPHONE NUMBER
			( )

13 TYPE OF OWNERSHIP (Check one)
☒ A. PRIVATE ☐ B. FEDERAL: ______ (Agency name) ☐ C. STATE ☐ D. COUNTY ☐ E. MUNICIPAL
☐ F. OTHER: ______ (Specify) ☐ G. UNKNOWN

14 OWNER/OPERATOR NOTIFICATION ON FILE (Check all that apply)
☐ A. RCRA 3001 DATE RECEIVED: _/_/_ MONTH DAY YEAR ☐ B. UNCONTROLLED WASTE SITE (CERCLA 103 c) DATE RECEIVED: _/_/_ MONTH DAY YEAR ☒ C. NONE

IV. CHARACTERIZATION OF POTENTIAL HAZARD

01 ON SITE INSPECTION
☒ YES DATE _/_/83 MONTH DAY YEAR
☐ NO
BY (Check all that apply)
☐ A. EPA ☐ B. EPA CONTRACTOR ☐ C. STATE ☐ D. OTHER CONTRACTOR
☐ E. LOCAL HEALTH OFFICIAL ☒ F. OTHER: RECRA RESEARCH, INC (Specify)
CONTRACTOR NAME(S): ______

02 SITE STATUS (Check one)
☒ A. ACTIVE ☐ B. INACTIVE ☐ C. UNKNOWN

03 YEARS OF OPERATION
1951 | PRESENT (BEGINNING YEAR / ENDING YEAR) ☐ UNKNOWN

04 DESCRIPTION OF SUBSTANCES POSSIBLY PRESENT, KNOWN, OR ALLEGED
PHENOLIC WASTES
PCBS
HEAVY METALS

05 DESCRIPTION OF POTENTIAL HAZARD TO ENVIRONMENT AND/OR POPULATION
CONTAMINATED SOILS; NO USE OF GROUNDWATER WITHIN THREE MILES OF SITE; FENCE SURROUNDS SITE; SITE CURRENTLY BEING USED AS JUNKYARD

V. PRIORITY ASSESSMENT

01 PRIORITY FOR INSPECTION (Check one. If high or medium is checked, complete Part 2 - Waste Information and Part 3 - Description of Hazardous Conditions and Incidents)
☐ A. HIGH (Inspection required promptly) ☒ B. MEDIUM (Inspection required) ☐ C. LOW (Inspect on time available basis) ☐ D. NONE (No further action needed, complete current disposition form)

VI. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency/Organization)	03 TELEPHONE NUMBER
THOMAS P. CONNARE	RECRA ENVIRONMENTAL INC	(716) 691-2600

04 PERSON RESPONSIBLE FOR ASSESSMENT	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NUMBER	08 DATE
SAME AS ABOVE			( )	5/19/86 MONTH DAY YEAR

EPA

POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	932079

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)

- ☐ A. SOLID
- ☐ B. POWDER, FINES
- ☒ C. SLUDGE
- ☐ D. OTHER ______ (Specify)
- ☐ E. SLURRY
- ☒ F. LIQUID
- ☐ G. GAS

02 WASTE QUANTITY AT SITE (Measures of waste quantities must be independent)

- TONS ______
- CUBIC YARDS UNKNOWN
- NO. OF DRUMS 60

03 WASTE CHARACTERISTICS (Check all that apply)

- ☒ A. TOXIC
- ☐ B. CORROSIVE
- ☐ C. RADIOACTIVE
- ☒ D. PERSISTENT
- ☐ E. SOLUBLE
- ☐ F. INFECTIOUS
- ☐ G. FLAMMABLE
- ☐ H. IGNITABLE
- ☐ I. HIGHLY VOLATILE
- ☐ J. EXPLOSIVE
- ☐ K. REACTIVE
- ☐ L. INCOMPATIBLE
- ☐ M. NOT APPLICABLE

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE ✓	UNKNOWN		PHENOLIC WASTES
OLW	OILY WASTE ✓	"		TRANSFORMER OIL
SOL	SOLVENTS ✓	"		VOLATILE ORGANICS
PSD	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS ✓	"		VOLATILE HALOGENATED ORGANICS
IOC	INORGANIC CHEMICALS ✓	"		CYANIDE
ACD	ACIDS			
BAS	BASES			
MES	HEAVY METALS ✓	"		Cd, Cr, Pb, Cu, Hg, Ni, Zn, Ar

IV. HAZARDOUS SUBSTANCES (See Appendix for most frequently cited CAS Numbers)

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
	PCBs				
	HEAVY METALS				

V. FEEDSTOCKS (See Appendix for CAS Numbers)

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS	N/A		FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

- NYSDEC REGION 9 FILES
  - SAMPLING AND ANALYSIS REPORT FOR LAWLES CONTAINER CO. PREPARED BY [illegible] RESEARCH, JULY 6 1983 (RECRA 7/6/83)

EPA

POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT

PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	932099

II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

01 ☐ J. DAMAGE TO FLORA — 02 ☐ OBSERVED (DATE: ______) ☐ POTENTIAL ☐ ALLEGED

04 NARRATIVE DESCRIPTION

UNKNOWN

01 ☐ K. DAMAGE TO FAUNA — 02 ☐ OBSERVED (DATE: ______) ☐ POTENTIAL ☐ ALLEGED

04 NARRATIVE DESCRIPTION (Include name(s) of species)

UNKNOWN

01 ☐ L. CONTAMINATION OF FOOD CHAIN — 02 ☐ OBSERVED (DATE: ______) ☐ POTENTIAL ☐ ALLEGED

04 NARRATIVE DESCRIPTION

UNKNOWN

01 ☒ M. UNSTABLE CONTAINMENT OF WASTES (Spills/runoff/standing liquids/leaking drums) — 02 ☐ OBSERVED (DATE: ______) ☒ POTENTIAL ☐ ALLEGED

03 POPULATION POTENTIALLY AFFECTED: ______ 04 NARRATIVE DESCRIPTION

CONTAMINATED SITE SOILS (RECRA 7/6/83) ; NO CONTAINMENT, SITE IS ACTIVE JUNKYARD

01 ☐ N. DAMAGE TO OFFSITE PROPERTY — 02 ☐ OBSERVED (DATE: ______) ☐ POTENTIAL ☐ ALLEGED

04 NARRATIVE DESCRIPTION

UNKNOWN

01 ☐ O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs — 02 ☐ OBSERVED (DATE: ______) ☐ POTENTIAL ☐ ALLEGED

04 NARRATIVE DESCRIPTION

UNKNOWN

01 ☐ P. ILLEGAL/UNAUTHORIZED DUMPING — 02 ☐ OBSERVED (DATE: ______) ☐ POTENTIAL ☐ ALLEGED

04 NARRATIVE DESCRIPTION

UNKNOWN

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS

III. TOTAL POPULATION POTENTIALLY AFFECTED: UNKNOWN

IV. COMMENTS

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

○ NYSDEC REGION 9 FILES

- RECRA 7/6/83 REPORT

EPA

POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	932099

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 ☐ A. GROUNDWATER CONTAMINATION — 02 ☐ OBSERVED (DATE: ______) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: ______ 04 NARRATIVE DESCRIPTION

UNKNOWN

01 ☐ B. SURFACE WATER CONTAMINATION — 02 ☐ OBSERVED (DATE: ______) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: ______ 04 NARRATIVE DESCRIPTION

UNKNOWN

01 ☐ C. CONTAMINATION OF AIR — 02 ☐ OBSERVED (DATE: ______) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: ______ 04 NARRATIVE DESCRIPTION

UNKNOWN

01 ☐ D. FIRE/EXPLOSIVE CONDITIONS — 02 ☐ OBSERVED (DATE: ______) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: ______ 04 NARRATIVE DESCRIPTION

UNKNOWN

01 ☒ E. DIRECT CONTACT — 02 ☐ OBSERVED (DATE: ______) ☒ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: ______ 04 NARRATIVE DESCRIPTION

CONTAMINATED SITE SOILS (RECRA 7/6/83) - SITE IS ACTIVE JUNKYARD

01 ☒ F. CONTAMINATION OF SOIL — 02 ☒ OBSERVED (DATE: 1983) ☐ POTENTIAL ☐ ALLEGED
03 AREA POTENTIALLY AFFECTED: ~ 1/4 (Acres) 04 NARRATIVE DESCRIPTION

HEAVY METALS, CYANIDE, PHENOL, PCBs, VOLATILE ORGANICS VOLATILE HALOGENATED ORGANICS

01 ☐ G. DRINKING WATER CONTAMINATION — 02 ☐ OBSERVED (DATE: ______) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: ______ 04 NARRATIVE DESCRIPTION

UNKNOWN

01 ☒ H. WORKER EXPOSURE/INJURY — 02 ☐ OBSERVED (DATE: ______) ☒ POTENTIAL ☐ ALLEGED
03 WORKERS POTENTIALLY AFFECTED: ______ 04 NARRATIVE DESCRIPTION

SITE IS ACTIVE JUNK YARD

01 ☐ I. POPULATION EXPOSURE/INJURY — 02 ☐ OBSERVED (DATE: ______) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: ______ 04 NARRATIVE DESCRIPTION

UNKNOWN; SITE IS FENCED WITH LOCKED GATES

EPA 2070-13

5.5 EPA SITE INSPECTION REPORT
(FORM 2070-13)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 1 - SITE LOCATION AND INSPECTION INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	932099

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site)	02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER
SCHRECK'S SCRAPYARD	55 SCHENCK STREET

03 CITY	04 STATE	05 ZIP CODE	06 COUNTY	07 COUNTY CODE	08 CONG DIST
NORTH TONAWANDA	NY	14120	NIAGARA		

09 COORDINATES: LATITUDE 43° 01' 47." LONGITUDE 78° 52' 41."

10 TYPE OF OWNERSHIP (Check one): ☒ A. PRIVATE ☐ B. FEDERAL ☐ C. STATE ☐ D. COUNTY ☐ E. MUNICIPAL ☐ F. OTHER ☐ G. UNKNOWN

III. INSPECTION INFORMATION

01 DATE OF INSPECTION	02 SITE STATUS	03 YEARS OF OPERATION
3 / 27 / 86 (MONTH DAY YEAR)	☒ ACTIVE ☐ INACTIVE	1951 (BEGINNING YEAR) / PRESENT (ENDING YEAR) ___ UNKNOWN

04 AGENCY PERFORMING INSPECTION (Check all that apply)
☐ A. EPA ☐ B. EPA CONTRACTOR ____ (Name of firm) ☐ C. MUNICIPAL ☐ D. MUNICIPAL CONTRACTOR ____ (Name of firm)
☐ E. STATE ☒ F. STATE CONTRACTOR RECRA RESEARCH INC (Name of firm) ☐ G. OTHER ____ (Specify)

05 CHIEF INSPECTOR	06 TITLE	07 ORGANIZATION	08 TELEPHONE NO.
THOMAS P. CONNARE	ENVIRONMENTAL SCIENTIST	RECRA	(716) 691-2600
09 OTHER INSPECTORS	**10 TITLE**	**11 ORGANIZATION**	**12 TELEPHONE NO.**
KEVIN M. CONNARE	STAFF GEOLOGIST	RECRA	(716) 691-2600
			( )
			( )
			( )
			( )

13 SITE REPRESENTATIVES INTERVIEWED	14 TITLE	15 ADDRESS	16 TELEPHONE NO
RED HARMS	VJT SALVAGE	55 SCHENCK STREET	(716) 694652x
			( )
			( )
			( )
			( )
			( )

17 ACCESS GAINED BY (Check one)	18 TIME OF INSPECTION	19 WEATHER CONDITIONS
☒ PERMISSION ☐ WARRANT	2:00 PM	PARTLY CLOUDY, 37°F ; NO SNOW COVER

IV. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency/Organization)	03 TELEPHONE NO.
THOMAS P. CONNARE	RECRA ENVIRONMENTAL INC	(716) 691-2600

04 PERSON RESPONSIBLE FOR SITE INSPECTION FORM	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NO.	08 DATE
SAME AS ABOVE				5 / 19 / 86 (MONTH DAY YEAR)

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	932099

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)

- ☐ A. SOLID
- ☐ B. POWDER, FINES
- ☒ C. SLUDGE
- ☐ D. OTHER ______ (Specify)
- ☐ E. SLURRY
- ☒ F. LIQUID
- ☐ G. GAS

02 WASTE QUANTITY AT SITE (Measures of waste quantities must be independent)

- TONS ______
- CUBIC YARDS UNKNOWN
- NO. OF DRUMS 60

03 WASTE CHARACTERISTICS (Check all that apply)

- ☒ A. TOXIC
- ☐ B. CORROSIVE
- ☐ C. RADIOACTIVE
- ☒ D. PERSISTENT
- ☐ E. SOLUBLE
- ☐ F. INFECTIOUS
- ☐ G. FLAMMABLE
- ☐ H. IGNITABLE
- ☐ I. HIGHLY VOLATILE
- ☐ J. EXPLOSIVE
- ☐ K. REACTIVE
- ☐ L. INCOMPATIBLE
- ☐ M. NOT APPLICABLE

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE ✓	UNKNOWN		PHENOLIC WASTES
OLW	OILY WASTE ✓	"		TRANSFORMER OIL
SOL	SOLVENTS ✓	"		VOLATILE ORGANICS
PSD	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS ✓	"		VOLATILE HALOGENATED ORGANICS
IOC	INORGANIC CHEMICALS ✓	"		CYANIDE
ACD	ACIDS			
BAS	BASES			
MES	HEAVY METALS ✓	"		Cd, Cr, Pb, Cu, Hg, Ni, Zn, Ar

IV. HAZARDOUS SUBSTANCES (See Appendix for most frequently cited CAS Numbers)

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
	PCBs				
	HEAVY METALS				

V. FEEDSTOCKS (See Appendix for CAS Numbers)

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS	N/A		FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

o NYSDEC REGION 9 FILES
- RECRA 7/6/83 REPORT

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	932097

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 ☐ A. GROUNDWATER CONTAMINATION — 02 ☐ OBSERVED (DATE: ______) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: ______ 04 NARRATIVE DESCRIPTION

UNKNOWN

01 ☐ B. SURFACE WATER CONTAMINATION — 02 ☐ OBSERVED (DATE: ______) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: ______ 04 NARRATIVE DESCRIPTION

UNKNOWN

01 ☐ C. CONTAMINATION OF AIR — 02 ☐ OBSERVED (DATE: ______) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: ______ 04 NARRATIVE DESCRIPTION

UNKNOWN

01 ☐ D. FIRE/EXPLOSIVE CONDITIONS — 02 ☐ OBSERVED (DATE: ______) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: ______ 04 NARRATIVE DESCRIPTION

UNKNOWN

01 ☒ E. DIRECT CONTACT — 02 ☐ OBSERVED (DATE: ______) ☒ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: ______ 04 NARRATIVE DESCRIPTION

CONTAMINATED SITE SOILS (RECRA 7/6/83 REPORT); SITE IS ACTIVE JUNKYARD

01 ☒ F. CONTAMINATION OF SOIL — 02 ☒ OBSERVED (DATE: 1983) ☐ POTENTIAL ☐ ALLEGED
03 AREA POTENTIALLY AFFECTED: ~ 1/4 (Acres) 04 NARRATIVE DESCRIPTION

HEAVY METALS, CYANIDE, PHENOL, PCBs, VOLATILE ORGANICS, VOLATILE HALOGENATED ORGANICS

01 ☐ G. DRINKING WATER CONTAMINATION — 02 ☐ OBSERVED (DATE: ______) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: ______ 04 NARRATIVE DESCRIPTION

UNKNOWN

01 ☒ H. WORKER EXPOSURE/INJURY — 02 ☐ OBSERVED (DATE: ______) ☒ POTENTIAL ☐ ALLEGED
03 WORKERS POTENTIALLY AFFECTED: ______ 04 NARRATIVE DESCRIPTION

SITE IS ACTIVE JUNKYARD

01 ☐ I. POPULATION EXPOSURE/INJURY — 02 ☐ OBSERVED (DATE: ______) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: ______ 04 NARRATIVE DESCRIPTION

UNKNOWN; SITE IS FENCED WITH LOCKED GATES

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	932099

II. HAZARDOUS CONDITIONS AND INCIDENTS *(Continued)*

01 ☐ J. DAMAGE TO FLORA — 02 ☐ OBSERVED (DATE: ______) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

UNKNOWN

01 ☐ K. DAMAGE TO FAUNA — 02 ☐ OBSERVED (DATE: ______) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION (include name(s) of species)

UNKNOWN

01 ☐ L. CONTAMINATION OF FOOD CHAIN — 02 ☐ OBSERVED (DATE: ______) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

UNKNOWN

01 ☒ M. UNSTABLE CONTAINMENT OF WASTES (Spills/Runoff/Standing liquids, Leaking drums) — 02 ☐ OBSERVED (DATE: ______) ☒ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: ______ 04 NARRATIVE DESCRIPTION

CONTAMINATED SITE SOILS (RECRA 7/6/83); NO CONTAINMENT; SITE IS ACTIVE JUNKYARD

01 ☐ N. DAMAGE TO OFFSITE PROPERTY — 02 ☐ OBSERVED (DATE: ______) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

UNKNOWN

01 ☐ O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs — 02 ☐ OBSERVED (DATE: ______) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

UNKNOWN

01 ☐ P. ILLEGAL/UNAUTHORIZED DUMPING — 02 ☐ OBSERVED (DATE: ______) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

UNKNOWN

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS

III. TOTAL POPULATION POTENTIALLY AFFECTED: UNKNOWN

IV. COMMENTS

V. SOURCES OF INFORMATION (Cite specific references, e.g. state files, sample analysis, reports)

o NYSDEC REGION 9 FILES
- RECRA 7/6/83 REPORT

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION
PART 4 - PERMIT AND DESCRIPTIVE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	932099

II. PERMIT INFORMATION

01 TYPE OF PERMIT ISSUED (Check all that apply)	02 PERMIT NUMBER	03 DATE ISSUED	04 EXPIRATION DATE	05 COMMENTS
☐ A. NPDES				
☐ B. UIC				
☐ C. AIR				
☐ D. RCRA				
☐ E. RCRA INTERIM STATUS				
☐ F. SPCC PLAN				
☐ G. STATE (Specify)				
☐ H. LOCAL (Specify)				
☐ I. OTHER (Specify)				
☒ J. NONE				

III. SITE DESCRIPTION

01 STORAGE/DISPOSAL (Check all that apply)	02 AMOUNT	03 UNIT OF MEASURE
☐ A. SURFACE IMPOUNDMENT		
☐ B. PILES		
☐ C. DRUMS, ABOVE GROUND		
☐ D. TANK, ABOVE GROUND		
☐ E. TANK, BELOW GROUND		
☒ F. LANDFILL	60	DRUMS
☐ G. LANDFARM		
☐ H. OPEN DUMP		
☐ I. OTHER (Specify)		

04 TREATMENT (Check all that apply)
- ☐ A. INCENERATION
- ☐ B. UNDERGROUND INJECTION
- ☐ C. CHEMICAL/PHYSICAL
- ☐ D. BIOLOGICAL
- ☐ E. WASTE OIL PROCESSING
- ☐ F. SOLVENT RECOVERY
- ☐ G. OTHER RECYCLING/RECOVERY
- ☐ H. OTHER (Specify)

05 OTHER
- ☒ A. BUILDINGS ON SITE: 2

06 AREA OF SITE: ~ 1 (Acres)

07 COMMENTS

SITE HAS BEEN USED FOR METALS SALVAGING OPERATION FROM 1951 TO 1977 AND AS TRANSFER STATION FOR WASTE HAULING FROM 1951 TO 1975. IN 1965, ~60 DRUMS PHENOLIC WASTES DISPOSED IN PIT ON SITE

IV. CONTAINMENT

01 CONTAINMENT OF WASTES (Check one)

☐ A. ADEQUATE, SECURE ☐ B. MODERATE ☒ C. INADEQUATE, POOR ☐ D. INSECURE, UNSOUND, DANGEROUS

02 DESCRIPTION OF DRUMS, DIKING, LINERS, BARRIERS, ETC

~60 DRUMS PHENOLIC WASTES DISPOSED OF IN OLD HYDRAULIC METAL BINDING PRESS PIT, 18 FEET DEEP. DRUMS REPORTEDLY CONFINED WITHIN CONCRETE WALLS OF PRESS PIT

V. ACCESSIBILITY

01 WASTE EASILY ACCESSIBLE: ☐ YES ☒ NO

02 COMMENTS

DRUMS ARE BELOW GROUND SURFACE; SITE IS ACTIVE JUNKYARD WITH FENCE AND LOCKED GATES

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

- NYSDEC REGION 9 FILES
- RECRA 7/6/83 REPORT

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	932099

II. DRINKING WATER SUPPLY

01 TYPE OF DRINKING SUPPLY (Check as applicable)

	SURFACE	WELL
COMMUNITY	A. X	B. ☐
NON-COMMUNITY	C. ☐	D. ☐

02 STATUS

ENDANGERED	AFFECTED	MONITORED
A. ☐	B. ☐	C. ☐
D. ☐	E. ☐	F. ☐

03 DISTANCE TO SITE

A. ~1 (mi)
B. ______ (mi)

III. GROUNDWATER

01 GROUNDWATER USE IN VICINITY (Check one)

☐ A. ONLY SOURCE FOR DRINKING
☐ B. DRINKING (Other sources available) COMMERCIAL, INDUSTRIAL, IRRIGATION (No other water sources available)
☐ C. COMMERCIAL, INDUSTRIAL, IRRIGATION (Limited other sources available)
X D. NOT USED, UNUSEABLE

02 POPULATION SERVED BY GROUND WATER 0

03 DISTANCE TO NEAREST DRINKING WATER WELL > 3 (mi)

04 DEPTH TO GROUNDWATER UNKNOWN (ft)

05 DIRECTION OF GROUNDWATER FLOW UNKNOWN

06 DEPTH TO AQUIFER OF CONCERN N/A (ft)

07 POTENTIAL YIELD OF AQUIFER N/A (gpd)

08 SOLE SOURCE AQUIFER ☐ YES X NO

09 DESCRIPTION OF WELLS (Including useage, depth, and location relative to population and buildings)

NO WELLS WITHIN 3 MILE RADIUS OF SITE

10 RECHARGE AREA ☐ YES ☐ NO COMMENTS: UNKNOWN

11 DISCHARGE AREA ☐ YES ☐ NO COMMENTS: UNKNOWN

IV. SURFACE WATER

01 SURFACE WATER USE (Check one)

X A. RESERVOIR, RECREATION DRINKING WATER SOURCE
☐ B. IRRIGATION, ECONOMICALLY IMPORTANT RESOURCES
☐ C. COMMERCIAL, INDUSTRIAL
☐ D. NOT CURRENTLY USED

02 AFFECTED/POTENTIALLY AFFECTED BODIES OF WATER

NAME	AFFECTED	DISTANCE TO SITE
NIAGARA RIVER	☐	700 FEET ~~(mi)~~
	☐	(mi)
	☐	(mi)

V. DEMOGRAPHIC AND PROPERTY INFORMATION

01 TOTAL POPULATION WITHIN

ONE (1) MILE OF SITE	TWO (2) MILES OF SITE	THREE (3) MILES OF SITE
A. ______ NO. OF PERSONS	B. ______ NO. OF PERSONS	C. > 50,000 NO. OF PERSONS

02 DISTANCE TO NEAREST POPULATION .1 (mi)

03 NUMBER OF BUILDINGS WITHIN TWO (2) MILES OF SITE > 500

04 DISTANCE TO NEAREST OFF-SITE BUILDING < .1 (mi)

05 POPULATION WITHIN VICINITY OF SITE (Provide narrative description of nature of population within vicinity of site, e.g., rural, village, densely populated urban area)

SITE IS SITUATED IN URBANIZED AREA OF NORTH TONAWANDA; RESIDENTIAL AREAS ARE LOCATED LESS THAN 1000 FEET FROM THE SITE

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

EPA

I. IDENTIFICATION
01 STATE: NY | 02 SITE NUMBER: 932099

VI. ENVIRONMENTAL INFORMATION

01 PERMEABILITY OF UNSATURATED ZONE (Check one)

☐ A. $10^{-6} - 10^{-8}$ cm/sec ☒ B. $10^{-4} - 10^{-6}$ cm/sec ☐ C. $10^{-4} - 10^{-3}$ cm/sec ☐ D. GREATER THAN 10^{-3} cm/sec

02 PERMEABILITY OF BEDROCK (Check one)

☐ A. IMPERMEABLE (Less than 10^{-6} cm/sec) ☐ B. RELATIVELY IMPERMEABLE ($10^{-4} - 10^{-6}$ cm/sec) ☒ C. RELATIVELY PERMEABLE ($10^{-2} - 10^{-4}$ cm/sec) ☐ D. VERY PERMEABLE (Greater than 10^{-2} cm/sec)

03 DEPTH TO BEDROCK: UNKNOWN (ft)
04 DEPTH OF CONTAMINATED SOIL ZONE: UNKNOWN (ft)
05 SOIL pH: ______

06 NET PRECIPITATION: 9 (in)
07 ONE YEAR 24 HOUR RAINFALL: 2.1 (in)
08 SLOPE: SITE SLOPE: <1 % | DIRECTION OF SITE SLOPE: ~ WEST | TERRAIN AVERAGE SLOPE: <1 %

09 FLOOD POTENTIAL: SITE IS IN N/A YEAR FLOODPLAIN
10 N/A ☐ SITE IS ON BARRIER ISLAND, COASTAL HIGH HAZARD AREA, RIVERINE FLOODWAY

11 DISTANCE TO WETLANDS (5 acre minimum)
ESTUARINE A. N/A (mi) | OTHER B. 1 (mi)

12 DISTANCE TO CRITICAL HABITAT (of endangered species): N/A (mi)
ENDANGERED SPECIES: N/A

13 LAND USE IN VICINITY

DISTANCE TO:

COMMERCIAL/INDUSTRIAL	RESIDENTIAL AREAS; NATIONAL/STATE PARKS, FORESTS, OR WILDLIFE RESERVES	AGRICULTURAL LANDS: PRIME AG LAND	AGRICULTURAL LANDS: AG LAND
A. <.1 (mi)	B. .2 (mi)	C. N/A (mi)	D. N/A (mi)

14 DESCRIPTION OF SITE IN RELATION TO SURROUNDING TOPOGRAPHY

SITE AND SURROUNDING AREA ARE GENERALLY FLAT WITH AN AVERAGE ELEVATION OF 575 FEET ABOVE SEA LEVEL. THERE IS NO DISCERNIBLE SLOPE OF THE LAND

VII. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

- NYSDEC REGION 9 FILES
  - RECRA 7/6/83 REPORT
- USGS TOPOGRAPHIC MAP, TONAWANDA NY WEST AND EAST QUADRANGLES, 1980
- HRS USERS MANUAL

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 6 - SAMPLE AND FIELD INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	932099

II. SAMPLES TAKEN

SAMPLE TYPE	01 NUMBER OF SAMPLES TAKEN	02 SAMPLES SENT TO	03 ESTIMATED DATE RESULTS AVAILABLE
GROUNDWATER		NO SAMPLES TAKEN	
SURFACE WATER			
WASTE			
AIR			
RUNOFF			
SPILL			
SOIL			
VEGETATION			
OTHER			

III. FIELD MEASUREMENTS TAKEN

01 TYPE	02 COMMENTS
	NO MEASUREMENTS TAKEN

IV. PHOTOGRAPHS AND MAPS

01 TYPE ☐ GROUND ☐ AERIAL

02 IN CUSTODY OF ______________________ (Name of organization or individual)

03 MAPS ☐ YES ☐ NO

04 LOCATION OF MAPS ______________________

V. OTHER FIELD DATA COLLECTED (Provide narrative description)

SITE SKETCH

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

EPA FORM 2070-13 (7-81)

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 7 - OWNER INFORMATION

EPA

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER

II. CURRENT OWNER(S)

Field	Owner 1	Owner 2	Owner 3	Owner 4
01 NAME	VJT SALVAGE			
02 D+B NUMBER				
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	55 SCHENCK STREET			
04 SIC CODE				
05 CITY	NORTH TONAWANDA			
06 STATE	NY			
07 ZIP CODE	14120			

PARENT COMPANY (If applicable)

Field	Parent 1	Parent 2	Parent 3	Parent 4
08 NAME	N/A			
09 D+B NUMBER				
10 STREET ADDRESS (P.O. Box, RFD #, etc.)				
11 SIC CODE				
12 CITY				
13 STATE				
14 ZIP CODE				

III. PREVIOUS OWNER(S) (List most recent first)

Field	Owner 1	Owner 2	Owner 3
01 NAME	JANE B. KULAK	MILTON J. KULAK	SCHRECK'S IRON+METAL CORP
02 D+B NUMBER			
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	UNKNOWN	DECEASED	UNKNOWN
04 SIC CODE			
05 CITY			
06 STATE			
07 ZIP CODE			

IV. REALTY OWNER(S) (If applicable; list most recent first)

Field	Owner 1	Owner 2	Owner 3
01 NAME	N/A		
02 D+B NUMBER			
03 STREET ADDRESS (P.O. Box, RFD #, etc.)			
04 SIC CODE			
05 CITY			
06 STATE			
07 ZIP CODE			

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

o NYSDEC REGION 9 FILES

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - OPERATOR INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	932079

II. CURRENT OPERATOR (Provide if different from owner)

01 NAME	02 D+B NUMBER
SAME AS OWNER	

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

08 YEARS OF OPERATION	09 NAME OF OWNER
1	RED HARMS

OPERATOR'S PARENT COMPANY (If applicable)

10 NAME	11 D+B NUMBER
N/A	

12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE

14 CITY	15 STATE	16 ZIP CODE

III. PREVIOUS OPERATOR(S) (List most recent first; provide only if different from owner)

01 NAME	02 D+B NUMBER
SCHRECK'S IRON+METAL CORP	

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
UNKNOWN	

05 CITY	06 STATE	07 ZIP CODE

08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD

01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD

01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD

PREVIOUS OPERATORS' PARENT COMPANIES (If applicable)

10 NAME	11 D+B NUMBER
N/A	

12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE

14 CITY	15 STATE	16 ZIP CODE

10 NAME	11 D+B NUMBER

12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE

14 CITY	15 STATE	16 ZIP CODE

10 NAME	11 D+B NUMBER

12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE

14 CITY	15 STATE	16 ZIP CODE

IV. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

o NYSDEC REGION 9 FILES

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 9 - GENERATOR/TRANSPORTER INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	932099

II. ON-SITE GENERATOR

01 NAME	02 D+B NUMBER
N/A	

03 STREET ADDRESS (P O Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

III. OFF-SITE GENERATOR(S)

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
OCCIDENTAL - DUREZ DIV.			

03 STREET ADDRESS (P O Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P O Box, RFD #, etc.)	04 SIC CODE
WALCK ROAD			

05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE
NORTH TONAWANDA	N.Y.				

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P O Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P O Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE

IV. TRANSPORTER(S)

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
SCRECK'S IRON + METAL CORP.			

03 STREET ADDRESS (P O Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (Box, RFD #, etc.)	04 SIC CODE
55 SCHENCK STREET			

05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE
NORTH TONAWANDA	NY	14120			

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P O Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

- NYSDEC REGION 9 FILES
- CONVERSATION WITH JAMES ALLEN CARROLL (REF. 12)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	932099

II. PAST RESPONSE ACTIVITIES

01 ☐ A. WATER SUPPLY CLOSED 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
N/A

01 ☐ B. TEMPORARY WATER SUPPLY PROVIDED 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
N/A

01 ☐ C. PERMANENT WATER SUPPLY PROVIDED 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
N/A

01 ☐ D. SPILLED MATERIAL REMOVED 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
N/A

01 ☐ E. CONTAMINATED SOIL REMOVED 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
N/A

01 ☐ F. WASTE REPACKAGED 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
N/A

01 ☐ G. WASTE DISPOSED ELSEWHERE 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
N/A

01 ☐ H. ON SITE BURIAL 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
N/A

01 ☐ I. IN SITU CHEMICAL TREATMENT 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
N/A

01 ☐ J. IN SITU BIOLOGICAL TREATMENT 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
N/A

01 ☐ K. IN SITU PHYSICAL TREATMENT 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
N/A

01 ☐ L. ENCAPSULATION 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
N/A

01 ☐ M. EMERGENCY WASTE TREATMENT 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
N/A

01 ☐ N. CUTOFF WALLS 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
N/A

01 ☐ O. EMERGENCY DIKING/SURFACE WATER DIVERSION 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
N/A

01 ☐ P. CUTOFF TRENCHES/SUMP 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
N/A

01 ☐ Q. SUBSURFACE CUTOFF WALL 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
N/A

EPA

POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	932099

II PAST RESPONSE ACTIVITIES (Continued)

01 ☐ R. BARRIER WALLS CONSTRUCTED 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
N/A

01 ☐ S. CAPPING/COVERING 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
N/A

01 ☐ T. BULK TANKAGE REPAIRED 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
N/A

01 ☐ U. GROUT CURTAIN CONSTRUCTED 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
N/A

01 ☐ V. BOTTOM SEALED 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
N/A

01 ☐ W. GAS CONTROL 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
N/A

01 ☐ X. FIRE CONTROL 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
N/A

01 ☐ Y. LEACHATE TREATMENT 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
N/A

01 ☐ Z. AREA EVACUATED 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
N/A

01 ☐ 1. ACCESS TO SITE RESTRICTED 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
N/A

01 ☐ 2. POPULATION RELOCATED 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
N/A

01 ☐ 3. OTHER REMEDIAL ACTIVITIES 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
N/A

III. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 11 - ENFORCEMENT INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	932099

II. ENFORCEMENT INFORMATION

01 PAST REGULATORY/ENFORCEMENT ACTION ☐ YES ☒ NO

02 DESCRIPTION OF FEDERAL, STATE, LOCAL REGULATORY/ENFORCEMENT ACTION

N/A

III. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

EPA FORM 2070-13 (7-81)

SECTION 6

6.0 ADEQUACY OF AVAILABLE DATA

In completing the Hazard Ranking Score (HRS), the Schreck's Scrapyard site was found to have a migration potential (Sm) score of 1.54. This score was based on information acquired through a review of available literature. During the completion of the HRS, several data inadequacies were encountered. Information needed to address these inadequacies include the following:

- subsurface information including depth to the water table and/or aquifer of concern, permeability of unconsolidated deposits, groundwater quality and groundwater flow direction.
- priority pollutant analysis for metals and organics in surface and near-surface soils.
- location of PCB contaminated soils.
- location of old press pit and verification of containment or leakage of phenolic wastes.

SECTION 7

7.0 PROPOSED PHASE II WORK PLAN

This section outlines the recommended procedures and technical means by which a Phase II investigation may be conducted. Any work plan which is submitted to NYSDEC for conducting a Phase II type study must follow the guidelines established by NYSDEC and subsequently be approved by NYSDEC.

7.1 Project Objectives

The purpose and objective of this proposed Phase II investigation is to obtain a final HRS score for the site as defined under the auspices of the New York State Superfund program and assess concerns regarding past disposal practices. The site investigation proposed herein is designed to generate data for the above identified tasks. The scope of this investigation may include:

- air monitoring
- surface geophysics
- test bore drilling
- monitoring well installation
- in-situ permeability testing
- groundwater and soil sampling
- surveying and mapping
- chemical analytical testing
- laboratory geotechnical testing
- groundwater well survey
- data analysis and reporting

- o characterizing the physical and chemical nature of the site
- o scoring the site under the Hazard Ranking System
- o reporting.

7.2 Scope of Work

A sampling and analysis program conducted in 1983 has indicated contamination of site soils with PCBs, heavy metals, arsenic, cyanide and organics (Reference 9). The extent of the contamination problem is not known, however, as past sampling focused on select portions of the site. In order to determine the extent of the contamination, both vertically and horizontally, a soil sampling scheme similar to that developed for the 1983 program should be implemented. A grid system should be set up (see Reference 9) such that composite soil samples could be collected across the site to a depth of three feet.

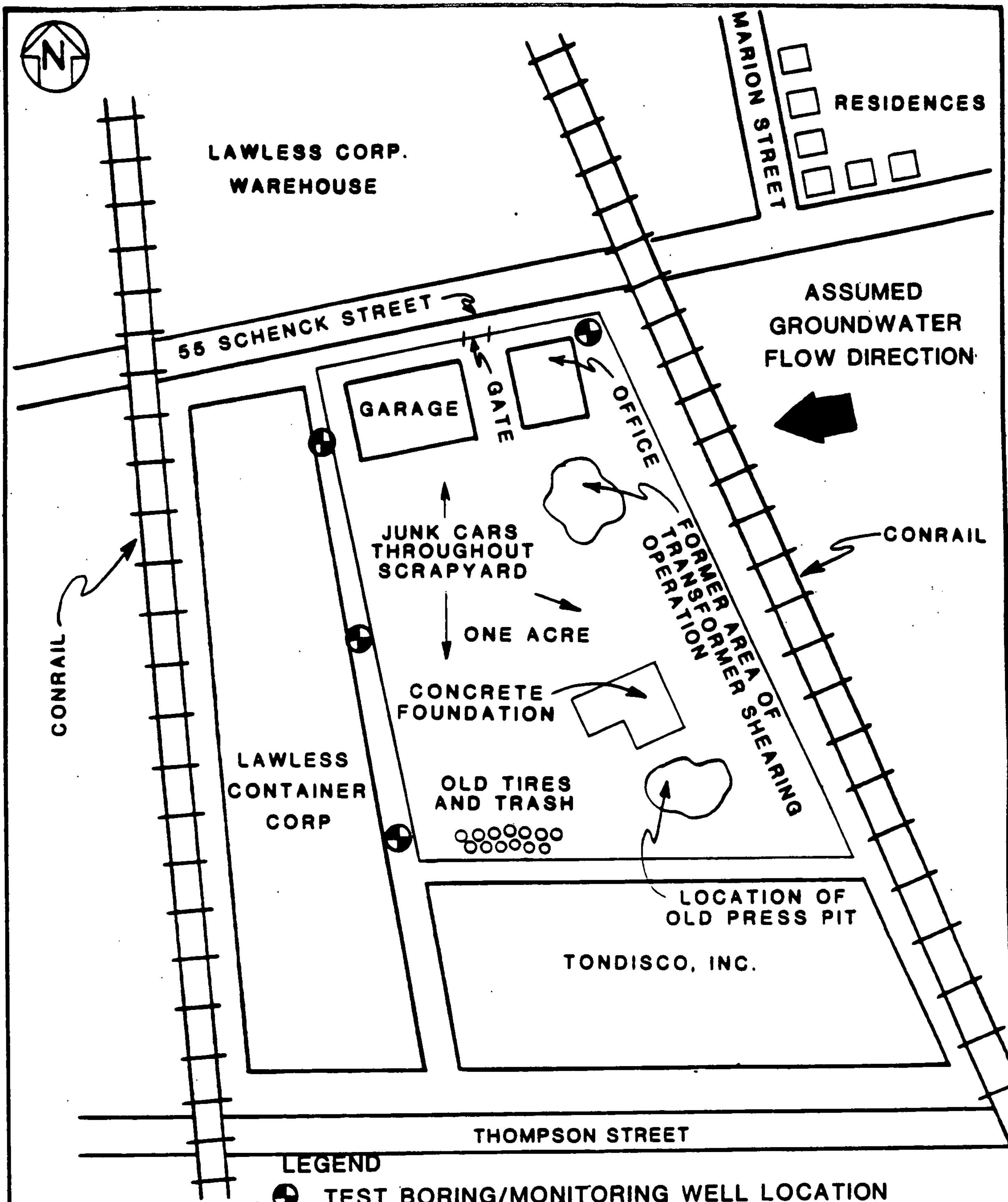
A Phase II investigation to determine subsurface information including groundwater quality is described in the sections that follow.

7.2.1 Geophysical Survey

A geophysical survey will be conducted over the site where access and topography permit to define the vertical and horizontal extent of the fill material and establish the final locations for monitoring well installations. The geophysical survey will be conducted using Terrain Conductivity.

Terrain conductivity readings will be obtained using a Geonics Model EM 31 terrain conductivity meter. The conductivity readings may serve to detect clusters of drums, tanks, cables, lateral fill variations, and contaminated groundwater plume geometry, if present. The grid network designed to obtain maximum efficiency from the survey will be established across the site.

All geophysical data and interpretations will be used to finalize the locations of proposed borings and monitoring wells. No borings or monitoring wells will be placed in the field until the final locations are determined by Recra in concurrence with NYSDEC. However, based upon current information, it is envisioned that one monitoring well will be placed upgradient of the site, and three along the downgradient area of the site (Figure 3).



RECRA RESEARCH INC.
BUFFALO, NEW YORK

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SCHRECK'S SCRAPYARD
N. TONAWANDA, N.Y.
N.Y.S. SUPERFUND
PHASE 1

Project No. 5C280419

PROPOSED
SITE PHASE II
WORKPLAN MAP

A

FIGURE 3

7.2.2 Test Borings

Four test borings will be advanced at the site. Based on a field review of the site, tentative locations for the borings will be selected by NYSDEC. Recommendations for the final locations will be based on the results of the geophysical survey and conditions encountered at the site.

Prior to initiating drilling activities, the drilling rig, augers, rods, split spoons, appurtenant equipment, well pipe and screens will be cleaned with steam. This cleaning procedure will also be used between each boring. These activities will be performed in a designated on-site cleaning area. Throughout and after the cleaning processes, direct contact between equipment and the ground surface will be avoided. Plastic sheeting and/or clean support structures will be used.

Test borings will be advanced with hollow stem augers, driven by truck mounted drilling equipment. During the drilling, an HNU photoionization detector will be used to monitor the gases exiting the hole. Auger cuttings will be contained in all downgradient borings. Soil samples will be collected using a two inch outside diameter split-barrel sampler advanced in accordance with the standard penetration test procedure (ASTM D-1586). The sample barrel(s) will be cleaned prior to each use by the following procedure:

- o initially cleaned of all foreign matter
- o washed with a detergent and water mixture
- o rinsed with potable water
- o washed with acetone

- o rinsed with distilled water
- o allowed to air dry.

An HNU detector will be used to monitor the gases from each sample as the split barrel sampler is opened. All samples will be placed in pre-cleaned, teflon-lined screw cap glass jars. The cleaning of the sample jars will include:

- o soap wash
- o tap water rinse
- o acetone rinse (pesticide grade)
- o rinse with copious quantities of deionized water (at least six rinsings).

Samples will be delivered daily under chain of custody control to the Recra Environmental Laboratories in Tonawanda, New York. A composite soil sample from each boring will be analyzed for priority pollutant metals and organics (Contract Laboratory Protocol), phenolic compounds and PCBs. GC/MS procedures will include the identification and quantification of all peaks 10% or greater than the nearest calibrating standard.

Split-spoon samples will be taken every five feet until the water table is reached unless a change in geologic material or overlying waste material is discovered through visual or HNU detection. Once encountered, continuous split-spoon sampling will be conducted through the shallow water bearing zone. Geologic classification of split-spoon samples will be performed and boring logs maintained by a Recra geologist.

At a minimum, each boring log will include:

- o date, test hole identification, and project identification
- o name of individual developing the log
- o name of driller and assistant(s)
- o drill make and model, auger size
- o identification of alternative drilling methods used and justification thereof (e.g. rotary drilling with a specific bit type to remove a sand plug from within the hollow stem augers)
- o depths recorded in feet and fractions thereof (tenths or inches), referenced to ground surface
- o standard penetration test (ASTM D-1586) blow counts
- o for samples, the length of the sample interval and the length of the sample recovered
- o the first encountered water table along with the method of determination, referenced to ground surface
- o drill and borehole characteristics
- o sequential stratigraphic boundaries
- o air monitoring information.

Selected split-spoon samples obtained while sampling at five foot intervals or when a change in lithology has occurred will be analyzed for Atterberg limits and moisture content. Analysis of a selected split-spoon sample from the encountered water bearing material will be performed for grain size determination. In the event that the borehole/monitoring well must be left unattended prior to completion, the borehole/monitoring well will be properly secured to ensure its integrity.

7.2.3 Groundwater Monitoring and Sampling

Four monitoring wells will be installed at the location of the test borings (Figure 3). Wells will be constructed of 10-foot long, 2-inch I.D. threaded flushjointed PVC screen and riser casing. Well screens will be installed with the top of the well screen located approximately one foot above the encountered groundwater table, dependent upon the major geologic changes encountered. All installations will include a washed, graded, sand pack surrounding the screen and extending two feet above the screen top. A two-foot thick bentonite seal will be placed above the sand pack and the remaining annulus filled with bentonite/grout to within two feet of the ground surface. A four to six inch diameter steel casing with locking cap will be placed over each well and cemented in place.

Well development will be performed using a pump or bottom discharge bailer at each well no sooner than 48 hours after the well grouting has been completed. Bailing will utilize pre-cleaned, dedicated PVC or stainless steel bailers at each well. Pumping will utilize a surface peristaltic pump fitted with pre-cleaned, dedicated polyethylene tubing for each well.

Prior to water and sediment evacuation, static water level and well bottom measurements will be recorded at each well using an electric level sounder or fiberglass tape. These will be cleaned prior to and after each use. The well water/sediment volume will also be calculated.

Well evacuation will be supplemented by:

- o Temperature, pH, and specific conductance measurements
- o Evacuation volume measurement
- o Visual identification of water clarity and color
- o Visual identification of the physical characteristics of removed sediments

The development process will continue until a stabilization of pH, specific conductance, temperature, and clarity of discharge is achieved.

The well development is designed to correct any clogging of the water-bearing formation which may occur as a side effect of the drilling, and remove any drilling water (if used) from the water table such that each well will yield water which is representative of the in-situ conditions. Static water level measurements will also be made following well development.

Groundwater sampling will be initiated one week after the well development has been completed. Each sample will be analyzed for priority pollutant metals and organics (Contract Laboratory Protocol), phenolic compounds, PCBs, hardness and specific conductance. GC/MS procedures will include the identification and quantification of all peaks 10% or greater than the nearest calibrating standard.

At each well location, initial static water level and well bottom measurements will be recorded using an electric level sounder and/or fiberglass tape which will be cleaned between each well. Well water will be evacuated prior to sample collection by bailing or pumping to dryness or removing a minimum of three equilibrated well water volumes. Pre-cleaned, dedicated PVC or stainless steel bailers will be used for sampling at each well.

Permeability testing of the newly installed monitoring wells will be conducted following sampling. Initial static water level measurements will be made in each well followed by the injection of a weighted slug of specific volume. An instantaneous head displacement associated with the slug volume will be created and the subsequent decline in water level will be measured with an electric water level sounder. Once head conditions reach a static state, the slug will be removed and a negative head condition will result relative to the initial static water level. The subsequent rise in water level will be measured with an electric water level sounder.

Data analysis will involve the determination of the coefficient of permeability. The analysis will utilize a technique provided by Harry R. Cedergren in Seepage, Drainage and Flow Nets, 2nd Edition, whereby the log of head ratio (dependent variable) is plotted with respect to elapsed time (independent variable). Data points for permeability determination are obtained from a linearization of this plot and utilized in an appropriate equation.

The testing will provide data on the permeability of the materials at the top of the water table. These values will subsequently be utilized for determining approximate flow rates within the saturated zone, and extrapolated to approximate permeability in the unsaturated zone as required in the scoring under the HRS. This data will be useful in assessing the rate of groundwater flow in this area and as data input in evaluating potential remedial alternatives if required.

7.2.4 Other Sampling

As indicated in Section 7.2, extensive testing of surface and near-surface soils will be necessary to determine the extent and magnitude of contamination at the site, especially for PCBs. Samples will be analyzed as outlined in Section 7.2.2 of this report. The cost analyses presented in Section 7.7 include costs for eight composite samples.

7.2.5 Air Monitoring

Air monitoring with an HNU photoionization detector will be performed as follows:

- o at one upwind and downwind location prior to any site work
- o during borings and monitoring well installations
- o for all split-spoon samples
- o for all surface soil and sediment samples

7.2.6 Surveying

A map will be prepared showing the location and appropriate elevations (e.g., ground surface, top of monitoring well casing) for each test boring, monitoring well installation, sampling point, and other key contour points.

A licensed land surveyor will be used to establish the locations and elevations of each above-mentioned point, as follows:

- Vertical Control - Elevations (0.01') will be established for the ground surface at the well, the top of monitor well casing (T.C.), and at least one other permanent object in the vicinity of the boring and well. Elevations will be relative to a regional, local or project specific datum. USGS benchmarks will be used whenever available.
- Horizontal Control - Exploratory borings and monitor wells will be located by ties (location and distance) to at least two nearby permanent objects. USGS benchmarks will be used whenever available.

7.3 Quality Assurance and Quality Control

An overall Quality Assurance Program is essential for the production of high-quality analytical data. Such a program requires precise control of laboratory activities. For the Quality Assurance Program in effect at the Laboratories of Recra, the reader is referred to a document previously submitted by Recra to NYSDEC, entitled, "Operation Manual - Field and Analytical Services."

All analytical procedures will be conducted using Contract Laboratory Protocol.

7.4 Final Hazard Ranking System Score

Upon completion of all field work and laboratory analysis, the Final Hazard Ranking System score will be calculated per NYSDEC guidelines.

7.5 Phase II Report

Upon completion of the investigation, a Phase II report will be prepared in complete accordance with the NYSDEC's Phase II report format. The Phase II report will include a plot plan drawing showing the following:

- o groundwater gradient
- o topographic relief
- o sampling locations
- o physical parameters and major contaminants/concentrations identified for each sampling location
- o any contaminant plumes (based on geophysical and monitoring data).

Five copies of the draft final Phase II report and fifteen copies of the final Phase II report will be submitted.

7.6 Applicable Procedures and Standards

All work performed for this project, including but not necessarily limited to, borings, monitoring well installations, monitoring, sampling, surveying, chain of custody, sample preservation, sample extraction, sample analysis, and HRS scoring, will conform to all applicable standards, guidelines, and prescribed methods and practices of the U.S. Environmental Protection Agency (USEPA), the New York State Department of Environmental Conservation (NYSDEC), and other applicable regulatory agencies. Any changes or modifications in these specifications will require approval by NYSDEC.

7.7 Estimated Cost

The estimated cost of the Phase II Work Plan is described below. This estimate is based on the placement of four monitoring wells in unconsolidated deposits at 30 feet below ground surface.

o Subsurface Investigation	$11,937.00
o Analyses	26,432.00*
o Preliminary Engineering Evaluation, Final HRS Scoring and Report	8,000.00
o Geophysics	5,000.00
Total Phase II	$51,369.00

* Price includes Contract Laboratory Protocol for priority pollutant metals and organics. Prices will vary among contracted laboratories.

APPENDIX A

2/A1693

APPENDIX A

DATA SOURCES AND REFERENCES

2/A3548

SCHRECK'S SCRAPYARD

REFERENCES

1. United States Geological Survey. Topographic Map, 7.5 Minute Series. Tonawanda East, New York Quadrangle. 1980.

2. New York State Atlas of Community Water System Sources. New York State Department of Health. 1982.

3. Uncontrolled Hazardous Waste Site Ranking System - A User's Manual, Draft, EPA. June 10, 1982.

4. LaSala, A.M., Jr. Ground-Water Resources of the Erie-Niagara Basin, New York. Prepared for the Erie-Niagara Basin Regional Water Resources Planning Board. Basin Planning Report ENB-3. 1968.

5. State Water Laws. New York Classifications and Quality Standards, Part 701. Bureau of National Affairs. November 29, 1985.

6. State of New York, Official Compilation of Codes, Rules and Regulations. Article 8, Part 837. January 1983.

7. Buehler, J.E. and I.H. Tesmer. Geology of Erie County, New York. Buffalo Society of Natural Sciences, Bulletin, Vol. 21, No.3. 1963.

8. Soil Survey of Niagara County, New York. United States Department of Agriculture, Soil Conservation Service. October 1972.

9. Sampling and Analysis Report: Schenck Street Site. Prepared for Lawless Container Corporation by Recra Research, Inc. July 6, 1983.

10. Documentation of Freshwater Wetlands and Critical Habitats of Endangered Species, NYSDEC Region 9. December 18, 1985.

11. Flood Insurance Rate Map, City of North Tonawanda, New York. Panel 3 of 4. January 6, 1982.

12. Letter of Documentation to James Allen Carroll from Thomas P. Connare, Recra Research, Inc. May 6, 1986.

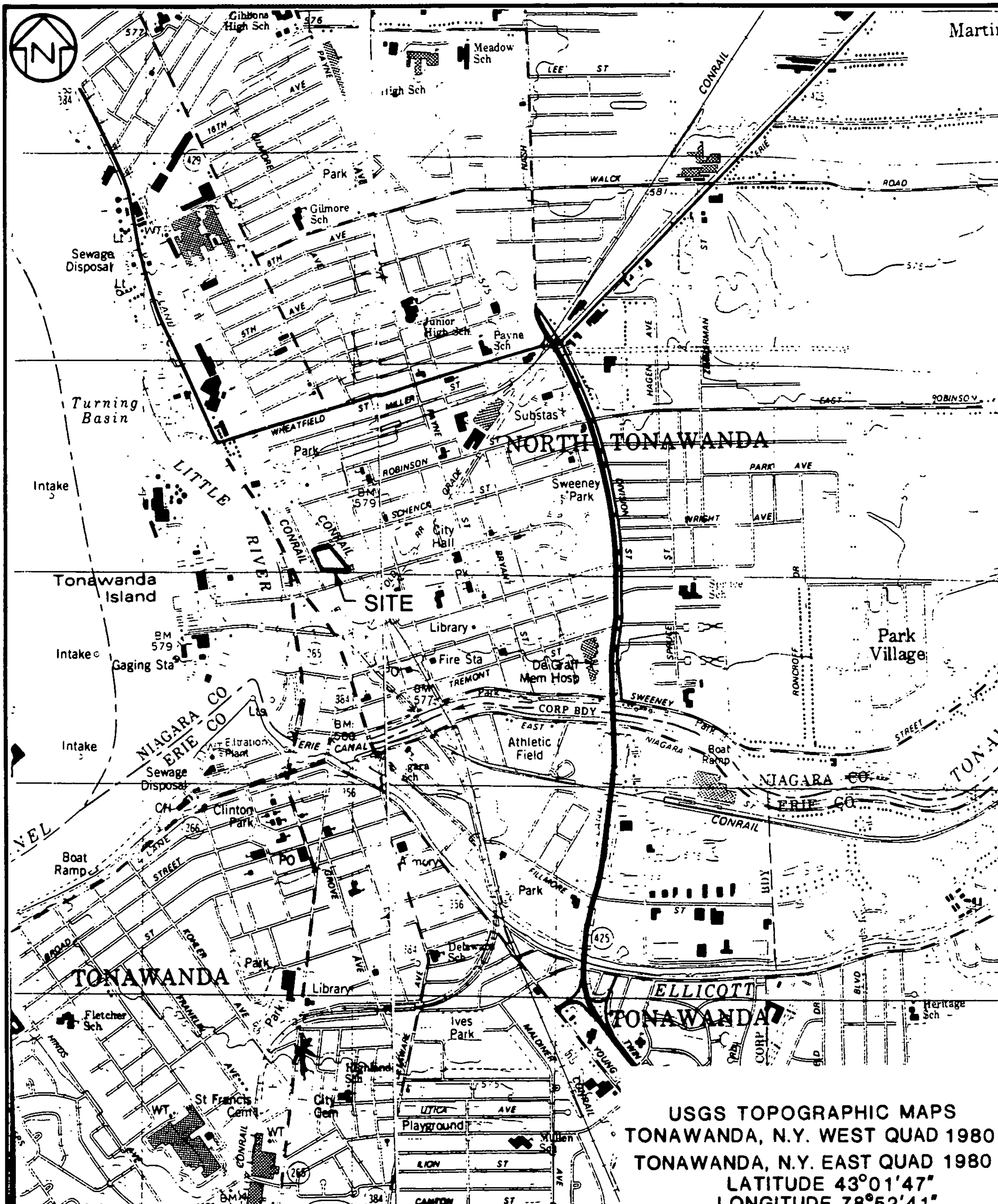
13. NYSDEC Region 9. Memo from Charles Zippiroli to Peter Buechi; Re: Past Ownership of Schreck's Scrap and Iron. June 4, 1985.

14. Letter of Documentation to Mike Hopkins, Niagara County Health Department from Thomas P. Connare, Recra Research, Inc. May 15, 1986.

15. Letter of Documentation to Ron Koczaja, Erie County Health Department, from Thomas P. Connare, Recra Research, Inc. May 17, 1986.

16. Preliminary Evaluation of Chemical Migration to Groundwater and the Niagara River for Selected Waste Disposal Sites. EPA-905/4-85-001. March 1985.

REFERENCE 1



USGS TOPOGRAPHIC MAPS
TONAWANDA, N.Y. WEST QUAD 1980
TONAWANDA, N.Y. EAST QUAD 1980
LATITUDE 43°01'47"
LONGITUDE 78°52'41"

RECRA RESEARCH INC.
BUFFALO, NEW YORK

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SCHRECK'S SCRAPYARD
NORTH TONAWANDA, N.Y.
N.Y.S. SUPERFUND
PHASE I

VICINITY MAP

Project No. 5C280419

A

BRUNING 61160-1

REFERENCE 2

DEC - 5

New York State Atlas of Community Water System Sources 1982

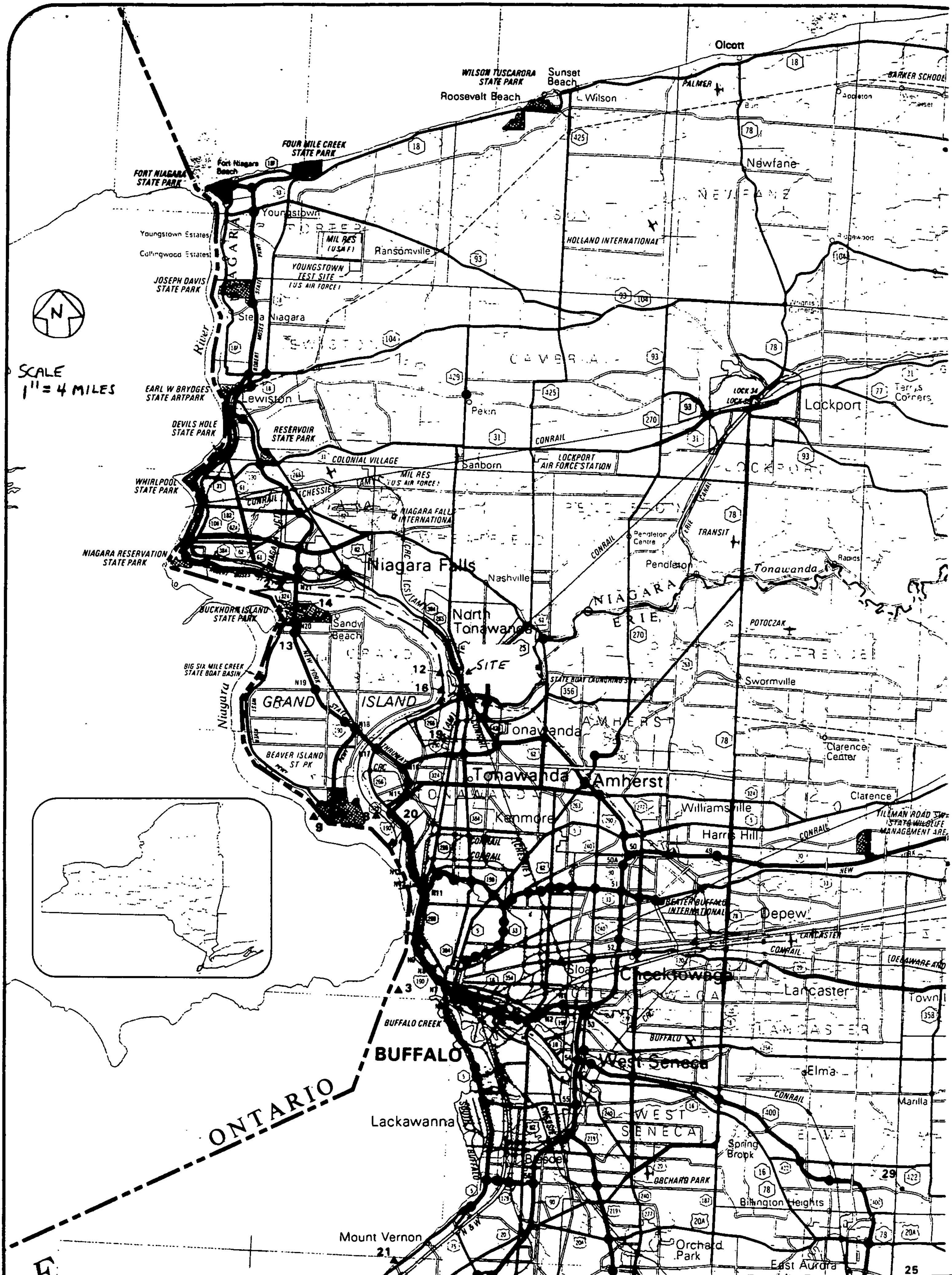
NEW YORK STATE DEPARTMENT OF HEALTH
DIVISION OF ENVIRONMENTAL PROTECTION
BUREAU OF PUBLIC WATER SUPPLY PROTECTION

ERIE COUNTY

ID NO	COMMUNITY WATER SYSTEM	POPULATION	SOURCE
Municipal Community			
	Akron Village (See No 1 Wyoming Co, Page 10)	3640	
1	Alden Village	3460	Wells
2	Angola Village	8500	Lake Erie
3	Buffalo City Division of Water	357870	Lake Erie
4	Caffee Water Company	210	Wells
5	Collins Water District #3	704	Wells
6	Collins Water Districts #1 and #2	1384	Wells
7	Erie County Water Authority (Sturgeon Point Intake)	375000	Lake Erie
8	Erie County Water Authority (Van DeWater Intake)	NA	Niagara River - East Branch
9	Grand Island Water District #2	9390	Niagara River
10	Holland Water District	1670	Wells
11	Lawtons Water Company	138	Wells
12	Lockport City (Niagara Co)		Niagara River - East Branch
13	Niagara County Water District (Niagara Co)		Niagara River - West Branch
14	Niagara Falls City (Niagara Co)		Niagara River - West Branch
15	North Collins Village	1500	Wells
16	North Tonawanda City (Niagara Co)		Niagara River - West Branch
17	Orchard Park Village	3671	Pipe Creek Reservoir
18	Springville Village	4169	Wells
19	Tonawanda City	18538	Niagara River - East Branch
20	Tonawanda Water District #1	91269	Niagara River
21	Wanakah Water Company	10750	Lake Erie
Non-Municipal Community			
22	Aurora Mobile Park	125	Wells
23	Bush Gardens Mobile Home Park	270	Wells
24	Circle B Trailer Court	50	Wells
25	Circle Court Mobile Park	125	Wells
26	Creekside Mobile Home Park	120	Wells
27	Donnelly's Mobile Home Court	99	Wells
28	Gowanda State Hospital	NA	Clear Lake
29	Hillside Estates	160	Wells
30	Hunters Creek Mobile Home Park	150	Wells
31	Knox Apartments	NA	Wells
32	Maple Grove Trailer Court	72	Wells
33	Millgrove Mobile Park	100	Wells
34	Perkins Trailer Park	75	Wells
35	Quarry Hill Estates	400	Wells
36	Springville Mobile Park	114	Wells
37	Springwood Mobile Village	132	Wells
38	Taylors Grove Trailer Park	39	Wells
39	Valley View Mobile Court	42	Wells
40	Villager Apartments	NA	Wells

NIAGARA COUNTY

D NO	COMMUNITY WATER SYSTEM	POPULATION	SOURCE
	Municipal Community		
	Lockport City (See No 12, Erie Co).	25000	
1	Middleport Village	2000	Wells (Springs)
	Niagara County Water District (See No 13, Erie Co)	48	
2	Niagara Falls City (See also No 14 Erie Co)	77384	Niagara River - East Branch
	North Tonawanda City (See No 16 Erie Co)	36000	
	Non-Municipal Community		
3	Country Estates Mobile Village	28	Wells



SCALE
1" = 4 MILES
SITE
Olcott
WILSON TUSCARORA STATE PARK
Sunset Beach
Roosevelt Beach
Wilson
FOUR MILE CREEK STATE PARK
FORT NIAGARA STATE PARK
Fort Niagara Beach
Youngstown
Youngstown Estates
Collingwood Estates
MIL RES (USAF)
Ransomville
YOUNGSTOWN TEST SITE (US AIR FORCE)
JOSEPH DAVIS STATE PARK
Stella Niagara
HOLLAND INTERNATIONAL
Newfane
River
EARL W BRYDGES STATE ARTPARK
Lewiston
Pekin
Lockport
DEVILS HOLE STATE PARK
RESERVOIR STATE PARK
COLONIAL VILLAGE
Sanborn
LOCKPORT AIR FORCE STATION
WHIRLPOOL STATE PARK
CONRAIL
CHESSIE
NIAGARA FALLS INTERNATIONAL
NIAGARA RESERVATION STATE PARK
Niagara Falls
Nashville
Pendleton
Tonawanda
BUCKHORN ISLAND STATE PARK
Sandy Beach
North Tonawanda
NIAGARA
ERIE
POTOCZAK
Swormville
BIG SIX MILE CREEK STATE BOAT BASIN
Niagara
GRAND ISLAND
BEAVER ISLAND ST PK
Tonawanda
Amherst
Clarence Center
Clarence
Williamsville
Kenmore
Harris Hill
TILLMAN ROAD STATE WILDLIFE MANAGEMENT AREA
GREATER BUFFALO INTERNATIONAL
Depew
Sloan
Cheektowaga
Lancaster
BUFFALO CREEK
BUFFALO
West Seneca
Elma
Marilla
ONTARIO
Lackawanna
WEST SENECA
Spring Brook
ORCHARD PARK
Billington Heights
Mount Vernon
Orchard Park
East Aurora

REFERENCE 3

DRAFT

UNCONTROLLED HAZARDOUS WASTE
SITE RANKING SYSTEM -
A USERS MANUAL

DRAFT

10 June 1982
(errata included)

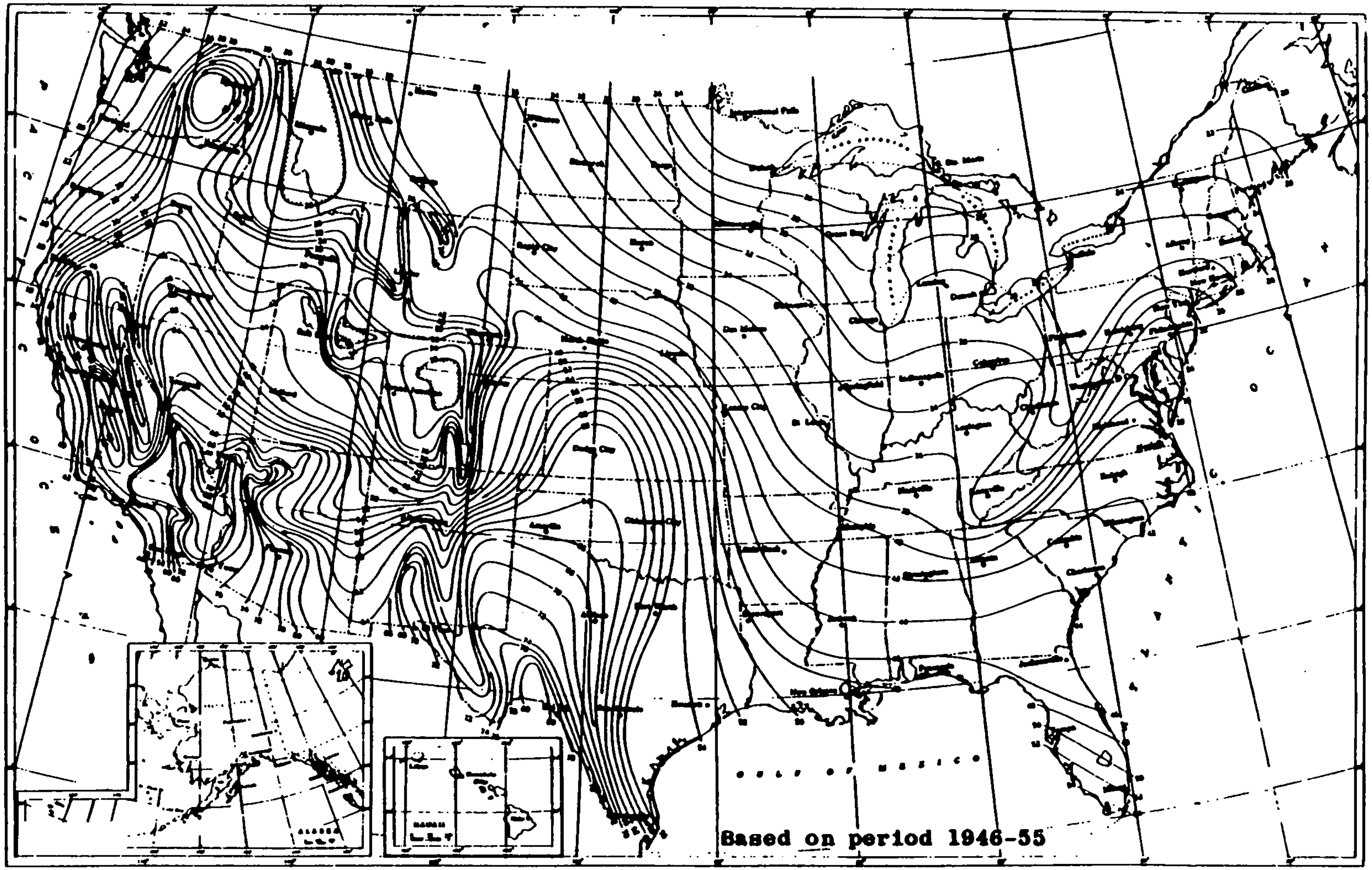


Figure 4

Mean Annual Lake Evaporation (In Inches)

Source: Climatic Atlas of the United States, U.S. Department of Commerce, National Climatic Center, Ashville, N.C., 1979.

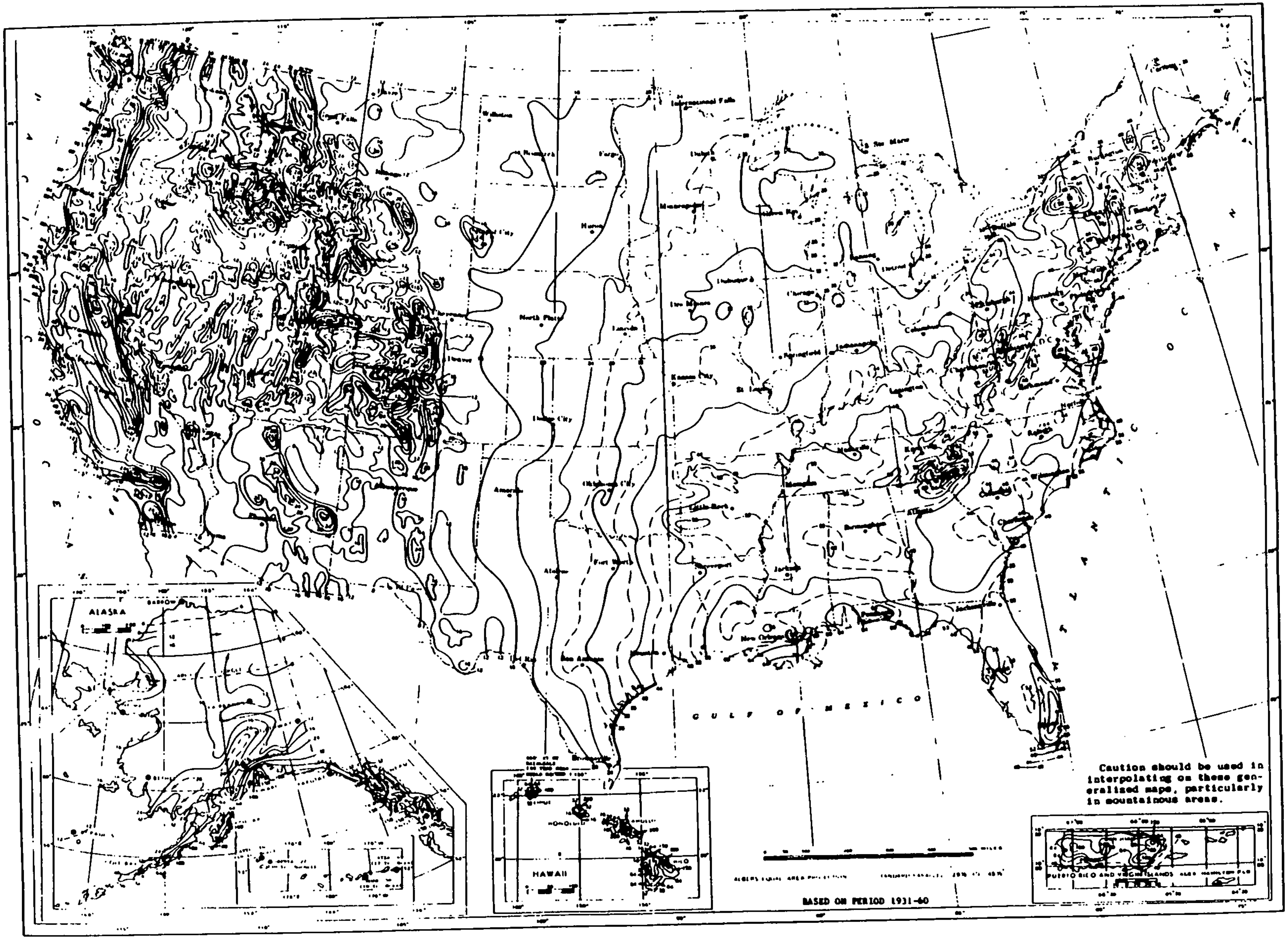


Figure 5

Normal Annual Total Precipitation (inches)

... U. S. Department of Commerce, National Climatic Center.

TABLE 2

PERMEABILITY OF GEOLOGIC MATERIALS*

TYPE OF MATERIAL	APPROXIMATE RANGE OF HYDRAULIC CONDUCTIVITY	ASSIGNED VALUE
Clay, compact till, shale; unfractured metamorphic and igneous rocks	$< 10^{-7}$ cm/sec	0
Silt, loess, silty clays, silty loams, clay loams; less permeable limestone, dolomites, and sandstone; moderately permeable till	$< 10^{-5} \geq 10^{-7}$ cm/sec	1
Fine sand and silty sand; sandy loams; loamy sands; moderately permeable limestone, dolomites, and sandstone (no karst); moderately fractured igneous and metamorphic rocks, some coarse till	$< 10^{-3} \geq 10^{-5}$ cm/sec	2
Gravel, sand; highly fractured igneous and metamorphic rocks; permeable basalt and lavas; karst limestone and dolomite	$> 10^{-3}$ cm/sec	3

*Derived from:

Davis, S. N., Porosity and Permeability of Natural Materials in Flow-Through Porous Media, R.J.M. DeWest ed., Academic Press, New York, 1969

Freeze, R.A. and J.A. Cherry, Groundwater, Prentice-Hall, Inc., New York, 1979

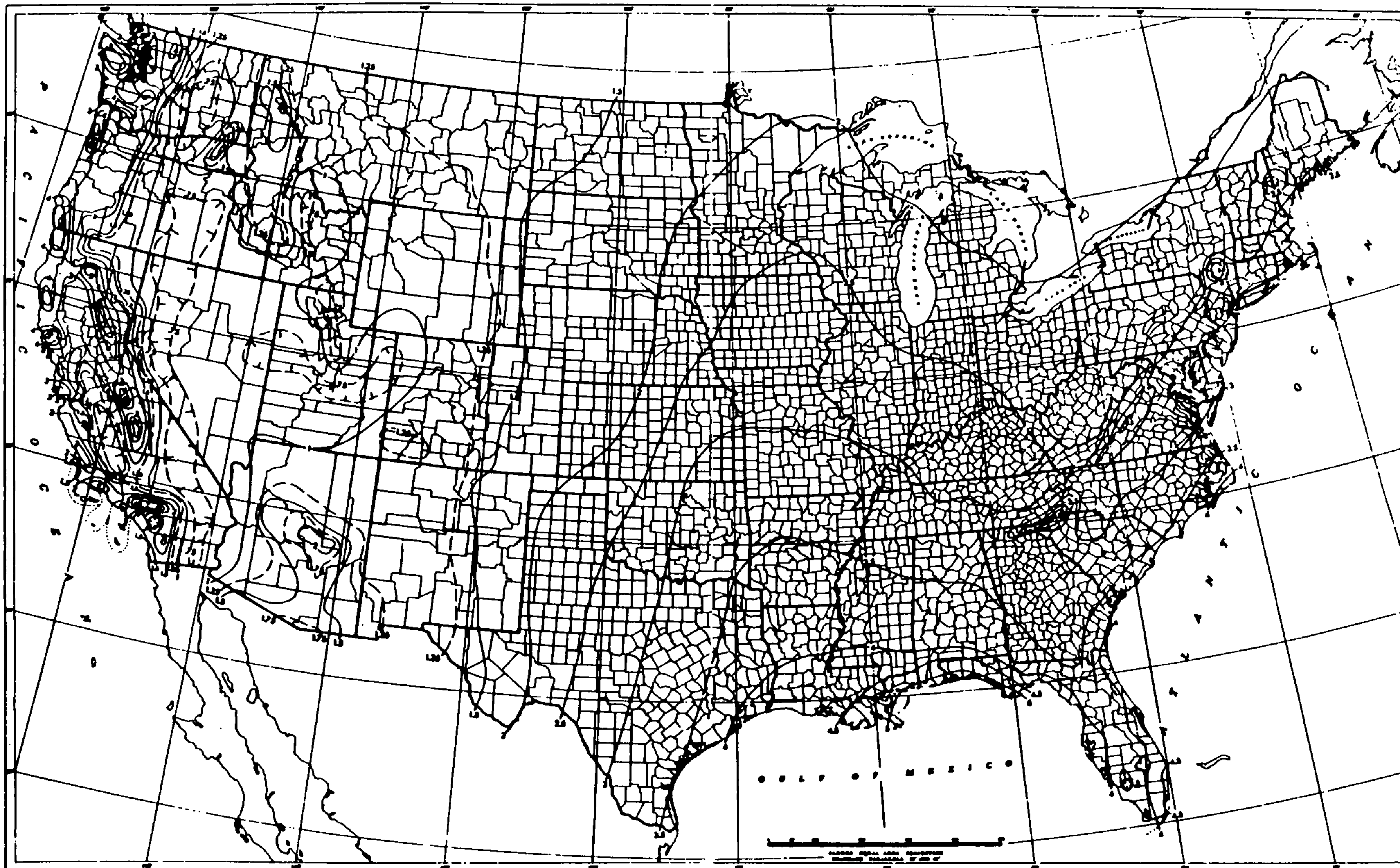


FIGURE 8

1-Year 24-Hour Rainfall (Inches)

Source: Rainfall Frequency Atlas of the United States, Technical Paper No. 40, U.S. Department of Commerce, U.S. Government Printing Office, Washington, D.C., 1963.

REFERENCE 4

GROUND-WATER RESOURCES OF THE ERIE-NIAGARA BASIN, NEW YORK

Prepared for the
Erie-Niagara Basin Regional Water Resources
Planning Board

by

A. M. La Sala, Jr.

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
in cooperation with
THE NEW YORK STATE CONSERVATION DEPARTMENT
DIVISION OF WATER RESOURCES

STATE OF NEW YORK
CONSERVATION DEPARTMENT
WATER RESOURCES COMMISSION

Basin Planning Report ENB-3
1968

Many domestic-supply wells penetrate from 1 foot to a few feet into the soluble rocks and produce small but adequate yields. On the other hand, industrial wells that were intended to produce large supplies of water give a truer picture of the water-supply potential of the rocks. Data on industrial wells show that the Camillus Shale will yield as much as 1,200 gpm and the limestone unit as much as 300 gpm and probably more. But the data also show that the rocks produce low yields at places. This is shown by such wells as 301-848-1 which was drilled to obtain a large supply for an industry but which yielded only 30 gpm. The water-bearing zones obviously are unevenly distributed through the rocks. Factors that control the occurrence of the water-bearing zones cannot be evaluated at the present time to the extent necessary to predict exactly where the zones occur.

The Lockport Dolomite is the least productive unit of the soluble rocks. Within the Erie-Niagara basin yields of wells in the Lockport range from about 4 to 90 gpm. Depth of the wells range from 20 to 70 feet. Most of the deeper wells were drilled where the depth to bedrock is greatest. Domestic-supply wells generally are finished in the fracture zone at the rock surface or in a bedding joint within the uppermost 30 feet of the rock. It is usually not necessary to drill deeper into the Lockport if only a small supply is needed.

Drilling deeper in an attempt to intersect additional bedding-plane openings at depth would provide higher yields but, generally, at the expense of lower water levels and therefore higher pump lifts. Johnston (1964) collected data on a much larger number of wells along the outcrop belt of the Lockport Dolomite than were inventoried in the Erie-Niagara basin. He found that wells drawing water from the lower 40 feet of the Lockport (the northern part of the outcrop area) yield from 1/2 to 20 gpm and have an average yield of 7 gpm. Wells finished in the upper part of the Lockport (the southern part of the outcrop area) yield from 2 to 110 gpm and have an average yield of 31 gpm. Yields of as much as 50 or 100 gpm are possible from the Lockport in the Erie-Niagara basin but would be exceptional.

CAMILLUS SHALE

Bedding and lithology

The Camillus Shale lies above the Lockport Dolomite and crops out to the south of where the dolomite is exposed. Exposures of the Camillus Shale are rare in the Erie-Niagara basin because of the low relief of the outcrop area and the cover of glacial deposits. Geologists who have studied the Camillus in the study basin agree that it consists mostly of gray shale. (For example, see Buehler and Tesmer, 1963, p. 29-30.) Subsurface data, on the other hand, indicate that a considerable amount of gray limestone and dolomite is interbedded with the shale. Along with these carbonates, gypsum comprises a significant part of the Camillus Shale. Some of the gypsum beds are as much as 5 feet thick. Gypsum also occurs in the Camillus as thin lenses and veins. Table 1, which is a log compiled during construction of a mine slope, illustrates the occurrence of gypsum and the predominance of carbonate rocks in some parts of the Camillus.

Though the Camillus dips southward at approximately 40 feet to the mile, the dip is not uniform. Gypsum miners say the formation "rolls," to describe the gentle folding of its beds. The formation is marked by broad, low folds with amplitudes of a few feet and spacings of a few hundred feet between crests. The fold axes generally are east-west.

Water-bearing openings

The extensive beds of gypsum make the Camillus Shale unique among the shale formations of the basin. The importance of the gypsum lies in its solubility; gypsum is far more soluble than the enclosing rocks, whether shale, dolomite, or limestone. Where gypsum has been dissolved, openings exist for the passage and storage of water.

The effect of the solution of gypsum on the water-bearing properties of the Camillus Shale (and other rocks) can be readily appreciated. Where the topmost beds of the Camillus crop out at the base of the falls of Murder Creek at Akron, the Camillus seems to be an impermeable shale. If one judged the water-bearing properties of the Camillus on the basis of this outcrop alone, he would be wrong. Yields of water wells and drainage into gypsum mines prove that large volumes of water do move through the Camillus.

Clues to the nature of the water-bearing openings in the Camillus can be obtained by considering some of the circumstances where large volumes of water were obtained. About 1885, the Buffalo Cement Company located a 4-foot thick bed of gypsum only 43 feet below land surface by test drilling in Buffalo on Main Street near Williamsville. A shaft was sunk with the intention of beginning a subsurface mining operation, but when the gypsum was struck the shaft was flooded with ground water. The report is that "..... a pump with a capacity of 2,000 gallons per minute failed to make any impression upon it [the water] and the attempt was abandoned" (Newland and Leighton, 1920, 209-210).

In 1964, a gypsum mine near Clarence Center received an unexpected inflow of ground water. Several hundred gallons of water per minute continuously enters the mine at a place about midway down the entry slope. This water is pumped out by a drainage system diagrammatically shown in figure 6. Ordinarily, only small seeps occur in the remainder of the mine from roof bolts and small cracks in the roof. At a distance of more than a mile from the entry slope, the working face intersected an unplugged drill hole. Water poured into the mine at an alarming rate until the hole was plugged with much effort.

Large-yield wells, such as those at Tonawanda and North Tonawanda, obtain water from thin intervals of gypsum-bearing rock. The gypsum in the Camillus Shale obviously is related to the occurrence of large quantities of water. Gypsum is a highly soluble mineral and is

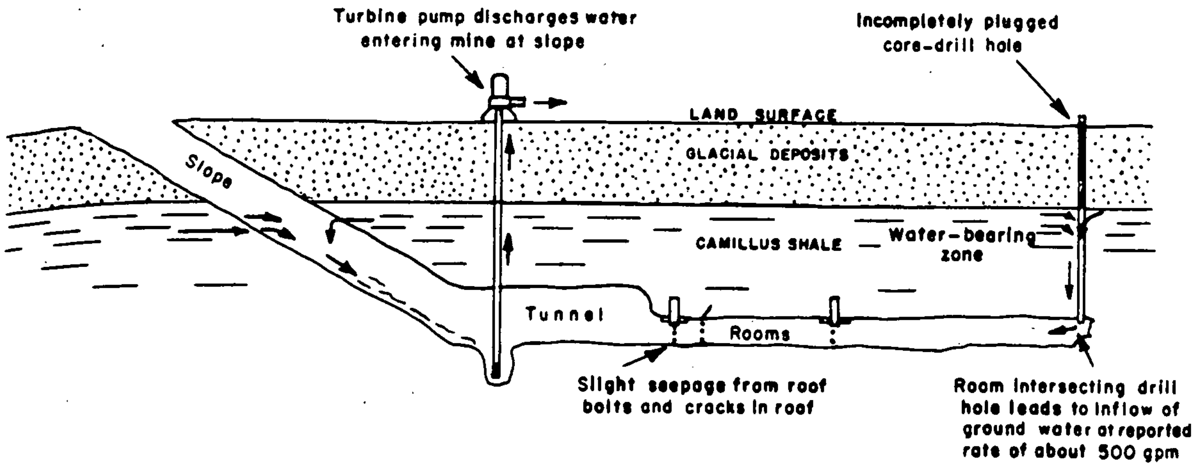


Figure 6.--Occurrence of ground water in the Camillus Shale at a gypsum mine near Clarence Center.

dissolved by circulating ground water faster than are the enclosing rocks. Very likely the openings in the Camillus that yield copious amounts of water were formed by the solution of gypsum by ground water. The water-bearing zones are mainly horizontal because most of the gypsum occurs in horizontal beds and thin zones of gypsiferous shale and dolomite. Only those gypsum zones actually exposed to circulating ground water can be widened by solution. The gypsum must be in contact with an open fracture through which the water can move. If no open fracture exists, the gypsum cannot be dissolved. The occurrence of ground water at the gypsum mine shown in figure 6 is a further illustration. The 4 1/2-foot thick bed that is mined at a depth of 66.9 feet (table 1) is dry because of the lack of vertical fractures to transmit water to it.

The solution-widened water-bearing zones occur at various depths and stratigraphic horizons in the Camillus. The existence of such zones is borne out by well data. For instance, wells 303-850-1 and -2 are 90 feet apart and obtain water from the same 2- to 3-foot thick zone at a depth of 67 to 68 feet. Such zones may be continuous for as much as 1 or 2 miles but information is not available on the extent of individual zones. The gypsum occurs principally in lenticular beds. The thicker beds may be 3 or 4 miles in lateral extent. The thinner beds can be expected to be much smaller in extent.

A zone of fracturing and solution extending several feet below the rock surface yields relatively small but sufficient water supplies for domestic use. This zone appears to be present throughout the area and is unrelated to stratigraphic position.

Hydrologic and hydraulic characteristics

The Camillus Shale forms a low topographic trough split down the axis by Tonawanda Creek. Ground water that enters the formation discharges mainly to the creek. Little water is discharged to the small, barely incised streams on the Camillus. These streams are dry much of the year.

Coefficients of transmissibility given in table 2 were computed for the Camillus Shale on the basis of specific capacities of wells penetrating a considerable thickness of the aquifer, by the method described by Walton (1962, p. 12-13).

Table 2.--Specific-capacity tests of wells finished in the Camillus Shale

Well number	Pumping rate (gpm)	Duration of pumping (hours) e: estimated	Drawdown (feet)	Specific capacity (gpm/ft)	Coefficient of transmissibility (gpd/ft)
a/ 258-853-1	1,090	e8	53	21	40,000
-2	90	--	22	4	7,000
258-855-1	500	e8	17	29	55,000
-2	1,000	e8	26	38	70,000
-3	1,500	e8	38	39	70,000
303-850-1	700	24	10	70	--
-2	660	e8	8	83	--

a/ Well also penetrates water-bearing zone in Lockport Dolomite.

The large specific capacities of wells 303-850-1 and -2 probably result in part from recharge induced from Sawyer Creek. Measurements of recovery of water levels in well 303-850-1 were made when well 303-850-2 was shut down after a year of continuous pumping. From these data, a coefficient of transmissibility of about 80,000 per foot and a coefficient of storage of 0.025 were computed. The computed transmissibility is about half the transmissibility that would have been indicated from specific capacity if recharge were not induced from Sawyer Creek.

Yields of wells

The Camillus Shale is by far the most productive bedrock aquifer in the area. Except in the vicinity of Buffalo and Tonawanda, where industrial wells produce from 300 to 1,200 gpm, no attempt has been made to obtain large supplies from the formation. However, the inflow of water to gypsum mines near Clarence Center and Akron indicate that large supplies are not necessarily restricted to the Buffalo and the Tonawanda area. Two examples of large flows of water encountered in gypsum mining have already been mentioned. Pumpage from gypsum mines near Clarence Center (including the mine mentioned previously) is substantial. The water pumped is discharged to Got Creek. On July 2, 1963, the creek had a flow of 2.1 mgd (million gallons per day) about half a mile downstream from the mines, that was due almost entirely to the pumpage. Water for industrial use is pumped from a flooded, abandoned gypsum mine at Akron. This pumpage, at a rate of 500 to 700 gpm, has had no appreciable effect on the water level in the mine.

Probably the larger solution openings are most common in discharge areas near Tonawanda Creek and its tributaries and near the Niagara River; the flow of ground water becomes concentrated as it approaches the streams to which it discharges. Other discharge areas, such as low-lying swampy areas and headwaters of small streams that have perennial flow, are likely places to drill wells.

LIMESTONE UNIT

Bedding and lithology

The term "limestone unit" in this report is applied to a sequence of limestone and dolomite overlying the Camillus Shale. The limestone unit includes the Bertie Limestone at the base, the Akron Dolomite, and the Onondaga Limestone at the top. The lithology and thickness of these units are shown in figure 7. The Bertie Limestone and the Akron Dolomite are Silurian in age and are separated from the overlying Onondaga Limestone of Devonian age by an unconformity or erosional contact.

The Bertie Limestone is mainly dolomite and dolomitic limestone but contains interbedded shale particularly in the thin-bedded lower part of the formation. The middle part is brown, massive dolomite, and the upper part is gray dolomite and shale whose beds are of variable thickness. The total thickness of the formation is about 55 feet (Buehler and Tesmer, 1963, p. 30-31).

The Akron Dolomite is composed of greenish-gray and buff dolomite beds varying from a few inches to about a foot in thickness. The upper contact of the Akron is erosional and is often marked by remnants of shallow stream channels. Thin lenses of sandy sediments lie in the bottoms of some channels. The thickness of the formation is generally between 7 and 9 feet (Buehler and Tesmer, 1963, p. 33-34).

REFERENCE 5

NEW YORK WATER CLASSIFICATIONS AND QUALITY STANDARDS

(Official Codes, Rules, and Regulations of the State of New York, Chapter X—Division of Water Resources, Article 2, Part 609 and Parts 700 through 704; Adopted April 28, 1972; Amended February 25, 1974; September 20, 1974; August 2, 1978; Effective September 1, 1978; November 5, 1984; July 3, 1985, Effective August 3, 1985; July 5, 1985)

CONTENTS

PART 609
RECLASSIFICATION OF WATERS

Section 609.1 Purpose. It is the objective of the State that water classifications provide for the protection and propagation of fish, shellfish and wildlife, and for recreation in and on the water, and take into account the use and value of public water supplies, propagation of fish, shellfish and wildlife, recreation in and on the water, and agricultural, industrial and other purposes including navigation.

609.2 Applicability. This Part applies to all petitions for reclassification of waters of the state. Petitions for reclassifications may be submitted by any person or public corporation. Reclassifications may be initiated by the Department.

609.3 Contents of petition. The petition shall be accompanied by a form provided by the Department and shall include the following information on the waters requested to be reclassified:

(a) Name or names of the waters or water segment;

(b) Location of the waters or water segment;

(c) Present classification of the waters of water segment;

(d) List of municipalities through which these waters flow;

(e) Factual basis for the reclassification request, including a discussion of the following factors, where applicable:

(1) size, depth, surface area covered, volume, direction and rate of flow, stream gradient and temperature of the water;

(2) character of the district bordering said waters and its peculiar suitability for the particular uses, and with a view to conserving the value of the same and encouraging the most appropriate use of lands bordering said waters, for residential, agricultural, industrial or recreational purposes;

(3) the uses which have been made, are being made or may be made, of said waters for transportation, domestic and industrial consumption, bathing, fishing and fish culture, fire prevention, the disposal of sewage, industrial waste and other wastes, or other uses within this state, and, at the discretion of the Department, any such uses in another state on interstate waters flowing through or originating in this state; and

(4) existing quality of said waters.

609.4 Maps. All petitions shall be accompanied by a map of suitable scale which shows the waters requested to be reclassified and the municipalities through which it flows.

609.5 Signatures on petitions. All petitions must be signed and verified as follows:

(a) Corporations: by a principal executive officer of at least the level of vice-president or his duly authorized representative.

(b) Partnership: by a general partner.

Item: 5. [Repealed]

Item: 6. [Repealed]

Note 1: [Repealed]

CLASS A

Best usage of waters. Source of water supply for drinking, culinary or food processing purposes and any other usages.

Conditions related to best usage of waters. The waters, if subjected to approved treatment equal to coagulation, sedimentation, filtration and disinfection, with additional treatment if necessary to reduce naturally present impurities will meet New York State Department of Health drinking water standards and will be considered safe and satisfactory for drinking water purposes.

Quality Standards for Class A Waters

Item: 1. Coliform.

Specifications: The monthly median coliform value for 100 ml of sample shall not exceed 5,000 from a minimum of five examinations and provided that not more than 20 percent of the samples shall exceed a coliform value of 20,000 for 100 ml of sample and the monthly geometric mean fecal coliform value for 100 ml of sample shall not exceed 200 from a minimum of five examinations.

Item: 2. pH.

Specifications: Shall be between 6.5 and 8.5.

Item: 3. Total dissolved solids.

Specifications: Shall be kept as low as practicable to maintain the best usage of waters, but in no case shall it exceed 500 milligrams per liter.

Item: 4. Dissolved oxygen.

Specifications: For cold waers suitable for trout spawning, the DO concentration shall not less than 7.0 mg/l from other than natural conditions. For trout waters, the minimum daily average shall not be less than 6.0 mg/1. At no time shall the DO concentration be less than 5.0 mg/1. For nontrout waters, the minimum daily average shall not be less than 5.0 mg/1. At no time shall the DO concentration be less than 4.0 mg/1.

Item: 5. [Repealed]

Item: 6. [Repealed]

Note 1: [Repealed]

CLASS B

Best usage of waters. Primary contact recreation and any other uses except as a source of water supply for drinking, culinary or food processing purposes.

Quality Standards for Class B Waters

Item: 1. Coliform.

Specifications: The monthly median coliform value for 100 ml of sample shall not exceed 2,400 from a minimum of five examinations and provided that not more than 20 percent of the samples shall exceed a coliform value of 5,000 for 100 ml of sample and the monthly geometric mean fecal coliform value for 100 ml of sample shall not exceed 200 from a minimum of five examinations. This standard shall be met during all periods when disinfection is practiced.

Item: 2. pH.

Specifications: Shall be between 6.5 and 8.5.

Item: 3. Total dissolved solids.

Specifications: None at concentrations which will be detrimental to the growth and propagation of aquatic life. Waters having present levels less than 500 milligrams per liter shall be kept below this limit.

Item: 4. Dissolved oxygen.

Specifications: For cold waters suitable for trout spawning, the DO concentration shall not be less than 7.0 mg/1 from other than natural conditions. For trout waters, the minimum daily average shall not be less than 6.0 mg/1. At no time shall the DO concentration be less than 5.0 mg/1. For nontrout waters, the minimum daily average shall not be less than 5.0 mg/1. At no time shall the DO concentration be less than 4.0 mg/1.

Note 1: [Repealed]

CLASS C

Best usage of waters. Suitable for fishing and all other uses except as a source of water supply for drinking, culinary or food processing purposes and primary contact recreation.

Quality Standards for Class C Waters

Item: 1. Coliform.

Specifications: The monthly geometric mean total coliform value for 100 ml of sample shall not exceed 10,000 and the monthly geometric mean fecal coliform value for 100 ml of sample shall not exceed 2,000 from a minimum of five examinations. This standard shall be met during all periods when disinfection is practiced.

Item: 2. pH.

Specifications: Shall be between 6.5 and 8.5.

Item: 3. Total dissolved solids.

Specifications: None at concentrations which will be detrimental to the growth and propagation of aquatic life. Waters having present levels less than 500 milligrams per liter shall be kept below this limit.

Item: 4. Dissolved oxygen.

Specifications: For cold waters suitable for trout spawning, the DO concentration shall not be less than 7.0 mg/l from other than natural conditions. For trout waters, the minimum daily average shall not be less than 6.0 mg/1. At no time shall the DO concentration be less than 5.0 mg/1. For nontrout waters, the minimum daily average shall not be less than 5.0 mg/1. At no time shall the DO concentration be less than 4.0 mg/1.

Note 1: [Repealed]

CLASS D

Best usage of waters. These waters are suitable for secondary contact recreation, but due to such natural conditions as intermittency of flow, water conditions not conducive to propagation of game fishery or stream bed conditions, the waters will not support the propagation of fish.

Conditions related to best usage of waters. The waters must be suitable for fish survival.

Quality Standards for Class D Waters

Item: 1. pH.

Specifications: Shall be between 6.0 and 9.5.

Item: 2. Dissolved oxygen.

Specifications: Shall not be less than three milligrams per liter at any time.

Note 1: [Repealed]

701.20 Classes and standards for saline surface waters. The following items and specifications shall be the standards applicable to all New York Saline Surfaces Waters which are assigned the classification of SA, SB, SC or SD, in addition to the specific standards which are found in this Part under the heading of each such classification.

Quality Standards for Saline Surface Waters

Items: 1. Garbage, cinders, ashes, oils, sludge or other refuse.

Specifications: None in any waters of the marine district as defined by Environmental Conservation Law (§17-0105).

Item: 2. pH.

Specifications: The normal range shall not be extended by more than 0.1 pH unit.

Item: 3. Turbidity.

Specifications: No increase except from natural sources that will cause a substantial visible contrast to natural conditions. In cases of naturally turbid waters, the contrast will be due to increased turbidity.

Item: 4. Color.

Specifications: None from man-made sources that will be detrimental to anticipated best usage of waters.

Item: 5. Suspended, colloidal or settleable solids

Specifications: None from sewage, industrial wastes or other wastes which will cause deposition or be deleterious for any best usage determined for the specific waters which are assigned to each class.

Items: 6. Oil and floating substances.

Specifications: No residue attributable to sewage, industrial wastes or other wastes, nor visible oil film nor globules of grease.

Item: 7. Thermal discharges.

Specifications: (See Part 704 of this Title.)

CLASS SA

Best usage of waters. The waters shall be suitable for shellfishing for market purposes and primary and secondary contact recreation.

Quality Standards for Class SA Waters

Item: 1. Coliform.

Specifications: The median MPN value in any series of samples representative of waters in the shellfish growing area shall not be in excess of 70 per 100 ml.

Item: 2. Dissolved oxygen.

Specifications: Shall not be less than 5.0 mg/l at any time.

Items: 3. Toxic wastes and deleterious substances.

Specifications: None in amounts that will interfere with use for primary contact recreation or that will be injurous to edible fish or shellfish or the culture or propagation thereof, or which in any manner shall adversely affect the flavor, color, odor or sanitary condition thereof or impair the waters for any other best usage as determined for the specific waters which are assigned to this class.

CLASS SB

Best usage of waters. The waters shall be suitable for primary and secondary contact recreation and any other use except for the taking of shellfish for market purposes.

Quality Standards for Class SB Waters

Item: 1. Coliform

Specifications: The monthly median coliform value for 100 ml of sample shall not exceed 2,400 from a minimum of five examinations and provided that not more than 20 percent of the samples shall exceed a coliform value of 5,000 for 100 ml of sample and the monthly geometric mean fecal coliform value for 100 ml of sample shall not exceed 200 from a minimum of five examinations. This standard shall be met during all periods when disinfection is practiced.

Published by THE BUREAU OF NATIONAL AFFAIRS, INC., Washington, D.C. 20037

REFERENCE 6

STATE OF NEW YORK

OFFICIAL COMPILATION

OF

CODES, RULES AND REGULATIONS

MARIO M. CUOMO
Governor

GAIL S. SHAFFER
Secretary of State

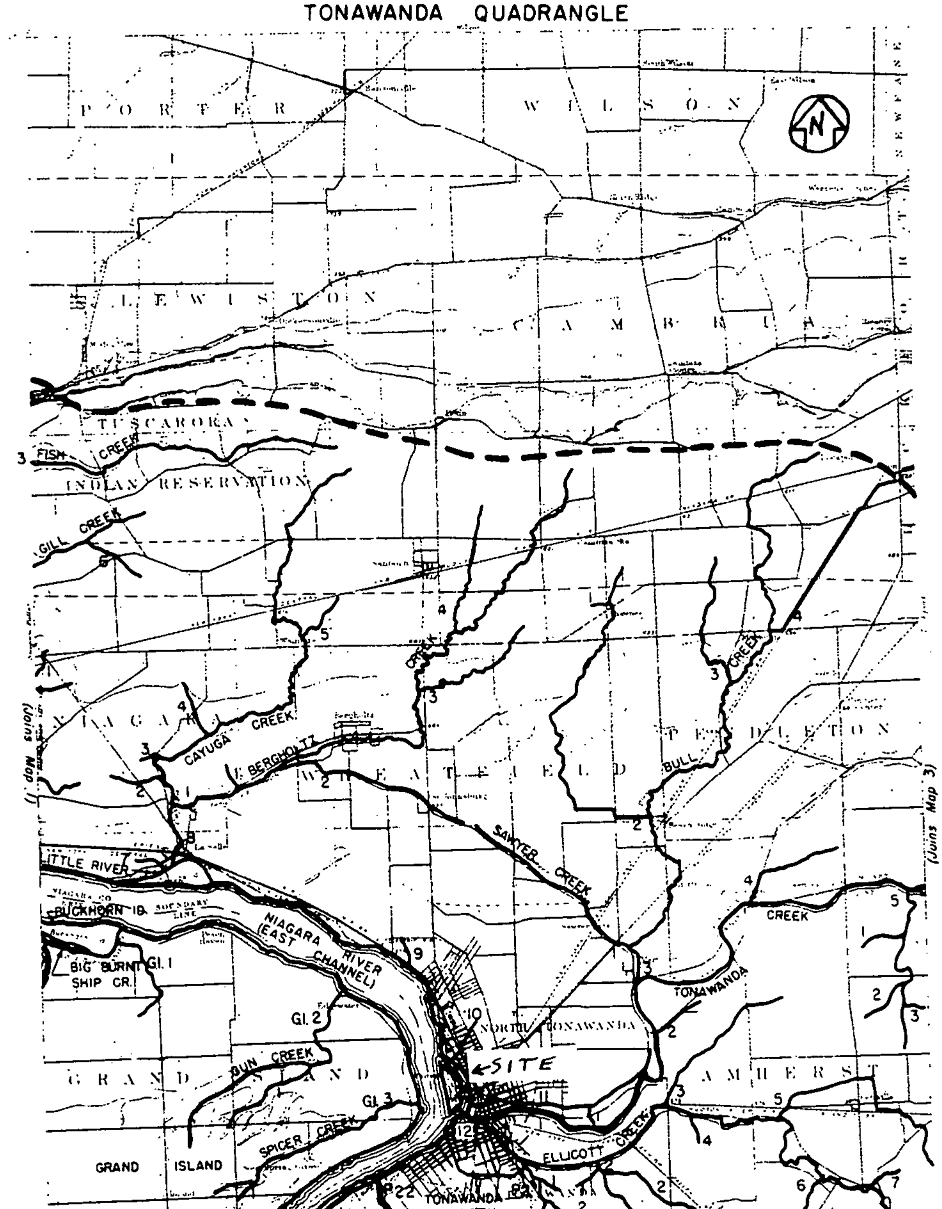
Published by
DEPARTMENT OF STATE
162 Washington Avenue
Albany, New York 12231

TITLE 6 CONSERVATION

PART 825

CURRENT PAGES

TONAWANDA QUADRANGLE



MAP 2

837.4 Table I.

TABLE I

Classifications and Standards of Quality and Purity Which Are Assigned to All Surface Waters within the Lake Erie (East End) - Niagara River Drainage Basin; Erie, Niagara, Genesee, Orleans and Wyoming Counties, New York

Item No.	Waters Index Number	Name	Description	Map Ref. No.	Class	Standards
1	0-158	Niagara River American side	Waters from international boundary to American shore between confluence with Lake Ontario and Lake Erie. Latter point is defined as a line running due west from south end of Bird Island ier to international boundary. These waters include all bays, arms, and inlets thereof, but not trib. streams or Black Rock Canal.	1,2,6	A-Special (international boundary waters)	A-Special (international boundary waters)
2	Black Rock Canal	Black Rock Canal	Waters east of Sqaw Island and Bird Island ier between canal locks and a line from south end of Bird Island ier to Buffalo harbor light #6.	6	C	C
3	0-158-1 and 2	Tributaries of Niagara River	Enter Niagara River from east in Town of Lewiston approximately 4.5 and 7.0 miles respectively from mouth.	1	C	C
4	0-158-3	Fish Creek	Enters Niagara River from east approximately 2.0 miles north of Niagara-Lewiston town line.	1,2	D	D
5	0-158-4 and P 1	Tributary of Niagara River	Enters Niagara River from east approximately 0.7 mile north of Niagara-Lewiston town line.	1	D	D

TABLE I (contd.)

Item No.	Waters Index Number	Name	Description	Map Ref. No.	Class	Standards
19	0-158-12 portion as described	Tonawanda Creek	Enters Niagara River from east at Erie-Niagara county line. Mouth to Barge Canal confluence at Pendleton.	2,3	C	C
20	0-158-12 portion as described	Tonawanda Creek	From Barge Canal confluence at Pendleton to dam at East Pembroke.	3,4,8	B	B
21	0-158-12 portion as described	Tonawanda Creek	From dam at East Pembroke to water supply dam at Batavia.	4,5,8,9	C	C
22	0-158-12 portion as described	Tonwanda Creek	From water supply dam at Batavia to source.	8,9,12	A	A
23	0-158-12-1 portion as described	Ellicott Creek	Enters Tonawanda Creek from south-east approximately 0.3 mile from mouth. Mouth to Erie Railroad crossing.	2	D	D
24	0-158-12-1 portion as described	Ellicott Creek	From Erie Railroad crossing to trib. 1 which is in line with a continuation of Mill Creek Road, City of Tonawanda.	2	C	C
25	0-158-12-1 portion as described including P 4a	Ellicott Creek	From trib. 1 which is in line with a continuation of Mill Creek Road, City of Tonawanda to trib. 17 which is approximately 0.5 mile west of western boundary, Village of Alden.	2,6,7	B	B

REFERENCE 7

GEOLOGY

OF

ERIE COUNTY

New York

By

Edward J. Buehler

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State University of New York at Buffalo

and

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Professor of Geology
State University College at Buffalo

BUFFALO SOCIETY OF NATURAL SCIENCES
BULLETIN

Vol. 21. No. 3 Buffalo, 1963

Detailed Stratigraphy and Paleontology

Silurian System

UPPER SILURIAN (CAYUGAN) SERIES

SALINA GROUP

TYPE REFERENCE: Dana (1863, pp. 246-251).

TYPE LOCALITY: Vicinity of Syracuse, New York, formerly known as Salina.

TERMINOLOGY: Approximately the same as the "Onondaga salt group" of early writers. The Salina Group included three formations: the Vernon Shale (oldest), Syracuse Formation, and Camillus Shale. Only the Camillus is seen in western New York. See Fisher (1960).

AGE: Late Silurian (Cayugan).

THICKNESS: In western New York, the Salina Group is about 400 feet thick, but this unit increases considerably in thickness to the east.

LITHOLOGY: The Salina Group in Erie County is largely shale but considerable amounts of gypsum and anhydrite are also present.

PROMINENT OUTCROPS: Outcrops are rare in Erie County. The uppermost portion can be seen at the base of Akron Falls.

CONTACTS: The lower contact is not exposed near Erie County and the contact with the overlying Bertie Formation is difficult to define precisely.

ECONOMIC GEOLOGY: The Camillus Shale of the Salina Group is a source of gypsum and anhydrite in Erie County. To the east, the Salina Group also includes salt beds.

PALEONTOLOGY: No fossils have been reported from the Salina Group of Erie County.

CAMILLUS SHALE

TYPE REFERENCE: Clarke (1903, pp. 18-19).

TYPE LOCALITY: Village of Camillus, Onondaga County, New York; Baldwinsville quadrangle.

TERMINOLOGY: See Alling (1928) and Leutze (1954).

AGE AND CORRELATION: Late Silurian (Cayugan). Equivalent to lower part of Brayman Shale in eastern New York.

THICKNESS: Approximately 400 feet.

LITHOLOGY: The Camillus varies from thin-bedded shale to massive mudstone. The color is gray or brownish gray but some beds show a tinge of red or green. According to Alling (1928, pp. 24-26), the Camillus at the type locality is a massive gray magnesian-lime mudrock. Gypsum and anhydrite are present in Erie County.

It is probable that during much of Late Silurian time the northeastern United States was a desert basin. Salt and gypsum were precipitated by evaporation of the shrinking inland Salina Sea.

PROMINENT OUTCROPS: The Camillus Shale extends across Erie County in an east-west trending belt approximately six to eight miles wide. This belt is largely lowland in which outcrops are rare. The top of the formation is exposed at Akron Falls (pl. 6, upper). A small section can be seen in the valley of Murder Creek north of Akron. Houghton (1914, pp. 7-8), Luther (1906, p. 8) and others report outcrops on Grand Island but these could not be located.

CONTACTS: The lower contact of the Camillus Shale is not exposed near Erie County. The contact with the overlying Bertie Formation is difficult to define.

ECONOMIC GEOLOGY: The Camillus Shale is an important source of gypsum. National Gypsum Company has a mine at Clarence Center, Certain-Teed Company at Akron, and United States Gypsum Company at Oakfield in neighboring Genesee County.

PALEONTOLOGY: No fossils have been reported from the Camillus Shale of Erie County. Apparently animal life could not survive in the "dead sea" environment of the time.

BERTIE FORMATION

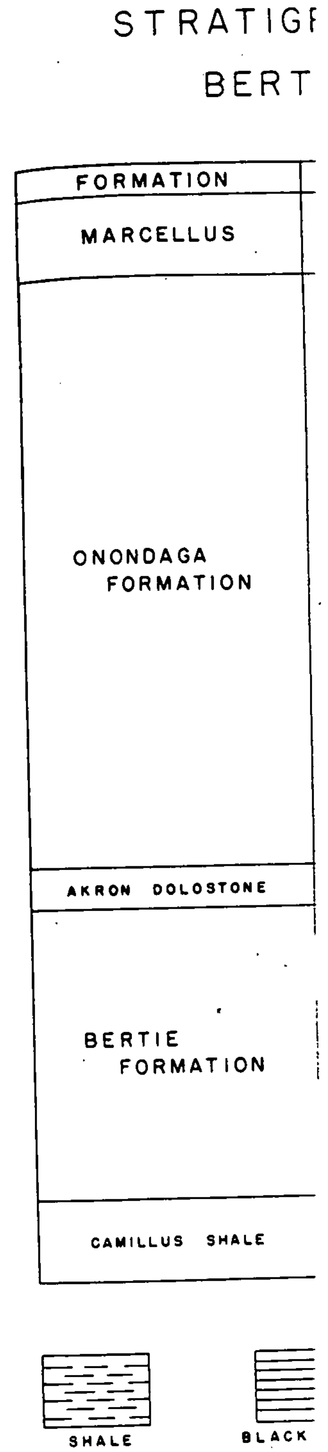
TYPE REFERENCE: Chapman (1864, p. 190).

TYPE LOCALITY: Bertie township, Welland County, Ontario, Canada.

TERMINOLOGY: This unit is commonly called the Bertie Waterlime. Chadwick (1917) divided the Bertie into four units: the Oatka (oldest), Falkirk, Scajaquada, and Williamsville. The Williamsville Member was formerly called the "Buffalo cement bed" (see fig. 4).

AGE AND CORRELATION: Late Silurian (Cayugan). Equivalent to upper part of Brayman Shale in eastern New York.

THICKNESS: 50 - 60 feet total. Approximate figures for the members are Oatka 20 feet, Falkirk 20 feet, Scajaquada 8 feet, and Williamsville 6 feet.



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STRATIGRAPHIC COLUMN
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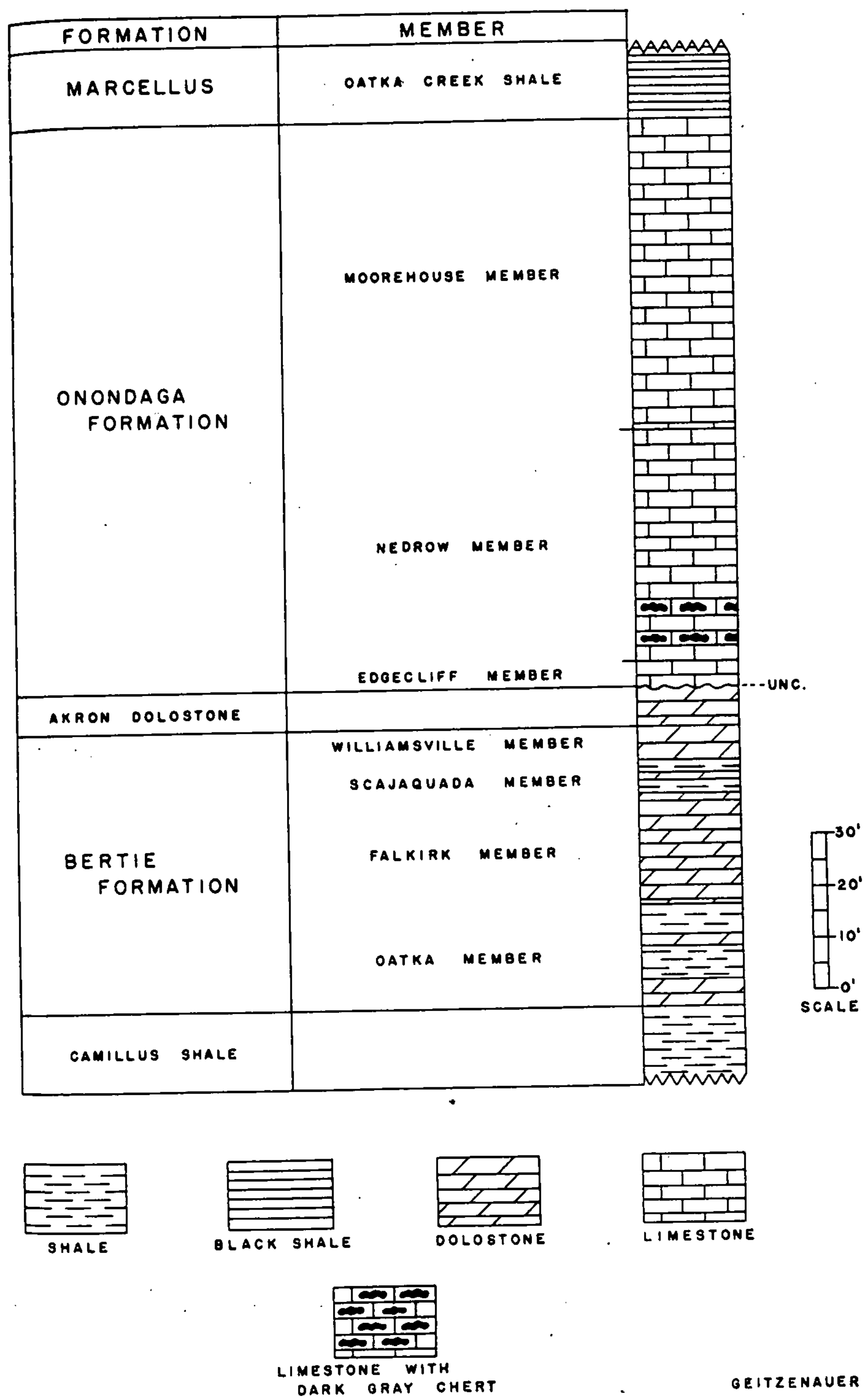


Fig. 5

REFERENCE 8

[redacted]

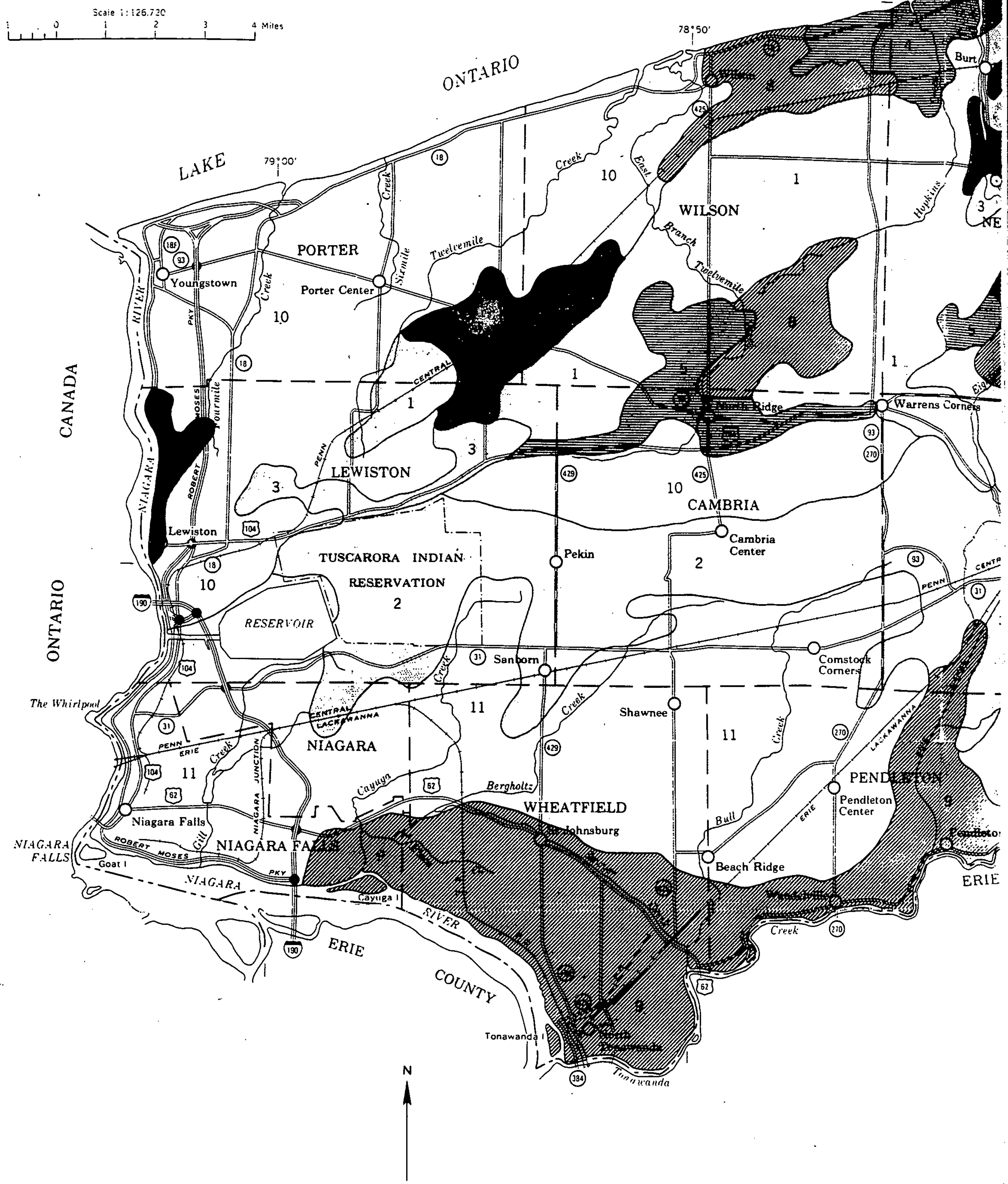
SOIL SURVEY OF
Niagara County, New York

United States Department of Agriculture
Soil Conservation Service
In cooperation with
Cornell University Agricultural Experiment Station

Issued October 1972

GENERAL SOIL MAP

NIAGARA COUNTY, NEW YORK



SOIL ASSOCIATIONS

AREAS DOMINATED BY SOILS FORMED IN GLACIAL TILL

1 — Appleton-Hilton-Sun association: Deep, moderately well drained to very poorly drained soils having a medium-textured subsoil

2 — Hilton-Ovid-Ontario association: Deep, well-drained to somewhat poorly drained soils having a medium-textured or moderately fine textured subsoil

3 — Lockport-Ovid association: Moderately deep and deep, somewhat poorly drained soils having a fine textured or moderately fine textured subsoil

AREAS DOMINATED BY SOILS FORMED IN GRAVELLY GLACIAL OUTWASH OR IN BEACH AND BAR DEPOSITS

Howard-Arkport-Phelps association: Deep, somewhat excessively drained to moderately well drained soils having a medium-textured to moderately coarse textured subsoil, over gravel and sand

Otisville-Altmar-Fredon-Stafford association: Deep, excessively drained to poorly drained soils having a dominantly medium-textured to coarse-textured subsoil, over gravel and sand

AREAS DOMINATED BY SOILS FORMED IN LAKE-LAID SANDS

Minoa-Galen-Elnora association: Deep, somewhat poorly drained and moderately well drained soils having a medium-textured, moderately coarse textured, or coarse textured subsoil, over fine and very fine sand

Claverack-Cosad-Elnora association: Deep, moderately well drained and somewhat poorly drained soils having a coarse-textured subsoil, over clay or fine sand

AREAS DOMINATED BY SOILS FORMED IN LAKE-LAID SILTS AND VERY FINE SANDS

Niagara-Collamer association: Deep, somewhat poorly drained and moderately well drained soils having a medium-textured to moderately fine textured subsoil

Canandaigua-Raynham-Rhinebeck association: Deep, somewhat poorly drained to very poorly drained soils having a dominantly medium-textured to fine-textured subsoil

AREAS DOMINATED BY SOILS FORMED IN LAKE-LAID CLAYS AND SILTS

10 — Rhinebeck-Ovid-Madalin association: Deep, somewhat poorly drained to very poorly drained soils having a fine textured or moderately fine textured subsoil that is dominantly brown or olive in color

11 — Odessa-Lakemont-Ovid association: Deep, somewhat poorly drained to very poorly drained soils having a fine textured or moderately fine textured subsoil that is dominantly reddish in color

Brockport silt loam, 0 to 4 percent slopes (BrA).--Individual areas of this soil range from as small as 5 acres to more than 100 acres in size. They are roughly oblong or circular, and they follow the bedding planes of the underlying rock.

Included with this soil in mapping are some small areas of better drained soils on slight rises or knolls. Also included are small areas of Brockport soils that have slopes of more than 4 percent. Some areas have a gravelly glacial till smear that is less than 20 inches thick over the weathered shale. Also included, where the underlying shale is at a depth of more than 40 inches, are small areas of Rhinebeck or Madalin soils.

Unless drained, this soil is better suited to hay, small grains, pasture, and trees than to cultivated crops. Where this soil is used for cultivated crops, adequate surface drainage needs to be provided along with good cultural practices that maintain soil tilth. Irrigation or tile drainage generally is not suitable for this soil. (Capability unit IIIw-2; woodland suitability group 3w1)

Canandaigua Series

The Canandaigua series consists of deep, poorly drained and very poorly drained, medium-textured to moderately fine textured soils. These soils formed in lacustrine deposits of silt, very fine sand, and clay. Canandaigua soils are level or depressional and occupy areas where water ponds or runs off very slowly. Also, runoff is received from surrounding areas.

A representative profile of a Canandaigua soil has a dark-gray, neutral silty clay loam surface layer about 7 inches thick. It is underlain by an olive-gray, firm, neutral silty clay loam subsoil that is distinctly mottled. The subsoil extends to a depth of 24 inches. The substratum is calcareous. It is firm, platy, grayish-brown silt loam that is prominently mottled in the upper part. Below a depth of 35 inches, the substratum is fine sand, silt, and very thin lenses of clay.

Canandaigua soils, unless drained artificially, have water standing at the surface throughout spring and after each rainy period. The downward percolation of water is restricted by the high water table, as is the depth of rooting. In spring, roots are confined to a depth of about 6 inches. As the season progresses, the rooting depth extends to about 15 inches below the surface. The available moisture capacity is moderate to low.

Representative profile of Canandaigua silty clay loam (0 to 2 percent slopes), 30 feet south of Tonawanda Creek Road and five-eighths mile west of Riddle Road:

Ap--0 to 7 inches, very dark-gray (10YR 3/1) silty clay loam, very dark grayish-brown (2.5Y 3/2) when rubbed; moderate, fine and very fine, subangular blocky structure; friable; abundant fine roots; neutral; abrupt, smooth boundary. 6 to 9 inches thick.

B2g--7 to 24 inches, olive-gray (5Y 5/2) silty clay loam; gray (5Y 5/1) ped coats and common, medium and coarse, prominent, yellowish-brown (10YR 5/6) mottles in ped interiors; weak, coarse, prismatic structure breaking to moderate, medium and coarse, blocky structure; firm; plentiful roots in upper part and few fine roots in lower part; neutral; clear, wavy boundary. 12 to 21 inches thick.

C1g--24 to 35 inches, grayish-brown (2.5Y 5/2) silt loam; gray (5Y 5/1) ped coats and many (about 30 percent), fine and medium, prominent, yellowish-brown (10YR 5/6) mottles in ped interiors; few, white lime streaks; weak, fine, medium and thick, platy structure; firm; very few roots; calcareous; clear, wavy boundary. 6 to 15 inches thick.

IIC2--35 to 50 inches, light olive-brown (2.5Y 5/4), stratified or varved loamy fine sand, silt, and very thin clay lenses; lime streaks and lime concretions or nodules; many, coarse; distinct, yellowish-brown (10YR 5/6) mottles; very weak, platy structure; friable; calcareous.

The solum ranges from 20 to 30 inches in thickness, and depth to carbonates ranges from 18 to 40 inches. Depth to bedrock is more than 40 inches. To a depth of 30 inches, chroma is 2 or less in 60 percent of the matrix in the B and C horizons. Ped faces in the B and C horizons are 2 or less in chroma.

The Ap horizon ranges from 10YR to 2.5Y in hue, is 2 or 3 in value, and is 1 or 2 in chroma. Thickness of the Ap horizon does not exceed one-third the thickness of the solum. The Ap horizon ranges from silt loam to silty clay loam.

The B horizon ranges from 5YR to 5Y in hue, from 4 to 6 in value, and is 1 or 2 in chroma. It ranges from fine sandy loam to silty clay. The average clay content of the 10- to 40-inch control section is between 18 and 35 percent. The B horizon has moderate or weak, blocky structure that is within weak, coarse, prismatic structure in many places. Common to many, distinct and prominent mottles that have a higher chroma than that described occur in the B and C horizons in some places.

The Canandaigua soils formed in deposits similar to those of the moderately well drained Collamer soils and the somewhat poorly drained Niagara soils. Canandaigua soils are finer textured than Lamson soils and have a coarser textured B horizon than the Lakemont and Madalin soils. Canandaigua soils are wetter and have a finer textured B horizon than the Raynham soils. Canandaigua soils are wetter and have a coarser textured B horizon than Odessa and Rhinebeck soils.

Canandaigua silt loam (0 to 2 percent slopes) (Ca).--This soil occupies areas that receive runoff from adjacent soils. The surface layer of this soil contains less clay than that of the soil having the profile described as representative for the series. This soil occurs in irregularly shaped areas that generally are less than 20 acres in size.

Commonly included areas are spots of better drained Raynham and Rhinebeck soils south of the limestone escarpment. Other common inclusions are finer textured Lakemont and Madalin soils that have drainage similar to that of this soil. In many places north of the limestone escarpment, there are included areas of somewhat poorly drained Appleton and poorly drained Sun soils that formed in glacial till. Areas near U.S. Highway No. 104 (Ridge Road) contain numerous sand lenses in the subsoil and substratum. In some depressional areas and potholes, spots of very poorly drained Canandaigua soils occur and have a mucky surface layer. Other spots of Canandaigua soils have a sandy surface layer.

This soil is not intensively used. Most areas are wooded, idle, or used for pasture. But this soil is well suited to crops, pasture, and trees if it is adequately drained and protected from flooding or from ponding caused by runoff from the surrounding uplands. It is particularly well suited to intensive use for some vegetable and row crops. Undrained areas can be used for pasture if management is good, but most areas cannot be used for other crops. (Capability unit IIIw-3; woodland suitability group 4w1)

Canandaigua silty clay loam (0 to 2 percent slopes) (Cb).--This soil has the profile described as representative for the series. The soil occurs in long, narrow drainageways and basinlike areas in the southern part of the county. Areas range from 10 to 50 acres in size.

Included with this soil in mapping are small areas of better drained Rhinebeck and Raynham soils. Also included are small areas of Lamson, Lakemont, and Madalin soils.

This soil is not used intensively. Most areas are wooded, idle, or in pasture. If this soil is adequately drained and fertilized, it is suited to crops. Because of the moderately fine textured surface layer, this soil puddles easily if tilled when wet. It crusts or forms hard clods as it dries. Maintaining good tilth is difficult. (Capability unit IIIw-3; woodland suitability group 4w1)

Cayuga Series

The Cayuga series consists of deep, moderately well drained to well drained, medium-textured soils. These soils developed in lacustrine silt and clay that is 20 to 36 inches thick over loamy calcareous glacial till. They are nearly level to moderately sloping or undulating and occur in areas that are adjacent to or within old glacial lakebeds. Cayuga soils occur throughout the county, mainly south of the Lockport limestone formation.

A representative Cayuga soil has a dark grayish-brown silt loam surface layer 8 inches thick. The next layer is reddish-brown silty clay loam 3 inches thick. The subsoil occurs at a depth of 11 inches and is firm, reddish-brown silty clay 14 inches thick. It contains a few coarse fragments and is plastic when wet and hard when dry. The reddish-brown gravelly loam substratum is at a depth of about 25 inches and has a few large stones. It is firm and calcareous.

These soils have a seasonal high water table tha rises to within 18 inches of the surface. The wate table is perched above the slowly permeable subsoil and underlying glacial till. In some places during extended rainy periods, water stays for a few days in small depressions.

Roots are confined mainly to the uppermost 25 inches of the Cayuga soils. The available moisture capacity is high. Because of the clay in the surface layer and subsoil, care must be taken to maintain good tilth. If these soils are plowed when wet, they become compact and cloddy.

Representative profile of a Cayuga silt loam having slopes of 0 to 2 percent, in a hayfield 1,000 feet west of the junction of Packard and Lock port Roads and 125 feet north of Lockport Road:

Ap--0 to 8 inches, dark grayish-brown (10YR 4/2) heavy silt loam; moderate, fine, and medium, subangular blocky structure; friable; abundan roots; neutral; abrupt, smooth boundary. 6 t 10 inches thick.

B&A--8 to 11 inches, reddish-brown (5YR 4/3) silty clay loam; moderate, fine to medium, subangular blocky structure within weak, coarse, prismatic structure; firm; plentiful fine roots; common root and worm channels; patchy clay films on ped surfaces; a few fragments larger than 2 millimeters; thin coats of brown (10YR 5/3) loam on blocks and prisms; neutral; clear, wavy boundary. 2 to 6 inches thick.

B2t--11 to 25 inches, reddish-brown (5YR 4/3) silty clay; moderate, fine to medium, subangular blocky structure within weak, coarse, prismatic structure; firm; plentiful fine roots; a few fragments larger than 2 millimeters; thin clay films on most ped surfaces; thick films in the pores; neutral; abrupt, wavy boundary. 8 to 20 inches thick.

IIC--25 to 50 inches, reddish-brown (5YR 4/4) gravelly loam of which about 25 percent is fragments larger than 2 millimeters; weak, thick, platy structure; firm; very few fine roots; calcareous.

The solum ranges in thickness from 20 to 36 inches, and this is the same as the depth to carbonates. Content of coarse fragments in the solum ranges from 0 to about 10 percent. The IIC horizor has a content of coarse fragments ranging from 5 tc 35 percent. The solum is neutral to medium acid, and the IIC horizon is calcareous.

The Ap horizon has a hue of 10YR or 7.5YR, value of 3 or 4, and chroma of 2 or 3. When the Ap horizon is dry, values are more than 5.5. Where the Ap horizon is thin, there is an A2 horizon in some places.

for best crop growth. (Capability unit IIw-2; woodland suitability group 2o1)

Raynham Series

The Raynham series consists of deep, somewhat poorly drained, medium-textured soils. These soils formed in dominantly calcareous, silty sediments that were deposited in glacial Lake Tonawanda. They are level to gently sloping and occur within the glacial lake area. In Niagara County these soils are within 3 miles of Tonawanda Creek, mainly near the city of North Tonawanda. Slopes range from 0 to 6 percent.

A representative profile of a Raynham soil has a dark grayish-brown silt loam surface layer. It is medium acid and 8 inches thick. The upper part of the subsoil is friable, light olive-brown silt loam that is distinctly mottled. It contains pockets of heavy silt loam, is slightly acid, and extends to a depth of 25 inches. The lower part of the subsoil consists of very friable, light olive-brown loamy very fine sand to very fine sandy loam. It contains many distinct mottles, is neutral, and extends to a depth of 38 inches. The calcareous substratum consists of friable, light olive-brown very fine sandy loam that has discontinuous pockets of light-gray and light brownish-gray silt and very fine sand.

The seasonal high water table rises to within 1 foot of the surface early in spring and in other excessively wet periods. A few areas are ponded for short periods. Roots are confined to the surface layer early in spring. As the growing season progresses and the water table falls, roots extend to the water table or calcareous substratum, whichever is shallower. Most roots, however, are confined to the upper 20 inches. The available moisture capacity is moderate.

If drainage is adequate, these soils are suited to most crops grown in the county. They are well suited to some vegetables.

Representative profile of Raynham silt loam, 0 to 2 percent slopes, in the town of Wheatfield, about one-fourth mile west of Tonawanda Creek Road and 50 feet north of Walck Road; idle field:

Ap--0 to 8 inches, dark grayish-brown (10YR 4/2) silt loam; moderate, fine and medium, granular structure; friable; abundant fine roots; medium acid; abrupt, smooth boundary. 6 to 9 inches thick.

B2--8 to 25 inches, light olive-brown (2.5Y 5/4) silt loam that has a few pockets of heavy silt loam; many (about 30 percent), fine, distinct, grayish-brown (2.5Y 5/2) mottles and coarse, distinct, yellowish-brown (10YR 5/6) mottles; moderate, thin, platy structure within weak, medium, subangular blocky structure; friable; grayish-brown (10YR 5/2) ped faces; abundant fine roots in upper part, plentiful fine roots in lower part; slightly acid; abrupt, smooth boundary. 12 to 20 inches thick.

B3--25 to 38 inches, light olive-brown (2.5Y 5/4) loamy very fine sand to very sandy loam; many (about 30 percent), coarse, distinct, yellowish-brown (10YR 5/6) and faint, grayish-brown (2.5Y 5/2) mottles; very weak, thin, platy structure; very friable; grayish brown (2.5Y 5/2) ped coats; few fine roots; neutral; clear, wavy boundary. 6 to 18 inches thick.

C--38 to 50 inches, light olive-brown (2.5Y 5/4) very fine sandy loam and light-gray (10YR 6/1) and light brownish-gray (10YR 6/2) discontinuous layers of silt and fine sand; many (about 35 percent), coarse, prominent, reddish-yellow (7.5YR 6/6) and faint, grayish-brown (2.5Y 5/2) mottles; very weak, medium, platy structure; friable; very few roots; calcareous.

Thickness of the solum ranges from 25 to 40 inches and corresponds to the depth to carbonates. The profile is generally free of coarse fragments, but in a few places a few pebbles are on the surface or in the profile. Texture ranges from loamy very fine sand to silt loam in the solum and from very fine sand to silt loam in the C horizon. Between depths of 10 to 40 inches, the soil material is less than 18 percent clay and less than 15 percent sand coarser than very fine sand. The solum ranges from medium acid to mildly alkaline.

The Ap horizon is 10YR in hue and 2 in chroma. Value is 4 or 3 when the Ap horizon is moist and is more than 5.5 when this horizon is dry.

The matrix of the B horizon is mainly 10YR and 2.5Y in hue, but the range is from 5Y to 7.5YR. Value of the matrix is 4 or 5, and chromas range from 2 to 4. The mottles in ped interiors normally have both high and low chromas. Not more than 60 percent of the B horizon has a chroma of 2. Ped faces have dominant chromas of 2 or less and are generally free of mottles. The B horizon ranges from loamy very fine sand to heavy silt loam. The finest texture generally is directly below the Ap horizon, and texture is coarser as depth increases.

The C horizon is stratified silt and very fine sand in many places. It normally contains less clay than the B horizon. Colors are in the same range as for the B horizon, except that the C horizon has pockets or centers in which mottles have a chroma of 1.

The Raynham soils in this county are calcareous nearer the surface than the defined range for the series. This difference does not alter the usefulness and behavior of the Raynham soils in this county.

The Raynham soils are better drained than the Canandaigua soils. The B horizon in the Raynham soils is coarser textured than that in the Rhinebeck soils. Raynham soils are similar to Minoa soils in drainage but have a higher proportion of silt and very fine sand. They lack the Bt horizon of Niagara soils.

Raynham silt loam, 0 to 2 percent slopes (RaA).--This soil has the profile described as representative for the series. It is in areas that were occupied by glacial Lake Tonawanda. It occurs on slightly higher landscapes in close association with poorly drained Canandaigua soils. Areas are generally more than 10 acres in size, but some are more than 100 acres. Areas generally are irregular in shape, but some are oblong and parallel Tonawanda Creek.

Most commonly included with this soil in mapping are areas of poorly drained Canandaigua soils. Also included are areas of coarser textured Minoa soils and finer textured Rhinebeck soils. Other inclusions, near the southern boundary of the Raynham soils, are areas where the silty sediments are underlain by reddish clay. In these areas there are inclusions of Rhinebeck soils, thick surface variant, in many places.

If undrained, this soil is suited to hay, pasture, trees, or other uses of low intensity. If adequately drained and fertilized, the soil can be used for most of the cultivated crops grown in the county. It is excellent for growing some kinds of vegetables. Suitability for fruit is questionable because of the geographic location of this soil. Drainage outlets may be difficult to establish. Also, maintaining good tilth is difficult if this soil is used intensively. (Capability unit IIIw-1; woodland suitability group 3w2)

Raynham silt loam, 2 to 6 percent slopes (RaB).--This soil has a profile similar to that described as representative for the series, except that the surface layer is thinner or finer textured in some places. This soil is in the same general areas as Raynham silt loam, 0 to 2 percent slopes. It normally is near drainageways where erosion is starting to dissect the landscape. Areas range from about 5 to 25 acres in size. They are in fairly narrow strips along drainageways.

Commonly included with this soil in mapping are Canandaigua or Wayland soils in the lowest part of drainageways. At higher elevations areas of Galen or Collamer soils are included in some places. Other inclusions are areas of Niagara soils. The largest inclusion is of the nearly level Raynham soil.

This gently sloping soil has about the same uses and needs about the same management as the nearly level Raynham soil, though in most places this gently sloping soil is more difficult to manage because of slope and drainageways. Some erosion control measures are needed in intensively cultivated areas. Drainage may be easier on this soil because most areas have adequate outlets. (Capability unit IIIw-5; woodland suitability group 3w2)

Rhinebeck Series

The Rhinebeck series consists of deep, somewhat poorly drained, moderately fine textured and medium-textured soils. These soils formed in calcareous lacustrine deposits of silt and clay. They are nearly level to gently sloping and occur in the basins of old glacial lakes. Slopes range from 0 to 6 percent.

A representative profile of a Rhinebeck soil has a very dark grayish brown silt loam surface layer that is neutral and 8 inches thick. This layer is underlain by friable, grayish-brown silt loam 2 inches thick. It is neutral and contains many, prominent mottles. The subsoil is between depths of 10 and 23 inches. It consists of firm, plastic, dark grayish-brown heavy silty clay loam that is mottled and neutral. Next is a very firm, calcareous substratum that consists of brown silty clay loam and thin lenses of silt. It has many mottles and some thin, pinkish-white streaks of lime.

The seasonal high water table rises to within 1 foot of the surface early in spring and in excessively wet periods. Some areas are ponded for short periods. The water table is generally perched above the slowly permeable subsoil and substratum.

Roots are restricted to the dark plow layer early in spring. As the season progresses and the water table drops, roots can extend downward to the calcareous substratum. Most roots, however, are confined to the uppermost 20 inches of soil. The available moisture capacity is moderate.

Representative profile of Rhinebeck silt loam, 0 to 2 percent slopes, in the town of Porter, 1 mile west of Ransomville Road and 800 yards south of State Route 18 (Lake Road); cultivated area:

Ap--0 to 8 inches, very dark grayish brown (10YR 3/2) silt loam, dark grayish brown (10YR 4/2) when rubbed; weak, medium and fine, granular structure; very friable; abundant, fine roots; neutral; abrupt, smooth boundary. 7 to 10 inches thick.

A2--8 to 10 inches, grayish-brown (2.5Y 5/2) silt loam; many (about 50 percent), fine and medium, prominent, strong-brown (7.5YR 5/6) mottles; moderate, medium, subangular blocky structure; friable; abundant fine roots; neutral; clear, broken boundary. 0 to 4 inches thick.

B2t--10 to 23 inches, dark grayish-brown (10YR 4/2) heavy silty clay loam; many (about 50 percent), fine, faint, dark yellowish-brown (10YR 4/4) mottles; moderate, fine, subangular blocky structure within moderate, coarse, prismatic structure; firm, plastic; dark-gray (10YR 4/1) coats on prism faces; clay films are nearly continuous on ped faces and fairly thick in pores; material from A2 horizon interfingers around peds in the upper part of B2t horizon; neutral; plentiful fine roots; clear, wavy boundary. 4 to 26 inches thick.

C--23 to 60 inches, brown (7.5YR 5/2) silty clay loam and thin lenses of silt; many (about 50 percent), fine, distinct, strong-brown (7.5YR 5/6) and dark yellowish-brown (10YR 4/4) mottles; moderate, medium and thick, platy structure; strong, coarse, prismatic structure in the upper part; very firm; gray (5YR 5/1) and greenish-gray (5GY 5/1) coats on prism faces; thin, pinkish-white (7.5YR 8/2) streaks and patches of lime;

roots few in upper part and decrease to none with depth; calcareous.

Thickness of the solum ranges from 20 to 40 inches and corresponds well with depth to carbonates. The solum is neutral to slightly acid. Coarse fragments are typically absent, but up to 5 percent may occur in any horizon. Bedrock is at a depth of more than 40 inches and typically is deeper than 6 feet.

The Ap horizon is 10YR or 2.5Y in hue and 3 or 2 in chroma. Value is 4 or 3 when the Ap horizon is moist, but is more than 5.5 when the horizon is dry and is 4 or more when the material is rubbed. Texture ranges from silt loam to silty clay loam. The A2 horizon is absent in some places. If present, the A2 horizon ranges from 10YR to 5Y in hue, is 5 or 6 in value, and is 2 or 3 in chroma. Texture ranges from silt loam to silty clay loam.

The Bt horizon has hues ranging from 10YR to 5Y, value of 4 or 5, and chroma ranging from 2 to 4. A chroma of 2 does not dominate more than 59 percent of the Bt horizon. Ped coats and prism faces have a dominant chroma of 2 or less. Texture ranges from silty clay loam to clay. The average clay content is between 34 and 55 percent. Interfingering of A2 material into the upper part of the Bt horizon is interpreted as degradation.

The C horizon ranges from 7.5YR to 5Y in hue, is 4 or 5 in value, and ranges from 1 to 3 in chroma. This horizon ranges from silt loam to silty clay, but it contains strata of sand, silt, or clay in some places. The C horizon typically has thick, platy structure that was imparted by the varved lake deposits.

The Rhinebeck soils formed in deposits similar to those of the moderately well drained to well drained Hudson soils and the poorly drained to very poorly drained Madalin soils. Rhinebeck soils are similar to Churchville soils in texture and drainage but lack the underlying glacial till that is characteristic of Churchville soils. Rhinebeck soils are wetter than Cayuga soils and do not have glacial till within a depth of 3 1/2 feet. The Bt horizon of Rhinebeck soils is finer textured than that of the Niagara soils. Rhinebeck soils have a Bt horizon, but Raynham soils do not. They are better drained than Canandaigua soils, which do not have a Bt horizon.

Rhinebeck silt loam, 0 to 2 percent slopes (RbA).--This soil has the profile described as representative for the series. It occupies broad, nearly level areas within glacial lake plains. Areas are fairly large in most places and are more than 100 acres in size. The areas are roughly oblong in many places. Most of the acreage of this soil is north of the limestone escarpment. Much of it is in the towns of Porter, Wilson, and Somerset within 5 miles of Lake Ontario.

Most commonly included with this soil in mapping are areas of Niagara soils that contain less clay in the subsoil than this Rhinebeck soil. Also included are areas of Hudson or Collamer soils on knolls and at higher elevations and of poorly drained Madalin or Canandaigua soils in depressions and along drainageways. Cayuga or Churchville soils are included in areas where the lacustrine deposits are moderately deep over glacial till. The Ovid soils are included where the lacustrine deposits have been mixed with glacial till or glacial beach deposits. Other inclusions are sand or gravel smears, which are normally indicated on the soil map by the appropriate symbol.

This soil is suited to most crops grown in the county if drainage is adequate. Undrained areas are better suited to some grains, hay, pasture, trees, or wildlife than to row crops. Because the soil is only a short distance from Lake Ontario, this soil is used intensively for fruit, especially for apples, pears, and grapes. Alfalfa generally does well because of the high lime content of the soils.

Because this soil is plastic when wet and is cloddy, hard, or crusty when dry, cultivation at the proper moisture content is needed. Machinery bogs down if used when this soil is wet. Seed germination is generally poor if this soil is cultivated and planted when dry. Maintenance of good tilth is difficult in intensively cultivated areas. Runoff is slow because this soil is nearly level. (Capability unit IIIw-2; woodland suitability group 3w1)

Rhinebeck silt loam, 2 to 6 percent slopes (RbB).--This soil has a profile similar to that described as representative for the series, except that the surface layer is likely to be thinner or finer textured. This soil is in the same general areas as the nearly level Rhinebeck silt loam. It occupies the slope breaks and, in many places, is along drainageways. Areas are generally small but in some places are as much as 50 acres or more in size. They are roughly oblong in many places.

Most commonly included with this soil in mapping are areas of Hudson or Collamer soils on knolls. Madaline or Canandaigua soils are included in depressions or in the lowest parts of the drainageways. Also included, in some places, are silty Niagara soils. Other inclusions are of Cayuga, Churchville, and other soils that are underlain by glacial till. In a few included areas of Cazenovia or Ovid soils, material has been mixed with glacial till or glacial beach deposits. Some included areas are severely eroded. Areas of sand or gravel smears are normally indicated on the soil map by the appropriate symbols.

This soil is suited to about the same use and requires about the same management as the nearly level Rhinebeck silt loam, but drainage is normally easier to establish on this soil because it is more sloping. Erosion is a hazard in some places, especially if this soil is intensively cultivated. Runoff is moderate to moderately rapid. (Capability unit IIIw-5; woodland suitability group 3w1)

Rhinebeck silty clay loam, sandy substratum, 0 to 2 percent slopes (RhA).--This soil has a profile similar to that described as representative for the series, but it has a finer textured surface layer and a coarser textured substratum. Most profiles of this soil are free of coarse fragments, but the profile described as representative has some fragment in the surface layer or in layers under it.

This soil occurs in the southern part of Niagara County, generally within 3 miles of Tonawanda Creek. It is in broad, flat areas that were occupied by glacial Lake Tonawanda. Areas are generally large, some more than 500 acres in size. They are normally roughly oblong and parallel to Tonawanda Creek.

Most commonly included with this soil in mapping are areas of silty Raynham soils and wetter Canandaigua soils. A few areas have inclusions of Rhinebeck soils, thick surface variant. Included areas of Madalin or Canandaigua soils are in wet spots or along drainageways. In some included areas, the fine-textured surface deposit is less than 20 inches thick. Other inclusions have sand layers above a depth of 40 inches. Many included areas have a silt loam surface layer rather than one of silty clay loam.

Undrained areas of this soil are suited to some grains, hay, pasture, trees, or wildlife. If drainage is adequate, most cultivated crops can be grown, but this soil is not suited to most fruit crops, because of its geographic location. Because of the moderately fine textured surface layer, this soil is not suited to most vegetable crops. It needs to be cultivated at the proper moisture content. If this soil is plowed and cultivated when wet, hard clods or crusty surfaces form. Seed germination is generally poor if seeds are planted when this soil is too dry. Some areas are ponded early in spring and in excessively wet periods. Permeability is moderately slow in the surface layer and slow in the subsoil. Runoff is slow because this soil is nearly level. (Capability unit IIIw-2; woodland suitability group 3w1)

<u>Rhinebeck silty clay loam, sandy substratum, 2 to 6 percent slopes</u> (RhB).--This soil has a profile similar to that described as representative for the series, except that the surface layer is finer textured and a coarser textured substratum is below a depth of 40 inches. This soil is in the southern part of Niagara County, normally within 2 miles of Tonawanda Creek. It occurs along drainageways and other areas that were occupied by glacial Lake Tonawanda. Areas are generally less than 20 acres in size. They normally are long narrow strips bordering drainageways.

Most commonly included with this soil in mapping are poorly drained Wayland, Madalin, or Canandaigua soils in the lowest part of the drainageways. Other large inclusions are of the nearly level Rhinebeck soil.

In undrained areas this gently sloping soil is suited to some grains, hay, pasture, trees, or wildlife. If drainage is adequate, most cultivated crops can be grown. Because of its geographic location, this soil is not well suited to most fruit crops. Because the surface layer is moderately fine textured, vegetable crops do not grow well. If this soil is plowed and cultivated when wet, hard clods or crusty surfaces form. Seed germination is generally poor if this soil is planted when too dry. The hazard of erosion is serious if the soil is cultivated and not protected. (Capability unit IIIw-5; woodland suitability group 3w1)

<u>Rhinebeck Series, Thick Surface Variant</u>

The Rhinebeck series, thick surface variant, consists of deep, somewhat poorly drained, medium-textured soils. These soils formed in lake deposits in which the dominant material is silt to a depth of 26 to 40 inches. The upper part of these soils is similar to that of Raynham soils, but the lower part has a high clay content similar to that of the Rhinebeck soils.

Soils of the Rhinebeck series, thick surface variant, are nearly level and occur in areas that were occupied by postglacial lakes. In Niagara County, there are two major areas. One is just south of the village of Bergholtz, and the other is near Dunnigan Road, south of the city of Lockport. Slopes are less than 3 percent.

A representative profile of a Rhinebeck soil, thick surface variant, has a very dark grayish-brown silt loam surface layer 9 inches thick. The upper part of the subsoil is friable, mottled, light olive-brown silt loam that is neutral. The lower part of the subsoil begins at a depth of 17 inches. It consists of very friable, light olive-brown very fine sandy loam to light silt loam that has many mottles and is neutral. The calcareous substratum is at a depth of 24 inches. It consists of firm, reddish-brown, silty clay streaked with pinkish-gray lime.

The seasonal high water table rises to within a foot of the surface early in spring and in other excessively wet periods. Some areas are ponded for short periods. The water table is generally perched above the slowly permeable, fine-textured lower part of the subsoil. Early in the growing season, roots are confined to the surface layer. As the growing season progresses and the water table is lowered, roots extend downward to the water table or to the calcareous substratum, whichever is deeper. Most roots are confined to the uppermost 20 inches of soil. The available moisture capacity is moderate.

Representative profile of Rhinebeck silt loam, thick surface variant, in the town of Wheatfield, about 350 yards southwest of sharp bend in Sy Road and 1 1/2 miles south of the village of Bergholtz; idle field:

Ap--0 to 9 inches, very dark grayish brown (10YR 3/2) silt loam, light brownish gray (2.5Y 6/2) when dry; moderate, fine and very fine, subangular blocky structure; friable; abundant fine roots; neutral; abrupt, smooth boundary.

B21--9 to 17 inches, light olive-brown (2.5Y 5/4) silt loam; many (about 35 percent), faint, grayish-brown (2.5Y 5/2) and distinct, yellowish-brown (10YR 5/6) mottles; moderate, thin, platy structure within weak, prismatic structure; friable; grayish-brown (2.5Y 5/2) ped faces; some tonguing of Ap material along root and worm channels; abundant fine roots; neutral; gradual, wavy boundary. 6 to 12 inches thick.

B22--17 to 24 inches, light olive-brown (2.5Y 5/4) very fine sandy loam to light silt loam; many (about 50 percent), coarse, faint, grayish-brown (2.5Y 5/2) mottles and coarse, distinct, yellowish-brown (10YR 5/6) mottles; very weak, medium, subangular blocky structure within weak, prismatic structure; very friable; grayish-brown (2.5Y 5/2) ped faces; plentiful fine roots; neutral or calcareous; abrupt, smooth boundary. 5 to 10 inches thick.

IIB23t--24 to 32 inches, reddish-brown (5YR 4/3) silty clay; common, medium, distinct, strong-brown (7.5YR 5/6) mottles; weak, coarse, blocky structure; firm; many, pinkish-gray (5YR 7/2) lime streaks; greenish-gray (5GY 5/1) ped faces in upper part; few roots; calcareous. 8 to 12 inches thick.

Thickness of the solum ranges from 26 to 40 inches and corresponds well with depth to the underlying calcareous, red clay. Coarse fragments are generally absent to a depth of 40 inches. The solum ranges from medium acid to mildly alkaline. Bedrock is at a depth of more than 40 inches and, in most places, is below 6 feet.

The Ap horizon is 10YR or 2.5Y in hue and 1 or 2 in chroma. Value is 3 or 4 when the Ap horizon is moist and is more than 5.5 when it is dry. The Ap horizon is dominantly silt loam, but it ranges from fine sandy loam to light silty clay loam.

The B horizon has hues ranging from 10YR to 5Y, value of 5 or 6, and chroma ranging from 2 to 4. Chroma of 2 or less is not dominant in the matrix but is on the ped faces. The B horizon ranges from loamy very fine sand to heavy silt loam. The clay content is between 5 and 18 percent. The total content of silt and very fine sand is more than 70 percent, and typically is more than 80 percent.

The IIB and IIC horizons range from 10YR to 2.5Y in hue, are 3 to 5 in value, and are 3 or 4 in chroma. Texture ranges from silty clay loam to clay. The average clay content is more than 35 percent.

The Rhinebeck soils, thick surface variant, are similar to the Raynham soils in the upper part but are moderately deep to clayey lake sediments. These soils have a higher silt content in the upper part than normal Rhinebeck soils or Odessa soils. They are better drained and have a higher silt content in the upper part than Lakemont or Madalin soils.

<u>Rhinebeck silt loam, thick surface variant</u> (Rk).--This nearly level soil occurs in the flat intergrade zone between large areas of deep, silty Raynham soils to the south and of deep, clayey soils to the north. Between these large areas, they are in narrow strips in many places. They also occur in small, slightly higher areas surrounded by the poorly drained Lakemont or Madalin soils. Areas range from about 10 to 50 acres in size.

Most commonly included with this soil in mapping are areas of finer textured Odessa, Lakemont, and Madalin soils. These included areas occur where the silty cap is less than 20 inches thick. In a few places there are inclusions of deep, silty Raynham or Canandaigua soils. Inclusions of Rhinebeck or Cosad soils also are in a few areas.

If undrained, this soil is suited to hay, pasture, or trees, or to other uses of low intensity. If adequately drained and fertilized, this soil can be used for most cultivated crops grown in the county. Because of its geographic location, fruit growing is questionable.

Drainage is the most important management need. Suitable outlets are difficult to establish in some places. This soil should be plowed and cultivated at a favorable moisture content. If it is plowed and cultivated when wet, hard clods or crusty surfaces form. Permeability is moderate in the surface layer and moderately slow to slow in the subsoil. Runoff is slow. (Capability unit IIIw-2; woodland suitability group 3w1)

Rock Land, Nearly Level

Rock land, nearly level (RoA) consists of areas that have rock outcrops and very shallow soils over rock. The general rockiness affects areas of this land type more than all other soil characteristics. Exposed stones or rock outcrops generally cover 70 to 80 percent of the surface of this mapping unit. Vegetation is sparse and stunted.

This mapping unit occurs in areas of the limestone escarpment, or it is closely associated with these areas. One fairly large area is just east of the county jail near Sunset Road and Jackson Street. Some areas of deeper soils are covered by stones in most places. A few of these stony areas occur between the villages of Sanborn and Pekin. In these stony areas, the fields have had stones moved and dumped in areas where there was a large boulder or rock outcrops. Small islands of very stony soils are made by this dumping.

Some areas of Rock land, nearly level, can be used for light grazing, but better uses are for recreation and wildlife. The larger areas, such as those near the county jail, could be used for nature trails. Permeability normally is rapid because of the cracks and fractures in the underlying limestone, but in some areas small depressions are ponded early in spring and in excessively wet periods. Runoff is mostly slow.

This mapping unit generally has slopes of less than 5 percent. Most slopes in the larger areas are less than 3 percent. (Capability unit VIIIs-1; woodland suitability group not assigned)

Rock Land, Steep

Rock land, steep (RoF) is similar to Rock land, nearly level, but has slopes of more than 15 percent.

REFERENCE 9

RECRA RESEARCH, INC.
Hazardous Waste And Toxic Substance Control

Sampling and Analysis Report
Schenck Street Site
Lawless Container Corporation

Prepared For: Mr. James Porter
Lawless Container Corporation
51 Robinson Street
North Tonawanda, New York 14120

Prepared By: Recra Research, Inc.
4248 Ridge Lea Road
Amherst, New York 14226

(3C497118, 83-113A)

July 6, 1983

Sampling and Analysis Report
Schenck Street Site

Introduction

Lawless Container Corporation (Lawless) has contemplated the purchase of property located on Schenck Street for purposes of future plant expansion(s). The site, approximately 300 feet by 222 feet, was formerly used for the reclamation of metallics. Prior to actual purchase, Lawless contracted with Recra Research, Inc. (Recra) to evaluate the site relative to any environmental liabilities that could be present based upon the prior activities which had occured on the site. This report presents the results of the above referenced site evaluation.

Program Design

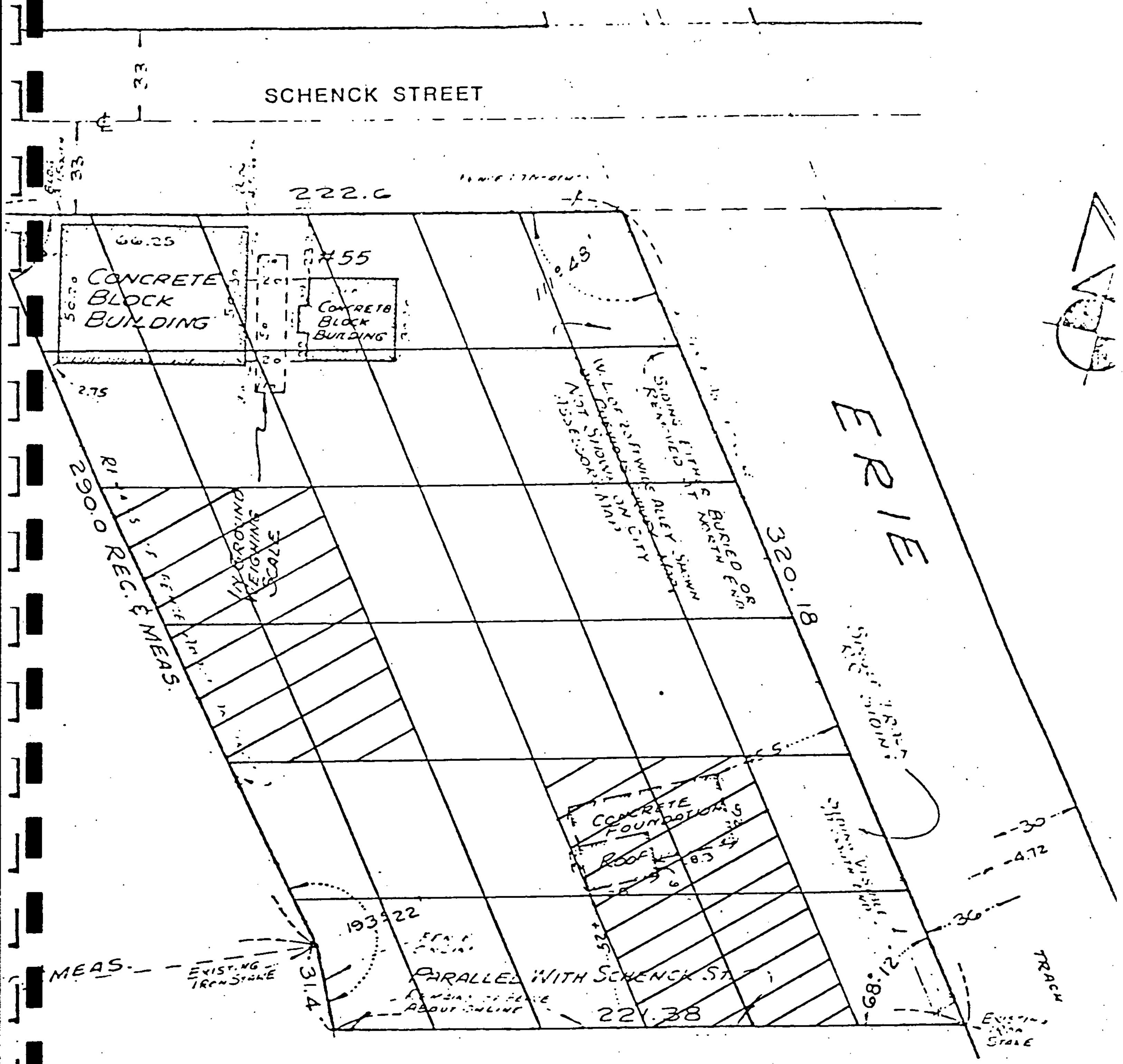
The sampling and analysis program for the Schenck Street site included the collection of surface and near-surface soil samples from two areas selected by Lawless for initial evaluation.

The site was divided into a 36 point grid pattern (each grid being approximately 37' x 50'). The two areas selected by Lawless consisted of four (4) grid points each as illustrated in Figure 1.

Within each of the grid points a soil sample was collected with a bucket-type hand auger. All eight (8) borings locations (B-1 through B-8) included collection of a 0 - 1' sample. Borings B-2 and B-4 also included collection from the 1 - 2' and 2 - 3' intervals. Borings B-7 and B-8 also yielded a 1 - 2' interval sample.

As proposed, the bucket-type auger was cleaned between each sampling to prevent any cross-contamination and all samples were containerized in pre-cleaned glass bottles.

FIGURE 1



SCHENCK STREET SITE

SAMPLE GRID SYSTEM

Samples from B-1 through B-8 were characterized as dry black cindery fill with glass, slag and metal. Both samples B-2 and B-4 from the lower strata (to 3') showed visible contamination. Standing water in B-2 (at a depth of 1.17 feet) may indicate possible groundwater contamination as well. Recra's field report from the above collection made on May 31, 1983 is attached as Appendix A.

Upon return of samples to the New York State Certified Laboratories of Recra, one composite sample was created from each of the two areas of the site being initially evaluated. The first composite was for Borings B-1 through B-4. The second composite was for Borings B-5 through B-8. In both cases only the 0 - 1' samples were used to create the composite samples; other collected soils have been archived for future analysis as deemed appropriate.

Composited surface soil samples were then analyzed for the following parameters:

- Halogenated Organic Scan - Gas Chromatography - Electron Capture Detector
- Volatile Halogenated Organic Scan - Gas Chromatography - Purge and Trap/ Coulson's Detector
- Organic Scan - Gas Chromatography - Flame Ionization Detector
- Polychlorinated Biphenyls (PCB's)
- Phenol (total recoverable)
- Oil and Grease
- Total Metals
  - Lead
  - Zinc
  - Nickel
  - Arsenic
  - Selenium

Copper

Chromium

Cadmium

Mercury

The analytical results for these two (2) composite samples along with the appropriate analytical comments are subsequently reported in Table 1. Quality control data for these analysis are presented in Appendix B.

Discussion

The previously presented analytical results indicates that both composite samples are highly contaminated. Both samples contain levels of all tested metals (except selenium), which are considered to be substantially above background levels. This is particularly true of copper, lead and zinc. Total cyanide was also found to be present in both samples as were phenolics. Oils and grease values support the noted field observations. The volatile organics scan results further substaniate this latter observation. Additionally both volatile and non-volatile halogenated organics including PCB's were found to be present in both composite soil samples.

Although no leachate testing has been completed as a part of this initial program the particle size and type encountered in concert with the high metal levels detected suggest that these soil samples would most probably be considered as hazardous materials under RCRA. The presence of halogenated organics in addition to the PCB's are also reason for concern based upon the inherent mobility of the volatile constituents and upon the overall regulatory agency prespective of these potential types of contaminants. Finally since the PCB's were found to be greater than 50 ppm in both samples, these soils are defined by the Toxic Substances Control Act to be PCB contaminated and would probably require excavation and secure land burial as the mode of ultimate disposal.

Based upon the limited amount of information available at this time, it would appear that the Schenck Street Site would produce a potentially high short and long term environmental impairment liability for Lawless. Additional sampling and analysis as well as cost benefit analysis should be performed however to confirm not only the overall extent of contamination but also the costs for site cleanup versus the value of the property to Lawless in light of their future expansion plans.

ANALYTICAL RESULTS

LAWLESS CONTAINER CORPORATION

Report Date: 6/24/83
Date Received: 5/31/83

PARAMETER	UNITS OF MEASURE	SAMPLE IDENTIFICATION (DATE) BORING COMPOSITE 1-4 (5/31/83)	SAMPLE IDENTIFICATION (DATE) BORING COMPOSITE 5-8 (5/31/83)
Total Arsenic	μg/g dry	90	17
Total Cadmium	μg/g dry	21	35
Total Chromium	μg/g dry	300	470
Total Copper	μg/g dry	2,200	3,500
Total Lead	μg/g dry	7,300	2,100
Total Mercury	μg/g dry	2.5	4.1
Total Nickel	μg/g dry	330	360
Total Selenium	μg/g dry	<0.08	<0.1
Total Zinc	μg/g dry	2,600	9,500
Total Cyanide	μg/g dry	19	5.7
Total Recoverable Phenolics	μg/g dry	36	4.9
Total Recoverable Oil and Grease	μg/g dry	78	54
Volatile Organic Scan (FID)	μg/g dry as Carbon; Benzene Standard	200,000	220,000
Volatile Halogenated Organic Scan (Coulson's)	μg/g dry as Chlorine; Carbon Tetrachloride Standard	350	760
Halogenated Organic Scan (ECD)	μg/g dry as Chlorine; Lindane Standard	32	28
Total Polychlorinated Biphenyls	μg/g dry as Aroclor 1248	32	48
	μg/g dry as Aroclor 1260	23	18
	μg/g dry Total	55	66
Dry Weight	%	89	86

COMMENTS: Refer to text.

FOR RECRA ENVIRONMENTAL LABORATORIES Deborah J. Prario

DATE 6/24/83

RECRA ENVIRONMENTAL LABORATORIES

I.D. #83-481

ANALYTICAL RESULTS

LAWLESS CONTAINER CORPORATION

Report Date: 6/24/83
Date Received: 5/31/83

COMMENTS:

Analyses were performed according to U.S. Environmental Protection Agency methodologies where applicable.

The chromatograms of the samples for PCB analyses were qualitatively screened for the presence of nine PCB mixtures (Aroclors). These included Aroclor 1016, 1221, 1232, 1242, 1248, 1254, 1260, 1262 and 1268.

Organic Scan results are used for screening purposes only and are not designed for qualification or quantification of specific organic compounds. Volatile Organic Scan (FID) results are based upon the response factor and carbon content of Benzene, but do not imply either the presence or absence of the compound itself. Volatile Halogenated Organic Scan (Coulson's) results are based upon the response factor and chlorine content of Carbon Tetrachloride, but do not imply either the presence or absence of the compound itself. Halogenated Organic Scan (ECD) results are based upon the response factor and chlorine content of Lindane, but do not imply either the presence or absence of the compound itself.

Results of the analysis of soils are corrected for moisture content and reported on a dry weight basis.

The values reported as Total Polychlorinated Biphenyls represents the mathematical summation of the positive values reported for the individual Aroclors.

Values reported as less than (<) indicate the working detection limit for the particular sample or parameter.

FOR RECRA ENVIRONMENTAL LABORATORIES Deborah J. Francia

DATE 6/24/83

RECRA ENVIRONMENTAL LABORATORIES
I.D. #83-481

Appendix A

Field Report
Schenck Street Site

MEMO

TO: Robert K. Wyeth, C. James Stellrecht DATE: June 2, 1983

FROM: Jim Stachowski

RE: Field Report, Schenck Street Site
Soil Sampling

PROJECT CODE: 3C497118 CLIENTS NAME: Lawless Container Corp.

CREW: Jeff Wittlinger, Jim Stachowski

DISCUSSION: Arrived on site at 8:30 AM, May 31, 1983. Met with Mr. James Porter and reviewed site for sampling locations. All sampling was performed utilizing bucket auger and completed by 3:30 PM. Listed below are applicable details.

SAMPLING LOCATION	SUBSURFACE CHARACTERISTICS	SAMPLE IDENTIFICATION
Boring 1	Dry black cindery fill with glass, slag, metal, and assorted automotive debris. Refusal at 1.0 ft. below grade.	Sample 1 (0-1')
Boring 2	Dry black cindery fill with assorted glass, metal, and automotive debris to 1.0 ft., over dry tan and gray silty crushed stone fill (becoming wet at approximately 1.0 ft. with an associated oily appearance and odor) to 1.25 ft., over clayey-silt, partly organic, slightly plastic. Strata is blackish gray at top grading to mottled olive green and gray to completion at 3.0 ft. below grade. Standing water in hole at 1.17 ft. at completion, has heavily contaminated odor and appearance (oily).	Sample 1 (0-1') Sample 2 (1-2') Sample 3 (2-3')
Boring 3	Dry black cindery fill with glass, metal, and slag, dense in place. Refusal at 1.08 ft. below grade.	Sample 1 (0-1')

SAMPLING LOCATION	SUBSURFACE CHARACTERISTICS	SAMPLE IDENTIFICATION
Boring 4	Dry black cindery fill with slag, stone, glass, and metal (has oily smell and slight oily appearance) to 1.5 ft., over blackish gray/olive brown clayey-silt with sandy and gravelly textured fill, saturated at 2.0 ft. High visible contamination (oily) within saturated zone. Completed at 3.0 ft. below grade. No water in hole at completion.	Sample 1 (0-1') Sample 2 (1-2') Sample 3 (2-3')
Boring 5	Moist black cindery fill with metal, slag, etc... Refusal at 1.17 ft. below grade.	Sample 1 (0-1')
Boring 6	- Moist fill as above, refusal at 1.08 ft. below grade.	Sample 1 (0-1')
Boring 7	Dry fill as above, refusal at 1.38 ft. below grade.	Sample 1 (0-1') Sample 2 (1-2')
Boring 8	Fill as above, refusal at 1.54 ft. below grade.	Sample 1 (0-1') Sample 2 (1-2')

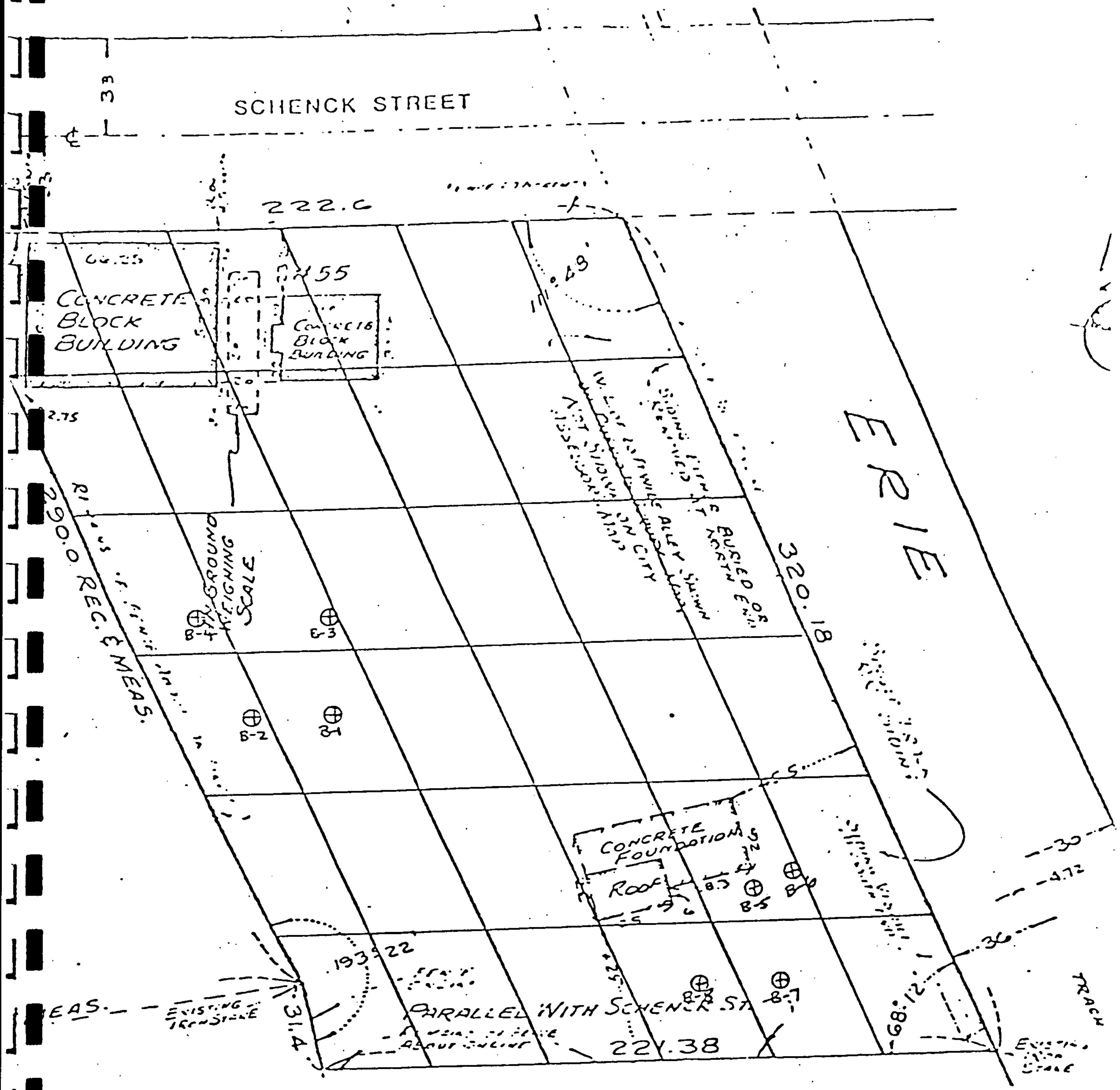
SAMPLE LOCATION	MEASUREMENTS
Boring 1	- From SW corner of western concrete building: 166 ft. south, 62 ft. east.
Boring 2	- From SW corner of western concrete building: 166 ft. south, 39 ft. east.
Boring 3	- From SW corner of western concrete building: 129 ft. south, 65 ft. east.
Boring 4	- From SW corner of western concrete building: 129 ft. south, 20 ft. east.
Boring 5	- From concrete foundation: 28 ft. east of SE corner (roofed section), 8 ft. south of SE corner of foundation.
Boring 6	- 14 ft. east of Boring #5.
Boring 7	- From SE corner of concrete foundation: 40 ft. south.
Boring 8	- 28 ft. west of Boring #7.

See Attached sketch for sample location identification.

James R. Stachowski

James R. Stachowski

JRS/jlh
cc: Jeff Wittlinger



SCHENCK STREET SITE
SAMPLE GRID SYSTEM

Appendix B

Quality Control Data

For

Analytical Resulsts
of Composite Samples for
the Schenck Street Site

ANALYTICAL RESULTS

LAWLESS CONTAINER CORPORATION
QUALITY CONTROL

Report Date: 6/24/83
Date Received: 5/31/83

REPLICATE ANALYSES

PARAMETER	SAMPLE I.D.	UNITS OF MEASURE	VALUE 1	VALUE 2	MEAN	STANDARD DEVIATION	PERCENT COEFFICIENT OF VARIATION
Total Arsenic	Boring Comp. 5-8	ug/g dry	13.1	20.2	16.65	5.0	30
Total Cadmium	Boring Comp. 5-8	ug/g dry	39.9	29.4	34.6	7.4	21
Total Chromium	Boring Comp. 5-8	ug/g dry	486	449	468	26	5.6
Total Copper	Boring Comp. 5-8	ug/g dry	1,627	5,355	3,480	2,621	75
Total Lead	Boring Comp. 5-8	ug/g dry	2,320	1,894	2,107	301	14
Total Mercury	Boring Comp. 5-8	ug/g dry	3.79	4.37	4.08	0.41	10
Total Nickel	Boring Comp. 5-8	ug/g dry	361	354	357	4.5	1.3
Total Selenium	Boring Comp. 5-8	ug/g dry	<0.1	<0.05	<0.1	-	-
Total Zinc	Boring Comp. 5-8	ug/g dry	11,700	7,350	9,520	3,076	32

FOR RECRA ENVIRONMENTAL LABORATORIES [signature]

DATE 6/24/83

RECRA ENVIRONMENTAL LABORATORIES
I.D. #83-481

ANALYTICAL RESULTS

LAWLESS CONTAINER CORPORATION
QUALITY CONTROL

Report Date: 6/24/83
Date Received: 5/31/83

RECOVERY ANALYSIS

PARAMETER	SAMPLE I.D.	µg OF SPIKE	µg RECOVERED	% RECOVERY
Total Arsenic	Boring Comp. 1-4	0.3	0.285	95
Total Cadmium	Boring Comp. 5-8	1,000	1,000	100
Total Copper	Boring Comp. 5-8	250	265	106
Total Lead	Boring Comp. 1-4	25	25.7	103
Total Nickel	Boring Comp. 5-8	1,000	990	99
Total Selenium	Boring Comp. 1-4	0.3	0.261	87
Total Zinc	Boring Comp. 5-8	500	450	90

FOR RECRA ENVIRONMENTAL LABORATORIES [illegible]

DATE 6/24/83

RECRA ENVIRONMENTAL LABORATORIES
I.D. #83-481

ANALYTICAL RESULTS

LAWLESS CONTAINER CORPORATION
QUALITY CONTROL

Report Date: 6/24/83
Date Received: 5/31/83

REPLICATE VOLATILE ORGANIC SCAN (FID) ANALYSIS OF
SAMPLE BORING COMPOSITE 1-4

PARAMETER	UNITS OF MEASURE	VALUE 1	VALUE 2	MEAN	STANDARD DEVIATION	PERCENT COEFFICIENT OF VARIATION
Volatile Organic Scan (FID)	ug/g dry as Carbon; Benzene Standard	270,000	120,000	200,000	110,000	54

BENZENE RECOVERY ANALYSIS OF
SAMPLE BORING COMPOSITE 1-4

COMPOUND IDENTIFICATION	ng OF SPIKE	ng RECOVERED	% RECOVERY
Benzene	30	27	90

FOR RECRA ENVIRONEMNTAL LABORATORIES Deborah J. Pracio

DATE 6/24/83

RECRA ENVIRONMENTAL LABORATORIES
I.D. #83-481

ANALYTICAL RESULTS

LAWLESS CONTAINER CORPORATION
QUALITY CONTROL

Report Date: 6/24/83
Date Received: 5/31/83

REPLICATE VOLATILE HALOGENATED ORGANIC SCAN (COULSON'S) ANALYSIS OF SAMPLE BORING COMPOSITE 5-8

PARAMETER	UNITS OF MEASURE	VALUE 1	VALUE 2	MEAN	STANDARD DEVIATION	PERCENT COEFFICIENT OF VARIATION
Volatile Halogenated Organic Scan (Coulson's)	μg/g dry as Chlorine; Carbon Tetrachloride Standard	600	920	760	230	30

CARBON TETRACHLORIDE RECOVERY ANALYSIS OF SAMPLE BORING COMPOSITE 5-8

COMPOUND IDENTIFICATION	ng OF SPIKE	ng RECOVERED	% RECOVERY
Carbon Tetrachloride	67	48	72

FOR RECRA ENVIRONMENTAL LABORATORIES Deborah J. Travis

DATE 6/24/83

RECRA ENVIRONMENTAL LABORATORIES

ANALYTICAL RESULTS

LAWLESS CONTAINER CORPORATION
QUALITY CONTROL

Report Date: 6/24/83
Date Received: 5/31/83

REPLICATE HALOGENATED ORGANIC SCAN (ECD) ANALYSIS OF
SAMPLE BORING COMPOSITE 5-8

PARAMETER	UNITS OF MEASURE	VALUE 1	VALUE 2	MEAN	STANDARD DEVIATION	PERCENT COEFFICIENT OF VARIATION
Halogenated Organic Scan (ECD)	µg/g dry as Chlorine; Lindane Standard	30	26	28	2.8	10

LINDANE RECOVERY ANALYSIS OF
METHOD BLANK

COMPOUND IDENTIFICATION	ng OF SPIKE	ng RECOVERED	% RECOVERY
Lindane	0.04	0.04	100

FOR RECRA ENVIRONMENTAL LABORATORIES Deborah J Francis

DATE 6/24/83

RECRA ENVIRONMENTAL LABORATORIES
I.D. #83-481

ANALYTICAL RESULTS

LAWLESS CONTAINER CORPORATION
QUALITY CONTROL

Report Date: 6/24/83
Date Received: 5/31/83

REPLICATE PCB ANALYSIS OF
SAMPLE BORING COMPOSITE 5-8

COMPOUND IDENTIFICATION	UNITS OF MEASURE	VALUE 1	VALUE 2	MEAN	STANDARD DEVIATION	PERCENT COEFFICIENT OF VARIATION
Aroclor 1248	μg/g dry	52	44	48	5.7	12
Aroclor 1260	μg/g dry	19	17	18	1.4	7.9
Total	μg/g dry	-	-	66	-	-

PCB RECOVERY ANALYSIS OF
METHOD BLANK

COMPOUND IDENTIFICATION	ng OF SPIKE	ng RECOVERED	% RECOVERY
Aroclor 1242	1.0	1.2	120
Aroclor 1254	1.0	0.99	99

FOR RECRA ENVIRONMENTAL LABORATORIES *Deborah J. Francis*

DATE *6/24/83*

RECRA ENVIRONMENTAL LABORATORIES

REFERENCE 10

New York State Department of Environmental Conservation
600 Delaware Avenue, Buffalo, NY 14202-1073 716/847-4550

RECEIVED
DEC 19 1985
RECRA RESEARCH, INC.

Henry G. Williams
Commissioner

December 18, 1985

Mr. Sheldon S. Nozik
RECRA Research, Inc.
4248 Ridge Lea Road
Amherst, NY 14226

Dear Mr. Nozik:

Tentative Erie County and final Niagara County freshwater wetlands are shown directly on your site maps for the Superfund sites you are studying. Please be sure to examine all the maps since I did not copy all wetland boundaries if a given area was shown on another map.

Also, our maps show only those wetlands which exceed 5 ha in size. We have no information compiled for wetlands less than 5 acres in size.

To my knowledge, we have no "critical habitats" within one mile of the sites in question. Further, I am not aware of endangered or threatened species occupying these sites.

If you need some specific information on the wetlands within your study area, you will need to come to Regional Headquarters to compile those data.

Sincerely,

Gordon R. Batcheller

Gordon R. Batcheller
Senior Wildlife Biologist
Region 9

GRB:ls

Enc.

cc: Mr. Pomeroy

Would you please forward information on sites 1-10 as soon as possible, as we have a January 15, 1986 deadline for submittal of these reports to Albany.

Thank you very much for your assistance and promptness in these matters. Should you have any questions or comments, please do not hesitate to call.

Sincerely,

RECRA RESEARCH, INC.

Sheldon S. Nozik
Environmental Specialist

SSN/jlo
Enclosure

RECRA RESEARCH, INC.
Hazardous Waste And Toxic Substance Control

December 13, 1985

Mr. James Pomeroy
Habit Protection Biologist
NYSDEC Fish and Wildlife Office
128 South Street
Olean, NY 14760

Dear Mr. Pomeroy:

As per our telephone conversation on December 3, 1985, enclosed are sections of the topographic maps for the NYSDEC Phase I Superfund sites we are presently working on. Below is a list of these sites:

1. Exolon Company
2. Pennwalt-Lucidal
3. Mollenberg-Betz Co.
4. Empire Waste
5. Bisonite Paint Co.
6. Stocks Pond
7. Aluminum Matchplate
8. Otis Elevator (Stimm Assoc.)
9. LaSalle Reservoir
10. Tonawanda City Landfill
11. Union Road Site
12. Central Auto Wrecking (Diarsonal Co.)
13. Procknal and Katra
14. Consolidated Freightway
15. U.S. Steel (Stimm Assoc.)
16. Ernst Steel
17. American Brass (Anaconda)
18. Erie-Lackawanna Site
19. Dresser Industries
20. W. Seneca Transfer Station
21. Old Land Reclamation
22. Northern Demolition
23. Lackawanna Landfill
24. South Stockton Landfill*
25. Chadakoin River Park*
26. Dunkirk Landfill*
27. Felmont Oil Co.*
28. NFTA**
29. Walmore Road Site**
30. Schreck's Scrapyard**

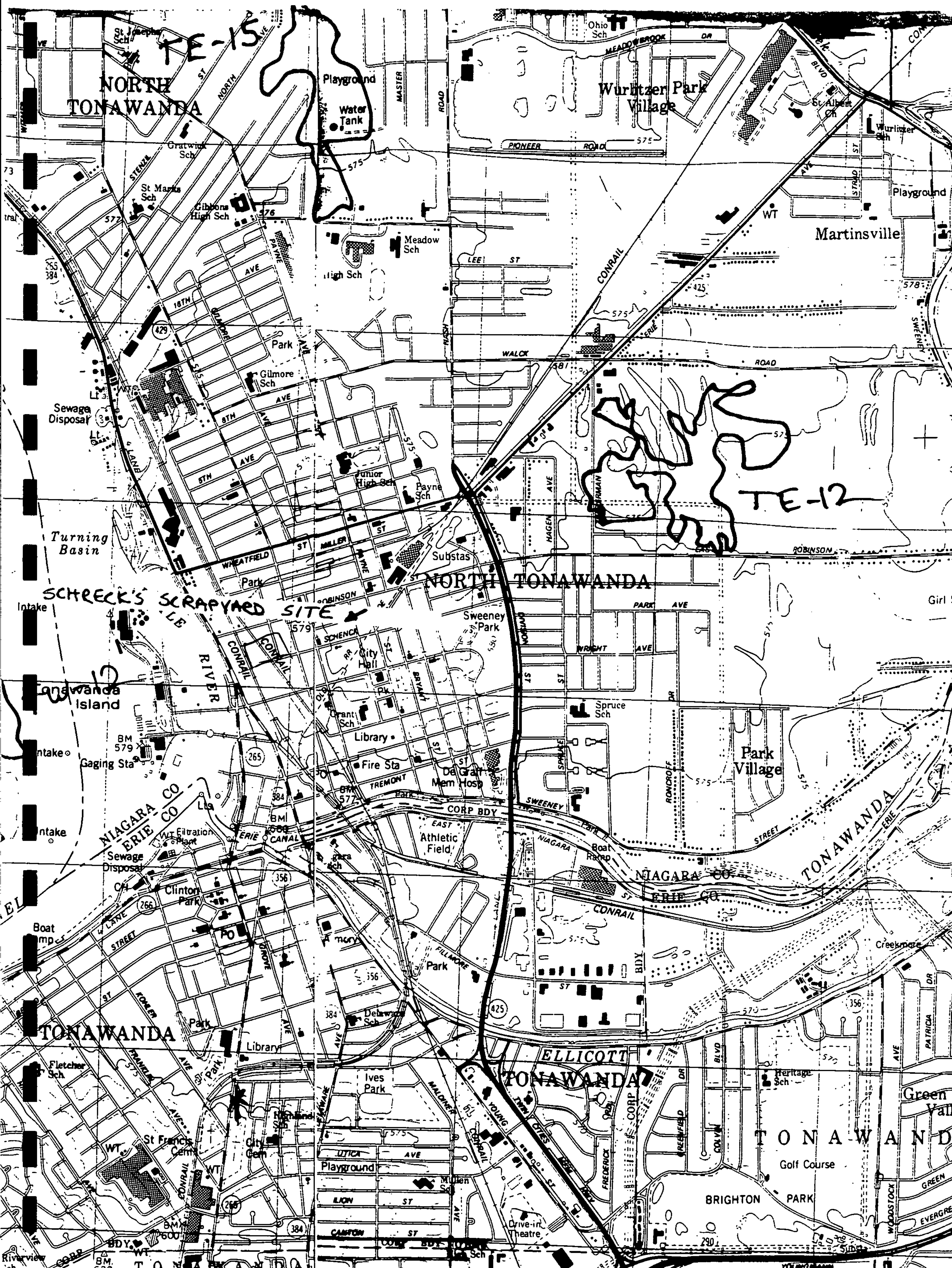
* Chautaugua County
** Niagara County

As part of the search requirements for the NYSDEC Superfund sites, each of these sites must be documented as follows:

- if there are any coastal wetlands within two (2) miles of the site
- if there are any freshwater wetlands within one (1) mile of the site (5 acre min.
- if there are any critical habitats within one (1) mile of the site (endangered species or wildlife refuges)

Continued . . .

4248 Ridge Lea Road, Amherst, New York 14226 Telephone (716) 838-6200


TE-15
TE-12
SCHRECK'S SCRAPYARD SITE
W-12
NORTH TONAWANDA
St Joseph Sch
Playground
Water Tank
Ohio Sch
MEADOWBROOK DR
Wurlitzer Park Village
St Albert Ch
Wurlitzer Sch
PIONEER ROAD
Gratwick Sch
St Marks Sch
Gibbons High Sch
Meadow Sch
High Sch
LEE ST
CONRAIL
Martinsville
Playground
WT
Park
Gilmore Sch
WALCK ROAD
Sewage Disposal
Turning Basin
Junior High Sch
Payne Sch
WHEATFIELD ST
MILLER
Substas
ROBINSON
Park
Intake
Sweeney Park
PARK AVE
WRIGHT AVE
Girl S
City Hall
RIVER
Tonawanda Island
Grant Sch
Spruce Sch
Intake
Gaging Sta
Library
Fire Sta
De Graff Mem Hosp
TREMONT
Park Village
NIAGARA CO
ERIE CO
SWEENEY
CORP BDY
Filtration Plant
ERIE CANAL
Athletic Field
Boat Ramp
Intake
Sewage Disposal
TONAWANDA
NIAGARA CO
ERIE CO
CONRAIL
Clinton Park
PO
Boat Ramp
Armory
FILLMORE
Park
Creekmore
Delaware Sch
Park
TONAWANDA
Library
ELLICOTT
TONAWANDA
Fletcher Sch
Ives Park
Heritage Sch
Green Vall
Highland Sch
St Francis Cem
City Cem
UTICA AVE
Playground
TONAWAND
Mullen Sch
Golf Course
LION ST
BRIGHTON PARK
CANTON ST
Drive-in Theatre
Riverview

REFERENCE 11

C Areas of minimal flooding. (No shading)

D Areas of undetermined, but possible, fl

V Areas of 100-year coastal flood with ve action); base flood elevations and flood h not determined.

V1-V30 Areas of 100-year coastal flood with ve action); base flood elevations and flood h determined.

NOTES TO USER

Certain areas not in the special flood hazard areas (zo may be protected by flood control structures.

This map is for flood insurance purposes only; it do sarily show all areas subject to flooding in the co all planimetric features outside special flood hazard ar

For adjoining map panels, see separately printed In Panels.

INITIAL IDENTIFICATION:
APRIL 12, 1974

FLOOD HAZARD BOUNDARY MAP REVISI
MAY 7, 1976

FLOOD INSURANCE RATE MAP EFFECTI
JANUARY 6, 1982

FLOOD INSURANCE RATE MAP REVISIO

Refer to the FLOOD INSURANCE RATE MAP E date shown on this map to determine when actuarial ra structures in the zones where elevations or depths established.

To determine if flood insurance is available in this c contact your insurance agent, or call the National Floo Program at (800) 638-6620.

N

APPROXIMATE SCALE
400' 0 400'

NATIONAL FLOOD INSURANCE

FIRM
FLOOD INSURANCE RAT

CITY OF
NORTH TONAW.
NEW YORK
NIAGARA COUI

PANEL 3 OF 4
(SEE MAP INDEX FOR PANELS NO

COMMUNITY-PANEL N

REFERENCE 12

RECRA RESEARCH, INC.
Hazardous Waste And Toxic Substance Control

May 7, 1986

Mr. James Carroll
6544 Errick Road
North Tonawanda, NY 14120

Dear Mr. Carroll:

As part of the background information search requirements for the NYSDEC Superfund sites, we, the consultants, are required to have all our interviews, personal or telephone, documented.

Below is a synopsis of our telephone conversation which took place on May 2, 1986 pertaining to Schreck's Scrapyard located at 55 Schenck Street in North Tonawanda, New York. I would like to request that you read the account, sign at the bottom of the page, and return it to the undersigned. This request is only to serve as documentation that our conversation took place.

- o Tennis Schreckengost started a scrap iron business called Schreck's Scrap Iron and Metal at 55 Schenk Street in 1951.

- o Bengart and Memel bought out Schreck's Scrap Iron and Metal in 1954 and operated until 1977.

- o From 1951 to 1975, Schreck's Scrapyard was used as a transfer station for the hauling of phenolic waste from Occidental-Durez to various waste disposal facilities.

- o In 1965, approximately 50-60 drums of phenolic wastes were landfilled in an old press pit at 55 Schenck Street. The press pit was part of a hydraulic bailing operation in which scrap metal was pressed, bailed, and then recycled at local steel making facilities. The drums containing waste were used to fill in the old press pit which was 18 feet deep. The press pit was located approximately 30 feet in from the rear property boundary (Tondisco, Inc.) and 70 feet in from the railroad spur in the Oliver Street direction. The drums were confined within the concrete walls of the press pit.

- o From 1960 to 1975, transformers from Niagara Mohawk Power Corporation were routinely brought to 55 Schenck Street for salvage. The metal casings of the transformers were sheared for foundry steel. During the shearing process, oil from the transformers was spilled on the ground. The shearing operation took place in the center of the yard behind the office. Periodically, a dozer was used to push oil soaked soil towards the property boundary at the railroad spur near Oliver Street.

4248 Ridge Lea Road, Amherst, New York 14226 Telephone (716) 838-6200

Should you have any further questions or comments, please feel free to contact me. Thank you for your time and effort.

Sincerely,

RECRA RESEARCH, INC.

Thomas P. Connare

Thomas P. Connare
Environmental Analyst

TPC:pal

James Allen Carroll

REFERENCE 13

New York State Department of Environmental Conservation

MEMORANDUM

TO: Peter Buechi
FROM: Charles Zippiroli
SUBJECT: Hazardous Waste Site Ownership
DATE: June 4, 1985

The following is a list of past owners of those lands as outlined by you as part of Schreck's Scrap and Iron, 55 Schenk Street, North Tonawanda:

VJT Inc.
Jane B. Kulak
Milton J. Kulak
Schrecks Iron Metal Corp.
Melvin F. Wagenschuetz
Tonawandas Distributing Corp.

Charles Zippiroli
Asst. Land & Claims Adjuster
Region 9

CZ:ls

REFERENCE 14

RECRA RESEARCH, INC.

Hazardous Waste And Toxic Substance Control

RECEIVED
MAY 22 1986
RECRA RESEARCH, INC.

May 19, 1986

Mr. Mike Hopkins
Niagara County Health Department
~~5467 Upper Mountain Road~~ Main PO Box 428
~~Lockport, NY 14094~~ Niagara Falls, NY 14302

Dear Mr. Hopkins:

As part of the background information search requirements for the NYSDEC Superfund sites, we, the consultants, are required to have all our interviews, personal or telephone, documented.

Below is a synopsis of our telephone conversation which took place on May 15, 1986. I would like to request that you read the account, sign at the bottom of the page, and return it to the undersigned. This request is only to serve as documentation that our conversation took place.

- To the best of your knowledge, there are no groundwater wells being used in Niagara County within a three mile radius of the Schreck's Scrapyard site at 55 Schenck Street in the City of North Tonawanda.

Should you have any further questions or comments, please feel free to contact me. Thank you for your time and effort.

Sincerely,

RECRA RESEARCH, INC.

Thomas P. Connare

Thomas P. Connare
Environmental Analyst

TPC:pal

Mike Hopkins

4248 Ridge Lea Road, Amherst, New York 14226 Telephone (716) 838-6200

REFERENCE 15

RECRA RESEARCH, INC.

Hazardous Waste And Toxic Substance Control

May 19, 1986

Mr. Ron Koczaja
Erie County Health Department
95 Franklin Street
Buffalo, NY 14212

Dear Mr. Koczaja:

As part of the background information search requirements for the NYSDEC Superfund sites, we, the consultants, are required to have all our interviews, personal or telephone, documented.

Below is a synopsis of our telephone conversation which took place on May 17, 1986. I would like to request that you read the account, sign at the bottom of the page, and return it to the undersigned. This request is only to serve as documentation that our conversation took place.

- To the best of your knowledge, there are no groundwater wells being used in Erie County within a three mile radius of the Schreck's Scrapyard site at 55 Schenck Street in the City of North Tonawanda.

Should you have any further questions or comments, please feel free to contact me. Thank you for your time and effort.

Sincerely,

RECRA RESEARCH, INC.

Thomas P. Connare

Thomas P. Connare
Environmental Analyst

TPC:pal

Ron Koczaja

RECEIVED
MAY 23 1986

4248 Ridge Lea Road, Amherst, New York 14226 Telephone (716) 838-6200

REFERENCE 16

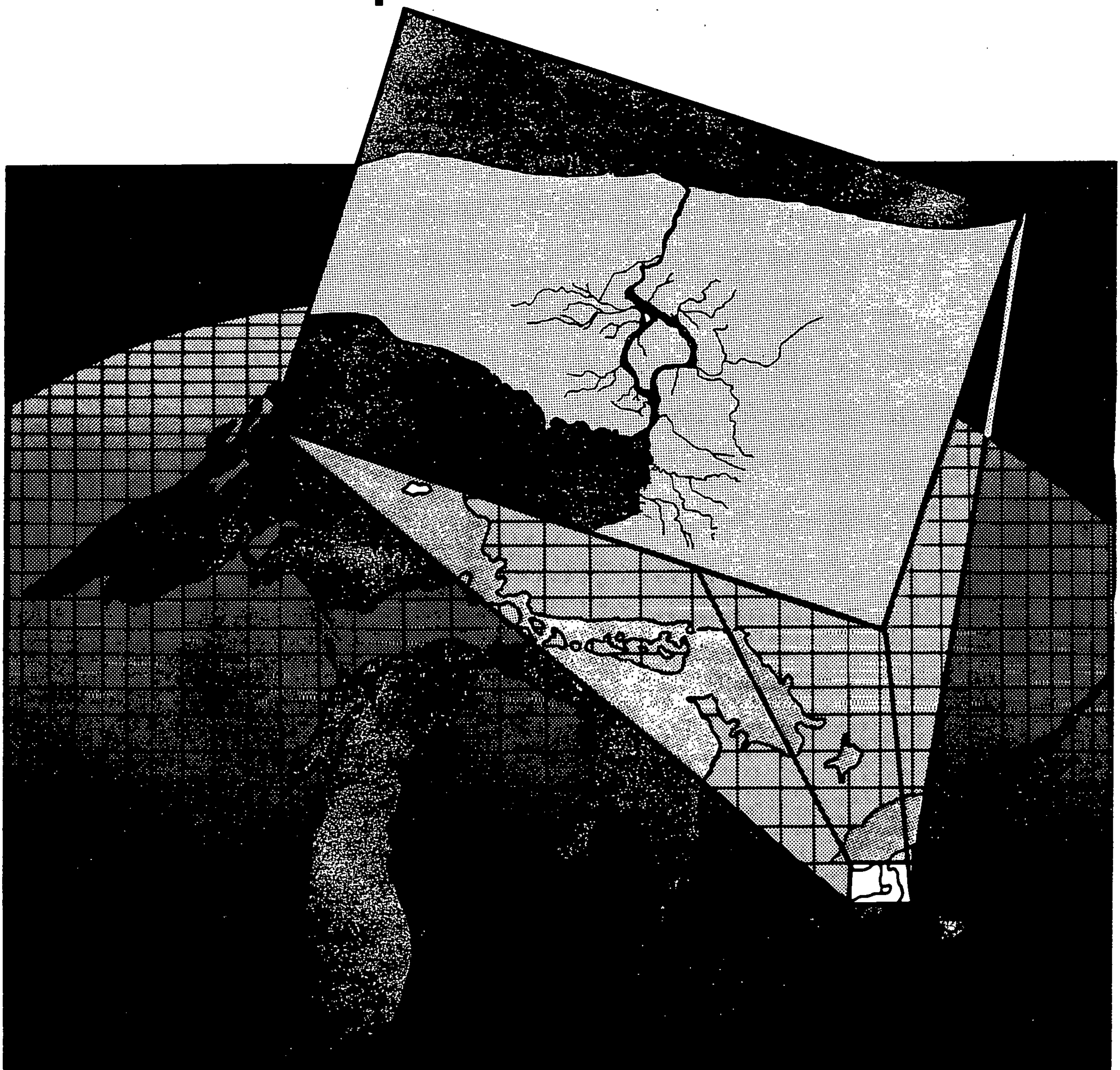
United States
Environmental Protection
Agency

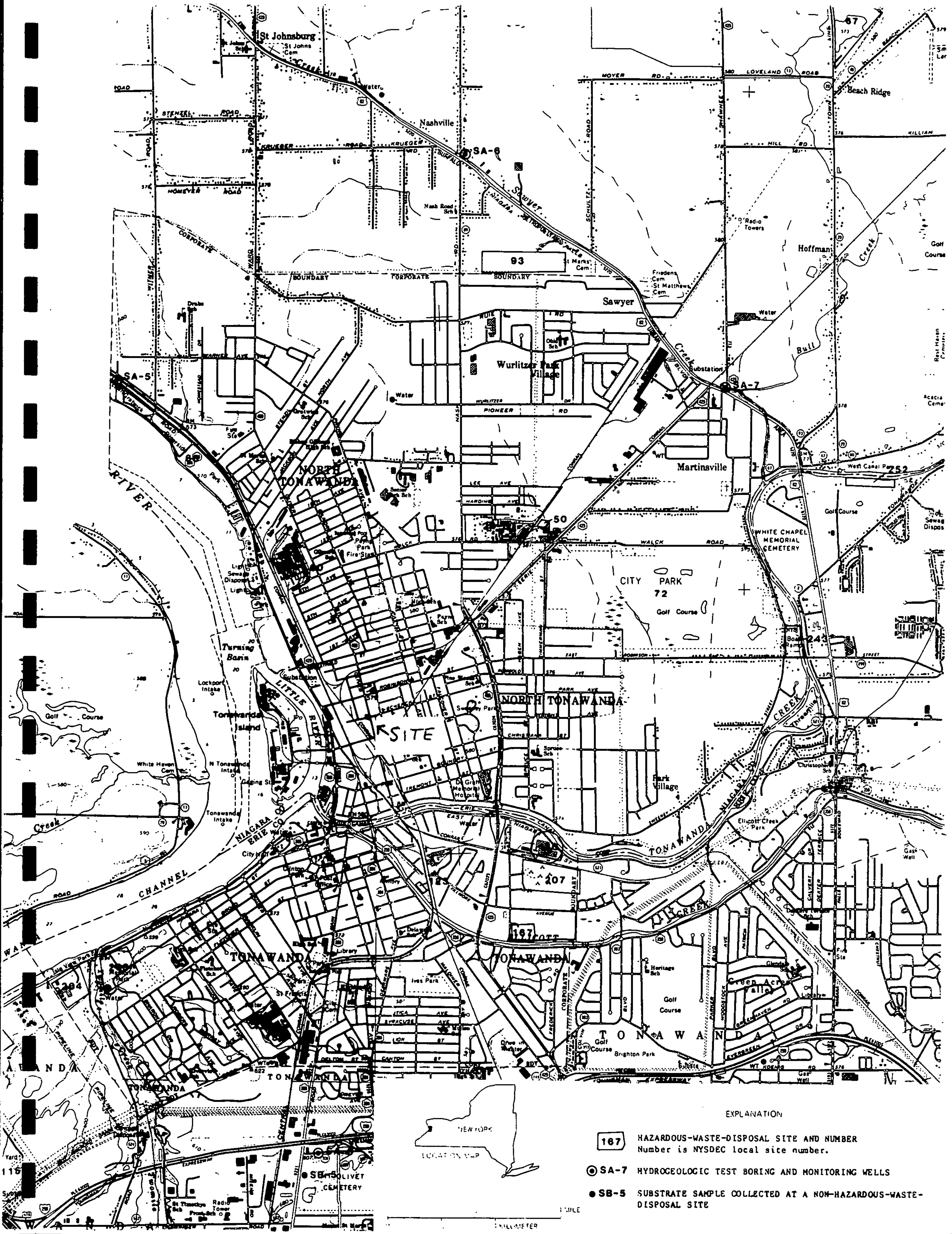
Great Lakes National
Program Office
536 South Clark Street
Chicago, Illinois 60605

EPA-905/4-85-001
March 1985

EPA

Preliminary Evaluation Of Chemical Migration To Groundwater and The Niagara River from Selected Waste-Disposal Sites





St Johnsburg
Nashville
SA-6
93
Sawyer
Beach Ridge
Hoffman
Wurlitzer Park Village
SA-5
SA-7
Martinsville
NORTH TONAWANDA
50
WHITE CHAPEL MEMORIAL CEMETERY
CITY PARK
72
Golf Course
243
252
SITE
NORTH TONAWANDA
Tonawanda Island
LITTLE RIVER
NIAGARA RIVER
Park Village
ERIE CANAL
TONAWANDA CREEK
207
167
TONAWANDA
TONAWANDA
SB-5
OLIVET CEMETERY
NEW YORK
LOCATION MAP
1 MILE
1 KILOMETER
EXPLANATION
167 HAZARDOUS-WASTE-DISPOSAL SITE AND NUMBER
Number is NYSDEC local site number.
SA-7 HYDROGEOLOGIC TEST BORING AND MONITORING WELLS
SB-5 SUBSTRATE SAMPLE COLLECTED AT A NON-HAZARDOUS-WASTE-DISPOSAL SITE

"Preliminary Evaluation of Chemical Migration to Groundwater and the Niagara River from Selected Waste-Disposal Sites"

By

Edward J. Koszalka, James E. Paschal, Jr.,

Todd S. Miller and Philip B. Duran

Prepared by the U.S. Geological Survey

in cooperation with the

New York State Department of Environmental Conservation

for the

U.S. ENVIRONMENTAL PROTECTION AGENCY

The rate of ground-water movement within the unconsolidated aquifer at the Buffalo Color Corporation (sites 120-122) was calculated and ranges from 0.02 to 0.06 ft/yr.

The direction of ground-water movement in the unconsolidated aquifer is generally toward the major surface-water bodies--Lake Erie, Niagara River, and Buffalo River (fig. 4). The ground-water flow pattern is dissected in the northern part of the area, where impermeable bedrock is less than 5 ft below land surface, as indicated in figure 4. This unsaturated zone diverts the flow northward and southward.

Ground-Water Quality

The quality of ground water in the bedrock aquifer in the Buffalo area has been documented by LaSala (1968), who included maps showing the concentration ranges for sulfate, hardness, and chloride. Sulfate concentrations given in that report ranges from 100 to 500 ppm and hardness (as $CaCO_3$) from 150 to 1,000 ppm; chloride concentrations range from 100 to 1,500 ppm, and specific conductance ranges from 1,000 to 9,000 µmho/cm.

To estimate background water quality in the Buffalo area, a water sample was collected from the unconsolidated deposits in the fall of 1982 and analyzed for priority pollutants. The observation well was on Seneca Street (well SA-9, pl. 1), in the eastern part of the area just east of the Buffalo city line, and was screened above the bedrock contact. The results are given in table 14. Cadmium, lead, and zinc exceeded USEPA drinking-water criteria; minor amounts of some organic compounds were also detected. Additional sampling of the ground water in the unconsolidated aquifer would be needed to define the quality of water in this aquifer in the Buffalo area.

Three substrate samples were collected in the Buffalo area at localities not affected by waste-disposal sites to compare their concentrations of heavy metals with those in substrate samples from waste-disposal sites. Results are given in table 13.

Table 13.--Heavy-metal concentrations in samples from undisturbed soils in Buffalo, N.Y., June 1, 1983
[Locations shown in pl. 1. Concentrations in µg/kg.]

Location	Sample number	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Zinc
Forest Lawn Cemetery	SB-1	5,000	8,000	7,000	20,000	100	10,000	31,000
Martin Luther King Park	SB-2	5,000	8,000	10,000	40,000	90	20,000	42,000
Holy Cross Cemetery[1]	SB-3	9,000	30,000	40,000	290,000	280	40,000	160,000

[1] This location is downwind from a major industrial area.

TONAWANDA AREA

Geology

The Tonawanda study area (pl. 2) consists of unconsolidated deposits of clay, sand, and till of Pleistocene and Holocene age overlying Camillus Shale bedrock of Silurian age.

Bedrock Units.--The Camillus Shale is the only bedrock unit encountered in the area. As described previously, it is a gray, red, and green thin-bedded unit with massive mudstone and also contains beds and lenses of gypsum. Thickness of the shale is estimated to be 400 ft but decreases to the north near the contact with the Lockport Dolomite.

Unconsolidated Deposits.--The unconsolidated units consist of glacial material deposited during the latter part of the Pleistocene epoch and lacustrine material deposited during the early Holocene. The distribution of unconsolidated deposits in the area is shown in figure 5.

The Pleistocene materials are similar to those in the Buffalo area except for a ground-moraine deposit, which consists mainly of lodgment till, silty clay till, and sandy till. This deposit was formed by the transport and deposition of material beneath the southward flowing continental ice sheet (Muller, 1977) and is thus compacted and relatively impermeable.

The northern part of the area contains a Holocene lacustrine deposit consisting primarily of clay with stringers of sand and silt. Most stringers are less than 3 inches thick and are discontinuous throughout the area.

The U.S. Geological Survey drilled five test holes in 1982 to obtain additional data on the subsurface geology of the area. (Locations of these holes, SA-4 through SA-8, are shown on pl. 2.) The geologic logs are as follows:

Boring No.	Depth (ft)	Description
SA-4	0 - 1.5	Topsoil
	1.5 - 6.5	Clay, sand, green
	6.5 - 18.5	Clay, pink
	18.5	Bedrock
SA-5	0 - 6.5	Road fill, rubble
	6.5 - 19.0	Clay, pink
	19.0 - 24.5	Sand
	24.5	Bedrock
SA-6	0 - 3.0	Topsoil, rubble
	3.0 - 28.0	Clay, pink
	28.0 - 44.0	Sand, silty
	44.0	Bedrock
SA-7	0 - 1.5	Topsoil
	1.5 - 16.5	Clay, gray-green
	16.4 - 19.0	Clay, pink
	19.0 - 27.0	Clay, sandy pink
	27.0	Bedrock

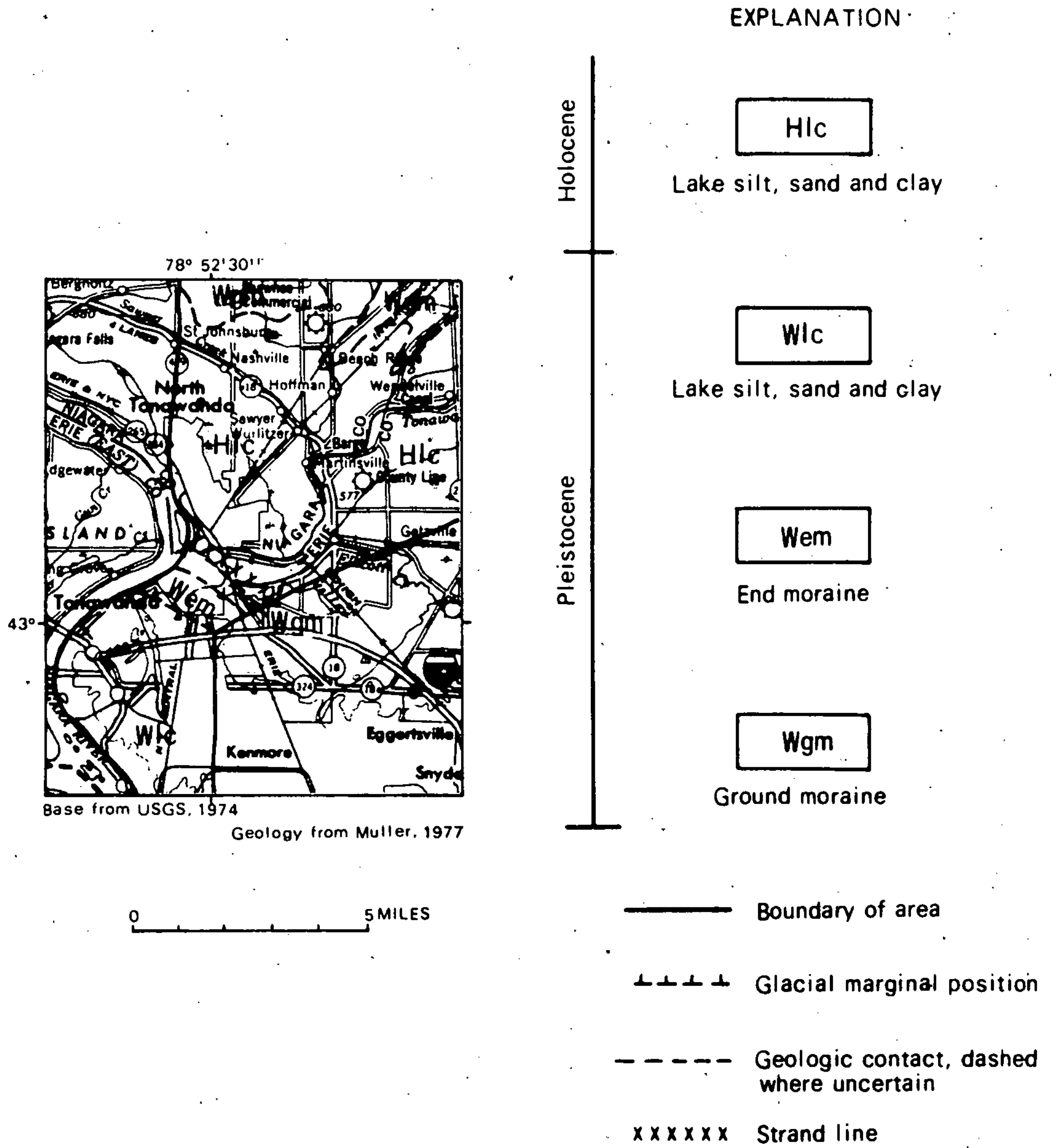


Figure 5. Surficial geology of the Tonawanda area.

Boring No.	Depth (ft)	Description
SA-8	0 - 1.5	Topsoil
	1.5 - 31.5	Clay, red
	31.5 - 63.0	Clay, red, interbedded with gravel
	63.0	Bedrock

The information obtained from these test borings, together with the data from the disposal sites, can be used to characterize the geology of the area in general terms. The unconsolidated deposits, primarily the Pleistocene and Holocene lacustrine clays, are encountered within 6 ft of land surface. Their thickness, which seems to be dependent upon the depth to bedrock, ranges from 18.5 to 63.0 ft. The test drilling confirmed the boundaries of the unconsolidated deposits as drawn by Muller (1977). Also, the Pleistocene and Holocene clay units are similar except in color and the presence of sand stringers in the latter.

Aquifer Lithology and Water-Bearing Characteristics

The hydrologic system of the Tonawanda area is similar to that of the Buffalo area--a bedrock aquifer consisting of Camillus shale overlain by an aquifer of unconsolidated deposits.

Water within the bedrock aquifer flows through the joints, fractures, and solution cavities within the unit. The Camillus Shale is estimated to have a transmissivity ranging from 7,000 to 70,000 (gal/d)/ft (LaSala, 1968). Regionally, under nonpumping conditions, ground water in the shale moves west and south. Ground water in shallow bedrock discharges into Tonawanda Creek, Ellicott Creek, and the Niagara River (pl. 2)

The overlying aquifer consists of unconsolidated morainal and clay deposits. The morainal material is generally a clayey till whose permeability is as low as that of the lacustrine clays. During the test drilling, ground water was encountered at various depths within the clayey units; also encountered were stringers of permeable sand that initially yielded considerable amounts of water. The yield diminished with time, however, as the stringers became dewatered.

The low permeability of the deposits causes a seasonal perched water table, similar to that of the Buffalo area, during periods of high precipitation. This water table discharges into areas of low topography and eventually into nearby surface-water bodies.

The hydrologic properties of the unconsolidated aquifer have been discussed in several consultant reports on the geohydrology of the major disposal sites; these reports are cited in the site descriptions (appendix B).

Permeability tests done by consultants on clay samples from several of the disposal sites indicate that the vertical permeability is low, ranging from 10^{-6} to 10^{-8} cm/s. This is probably the reason for the nearly steady water levels in monitoring wells screened in this aquifer. Horizontal permeability may be orders of magnitude greater than vertical permeability.

The direction of ground-water movement in the aquifer is generally toward the major surface-water bodies--the Niagara River and Ellicott, Sawyer, and Tonawanda Creeks (pl. 2).

Ground-Water Quality

The chemical quality of ground water in the bedrock aquifer has been investigated by LaSala (1968). Concentrations of sulfate ranged from 100 to 1,000 mg/L and hardness (as $CaCO_3$) from 1,500 to 3,000 mg/L. Chloride concentrations ranged from 100 to 1,500 mg/L, and specific conductance from 1,500 to 9,000 μmho/cm at 25°C.

Water samples were collected in the fall of 1982 from five observation wells (SA-4, 5, 6, 7, and 8; locations shown in pl. 2) screened in the unconsolidated deposits above the bedrock contact and were analysed for priority pollutants. Four of the wells were along the eastern edge of the area and one was adjacent to the Niagara River. Results of the analyses (table 16) indicate that concentrations of cadmium, lead, and zinc exceeded USEPA drinking-water criteria and NYS ground-water standards. A few organic compounds were detected, all in minimal quantities except methylene chloride and toluene. Chlordane was detected at a well along the eastern edge of the area, and α-chlordane was detected at one well adjacent to the Gratwick-Riverside Park site along the Niagara River. Additional sampling of ground water in the aquifer would be needed to define its quality in the Tonawanda area.

Three substrate samples were collected at localities not affected by waste-disposal sites in the Tonawanda area and were analyzed for heavy metals; results are given in table 15.

Table 15.--Heavy-metal concentrations in substrate samples from undisturbed soils in Tonawanda, N.Y., May 31, 1983 and June 1, 1983.
[Concentrations in μg/kg. Locations shown in pl. 2]

Location	Sample number	Cadmium	Chromium	Copper	Lead
Beaver Island State Park	SB-4	4,000	8,000	10,000	100,000
Mount Olive Cemetery	SB-5	4,000	20,000	20,000	30,000
Oppenheim Park	SB-6	1,000	20,000	20,000	20,000
Ellicott Creek Park	SB-7	4,000	10,000	20,000	20,000

Location	Sample number	Mercury	Nickel	Zinc
Beaver Island State Park	SB-4	200	20,000	57,000
Mount Olive Cemetery	SB-5	120	30,000	58,000
Oppenheim Park	SB-6	110	20,000	59,000
Ellicott Creek Park	SB-7	120	20,000	47,000

APPENDIX B

2/A1693

APPENDIX B

REVISED "HAZARDOUS WASTE DISPOSAL SITE REPORT"

(47-15-11 (10/83)

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

DIVISION OF SOLID AND HAZARDOUS WASTE

INACTIVE HAZARDOUS WASTE DISPOSAL SITE REPORT

PRIORITY CODE: 2a SITE CODE: 932099

NAME OF SITE: Schreck's Scrapyard REGION: 9

STREET ADDRESS: 55 Schenck Street

TOWN/CITY: North Tonwanda COUNTY: Niagara

NAME OF CURRENT OWNER OF SITE: VJT Salvage, Inc.

ADDRESS OF CURRENT OWNER OF SITE: 55 Schenck Street

TYPE OF SITE: OPEN DUMP [ ] STRUCTURE [ ] LAGOON [ ] LANDFILL [XXX] TREATMENT POND [ ]

ESTIMATED SIZE: 1 ACRES

SITE DESCRIPTION:

Scrap iron business from 1951 to 1977. In 1965, 50-60 drums of phenolic waste landfilled on the property. From 1960 to 1975, transformers salvaged resulting in oil spillage. Site soil samples from 1983 contained heavy metals, arsenic, phenol, cyanide, PCBs, and organics.

HAZARDOUS WASTE DISPOSED: CONFIRMED [ ] SUSPECTED [XXX]

TYPE AND QUANTITY OF HAZARDOUS WASTES DISPOSED:

TYPE	QUANTITY (POUNDS, DRUMS, TONS, GALLONS)
Phenolic waste	50-60 drums
Transformer oil	Unknown

TIME PERIOD SITE WAS USED FOR HAZARDOUS WASTE DISPOSAL:

______________, 19 60 TO ______________, 19 75

OWNER(S) DURING PERIOD OF USE: Bengart and Memel, Inc.

SITE OPERATOR DURING PERIOD OF USE: Same

ADDRESS OF SITE OPERATOR: 55 Schenk Street, North Tonawanda, New York

ANALYTICAL DATA AVAILABLE: AIR ☐ SURFACE WATER ☐ GROUNDWATER ☐ SOIL ☐ SEDIMENT ☐ NONE ☐

CONTRAVENTION OF STANDARDS: GROUNDWATER ☐ DRINKING WATER ☐ SURFACE WATER ☐ AIR ☐

SOIL TYPE: Silt, fine sand, clay

DEPTH TO GROUNDWATER TABLE: Unknown

LEGAL ACTION: TYPE: ______________ STATE ☐ FEDERAL ☐

STATUS: IN PROGRESS ☐ COMPLETED ☐

REMEDIAL ACTION: PROPOSED ☐ UNDER DESIGN ☐ IN PROGRESS ☐ COMPLETED ☐

NATURE OF ACTION: ______________

ASSESSMENT OF ENVIRONMENTAL PROBLEMS:

Soil contamination

ASSESSMENT OF HEALTH PROBLEMS:

Undetermined

PERSON(S) COMPLETING THIS FORM:

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION		NEW YORK STATE DEPARTMENT OF HEALTH	
NAME	Thomas P. Connare, Recra Research, Inc.	NAME	
TITLE	Environmental Scientist	TITLE	
NAME		NAME	
TITLE		TITLE	
DATE:		DATE:	