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915005

ENGINEERING INVESTIGATIONS AT INACTIVE HAZARDOUS WASTE SITES

PHASE I INVESTIGATION

Aluminum Match Plate Site No. 915005
Tonawanda Erie County

DATE: February 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.

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

Aluminum Match Plate Corporation
Tonawanda, Erie County, New York
Site #915005

Prepared For:

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

Prepared By:

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1.0 EXECUTIVE SUMMARY

The Aluminum Match Plate Corporation is located in a commercial/industrial/residential area in Tonawanda, New York (Figure 1). Foundry sands containing a phenol binder were used as fill for low-lying areas of the site. Approximately 30 tons of spent sand was generated per week and placed into the one acre disposal area (Figure 2).

The company contracted Calspan Corporation to conduct a leachate potential test on a sample of foundry sand in 1978. Phenol was detected at a concentration of 0.16 ppm in the elutriate.

In 1979, the New York State Department of Environmental Conservation (NYSDEC) issued a Part 360 permit to the company for the landfilling operation. The permit was due to expire in September of 1982. However, in 1980 the company notified the Erie County Department of Environment and Planning of its plans to cease the on-site disposal of sands. Niagara Sanitation was then contracted to haul foundry sands generated by current operations to a disposal area in Niagara County.

The U.S. Geological Survey conducted a preliminary hydrogeologic and chemical evaluation of the site in 1982. Soil samples were collected from each boring and analyzed for iron, mercury, and phenol. Iron was the only compound detected.

The Phase I effort included a compiling of information gathered from the NYSDEC, the Erie County Department of Environment and Planning, 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).

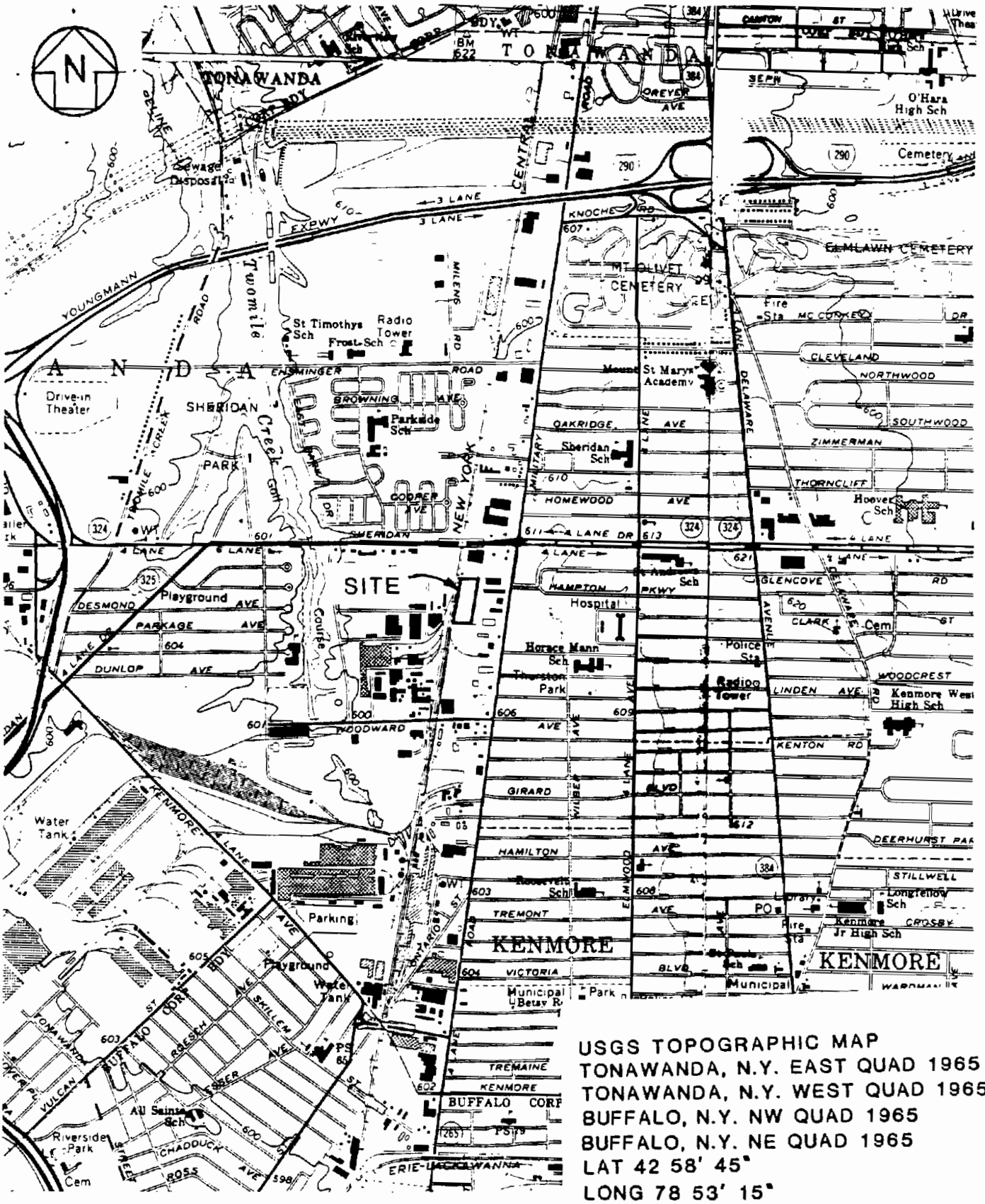
The risks involved with direct contact (Sdc) and the potential for fire and explosion (Sfe) are evaluated according to site specific information including toxicity of waste, quantity, site demographics, location with respect to sensitive habitats of wildlife, etc. Migration potential (Sm) is evaluated 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 Aluminum Match Plate Corporation was scored according to the Mitre Corporation Hazard Ranking System (HRS) and the following scores were obtained:

$S_m = 0$ (Sgw = 0; Ssw = 0; Sa = 0)

S_{fe} = N/A

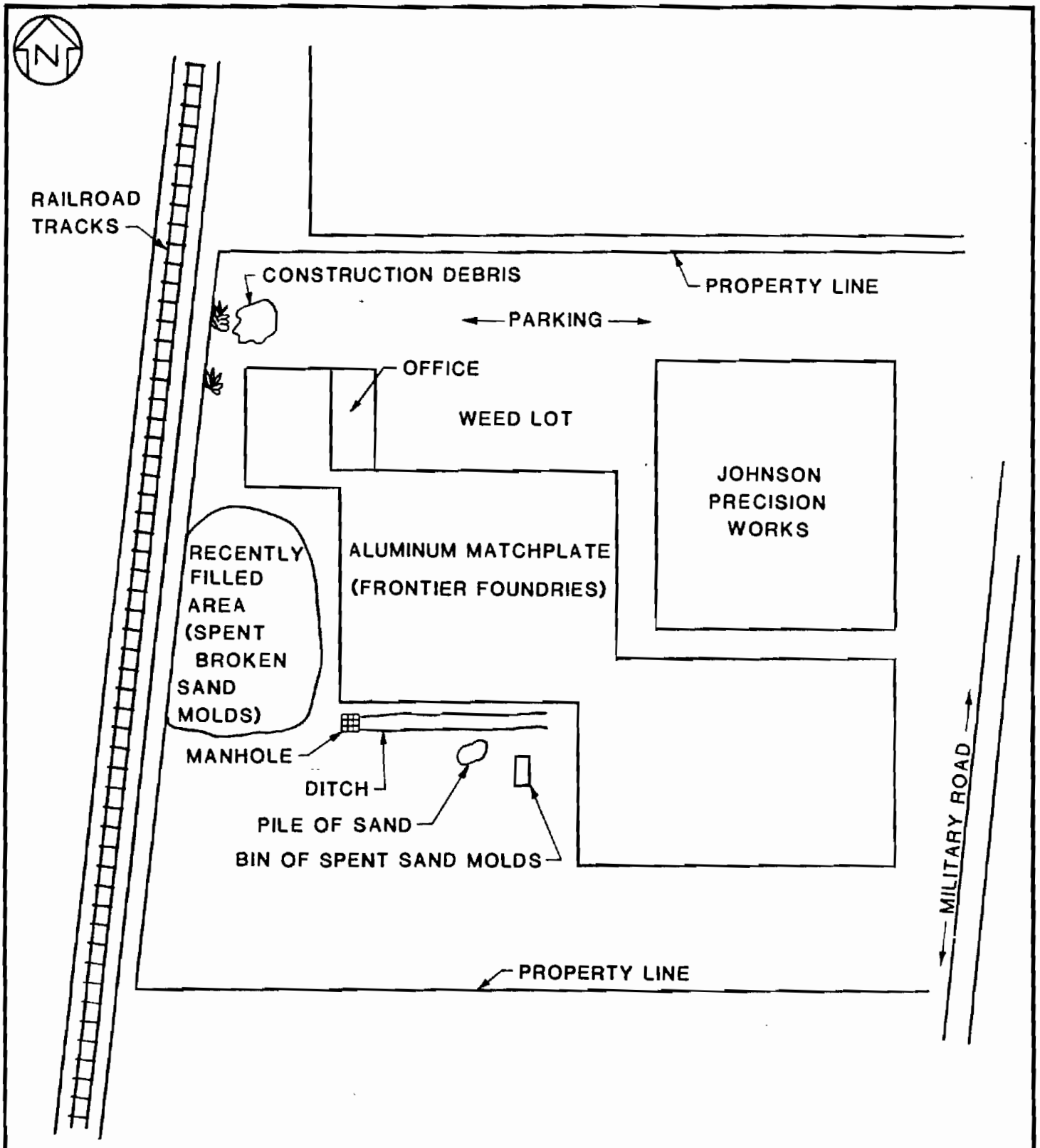
$S_{dc} = 50$



USGS TOPOGRAPHIC MAP
TONAWANDA, N.Y. EAST QUAD 1965
TONAWANDA, N.Y. WEST QUAD 1965
BUFFALO, N.Y. NW QUAD 1965
BUFFALO, N.Y. NE QUAD 1965
LAT 42 58' 45"
LONG 78 53' 15"

RECRA RESEARCH INC. BUFFALO, NEW YORK	Scale: 1:24,000	ALUMINUM MATCHPLATE CO TONAWANDA, N.Y. N.Y.S. SUPERFUND PHASE I	VICINITY MAP
	By / Date		
	Dwn. JEM 12/85		
	Ckd.		
	Ap'vd.		
	Rev.	Project No. 5C280396	A FIGURE 1

BRUNING 61160-1



RECRA RESEARCH INC. BUFFALO, NEW YORK	Scale: NTS			ALUMINUM MATCHPLATE CORP. TONAWANDA, N.Y. N.Y.S. SUPERFUND PHASE I	SITE MAP
		By	Date		
	Dwn.	MJS	1/8/85		
	Ckd.				
	Ap'vd.				
	Rev.			Project No. 5C280396	A FIGURE 2

BRUNING 61160-1

2.0 PURPOSE

The objective of this Phase I investigation is to prepare a report for the Aluminum Match Plate Corporation 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 an objective 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:

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

The 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, relative to water supplies, of population centers and sensitive environments such as wetlands.

3.0 SCOPE OF WORK

In order to provide an accurate and thorough characterization of the Aluminum Match Plate Corporation site, Recra Research, Inc. (Recra), personnel conducted a search of state and county office files, a review of available general information concerning regional geography, geology and hydrogeology, and an interview with personnel associated with site operations.

The majority of the data comprising this report was obtained from NYSDEC Region 9 located at 600 Delaware Avenue, Buffalo, New York (716-847-4600) and the Erie County Department of Environment and Planning located at 95 Franklin Street, Buffalo, New York (716-846-8390). These files provided valuable site information concerning past operations, waste types and quantities, sampling activities and site conditions during past inspections. NYSDEC Region 9 also provided floodplain information and the location of wetlands and critical habitats of endangered species in the vicinity of the site.

In addition to the above mentioned activities, Recra personnel conducted an inspection of the site on December 11, 1985 so as to become familiar with the site and identify the present condition of the facility. At the time of the inspection, the weather was rainy, the temperature was 35°F, and there was no snow cover on the ground. No air monitoring was conducted at this time.

4.0 SITE ASSESSMENT

4.1 Site History

The Aluminum Match Plate Corporation, located on Military Road in Tonawanda, New York, manufactures aluminum casting using the shell molding process (Reference 1). From the 1940s to 1980, the company disposed of spent foundry sands which contained a phenol binder into low-lying areas of the site adjacent to the plant building. Approximately 30 tons of spent sand was generated per week and disposed of into a one acre area (References 14 and 15).

A leachate potential test was conducted on a sample of foundry sand in 1978. Phenol was detected at 0.16 ppm in the elutriate (References 8 and 14).

In 1979, the NYSDEC issued a Part 360 permit to the company for the land-filling operation. The permit was due to expire in September of 1982. In May of 1980, however, the company informed the Erie County Department of Environment and Planning that on site disposal of sand had ceased. The company then contracted Niagara Sanitation to haul the foundry sands generated by current operations to a disposal area in Niagara County (References 15 and 16). An unknown amount of foundry sand used as fill for low-lying marshy areas remains at the site.

In 1982, the U.S. Geological Survey conducted a preliminary hydrogeologic and chemical evaluation of the site. Four test borings were advanced to depths not exceeding 8.5 feet. Groundwater was not encountered in any of the borings. A soil sample was taken from each hole and analyzed for

iron, mercury, and phenol. Iron was the only compound detected (Reference 7).

In December of 1985, Recra personnel inspected the site. No vegetation was growing on the disposal area which appeared to be recently graded. No leachate or stained ground was observed. Refractory rubble was spread on the surface of the fill area.

4.2 Site Area Surface Features

4.2.1 Topography and Drainage

The Aluminum Match Plate Corporation lies in a topographically flat area. The site area slopes very gently towards Two Mile Creek located one half mile west of the site (Reference 5).

Surface drainage is assumed to be collected by storm sewers located adjacent to the site.

4.2.2 Environmental Setting

The Aluminum Match Plate Corporation site is located in an area occupied by commercial, industrial, and residential properties. The area used for disposal of foundry sands lies west of the plant building adjacent to the railroad tracks (Figure 2). There are no barriers of any kind to limit access to the site.

The nearest residence is located within 500 feet of the site on the east side of Military Road. All residents are serviced by municipal water which draws its supply from the Niagara River located 3.25 miles west of

the site. Two Mile Creek, the nearest surface water, is located one half mile west of the site and is classified as a "B" water resource suitable for primary contact recreation and all other uses except as a source of drinking water and culinary and food processing purposes (References 5, 6, and 12). Actual usage of Two Mile Creek is probably limited to secondary contact recreation including occasional fishing and small craft boating.

A classified wetland, BW-6, is located 1.5 miles west of the site. There are no known critical habitats of endangered species in the vicinity of the site (Reference 9). The site is not located within a 100-year floodplain (Reference 17).

4.3 Site Hydrogeology

4.3.1 Geology

Bedrock first encountered underlying the site consists of the Camillus Shale (Reference 13). According to Buehler and Tesmer (1963), the Camillus Shale varies from thin-bedded shale to massive mudstone and is colored gray to brownish gray with some beds showing a reddish or greenish tinge. Subsurface data indicate the presence of limestone and dolostone interbedded with the shale (Reference 11). Gypsum beds up to five feet thick also occur in the Camillus Shale (Reference 11). The Camillus Shale is estimated to be 400 feet thick (Reference 3), dipping southward in Erie County at approximately 40 feet per mile (Reference 11).

In the vicinity of the site, depth to bedrock is approximately 60 feet

(Reference 7, page 224).

4.3.2 Soils

Surficial soils in the site area have been classified as Urban Land-Odessa. This soil unit occurs in highly developed residential areas. The undisturbed portions of this unit are classified as Odessa soils which are poorly drained lake-laid sediments having a high clay content (Reference 10). Permeability of these soils ranges from $<10^{-5}$ $\geq 10^{-7}$ cm/sec (Reference 4).

4.3.3 Groundwater

Water-bearing zones in the Tonawanda area are known to occur in both the Camillus Shale and in the overlying unconsolidated deposits. The Camillus Shale is a very productive aquifer because of the extensive network of joints, fractures and especially solution cavities within the unit. Cavities in the Camillus Shale that yield significant quantities of water were formed primarily by the solution of gypsum by groundwater (Reference 11).

The overlying unconsolidated materials in the area consist of glacial and/or lacustrine deposits. During test drilling conducted in the Tonawanda area by the U.S. Geological Survey in 1982, groundwater was encountered at various depths within the clayey units and sand lenses (Reference 7). In 1944, two wells were installed 2,000 feet west of the site. Groundwater was encountered at 90 feetion a gypsiferous zone of the Camillus Shale (Reference 12).

Permeability associated with the Camillus Shale appears to be related to the degree and connecting of dissolved gypsum cavities in the rock. LaSalla reported the transmissivity of this aquifer to range between 7,000 and 70,000 gal/day/foot (Reference 11).

Permeability of lacustrine deposits consisting of clay, silt, and sand are frequently very low. Permeability tests conducted in association with the U.S. Geological Survey study of the Tonawanda area indicated low vertical permeability ranging from 10^{-6} to 10^{-8} cm/sec (Reference 7). Horizontal permeability was believed to be more variable, especially due to sand stringers in the unconsolidated deposits (Reference 7).

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

The U.S. Geological Survey collected four soil samples from on-site borings in 1982. The depths at which the samples were taken is not identified. The samples were analyzed for iron, mercury, and phenol. Iron

was detected in levels ranging from 8,200 to 13,000 ppm. Mercury and phenol were not detected (Reference 7, pg. 225).

In 1978, the company contracted with Calspan Corporation to analyze a sample of foundry sand according to the EPA Toxicity Extraction Procedure. The elutriate measured 0.16 ppm of phenol (Reference 8).

5.0 PRELIMINARY APPLICATION OF THE HAZARD RANKING SYSTEM

5.1 Narrative Summary

The Aluminum Match Plate Corporation site is located in a commercial/industrial/residential area in the Town of Tonawanda, Erie County, New York. The company is a subsidiary of Frontier Foundries, Inc., of Niagara Falls, New York. Foundry sands which contained a phenol binder were used to fill in low-lying areas of the site. Approximately 30 tons of spent sand was generated per week and disposed of into the one acre area (References 14 and 15).

In 1978, a leachate potential test was conducted on a sample of foundry sand. Phenol was detected at a concentration of 0.16 ppm in the elutriate (References 8 and 14).

In 1979, the NYSDEC issued a Part 360 permit of the company for the land-filling operation. In 1980, the company notified the Erie County Department of Environment and Planning of its plans to cease the on-site disposal of sands. Niagara Sanitation of Niagara County was then contracted to haul all foundry sands generated by future operations (Reference 15).

The U.S. Geological Survey conducted a preliminary subsurface investigation of the site in 1982. Soil samples were collected from each of the four borings and were analyzed for iron, mercury, and phenol. Iron was the only compund detected (Reference 7). The depth at which the samples were taken was not identified.

The nearest surface water, Two Mile Creek, is located one half mile west of the site and is classified as a "B" water resource suitable for all uses except as a source of drinking water and culinary and food processing purposes (References 5, 6, and 12). A classified wetland, BW-6, is located 1.5 miles west of the site (Reference 9). There are no known critical habitats of endangered species in the vicinity of the site and the site is not in a 100-year floodplain (References 9 and 17).

5.2 HRS WORKSHEET

Facility name: Aluminum Matchplate

Location: 1500 Military Road, Tonawanda, Erie County, New York

EPA Region: 2

Person(s) in charge of the facility: E. Cam Austin, Plant Manager

Name of Reviewer: Recra Research, Inc. Date: January 14, 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.)

The facility is located in a commercial/industrial/residential area in Tonawanda, New York. Foundry sands containing a phenol binder were used as fill for low lying areas of the site comprising about one acre. In 1982, USGS collected soil samples and analyzed for mercury, iron, and phenol and found only iron. In 1978, EP toxicity test of foundry sands indicated 0.16 ppm phenol concentration in elutriate.

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

$S_{FE} =$ N/A

$S_{DC} = 50$

FIGURE 1
HRS COVER SHEET

Ground Water Route Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multi-plier	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	2	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	0	3	
Total Route Characteristics Score			6	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	12	18	
Hazardous Waste Quantity	0 (1) 2 3 4 5 6 7 8	1	1	8	
Total Waste Characteristics Score			13	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	4	6	
Physical State	(0) 1 2 3	1	0	3	
Total Route Characteristics Score			6	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	12	18	
Hazardous Waste Quantity	0 (1) 2 3 4 5 6 7 8	1	1	8	
Total Waste Characteristics Score			13	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	0	6	
Population Served/Distance to Water Intake Downstream	(0) 4 6 8 10 / 12 15 18 20 / 24 30 32 35 40	1	0	40	
Total Targets Score			0	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			0	64,350	
7 Divide line 6 by 64,350 and multiply by 100		S_{sw} =	0		

FIGURE 7
SURFACE WATER ROUTE WORK SHEET

Air Route Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multi-plier	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		3	
Toxicity	0 1 2 3	3		9	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1		8	
	Total Waste Characteristics Score			20	
3 Targets					5.3
Population Within 4-Mile Radius	0 9 12 15 18 21 24 27 30	1		30	
Distance to Sensitive Environment	0 1 2 3	2		6	
Land Use	0 1 2 3	1		3	
	Total Targets Score			39	
4 Multiply 1 x 2 x 3				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})	0	0
Air Route Score (S_a)	0	0
$S_{gw}^2 + S_{sw}^2 + S_a^2$		0
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2}$		0
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2} / 1.73 = S_M =$		0

FIGURE 10
WORKSHEET FOR COMPUTING S_M

Fire and Explosion Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)
1 Containment	1 3	1		3	7.1
2 Waste Characteristics					7.2
Direct Evidence	0 3	1		3	
Ignitability	0 1 2 3	1		3	
Reactivity	0 1 2 3	1		3	
Incompatibility	0 1 2 3	1		3	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1		8	
Total Waste Characteristics Score				20	
3 Targets					7.3
Distance to Nearest Population	0 1 2 3 4 5	1		5	
Distance to Nearest Building	0 1 2 3	1		3	
Distance to Sensitive Environment	0 1 2 3	1		3	
Land Use	0 1 2 3	1		3	
Population Within 2-Mile Radius	0 1 2 3 4 5	1		5	
Buildings Within 2-Mile Radius	0 1 2 3 4 5	1		5	
Total Targets Score				24	
4 Multiply 1 x 2 x 3				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	3	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			10,800	21,600	
7 Divide line 6 by 21,600 and multiply by 100		S_{DC} = 50			

FIGURE 12
DIRECT CONTACT WORK SHEET

June 28, 1982

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: Aluminum Matchplate Corporation

LOCATION: 1500 Military Road, Tonawanda, Erie County, New York

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:

Aquifer in Camillus Shale at approximately 85 feet
unconsolidated deposits are mainly clay, perched water common

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

Unknown

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

Unknown

Net Precipitation

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

36 inches (Ref. 4)

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

26 inches (Ref. 4)

Net precipitation (subtract the above figures):

10 inches

Permeability of Unsaturated Zone

Soil type in unsaturated zone:

Urban-Land Odessa (Ref. 10)

Permeability associated with soil type:

$<10^{-5} \geq 10^{-7}$ cm/sec. (Ref. 4)

Physical State

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

Solid (Ref. 14)

* * *

3 CONTAINMENT

Containment

Method(s) of waste or leachate containment evaluated:

No containment (Ref. 14)

Method with highest score:

No containment (Ref. 4)

4 WASTE CHARACTERISTICS

Toxicity and Persistence

Compound(s) evaluated:

Phenol (Ref. 14)

Compound with highest score:

Phenol (Ref. 4)

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):

A leachate potential test was performed on a foundry sand sample from the site in 1978. Phenol was detected at 0.16 ppm in the elutriate. Subsequent sampling of the fill area by the U.S. Geological Survey in 1982 did not detect any phenol at the site. Consequently, apply HRS score of 1 for unknown. (Refs. 2, 7, 8, and 14)

Basis of estimating and/or computing waste quantity:

N/A

* * *

5 TARGETS

Ground Water Use

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

Not used

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 (Ref. 11 and 12)

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

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

Facility Slope and Intervening Terrain

Average slope of facility in percent:

Less than 1% (Ref. 5)

Name/description of nearest downslope surface water:

Two Mile Creek Class "B" Water Resource (Ref. 6)

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

Less than 1% (Ref. 5)

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

No

Is the facility completely surrounded by areas of higher elevation?

No

1-Year 24-Hour Rainfall in Inches

2.1 inches (Ref. 6)

Distance to Nearest Downslope Surface Water

2500 feet (Ref. 5)

Physical State of Waste

Solid (Ref. 14)

* * *

3 CONTAINMENT

Containment

Method(s) of waste or leachate containment evaluated:

No Containment (Ref. 14)

Method with highest score:

No Containment

4 WASTE CHARACTERISTICS

Toxicity and Persistence

Compound(s) evaluated

Phenol (Refs. 7 and 14)

Compound with highest score:

Phenol (Ref. 4)

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):

A leachate potential test was performed on a foundry sand sample from the site in 1978. Phenol was detected at 0.16 ppm in the elutriate. Subsequent sampling of the fill area by the U.S. Geological Survey in 1982 did not detect any phenol at the site. Consequently, apply HRS score of 1 for unknown. (Refs. 2, 7, 8, and 14)

Basis of estimating and/or computing waste quantity:

N/A

* * *

5 TARGETS

Surface Water Use

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

Two Mile Creek located ½ mile west of site is classified as a "B" water resource suitable for primary contact recreation and all other uses except as a source of drinking water.

East Branchof Niagara River located 2¼ miles west of site, classified as A-special international boundary waters suitable for drinking. However, no intakes located within 3 miles of site. (Refs. 6, 12, and 18)

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:

N/A

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

N/A

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:

East branch of Niagara River, southwest of Tonawanda Island

No intakes within 3 miles downstream of site (Ref. 12)

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:

Two Mile Creek, classified as a "B" water resource suitable for primary contact recreation

(Ref. 6 and 18)

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

Approximately 4¼ miles (Ref. 12)

AIR ROUTE

1 OBSERVED RELEASE

Contaminants detected:

No observed release. Documentation for the air route is not applicable.

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

Reactivity and Incompatibility

Most reactive compound:

N/A

Most incompatible pair of compounds:

N/A

Toxicity

Most toxic compound:

Hazardous Waste Quantity

Total quantity of hazardous waste:

Basis of estimating and/or computing waste quantity:

* * *

3 TARGETS

Population Within 4-Mile Radius

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

0 to 4 mi 0 to 1 mi 0 to 1/2 mi 0 to 1/4 mi

Distance to a Sensitive Environment

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

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

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

Land Use

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

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

Distance to residential area, if 2 miles or less:

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

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

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

FIRE AND EXPLOSION

NOT APPLICABLE

1 CONTAINMENT

Hazardous substances present:

Type of containment, if applicable:

* * *

2 WASTE CHARACTERISTICS

Direct Evidence

Type of instrument and measurements:

Ignitability

Compound used:

Reactivity

Most reactive compound:

Incompatibility

Most incompatible pair of compounds:

* * *

Hazardous Waste Quantity

Total quantity of hazardous substances at the facility:

Basis of estimating and/or computing waste quantity:

* * *

3 TARGETS

Distance to Nearest Population

Distance to Nearest Building

Distance to Sensitive Environment

Distance to wetlands:

Distance to critical habitat:

Land Use

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

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

Distance to residential area, if 2 miles or less:

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

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

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

Population Within 2-Mile Radius

Buildings Within 2-Mile Radius

DIRECT CONTACT

1 OBSERVED INCIDENT

Date, location, and pertinent details of incident:

N/A

* * *

2 ACCESSIBILITY

Describe type of barrier(s):

No barriers to entry (Recra site visit, 12/11/85)

* * *

3 CONTAINMENT

Type of containment, if applicable:

No containment (Ref. 14)

* * *

4 WASTE CHARACTERISTICS

Toxicity

Compounds evaluated:

Phenol (Ref. 14)

Compound with highest score:

Phenol (Ref. 4)

* * *

5 TARGETS

Population within one-mile radius

Between 3,000 and 10,000 (Ref. 5)

Distance to critical habitat (of endangered species)

N/A

5.4 EPA PRELIMINARY ASSESSMENT
(Form 2070-12)

EPA

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

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	915005

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site)	02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER
ALUMINUM MATCHPLATE Corp	1500 MILITARY ROAD

03 CITY	04 STATE	05 ZIP CODE	06 COUNTY	07 COUNTY CODE	08 CONG DIST
TONAWANDA	NY	14217	ERIE		

09 COORDINATES LATITUDE	LONGITUDE
42° 58' 45."	078 53' 15."

10 DIRECTIONS TO SITE (Starting from nearest public road)
MILITARY ROAD SOUTH FROM SHERIDAN TO 1500 MILITARY

III. RESPONSIBLE PARTIES

01 OWNER (If known)	02 STREET (Business, mailing, residential)
FRONTIER BRONZE CORP.	4870 PACKARD ROAD

03 CITY	04 STATE	05 ZIP CODE	06 TELEPHONE NUMBER
NIAGARA FALLS	NY	14304	(716) 282-1251

07 OPERATOR (If known and different from owner)	08 STREET (Business, mailing, residential)
Aluminum Matchplate Corp.	

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

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 4 / 7 / 81 (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: Erie Co. Dept. of Environment & Planning (Specify)
CONTRACTOR NAME(S): _____

02 SITE STATUS (Check one)	03 YEARS OF OPERATION		
☐ A. ACTIVE ■ B. INACTIVE ☐ C. UNKNOWN	1940 (BEGINNING YEAR)	1979 (ENDING YEAR)	☐ UNKNOWN

04 DESCRIPTION OF SUBSTANCES POSSIBLY PRESENT, KNOWN, OR ALLEGED
phenol

05 DESCRIPTION OF POTENTIAL HAZARD TO ENVIRONMENT AND/OR POPULATION
unknown

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 RESEARCH, INC	(716) 833-8203

04 PERSON RESPONSIBLE FOR ASSESSMENT	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NUMBER	08 DATE
DIANE M. WERNEIWSKI		RECRA RESEARCH	(716) 833 8203	12 / 14 / 15 (MONTH DAY YEAR)

EPA FORM 2070-12 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	915005

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 _____

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			
OLW	OILY WASTE			
SOL	SOLVENTS			
PSD	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS			
IOC	INORGANIC CHEMICALS			
ACD	ACIDS			
BAS	BASES			
MES	HEAVY METALS			

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

V. FEEDSTOCKS (See Appendix for CAS Numbers)

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

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

EPA

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

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	915005

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 ☐ A. GROUNDWATER CONTAMINATION 03 POPULATION POTENTIALLY AFFECTED _____	02 ☐ OBSERVED (DATE _____) 04 NARRATIVE DESCRIPTION	☐ POTENTIAL	☐ ALLEGED
UNKNOWN			
01 ☐ B. SURFACE WATER CONTAMINATION 03 POPULATION POTENTIALLY AFFECTED _____	02 ☐ OBSERVED (DATE _____) 04 NARRATIVE DESCRIPTION	☐ POTENTIAL	☐ ALLEGED
UNKNOWN			
01 ☐ C. CONTAMINATION OF AIR 03 POPULATION POTENTIALLY AFFECTED. _____	02 ☐ OBSERVED (DATE _____) 04 NARRATIVE DESCRIPTION	☐ POTENTIAL	☐ ALLEGED
UNKNOWN			
01 ☐ D. FIRE/EXPLOSIVE CONDITIONS 03 POPULATION POTENTIALLY AFFECTED. _____	02 ☐ OBSERVED (DATE: _____) 04 NARRATIVE DESCRIPTION	☐ POTENTIAL	☐ ALLEGED
UNKNOWN			
01 ☐ E. DIRECT CONTACT 03 POPULATION POTENTIALLY AFFECTED _____	02 ☐ OBSERVED (DATE: _____) 04 NARRATIVE DESCRIPTION	☐ POTENTIAL	☐ ALLEGED
UNKNOWN			
01 ☐ F. CONTAMINATION OF SOIL 03 AREA POTENTIALLY AFFECTED: _____ (Acres)	02 ☐ OBSERVED (DATE _____) 04 NARRATIVE DESCRIPTION	☐ POTENTIAL	☐ ALLEGED
UNKNOWN			
01 ☐ G. DRINKING WATER CONTAMINATION 03 POPULATION POTENTIALLY AFFECTED: _____	02 ☐ OBSERVED (DATE: _____) 04 NARRATIVE DESCRIPTION	☐ POTENTIAL	☐ ALLEGED
UNKNOWN			
01 ☐ H. WORKER EXPOSURE/INJURY 03 WORKERS POTENTIALLY AFFECTED: _____	02 ☐ OBSERVED (DATE: _____) 04 NARRATIVE DESCRIPTION	☐ POTENTIAL	☐ ALLEGED
UNKNOWN			
01 ☐ I. POPULATION EXPOSURE/INJURY 03 POPULATION POTENTIALLY AFFECTED: _____	02 ☐ OBSERVED (DATE: _____) 04 NARRATIVE DESCRIPTION	☐ POTENTIAL	☐ ALLEGED
UNKNOWN	--		

EPA

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

I. IDENTIFICATION
01 STATE: NY | 02 SITE NUMBER: 915005

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

UNKNOWN

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

UNKNOWN

III. TOTAL POPULATION POTENTIALLY AFFECTED: UNKNOWN

IV. COMMENTS

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

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	915035

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site)	02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER				
ALUMINUM MATCHPLATE	1500 MILITARY ROAD				
03 CITY	**04 STATE**	**05 ZIP CODE**	**06 COUNTY**	**07 COUNTY CODE**	**08 CONG DIST**
TONAWANDA	NY	14217	ERIE		

09 COORDINATES
LATITUDE 42° 58' 45" | LONGITUDE 078° 53' 15"

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
12, 11, 85 (MONTH DAY YEAR)	☐ ACTIVE ☒ INACTIVE	1940 (BEGINNING YEAR) – 1979 (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 RESEARCH INC	(716) 8386200
09 OTHER INSPECTORS	**10 TITLE**	**11 ORGANIZATION**	**12 TELEPHONE NO.**
SHELDON S. NOZIK	Environmental Scientist	RECRA RESEARCH INC	(716) 8386200
			( )
			( )
			( )
			( )

13 SITE REPRESENTATIVES INTERVIEWED	14 TITLE	15 ADDRESS	16 TELEPHONE NO
E. CAM AUSTIN	PLANT MANAGER	1500 MILITARY RD.	(716) 873-7054
			( )
			( )
			( )
			( )
			( )

17 ACCESS GAINED BY (Check one)	18 TIME OF INSPECTION	19 WEATHER CONDITIONS
☒ PERMISSION ☐ WARRANT	10:00 AM	CLOUDY, RAIN, 35°F

IV. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency/Organization)	03 TELEPHONE NO
THOMAS P. CONNARE	RECRA RESEARCH INC	(716) 833-8203

04 PERSON RESPONSIBLE FOR SITE INSPECTION FORM	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NO.	08 DATE
DIANE M. WERNEIWSKI		RECRA RESEARCH	(716) 833-8203	12 / 14 / 85 (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	915005

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 UNKNOWN

CUBIC YARDS _____

NO OF DRUMS _____

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			
OLW	OILY WASTE			
SOL	SOLVENTS			
PSD	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS			
IOC	INORGANIC CHEMICALS			
ACD	ACIDS			
BAS	BASES			
MES	HEAVY METALS			

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

V. FEEDSTOCKS (See Appendix for CAS Numbers)

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

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

EPA FORM 2070-13(7-81)

EPA

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

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	915005

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

UNKNOWN

01 ☐ F. CONTAMINATION OF SOIL — 02 ☐ OBSERVED (DATE 1982) ☐ POTENTIAL ☐ ALLEGED
03 AREA POTENTIALLY AFFECTED: _____ (Acres) 04 NARRATIVE DESCRIPTION

USGS STUDY DETECTED ELEVATED LEVELS OF IRON IN SITE SOILS (REFERENCE 7)

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

UNKNOWN

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

UNKNOWN

EPA

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

I. IDENTIFICATION
01 STATE: NY | 02 SITE NUMBER: 915005

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
WASTES HAVE BEEN REMOVED

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
UNKNOWN

III. TOTAL POPULATION POTENTIALLY AFFECTED: UNKNOWN

IV. COMMENTS

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)
REFERENCE 7 - EPA-905/4-85-001. PRELIMINARY EVALUATION OF CHEMICAL MIGRATION TO GROUNDWATER AND THE NIAGARA RIVER FROM SELECTED WASTE DISPOSAL SITES

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

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	915005

II. PERMIT INFORMATION

01 TYPE OF PERMIT ISSUED (Enter 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				
H LOCAL				
I OTHER				
J NONE				

III. SITE DESCRIPTION

01 STORAGE/DISPOSAL (Enter all that apply)	02 AMOUNT	03 UNIT OF MEASURE	04 TREATMENT (Enter all that apply)	05 OTHER
A SURFACE IMPOUNDMENT			A INCINERATION	A BUILDINGS ON SITE
B PILES			B UNDERGROUND INJECTION	
C DRUMS, ABOVE GROUND			C CHEMICAL/PHYSICAL	
D TANK, ABOVE GROUND			D BIOLOGICAL	
E TANK, BELOW GROUND			E WASTE OIL PROCESSING	06 AREA OF SITE
F LANDFILL			F SOLVENT RECOVERY	< 1 (Acres)
G LANDFARM			G OTHER RECYCLING/RECOVERY	
H OPEN DUMP			H OTHER	
I OTHER				

07 COMMENTS

IV. CONTAINMENT

01 CONTAINMENT OF WASTES

A ADEQUATE, SECURE | B MODERATE | C INADEQUATE, POOR | D INSECURE, UNSOUND, DANGEROUS

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

FOUNDRY SAND WAS STORED AT THE SITE - HOWEVER IT HAS BEEN REMOVED.

V. ACCESSIBILITY

01 WASTE EASILY ACCESSIBLE YES NO

02 COMMENTS

FOUNDRY SANDS (WASTE) HAVE BEEN REMOVED FROM SITE

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

EPA

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

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	915005

II. DRINKING WATER SUPPLY

01 TYPE OF DRINKING SUPPLY (Check as applicable)	SURFACE	WELL
COMMUNITY	A ■	B ☐
NON-COMMUNITY	C ☐	D ☐

02 STATUS	ENDANGERED	AFFECTED	MONITORED
	A ☐	B ☐	C ☐
	D ☐	E ☐	F ☐

03 DISTANCE TO SITE
A _____ (mi)
B _____ (mi)

III. GROUNDWATER

01 GROUNDWATER USE IN VICINITY (Check one)
☐ A. ONLY SOURCE FOR DRINKING B. DRINKING (Other sources available) C. COMMERCIAL, INDUSTRIAL, IRRIGATION (Other sources available) ● D. NOT USED, UNUSEABLE
COMMERCIAL, INDUSTRIAL, IRRIGATION (No other sources available)

02 POPULATION SERVED BY GROUND WATER 0

03 DISTANCE TO NEAREST DRINKING WATER WELL _____ (mi)

04 DEPTH TO GROUNDWATER	05 DIRECTION OF GROUNDWATER FLOW	06 DEPTH TO AQUIFER OF CONCERN	07 POTENTIAL YIELD OF AQUIFER	08 SOLE SOURCE AQUIFER
~90 (ft)	westerly	_____ (ft)	_____ (gpd)	☐ YES ☐ NO

09 DESCRIPTION OF WELLS (Including usage, depth, and location relative to population and buildings)
TWO WELLS LOCATED APPROXIMATELY ONE MILE WEST OF SITE AT UNION CARBIDE, DEPTH OF WELLS 375 feet, NOT USABLE

10 RECHARGE AREA		11 DISCHARGE AREA	
☐ YES	COMMENTS	☐ YES	COMMENTS
☐ NO		☐ NO	

IV. SURFACE WATER

01 SURFACE WATER USE (Check one)
☑ 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		~3 (mi)
TWO MILE CREEK		~.5 (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 >3000 (NO. OF PERSONS)

02 DISTANCE TO NEAREST POPULATION
~.1 (mi)

03 NUMBER OF BUILDINGS WITHIN TWO (2) MILES OF SITE	04 DISTANCE TO NEAREST OFF-SITE BUILDING
>1000	Adjacent (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 LOCATED IN AN INDUSTRIAL/COMMERCIAL/ RESIDENTIAL AREA

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

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	915005

II. SAMPLES TAKEN

SAMPLE TYPE	01 NUMBER OF SAMPLES TAKEN	02 SAMPLES SENT TO	03 ESTIMATED DATE RESULTS AVAILABLE
GROUNDWATER			
SURFACE WATER			
WASTE			
AIR			
RUNOFF			
SPILL			
SOIL	4	U.S. Geological Survey	1982
VEGETATION			
OTHER			

III. FIELD MEASUREMENTS TAKEN

01 TYPE	02 COMMENTS

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)

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

EPA DOCUMENT - 905/4-85-001

EPA

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

I. IDENTIFICATION
01 STATE: NY | 02 SITE NUMBER: 915005

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	04 DEPTH OF CONTAMINATED SOIL ZONE	05 SOIL pH	
~ 86 (ft)	unknown (ft)	unknown	

06 NET PRECIPITATION	07 ONE YEAR 24 HOUR RAINFALL	08 SLOPE: SITE SLOPE	DIRECTION OF SITE SLOPE	TERRAIN AVERAGE SLOPE
10 (in)	2.1 (in)	< 3 %	WEST	< 3 %

09 FLOOD POTENTIAL
SITE IS IN N/A YEAR FLOODPLAIN

10 ☐ SITE IS ON BARRIER ISLAND, COASTAL HIGH HAZARD AREA, RIVERINE FLOODWAY

11 DISTANCE TO WETLANDS (5 acre minimum)
ESTUARINE: A. _____ (mi)
OTHER: B. ~ 1.5 (mi)

12 DISTANCE TO CRITICAL HABITAT (of endangered species)
NA (mi)
ENDANGERED SPECIES: _____

13 LAND USE IN VICINITY

DISTANCE TO:

COMMERCIAL/INDUSTRIAL	RESIDENTIAL AREAS; NATIONAL/STATE PARKS, FORESTS, OR WILDLIFE RESERVES	AGRICULTURAL LANDS: PRIME AG LAND	AG LAND
A. Adjacent (mi)	B. < 500 ft (mi)	C. N/A (mi)	D. _____ (mi)

14 DESCRIPTION OF SITE IN RELATION TO SURROUNDING TOPOGRAPHY

The Aluminum Matchplate Corporation is located in a topographically flat area

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

- NYSDEC REGION 9 FILES
- HRS USERS MANUAL
- TOPOGRAPHIC MAP, BUFFALO NY NW. QUAD 1965

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

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	915005

II. CURRENT OWNER(S)

01 NAME	02 D+B NUMBER
FRONTIER BRONZE CORP.	

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
4810 PACKARD ROAD	

05 CITY	06 STATE	07 ZIP CODE
NIAGARA FALLS	NY	14304

01 NAME | 02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.) | 04 SIC CODE
05 CITY | 06 STATE | 07 ZIP CODE

01 NAME | 02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.) | 04 SIC CODE
05 CITY | 06 STATE | 07 ZIP CODE

01 NAME | 02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.) | 04 SIC CODE
05 CITY | 06 STATE | 07 ZIP CODE

PARENT COMPANY (if applicable)

08 NAME | 09 D+B NUMBER
10 STREET ADDRESS (P.O. Box, RFD #, etc.) | 11 SIC CODE
12 CITY | 13 STATE | 14 ZIP CODE

08 NAME | 09 D+B NUMBER
10 STREET ADDRESS (P.O. Box, RFD #, etc.) | 11 SIC CODE
12 CITY | 13 STATE | 14 ZIP CODE

08 NAME | 09 D+B NUMBER
10 STREET ADDRESS (P.O. Box, RFD #, etc.) | 11 SIC CODE
12 CITY | 13 STATE | 14 ZIP CODE

08 NAME | 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)

01 NAME | 02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.) | 04 SIC CODE
05 CITY | 06 STATE | 07 ZIP CODE

01 NAME | 02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.) | 04 SIC CODE
05 CITY | 06 STATE | 07 ZIP CODE

01 NAME | 02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.) | 04 SIC CODE
05 CITY | 06 STATE | 07 ZIP CODE

IV. REALTY OWNER(S) (if applicable, list most recent first)

01 NAME | 02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.) | 04 SIC CODE
05 CITY | 06 STATE | 07 ZIP CODE

01 NAME | 02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.) | 04 SIC CODE
05 CITY | 06 STATE | 07 ZIP CODE

01 NAME | 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)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 8 - OPERATOR INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	915005

II. CURRENT OPERATOR (Provide if different from owner)

01 NAME	02 D+B NUMBER
Aluminum Matchplate	

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
1500 Military Rd.	

05 CITY	06 STATE	07 ZIP CODE
Tonawanda	NY	14217

08 YEARS OF OPERATION	09 NAME OF OWNER
>20yrs	

OPERATOR'S PARENT COMPANY (If applicable)

10 NAME	11 D+B NUMBER

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

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

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

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 analyses, reports)

EPA

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

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	915005

II. ON-SITE GENERATOR

01 NAME	02 D+B NUMBER	
Aluminum Matchplate		
03 STREET ADDRESS (Number and Street)	04 SIC CODE	
1500 Military Rd		
05 CITY	06 STATE	07 ZIP CODE
Tonawanda	NY	14217

III. OFF-SITE GENERATOR(S)

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
03 STREET ADDRESS (Number and Street)	04 SIC CODE	03 STREET ADDRESS (Number and Street)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE	05 CITY	06 STATE / 07 ZIP CODE
01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
03 STREET ADDRESS (Number and Street)	04 SIC CODE	03 STREET ADDRESS (Number and Street)	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
03 STREET ADDRESS (Number and Street)	04 SIC CODE	03 STREET ADDRESS (Number and Street)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE	05 CITY	06 STATE / 07 ZIP CODE
01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
03 STREET ADDRESS (Number and Street)	04 SIC CODE	03 STREET ADDRESS (Number and Street)	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)

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EPA

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

I. IDENTIFICATION

01 STATE: NY | 02 SITE NUMBER: 915105

II. PAST RESPONSE ACTIVITIES

01 ☐ A. WATER SUPPLY CLOSED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
NA

01 ☐ B. TEMPORARY WATER SUPPLY PROVIDED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
NA

01 ☐ C. PERMANENT WATER SUPPLY PROVIDED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
NA

01 ☐ D. SPILLED MATERIAL REMOVED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
NA

01 ☐ E. CONTAMINATED SOIL REMOVED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
NA

01 ☐ F. WASTE REPACKAGED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
NA

01 ☐ G. WASTE DISPOSED ELSEWHERE — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
NA

01 ☐ H. ON SITE BURIAL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
NA

01 ☐ I. IN SITU CHEMICAL TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
NA

01 ☐ J. IN SITU BIOLOGICAL TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
NA

01 ☐ K. IN SITU PHYSICAL TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
NA

01 ☐ L. ENCAPSULATION — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
NA

01 ☐ M. EMERGENCY WASTE TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
NA

01 ☐ N. CUTOFF WALLS — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
NA

01 ☐ O. EMERGENCY DIKING/SURFACE WATER DIVERSION — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
NA

01 ☐ P. CUTOFF TRENCHES/SUMP — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
NA

01 ☐ Q. SUBSURFACE CUTOFF WALL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
NA

EPA

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

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	915035

II PAST RESPONSE ACTIVITIES (Continued)

01 ☐ R. BARRIER WALLS CONSTRUCTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION NA

01 ☐ S. CAPPING/COVERING — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION NA

01 ☐ T. BULK TANKAGE REPAIRED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION NA

01 ☐ U. GROUT CURTAIN CONSTRUCTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION NA

01 ☐ V. BOTTOM SEALED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION NA

01 ☐ W. GAS CONTROL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION NA

01 ☐ X. FIRE CONTROL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION NA

01 ☐ Y. LEACHATE TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION NA

01 ☐ Z. AREA EVACUATED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION NA

01 ☐ 1. ACCESS TO SITE RESTRICTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION NA

01 ☐ 2. POPULATION RELOCATED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION NA

01 ☐ 3. OTHER REMEDIAL ACTIVITIES — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION None Known

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	91505

II. ENFORCEMENT INFORMATION

01 PAST REGULATORY ENFORCEMENT ACTION ☐ YES ☒ NO

02 DESCRIPTION OF FEDERAL, STATE, LOCAL REGULATORY ENFORCEMENT ACTION

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

EPA FORM 2070-13 (7-81)

6.0 ADEQUACY OF AVAILABLE DATA

In completing the Hazard Ranking System score (HRS), Aluminum Match Plate Corporation was found to have a migration potential of 0.0. This score was based on the information acquired through a review of available literature. During completion of the HRS, several data inadequacies were encountered. The following would be necessary to address these inadequacies:

- Limited sampling of surface and subsurface soils that would include updated extraction procedure toxicity testing for phenol.
- Subsurface information including depth to the water table, soil permeability, groundwater quality, and groundwater flow direction. This information would be necessary if a contamination problem was found at the site during a preliminary sampling program.

7.0 PROPOSED PHASE II WORK PLAN

A Phase II investigation of the Aluminum Match Plate site involving a geophysics survey, test borings, monitoring well installation, and groundwater sampling does not appear to be warranted. The HRS scoring of 12 for toxicity is based upon the possibility of phenol being present in the foundry sand fill material. The results of an extraction toxicity test on a sample of the foundry sand in 1978 indicated a phenol concentration of 0.16 ppm in the extraction elutriate (Reference 8). Soil samples collected at the site by the U.S. Geological Survey in 1982, however, did not contain any detectable amounts of phenol (Reference 7).

A limited soil sampling program should be conducted at the site to determine if phenol exists in the fill material at the present time. Six surface (0'-2' interval) and six subsurface (2'-4' interval) hand auger samples should be collected randomly across the filled areas of the site. Adjacent samples from each interval should be composited and analyzed for phenol using an extraction procedure toxicity test. Positive results from these analyses would suggest that further investigation and possible remedial action is needed at the site.

APPENDIX A

DATA SOURCES AND REFERENCES

REFERENCES

1. Aluminum Match Plate Corporation, Operation Plan and Plant Process.

2. Memorandum, Erie County Department of Environment and Planning, from Ronald Koczaja, January 9, 1979.

3. The Geology of Erie County, New York, Edward J. Buehler, Irving H. Tesmer, Buffalo Society of Natural Sciences Bulletin, Vol. 21, No. 3, 1963.

4. Hazardous Ranking System, Users Manual, June 1982.

5. US Geological Survey, Buffalo Northwest, New York Quadrangle, 7.5 minute, 1965.

6. State of New York, Official Compilation of Codes, Rules, and Regulations, Vol. C, 1967.

7. Preliminary Evaluation of Chemical Migration to Groundwater and the Niagara River from Selected Waste Disposal Sites, USEPA, March, 1985.

8. Letter from Richard P. Leonard, Calspan Corporation, to Matthew Van Voris, Aluminum Match Plate, October 9, 1978.

9. Letter and map from Gordon Batcheller, NYSDEC Region 9, to Sheldon S. Nozik, Recra Research, Inc., December 19, 1985.

10. General Soil Map and Interpretations, Erie County, New York, USDA, Soil Conservation Service, May 1979.

11. Erie-Niagara Basin Groundwater Resources, Erie Niagara Basin Regional Water Resources Planning Board, 1968.

12. New York State Atlas of Community Water System Sources, New York State Department of Health, Division of Environmental Protection Bureau of Public Water Supply Protection, 1982.

13. Freeze, R. A., and John A. Cherry, Groundwater, Prentice-Hall, Inc., Englewood Cliffs, NJ 1979.

14. NYSDEC Division of Solid and Hazardous Waste Inactive Disposal Site Report, Peter Buechi, December, 1983.

15. Letter from Elmer A. Weston, Aluminum Match Plate Corporation to Ronald D. Koczaja, Erie County Department of Environment and Planning, May 2, 1980.

16. Letter to Matthew Van Voris, Frontier Foundries, from Diane M. Werneiwski, Recra Research, Inc., January 9, 1986.

17. Daily Field Report Flood Plain Information Gathered from Becky Anderson, NYSDEC Flood Control Division by Sheldon S. Nozik, Recra Research, Inc. December 12, 1986.

18. New York State Water Laws, Bureau of National Affairs, Inc., Washington, D.C., August 17, 1979.

REFERENCE 1

FRONTIER BRONZE
CORPORATION

ALUMINUM CASTINGS
NON-FERROUS CASTINGS

TRADE FRONTIER MARK

FRONTIER 40-E ALUMINUM ALLOY

4870 PACKARD ROAD
NIAGARA FALLS, N.Y. 14305

ALUMINUM MATCH PLATE CORP.

OPERATION PLAN AND PLANT PROCESS

At the present time this plant is contained within two buildings as shown on the site plan marked as S1. As described previously this plant manufactures a variety of aluminum castings using the shell molding process and permanent mold process.
Clean ingot and casting returns are used as the raw material input for metal. The mold itself, into which the metal is poured, consists of 140 grit silica sand and a Phenolic Formaldahyde resin used to bond the sand into any desired shape. The molds are produced using various tooling and machines for this specific purpose. External heat is the catalyst for activating the bonding process.
Once the molds are asembled the molten metal is poured into the molds. After a cooling period the castings and molds go to a shakeout station. The shell sand, still in a bonded form,is broken away from the casting and is collected in a central location. At the present time this used shell sand cannot be recoated so it has no further value. When future technology discovers a method of reclaiming this sand and recoating it for continued use, I am sure we will follow such a procedure. Once enough used sand is collected a small company owned dump truck hauls this sand to the landfill location as shown on the site plan.
The actual procedure for operation of the landfill is very simple. Once enough material is dumped the material is graded to a level as desired. There are no specific procedures other than the only material dumped is used shell sand. As for compliance as setforth in 6 NYCRR 360.8 they are as follows:

Section 360.8
a) General Requirements

1) By the very nature of this waste it is impossbile for the waste to enter surface or ground waters.

2) The landfill is located in a zoned first industrial area by the Town of Tonawanda.

3) Application for disposal of an industrial waste stream completed.

4) Salvaging may be done when technically feasible in the future.

5) Dumping is done only during normal working hours. (daylight)

6) No access controls are needed since the site is very small and used only by plant personnel.

7) All other refuse and plant waste is disposed of using alternate means.

8) There are no such hazards.

9) " " " roads.

10) " " " safety hazards.

11) There is no noise problems as specified.

12) The plant fulfills these requirements.

13) Same as above.

14) No burning is permitted.

15) See Site Plan.

16) Not applicable.

17) Records consist of the volume of sand purchased and used during any given period.

18) No reports are necessary.

19) Compliance will result subject to approval by the department.

20) See USGS Map (Buffalo NW Quadrangle). There is no flood plain in the area.

b) Requirements for Specific Solid Waste Management Facilities

We are requesting that a variance for this section be granted. Justification for this waiver is as follows. We feel that since the Leachate Test proves that no hazard exists for this material and that the landfill has only one use (private) and is very small, this section should not apply to this landfill.

REFERENCE 2

COUNTY OF ERIE
DEPARTMENT OF ENVIRONMENT & PLANNING
DIVISION OF ENVIRONMENTAL CONTROL

MEMORANDUM

FROM Ronald Koczaja DATE January 9, 1979

TO File

SUBJECT Aluminum Matchplate - 1500 Military Road, Kenmore
On site solid waste disposal application

On January 5, 1979 the site proposed for the disposal of spent sand casting molds was inspected by the writer, accompanied by the plant superintendent, Mr. Westin. Approximately 30 tons of spent sand is generated a week. This material is placed in a dump truck (approx. 4 ton capacity) and then transferred to the dumping area at the rear of the building. When a sufficient number of loads have been transferred to the dump site the piles are leveled by the same truck which is equipped with a plow blade. The company is currently in the process of acquiring a small, tracked bulldozer.

The proposed site is approximately 1/3 acre in size and is adjacent to a completed disposal area. No final cover has been placed over the completed area. According to Mr. Westin the sites of the parking lot, completed dumping area, and proposed area were low lying marsh areas. The proposed area is currently being used and it did not appear that much of any pre-existing wetlands remain.

A drainage system is to be installed in the near future at the rear of the building. Mr. Westin related that the dump site would be graded with a gentle slope towards this drainage system. Disposal of spent sand is desired to raise the level of the proposed site equal to that of the parking and completed disposal areas. While difficult to estimate, it appeared to the writer that this would require 3-4 feet of spent sand.

The spent castings, once dumped and graded, are in pieces approximately 2" X 2" X $\frac{1}{2}$". No additional compaction is attempted other than what occurs during the dumping and grading activity.

The storm drain could provide a monitoring point for contaminated run off. In addition to the runoff that reaches the drain system, an appreciable amount would likely find its way into the drainage along the railroad right of way. Monitoring flow in the drain system would be beneficial in evaluating the concentrations of phenol leaching from the sand but not total amount.

cc: Donald Campbell

RK/maa

REFERENCE 3

GEOLOGY

OF

ERIE COUNTY

New York

By

EDWARD J. BUEHLER

Professor of Geology
State University of New York at Buffalo

AND

IRVING H. TESMER

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.

STRATIGRAPHIC

BERTIE-ONO

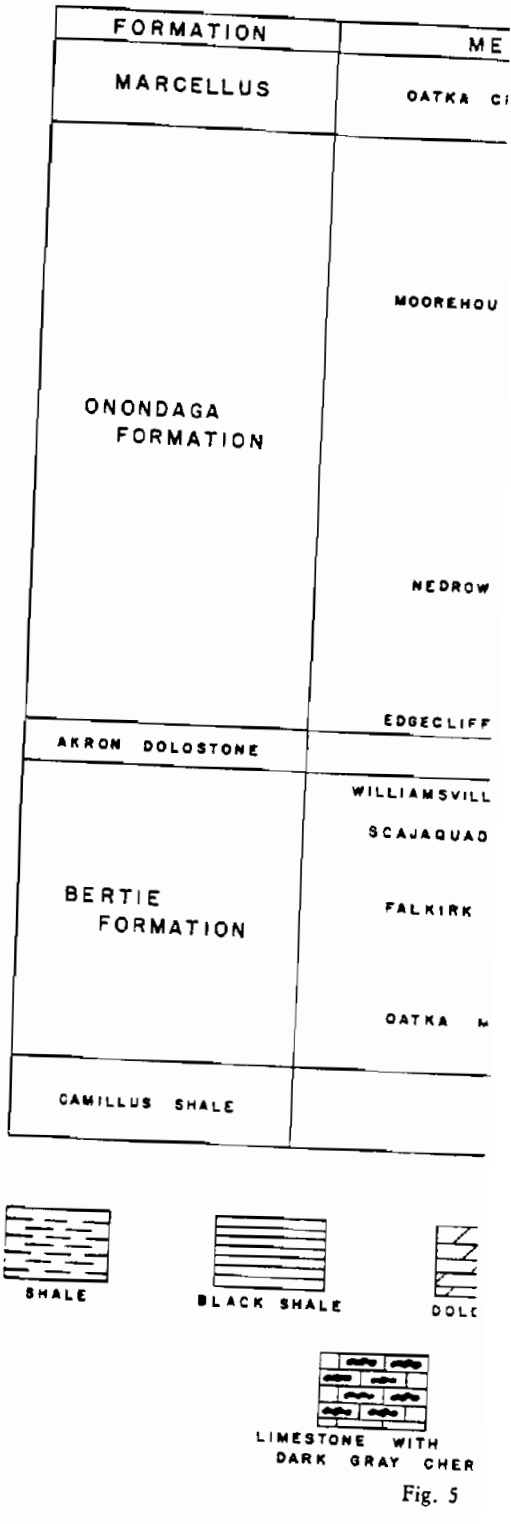


Fig. 5

Middle Devonian

Hamilton Group

Dl

Ludlowville Formation

Tichenor Limestone Member, thin, massive, fossiliferous, resistant limestone occurs at top; Wanakah Shale Member, medium-gray, fossiliferous, calcareous shale with some calcareous concretions; Ledyard Shale Member, dark-gray calcareous shale; Centerfield Limestone Member, thin, massive limestone unit at base.

Skaneateles Formation

Levanna Shale Member, dark-gray calcareous shale; Stafford Limestone Member, massive, fossiliferous limestone at base.

Marcellus Formation

Oatka Creek Shale Member, black calcareous shale with some calcareous concretions.

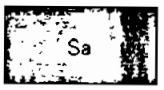
Do

Onondaga Limestone

Moorehouse Limestone Member, light-gray limestone containing numerous corals and considerable dark-gray chert nodules; Nedrow Member, intermixed light-gray limestone and dark-gray chert; Edgecliff Member, light-gray limestone with some light-gray chert nodules, locally represented by a coral bioherm.

UNCONFORMITY

Upper Silurian



Akron Dolostone

Light-gray dolostone

Sb

Bertie Formation

Williamsville Member, light-gray argillaceous limestone; Scajaquada Member, interbedded dark-gray shale and argillaceous limestone; Falkirk Member, light-gray dolostone; Oatka Member, dark-gray shale with argillaceous limestone at base containing eurypterids.

Sc

Camillus Shale

Gray shale containing large amounts of gypsum

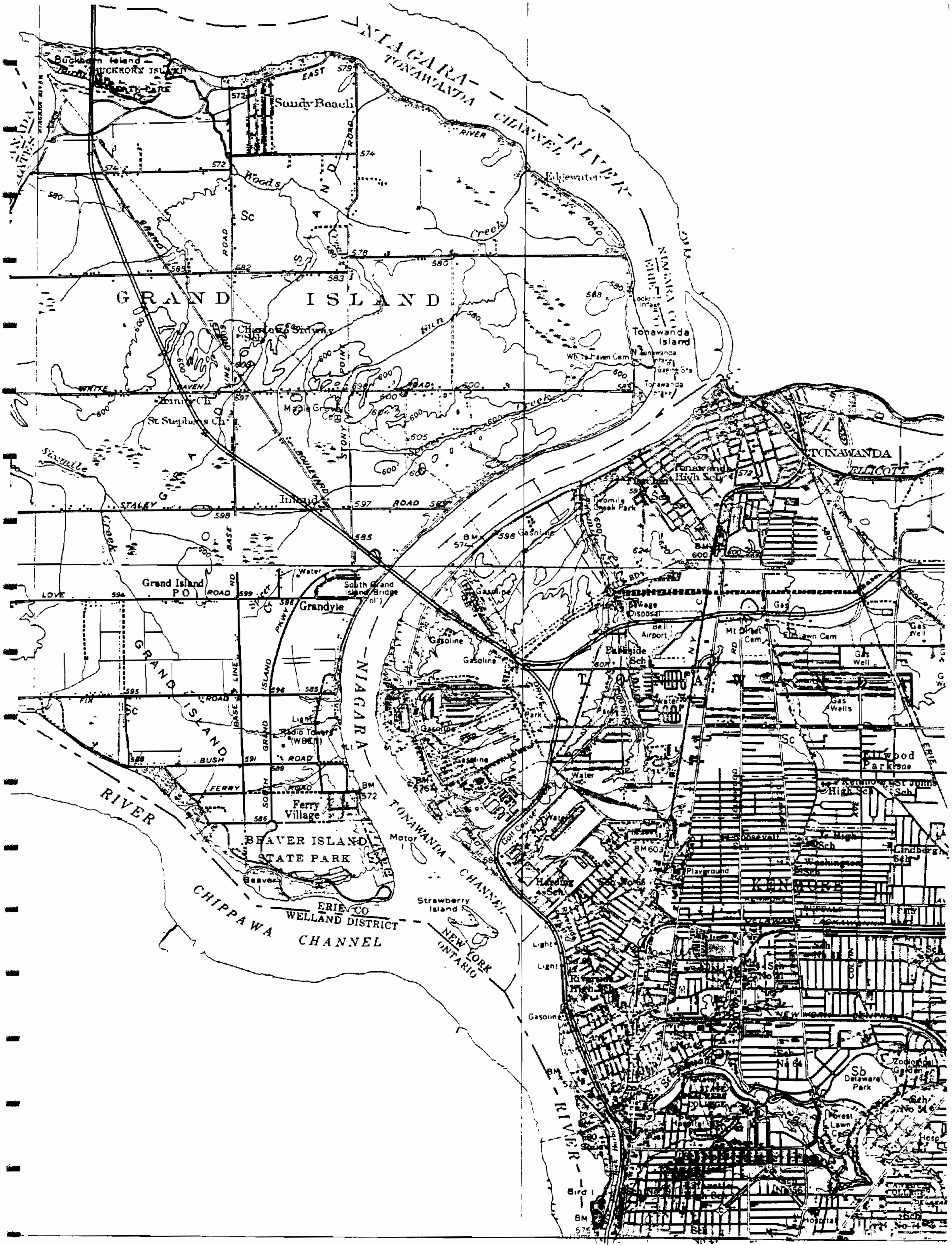
SILURIAN

Contact

Inferred Contact

GEOLOGIC MAP OF ERIE COUNTY, NEW YORK BEDROCK GEOLOGY

by Edward J. Buehler and Irving H. Tesmer


NIAGARA
TONAWANDA
CHANNEL
RIVER
Buckhorn Island
BUCKHORN ISLAND
Sandy Beach
EAST RIVER ROAD
Woods Creek
GRAND ISLAND
Sc
Tonawanda Island
White Haven Cem
Charlotte Sidway Sch
WHITE HAVEN ROAD
Trinity Ch
St Stephens Ch
Maple Grove Cem
STONY POINT ROAD
Sixmile Creek
STALEY ROAD
Inland
BOULEVARD
BASE LINE RD
Grand Island PO
LOVE ROAD
South Grand Island Bridge (Toll)
Grandyle
FIX ROAD
SOUTH GRAND ISLAND PKWY
Radio Towers (WBEN)
BUSH ROAD
FERRY ROAD
Ferry Village
BEAVER ISLAND STATE PARK
Motor
RIVER
CHIPPAWA CHANNEL
ERIE CO
WELLAND DISTRICT
Strawberry Island
NEW YORK
ONTARIO
TONAWANDA
ELLICOTT
Tonawanda High Sch
Twomile Creek Park
Gasoline
Sewage Disposal
Bell Airport
Mt Olivet Cem
Elmlawn Cem
Parkside Sch
Gas Well
Gas Wells
Water
Golf Course
Kenwood Park
Kenmore High Sch
St Johns Sch
Roosevelt Sch
Washington Sch
Lindbergh Sch
Jr High Sch
Playground
KENMORE
Light
Riverside High Sch
Gasoline
Delaware Park
Zoological Garden
Forest Lawn Cem
Bird I
Hospital
NEW YORK CENTRAL

REFERENCE 4

DRAFT

UNCONTROLLED HAZARDOUS WASTE SITE RANKING SYSTEM - A USERS MANUAL

DRAFT

10 June 1982

(errata included)

FOREWORD

The method for ranking hazardous substance facilities that is described in this document was developed by The MITRE Corporation under contract to the U.S. Environmental Protection Agency. The method has benefited from extensive review and comment by EPA personnel, state officials, and interested parties in the private sector.

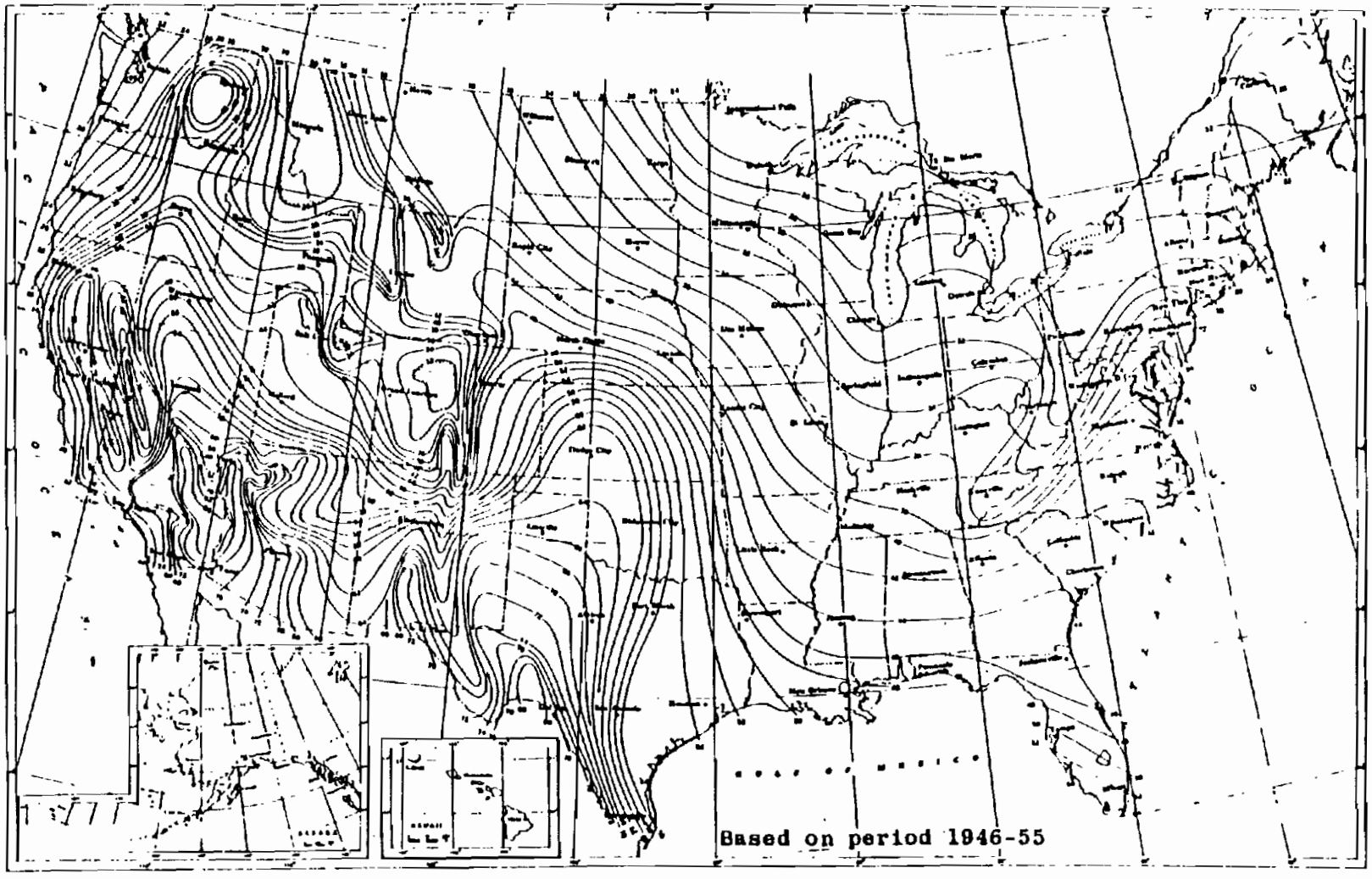


Figure 4

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.

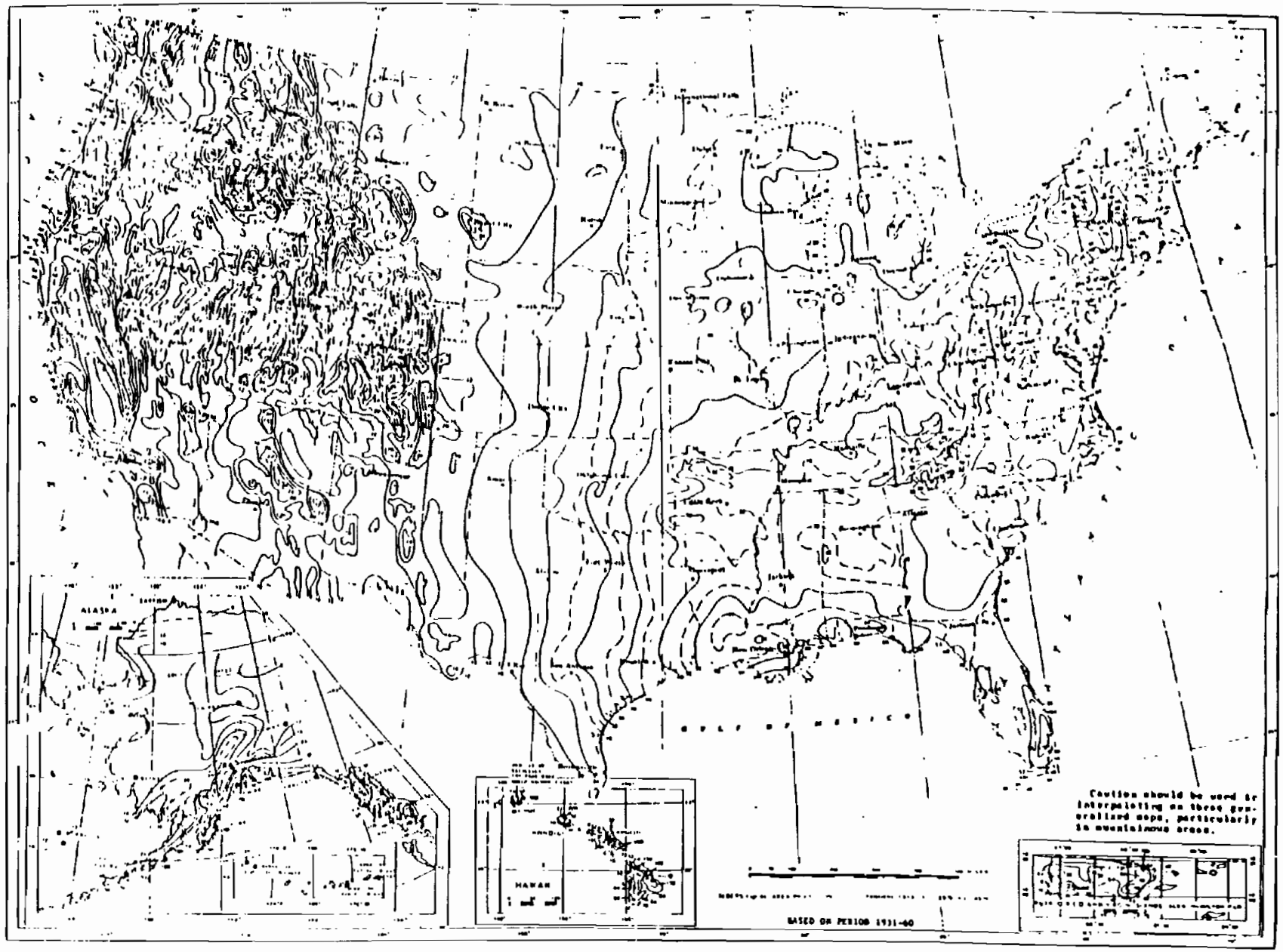


Figure 5

Normal Annual Total Precipitation (inches)

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

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

TABLE 3

CONTAINMENT VALUES FOR GROUND WATER ROUTE

Assign containment a value of 0 if: (1) all the hazardous substances at the facility are underlain by an essentially non permeable surface (natural or artificial) and adequate leachate collection systems and diversion systems are present; or (2) there is no ground water in the vicinity. The value "0" does not indicate no risk. Rather, it indicates a significantly lower relative risk when compared with more serious sites on a national level. Otherwise, evaluate the containment for each of the different means of storage or disposal at the facility using the following guidance.

A. Surface Impoundment

	Assigned Value
Sound run-on diversion structure, essentially non permeable liner (natural or artificial) compatible with the waste, and adequate leachate collection system	0
Essentially non permeable compatible liner with no leachate collection system; or inadequate freeboard	1
Potentially unsound run-on diversion structure; or moderately permeable compatible liner	2
Unsound run-on diversion structure; no liner; or incompatible liner	3

B. Containers

	Assigned Value
Containers sealed and in sound condition, adequate liner, and adequate leachate collection system	0
Containers sealed and in sound condition, no liner or moderately permeable liner	1
Containers leaking, moderately permeable liner	2
Containers leaking and no liner or incompatible liner	3

C. Piles

	Assigned Value
Piles uncovered and waste stabilized; or piles covered, waste unstabilized, and essentially non permeable liner	0
Piles uncovered, waste unstablized, moderately permeable liner, and leachate collection system	1
Piles uncovered, waste unstabilized, moderately permeable liner, and no leachate collection system	2
Piles uncovered, waste unstablized, and no liner	3

D. Landfill

	Assigned Value
Essential non permeable liner, liner compatible with waste, and adequate leachate collection system	0
Essentially non permeable compatible liner, no leachate collection system, and landfill surface precludes ponding	1
Moderately permeable, compatible liner, and landfill surface precludes ponding	2
No liner or incompatible liner; moderately permeable compatible liner; landfill surface encourages ponding; no run-on control	3

discussed below. Match the individual values assigned with the values in the matrix for the combined rating factor. Evaluate several of the most hazardous substances at the facility independently and enter only the highest score in the matrix on the work sheet.

	Value for Persistence			
Value for Toxicity	0	1	2	3
0	0	0	0	0
1	3	6	9	12
2	6	9	12	15
3	9	12	15	18

Persistence of each hazardous substance is evaluated on its biodegradability as follows:

Substance	Easily biodegradable compounds	Straight chain hydrocarbons	Substituted and other ring compounds	Metals, polycyclic compounds and halogenated hydrocarbons
Value	0	1	2	3

More specific information is given in Tables 4 and 5.

Toxicity of each hazardous substance being evaluated is given a value using the rating scheme of Sax (Table 6) or the National Fire Protection Association (NFPA) (Table 7) and the following guidance:

Toxicity	Sax level 0 or NFPA level 0	Sax level 1 or NFPA level 1	Sax level 2 or NFPA level 2	Sax level 3 or NFPA level 3 or 4
Value	0	1	2	3

Table 4 presents values for some common compounds.

TABLE 4

WASTE CHARACTERISTICS VALUES FOR SOME COMMON CHEMICALS

CHEMICAL/COMPOUND	TOXICITY [1]	PERSISTENCE [2]	SOLUBILITY [3]	REACTIVITY [3]
Acetaldehyde	3	0	3	2
Acetic Acid	3	0	2	1
Acetone	2	0	3	0
Aldrin	3	3	1	0
Ammonia, Anhydrous	3	0	1	0
Aniline	3	1	2	0
Benzene	3	1	3	0
Carbon Tetrachloride	3	3	0	0
Chlordane	3	3	0*	0*
Chlorobenzene	2	2	3	0
Chloroform	3	3	0	0
Cresol-O	3	1	2	0
Cresol-M&P	3	1	1	0
Cyclohexane	2	2	3	0
Endrin	3	3	1	0
Ethyl Benzene	2	1	3	0
Formaldehyde	3	0	2	0
Formic Acid	3	0	2	0
Hydrochloric Acid	3	0	0	0
Isopropyl Ether	3	1	3	1
Lindane	3	3	1	0
Methane	1	1	3	0
Methyl Ethyl Ketone	2	0	3	0
Methyl Parathion in Xylene Solution	3	0Δ	3	2
Naphthalene	2	1	2	0
Nitric Acid	3	0	0	0
Parathion	3	0Δ	1	2
PCB	3	3	0Δ	0Δ
Petroleum, Kerosene (Fuel Oil No. 1)	3	1	2	0
Phenol	3	1	2	0
Sulfuric Acid	3	0	0	2
Toluene	2	1	3	0
Trichlorobenzene	2	3	1	0
∝-Trichloroethane	2	2	1	0
Xylene	2	1	3	0

[1] Sax, N. I., Dangerous Properties of Industrial Materials, Van Nostrand Rheinhold Co., New York, 4th ed., 1975. The highest rating listed under each chemical is used.

[2] JRB Associates, Inc., Methodology for Rating the Hazard Potential of Waste Disposal Sites, May 5, 1980.

[3] National Fire Protection Association, National Fire Codes, Vol. 13, No. 49, 1977.

* Professional judgment based on information contained in the U.S. Coast Guard CHRIS Hazardous Chemical Data, 1978.

Δ Professional judgment based on existing literature.

TABLE 8

VALUES FOR FACILITY SLOPE AND INTERVENING TERRAIN

Facility Slope		Intervening Terrain				
		Terrain Average Slope ≤3%; or Site Separated from Water Body by Areas of Higher Elevation	Terrain Average Slope 3-5%	Terrain Average Slope 5-8%	Terrain Average Slope >8%	Site in Surface Water
Facility is closed basin		0	0	0	0	3
Facility has average slope	≤3%	0	1	1	2	3
Average slope	3-5%	0	1	2	2	3
Average slope	5-8%	0	2	2	3	3
Average slope	>8%	0	2	3	3	3

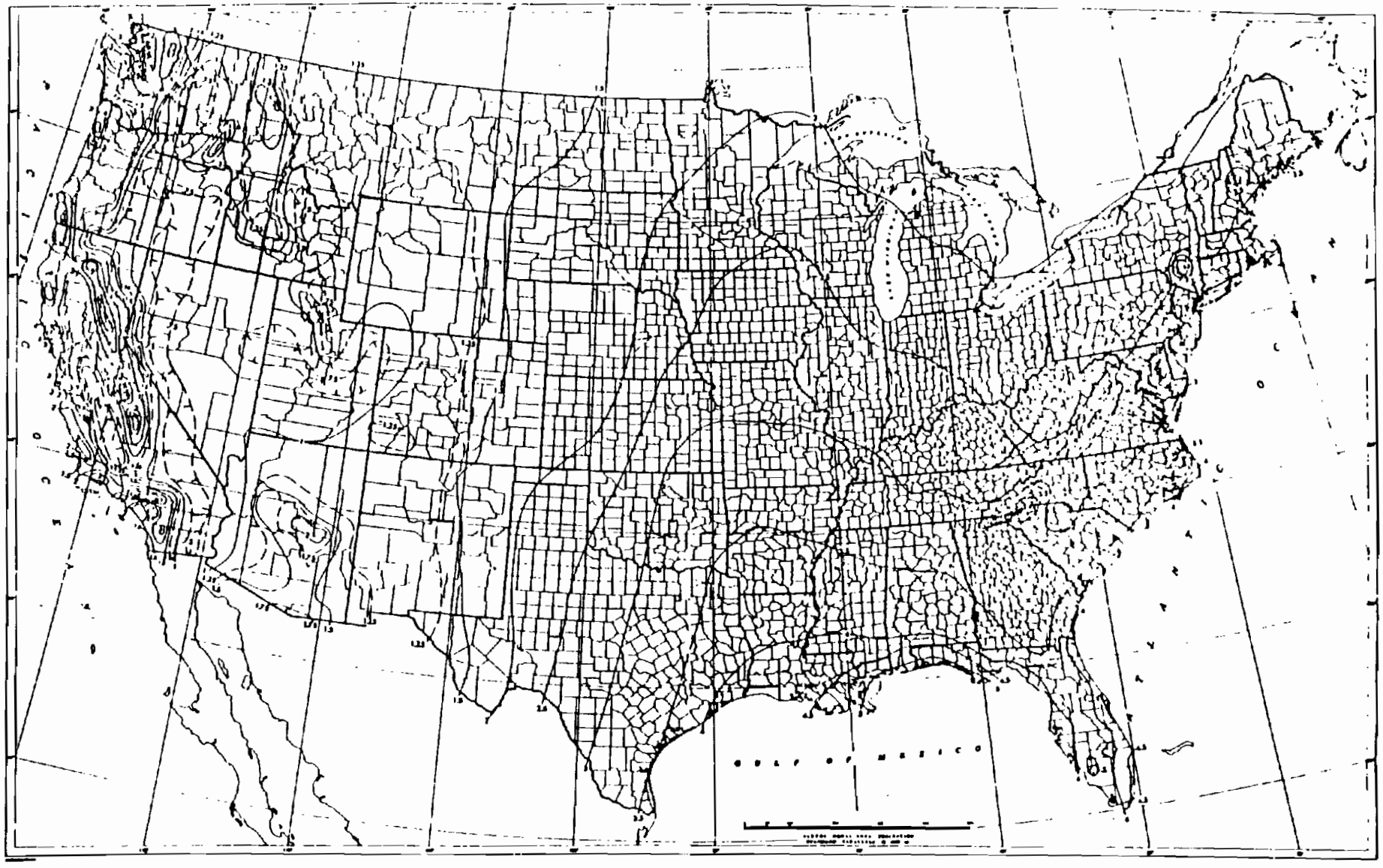


FIGURE 8

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.

TABLE 9

CONTAINMENT VALUES FOR SURFACE WATER ROUTE

Assign containment a value of 0 if: (1) all the waste at the site is surrounded by diversion structures that are in sound condition and adequate to contain all runoff, spills, or leaks from the waste; or (2) intervening terrain precludes runoff from entering surface water. Otherwise, evaluate the containment for each of the different means of storage or disposal at the site and assign a value as follows:

A. Surface Impoundment

	Assigned Value
Sound diking or diversion structure, adequate freeboard, and no erosion evident	0
Sound diking or diversion structure, but inadequate freeboard	1
Diking not leaking, but potentially unsound	2
Diking unsound, leaking, or in danger of collapse	3

B. Containers

	Assigned Value
Containers sealed, in sound condition, and surrounded by sound diversion or containment system	0
Containers sealed and in sound condition, but not surrounded by sound diversion or containment system	1
Containers leaking and diversion or containment structures potentially unsound	2
Containers leaking, and no diversion or containment structures or diversion structures leaking or in danger of collapse	3

C. Waste Piles

	Assigned Value
Piles are covered and surrounded by sound diversion or containment system	0
Piles covered, wastes unconsolidated, diversion or containment system not adequate	1
Piles not covered, wastes unconsolidated, and diversion or containment system potentially unsound	2
Piles not covered, wastes unconsolidated, and no diversion or containment or diversion system leaking or in danger or collapse	3

D. Landfill

	Assigned Value
Landfill slope precludes runoff, landfill surrounded by sound diversion system, or landfill has adequate cover material	0
Landfill not adequately covered and diversion system sound	1
Landfill not covered and diversion system potentially unsound	2
Landfill not covered and no diversion system present, or diversion system unsound	3

TABLE 10

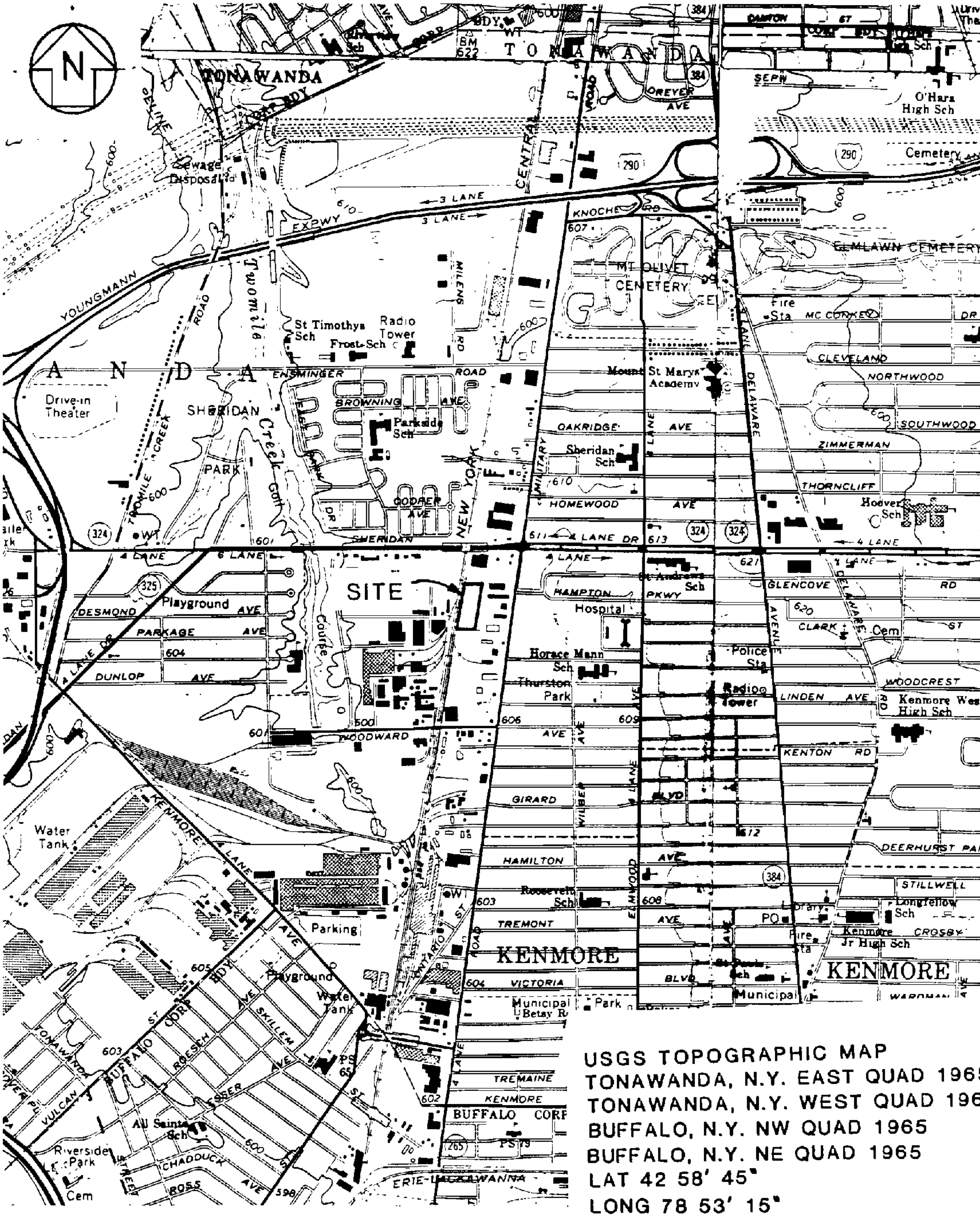
VALUES FOR SENSITIVE ENVIRONMENT (SURFACE WATER)

ASSIGNED VALUE =	0	1	2	3
DISTANCE TO WETLANDS* (5 acre minimum)				
Coastal	>2 miles	1 - 2 miles	½ - 1 mile	< ½ mile
Fresh Water	>1 mile	¼ - 1 mile	100 feet - ¼ mile	< 100 feet
DISTANCE TO CRITICAL HABITAT (of endangered species)** or National Wildlife Refuge	>1 mile	½ - 1 mile	¼ - ½ mile	< ¼ mile

*Wetland is defined by EPA in the Code of Federal Regulations 40 CFR Part 230, Appendix A, 1980

**Endangered species are designated by the U.S. Fish and Wildlife Service.

REFERENCE 5



RECRA RESEARCH INC. BUFFALO, NEW YORK	Scale: 1:24,000		ALUMINUM MATCHPLATE CO. TONAWANDA, N.Y. N.Y.S. SUPERFUND PHASE I	VICINITY MAP
		By / Date		
	Dwn.	JEM / 12/85		
	Ckd.			
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	Rev.		Project No. 5C280396	A

61160-1

BRUNING

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

1/83

Title 6
Conservation
Vol. C

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Lenz & Riecker, Inc.
1 Columbia Place
Albany, New York 12207

ARTICLE 8

Lake Erie — Niagara River Drainage Basin Series

PART

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. La tter 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
111	0-158-12-77-3 and trib. and 4 as shown on reference map	Tribs. of East Fork	Enter East Fork between Engine Creek, item no. 110, and source.	12	A	A(T)
112	0-158-12-78	Perry Brook	Enters Tonawanda Creek from south approximately 2.8 miles southwest of Johnsonburg.	12	A	A
113	0-185-12-79 and trib. and 80	Tribs. of Tonawanda Creek	Enter Tonawanda Creek between Perry Brook, item no. 112, and source.	12	A	A
114	0-158-13 and tribs. including P 22 as shown on reference map	Two Mile Creek	Enters Niagara River (East Channel) at Two Mile Creek Road in City of Tonawanda.	2,6	B	B
115	0-158-14 and tribs. as shown on reference map	Trib. of Niagara River	Enters Niagara River approximately opposite intersection of Ontario Street and Niagara Street, City of Buffalo.	6	D	D
116	0-158-15 portion as described including P 24 and P 25	Scajaquada Creek	Enters Niagara River approximately opposite intersection of Niagara Street and Tonawanda Street, City of Buffalo. Mouth to crossing of Main Street, City of Buffalo.	6	B	B

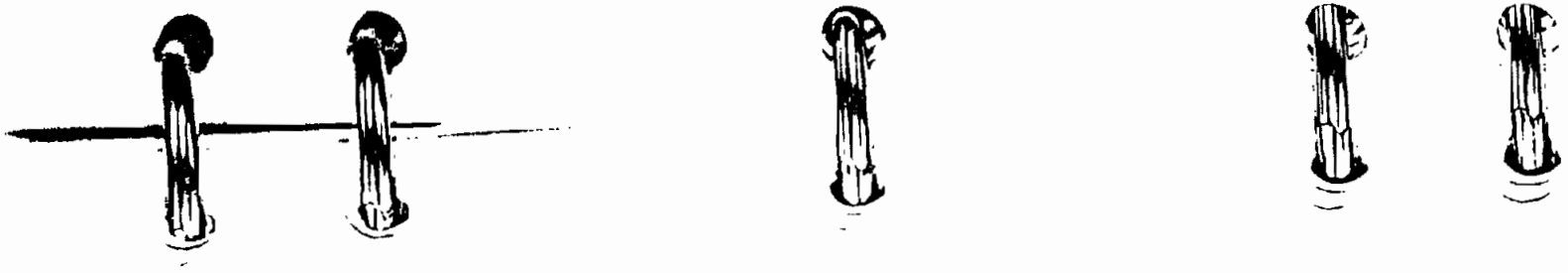
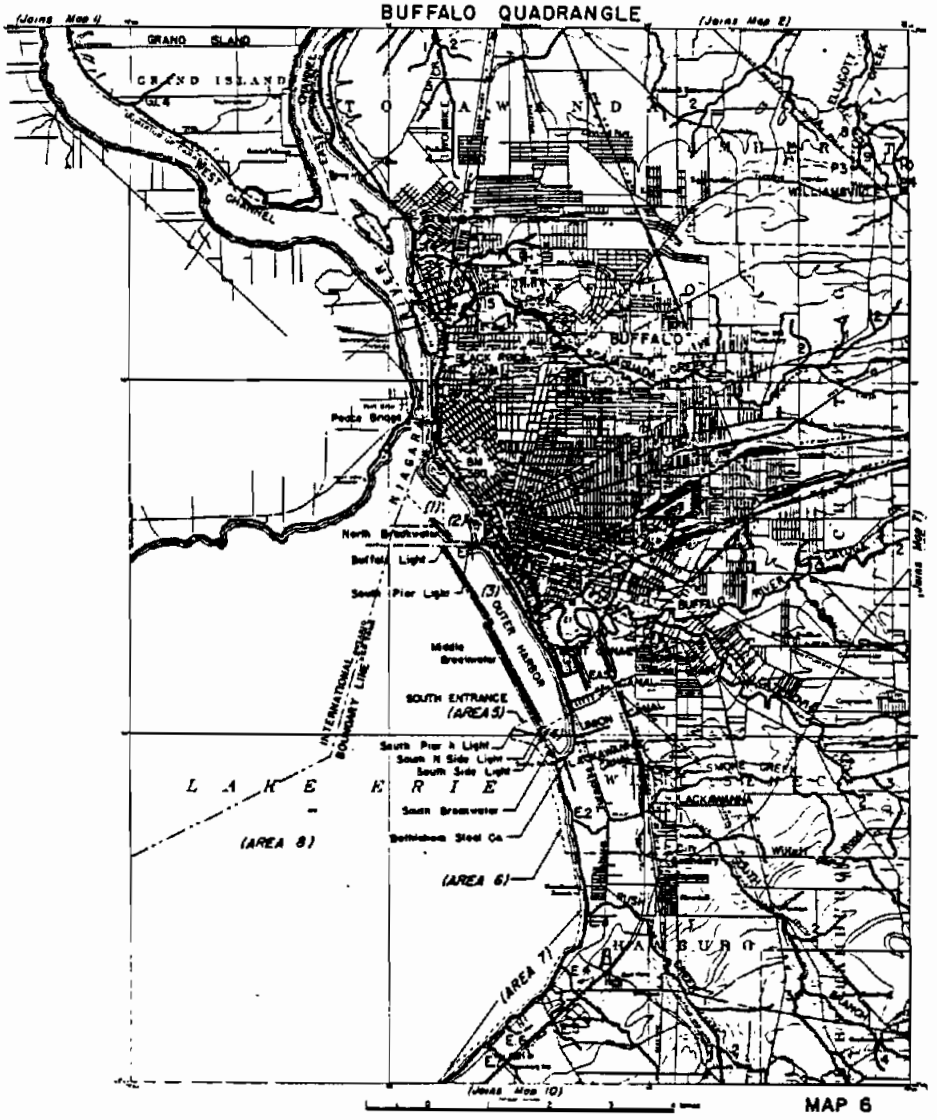


TABLE I (contd.)

Item No.	Waters Index Number	Name	Description	Map Ref. No.	Class	Standards
117	0-158-15 portion described	Scajaquada Creek	From crossing of Main Street, City of Buffalo to trib. 4 which ... in line with continuation of	6	D	D


BUFFALO QUADRANGLE
(Joins Map 4)
(Joins Map 8)
GRAND ISLAND
BUFFALO
L A K E E R I E
(AREA 8)
(AREA 6)
(AREA 7)
SOUTH ENTRANCE (AREA 5)
OUTER HARBOR
INTERNATIONAL BOUNDARY LINE
(Joins Map 10)
(Joins Map 7)
MAP 6

REFERENCE 7

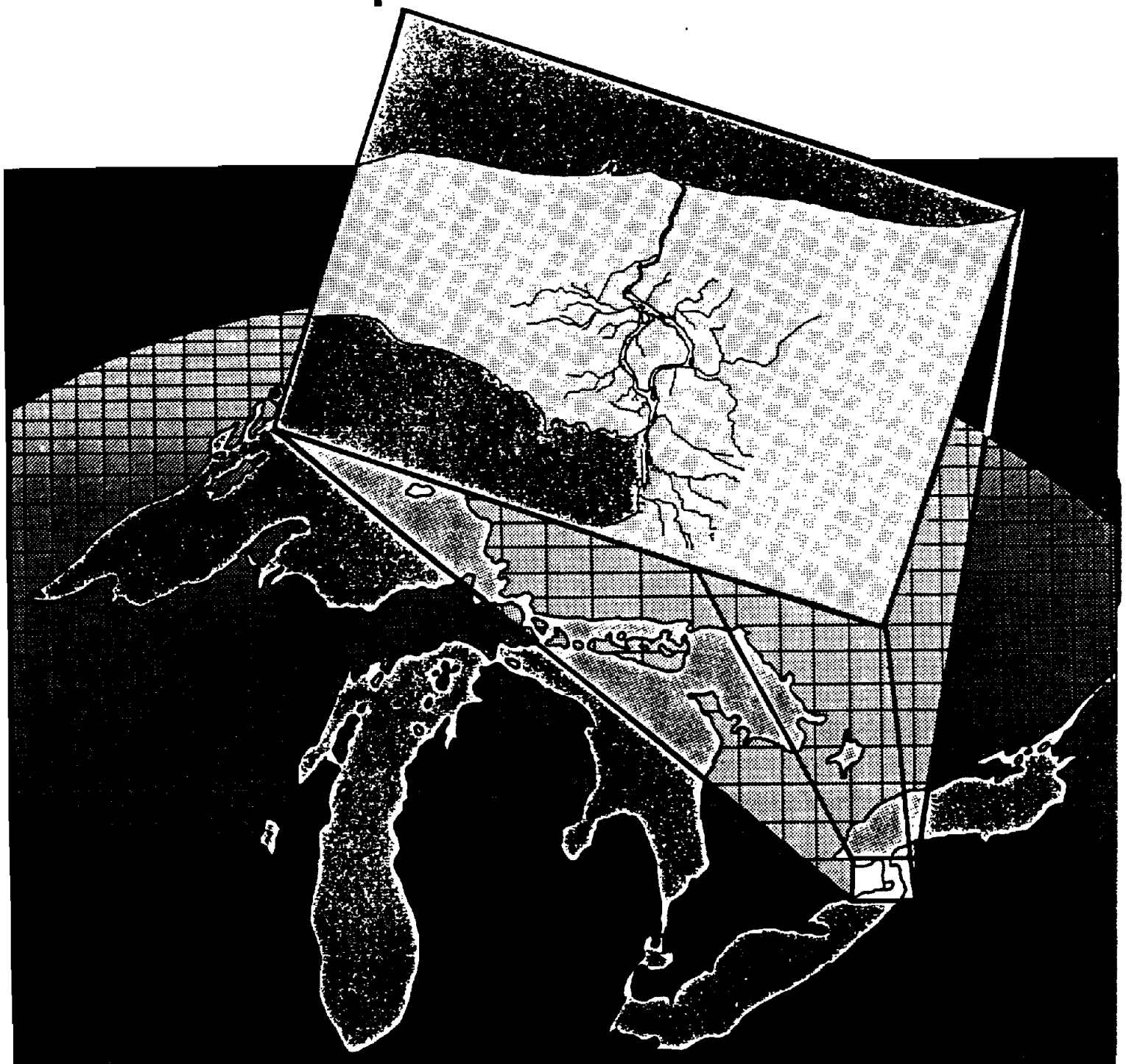
United States
Environmental Protection
Agency

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

EP[illegible]405/4-85-001
March 1985

EPA

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



"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

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

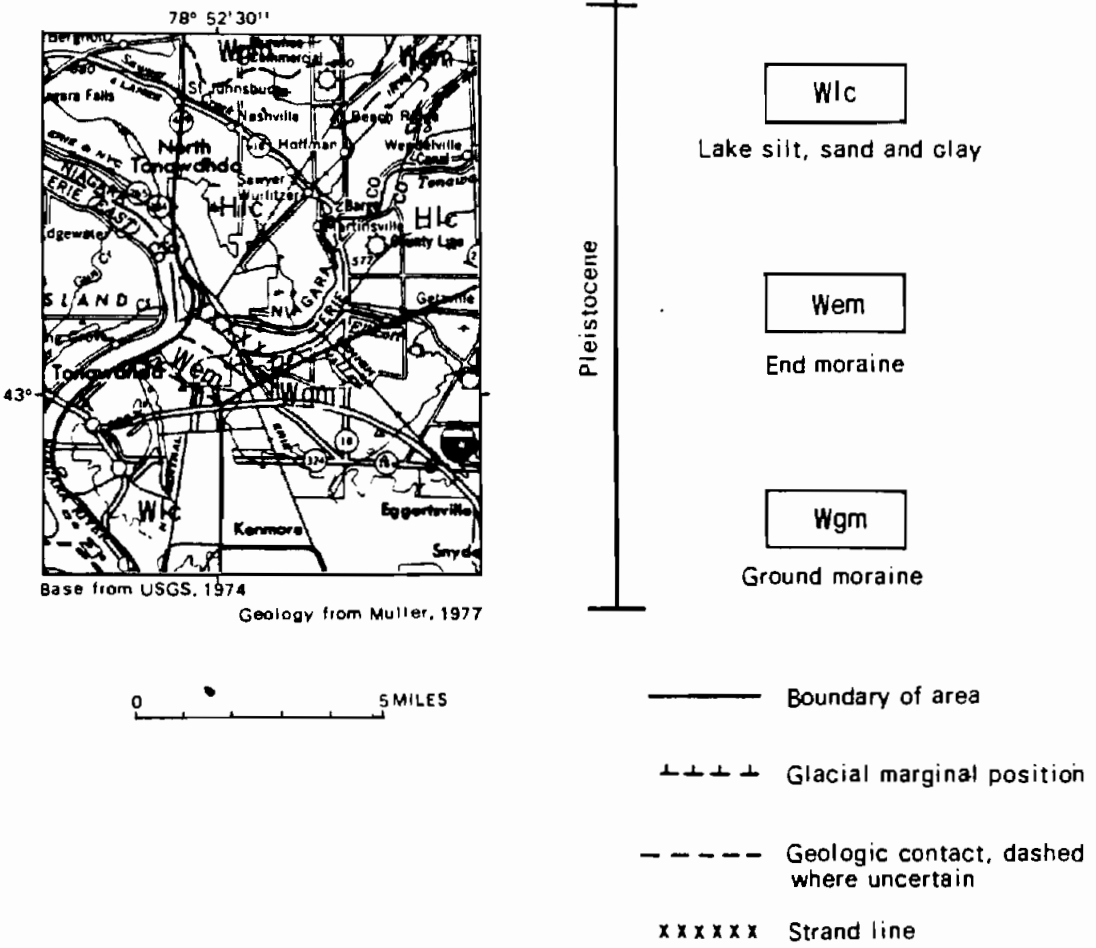


Figure 5. Surficial geology of the Tonawanda area.

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

Table B-15.--Analyses of substrate samples from Tonawanda Coke, site 110, Tonawanda, N.Y., May 24, 1983 (continued)
[Locations shown in fig. B-15. Concentrations are in µg/kg; dashes indicate that constituent or compound was not found, LT indicates it was found but below the quantifiable detection limit.]

	Sample number and depth below land surface (ft)			
	1 (4.0)	(split)	2 (4.0)	3 (4.0)
Organic compounds (continued)				
Nonpriority pollutants				
Acetone	--	(164**)	379**	--
Carbon disulfide	180**	(614**)	620**	161**
Diethyl phthalate	--	(*)	--	--
2-Hexanone	--	(--)	--	17.1**
4-Methyl-2-pentanone	--	(--)	--	6.3**
Styrene	--	(--)	86.1**	--
O-xylene	4.7**	(25.5**)	238**	17.1**
4-Chloroaniline	*	(--)	--	--
Dibenzofuran	--	(*)	--	*
2-Methylnaphthalene	*	(*)	--	*
4-Methylphenanthrene[1]	--	(*)	--	--
Tetrahydrofuran[1]	--	(--)	--	*
Perylene	--	(*)	--	--
1-Methylnaphthalene[1]	*	(--)	--	--
1,8-Dimethylnaphthalene[1]	*	(--)	--	--
Thiophene[1]	--	(--)	*	--
2-Methylbutane[1]	--	(--)	--	*
Cyclohexane[1]	--	(--)	--	*
Unknown hydrocarbons[1]	*	(*)	--	--

111. ALUMINUM MATCH PLATE CORPORATION (USGS field reconnaissance) NYSDEC 915005

General information and chemical-migration potential.--The Aluminum Match Plate Corporation site, a 1-acre area in the city of Tonawanda, was used to dispose of an unknown quantity of molding sand with phenolic binder and aluminum grindings.

The potential for the downward movement of contaminants is probably small because of the thick clay below. Chemical data give no indication of horizontal migration. The potential for contaminant migration is indeterminable.

Geologic information.--The site consists of glacial lacustrine clay overlying bedrock of Camillus Shale. The shale is about 60 ft below land surface.

The U.S. Geological Survey drilled four test borings on the site in 1982; the locations are shown in figure B-16. The geologic logs are as follows:

Boring no.	Depth (ft)	Description
1	0 - 1.0	Topsoil with clay cap.
	1.0 - 4.0	Clay, sandy, gray-green.
	4.0 - 8.5	Clay, red, dry.
		SOIL SAMPLE: 3.0 ft.
2	0 - 1.5	Topsoil, black.
	1.5 - 2.0	Clay, yellow.
	2.0 - 2.5	Clay, red, tight.
		SOIL SAMPLE: 1.5 ft.
3	0 - 1.5	Topsoil, black.
	1.5 - 5.0	Clay, red.
		SOIL SAMPLE: 1.5 ft.
4	0 - 2.0	Topsoil, black.
	2.0 - 5.0	Clay, red.
		SOIL SAMPLE: 1.5 ft.

Hydrologic information.--No ground water was encountered in the test borings nor in previous test drilling along Military Road (pl. 2), and no ground water was encountered to a depth of 16 ft.

Chemical information.--The U.S. Geological Survey collected four soil samples from the boreholes for iron, mercury, and phenols analyses; results are given in table B-16. Only iron was detected.

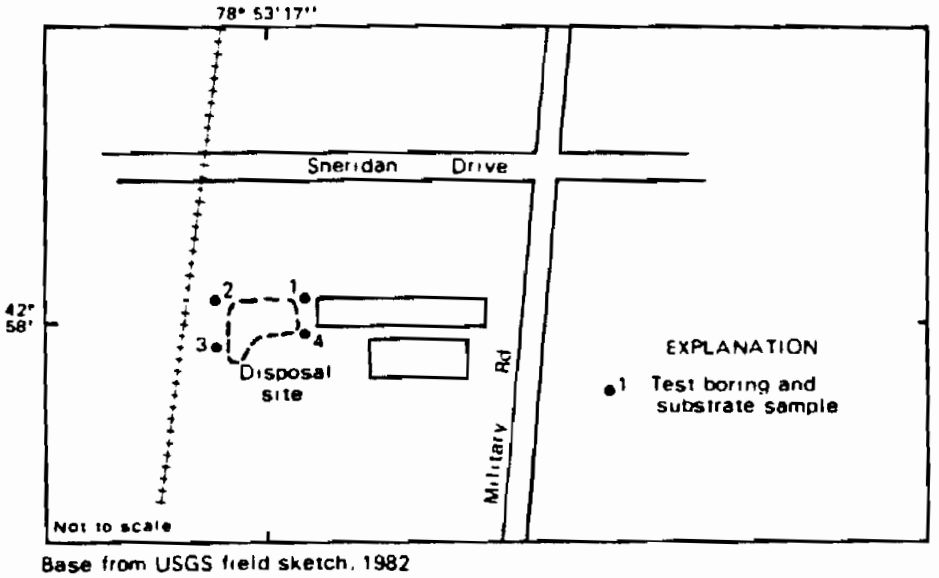


Figure B-16. Location of sampling holes at Aluminum Match Plate Corporation, site 111, Tonawanda.

Table B-16.--Analyses of substrate samples from Aluminum Match Plate, site 111, Tonawanda, N.Y., July 20, 1982.
[Locations shown in fig. B-16. Concentrations are in µg/kg; dashes indicate that constituent or compound was not found, LT indicates it was found but below the quantifiable detection limit.]

	Sample number and depth below land surface (ft)			
	1	2	3	4
	3.0	1.5	1.5	1.5
Inorganic constituents				
Iron	11,000,000	13,000,000	11,000,000	8,200,000
Mercury	--	--	--	--
Organic compounds				
Phenol	--	--	--	--

114. ASHLAND PETROLEUM COMPANY (Literature review) NYSDEC 915061

General information and chemical-migration potential.--This site, in the northern part of the town of Tonawanda, is a solid-waste landfill containing spent lime, clay, wood, concrete, metal, and phosphoric acid catalysts. The potential for contaminant migration is indeterminable because data are lacking.

Geologic information.--The U.S. Geological Survey drilled four test borings on the site in 1975. The geologic logs indicated bedrock (Camillus Shale) at approximately 80 ft below grade. Overlying the bedrock is a sequence of silt and clay layers with occasional embedded gravel.

Hydrologic information.--No hydrologic information is available.

Chemical information.--No chemical data are available, and no monitoring has been proposed.

115. ASHLAND PETROLEUM COMPANY (Literature review) NYSDEC 915008c

General information and chemical-migration potential.--This site, received low-level radioactive material during 1944-46. Approximately 8,000 tons of uranium ore tailings containing 0.54 percent uranium was spread over the area to a depth of 2 ft.

No data are available to determine contaminant migration by ground-water movement. However, the chemical analyses of water from adjacent drainage ditches indicate the presence of some heavy metals and low-level radiation, which indicates possible offsite migration by surface runoff. The potential for contaminant migration in ground water is indeterminable.

REFERENCE 8

9 October 1978
RPL:hf-56

Mr. Matthew Van Voris
Aluminum Match Plate Company
1500 Military Road
P.O. Box 206
Kenmore, New York 14217

Dear Mr. Van Voris:

The foundry sand sample of 9/20/78 (P.O. 5058) was extracted according to the toxicant extractant procedure outlined in the enclosure to this letter. Phenol content of the etutriate measured 0.16 ppm. This amounts (to 3.2 µg/g of sand leached). Although this sand does not appear to have a particularly high leaching rate under the conditions of the test, we cannot judge the potential for pollution of ground or surface waters. There may be attenuation of phenol by the soils of the disposal site before reaching ground or surface waters. The degree of attenuation could be ascertained by the installation of monitoring and sampling wells at the disposal site.

Please contact me if you have any questions regarding this analysis or further work.

.0032 × 10⁻³ g phenol / g sand × 250 g sand = 0.8 × 10⁻³ g phenol → 0.8 mg/liter solution

Sincerely yours,

Richard P. Leonard

Richard P. Leonard, Head
Environ. Systems Analysis Section

cc: John Michalovic, Calspan
Milt Smith, Calspan

Enclosure

15378

RECEIVED
OCT 1 1978
ALUM. MATCH PLATE CORP.

TOXICANT EXTRACTANT PROCEDURE USED ON FOUNDRY SAND - ALUMINUM PLATE COMPANY

The procedure used follows those proposed under Section 3001 of the 197o Resource, Conservation and Recovery Act (RCRA) dated March 24, 1978. The sand was extracted according to the following procedure and the elutriate analyzed for phenol content.

(1) a sample of sand (o2.5 g) was added to 500 ml deionized water (water: sand = 8:1)

(2) this mixture was adjusted to pH 5.0 with 1:1 acetic acid

(3) the mixture was agitated for a 24 hour period while maintaining pH 4.9 - 5.2

(4) water was filtered to separate solids and deionized water added to give volume of 625 ml (water: sand = 10:1)

(5) sand was reextracted as in steps 3 and 4

(6) total elutriate (1250 ml) was analyzed for phenol by standard methods

REFERENCE 9

New York State Department of Environmental Conservation
600 Delaware Avenue, Buffalo, NY 14202-1073 716/847-4560

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,

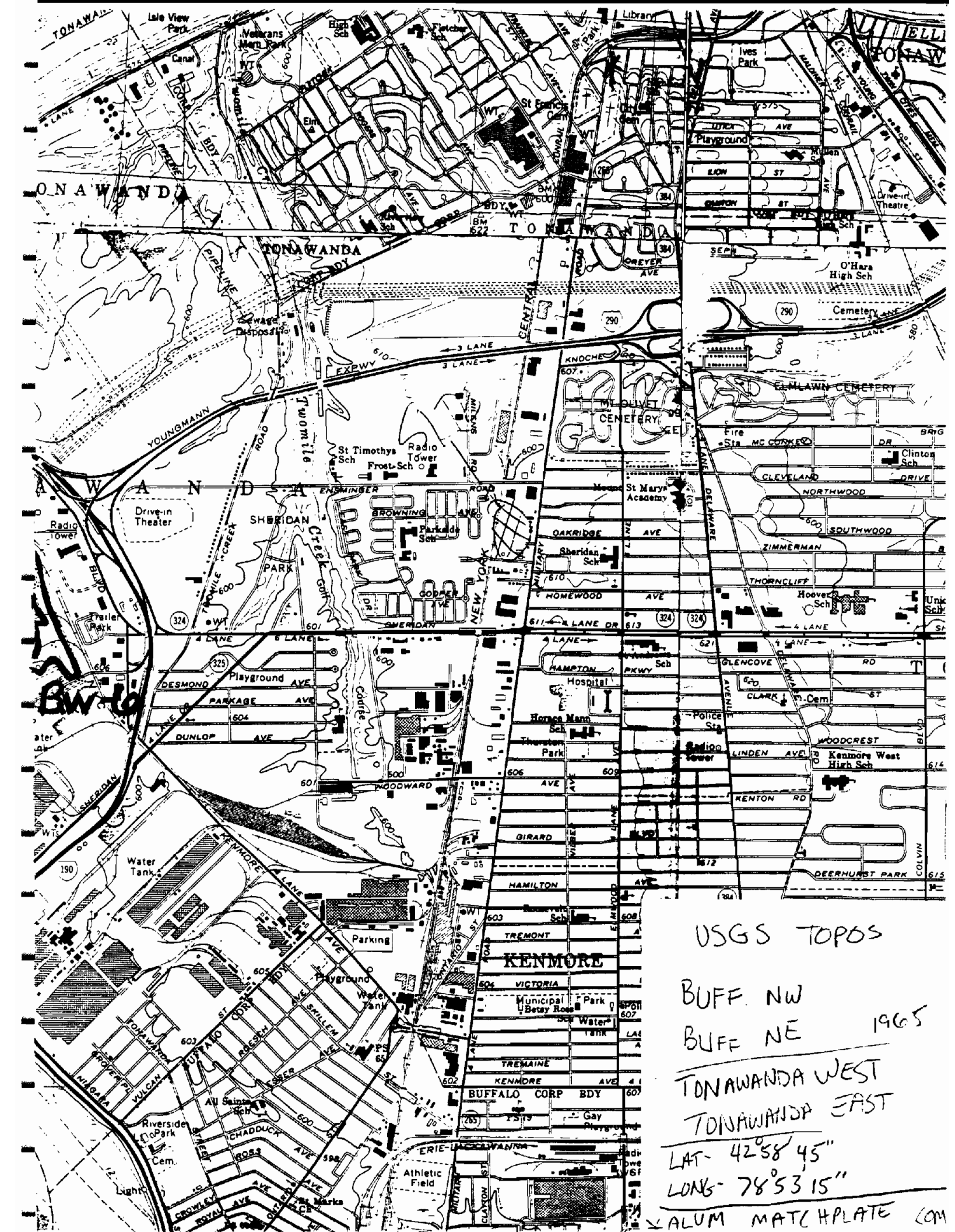
Gordon Batcheller

Gordon R. Batcheller
Senior Wildlife Biologist
Region 9

GRB:ls

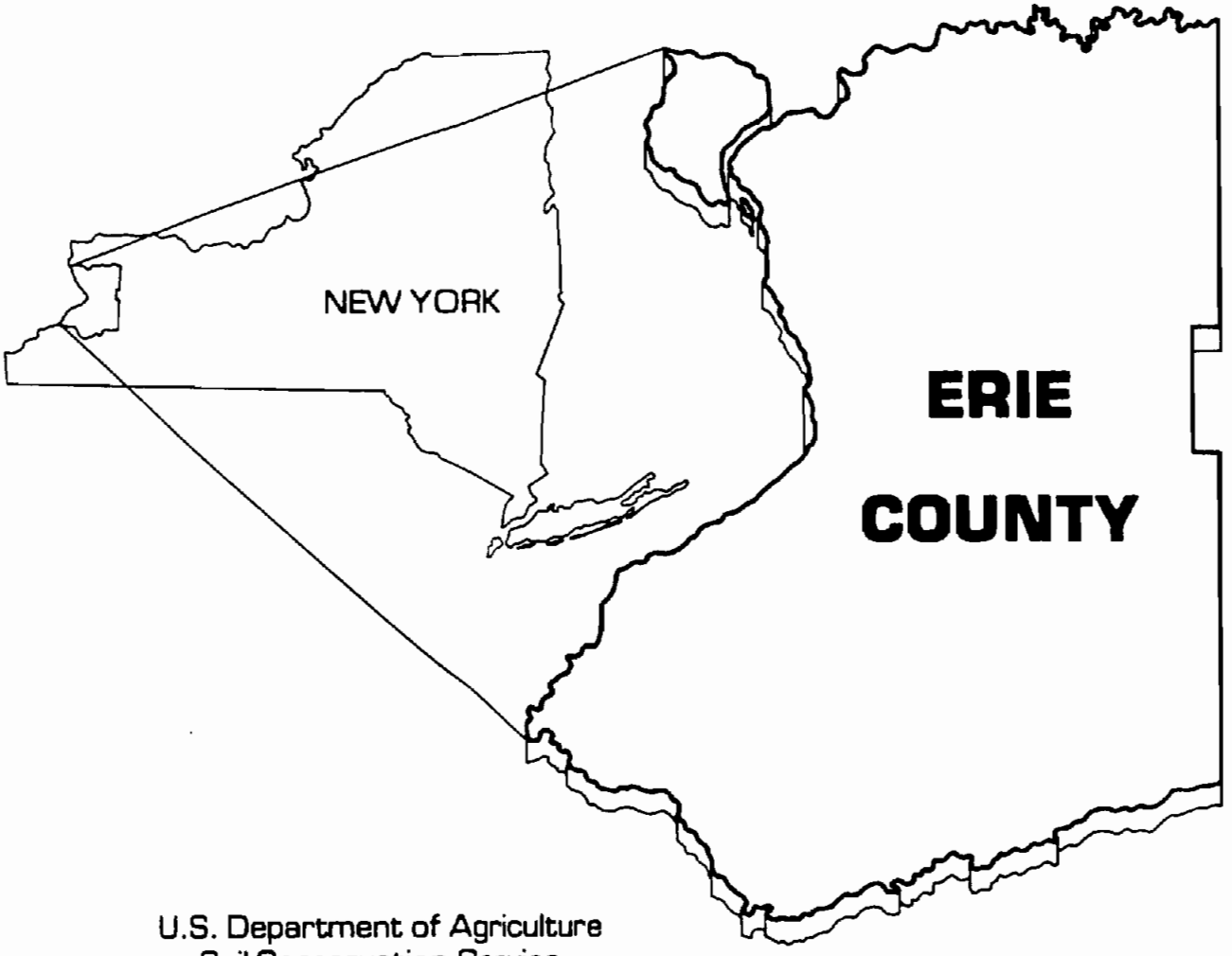
Enc.

cc: Mr. Pomeroy


USGS TOPOS
BUFF NW
BUFF NE 1965
TONAWANDA WEST
TONAWANDA EAST
LAT- 42°58'45"
LONG- 78°53'15"
ALUM MATCHPLATE COM

REFERENCE 10

GENERAL SOIL MAP and INTERPRETATIONS



U.S. Department of Agriculture
Soil Conservation Service

in cooperation with

Cornell University Agricultural Experiment Station and
Erie County Soil and Water Conservation District

GENERAL SOIL MAP

ERIE COUNTY, NEW YORK
(Scale 1:62,500)

Prepared for

ERIE COUNTY SOIL AND WATER
CONSERVATION DISTRICT

by the
UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

In cooperation with
CORNELL UNIVERSITY
AGRICULTURAL EXPERIMENT STATION

Report prepared by:
John P. Wulforst, Soil Scientist, Soil Conservation Service
Willis E. Hanna, Soil Scientist, Soil Conservation Service

May 1979

This report is a supplement to the Soil Survey of Erie County, New York. The detailed soil survey provided a basis for preparation of this report and accompanying general soil map. The reader should consult the Soil Survey of Erie County for detailed soils information.

Note - Because this report is published in advance of the detailed Soil Survey of Erie County, a few soil names and interpretations may differ slightly from the final published detailed soil survey.

Partial funding for publication of this report was provided by the Erie County Soil and Water Conservation District.

43. URBAN LAND-ODESSA, NEARLY LEVEL

Nonsoil areas, and deep, somewhat poorly drained, clayey soils, on lowland plains.

This unit is in areas of residential developments interspersed with undisturbed soils dominated by clayey sediments. Most areas extend eastward and northward from Buffalo into the suburbs. Slope ranges from 0 to 3 percent.

This unit covers about 11,100 acres or 1.6 percent of the county. Urban land makes up 65 percent of the unit, Odessa soils about 25 percent and soils of minor extent the remaining 10 percent.

The urban land portion of this unit is covered by streets, sidewalks, driveways, house foundations, and parking lots. A few areas also include shopping centers, institutional facilities and light industrial parks. All of these areas have the upper layers of soil disturbed or removed. The undisturbed soil portion of this unit is dominated by Odessa soils that formed in gravel and stone-free, lake-laid sediments having a high clay content. These soils are somethwat poorly drained and have a seasonal high water table perched in the upper part of the subsoil during spring and other wet periods. Rate of water movement through the soil is slow or very slow. Most areas of the undisturbed Odessa soils are in lawns, gardens, parks, or vacant lots.

Soils that are of minor extent are primarily those of the Cosad and Lakemont series. Cosad soils are in areas that have a surficial layer of sand overlying clayey sediments. Poorly drained and very poorly drained Lakemont soils occur in depressions and along drainageways in this unit.

Most of this unit is in residential housing. Seasonal wetness, slow water movement through the soil, clayey textures, and poor stability of the soil layers are concerns for further development of areas of this unit. In the town of Amherst, some areas are subject to ponding or slow removal of water when nearby streams are near flood stage.

10

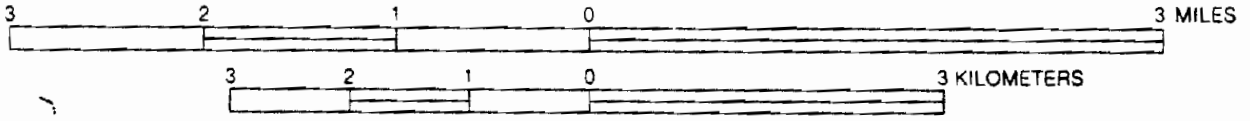
U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

CORNELL UNIVERSITY AGRICULTURAL EXPERIMENT STATION

GENERAL SOIL MAP

ERIE COUNTY, NEW YORK

SCALE 1:62,500



55'

) FEET

LEGEND

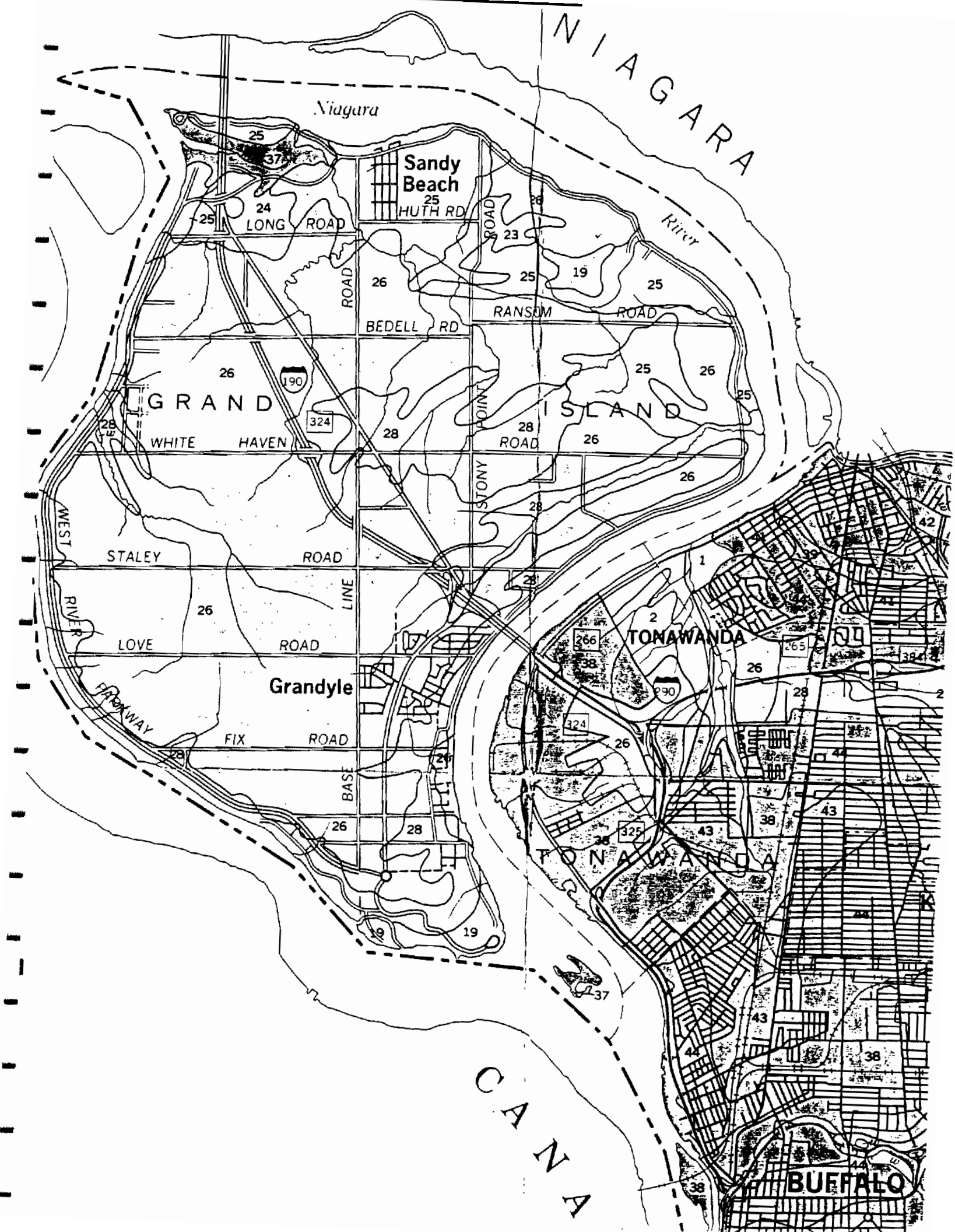
DEEP SOILS WITHOUT FRAGIPANS FORMED IN GLACIAL TILL AND IN LACUSTRINE MANTLED GLACIAL TILL

1	Cazenovia-Cayuga, gently sloping
2	Churchville-Remson, nearly level
3	Darien, nearly level
4	Derby, gently sloping
5	Lima-Honeoye, gently sloping
6	Ovid-Appleton, nearly level
7	Schuyler-Valois-Mardin, moderately steep
8	Valois, sloping

DEEP SOILS WITH FRAGIPANS FORMED IN GLACIAL TILL

9	Mardin, gently sloping
10	Volusia-Erie, gently sloping

MODERATELY DEEP AND SHALLOW SOILS FORMED IN GLACIAL TILL OVER BEDROCK


NIAGARA
Niagara
River
Sandy Beach
HUTH RD
LONG ROAD
ROAD
BEDELL RD
RANSOM ROAD
GRAND ISLAND
WHITE HAVEN
JOINT
STONY
ROAD
WEST
STALEY ROAD
RIVER
LINE
LOVE ROAD
Grandyle
PARKWAY
FIX ROAD
BASE
TONAWANDA
TONAWANDA
BUFFALO
CANA
190
324
290
266
325

REFERENCE 11

Erie-Niagara Basin

Water Resources

ERIE-NIAGARA BASIN REGIONAL WATER
RESOURCES PLANNING BOARD

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

Table 6.--Records of selected wells in the Erie-Niagara basin (Continued)

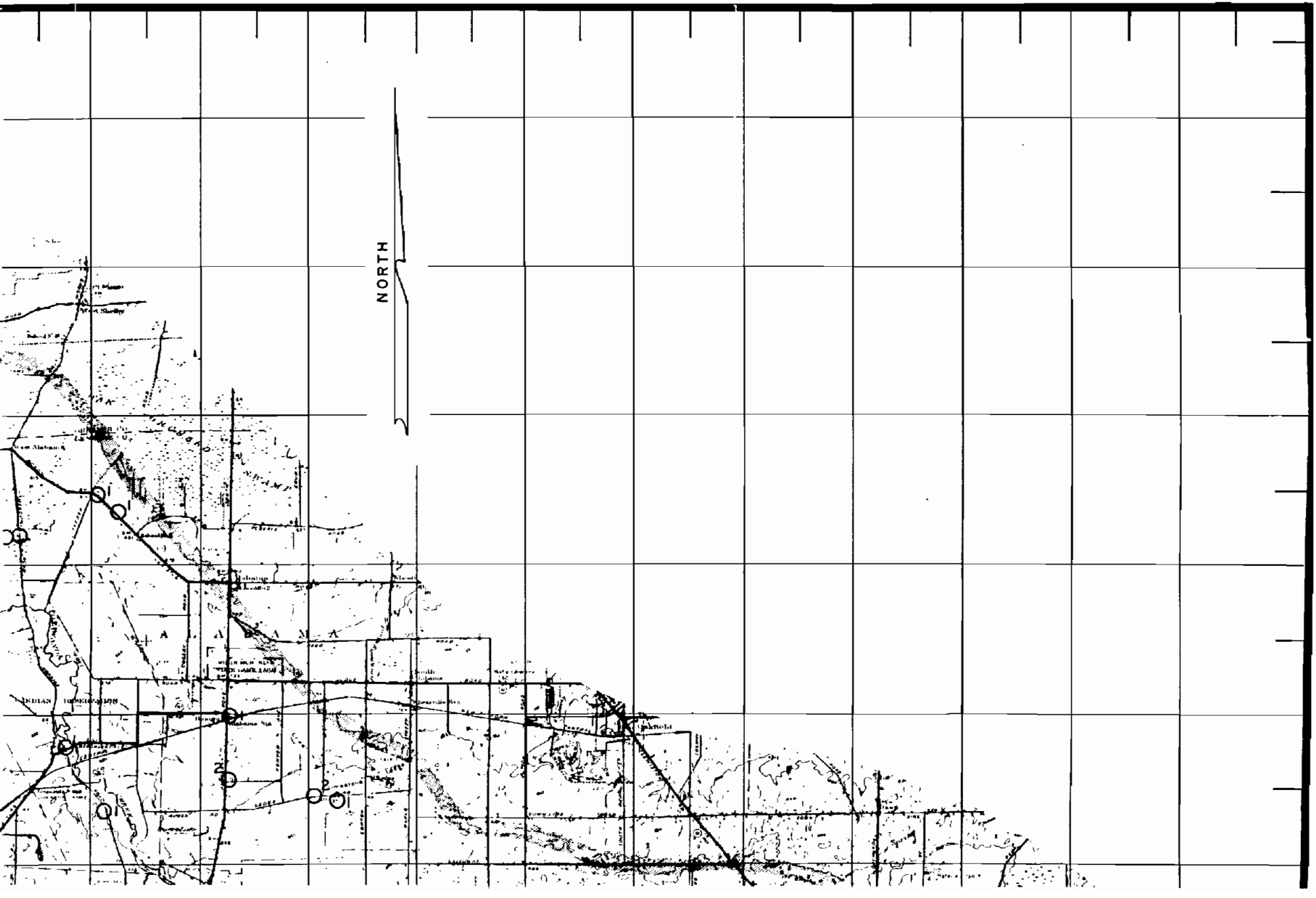
Well number	County	Owner	Year completed	Type of well	Depth of well (feet)	Diameter (inches)	Depth to bedrock (feet)	Water-bearing material	Altitude above sea level (feet)	Water level: Below land surface (feet)	Water level: Date	Method of lift	Estimated pumpage or flow (gallons per day)	Use	Remarks
254-829-3	Erie	Village of Alden	1964	Drl	ra35	--	--	Sand and gravel	845	--	--	Tur	--	PS	Construction of well is reported to be similar to that of well 254-829-1; yield 220 gpm.
254-830-1	do.	W. and J. Fahrinqer	a1904	Drl	rl,150	8	--	Lockport Dolomite?	840	r350	8-62	Dw	--	C	Gas test well which yields a black brine used for mineral baths.
254-834-1	do.	G. Glose	1962	Drl	66.2	10	e7	Shale	770	p26.3	8-19-64	Jet	450	D	H_2S.
-2	do.	R. Maue	1961	Drl	52.9	6	a10	do.	765	7.1	8-19-64	Jet	200	D	Iron; H_2S; water-bearing zone at 25 feet; blasting charge fired at 20-25 ft to increase yield.
255-812-1	Genesee	Western New York Concrete Corp.	1957	Drl	85.9	8	--	Sand and gravel	965	2.4	7-17-63	--	--	A	Anal; screen, 8-inch diameter; 77.9-85.9 ft; pumping test 60 gpm, swl 2 ft, dd 42 ft (r).
-2	do.	do.	1957	Drl	81.4	8	--	do.	970	7.3	7-17-63	--	--	A	Yield about 50 gpm (r); OW.
-3	do.	H. Eart	1944	Drl	38.5	6	--	do.	945	6.3	6-16-64	Sw	1,000	F	Iron.
255-848-1	Erie	Commodore Theater	--	Drl	r75	8	7	Limestone	640	0	1951	Tur	--	C	Air-conditioning use; pumping data, 130 gpm, dd 10 ft (r).
255-850-1	do.	Nagel Dairy	--	Drl	r90	8	20	do.	660	r,p20	1951	Tur	--	C	Pumping data, 180 gpm, dd 45 ft.
256-818-1	Genesee	D. Hagge	1959	Drl	45	6	a30	Shale	935	9.7	7-30-64	Jet	700	F	Yield 8 gpm (r).
256-822-1	do.	K. Skeet	1962	Drl	27.5	6	3	do.	890	7.3	7-30-64	Sw	300	D	Anal; H_2S.
256-831-1	Erie	Sieracki	1959	Drl	52.3	6	a40	do.	800	16.6	8-19-64	Jet	200	D	Anal.
256-835-1	do.	Huber	1964	Drl	68.5	6	--	do.	770	18.7	7-23-64	--	--	D	
-2	do.	C. Suess	1958	Drl	59	6	a34	Limestone	750	29.6	8-19-64	Jet	250	D	Anal.
256-844-1	do.	Twin Industries Corp., Aerospace Division	1951	Drl	r117	6	--	do.	715	--	--	Tur	--	U, I	Iron; H_2S; well is unused because quality of water has deteriorated; formerly supplied 150,000 gpd; yield about 285 gpm.
-2	do.	do.	1951	Drl	90	8	--	do.	715	r45	7- 3-64	--	--	U, I	
257-812-1	Genesee	E. Foster	1955	Drl	65	6	--	Sand and gravel	895	5.2	6-16-64	Jet	1,500	F	
-2	do.	W. Cook	1960	Drl	71.3	6	--	do.	895	5.2	6-16-64	Sw	150	D	Anal; Iron.
257-817-1	do.	J. Penkszyck	1961	Drl	r52	--	--	Shale	920	--	--	Jet	--	D	Iron.
257-824-1	do.	Village of Corfu	1954	Drl	r39.3	12, 8	30	Sand and gravel; shale	850	6	1- 6-54	Tur	55,000	PS	Temp 49.8, 1-17-63; screen, 8-inch diameter, 100-slot from 34.3-39.3 ft; 12-inch diameter gravel pack from 32-39.3 ft; pumping rate 90 gpm; pumping test 100 gpm, swl 6 ft, dd 11 ft.
-2	do.	do.	1952	Drl	r36.6	12	32	do.	850	4	10-27-52	--	--	A	Pumping test, 110 gpm, swl 4 ft, dd 12 ft.
257-855-1	Erie	E. I. du Pont de Nemours & Co.	1925	Drl	r101	8	55	Camillus Shale	590	r30	1951	AL	--	A, I	Yield 125 gpm; 1 of 3 wells of the "north" well field; combined pumpage was 200,000 gpd.
-2	do.	do.	1925	Drl	r123	8	55	do.	590	r30	1951	AL	--	A, I	Yield 125 gpm; 1 of 7 wells of the "south" well field; combined pumpage was 1 mgd.
258-809-1	Genesee	O-AT-KA Milk Products Cooperative, Inc.	1958	Drl	r49.2	18, 10	--	Sand and gravel	900	26.5	8- 1-58	Tur	--	I	Screen, 10-inch diameter, 125-slot, from 41 to 49 ft; gravel packed, Cape May No. 5 gravel; pumping test, 456 gpm, swl 26.5 ft, dd 12.8 ft.
-2	do.	do.	1958	Drl	--	8	--	do.	900	27.3	5- 8-63	Tur	--	I	
[illegible]															

Well number	County	Owner	Year completed	Type of well	Depth of well (feet)	Diameter (inches)	Depth to bedrock (feet)	Water-bearing material	Altitude above sea level (feet)	Water level: Below land surface (feet)	Water level: Date	Method of lift	Estimated pumpage or flow (gallons per day)	Use	Remarks
258-815-1	Genesee	F. Peck	--	Dri	31	6	--	Shale	920	8.1	6-26-63	Sw	50	D	Anal; iron; temp 49.0; yield 12 gpm (r).
258-822-1	do.	E. Lewis	1964	Dri	41.6	6	41.6	Sand	870	9.1	8-19-64	Sw	400	Ag	Anal; H_2S; yield 11 gpm (r).
258-827-1	do.	E. Powanski	1952	Dri	36.5	6	a34	Limestone	835	31.3	8-19-64	Jet	250	D	H_2S; yield 7 gpm (r).
258-833-1	Erie	B. Fields	1960	Dri	62.6	6	a13	do.	775	p22.7	8-18-64	Sub	300	D	Anal.
258-837-1	do.	R. Bowman	1956	Dri	76.2	6	a22	do.	748	19.4	8-18-64	Jet	300	D	Do.
+ 258-843-1	do.	W. Voss	--	Dri	62	8	--	Camillus Shale	615	Flow	--	--	5,000	A	Anal; H_2S; temp 50.8, 8-14-64; flows about 5 gpm at LS.
+ 258-853-1	do.	Linde Div., Union Carbide Corp.	1944	Dri	r375	8	87	Camillus Shale and Lockport Dolomite	600	r,p115	1944	Tur	--	U	H_2S; drilled to 130-ft depth in 1943 and deepened in 1944; "black" water entering from Lockport Dolomite after deepening made well unusable; yield 3,000 gpm (r); pumping test, 1,090 gpm, dd 53 ft.
-2	do.	do.	1944	Dri	r375	8	86	do.	600	r,p82	1944	Tur	--	U	H_2S; drilled to 157-ft depth in 1943 and deepened in 1944; water obtained at 90 ft from a gypsiferous zone in Camillus Shale and "black" water at 312 ft from the Lockport Dolomite which was first penetrated at 288 ft; yield from upper water-bearing zone 90 gpm, dd 22 ft; lower zone was not tested.
258-855-1	do.	Dunlop Tire & Rubber Co.	1943	Dri	r137	12	69	Camillus Shale	590	p36	10-27-52	Tur	--	I	H_2S; pumping rate 1,000 gpm (r); pumping test 500 gpm, swl 36 ft, dd 17 ft; this well and well 258-855-2 yield a combined total of 600,000 gpd.
-2	do.	do.	1943	Dri	r139.7	--	71	do.	590	p54.3	7-16-64	Tur	--	I	H_2S; pumping rate about 1,000 gpm (r); pumping test 1,000 gpm, swl 36 ft, dd 26 ft; this well and well 258-855-1 yield a combined total of 600,000 gpd.
-3	do.	do.	1952	Dri	r120	--	--	do.	592	p39	10-27-52	Tur	--	I	H_2S; pumping test 1,500 gpm, swl 39 ft, dd 38 ft.
259-809-1	Genesee	O-AT-KA Milk Products Cooperative, Inc.	1963	Dri	r60	20, 16	--	Sand and gravel	890	r15	4-27-62	Tur	1,000,000	I	Anal; screen, 13 1/8-inch diameter, 10 ft of 60-slot, 10 ft of 125-slot, from 40-60 ft; pumping rate about 1,200 gpm (r); pumping test 600 gpm, swl 15 ft, dd 1.5 ft (r).
-2	do.	City of Batavia	1963	Dri	r69	16	--	do.	890	14.0	5- 8-63	Tur	--	PS	Anal; H_2S; screen, 16-inch telescope, 125-slot, 52.9-69 ft; pumping rate 1,000 gpm.
-3	do.	do.	1962	Dri	54.1	8	--	do.	890	11.7	5- 6-63	--	--	T	Depth 61 ft (r); screen, 6-inch diameter, 100-slot, from 51-61 ft; pumping test 235 gpm, swl 18.3 ft, dd 0.5 ft (r); OW.
-4	do.	O-AT-KA Milk Products Cooperative, Inc.	1963	Dri	52.2	8	--	do.	890	p13.0	5- 7-63	--	--	T	
-5	do.	City of Batavia	1962	Dri	60.2	8	--	do.	890	13.7	5- 8-63	--	400,000	T	Depth 70 ft (r); screen, 6-inch diameter, 100-slot, from 60-70 ft; pumping test (r), 235-259 gpm, swl 18.5 ft, dd 0.5 ft after 24 hours discharge.
-6	do.	do.	1963	Dri	r75	16	--	do.	895	r14.2	5-27-63	Tur	--	PS	Screen, 16-inch diameter; test pumped at 1,000 gpm.
-7	do.	do.	1963	Dri	r60	8	--	do.	890	r13.7	2-15-62	--	400,000	X, T	H_2S (r); pumping test 200 gpm, swl 13.7 ft, dd 4.4 ft after 24 hours discharge.
259-817-1	do.	D. Beals	1960	Dri	r33	--	--	do.	865	r3	1960	Sw	100	D	Anal; H_2S; yield 4 gpm (r).
259-818-1	do.	Bitterman Bros., Inc.	--	Dri	18.3	12, 6	--	do.	--	6.6	9-17-63	Sw	--	C, O	
259-820-1	do.	A. Wintara	1960	Dri	22.6	6	--	Limestone	880	7.4	9-17-63	Sw	500	C, D	
259-822-1	do.	J. Daley	1956	Dri	70	6	--	Sand	900	27.1	8-19-64	Jet	200	D	Anal; H_2S.

SCALE
1" = 4 MILES
N
SITE
232
231
230
229
840
Last three digits of latitude
WHEATFIELD
AMHERST
TONAWANDA
GRAND ISLAND
BERTIE
BUFFALO
NIAGARA RIVER
CHIPPAWA CHANNEL

BASIN PLANNING REPORT ENB 3 PLATE 1

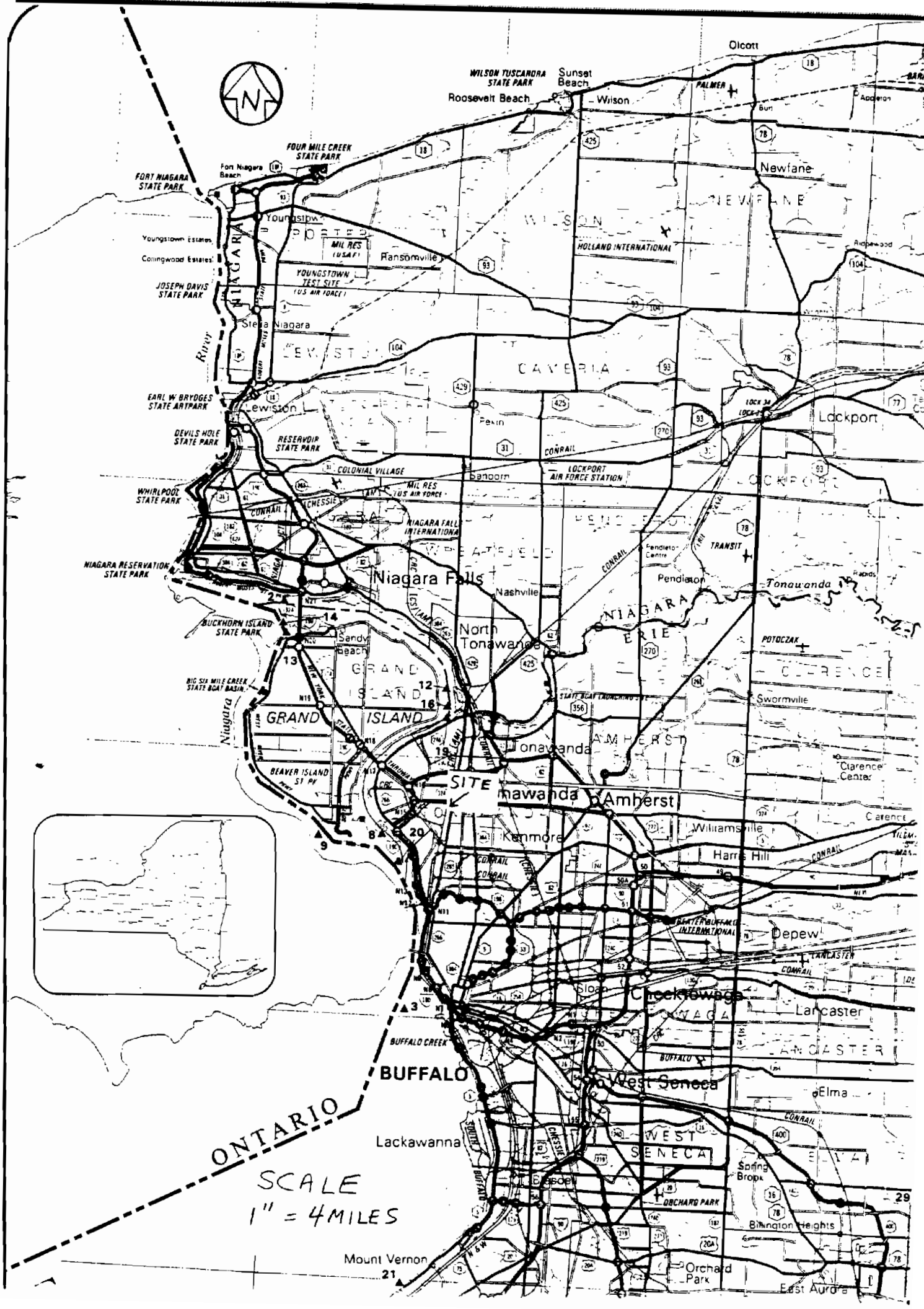
Published by NEW YORK STATE WATER RESOURCES COMMISSION
CONSERVATION DEPARTMENT , DIVISION OF WATER RESOURCES



REFERENCE 12

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



ADAPTED FROM THE FOUR SHEET, 1:250,000 SCALE NEW YORK STATE MAP © 1980 BY THE NEW YORK STATE DEPARTMENT OF TRANSPORTATION

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
X 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
X 16	North Tonawanda City (Niagara Co).		Niagara River - West Branch
17	Orchard Park Village.	3671.	Pipe Creek Reservoir
18	Springville Village.	4169.	Wells
X 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

ID NO	COMMUNITY WATER SYSTEM
Municipal Community	
	Lockport City (See No 12,
1	Middleport Village.
	Niagara County Water Dist (See No 13, Erie Co).
2	Niagara Falls City (See Erie Co).
	North Tonawanda City (Se Erie Co).
Non Municipal Community	
3	Country Estates Mobile V

REFERENCE 13

GROUNDWATER

R. Allan Freeze/John A. Cherry

Library of Congress Cataloging in Publication Data

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Groundwater.

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ISBN 0-13-365312-9

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PRENTICE-HALL OF SOUTHEAST ASIA PTE. LTD., *Singapore*
WHITEHALL BOOKS LIMITED, *Wellington, New Zealand*

Table 2.2 Range of Values of Hydraulic Conductivity and Permeability

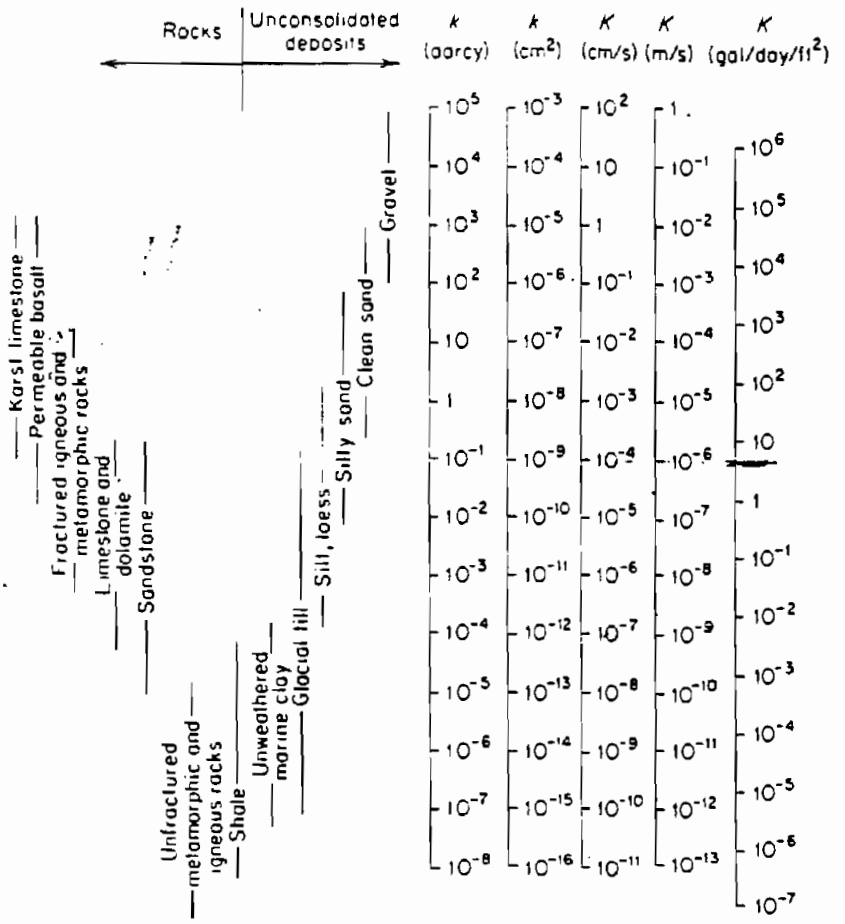

Table 2.3 Conversion Factors for Permeability and Hydraulic Conductivity Units

	Permeability, k*			Hydraulic conductivity, K		
	cm^2	ft^2	darcy	m/s	ft/s	gal/day/ft^2
cm^2	1	1.08×10^{-3}	1.01×10^{8}	9.80×10^{2}	3.22×10^{3}	1.85×10^{9}
ft^2	9.29×10^{2}	1	9.42×10^{10}	9.11×10^{5}	2.99×10^{6}	1.71×10^{12}
darcy	9.87×10^{-9}	1.06×10^{-11}	1	9.66×10^{-6}	3.17×10^{-5}	1.82×10^{1}
m/s	1.02×10^{-3}	1.10×10^{-6}	1.04×10^{5}	1	3.28	2.12×10^{6}
ft/s	3.11×10^{-4}	3.35×10^{-7}	3.15×10^{4}	3.05×10^{-1}	1	5.74×10^{5}
gal/day/ft^2	5.42×10^{-10}	5.83×10^{-13}	5.49×10^{-2}	4.72×10^{-7}	1.74×10^{-6}	1

*To obtain k in ft^2, multiply k in cm^2 by 1.08×10^{-3}.

REFERENCE 14

(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: 915005

NAME OF SITE: Aluminum Matchplate Corp. REGION: 9

STREET ADDRESS: 1500 Military Road

TOWN/CITY: Tonawanda COUNTY: Erie

NAME OF CURRENT OWNER OF SITE: Aluminum Matchplate Corp.

ADDRESS OF CURRENT OWNER OF SITE: 1500 Military Rd., Kenmore, NY 14217

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

ESTIMATED SIZE: <1 ACRES

SITE DESCRIPTION:

Spent casting molds were used as fill in low areas adjacent to the plant. A Part 360 permit was issued on 9/7/79 for the filling operation. The permit expired on 9/7/82. Leachate potential test ran on the molding sands indicated 0.16 ppm phenol in elutriate. Site was sampled in July, 1982 by the U.S. Geological Survey under the Niagara River Toxics Investigation. Samples were analyzed for iron, mercury and phenols.

HAZARDOUS WASTE DISPOSED: CONFIRMED [x] SUSPECTED [ ]

TYPE AND QUANTITY OF HAZARDOUS WASTES DISPOSED:

TYPE	QUANTITY (POUNDS, DRUMS, TONS, GALLONS)
Molding sand with phenolic binder and aluminum grindings	Unknown

TIME PERIOD SITE WAS USED FOR HAZARDOUS WASTE DISPOSAL:

_____, 1940 TO _____, 19 79

OWNER(S) DURING PERIOD OF USE: Aluminum Matchplate Corp.

SITE OPERATOR DURING PERIOD OF USE: Same

ADDRESS OF SITE OPERATOR: Same

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

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

SOIL TYPE: Clay

DEPTH TO GROUNDWATER TABLE: Unknown

LEGAL ACTION: TYPE: None STATE ☐ FEDERAL ☐
STATUS: IN PROGRESS ☐ COMPLETED ☐
REMEDIAL ACTION: PROPOSED ☐ UNDER DESIGN ☐
IN PROGRESS ☐ COMPLETED ☐

NATURE OF ACTION: None

ASSESSMENT OF ENVIRONMENTAL PROBLEMS:

No phenol or mercury detected in U.S.G.S. samples.
No apparent environmental problem.

ASSESSMENT OF HEALTH PROBLEMS:

INCIDENT INFORMATION

PERSON(S) COMPLETING THIS FORM:

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

NAME Peter Buechi
TITLE Assoc. Sanitary Engr.
NAME Ahmed Tayyebi
TITLE Asst. Sanitary Engr.
DATE: 12/83

NEW YORK STATE DEPARTMENT OF HEALTH

NAME R. Tramontano
TITLE Bur. Tox. Subst. Assess.
NAME
TITLE
DATE: 12/83

REFERENCE 15

Don: If no info (letter) by 5/16 call at Westin on Paul Way

ALUMINUM MATCH PLATE CORPORATION

SUBSIDIARY OF FRONTIER BRONZE CORPORATION

1500 MILITARY ROAD • KENMORE, NEW YORK 14217

P.O. BOX 206 PHONE: (716) 873-7054

May 2, 1980

County of Erie
95 Franklin Street
Buffalo, New York 14202

Attention: Ronald D. Koczaja

Dear Mr. Koczaja:

This will confirm our telephone conversation this date with reference to our resin sand dump in the back of our building. We are making arrangements with Niagara Sanitation of Buffalo to haul all our waste sand out, and by next week we should have the dates that they are going to clean up the dump. They will give us a schedule of the weekly pick-up basis. As soon as we receive this information, we will contact you immediately.

If you have any further questions, please do not hesitate to contact us.

Very truly yours,

ALUMINUM MATCH PLATE CORPORATION

E A Westin

Elmer A. Westin

Plant Sup't.

EAW:lo

Dave Young - Niagara Falls - DEC permitted
57 tandem loads taken thus far out of 10 loads
remaining as of 5/29/80 per Elmer A. Westin/RDK

FRONTIER TRADE MARK

AMP

REFERENCE 16

RECRA RESEARCH, INC.

Hazardous Waste And Toxic Substance Control

January 9, 1986

Mr. Mathew Van Voris
Frontier Bronze Corporation
4870 Packard Road
Niagara Falls, NY 14304

Dear Mr. Van Voris:

I would like to take this opportunity to thank you for your cooperation during our investigation of the Aluminum Matchplate Corporation. 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 transcript of our telephone conversation which took place on January 9, 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.

° Foundry sands were landfilled in low lying areas of the site

° Once the lying areas were completely filled, additional foundry sands were hauled off-site for disposal by Niagara Sanitation.

Thank you for your assistance.

Sincerely,

RECRA RESEARCH, INC.

Diane M. Werneiwski

Diane M. Werneiwski
Staff Geologist

DMW/jlo

Mr. Mathew Van Voris

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

REFERENCE 17

SHEET 1 OF 2

DAILY FIELD REPORT

PROJECT NO. Superfund Phase I **LOCATION** NYSDEC Delaware Ave

DATE 12/10/85 **REPORT NO.** _____

WEATHER CONDITIONS _____

REPORT

ACTIVITIES

Information was obtained from Becky Anderson of the flood Control Division of the NYSDEC office on Delaware Ave.

- The following sites were found to lie within either a 100 yr. flood plain or a 500 yr. flood plain and a photo copy was made of the F.I.R.M. map:
  1. Walmore Rd. site
  2. NFTA
  3. Chada Koin River Park
  4. Central Autowrecking
  5. Procknal and Katra
  6. Felmont Oil
  7. W. Seneca Transfer station
  8. U.S. Steel (Stimm Assoc.)

- The following sites were found not to lie within any flood plain and a photocopy was obtain of the F.I.R.M. map documenting this:
  1. Exolon
  2. Tonawanda city landfill
  3. Lackawanna Landfill
  4. Union Rd. Site
  5. Mollenberg-Betz
  6. Old Land Reclamation
  7. Dresser
  8. Stocks Pond
  9. Ernst Steel
  10. S. Stockton L.F.
  11. Northern Demolition

SHEET 2 OF 2

DAILY FIELD REPORT

PROJECT NO. _____ LOCATION _____

DATE _____ REPORT NO. _____

WEATHER CONDITIONS _____

REPORT

ACTIVITIES

- The following sites were found not to lie within any flood plain, although no copies of these maps were obtained!

1. Anaconda (American Brass
2. Bisonite Paint
3. Aluminum Matchplate
4. LaSalle Reservoir
5. Pennwalt - Lucidal
6. Empire Waste
7. Otis Elevertor (Hard Manfg.)
8. Consolidated Freightway

REMARKS

Shelley L. Nagel 12/10/85

REFERENCE 18

Item: 6. Radioactivity.

a. Gross beta.

Specifications: Shall not exceed 1,000 picocuries per liter in the absence of Sr^{90} and alpha emitters.

b. Radium 226.

Specifications: Shall not exceed three picocuries per liter.

c. Strontium 90.

Specifications: Shall not exceed 10 picocuries per liter.

Note 1: With reference to certain toxic substances affecting fish life, the establishment of any single numerical standard for waters of New York State would be too restrictive. There are many waters, which because of poor buffering capacity and composition will require special study to determine safe concentrations of toxic substances. However, most of the nontrout waters near industrial areas in this State will have an alkalinity of 80 milligrams per liter or above. Without considering increased or decreased toxicity from possible combinations, the following may be considered as safe stream concentrations for certain substances to comply with the above standard for this type of water. Waters of lower alkalinity must be specifically considered since the toxic effect of most pollutants will be greatly increased.

Ammonia or ammonium compounds — Not greater than 2.0 milligrams per liter expressed as NH_3 at pH of 8.0 or above.

Cyanide — Not greater than 0.1 milligrams per liter expressed as CN.

Ferro- or ferricyanide — Not greater than 0.4 milligrams per liter expressed as $Fe(CN)_6$.

Copper — Not greater than 0.2 milligrams per liter expressed as Cu.

Zinc — Not greater than 0.3 milligrams per liter expressed as Zn.

Cadmium — Not greater than 0.3 milligrams per liter expressed as Cd.

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. Phenolic compounds.

Specifications: Shall not be greater than 0.005 milligrams per liter (phenol).

Item: 6. Radioactivity.

a. Gross beta.

Specifications: Shall not exceed 1,000 picocuries per liter in the absence of Sr^{90} and alpha emitters.

b. Radium 226.

Specifications: Shall not exceed three picocuries per liter.

c. Strontium 90.

Specifications: Shall not exceed 10 picocuries per liter.

Note 1: Refer to note 1 under Class AA which is also applicable to Class A standards.

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: Refer to note 1 under Class AA which is also applicable to Class B standards.

Item: 2. Dissolved oxygen.

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

Item: 3. Toxic wastes and deleterious substances.

Specifications: None in amounts that will interfere with use for primary contact recreation or that will be injurious 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 SC

Best usage of waters. The waters shall be suitable for fishing and all other uses except for primary contact recreation and for the taking of shellfish for market pruposes.

Quality Standards for Class SC 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 in practiced.

Item: 2. Dissolved oxygen.

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

Item: 3. Toxic wastes and deleterious substances.

Specifications: None in amounts that will interfere with use for secondary contract recreation or that will be injurious 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 SD

Best usage of waters. All waters not primarily for recreational purposes, shellfish culture or the development of fish life and because of natural or man-made conditions cannot meet the requirements of these uses.

Quality Standards for Class SD Waters

Item: 1. Dissolved oxygen.

Specifications: Shall not be less than 3.0 mg/l at any time.

Item: 2. Toxic wastes and deleterious substances.

Specifications: None alone or in combination with other substances or wastes in sufficient amounts to prevent survival of fish life or impair the waters for any other best usage as determined for the specific waters which are assigned to this class.

PART 702
SPECIAL CLASSIFICATIONS AND STANDARDS

Section 702.1 Class A — Special (International boundary waters).

(GREAT LAKES WATER QUALITY AGREEMENT OF 1972)

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

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

Quality Standards for Class A — Special Waters

(International Boundary Waters)

Item: 1. Coliform.

Specifications: The geometric mean of not less than five samples taken over not more than a 30-day period should not exceed 1,000 per 100 ml total coliform nor 200 per 100 ml fecal coliform.

Item: 2. Dissolved oxygen.

Specifications: In the rivers and upper waters of the lakes not less than 6.0 mg/l at any time. In hypolimnetic waters, it should be not less than necessary for the support of fish life, particularly cold water species.

Item: 3. Total dissolved solids.

Specifications: Should not exceed 200 milligrams per liter.

Item: 4. pH

Specifications: Should not be outside the range of 6.7 to 8.5.

Item: 5. Iron.

Specifications: Should not exceed 0.3 milligrams per liter as Fe.

Item: 6. Phosphorus

Specifications: Concentrations should be limited to the extent necessary to prevent nuisance growths of algae, weeds and slimes that are or may become injurious to any beneficial water use.

Item: 7. Radioactivity.

Specifications: Should be kept at the lowest practicable levels and in any event should be controlled to the extent necessary to prevent harmful effects on health.

Item: 8. Taste and odor-producing substances, toxic wastes and deleterious substances.

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

Item: 9. 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 this class.

Item: 10. Oil and floating substances.

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

Item: 11. Thermal discharges.

Specifications: (See Part 704 of this Title.)

To meet the water quality objectives referred to in the "Great Lakes Water Quality Agreement of 1972," the standards listed above shall be subject to revision from time to time after further hearings on due notice.

Note: Refer to note 1 under Class AA which is also applicable to Class A — Speical (International Boundary Waters) standards.

702.2 Class AA — Special (Lake Champlain drainage basin).

CLASS AA — SPECIAL

Best usage of waters. Any usage except for disposal of sewage, industrial wastes or other wastes.

Quality Standards for Class AA — Special Waters (Lake Champlain Drainage Basin)

Item: 1. Floating solids, settleable solids, oil, sludge deposits, toxic wastes, deleterious substances, colored or other wastes or heated liquids.

Specifications: None attributable to sewage, industrial waste or other wastes.

2. Sewage or waste effluents.

None into waters of this class.

702.3 Special classes and standards for the Lower Hudson River, Arthur Kill, Kill Van Kull, Harlem River, Raritan Bay and Lower East River drainage basins, New York Bay area, Nassau County including Long Island Sound, Suffolk County, Upper East River, Long Island Sound drainage basins, within Queens, Bronx and Westchester Counties and Jamaica Bay drainage basin within Kings and Queens Counties including a certain portion of Rockaway Inlet. (a) This section applies to the waters within the following areas, which constitute the Interstate Sanitation District:

(1) The drainage basin of the Lower Hudson River from the mouth to northern Westchester-Rockland county lines, except Saw Mill River and Sparkill Creek drainage basins.

(2) The drainage basins of Arthur Kill, Kill Van Kull, and Harlem River, and Raritan Bay.

(3) The drainage basin of Lower East River from the mouth to a line across East River north of Wards Island between Stony Point in Bronx County and Lawrence Point in Queens County.

(4) New York Bay including Gravesend Bay, Coney Island Creek, Atlantic Basin, Erie Basin, Gowanus Bay, Gowanus Canal, the Narrows and Atlantic Ocean waters off Coney Island lying westerly of a north-south line from Light Inlet at the southeasterly tip of Conel Island Peninsula to the south tip of Rockaway Point, thence along the jetty to Rockaway jetty light, thence due south to the New York-New Jersey boundary line.

(5) Nassau County including the waters of Long Island Sound between Nassau-Queens and Nassau-Suffolk county lines and the waters of Atlantic Ocean to the three mile limit between said county lines.

(6) The area within Suffolk County lying west of a north-south topographical limit line and its extensions to a point in Long Island Sound at the New York Connecticut State boundary line due north of Miller Place Beach and to Blue Point on the south mainland thence southward across Great South Bay to Water Island, thence three miles due south to a point in Atlantic Ocean at the south State boundary line.

(7) Certain tidal waters which are within the Upper East River and Long Island Sound drainage basins within Queens, Bronx and Westchester Counties.

(8) Jamaica Bay drainage basin within Kings and Queens Counties and including Rockaway Inlet east of a north-south line drawn from Light Inlet at the southeasterly tip of Coney Island peninsula near Manhattan Beach to the westerly shoreline west of Lookout Tower on Rockaway Point.

b. Said classes and standards of quality and purity applicable thereto are set forth hereinafter and designated Class I and Class II.

CLASS I

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

Quality Standards for Class I Waters

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

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

Item: 2. 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: 3. Dissolved oxygen.

Specifications: Shall not be less than 4.0 mg/l at any time.

Item: 4. pH.

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

Item: 5. 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: 6. Color.

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

Item: 7. Taste and odor-producing substances, toxic wastes and deleterious substances.

Specifications: None in amounts that will interfere with use for secondary contact recreation or that will be injurious to edible fish or shellfish or the culture or propagation thereof, or which in any manner shall

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: 915005

NAME OF SITE: Aluminum Match Plate Corporation REGION: 9

STREET ADDRESS: 1500 Military Road

TOWN/CITY: Tonawanda COUNTY: Erie

NAME OF CURRENT OWNER OF SITE: Aluminum Match Plate Corporation

ADDRESS OF CURRENT OWNER OF SITE: 1500 Military Road, Tonawanda, NY

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

ESTIMATED SIZE: <1 ACRES

SITE DESCRIPTION:

Spent casting sands were used as filling in the low lying areas adjacent to the plant. A Part 360 was issued in 9/79 for the filling operation. In 1980, the company ceased on-site disposal of sand. In 1978, a leachate potential test was conducted on the foundry sands. Phenol was found in a concentration of .16 ppm in the elutriate. U.S. Geological Survey conducted a preliminary hydrogeologic and chemical evaluation of the site in 1982. Soil samples were taken from each of the four borings and analyzed for iron, mercury and phenol. Iron, the only detected compound, was found in elevated concentrations.

HAZARDOUS WASTE DISPOSED: CONFIRMED [ ] SUSPECTED [X]

TYPE AND QUANTITY OF HAZARDOUS WASTES DISPOSED:

TYPE	QUANTITY (POUNDS, DRUMS, TONS, GALLONS)
Foundry sand with phenolic binder	Unknown
and aluminum grindings	

TIME PERIOD SITE WAS USED FOR HAZARDOUS WASTE DISPOSAL:

_____, 19 40 TO _____, 19 79

OWNER(S) DURING PERIOD OF USE: Aluminum Match Plate Corporation

SITE OPERATOR DURING PERIOD OF USE: Same

ADDRESS OF SITE OPERATOR: Same

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

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

SOIL TYPE: Silt and Clay

DEPTH TO GROUNDWATER TABLE: Unknown

LEGAL ACTION: TYPE: None STATE ☐ FEDERAL ☐
STATUS: IN PROGRESS ☐ COMPLETED ☐
REMEDIAL ACTION: PROPOSED ☐ UNDER DESIGN ☐
IN PROGRESS ☐ COMPLETED ☐

NATURE OF ACTION: None

ASSESSMENT OF ENVIRONMENTAL PROBLEMS:

Unknown

ASSESSMENT OF HEALTH PROBLEMS:

Insufficient Information

PERSON(S) COMPLETING THIS FORM:

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

NAME Recra Research, Inc. Diane M. Werneiwski
TITLE Staff Geologist
NAME _____
TITLE _____
DATE: January 17, 1986

NEW YORK STATE DEPARTMENT OF HEALTH

NAME _____
TITLE _____
NAME _____
TITLE _____
DATE: _____