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ENGINEERING INVESTIGATIONS AT INACTIVE HAZARDOUS WASTE SITES

PHASE II INVESTIGATION

Brzezinski Property	Site No. 932006
Town of Wheatfield	Niagara County

DATE: March 1990

VOLUME I

Prepared for:

New York State Department of Environmental Conservation

50 Wolf Road, Albany, New York 12233
Thomas C. Jorling, *Commissioner*

Division of Hazardous Waste Remediation
Michael J. O'Toole, Jr., P.E., *Director*

By:

Lawler, Matusky & Skelly Engineers

ENGINEERING INVESTIGATIONS AT INACTIVE HAZARDOUS WASTE SITES IN THE STATE OF NEW YORK PHASE II INVESTIGATIONS

Brzezinski Property
Town of Wheatfield, Niagara County
Site No. 932006
Volume I - Report

Prepared for

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

Prepared by

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One Blue Hill Plaza
Pearl River, New York 10965

March 1990

LMSE-90/0191&576/017

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CHAPTER 1

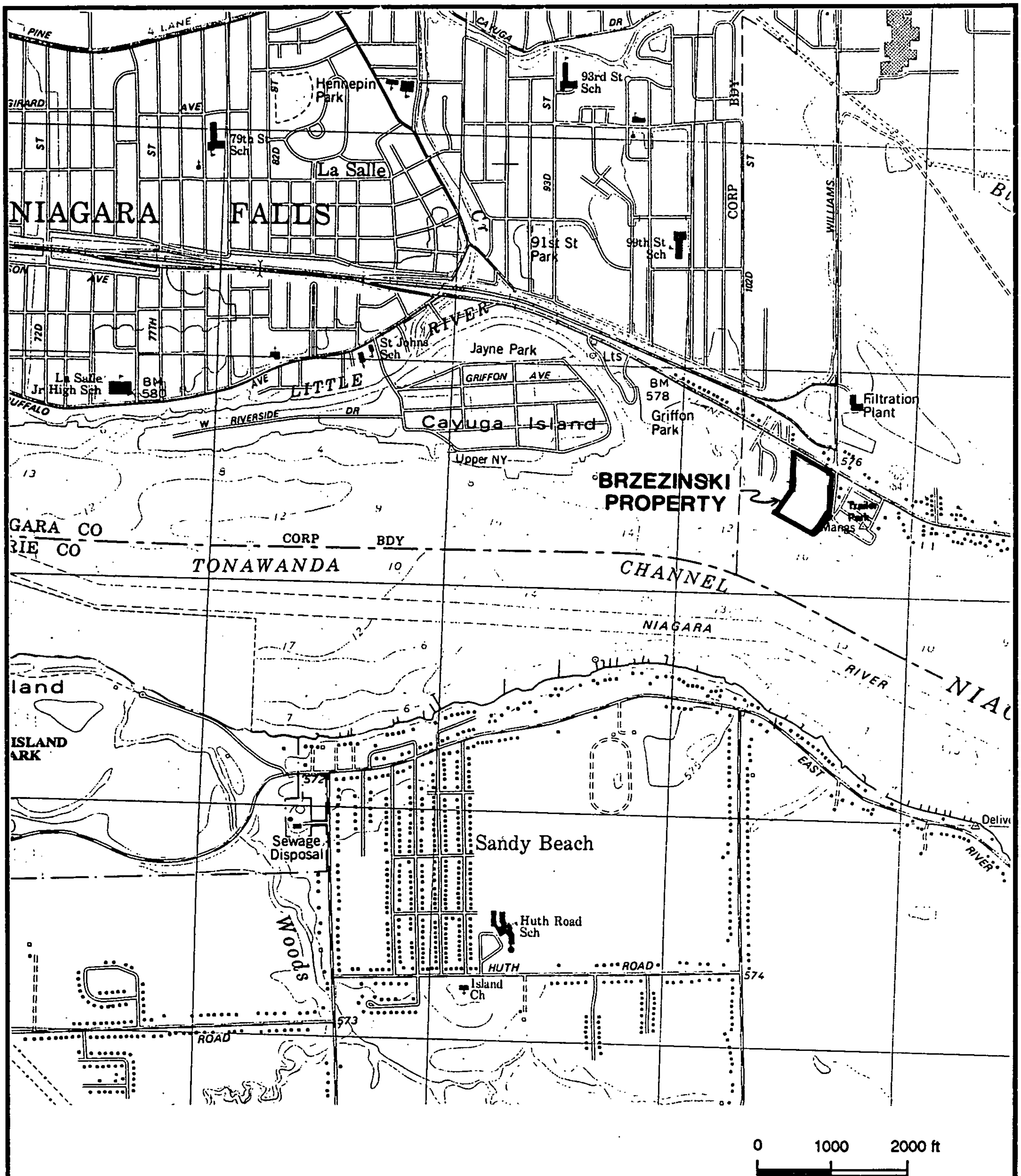
EXECUTIVE SUMMARY

The Brzezinski Property is located in the Town of Wheatfield, Niagara County, New York (Figure 1-1). The site lies between River Road (State Routes 365 and 364) to the north and the Niagara River to the south. A 60-ft right-of-way owned by the Niagara County Water District separates the site from the Lynch Park Trailer Park to the east (Figure 1-2). Photos 1 through 6 depict the site and are oriented to Figure 1-2.

The site is part of a 20-acre parcel that included the river shoreline, a natural cove, and the river itself. An earthen berm reinforced with rock riprap was constructed across the mouth of the cove in the mid-1960s. Water was then pumped out of the cove into the river and the cove was filled with solid industrial wastes.

One of the owners, Mr. John Brzezinski, received a permit to operate the site as a refuse disposal area in 1970. The Niagara County Health Department has noted that prior to receipt of Mr. Brzezinski's permit application a large percentage of the landfill had already been used up.

Sources of this industrial waste fill included (1) Carborundum Co., Abrasives Division (Niagara Falls, New York), which reportedly contributed grit, sandpaper, grinding wheels, and floor sweepings; (2) Bell Aerospace Textron (Niagara Falls Air Force Base, Niagara Falls, New York), which reportedly disposed of plaster molds on-site; and (3) the Niagara County Incinerator Plant, which reportedly disposed of 400-600 yd^3 of ash on site. During the time of deposition of these industrial materials, clean fill (native soil) from a sewer construction project was also deposited on-site as intermediate and final cover. Landfilling of the site ceased in



Quadrangle Location

Lat 43°04'13"N
Long 78°56'29"W

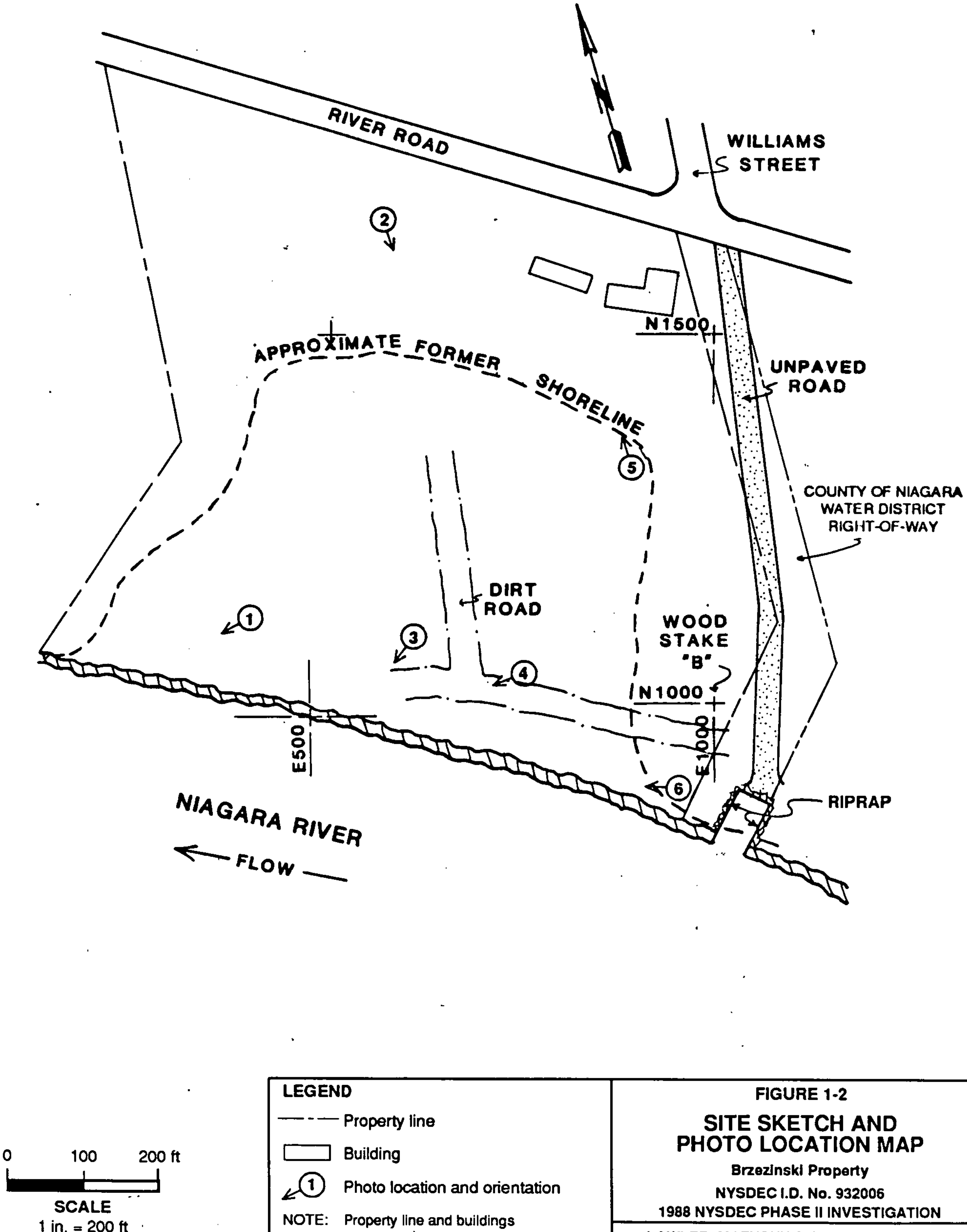
Source: USGS Topographic Map
Tonawanda West, N.Y.

FIGURE 1-1

LOCATION MAP

Brzezinski Property
NYSDEC I.D. No. 932006
1988 NYSDEC PHASE II INVESTIGATION

LAWLER, MATUSKY & SKELLY ENGINEERS
Pearl River, New York



LEGEND

Property line

Building

Photo location and orientation

NOTE: Property line and buildings are approximate

FIGURE 1-2

SITE SKETCH AND PHOTO LOCATION MAP

Brzezinski Property

NYSDEC I.D. No. 932006

1988 NYSDEC PHASE II INVESTIGATION

LAWLER, MATUSKY & SKELLY ENGINEERS
Pearl River, New York

PHOTO 1. Looking southwest from western section of property.

PHOTO 2. Looking south from northern end of property.

PHOTO 3. Looking southwest from southern mid-portion of property.


PHOTO 4. Access road; looking west from southern end of property.


PHOTO 5. Looking north; access road (not visible) is to the right.


PHOTO 6. Concrete rubble breakwall on southern end of site, looking west.

1972. At this time the original shoreline and landfilled cove area consisted of 11.1 acres.

In 1982 the U.S. Geological Survey (USGS) drilled three borings on the site and detected elevated concentrations of copper and iron in the soils; the presence of fill and an oil-like stain were also reported. In 1983 a Phase I investigation was completed by Recra Research, Inc., Amherst, New York. In late 1983 Earth Dimensions, Inc. (East Aurora, New York), drilled test borings on-site for a prospective buyer. Phenols were detected in several borings. In 1986 the New York State Department of Environmental Conservation (NYSDEC) took two surface soil, one water, and one sediment sample and found high metals concentrations in the soil matrices.

A Phase II investigation, the subject of this report, was conducted in 1988 by Lawler, Matusky & Skelly Engineers (LMS). This investigation included a review of available literature and correspondence about site operations and previous investigations, a site reconnaissance, a geophysical survey, surface soil sampling, installation of test borings and monitoring wells, surface water sampling, and ambient air monitoring.

The conclusions of the Phase II investigation are:

- Industrial fill, as previously documented, and native soils have been placed in and near a former cove of the Niagara River to an average depth of about 7 ft below existing grade. Present grade is approximately 10 ft above the river. An earthen berm reinforced with rock riprap separates the cove from the Niagara River.

- The river fluctuations create a bank storage condition along the southern edge of the site such that water table elevations are higher near the river than upgradient. Because of the river influence, much of the fill material in the former cove lies beneath the water table.

- The porous nature of the fill allows for infiltration of water down to the native, relatively impermeable clay that acts as a barrier against further downward migration of contaminants. However, movement of groundwater contaminants toward the river may be occurring at the surface of this clay and through the fill itself.

- Elevated concentrations of metals were found in several soil samples. Concentrations of lead, iron, and manganese in the groundwater exceeded state standards.

- One groundwater sample also had concentrations of PCBs (Aroclor 1254) and 4,4'-DDT that exceeded state standards.

- Chloroethane, benzene, and xylene concentrations also exceeded state groundwater standards.

- A petroleumlike sheen was observed on the water table at GW-2 and GW-3.

- A suite of semivolatile organic compounds found in the surface soil sample is also suggestive of a petroleum source of unknown origin.

- Very high concentrations of a suite of volatile organics, particularly trichloroethene, in the soils at GW-4B suggest a separate surface discharge of some solvents and degreasers not related to the industrial fill found on the rest of the property. Some of these contaminants may be moving toward the river along the surface of the underlying clay layer. These high concentrations require additional investigations.

- Investigations to date are inconclusive as to whether any contamination from the site has migrated into the Niagara River, elsewhere off site, or below the native clay layer.

As one element in the site assessment, the data collected during LMS' Phase II sampling and sampling by other agencies and organizations have been used to evaluate the site within the context of the U.S. Environmental Protection Agency (EPA) Hazard Ranking System (HRS), the standard ranking system used by NYSDEC. The HRS assigns numerical values to various aspects of a site and assesses them with respect to their potential for posing a risk to the general public and the environment due to the presence of uncontrolled release of hazardous substances. It does not address the feasibility, desirability, or degree of cleanup required and does not address all potential environmental or health impacts.

The final HRS score, the hazardous substance migration (S_M) score, is a combination of the values assigned to groundwater (S_{GW}), surface water (S_{SW}), and air (S_A). Fire and explosion (S_{FE}) and direct contact (S_{DC}) are also scored numerically, but are not considered in the final HRS (S_M) score.

Based on information gathered from this investigation, the Brzezinski Property site was scored as follows:

S_M = 2.3 (S_{GW} = 3.0; S_{SW} = 2.66; S_A = 0.00)

S_{FE} = not scored S_{DC} = 37.50

The total score is 2.3 out of a possible 100.

Based on the conclusions of the Phase II work, the following additional investigations are recommended:

- Define the extent of volatile organic contamination in the northern portion of the property, which is suspected of having a source from a surface discharge, by drilling test borings to the water table. Continuous split-spoon samples would be analyzed on site by a mobile gas chromatography (GC) laboratory for the predominant compound, trichloroethene (TCE).

- Install a north-south transect of three to four new monitoring wells from River Road, through the fill, to the Niagara River shoreline. Water table information from these wells would help define the hydraulic interrelationship between the river and the site groundwater. In addition, samples of groundwater from these new wells and the Phase II wells should be analyzed for target compound list (TCL) compounds to determine whether contaminants are moving toward the river or off site.

- Sample the Niagara River up and downstream of the site to see whether site contaminants are reaching the river.

- Sample during construction of water main on adjacent property.

CHAPTER 2

CHAPTER 2

OBJECTIVES

Lawler, Matusky & Skelly Engineers (LMS), under contract to the New York State Department of Environmental Conservation (NYSDEC), conducted a Phase II investigation of the Brzezinski Property, located in the Town of Wheatfield, Niagara County, New York. The investigation was targeted to address specific concerns regarding past waste disposal practices, characterize fill material, determine the extent and nature of any contaminants, and provide additional information on the site so that it could be scored accurately on the Hazard Ranking System (HRS). The HRS is the standard ranking system adopted by NYSDEC for state Superfund projects and inactive waste disposal sites. Specific objectives of the Phase II investigations are to:

- Provide a geological and hydrogeological site assessment, including determination of depth to groundwater and aquifers of concern.
- Identify and evaluate the presence, concentration, and nature of contamination and determine to the extent limited by the scope of work its release (if any) to the environment.
- Using information compiled in the study, determine the significance of any release and the degree to which it may threaten surrounding areas.
- Provide additional information to complete the final HRS score.
- Prepare a report documenting findings and outlining any recommendations for possible future work.

CHAPTER 3

CHAPTER 3

CHAPTER 3

DESCRIPTION OF PHASE II INVESTIGATION

3.1 SITE INVESTIGATION

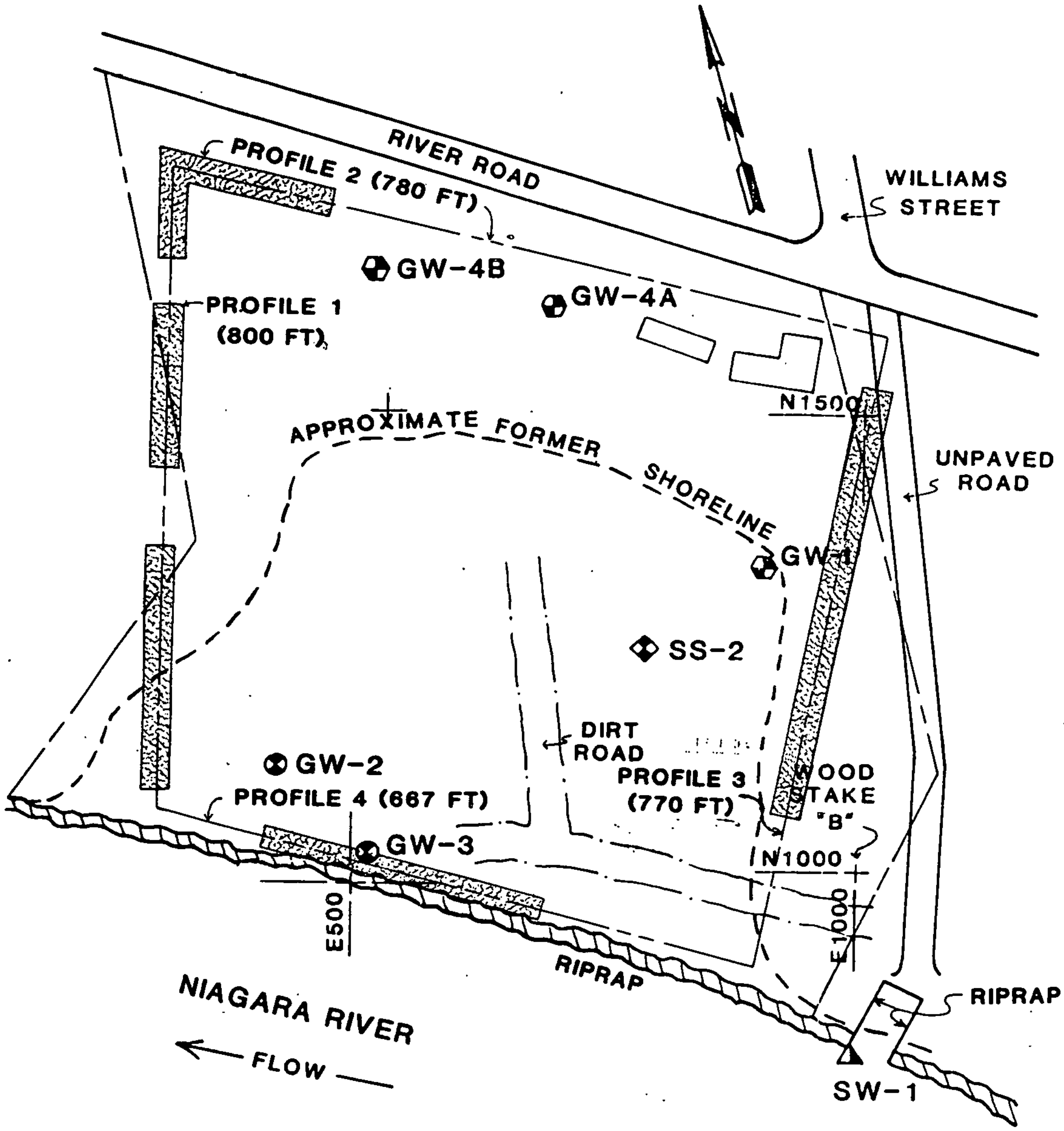
A site reconnaissance investigation of the Brzezinski Property (Appendix B) was conducted before any field work was initiated to determine:

- Site access problems
- Whether locations of monitoring wells and soil borings presented any access problems for the drill rig
- Volatile organic concentrations using air monitoring equipment
- Site hazards, such as drums and vents
- Power and water line locations

An LMS site-specific health and safety plan (HASP) was prepared (Appendix C) from the information gathered during the site visit.

3.2 GEOPHYSICAL SURVEY

A terrain conductivity survey was conducted around the perimeter of the site (Figure 3-1) on 17 August 1988 by the Dunn Geoscience Corporation (Dunn), Amherst, New York (Appendix D). This survey was conducted using a Geonics Model EM-31 DL terrain conductivity meter. The purpose of the geophysical survey was to determine the limits of the fill material and the presence of contaminant plumes. This information would then be used to help characterize the subsurface features of the site. Final borehole locations were



LEGEND

GW	=	Groundwater monitoring well location
SW	=	Surface water sample location
SS	=	Soil sample location
GW	=	Borehole sample location
	=	Anomaly

Source: After Dunn Geoscience Corp.

Property line

Building

Property line and buildings are approximate

SCALE

0 100 200

1 in. : 200 ft

FIGURE 3-1

GEOPHYSICAL SURVEY MAP
(Site as of 17 August 1988)

Brzezinski Property
NYSDEC I.D. No. 932006
1988 NYSDEC PHASE II INVESTIGATION

LAWLER, MATUSKY & SKELLY ENGINEERS
Pearl River, New York

also subject to the findings of this survey in order to minimize drilling risks and to adjust monitoring well placement (if needed) to collect representative groundwater samples. Geophysical exploration is an established method for nondestructively investigating the subsurface. However, because it is an indirect method of subsurface investigation, it is subject to inherent limitations and ambiguities. Search targets are detectable only if they produce recognizable anomalies or patterns against the background geophysical data. Natural and cultural features may exhibit or mask significant anomalies.

The EM-31 terrain conductivity meter is equipped with a transmitter coil that is energized with an alternating current at an audio frequency and placed on the ground. The magnetic field produced by the electrical current in the coil induces small currents in the earth, producing a secondary magnetic field. The ratio of the preliminary field to the secondary field is linearly proportional to the ground conductivity. The effective depth of investigation of the instrument is 20 ft.

Groundwater contamination can be detected by the EM-31, provided that the contaminants produce a measurable anomaly. Typically, this can occur if sufficient amounts of electrolytic contaminants are present in the groundwater. The electrolytes that cause the instrument to respond are not of primary concern. However, contaminants of concern, such as organic chemicals, are often carriers of these electrolytes.

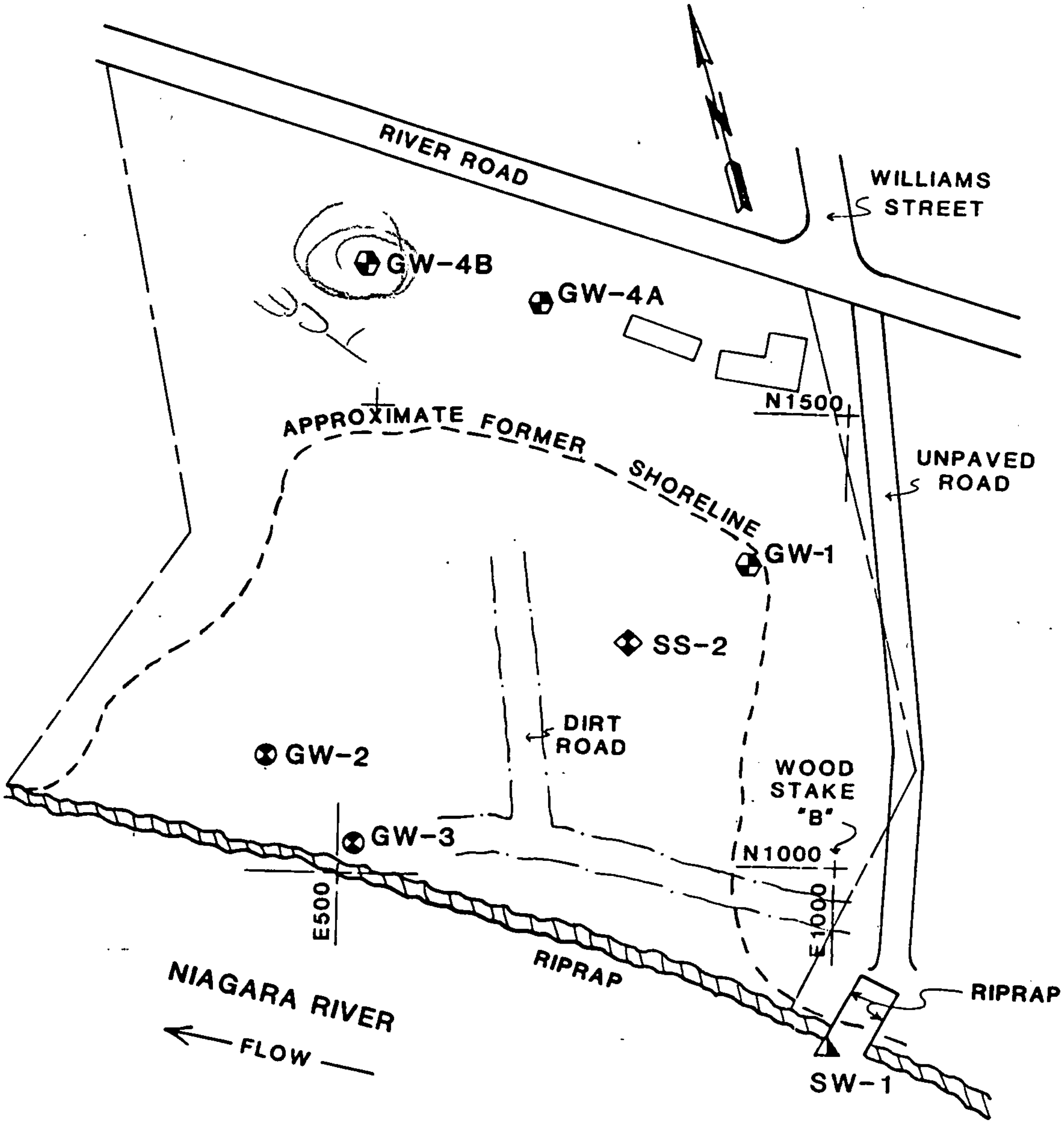
3.3 GROUNDWATER INVESTIGATION

Five boreholes were drilled at the site. The surficial topography and geology of the site indicated that the groundwater flow should be toward the river; therefore, upgradient was assumed near River Road and downgradient near the river. This report will use that designation, even though the final results do not give an indication of groundwater flow direction. Impermeable hydrologic conditions prevented any upgradient well installation. Two downgradient wells were the only monitoring wells installed during the Phase II field work.

3.3.1 Test Borings

Between 28 October and 1 November 1988 American Auger and Ditching Co., Inc., of West Monroe, New York, under LMS supervision, advanced three upgradient soil borings (GW-1, GW-4A, and GW-4B) as shown in Figure 3-2. One hand-augered boring (SS-2) was completed to 3.4 ft below grade. The three deeper borings, located on the north end of the property, were advanced with the dual objectives of providing a hydrogeologic assessment of the property and finding a suitable location for an upgradient monitoring well. All test borings were advanced with 4.25-in. I.D. hollow-stem augers by a Mobile B-57 drill rig. Split-spoon samples were taken every 5 ft until the water table was reached. Continuous split-spoon sampling was conducted from the top of the water table to the bottom of the boring. All split-spoon samples were monitored with an HNU photoionization detector (PID). Test boring GW-1 was monitored with an MSA 361 combustible gas indicator as well as an HNU meter. An onsite LMS geologist logged each sample by describing the fill/soil characteristics (Appendix E) and noting the presence of any visual contamination (Ref. 1, Appendix A). Two representative soil samples from each borehole were collected for sieve analysis.

The first upgradient soil boring (GW-4A) was advanced to 24 ft on 28 October 1988. The water table was encountered approximately 14



LEGEND

- GW = Groundwater monitoring well location
- SW = Surface water sample location
- SS = Soil sample location
- GW = Borehole sample location
- Property line
- Building

Property line and buildings are approximate

SCALE 0 100 200

1 in. : 200 ft

FIGURE 3-2
POSTFILL AREA AND SAMPLE LOCATION MAP
Brzezinski Property
NYSDEC I.D. No. 932006
1988 NYSDEC PHASE II INVESTIGATION

LAWLER, MATUSKY & SKELLY ENGINEERS
Pearl River, New York

ft below grade. Sandy silts were encountered in the top 14 ft. The groundwater was found in tightly compacted clays that did not yield sufficient water to support the installation of a monitoring well. There were no visual signs of contamination nor were there any HNU readings above background for any of the samples taken for GW-4A. The borehole was backfilled with drill cuttings and sealed with a cement/bentonite grout (Ref. 1, Appendix A).

An alternate site (GW-4B) was chosen to the northwest of GW-4A (Figure 3-2) in an attempt to penetrate the more permeable sand and silt of the former cove of the Niagara River. The 9-11 ft soil sample at GW-4B produced a slight deflection above background on the HNU meter. During augering (down to 14 ft), drill cuttings became wet at approximately 12 ft (possibly the water table). These cuttings resulted in an HNU reading of 1-2 ppm above background. The 14-16 ft soil sample produced readings of up to 600 ppm (Ref. 1, Appendix A) on the HNU. The clayey sample (from 14-16 ft below grade) produced a brown, shiny liquid when compressed. NYSDEC was notified and a decision was made to seal the boring with a cement/bentonite grout. All drill cuttings were drummed and labeled. The 14-16 ft sample was preserved and analyzed for TCL compounds by Recra Environmental, Inc. (Amherst, New York).

A final boring, GW-1, was advanced on 1 November 1988 in the northeastern portion of the landfill (Figure 3-2). Because of the high HNU readings from GW-4B, an MSA 361 combustible gas indicator was also used for air monitoring during the drilling of this boring. Silty sand with clay or gravel, including some ash and glass, was encountered from 0.6 to 9 ft below grade. Industrial fill was encountered from 9 to 11 ft below grade. The 9-11 ft sample produced a strong sulfur odor but registered no HNU or MSA readings above background. Visible vapors emitted over the open-ended auger gave

HNU readings up to 240 ppm, an MSA reading of 44-ppm hydrogen sulfide (H_2S), +100% lower explosive limit (LEL), and 0.3% oxygen (O_2). The sample was scanned with the HNU and MSA 361. As no readings above background were observed, NYSDEC decided not to collect a soil sample for chemical analysis. The 11-13 ft soil sample had an HNU reading of 0.6 ppm. The LEL alarm sounded from above the open auger at a depth of 14 ft. Drilling continued to 34.2 ft with no meter readings above background. An on-site NYSDEC representative decided not to install a monitoring well because the high clay content of the soils encountered would not transmit enough water for sampling purposes (Ref. 1, Appendix A). The borehole was backfilled and sealed with a cement/bentonite grout.

3.3.2 Installation of Groundwater Monitoring Wells

American Auger and Ditching Co. installed two downgradient groundwater monitoring wells on 26 and 27 October 1988 (Appendix F). The two monitoring wells (GW-2 and GW-3) were installed on the south end of the property adjacent to the Niagara River (Figure 3-2). Although the topography of the property is relatively level, it is logical to assume that the groundwater flows in a southerly direction, which is why GW-2 and GW-3 were located near the river.

The boreholes for these wells were advanced by a Mobile B-57 drill rig using 4.25-in. I.D. hollow-stem augers. Continuous split-spoon samples were collected and monitored with an HNU PID. An on-site LMS geologist logged each sample by describing the fill/soil characteristics and noting the presence of any visible contamination (Ref. 1, Appendix A).

Soil samples collected from 9.5 to 12 ft at GW-2 showed visible evidence of petroleum. Because HNU readings ranged from 0.2 to 3.1

ppm above background, the 10-12 ft soil sample was retained and preserved at 4°C for analysis by Recra. Except for the 11-13 ft sample from GW-3, no other soil samples from either GW-2 or GW-3 showed any visible signs of contamination. The GW-3 sample showed visible evidence of an oily sheen on the water in the fill, but had no HNU readings above background.

The boreholes for GW-2 and GW-3 were then completed as monitoring wells (Ref. 1, Appendix A). Each well was screened with 0.010 slot, 2-in.-diameter schedule 40 PVC from the bottom of the borehole to 1 ft above the water table. Two-inch-diameter PVC riser extended from the top of the screen to approximately 2 ft above grade. The annular space between the screen and the borehole was gradually filled with No. 2 sand from the bottom of the borehole to 2 ft above the top of the screen. A 2-ft bentonite seal was placed above the sand pack and the remainder of the annular space was sealed with a cement/bentonite grout. A locking protective steel casing was placed over the top of the PVC riser and set in the cement.

3.3.3 Well Development and Groundwater Sampling

On 3 November 1988 monitoring wells GW-2 and GW-3 were developed (Appendix G) to increase well productivity and yield a representative groundwater sample. A gas-powered centrifugal pump with dedicated polypropylene tubing and a one-way foot valve pumped water from the well at the maximum rate at which the saturated material would produce sufficient head to maintain a constant flow to the pump. During the pumping, the foot valve and tubing were vigorously surged within the water column. This process forced water back into the sand pack from the well and cleaned the borehole of fine-grained material that may have been smeared along its walls during the drilling process. Surging water also moved the sand pack, which in effect decreased its porosity by settling, thus increasing its filtering capabilities. Development of the wells continued until at least four borehole volumes of water were purged from the well and turbidity readings of less than 50 nephelometric turbidity units (NTU) were achieved (37 NTU for GW-2 and 10 for GW-3). In addition to turbidity readings, temperature, pH, and specific conductivity of the purged groundwater were measured and recorded at several intervals during well development.

Following development, the monitoring wells were left undisturbed to allow the groundwater flow to resume its normal direction so that a representative water sample could be collected.

Sampling (Appendix H) was performed with dedicated Teflon point-source bailers that had been laboratory decontaminated and stored in an isolated area to avoid cross-contamination. Initially, a field blank was collected from the first bailer by pouring laboratory-filtered water stored in the sample bottles into the Teflon bailer and then allowing it to run into a new set of sample bottles. Field blanks were analyzed for the identical parameters analyzed for the monitoring well samples to determine the existence of residual contamination in the bailer, sample bottles, or possibly the ambient air. Before water samples were collected for analysis, physical parameters were recorded. Following the sampling, turbidity was rechecked to ensure that the water quality was within the guidelines for laboratory analysis.

Each sample container was labeled with the well identification number, site name, job number, date, time, parameters to be analyzed from the container, and any field preservative added. Containers were placed in iced coolers to maintain a constant temperature at or close to 4°C before they were shipped to the laboratory. All samples were accompanied by a chain-of-custody form. If a shipping firm was used, e.g., Federal Express, the numbered laboratory seals were put on the coolers before shipment.

3.3.4 Permeability Testing

Permeability tests were performed on the two monitoring wells (GW-2 and GW-3) installed at the site (Ref. 2, Appendix A). Permeability test results, expressed as hydraulic conductivity, give the rate of flow in gallons per day (gpd) through a cross section of 1 ft^2. Permeability calculations, which are useful in determining the potential rate of movement of a contaminant plume, are derived from data gained from slug tests performed on each well. The slug test measures the time it takes for the well to reach equilibrium after a volume of water is displaced by a solid stainless steel slug. After the slug is lowered into the water table and the well is allowed to stabilize, the slug is quickly removed and the time it takes for the well to regain its original static water level is recorded. The procedure was repeated several times to ensure that the well recovery rates were consistent and that the field data were valid. A bail test was also performed at the wells to check the slug test results. A bail test is essentially the opposite of the slug test and consists of water withdrawn at a constant rate. The well's recovery is measured.

The field data from these slug tests were then used to calculate hydraulic conductivity (Ref. 3, Appendix A). The calculation is based on the Thiem equation of steady-state flow to a well and is applicable to completely or partially penetrating wells in unconfined aquifers. The equation gives hydraulic conductivity in gallons per day per square feet (gpd/ft^2) for the aquifer at the well

(Ref. 2, Appendix A). GW-2 had a calculated conductivity of 9.01 x 10^{-2} gpd/ft^2 and 8.58 gpd/ft^2.

3.4 SOIL SAMPLING

Three soil samples were collected for analysis from the Brzezinski Property. Each sample container was labeled and identified as to sample location, site name, job number, date, time, and parameters for analysis. The containers were placed in coolers with ice immediately after sampling to maintain the samples at 4°C. All samples were accompanied by chain-of-custody forms.

The first soil sample was collected on 26 October 1988 while the soil boring for monitoring well GW-2 (Figure 3-2) was being advanced. Scanning of the 10-12 ft split-spoon sample with an HNU PID produced readings of 0.2 to 3.1 ppm. NYSDEC was notified and the 10-12 ft sample was retained for analysis. Soil sample GW-2 was analyzed for metals and EP toxicity metals.

The second soil sample was taken on 28 October 1988 while the soil boring GW-4B was being advanced (Figure 3-2). Scanning the 14-16 ft split-spoon sample with the HNU meter produced readings of up to 600 ppm. NYSDEC was again notified and the 14-16 ft sample was retained for analysis. Soil sample GW-4B was analyzed for TCL compounds.

On 3 November 1988 the third soil sample, SS-2 (Figure 3-2), was taken using a laboratory-cleaned hand auger. The sample was taken from a depth of 2 to 3.4 ft and analyzed for all TCL compounds and EP toxicity metals.

The scope of work called for three shallow soil samples, with analyses for all TCL compounds and EP toxicity metals. Samples and analyses at GW-2, GW-4B, and SS-2 replaced the scoped work at NYSDEC's direction.

3.5 SURFACE WATER SAMPLING

One surface water sample, SW-1, was taken from the Niagara River on 3 November 1988 (Figure 3-2). The sample was located at the upstream corner of the property. NYSDEC decided not to collect any downstream samples. The sample was analyzed for TCL compounds. The surface water sample was collected in the laboratory-cleaned sample bottle. Samples were analyzed for pH, specific conductance, temperature, and turbidity at the time of collection.

The sample container was labeled and identified with the sample location I.D., site I.D., job number, date, time, parameters for analysis, and any preservative added in the field. The container was placed in a cooler with ice immediately after sampling to keep the sample at 4°C. The sample was accompanied by a chain-of-custody form.

3.6 AIR MONITORING

Portable air monitoring instruments were used during on-site activities to detect potential health hazards to on-site personnel and to screen samples for possible analysis. On 1 November 1988, while test boring GW-1 was being advanced, air monitoring was conducted with an MSA 361 combustible gas indicator and an HNU PID. For all other on-site activities, only the HNU meter was used. Air monitoring was performed during the following activities:

- Site reconnaissance. Before any field work was initiated, air monitoring was performed over the entire site to establish health and safety guidelines.

- Drilling. The split-spoon sample and material brought to the surface were monitored.

The breathing zone was continuously monitored during all on-site activities to detect volatile organic vapors.

CHAPTER 4

CHAPTER 4

CHAPTER 4

SITE ASSESSMENT

4.1 SITE HISTORY

The Brzezinski Property was purchased in 1962 by John and Anna Brzezinski. The site was undeveloped at the time of purchase. Four children of John and Anna Brzezinski have owned the site since 1982. Mr. Stanley Brzezinski, one of the four owners, operated the site during its use as a landfill and is still responsible for its maintenance (Ref. 4, p. 2, Appendix A).

The south-central part of the 20-acre property was a former cove of the Niagara River (Figure 3-2). In the mid-1960s an earthen berm reinforced with concrete rubble was constructed across the mouth of the cove. It is suspected that prior to riprapping the mouth of the cove, waste discharged from industries (Ashland oil, National Analine, Durez, International Paper Mill, Spalding Fiber, and Bethlehem Steel) upriver accumulated in the cove (Ref. 5, Appendix A). Filling of the bermed cove began at the site around 1965, and included material from the Carborundum Company, Abrasives Division (NYSDEC I.D. No. 932007), Bell Aerospace Textron (NYSDEC I.D. No. 932052), and the Niagara County Incinerator Plant (NCIP) (Ref. 4, p. 5, Appendix A). Available documents on the site history suggest that a permit had been obtained from the U.S. Army Corps of Engineers to fill in the cove and that an operating permit was issued in 1970 (Ref. 4, p. 5, Appendix A).

Carborundum deposited industrial waste that consisted of fly ash, sand, fire brick, dust, collection fines, grinding wheels, and grit (solid abrasive grains) (Ref. 6, Appendix A). Approximately 400 to

600 yd^3 of NCIP ash was also deposited somewhere at the site during or prior to 1969. Additional clean fill (soil of unknown composition) from an ongoing sewer construction project in the area was deposited at the site at various times for cover (exact dates unknown). During the mid-1960s Bell reportedly disposed of an unknown quantity of plaster molds (Ref. 7, Appendix A).

Complaints concerning the pumping of the ponded water behind the berm into the Niagara River were registered in 1968 with the Niagara County Health Department (NCHD) (Ref. 8, Appendix A). NCHD reports indicated that the Carborundum waste products had turned the pond water a blue-black color. This discolored discharge water caused the river to turn a blackish color for several hundred feet downstream.

In June of 1969 Mr. Stanley Brzezinski was cited by NCHD for burning refuse at the landfill. Later that year local residents registered complaints about the disposal of approximately 20 to 30 truckloads (400-600 yd^3) of ash from the NCIP (Ref. 8, Appendix A).

In September 1970 NCHD issued a permit to Mr. John Brzezinski to operate the site and to receive abrasive materials and various wheels and sand from Carborundum Bonded Division of Buffalo, New York (Ref. 9, Appendix A). The site's fill capacity was reached in 1972, and the site was subsequently closed. Since that time an unknown quantity of clean fill has been piled in hummocks throughout the site to discourage unauthorized dumping (Ref. 4, p. 6, Appendix A). At the time of site closure the entire original cove was filled in to the berm, resulting in a total land area of 11.1 acres up to its border with the Niagara River (Figure 3-2).

There are no wells known to be used for drinking water in this area, nor are there any industrial or commercial users of groundwater within 3 miles of the site. The City of Niagara Falls has its primary water intake on the Niagara River 2.9 miles downstream of the site and 5300 ft from shore. This primary intake is not in use. The city currently uses its auxiliary intake, which is located 3.5 miles downstream of the Brzezinski Property and 1400 ft from shore. The closest city water intake is more than 3 miles downstream of the site (Ref. 6, Appendix A).

The County of Niagara Water District owns a 60 to 70 ft right-of-way that runs alongside the eastern side of the Brzezinski site. Three pipes are located in the right-of-way. The first is a raw water intake located on the northwest corner of Grand Island. The second pipe is a potable line that carries drinking water from the county plant to supply Grand Island. The third pipe is an outflow line for the county's water filtration plant located on Williams Road. The third pipe is no longer in use. The County Water District plans to excavate portions of the right-of-way and add an additional line in 1990 (Ref. 10, Appendix A).

The center of Love Canal (NYSDEC I.D. No. 932020) lies approximately 3900 ft northwest of the site. The Hooker-102nd Street Landfill (NYSDEC I.D. No. 932022) and the 102nd Street Landfill - Olin (NYSDEC I.D. No. 932031) lie 700-1100 ft west-northwest of the site along the Niagara River.

4.2 TOPOGRAPHY

The prefill property boundaries at the site differ considerably from its current boundaries; approximately half of the present site is reclaimed land from the Niagara River. With the exception of clean fill hummocks, the general topography of the site is nearly level, sloping very gently toward the Niagara River.

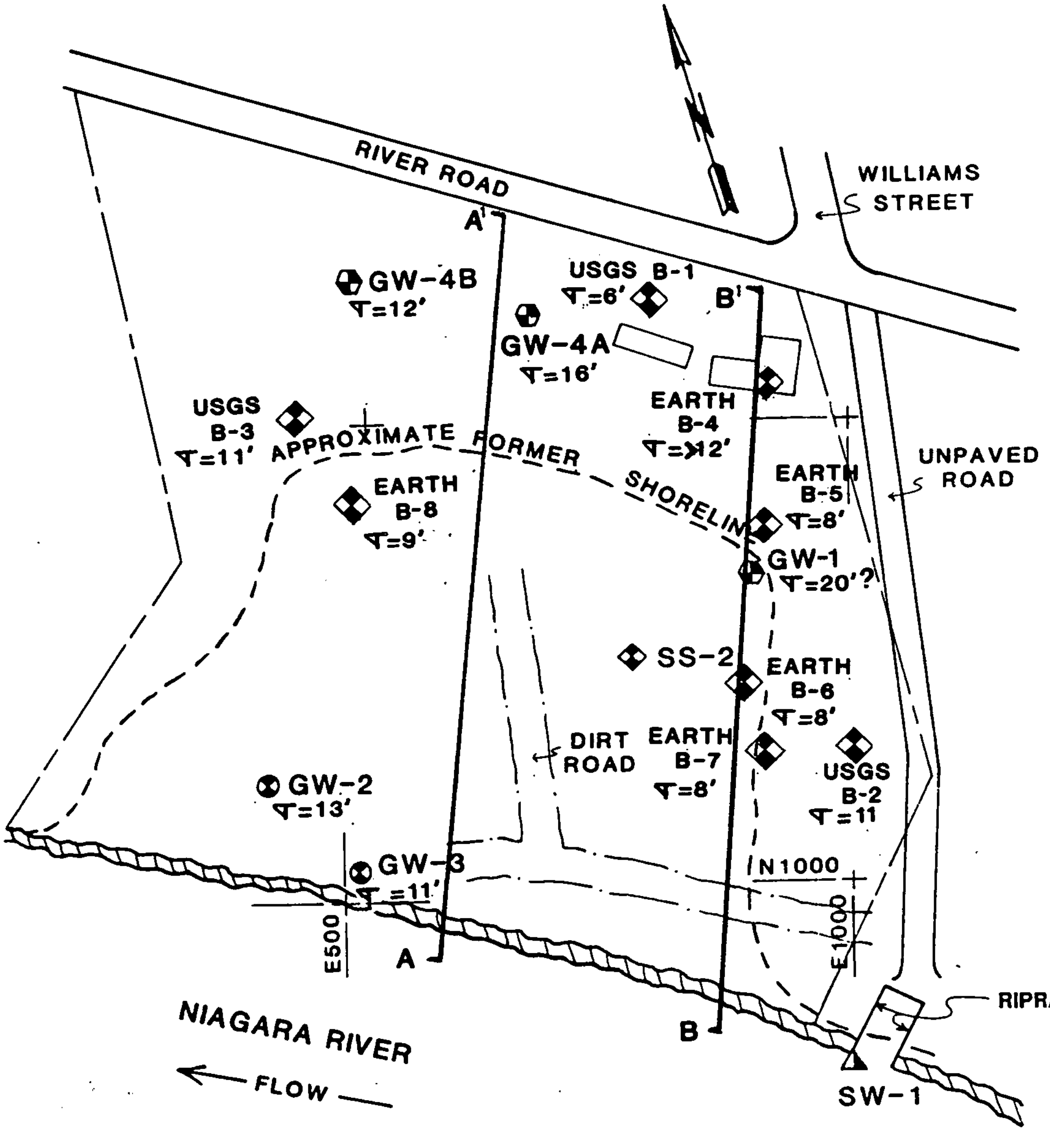
There are no streams or intermittent stream channels on the property itself; however, an unnamed intermittent stream enters the Niagara River less than 1 mile east of the site. The Niagara River flows east to west along the southern border of the property. No permanent ponds exist on the site, but the high clay content of the natural (nonfill) soils causes puddling of water after rain events. The site is located within the 100-year flood boundary of the Niagara River, as designated by the Federal Emergency Management Agency (Ref. 4, p. 7, Appendix A). The property is approximately 2100 ft south of a wetland (designated TW-6), but this wetland is hydraulically upgradient of the site (Ref. 11, Appendix A).

It is estimated that 4797 people live within 1 mile and over 26,000 live within 2 miles of the site. Over 1000 buildings and 200 mobile homes are located within 2 miles, although some of them are within the Love Canal area and have been evacuated. The nearest residence is approximately 200 ft from the filled area in a trailer park (number of trailers unknown).

Agricultural lands are located about 1 mile to the northeast of the site. A major commercial center, Summit Park Mall, is 1.25 miles north of the site (Ref. 1, Appendix A).

4.3 GEOLOGY

USGS advanced three boreholes on the site (Figure 4-1) in 1982 (Ref. 12, Appendix A). The borings were placed along the approximate borders of the fill. Boring 1 (8.0 ft deep) did not encounter fill material, but did encounter topsoil underlain by clay and sand/clay. Boring 2 (13.3 ft deep) encountered "black, oily sand" at about 6 ft below grade. Boring 3 (11.8 ft deep) encoun-



LEGEND

- GW = Groundwater monitoring well location
- SW = Surface water sample location
- SS = Soil sample location
- GW = Borehole sample location
- ? = Approximate
- ▽ = Static water level (from ground level, during drilling)
- A - A' = Geologic cross section location

---- Property line

Building

Property line and buildings are approximate

SCALE

0 100 200

1 in. : 200 ft

FIGURE 4-1

LOCATION OF BORINGS AND CROSS SECTIONS

Brzezinski Property
NYSDEC I.D. No. 932006
1988 NYSDEC PHASE II INVESTIGATION

LAWLER, MATUSKY & SKELLY ENGINEERS
Pearl River, New York

tered debris and fill from 2 to 8.7 ft below grade; black, oily sand was encountered from 6.6 to 8.7 ft below grade. Bedrock was not encountered in any boring.

Earth Dimensions, Inc., advanced five borings (Ref. 13, Appendix A) at the site in November 1983. Earth Dimensions referenced their borings as B-4 through B-8 (Figure 4-1). Two borings were located on the original river shoreline (B-4 and B-5). The other three (B-6, B-7, and B-8) were located in the lagoon area behind the berm where most of the fill was deposited. B-4 (12 ft deep) did not encounter any industrial fill material, but did encounter silty clay and sandy silt with gravel (soil fill) to a depth of 6.5 ft and clayey silt lake sediments from 6.5 to 12 ft. B-5 (15 ft deep) encountered soil fill to 7.5 ft and industrial fill from 7.5 to 11 ft below grade. B-6 (16 ft deep) encountered industrial fill from 5.5 to 10.5 ft below grade. B-7 (20 ft deep) encountered 5 ft of industrial fill from 5 to 10 ft below grade. B-8 (24.6 ft deep) encountered 7 ft of industrial fill from 5 to 12 ft below grade.

The five borings drilled during the Phase II investigation (GW-1, GW-2, GW-3, GW-4A, and GW-4B; Appendix E) show the fill to consist mainly of ash, wood, plastic, and concrete overlying the former river sediments of silty clay. GW-2 (23 ft deep) encountered industrial fill material from 7 to 12 ft below grade. A petroleum-like odor and sheen were noted between 9 and 10.5 ft in GW-2. GW-3 (20 ft deep) detected industrial fill material from 4.5 to 13 ft below grade. An oily stain was noted by USGS in their borings B-2 and B-3. A petroleumlike sheen was also observed on the water table at about 10 ft in GW-3. No industrial fill material was detected in GW-4A.

According to the Soil Conservation Service soil survey of Niagara County (Ref. 14, Appendix A), the soils that constitute the overburden on the northern half of the landfill belong to the Canandaigua Series. The natural (nonfill) soils found on the site are mainly clays, with some silt and sand.

The underlying bedrock at the site is from the Lockport Group (Ref. 4, p. 8, Appendix A). This bedrock is described as a massive bed of dolostone capable of transmitting significant quantities of groundwater through fractures and solution zones. The deepest boring (GW-1) advanced at the site (34.2 ft) did not reach bedrock.

4.4 HYDROGEOLOGY

The site hydrogeology varies according to the nature of the material encountered, i.e., natural soil vs industrial fill. The five Phase II soil borings were advanced on the site in locations selected to help define the landfill's hydrogeologic conditions (Ref. 1, Appendix A). Two were completed as monitoring wells.

These five soil borings show the three different hydrogeologic conditions of the site:

- Industrial fill material overlying former alluvial sediments of silty sand
- Industrial fill material overlying natural silty-clay soils
- Natural silty-clay soils with or without overlying soil fill

GW-2 and GW-3, the two borings located in the southwestern area of the site, were completed as monitoring wells. These borings were advanced in the area reclaimed from the Niagara River by backfilling. The boring logs for GW-2 and GW-3 show fill materials overlying former river sediments of sand and silt.

Boring GW-1 was located to the northeast of GW-2 and GW-3 (Figure 3-2), just outside the former river cove but still within the landfilled area of the site. The boring log for GW-1 shows soil cover overlying industrial fill that in turn overlies the natural, clayey, Canandaigua soils common to the area. GW-1 was not completed as a monitoring well because of the low permeability of the natural clay.

Boring log GW-4A was advanced near the River Road (see Figure 4-1). It was tested in hopes of finding an upgradient well site whose groundwater might reflect local conditions outside the landfill. Also, it is anticipated that any groundwaters that might be found would move downgradient into the landfill. This test boring was advanced through overburden and varved and other clays displaying high plasticity. The boring encountered moist impermeable clay zones - not groundwater. Any water found was not part of a groundwater flow regime. The well was abandoned at approximately 24 ft.

The fifth boring, GW-4B, was advanced in the north-central area of the site, adjacent to River Road. This boring was outside both the former river cove and the landfilled area. The boring log for GW-4B shows no industrial fill material, only several clay lenses of Canandaigua soils. This boring was also not completed as a monitoring well because of the tightness of the natural clay.

Permeability tests were conducted on monitoring wells GW-2 and GW-3 (see Section 3.3.4). The screens in these wells were set in zones encompassing both fill and underlying natural soils. The permeabilities measured in these two wells were 3.54×10^{-7} and 3.37×10^{-5} cm/sec for GW-2 and GW-3, respectively. These permeability results are consistent with the sandy silts found in these borings. These permeabilities suggest that contamination in the fill in the former river cove is likely to migrate downgradient both vertically and horizontally. Since recoverable groundwater was not obtained in any upgradient well because of the tightness of the natural silty-clays, it is likely that the groundwater recovered at GW-2 and GW-3 is perched water resulting from inflow, through the earthen berm, of Niagara River water.

Because the low water-bearing capabilities of the native, underlying clayey soil preclude well installation, permeability tests were not conducted in the other two borings. This low water-bearing capability is typical of the natural, clayey, Canandaigua soils. The potential for contaminant migration is low in these natural silty-clay soils.

Depth to moist soils and (where possible) groundwater was recorded while the five soil borings were being advanced. The elevations of the water table in the southwestern borings (GW-2 and GW-3) appear to be higher than the elevations where the moist soils were found in the northern borings (Figure 4-1). The higher water table near the river is most likely caused by bank storage of river water. As the river water levels rise, river water moves back into the filled-in cove area, resulting in a mounding of the water table near the shoreline.

Despite the strong influence of this bank storage phenomenon, the general topography of the area and its lithology and stratigraphy indicate that the groundwater flow is to the south, i.e., to the Niagara River. Measurements of the water table depths made during previous investigations of the site (see Section 4.5) show the overall water table to be generally higher than during the Phase II investigation. The boring logs of test boreholes drilled by USGS show a water table dipping toward the river: no bank storage is apparent, possibly because the USGS borings were farther from the river than the Phase II borings. Water level measurements taken during the drilling of the Earth Dimensions borings show a flat water table with the exception of the northeasternmost boring in which no water was encountered up to a depth of 12 ft (the depth of the boring).

4.5 OTHER DATA

4.5.1 USGS

USGS advanced three soil boring on the site on 19 June 1982 (Ref. 12, Appendix A). Figure 4-1 shows the approximate soil boring locations on the site. USGS collected three soil samples, one from each location. The sample from B-1 was collected at 6.5 ft below grade; from B-2, 12 ft below grade; from B-3, 12.6 ft below grade. All samples were analyzed for volatile organics; only the sample from B-2 had detectable organics (two tentatively identified compounds [TICs]).

Each sample was also analyzed for metals. Copper (5 to 61 mg/kg) and iron (2300 to 20,000 mg/kg) were detected in all three samples. The USGS report indicated that the copper value exceeds copper concentrations in local, industrial soils.

4.5.2 Earth Dimensions, Inc.

Soil samples were collected by Earth Dimensions during November 1983 and sent to Recra Research, Inc., for analysis (Ref. 13, Appendix A). The exact depth of each sample is unclear from the boring logs. Each sample (B-5, B-6, B-7, and B-8) was analyzed for benzene, toluene, and xylenes (BTX) as well as volatile halogenated organics and total recoverable phenolics. BTX and the halogenated organics were not detected (at a detection limit of 100 ug/kg) in any sample. B-5 had 79,000 ug/kg of total recoverable phenolics. Samples B-6, B-7, and B-8 had the following concentrations of total recoverable phenolics: 2900, 6500, and 7600 ug/kg, respectively. Two water samples in the borings were collected (labeled B-6, 10 ft; B-7, 8-10 ft), but no analyses were identified.

4.5.3 NYSDEC

NYSDEC collected one water, one sediment, and two surface soil samples on 16 October 1986 (Ref. 15, Appendix A). The water and sediment samples were collected from a surface ponding area near the river. One clay sample was collected from a clay pile near River Road, the other from a clay pile near the pond. Both samples were described as heavy clay, similar to modeling clay. The samples were analyzed for volatile organics, semivolatile organics (base neutral/acid extractable), pesticides/PCBs (for soil matrices only), and the Hazardous Substance List (HSL) metals. The volatile and semivolatile organics as well as the pesticides/PCBs analyses failed quality control/quality assurance (QA/QC) review and were deemed unusable by NYSDEC. HSL metal analyses passed QA/QC review and are summarized in Table 4-1. No EP toxicity test was performed. HSL metals were detected in each of the clay/sediment samples. Lead was not detected in either clay sample, but was found in the pond sediments at a concentration of 5298.9 mg/kg. Other high metals concentrations, in the pond sediment sample, were cadmium, copper, mercury, silver, and zinc. The water sample showed detectable concentrations of arsenic, iron, and zinc that may have leached from the sediments.

TABLE 4-1

NYSDEC 16 OCTOBER 1986 SAMPLE DATA SUMMARY[a]

Brzezinski Property NYSDEC I.D. No. 932006

SAMPLE:	PONDED WATER	POND SEDIMENT	CLAY PILE	CLAY NEAR LAGOON
NYSDEC SAMPLE No.:	SH9320060101	SH9320060102	SH9320060201	SH932006031
UNITS:	mg/l	mg/kg	mg/kg	mg/kg
PARAMETER				
Metals				
Arsenic	2.0	18.4168	38.9181	42.5586
Cadmium	<100	4.9	1.2	1.3
Chromium	<100	33.9	53.8	55.7
Copper	<30	38.8	29.4	29.1
Iron	1,200	32,067.9	49,198.4	50,285.0
Lead	<200	5,298.9	<0.2	<0.2
Manganese	<200	1,163.2	1,395.2	1,519.9
Mercury	<0.5	0.1615	<0.0005	0.12666
Nickel	<500	51.2	51.4	57.0
Silver	<0.05	0.0600	0.0489	0.0379
Zinc	100	517.0	146.9	177.3

[a]Organic data failed QA/QC review and are unusable.

4.6 PHASE II RESULTS

4.6.1 Phase II Site Inspection

LMS conducted a site inspection on 9 August 1988 (Appendix B) to determine existing site conditions. The site is accessible from all adjacent properties, River Road, and the river. The site is hummocky, with piles of rubble and soil (also described as clay elsewhere in this report) apparently placed to discourage traffic on the site itself. The site was well vegetated with grasses, shrubs, and occasional small trees during the inspection. There were some low-lying wet areas present on the site. No HNU readings above background were noted during the site visit.

4.6.2 Phase II Geophysical Data

Four terrain conductivity profiles were conducted along the site's four borders (Appendix D and Figure 3-1). Buried metallic debris and debris containing metal may be present along the north, south, and west borders of the site. Construction and demolition material is present along the southern profile on the surface and may also be present in the subsurface. If contaminants are present in the groundwater along the southern border, they may be masked by the presence of this debris. An anomaly along the eastern border of the site may represent groundwater contamination, increased clay content of the soil, or a near-surface water table.

4.6.3 Phase II Soil Data

Three soil samples were collected during the Phase II investigation (Appendix I). The samples were collected from a hand-augered location and at selected intervals from GW-2 and GW-4B. The soil sample from GW-2 was collected from 10 to 12 ft below grade in fill material reportedly consisting of grinding wheels, sandpaper, and fly ash. The sample from GW-4B was collected from 14 to 16 ft below grade where HNU readings reached 600 ppm. The third soil sample was collected at surface soil location SS-2 (Figure 3-2), between 2 and 3.4 ft below grade. The surface soil sample was hand augered to a depth of about 3.5 ft. Table 4-2 summarizes the detected compounds.

The validation and usability results of these samples can be found in Appendix J.

4.6.3.1 Volatile Organics. Two soil samples were analyzed for volatiles (GW-4B and SS-2). SS-2 contained tetrachloroethene at a concentration below the method detection level (MDL). An undiluted sample of GW-4B was found to contain high concentrations of trichloroethene (TCE) (1,100,000 ug/kg) along with relatively high concentrations of methylene chloride, acetone, 1,2-dichloroethane, 1,1,1-trichloroethane, toluene, ethylbenzene, and xylenes. A subsequent dilution and reanalysis of GW-4B again resulted in a TCE concentration of 1,200,000 ug/kg; however, most of the other detected compounds (except methylene chloride and toluene) were then so diluted that they were not detected. This concentration of TCE is 0.1% by weight of the sample and suggests that the original source of this contamination may have been pure product. Most of the volatile organics found are used as degreasers or solvents; however, there is no documented evidence of any of these chemicals being dumped at this site.

4.6.3.2 Semivolatile Organics. Twenty-one semivolatile compounds were detected in SS-2, most of them at or below MDL. These compounds are commonly found in petroleum products, dyes, and fly ash at the concentrations suggested by the soil sample results, and bis(2-ethylhexyl)phthalate is a common plasticizer.

TABLE 4-2 (Page 1 of 3)

NOVEMBER 1988 SOIL DATA SUMMARY

Brzezinski Property NYSDEC I.D. No. 932006

PARAMETER	GW-4B	GW-4B DL	GW-4B DL RE	SS-2
VOLATILE ORGANICS	[Dil.:10]	[Dil.:50]		
Methylene chloride	6,300 bj	7,800 bdj	11,000 bdj	ND
Acetone	49,000 b	ND	ND	ND
1,2 Dichloroethene (total)	1,900 j	ND	ND	ND
1,1,1-Trichloroethane	4,700 j	ND	ND	ND
Trichloroethene	1,100,000 e	1,200,000 d	1,200,000 d	ND
Tetrachloroethene	ND	ND	ND	1 j
Toluene	620 bj	3,400 bdj	5,300 bdj	ND
Ethylbenzene	680 j	ND	ND	ND
Total xylenes	6,700 bj	ND	ND	ND
Tentatively Identified Compounds				
Unknown ester	88,000 j	250,000 j	340,000 j	ND
SEMIVOLATILES				
Naphthalene	ND	NR	NR	78 j
2-Methylnaphthalene	ND	NR	NR	140 j
Acenaphthene	ND	NR	NR	130 j
Dibenzofuran	ND	NR	NR	84 j
Fluorene	ND	NR	NR	150 j
Phenanthrene	ND	NR	NR	1,200
Anthracene	ND	NR	NR	230 j
Di-n-butyl phthalate	ND	NR	NR	23 j
Fluoranthene	ND	NR	NR	1,500
Pyrene	ND	NR	NR	1,400
Butylbenzyl phthalate	ND	NR	NR	39 j
Benzo(a)anthracene	ND	NR	NR	690 j
Bis(2-ethylhexyl)phthalate	3,300 b	NR	NR	5,800
Chrysene	ND	NR	NR	780 j
Di-n-octylphthalate	ND	NR	NR	8 j

All data in ug/kg.

b - Found in method blank.
d - Concentration recovered from diluted sample.
e - Concentration exceeds GC/MS calibration range.
j - Estimated concentration; compound present below method detection limit.
ND - Not detected at analytical detection limit; see Appendix I for detection limit.
RE - Reextracted analysis.
NR - Not run.
DL - Diluted Sample

TABLE 4-2 (Page 2 of 3)

NOVEMBER 1988 SOIL DATA SUMMARY

Brzezinski Property NYSDEC I.D. No. 932006

PARAMETER	GW-4B	SS-2
SEMIVOLATILES (con't)	[Dil.:10]	
Benzo (b) fluoranthene	ND	700 j
Benzo (k) fluoranthene	ND	620 j
Benzo (a) pyrene	ND	520 j
Indeno (1,2,3-cd) pyrene	ND	260 j
Dibenzo (a,h) anthracene	ND	75 j
Benzo (g,h,i) perylene	ND	220 j
Tentatively Identified Compounds		
Alkyl hydrocarbon	1,180 j (3)	ND
Alkyl substituted compound	330 j	2,200 bj
Unknown	5,100 j (2)	2,590 bj (2)
Unknown ester	ND	610 j
PESTICIDES/PCBs		
Dieldrin	21 j	ND
4,4'- DDT	ND	39 j

All data in ug/kg.

b - Found in method blank.

j - Estimated concentration; compound present below method detection limit.

ND - Not detected at analytical detection limit; see Appendix I for detection limit.

NR - Not run.

() - Number of unknown compounds in total.

TABLE 4-2 (Page 3 of 3)

NOVEMBER 1988 SOIL DATA SUMMARY

Brzezinski Property NYSDEC I.D. No. 932006

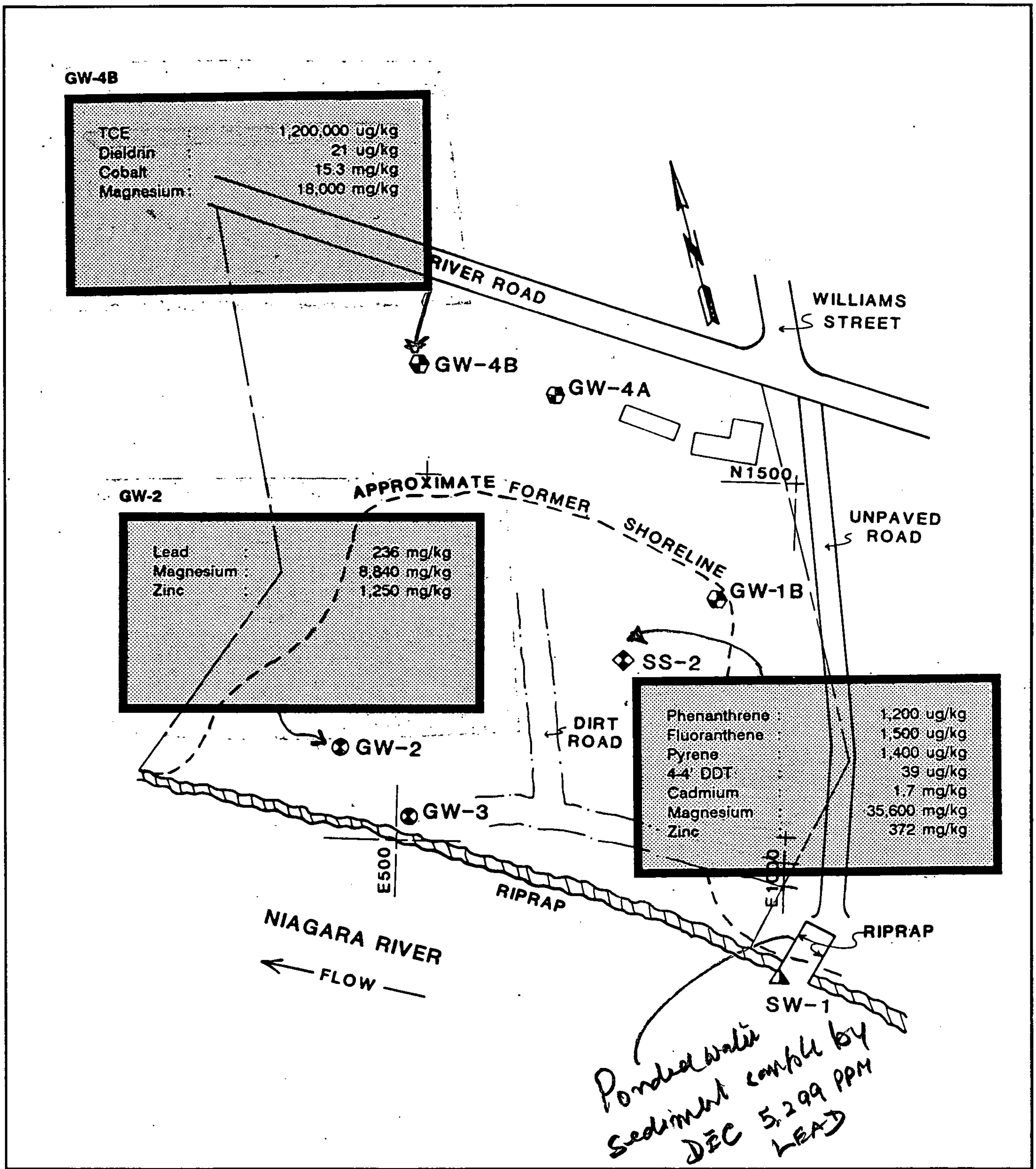
PARAMETER	GW-2	GW-4B	SS-2	BACKGROUND SOIL DATA (mg/kg) (Ref. 20, Appen. A)		EPA MAX. CONC.	GW-2	SS-2
					EP TOXICITY			
METALS (ug/kg)					**METALS (mg/l)**			
Aluminum	2,702	21,600	7,150	NB	Total Arsenic	5.0	<0.005	<0.005
Antimony	6.6 N	ND	ND	NB	Total Barium	100.0	2.0	0.49
Arsenic	6.9	24.1 f *	8.7 *	NB	Total Cadmium	1.0	<0.006	<0.006
Barium	109	110 *	92.5 *	NB	Total Chromium	5.0	0.012	5.0
Beryllium	ND	1.5	0.73	0.30	Total Lead	5.0	<0.05	<0.05
Cadmium	0.77	ND	1.7	NB	Total Mercury	0.2	NR	0.0008
Calcium	25,050	69,700 *	601	NB	Total Selenium	1.0	<0.005	<0.005
Chromium	101 N	25	31.0	30	Total Silver	5.0	<0.010	<0.010
Cobalt	9.0	15.3 *	8.4 *	8				
Copper	36.5 N	29.9 *	30.9 *	30				
Iron	15,400	35,800	19,200	10,000				
Lead	236	13.3 *	32.8 *	29				
Magnesium	8,840	18,000 *	35,600 *	5,000				
Manganese	817	634 *	289 *	1,000				
Mercury	0.19	0.13	0.61	0.098				
Nickel	151	27.9 N *	97.3 N *	50				
Potassium	75.5	3,043	1,020	NB				
Selenium	N	ND	ND	NB				
Silver	1.3 N	ND N *	ND	NB				
Sodium	2,030	1,170	911	NB				
Thallium	ND N	ND	ND	NB				
Vanadium	13.1	30.2	68.6	NB				
Zinc	1,250	86.2 *	372	400				
Cyanide	5.4	ND	ND	NB				
Percent Solids (%)	77.3	75.9	80.3	NB				

f - The correlation coefficient for method of standard addition is less than 0.995.
* - Duplicate analysis not within control limits.
NR - Not run.
N - Spiked sample recovery is not within control limits.
ND - Not detected at analytical detection limit; see Appendix I for detection limit.
NB - Background unknown.

4.6.3.3 Pesticides/PCBs. Two pesticides, dieldrin and 4,4'-DDT, were present below their detection limits (Table 4-2) in GW-4B and SS-2, respectively. No PCBs were detected in either sample.

4.6.3.4 Metals. Twenty-three metals were tested for in the three site soil samples (Table 4-2). Of these metals, only selenium and thallium were not detected in any of the soil samples. New York State does not currently have quality standards for constituents in soils. Since no background (or off-site) samples were collected, the metals data were compared against a range of concentrations from a variety of soils (Refs. 16, 17, Appendix A). These values are from a variety of locations and soil types (Ref. 16, Appendix A). The undisturbed site soils (sands, silts, and clays) would be expected to contain metals in concentrations within the reported ranges. Although most of the site's metals were within typical concentration ranges, cadmium, cobalt, lead, magnesium, and zinc were higher than these typical values (Figure 4-2) and may reflect the fly ash, fire brick, kiln dust, grit, grinding wheels, and incinerator ash deposited at the site.

4.6.3.5 Hazardous Characteristics. Two soil samples, SS-2 and GW-2, were analyzed for leachable metals to determine whether the sample (and fill) was hazardous as defined by EPA's EP toxicity test. Barium, chromium, and mercury, the only leachable metals detected (Table 4-2), were two to three orders of magnitude below the EPA maximum allowable EP toxicity concentrations (100 times the Federal drinking water standard) and are therefore not considered hazardous.



LEGEND

- GW = Groundwater monitoring well location
- SW = Surface water sample location
- SS = Soil sample location
- GW = Borehole sample location

--- Property line

Building

Property line and buildings are approximate

SCALE

0 100 200

1 in. : 200 ft

FIGURE 4-2

PHASE II SOIL CONCENTRATION MAP

Brzezinski Property
NYSDEC I.D. No. 932006
1988 NYSDEC PHASE II INVESTIGATION

LAWLER, MATUSKY & SKELLY ENGINEERS
Pearl River, New York

4.6.4 Phase II Groundwater Data

Groundwater in the area of the site is classified as GA: fresh groundwaters found in the saturated zone of consolidated deposits and consolidated rock or bedrock (Ref. 18, Appendix A), with best usage as a potable water supply. Class GA water quality standards are found in 6NYCRR Part 703.5 (Ref. 18, Appendix A). These standards, recently modified, are used here to evaluate the Phase II data.

Two groundwater samples (Table 4-3) were collected, one each from GW-2 and GW-3, on 3 November 1988 (Appendix I). Because groundwater in the wells is likely coming from the Niagara River, the water quality in these two monitoring wells may not truly reflect downgradient groundwater at the site. An upgradient well could not be installed, despite several efforts, because the lithology was not conducive to groundwater production.

The validation and usability results of these samples can be found in Appendix J.

4.6.4.1 Volatile Organics. Nine volatile organics were detected in the two groundwater samples (Table 4-3). Chloroethane, total xylenes, and carbon disulfide were identified above their MDL; TCE, benzene, chlorobenzene, and ethylbenzene, below.

Benzene was found in GW-3 at a concentration below its MDL. Even though the laboratory cannot quantify the sample, any detectable amount exceeds the state standard, i.e., nondetectable (ND). Benzene is a typical component of gasoline, solvents, and resins. Since toluene and xylenes were also found at detectable but estimated concentrations, gasoline may be at least one source of these compounds.

TABLE 4-3 (Page 1 of 2)

NOVEMBER 1988 GROUND WATER DATA SUMMARY

Brzezinski Property NYSDEC I.D. No. 932006

PARAMETER	G W 2	G W 3	G W 3MS	G W 3MSD	FIELD BLANK	TRIP BLANK	6 NYCRR Part 703.5 Standards
VOLATILE ORGANICS							
Chloroethane	55	32	31	34	ND	ND	NS
Methylene chloride	2 j	1 j	2 j	2 j	4 j	3 j	NS
Carbon disulfide	15	42	46	48	ND	ND	NS
Trichloroethene	0.9 j	ND	ND	ND	ND	ND	10
Benzene	ND	2 j	ND	ND	ND	ND	ND (a)
Toluene	2 bj	0.3 bj	ND	ND	ND	ND	50 (c)
Chlorobenzene	ND	3 j	ND	ND	ND	ND	20 (c)
Ethylbenzene	4 j	1 j	1 j	1 j	ND	ND	50 (c)
Total xylenes	12	31	37	36	ND	ND	50 (c)
Tentatively Identified Compounds							
Unknown	15 bj	19 bj	NR	NR	13 bj	13 bj	NS
Alkyl benzene derivative	33 j	87 j (3)	NR	NR	ND	ND	NS
Ethyl methyl benzene isomer	47 j	ND	NR	NR	ND	ND	NS
Aromatic compound	ND	21 j	NR	NR	ND	ND	NS
SEMIVOLATILES							
Naphthalene	ND	5 j	4 j	5 j	ND	NR	10 (c)
Acenaphthene	ND	2 j	ND	ND	ND	NR	20 (c)
Dibenzofuran	ND	1 j	1 j	1 j	ND	NR	NS
N-Nitrosodiphenylamine (1)	ND	ND	ND	0.4 j	ND	NR	NS
Phenanthrene	ND	3 j	3 j	3 j	ND	NR	10 (c)
bis (2-Ethylhexyl) phthalate	11 bj	16 b	7 bj	13 b	15 b	NR	4.2
Tentatively Identified Compounds							
Trimethyl Benzene Isomer	36 j	87 j	NR	NR	ND	NR	NS
Unknown	261 j (4)	545 bj (3)	NR	NR	97 bj (2)	NR	NS
Aromatic Compound	37 j	31 j	NR	NR	ND	NR	NS
Phenol Derivative	21 j	12 j	NR	NR	ND	NR	NS
Dimethyl Ethyl Phenol Isomer	ND	40 j	NR	NR	ND	NR	NS
Sulfur Compound	ND	15 j	NR	NR	ND	NR	NS
Unknown ester	ND	110 j	NR	NR	ND	NR	NS
PESTICIDES/PCBs							
Aroclor 1254	5.1'	ND	ND	ND	ND	NR	0.1
4,4' - DDT	ND	0.12	ND	ND	0.064 j	NR	ND

All data in ug/l.

( ) - Number of compounds in group total.

b - Found in method blank.

NS - No standard.

MS -Matrix spike (QA sample)

MSD -Martrix spike duplicate (QA sample)

(a) - Not detected by tests or analytical determination referenced in GNYCRR Part 703.4.

(c) - Guidance value.

NR - Not run.

j - Estimated concentration; compound present below method detection limit.

ND - Not detected at analytical detection limit; see Appendix A for detection limit.

TABLE 4-3 (Page 2 of 2)

NOVEMBER 1988 GROUNDWATER DATA SUMMARY

Brzezinski Property NYSDEC I.D. No. 932006

PARAMETER	GW-2	GW-3	GW-3 DUPL	NIAGARA RIVER	FIELD BLANK	6 NYCRR Part 703.5 Standard
METALS						
Aluminum	17,900	3,750	3,680	430	240	NS
Antimony	ND	ND	ND	ND	ND	NS
Arsenic	13.9	ND	ND	ND	ND	25
Barium	640	340	350	ND	ND	1000
Beryllium	ND	ND	ND	ND	ND	NS
Cadmium	ND	ND	6.0	ND	ND	10
Calcium	'259,000 N	144,000 N	146,000 N	41,900 N	ND N	NS
Chromium	48 *	13 *	[9.0] *	ND *	5.0 *	50 (a)
Cobalt	ND	ND	ND	ND	ND	NS
Copper	90	27	33	25	[17]	1000
Iron	53,000 N	19,300 N	19,600 N	300 N	ND N	300 (b)
Lead	46 *	14 *	21 *	ND *	ND *	25
Magnesium	82,000 N	57,600 N	59,200 N	10,200 N	ND N	NS
Manganese	1,230	528	538	17	ND	300
Mercury	ND *	0.47 *	0.99	ND *	ND *	2
Nickel	60	ND	ND	ND	ND	NS
Potassium	21,400	16,500	16,700	[1,580]	[300]	NS
Selenium	ND N	ND N	5.0 N	6.7 N S	6.9 N	20
Silver	ND N	ND N	ND N	ND N	ND N	50
Sodium	95,400	154,000	151,000	10,500	[1,590]	NS
Thallium	ND	ND	ND	ND	ND	NS
Vanadium	[45]	ND	ND	[12]	10	NS
Zinc	236 *	68 *	96 *	[13] *	[11] *	5000
Cyanide	ND	ND	ND	ND	ND	NS

(a) - Hexavalent standard.
(b) - Combined standard not to exceed 500 ug/l.
S - Value determined by the method of standard addition.
N - Spiked sample recovery is not within control limits.
ND - Not detected at analytical detection limit; see Appendix I for detection limit.
[ ] - Greater than or equal to the instrument detection limit but below contract-required detection limit.
* - Duplicate analysis not within control limits.

4-14A2

Chloroethane (ethyl chloride), a common solvent, was present at concentrations from 31 to 55 ug/l, thus exceeding the state standard by an order of magnitude.

Total xylenes were found at concentrations from 12 to 37 ug/l, which is two to eight times greater than the NYSDEC standard. Xylenes are found in gasolines, solvents, and coatings.

Carbon disulfide was found at concentrations of 15 to 48 ug/l above the detection limit, which is less than the NYSDEC standard of 50 ug/l. Carbon disulfide is used in resins, solvents, herbicides, and electronic vacuum tubes (Ref. 19, Appendix A).

Chlorobenzene, ethylbenzene, methylene chloride, TCE, and toluene were found at concentrations below their respective method detection levels (Table 4-3) as well as below the NYSDEC standard for each. Ethylbenzene's concentration, 4 ug/l, is just below the NYSDEC standard, 5 ug/l. The concentration of methylene chloride also approaches the NYSDEC standard, but since it was detected in the field and trip blanks, it may also be related to laboratory or sampling contamination.

4.6.4.2 Semivolatile Organics. No semivolatile compounds were identified above their MDL (Table 4-3). Bis(2-ethylhexyl) phthalate was present in each sample, but was also found in the method and field blanks. Since only one sample (GW-3) had a higher concentration than the field blank, this compound may have been introduced as a result of sampling or analytical procedures and may not be present in the actual groundwater.

4.6.4.3 Pesticides/PCBs. One pesticide (4,4'-DDT) was detected at a concentration of 0.12 ug/l in GW-3. This value exceeds the ND New York State standard for this compound in groundwater.

The PCB Aroclor 1254, detected at a concentration of 5.1 ug/l in GW-2, violates the 0.1 ug/l New York State standard for PCBs by an order of magnitude. Because of the turbidity of this groundwater sample, the PCBs detected may actually have been associated with unfiltered fines in the groundwater and not actually dissolved in the groundwater itself. No PCBs were detected in any of the soil samples from the site, however. PCBs are found typically in old waste oils and transformer fluids.

4.6.4.4 Metals. Groundwater samples were analyzed for 23 metals (Table 4-3). Chromium, which is used in airplane parts and rubber pigments, was detected at a concentration just below the 50 ug/l standard (48 ug/l). Iron, lead, and manganese concentrations in groundwater exceeded their respective groundwater standards and reflect the high metals concentrations in the soil. Iron and manganese concentrations violated standards by up to two orders of magnitude. Lead exceeded its 25 ug/l standard in one sample (GW-2), with a concentration of 46 ug/l.

Table 4-3A summarizes contaminants exceeding the groundwater standards and soil samples in excess of background levels (Ref. 20, Appendix A).

4.6.5 Phase II Surface Water Data

One surface water sample from the Niagara River was collected (Figure 4-3) near the upstream property edge on 7 August 1988 (Table 4-4). The Niagara River is a Class A stream whose best usage is as a source of water supply for drinking, culinary, or food processing purposes and any other usages (Ref. 18, Appendix A). A surface water intake exists 2.9 miles downstream, but is not being used at this time. The closest potable surface water intake is located 3.5 miles downstream of the site.

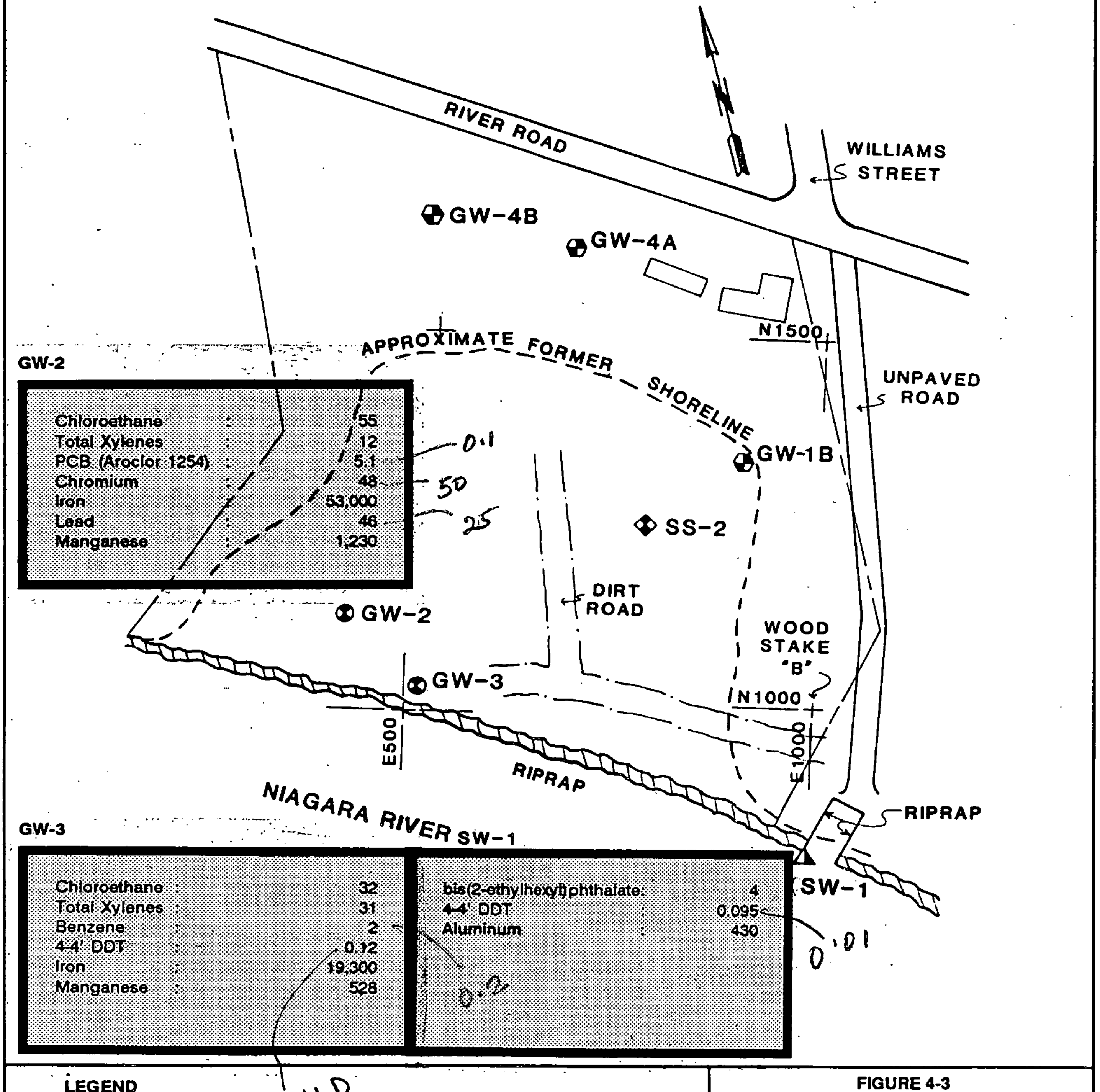
TABLE 4-3A

NOVEMBER 1988 PHASE II SUMMARY OF DATA EXCEEDING STANDARDS OR BACKGROUND

Brzezinski Property NYSDEC I.D. No. 932006

PARAMETER	SOIL SAMPLES (mg/kg) GW-2	SOIL SAMPLES (mg/kg) GW-4B	SOIL SAMPLES (mg/kg) SS-2	BACKGROUND SOIL DATA (mg/kg) (Ref. 20, Appen. A)	WATER SAMPLES (ug/l) GW-2	WATER SAMPLES (ug/l) GW-3	6 NYCRR PART 703.5 CLASS GA STANDARDS (ug/l)
ORGANICS							
Dieldrin		21 j		NA			NS
1,1,1-Trichloroethane		4,700 j		NA			50
1,2-Dichloroethane (total)		1,900 j		NA			0.8
Chloroethane				NA	55	32	5
Benzene				NA		2 j	NS
Ethylbenzene		680 j		NA			5
Toluene		620 bj		NA			5
Xylenes (total)		6,700 bj		NA	12	31	5
Chlorobenzene				NA			5
Methylene chloride		6,300		NA			5
Trichloroethene		1,100,000 e		NA			10
Carbon disulfide				NA		42	50
4,4-DDT			39 j	NA		0.12	NS
Aroclor 1254				NA	5.1		0.1
Bis(2-ethylhexyl)phthalate		3,300	5,800	NA			NS
METALS							
Cobalt	9.0	15	8.4 *	8			NS
Chromium	101 N		31	30			50
Iron	15,400	35,800	19,200	10,000	53,000	19,300	300
Magnesium	8,840	18,000 *	35,600 *	5,000	82,000 N	57,600 N	NS
Manganese				1,000	1,230	528	300
Lead	236		32.8 *	29	46 *		25
Zinc	1,250			400			5,000
Nickel	151		97.3 N *	50	60		NS
Mercury	0.19	0.13	0.61	0.098			2
Copper	36.5 N		30.9 *	30			1,000
Beryllium		1.5	0.73	0.30			3

* - Duplicate analysis not within control limits.
b - Found in method blank.
e - Estimated.
j - Estimated concentration; compound present below method detection limit.
N - Spike sample recovery not within control limits.
NA - Not available.
NS - No standard.



LEGEND

- GW = Groundwater monitoring well location
- SW = Surface water sample location
- SS = Soil sample location
- GW = Borehole sample location

All data is in µg/l.

Property line

Building

Property line and buildings are approximate

SCALE
0 100 200
1 in. : 200 ft

FIGURE 4-3

PHASE II
WATER SAMPLE COMPOUNDS

Brzezinski Property
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1988 NYSDEC PHASE II INVESTIGATION

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TABLE 4-4 (Page 1 of 2)

NOVEMBER 1988 SURFACE WATER DATA SUMMARY

Brzezinski Property NYSDEC I.D. No. 932006

PARAMETER	NIAGARA RIVER	FIELD BLANK	TRIP BLANK	6 NYCRR Part 701.19 Class II Standards
VOLATILE ORGANICS				
Methylene chloride	3 j	4 j	3 j	50 (c)
Tentatively Identified Compounds				
Unknown	11 bj	13 bj	13 bj	NS
SEMIVOLATILES				
Bis (2-ethylhexyl)phthalate	4 bj	15 b	NR	0.6
Tentatively Identified Compounds				
Unknown	35 bj	97 bj (2)	NR	NS
Unknown alcohol	27 bj	ND	NR	NS
PESTICIDES/PCBs				
4,4' - DDT	0.095 j	0.064 j	NR	0.01

All data in ug/l.
b - Found in method blank.
j - Estimated concentration; compound present below method detection limit.
( ) - Number of compounds in group total.
ND - Not detected at analytical detection limit; see Appendix I for detection limit.
NR - Not run.
NS - No standard.
(c) - Guidance value.

TABLE 4-4 (Page 2 of 2)

NOVEMBER 1988 SURFACE WATER DATA SUMMARY

Brzezinski Property NYSDEC I.D. No. 932006

PARAMETER	NIAGARA RIVER	FIELD BLANK	6 NYCRR Part 701.19 Class II Standards
METALS			
Aluminum	430	240	100
Antimony	ND	ND	3 (c)
Arsenic	ND	ND	50
Barium	ND	ND	1000
Beryllium	ND	ND	11 or 1000 (a)
Cadmium	ND	ND	10
Calcium	41,900 N	ND N	NS
Chromium	ND *	5.0 *	50
Cobalt	ND	ND	5
Copper	25	[17]	200
Iron	300 N	ND N	300
Lead	ND *	ND *	50
Magnesium	10,200 N	ND N	35,000
Manganese	17	ND	300
Mercury	ND *	ND *	2
Nickel	ND	ND	(b)
Potassium	[1,580]	[300]	NS
Selenium	6.7 N S	6.9 N	10
Silver	ND N	ND N	50
Sodium	10,500	[1,590]	NS (d)
Thallium	ND	ND	8
Vanadium	[12]	10	14
Zinc	[13] *	[11] *	300
Cyanide	ND	ND	100

All data in ug/l.
S - Value determined by the method of standard addition.
N - Spiked sample recovery is not within control limits.
ND - Not detected at analytical detection limit; see Appendix I for detection limit.
[ ] - Greater than or equal to the instrument detection limit but below contract-required detection limit.
* - Duplicate analysis not within control limits.
(c) - Guidance value.
(a) - 11 when hardness is less than or equal to 75 ppm and 1,000 when hardness is greater than 75 ppm.
(b) - Calculated standard requiring hardness.
(d) - Monitoring requirement.

The validation and usability results of this sample can be found in Appendix J.

4.6.5.1 Volatile Organics. Methylene chloride was the only volatile organic compound detected in the surface water sample and was also detected in the field and trip blank. One TIC was also identified in the sample and the method blank. It is suspected that methylene chloride and the TIC unknown are laboratory or sampling contaminants and not actually present in the surface water sample.

4.6.5.2 Semivolatile Organics. Bis(2-ethylhexyl)phthalate, the only semivolatile organic compound detected in the surface water sample, was found in the sample and in the method, trip, and field blanks. Two TICs were identified (Table 4-4) in the sample; both were found in the method blank and one was found in the field blank. It is likely that both bis(2-ethylhexyl)phthalate and the TICs are sampling artifacts and not present in the site sample.

4.6.5.3 Pesticides/PCBs. The pesticide 4,4'-DDT was detected below the MDL in both the surface water sample and the field blank (Table 4-4). These values violate the New York State surface water standard of 0.01 ug/l. No PCBs were detected in the surface water samples.

4.6.5.4 Metals. Twenty-three metals were tested for in the surface water sample (Table 4-4). Aluminum and iron concentrations exceeded their respective surface water standards.

4.7 DISCUSSION

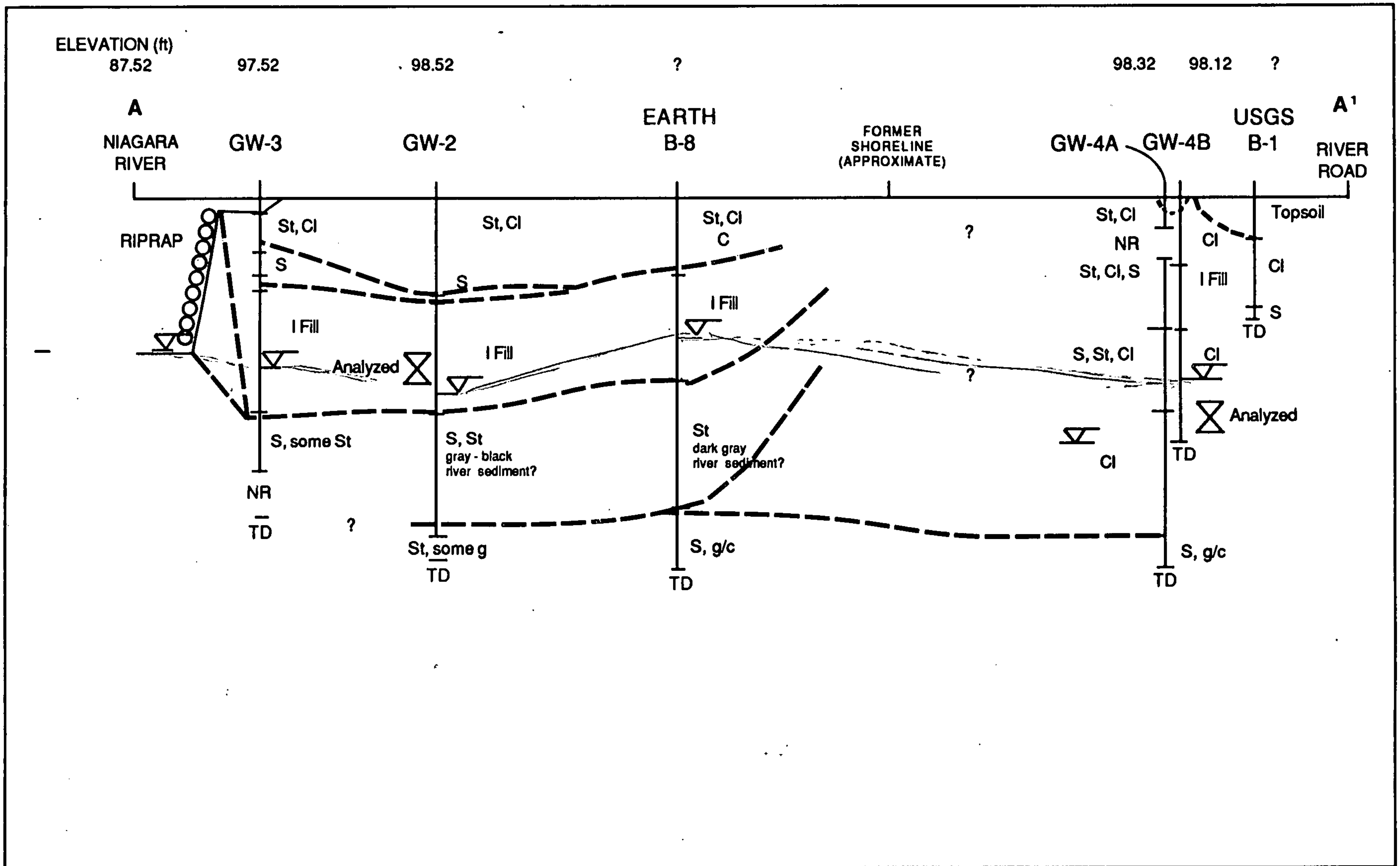
4.7.1 Fill Extent

Most of the fill material used to backfill the cove consisted of industrial wastes from Carborundum, with smaller amounts from Bell and the NCIP. Both the bermed cove and the areas immediately adjacent to the cove were reported to be filled with industrial and clean fill from a nearby sewer construction project. Figures 4-4 and 4-5 illustrate the known extent of the fills. On the average, the industrial fill is some 7 ft deep in the former cove, and appears to extend beyond the original cove shoreline by approximately 80 ft toward River Road.

4.7.2 Fill Composition

Bell reportedly dumped plaster molds at the site in the early to mid-1960s (Ref. 7, Appendix A). Specific information regarding the composition, quantity, and location of these plaster molds is unavailable. High calcium concentrations would be expected, depending on the amount of plaster deposited.

Carborundum deposited a quantity of solid industrial waste estimated at about 561 yd^3 based on the prefill cove volume. (The area of the cove from the 1961 survey map is approximately 2220 ft^2. At an average cove fill thickness of 7 ft, this is approximately 560 yd^3 of fill.) A 15-yd^3-capacity truck would require 38 trips to the site to deposit this amount of waste. The extent of additional fill beyond the former cove shoreline toward River Road is ill defined. The Carborundum fill was reported to contain only inert industrial waste, but another Carborundum site (NYSDEC I.D. No. 932007, Class 4) has confirmed hazardous waste - phenol, resin,



LEGEND

I fill	=	Industrial fill
Cl	=	Clay
St	=	Silt
S	=	Sand
g/c	=	Gravel/cobbles
TD	=	Total depth
NR	=	No recovery

Sample collected for chemical analysis

Water table

0 100'

10'

Horizontal scale 1 in. = 100 ft
Vertical scale 1 in. = 10 ft

A - A1 = 800 ft

FIGURE 4-4

GENERALIZED CROSS SECTION A - A1

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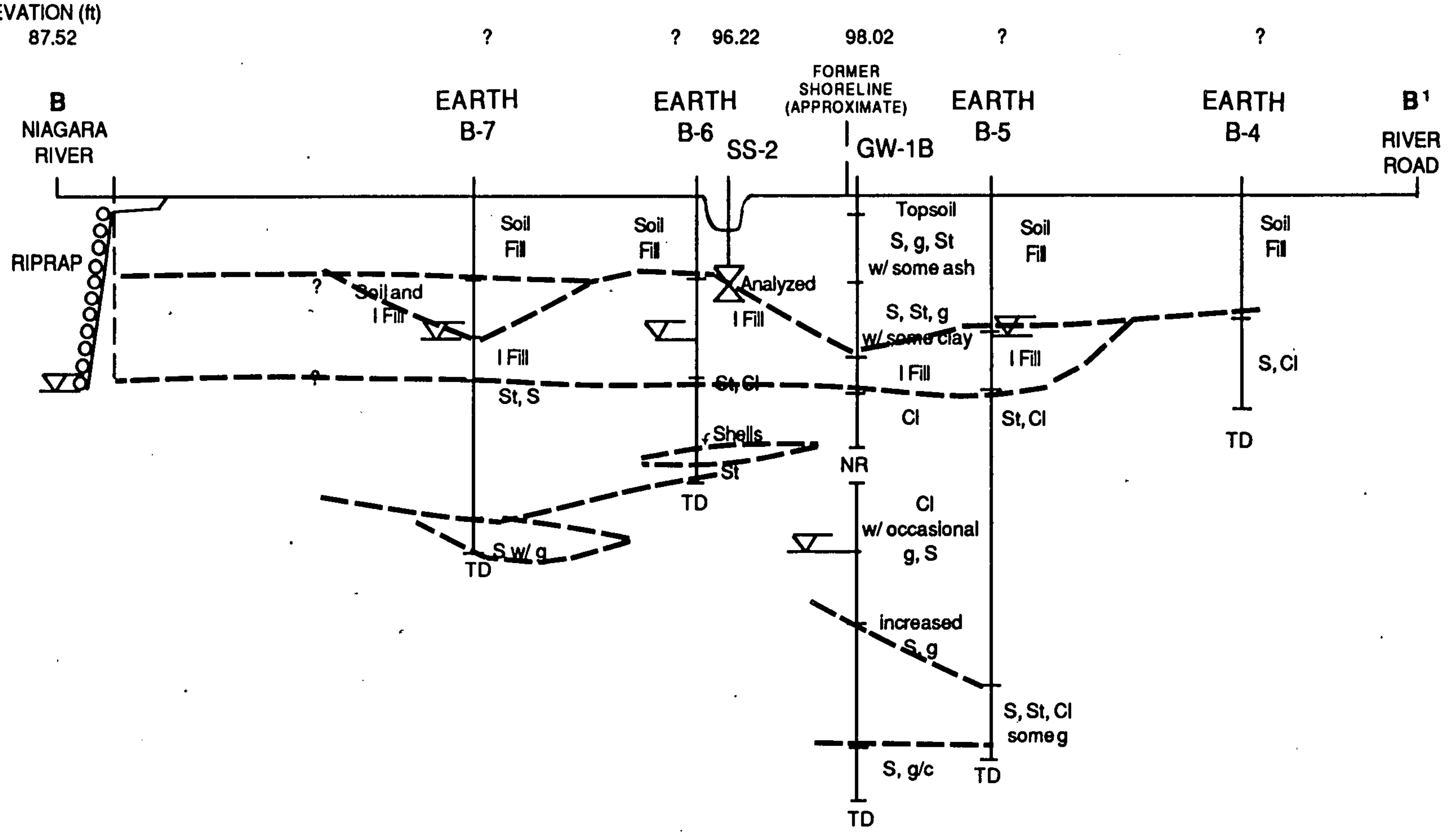

LEGEND

I fill	=	Industrial fill
Cl	=	Clay
St	=	Silt
S	=	Sand
g/c	=	Gravel/cobbles
TD	=	Total depth
NR	=	No recovery

Sample collected for chemical analysis

Water table

0 100'

10'

Horizontal scale 1 in. = 100 ft
Vertical scale 1 in. = 10 ft

B - B[1] = 800 ft

FIGURE 4-5

GENERALIZED CROSS SECTION B - B[1]

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NYSDEC I.D. No. 932006
1988 NYSDEC PHASE II INVESTIGATION

LAWLER, MATUSKY & SKELLY ENGINEERS
Pearl River, New York

glue, and "floor sweepings" (Ref. 21, Appendix A). Resins contain phenol and formaldehyde (Ref. 19, Appendix A). Animal glues contain various biologic components as well as metals (exact quantities and types are unknown). Phenols were detected in the 1983 analyses (Section 4.5.2), but not in any Phase II samples.

Approximately 400 to 600 yd^3 of ash from the NCIP was deposited at the site (Ref. 8, Appendix A) sometime in 1969. The area and depth of placement are not known. The ash type (bottom ash or fly ash) is not differentiated in the site reports. NCIP ash contained various semivolatiles, polychlorinated dibenzodioxins (PCDD), polychlorinated dibenzofurans (PCDF), PCBs, and metals (Ref. 22, Appendix A), and may be the source of the semivolatiles, PCBs, and metals detected in SS-2 (Table 4-5). (NYSDEC Phase II analyses did not include PCDD or PCDF analyses.)

4.7.3 Soil Chemistry

The chemistry of the fill and other on-site soils suggests that materials other than the documented industrial wastes and incinerator ash may have been disposed of on site. This is especially true at GW-4B, where a suite of volatile organics marked by very high concentrations of TCE were found in what appeared to be native or clean fill soils. These compounds, typical of solvents and degreasers, are not associated particularly with the materials known to have been deposited on site. Similarly, at SS-2, a suite of semivolatile organics typical of petroleum products were discovered, but no petroleum products are listed as having been disposed of on site, except for the allegations of waste accumulation in the original cove (Ref. 5, Appendix A). Finally, a petroleum sheen and BTX compounds found in GW-3 suggest deposition of gasoline or other petroleum products not identified as being disposed of on site.

TABLE 4-5

COMPOUNDS COMMON TO MWC[a] ASH AND BRZEZINSKI

Brzezinski Property NYSDEC I.D. No. 932006

PARAMETER	BRZEZINSKI SOIL (SS-2) ug/kg	MWC[a] ASH (RANGE) ug/kg	PARAMETER	BRZEZINSKI SOIL (SS-2) mg/kg	MWC ASH (RANGE) mg/kg
Semivolatiles			Aluminum	7,150	5,000-60,000
			Antimony	ND	<120-<260
Naphthalene	78	570-9300	Arsenic	8.7	29-50
Acenaphthene	130	28	Barium	92.5	79-2,700
Fluorene	150	ND-150	Beryllium	0.73	ND-2.4
Phenanthrene	1200	21-7600	Cadmium	1.7	0.18-100
Anthracene	230	1-500	Calcium	601	4,100-85,000
Di-n-butyl phthalate	23	ND-360	Chromium	31	12-1,500
Fluoranthene	1500	ND-6500	Cobalt	8.4	1.7-91
Pyrene	1400	ND-5700	Copper	30.9	40-5,900
Butyl benzylphthalate	39	ND-180	Iron	19,200	690-133,500
Chrysene	780	ND-690	Lead	32.8	31-36,600
Bis(2-ethylhexyl) phthalate	5800	85-2100	Magnesium	35,600	700-16,000
			Manganese	289	14-3,130
Benzo(k)fluoranthene	620	ND-470	Mercury	0.61	0.05-17.5
Benzo(a)pyrene	520	ND-400	Nickel	97.3	13-12,910
Benzo(g,h,i)perylene	220	ND-190	Potassium	1,020	290-12,000
			Selenium	ND	0.10-50
PCBs	ND	ND-32.15	Silver	ND	0.05-93.4
			Sodium	911	1,100-33,330
			Vanadium	68.6	13-150
			Zinc	372	92-46,000

[a]MWC = Municipal Waste Combustor.

4.8 CONCLUSIONS

4.8.1 Geology/Hydrogeology

The site's indigenous alluvial deposits of silty sand and lake sediment deposits of silty clay sand appear to have very low permeabilities. The silty clays in particular apparently act as a barrier to download groundwater movement. Efforts to install an upgradient well failed because of the impermeability of these silts and clays. The sand layers containing sandy silts with gravel and cobbles appear to be discontinuous and poorly sorted and are thus not productive, water-bearing horizons. Two downgradient monitoring wells screened in both the fill and the underlying soil had a permeability of 10^{-7} to 10^{-5} cm/sec, primarily a result of the porous industrial fill.

Bedrock (Lockport Dolomite) was not encountered during either the Phase II investigation or previous investigations. The deepest boring was 31.5 ft below grade. Reported depth to bedrock averages approximately 48 ft below grade.

The industrial fill was deposited in a wet, marshy area artificially barred from the Niagara River with rock riprap. Current water table conditions (Figure 4-1) are such that approximately half the fill is saturated by river water that flows back into the artificially filled cove and remains perched on the impermeable layer silty clays.

Measured water tables near the river were higher during the Phase II investigation than inferred water depths farther upgradient on the property. Monitoring wells GW-2 and GW-3 appear to tap groundwater that is the result of this riverbank storage phenomenon.

4.8.2 Fill Composition

References (Refs. 4 [p. 5], 6, 7, and 8, Appendix A) suggest that inert industrial solid waste and ash were deposited at the site, yet (1) a petroleumlike sheen has been observed on the water table; (2) high HNU readings (up to 600 ppm) were observed in nonfill soil; and (3) chemical analyses indicate compounds not reportedly associated with inert abrasive waste, e.g., TCE, PCBs, semivolatile organics, various metals, pesticides, and other volatile organics. Based on the chemistry analyses of soils and water, it is likely that other wastes, such as petroleum products and cleaning solvents, were deposited on site.

4.8.3 Site Contamination

The previous soil, sediment, and site surface water analyses detected only two TIC organic compounds and some elevated metals concentrations. The Phase II groundwater analyses showed violations of New York State standards for benzene, chloroethane, and xylenes. Soil analyses indicate elevated concentrations of organics (TCE, PCBs, and 4-4'-DDT) and metals (cadmium, cobalt, lead, magnesium, and zinc) both in and out of the fill.

High concentrations of TCE and other volatile organics typical of solvents and degreasers were found in GW-4B at the upgradient edge of the property at a depth of 14-16 ft in what appear to be native undisturbed soils. This suggests that barrels or a tank truck of spent solvents of unknown origin were discharged directly onto the ground surface. Since no evidence of drums or tanks was found on the land surface or during drilling of GW-4B, and since this contamination appears to be unrelated to the documented materials disposed of on site, it is likely that the source of this contamination is a direct surface discharge. The solvents from a surface discharge would then have leached through the more permeable upper soil strata down to the less permeable silty clay strata, where indeed they were found. Traces of these contaminants appear in the downgradient groundwater at GW-2 and GW-3, suggesting that these contaminants may be moving slowly on top of the dense native clay toward the river. Since no industrial fill material was found in GW-4B, there is nothing to suggest that any of the known waste contributors are the source of the solvents. Another possible (but less likely) source of these solvents may be drums or tanks located upgradient of the property, with solvents being leached and transported downgradient onto the property.

Since no downgradient surface water sample was requested in this study, the significance, if any, of a release to the Niagara River cannot be determined at this time. Although groundwater analyses show contamination on site, whether the contaminants are migrating into the river is unknown.

The semivolatile contaminants at SS-2 may have a source other than the documented fill. This suite of semivolatiles is typical of petroleum products, but may be related to fly ashes from either Carborundum or the incinerator.

Elevated concentrations of iron, lead, and manganese in the soils, fill, and groundwater may be attributable to documented wastes disposed of on site. The high iron and manganese may also be characteristic of the native soils. Other metals found at elevated concentrations in the soils included cadmium, cobalt, and zinc, all of which may be attributable to documented disposed wastes.

The source of the detected pesticide (4,4'-DDT) at concentrations that violate state standards is unknown. Likewise, the source of the PCB Aroclor 1254, at a concentration above state standards, is unknown, particularly since no PCBs were found in the soils.

4.8.4 HRS

The HRS score (see Chapter 5) is 2.1 and does not exceed the minimum 28.5 that would make the site eligible for addition to the National Priority List (NPL). Additional surface, groundwater, and soil/sediment analyses may modify the final HRS score.

4.9 RECOMMENDATIONS

Recommendations for future actions at the Brzezinski Property focus on the two areas of concern identified by the Phase II investigation:

1. The previously unidentified volatile organic contamination near GW-4B in the northern portion of the site along River Road
2. The former cove filled in with solid industrial wastes

4.9.1 Volatile Organic Contamination

The newly discovered volatile organic contamination in the upgradient portion of the property needs to be defined as to its extent (horizontal and vertical) and movement in the groundwater. A series of test borings should be drilled in an attempt to bound the suspected spill area. Four continuous split-spoon borings should be installed to the water table at increasing distances from the center of the suspected fill; e.g., four borings (north, south, east, and west) about 20 ft from GW-4B, then four more borings (northeast, southeast, southwest, northwest) 40 ft from GW-4B, and so on until the outer horizontal and vertical boundaries of the spill are defined. Samples should be analyzed for TCE, the most predominant organic contaminant, using an on-site mobile GC laboratory. In this way sampling and analyses need be done only to the edge of the discovered contamination.

Additional borings to the water table should be installed along the northern edge of the border at distances that define the extent of the spill near GW-4B to determine whether other similar discharges from whatever source occurred along the road. Borings should be completed only to the water table or native dense clay, whichever comes first, so as not to undermine the integrity of the natural clay layer that appears to be acting as a natural barrier to further downward groundwater movement at the site. All test borings would be backfilled with bentonite to the ground surface.

4.9.2 Filled Cove

The field investigations conducted to date have identified contamination of groundwater in the cove by metals, volatile organics, PCBs, pesticides, and miscellaneous TICs. However, the movement of these contaminants from upgradient or off-site sources through the fill and to the Niagara River has not been documented. Although there is some suggestion of contaminant migration vertically to the native dense clay and horizontally downgradient to the river, groundwater movement and the hydraulic interaction of the river with the groundwater require clarification.

To provide this clarification, a north-south transect of approximately three to four test borings is proposed to extend from the River Road to the river shoreline. Test borings would be drilled to the water table and completed as monitoring wells where recoverable groundwater was encountered. Again, test borings would not be drilled into the dense clay that acts as the site liner to prevent further vertical contamination migration. One boring should be continued to the top of bedrock in order to determine the level of bedrock in the area; however, special drilling techniques must be used to prevent vertical cross-contamination. If no technique can safely guarantee no cross-contamination, then do not drill to bedrock.

Boring logs rating the lithology and stratigraphy of the new test holes would be completed and compared with previous findings. Information on depths to groundwater and static water levels from these additional borings/wells and river would then be used in conjunction with information from previous investigations to better define the hydraulic interactions of the groundwater and the Niagara River.

In those borings that are successfully completed as monitoring wells, a round of groundwater samples should be taken in conjunction with a second round of samples from the previously completed GW-2 and GW-3 wells. These samples should be analyzed for TCL compounds and the results compared with the Phase II results to further define contaminant movement in the groundwater.

Finally, a second upstream and new downstream surface water sample of the Niagara River should be taken and analyzed for TCL compounds. Comparison of upstream vs downstream water quality may indicate what, if any, on-site contaminants are reaching the Niagara River. However, it is possible that because of the large flow of the Niagara River at the site, any contaminant discharges from the site may be diluted such that they are undetectable. If there is any sampleable seepage through the berm, sample should also be collected.

4.9.3 Sampling/Analysis During Water Line Construction

The County of Niagara Water District, whose three pipelines in a right-of-way borders the eastern side of the Brzezinski Property, has plans to expand capacity (Ref. 10, Appendix A). We recommend that during construction, samples of the soil be collected and analyzed by a mobile lab for volatile organic compounds.

CHAPTER 5

CHAPTER 5

NARRATIVE

CHAPTER 5

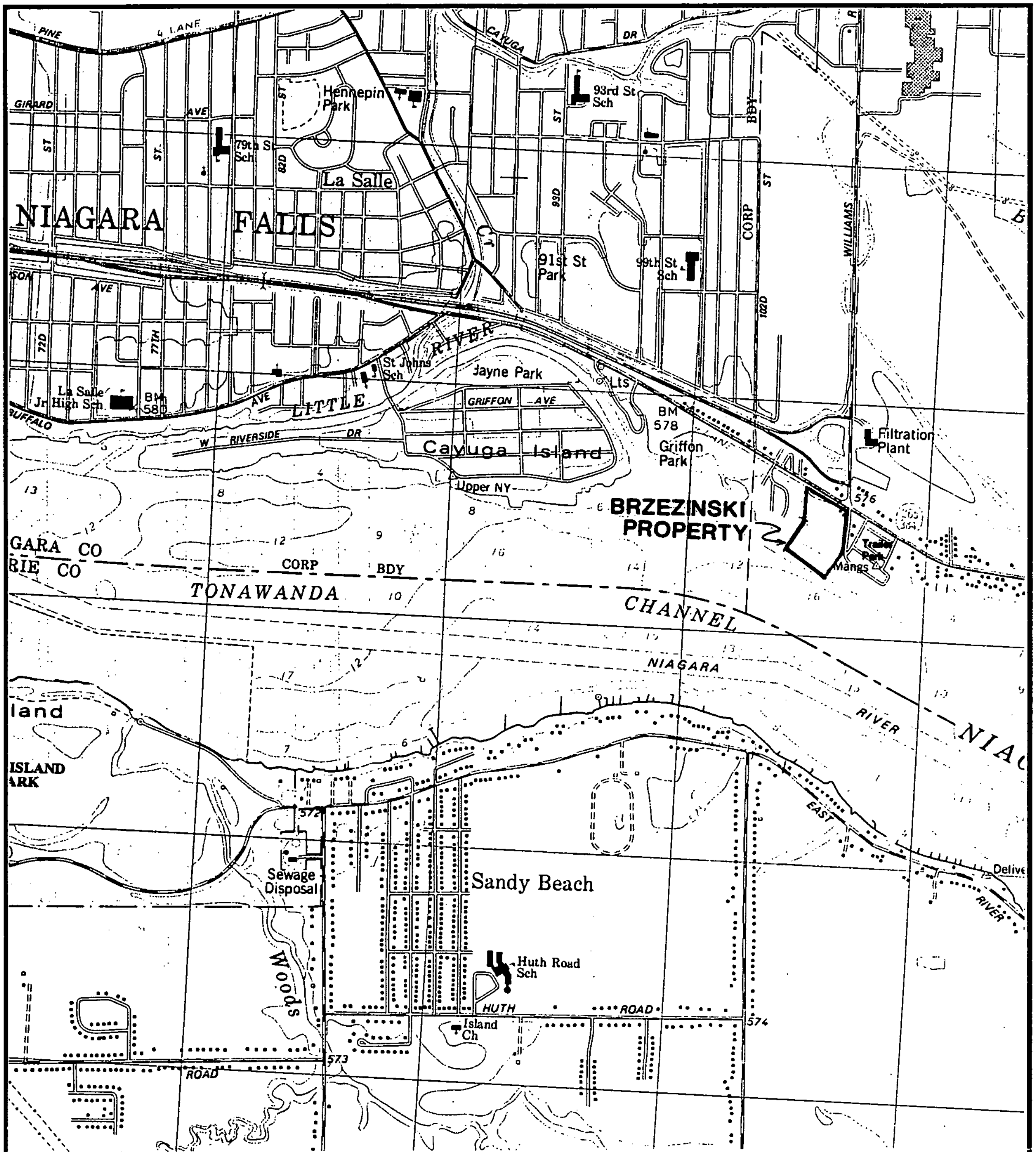
FINAL APPLICATION OF THE HAZARD RANKING SYSTEM

5.1 NARRATIVE SUMMARY

The 11-acre Brzezinski Property is located in the Town of Wheatfield in Niagara County, New York. The original 20-acre parcel consisted of about 6 acres of land, a 5-acre river cove, and the main Niagara River channel. The owners constructed a dike across the cove, pumped out the water into the Niagara River, and began filling in the cove with solid industrial waste. Thus, the site now consists of 11 acres of landfill. From 1965 to 1972 the site received solid industrial waste from Carborundum's Abrasives Division plant; it also received molds from the nearby Bell Aerospace Textron plant located at the Niagara Falls Air Force Base. Carborundum disposed of an unknown quantity of grinding wheels and abrasives. Bell discarded an unknown amount of plaster molds. Approximately 400 to 600 yd^3 of Niagara County Incinerator Plant ash was also deposited at the site. According to tests conducted by Lawler, Matusky & Skelly Engineers for the New York State Department of Environmental Conservation, the soil, groundwater, and adjacent Niagara River are contaminated with various organic compounds, metals, PCBs, and pesticides. A trailer park (population unknown) lies adjacent to the site. The City of Niagara Falls is within a mile of the site to the northwest. The City of Tonawanda lies approximately 2 miles southeast. It is not known if or how many people may be affected by groundwater, surface water, or direct soil contact. No cleanup or enforcement action has taken place on the site.

LOCATION

5.2 LOCATION MAP



Lat 43°04'13"N
Long 78°56'29"W

NEW YORK

Quadrangle Location

Source: USGS Topographic Map Tonawanda West, N.Y.

FIGURE 5-1

LOCATION MAP

Brzezinski Property
NYSDEC I.D. No. 932006
1988 NYSDEC PHASE II INVESTIGATION

LAWLER, MATUSKY & SKELLY ENGINEERS
Pearl River, New York

HRS WORKSHEETS

HRS WORKSHEETS

5.3 HRS WORKSHEETS

HRS COVER SHEET

Facility Name: Brzezinski Property

Location: 2040 River Road, Wheatfield, Niagara County, New York

EPA Region: 2

Person(s) in charge of the facility: Stanley Brzezinski
2080 River Road
Niagara Falls, New York 14034

Name of Reviewer: Christina Fern **Date:** 19 April 1989

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 11 acre inactive landfill located adjacent to the Niagara River. During its active years (1965-1972) the site received industrial waste consisting of grit, grinding wheels, and municipal incinerator ash. The major route of concern is groundwater and surface water (the Niagara River). Additional surface water, groundwater and soil samples would strengthen the HRS. No state or Federal legal action or remediation occurred at the site.

Scores: $S_M =$ 2.3 ($S_{gw} =$ 3.0 $S_{sw} =$ 2.66 $S_A =$ 0)

$S_{FE} =$ not scored

$S_{DC} =$ 37.5

GROUNDWATER ROUTE WORK SHEET

RATING FACTOR	ASSIGNED VALUE (circle one)	MULTIPLIER	SCORE	MAXIMUM SCORE	REFERENCE (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 of Aquifer of Concern	0 1 2 3	2	6	6	
Net Precipitation	0 1 2 3	1	2	3	
Permeability of the Unsaturated Zone	0 1 2 3	1	1	3	
Physical State	0 1 2 3	1	1	3	
	Total Route Characteristics Score		10	15	
3 CONTAINMENT	0 1 2 3	1	3	3	3.3
4 WASTE CHARACTERISTICS					3.4
Toxicity/Persistance	0 3 6 9 12 15 18	1	18	18	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1	1	8	
	Total Waste Characteristics Score		19	26	
5 TARGETS					3.5
Ground Water Use	0 1 2 3	3	3	9	
Distance to Nearest Well/Population Served	0 4 6 8 10 12 16 18 20 24 30 32 35 40	1	0	40	
			3	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			1,710	57,330	
7 Divide line 6 by 57,330 and multiply by 100		S_{gw} = 3.0			

SURFACE WATER ROUTE WORK SHEET

RATING FACTOR	ASSIGNED VALUE (circle one)	MULTIPLIER	SCORE	MAXIMUM SCORE	REFERENCE (section)
1 OBSERVED RELEASE	0 45	1	45	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	3	3	
1-yr 24-hr Rainfall	0 1 2 3	1	2	3	
Distance to Nearest Surface Water	0 1 2 3	2	6	6	
Physical State	0 1 2 3	1	1	3	
	Total Route Characteristics Score		12	15	
3 CONTAINMENT	0 1 2 3	1	3	3	4.3
4 WASTE CHARACTERISTICS					4.4
Toxicity/Persistance	0 3 6 9 12 15 18	1	18	18	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1	1	8	
	Total Waste Characteristics Score		19	26	
5 TARGETS					4.5
Surface Water Use	0 1 2 3	3	0	9	
Distance to a Sensitive Environment	0 1 2 3	2	2	6	
Population Served/ Distance to Water Intake Downstream	0 4 6 8 10 12 16 18 20 24 30 32 35 40	1	0	40	
	Total Targets Score		2	55	
6 If line 1 is 45, multiply 1 X 4 X 5 If line 1 is 0, multiply 2 X 3 X 4 X 5			1,710	64,350	
7 Divide line 6 by 64,350 and multiply by 100		S_{sw} = 2.66			

AIR ROUTE WORK SHEET

RATING FACTOR	ASSIGNED VALUE (circle one)	MULTIPLIER	SCORE	MAXIMUM SCORE	REFERENCE (section)
1 OBSERVED RELEASE	0 45	1	0	45	5.1
DATE AND LOCATION:					
SAMPLING PROTOCOL:					
If line 1 is 0, then Sa = 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			0	35,100	
5 Divide line 4 by 35,100 and multiply by 100		S_A =	0		

WORKSHEET FOR COMPUTING S_M

	S	S^2
GROUNDWATER ROUTE SCORE (S_{GW})	3.0	9
SURFACE WATER ROUTE SCORE (S_{SW})	2.66	7.1
AIR ROUTE SCORE (S_A)	0.00	0.00
$S^2_{GW} + S^2_{SW} + S^2_A$		16.1
$\sqrt{S^2_{GW} + S^2_{SW} + S^2_A}$		4
$\sqrt{S^2_{GW} + S^2_{SW} + S^2_A} / 1.73$ (S_M)		2.3

FIRE AND EXPLOSION WORK SHEET

RATING FACTOR	ASSIGNED VALUE (circle one)	MULTIPLIER	SCORE	MAXIMUM SCORE	REFERENCE (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 Target Score			24	
4 Multiply 1 X 2 X 3				1,440	
5 Divide line 4 by 1,440 and multiply by 100		S_{FE} = not scored			

DIRECT CONTACT WORK SHEET

RATING FACTOR	ASSIGNED VALUE (circle one)	MULTIPLIER	SCORE	MAXIMUM SCORE	REFERENCE (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	12	20	
Distance to a Critical Habitat	0 1 2 3	4	0	12	
Total Targets Score			12	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			8,100	21,600	
7 Divide line 6 by 21,600 and multiply by 100		S_{DC} =	37.5		

HRS DOCUMENTATION
RECORDS

HRS DOCUMENTATION RECORDS

5.4 HRS DOCUMENTATION RECORD

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: Brzezinski Property

LOCATION: 2040 River Road, Town of Wheatfield, Niagara County, New York

DATE SCORED: 19 March 1990

PERSON SCORING: Troy Goodman/Mark Creager

PRIMARY SOURCE(S) OF INFORMATION (e.g., EPA region, state, FIT, etc.):

New York State Department of Environmental Conservation
Central Office, Albany, NY

Niagara County Health Department
Niagara Falls, NY
LMS Phase II Report

FACTORS NOT SCORE DUE TO INSUFFICIENT INFORMATION:

Air route
Fire and explosion

COMMENTS OR QUALIFICATIONS:

Fire and explosion:
No state or local fire marshal has certified a fire and explosion threat at this site.

Air route: No contaminants detected by photoionization detector or combustible gas indicator.

GROUNDWATER ROUTE

1 OBSERVED RELEASE

Contaminants detected (5 maximum):

None

Rationale for attributing the contaminants to the facility:

While chloroethane (55 ppb) and lead (46 ppb) violate New York State groundwater standards, they are not detected in the fill in significant concentrations to justify a release.
Ref. 1
Assigned Value = 0

* * *

2 ROUTE CHARACTERISTICS

<u>Depth to Aquifer of Concern</u>

Name/description of aquifer(s) of concern:

Groundwater occurs in both the Lockport Dolomite bedrock and in the unconsolidated material beneath the site. Neither is used as an aquifer. Bedrock serves as the primary aquifer but overburden is deep and the water table is near.
Refs. 2, 3, 4 (p. 8)

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

10-20 ft
Groundwater was encountered below ground surface in the saturated zone, which is not used as an aquifer.
Ref. 5

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

Fill ends at 13.5 ft
Ref. 6

Depth from lowest point of waste disposal/storage to the highest seasonal level of the saturated zone of the aquifer of concern subtract the above figures:

0-6.5 ft. In the 0-20 ft category
Assigned Value = 3

Net Precipitation

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

35 in.
Ref. 7

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

28 in.
Ref. 7

Net precipitation (subtract the above figures):

7 in.
Assigned Value = 2

Permeability of Unsaturated Zone

Soil type in unsaturated zone:

Canandaigua series varies. Stratified loamy fine sand, silt and clay.
Ref. 8

Permeability associated with soil type:

Variable.
Field studies show 3.54×10^{-7} and 3.37×10^{-5} cm/sec
Refs. 8, 9
Assigned Value = 1

Physical State

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

Solid
Material known to be landfilled includes: fly ash, sand, fire brick, dust, collection fines, grinding wheels, grit (solid abrasive grains), NCIP (Niagara County Incinerator Plant) ash and plaster molds.
Assigned Value = 1
Refs. 4 (p. 5), 10, 11

* * *

3 CONTAINMENT

Containment

Method(s) of waste or leachate containment evaluated:

Landfill: no liner; moderately permeable cover; no run-on control
Refs. 4, 6

Method with highest score:

Assigned Value = 3

* * *

4 WASTE CHARACTERISTICS

Toxicity and Persistence

Compound(s) evaluated:

	Toxicity	Persistence	Matrix Value
Chloroethane			
Lead	3	3	18

Ref. 1

Compound with highest score:

Both metals have a matrix value of 18.
Ref. 12
Assigned Value = 18

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):

Total quantity of hazardous waste is unknown.

Basis of estimating and/or computing waste quantity:

Hazardous waste is present at the site. Its extent and exact origin is unknown. For HRS scoring purposes the lowest non-zero value is used.
Assigned Value = 1

* * *

5 TARGETS

Groundwater Use

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

Aquifer within a 3-mile radius is not used but is usable.
Population receives drinking water from Niagara River.
Assigned Value = 1

Distance to Nearest Well

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

Northeast of site

Distance to above well or building:

25 miles. In the greater than 3-mile category.
Refs. 13, 14
Assigned Value = 0

Population Served by Groundwater 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:

No known wells drawing from aquifer of concern. Population receives drinking water from Niagara River.
Ref. 13
Assigned Value = 0

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):

No known irrigated land.

Total population served by groundwater within a 3-mile radius:

Assigned Value: 0

SURFACE WATER ROUTE

1 OBSERVED RELEASE

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

Zinc

Rationale for attributing the contaminants to the facility:

Sample collected upstream of the site. A 1986 sample was collected from an on-site marsh and is considered usable for HRS scoring purposes.

PARAMETER	UPGRADIENT	DOWNGRADIENT (On-Site Marsh)
Zinc	[13]	100

All data in micrograms per liter (ug/l) or parts per billion (ppb)
[ ] $\geq$ instrument detection level, but less than the contract-required detection limit.
Refs. 1, 15
Assigned Value = 45

* * *

2 ROUTE CHARACTERISTICS

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

Average slope of facility in percent:

1.43%
Estimated from USGS topo map
Ref. 14
Assigned Value = 0

Name/description of nearest downslope surface water:

Niagara River
Refs. 13, 14

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

1.43% slope
Refs. 6, 14
Assigned Value = 0

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

Yes, the site is partially located in surface water. The disposal site was built into a cove of the Niagara River. The site is submerged in an area that was once the river.
Refs. 3, 5
Assigned Value = 3

Is the facility completely surrounded by areas of higher elevation?

No
Refs. 6, 14

<u>1-Year 24-hr Rainfall in Inches</u>

2-3 in.
Ref. 16
Assigned Value = 2

<u>Distance to Nearest Downslope Surface Water</u>

<1000 ft
Assigned Value = 3

<u>Physical State of Waste</u>

Solid
Materials known to be landfilled include fly ash, sand, fire brick, dust, collection fines, grinding wheels, grit (solid abrasive grains), NCIP ash, and plaster molds.
Refs. 4 (p. 5), 10, 11
Assigned Value = 1

* * *

3 CONTAINMENT

Method(s) of waste or leachate containment evaluated:

Landfill has adequate cover material, no diversion system.
Ref. 6

Method with highest score:

Assigned Value = 3

* * *

4 WASTE CHARACTERISTICS

Toxicity and Persistence

Compound(s) evaluated:

	Toxicity	Persistence	Matrix Score
Lead	3	3	18
Zinc	3	3	18

Compound with highest score:

Each has a value of 18. Potential exists for groundwater to migrate into surface water.
Ref. 1
Assigned Value = 18

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):

Total quantity of hazardous waste unknown.

Basis of estimating and/or computing waste quantity:

Hazardous waste is present at the site. Its extent and exact origin is unknown. For HRS scoring purposes the lowest nonzero number will be used.
Assigned Value = 1

* * *

5 TARGETS

<u>Surface Water Use</u>

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

Surface water is the primary drinking source. Intake is located 3.5 miles downstream.
Ref. 17
Assigned Value = 0

Is there tidal influence?

No

<u>Distance to a Sensitive Environment</u>

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

No coastal wetlands within 2 miles.
In the >2 mile category.
Ref. 14
Assigned Value = 0

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

Unnamed wetland 0.4 mile north.
In the 1/4 to 1 mile category.
Ref. 18
Assigned Value = 1

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

None known
Assume >1 mile
Assigned Value = 0

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:

Nearest intake is 3.5 miles downstream.
Intake that is 2.9 miles downstream is not in use and has no future service.
Ref. 17

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

None
Ref. 17

Total population served:

None
Assigned Value = 0

Name/description of nearest of above water bodies:

N/A

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

2.9 miles and 3.5 miles
No intake in use within 3 miles of site
Ref. 17

AIR ROUTE

1 OBSERVED RELEASE

Contaminants detected:

Ambient air value not above background (Ref. 19). Intrusive investigations data are not used within HRS air route context.
Assigned Value = 0
$S_A = 0$

Date and location of detection of contaminants:

N/A

Methods used to detect the contaminants:

N/A

Rationale for attributing the contaminants to the site:

N/A

* * *

2 WASTE CHARACTERISTICS

<u>Reactivity and Incompatibility</u>

Most reactive compound:

N/A

Most incompatible pair of compounds:

N/A

Toxicity

Most toxic compound:

N/A

Hazardous Waste Quantity

Total quantity of hazardous waste:

N/A

Basis of estimating and/or computing waste quantity:

N/A

* * *

3 TARGETS

Population Within 4-Mile Radius

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

House count taken from USGS topographic map and in cooperation with NYSDEC regarding population in the Love Canal area.

0 to 4 mi Ref. 20	0 to 1 mi Population = 1068	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:

None >2 miles
Ref. 14

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

Unnamed wetland 0.4 mile north
In the 1/4 - 1 mile category
Ref. 18

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

None

Land Use

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

None

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

None

Distance to residential area, if 2 miles or less:

Approximately 200 ft.
Ref. 6

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

None

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

None >2 miles

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

No

FIRE AND EXPLOSION

1 CONTAINMENT

Hazardous substances present:

Not certified as a significant fire and explosion hazard by local or state fire marshal.
Section will not be scored.

Type of containment, if applicable:

N/A

* * *

2 WASTE CHARACTERISTICS

Direct Evidence

Type of instrument and measurements:

N/A

Ignitability

Compound used:

N/A

Reactivity

Most reactive compound:

N/A

Incompatibility

Most incompatible pair of compounds:

N/A

Hazardous Waste Quantity

Total quantity of hazardous substances at the facility:

N/A

Basis of estimating and/or computing waste quantity:

N/A

* * *

3 TARGETS

Distance to Nearest Population

N/A

Distance to Nearest Building

N/A

Distance to Sensitive Environment

Distance to wetlands:

N/A

Distance to critical habitat:

N/A

Land Use

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

N/A

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

N/A

Distance to residential area, if 2 miles or less:

N/A

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

N/A

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

N/A

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

N/A

<u>Population Within 2-Mile Radius</u>

N/A

<u>Buildings Within 2-Mile Radius</u>

N/A

DIRECT CONTACT

1 OBSERVED INCIDENT

Date, location, and pertinent details of incident:

No data available to determine death or illness due to direct contact.
Assigned Value = 0

* * *

2 ACCESSIBILITY

Describe type of barrier(s):

Barriers do not surround the facility completely.
Refs. 6, 19
Assigned Value = 3

* * *

3 CONTAINMENT

Type of containment, if applicable:

Site is a landfill; unknown if cover is greater than 2 ft. Past data from surface sediment and water note contamination.
Ref. 21
Assigned Value = 15

* * *

4 WASTE CHARACTERISTICS

<u>Toxicity</u>

Compounds evaluated:

Arsenic, copper, iron, lead,
nickel, and zinc
Ref. 15

Compound with highest score:

All metals = 3
Assigned Value = 3

* * *

5 TARGETS

Population Within 1-Mile Radius

1068. In the 1001 to 3000 category.
Ref. 20
Assigned Value = 4

Distance to Critical Habitat (of Endangered Species)

Greater than 1 mile
Assigned Value = 0

HRS REFERENCES

HRS REFERENCES

5.5 HRS REFERENCES

HRS REFERENCES

[1] 1988 NYSDEC Phase II analytical data. Appendix I, this report.

[2] Todd S. Miller and William M. Kappel. 1987. Effect of Niagara Power Project on Groundwater Flow in the Upper Part of the Lockport Dolomite, Niagara Falls Area, New York. U.S. Geological Survey. Water Resources Investigations Report 86-4130.

[3] USGS field reconnaissance. 19 June 1982. Ref. 12, Appendix A, this report.

[4] Recra Research, Inc. 1983. New York State Superfund Phase I. Ref. 4, Appendix A, this report.

[5] 1988 NYSDEC Phase II boring logs and well sampling data. Appendices E, F, and G, this report.

[6] 1988 NYSDEC Phase II site inspection. Ref. 1, Appendix A, this report.

[7] Geraghty, Miller, Van Der Leeden, Troise. 1973. Water Atlas of the United States. Water information Center. 122 plates.

[8] U.S. Department of Agriculture, Soil Conservation Service. 1972. Soil Survey of Niagara County, NY. Ref. 14, Appendix A, this report.

[9] 1988 NYSDEC Phase II permeability calculations. Ref. 3, Appendix A, this report.

[10] Niagara County Health Department. 1982. Site history. Ref. 6, Appendix A, this report.

[11] Niagara County Health Department. 1970. Permit. Ref. 9, Appendix A, this report.

[12] U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response. 1982. Uncontrolled Hazardous Waste Site Ranking System - A Users Manual. Directive No. 93550-3, 60 pp.

[13] New York State Department of Health. 1982. New York State Atlas of Community Water System Sources. 3 pp.

[14] U.S. Geological Survey. 1980. Tonawanda West, New York, 7.5 minute series topographic maps. Figure 5-1, this report.

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(Continued)

[15] Recra Environmental, Inc. 1986. Analytical data. Ref. 11, Appendix A, this report.

[16] U.S. Department of Commerce, Rainfall Frequency Atlas of the United States. Technical Paper No. 40.

[17] Personal Communication with the City of Niagara Water Department, the County of Niagara Water District, Niagara County Department of Health regarding water usage of the Niagara River.

[18] New York State wetlands map. Ref. 11, Appendix A, this report.

[19] 1988. NYSDEC Phase II site reconnaissance. Appendix B, this report.

[20] House count. 1990. Phase II investigation.

[21] U.S. Department of Commerce. 1983. County and City Data Book. A Statistical Abstract Supplement. 10th Ed. 1 p.

REFERENCE 2

MRS Reference 2

EFFECT OF NIAGARA POWER PROJECT ON GROUND-WATER FLOW IN THE UPPER PART OF THE LOCKPORT DOLOMITE, NIAGARA FALLS AREA, NEW YORK

By Todd S. Miller and William M. Kappel

U.S. GEOLOGICAL SURVEY

Water-Resources Investigations Report 86-4130

Prepared in cooperation with

U.S. ENVIRONMENTAL PROTECTION AGENCY, and the

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

GB
1025
.N7
.N4
USGS
1987

Ithaca, New York

1987

of studies by the New York State Department of Environmental Conservation, private consultants, and by the U.S. Geological Survey to describe ground-water conditions at many waste-disposal sites in the Niagara Falls area.

Acknowledgments

The New York Power Authority provided construction details of the power-project facilities, water-level data from the forebay canal and pumped-storage reservoir, and assistance in measuring water levels in NYPA wells in the vicinity of the pumped-storage reservoir. The New York State Department of Environmental Conservation coordinated the water-level measurements at industrial sites. Several industries, including Occidental Petroleum and E.I. Dupont De Nemours and Company, provided water-level data. The City of Niagara Falls provided construction details on many sewer and building projects and assisted in obtaining permits and permission to drill observation wells within the city.

GEOHYDROLOGY OF THE LOCKPORT DOLOMITE

Stratigraphy and Lithology

Unconsolidated glacial deposits of till and lacustrine silt and clay, generally 5 to 15 ft thick but ranging to 48 ft thick, overlie the 80- to 158-ft-thick Lockport Dolomite of Middle Silurian age within the Niagara Falls area (Tesmer, 1981). The thickest unconsolidated deposits (up to 48 ft) are in a shallow buried valley in the western part of the city (pl. 1B).

Underlying the Lockport Dolomite is a 27-ft-thick sequence of Middle Silurian shale, limestone, and dolomite in the lower part of the Clinton Group, which is underlain by a 113-ft-thick sequence of Lower Silurian sandstone and shale that is in turn underlain by 1,200-ft-thick Upper Ordovician shale. These rocks are exposed only in the Niagara River gorge and are shown in the stratigraphic column in figure 2. The strata are gently folded and dip slightly to the south-southwest at about 30 ft/mi (Fisher and Brett, 1981).

The Lockport Dolomite is a fine to coarse crystalline, thin to massive bedded dolomite, limestone, and shaly dolomite, with vugs containing gypsum (calcium sulfate) and calcite (calcium carbonate). Other minor minerals disseminated throughout the formation are sphalerite (zinc sulfide), pyrite (iron sulfide), and galena (lead sulfide) (Tesmer, 1981).

Hydraulic Conductivity

The Lockport can be divided into two zones on the basis of water-transmitting properties. The upper 10 to 25 ft of rock is a moderately permeable zone that contains relatively abundant bedding planes and vertical joints enlarged by dissolution of dolomite and abundant solution cavities left by dissolution of gypsum; the remainder of the formation contains low to moderately permeable bedding planes of which as many as seven may be major water-bearing zones that are surrounded by fine-grained crystalline dolomite

Ground Water

Occurrence

The Lockport Dolomite is the principal source of ground water in the Niagara Falls area. Although the effective primary porosity is negligible, significant ground-water movement occurs through secondary openings such as bedding joints (planes), vertical joints (fractures), and solution cavities, described below. The upper 25 ft of the Lockport has a greater potential for movement of ground water (and contaminants) than the deeper parts because it has more interconnected vertical and horizontal joints that have been widened by solutioning, which allows direct entry of contaminants from surface sources.

Bedding planes.--The bedding planes, which transmit most of the water in the Lockport (Johnston, 1964), are relatively continuous fracture planes parallel to the natural layering of the rock. These openings were caused by crustal movements and the expansion of the rock during removal of weight by erosion of overlying rock units and by retreat of the glaciers. Johnston (1964) identified seven water-bearing zones, which consist either of a single open-bedding plane or an interval of rock layers containing several open planes. The top 10 to 25 ft of rock may contain one or two significant bedding planes; these are probably connected by vertical joints, which are abundant in the upper part of the formation.

The lower part of the Lockport Dolomite contains fewer water-bearing bedding planes that are interconnected by vertical joints. These deeper water-bearing zones are underlain and overlain by essentially impermeable rock. Each water-bearing bedding plane can be considered a separate and distinct artesian aquifer (Johnston, 1964). The hydraulic head within each water-bearing zone is lower than that in the zone above it; this indicates a downward component of ground-water flow.

Vertical joints.--Vertical joints in the Lockport Dolomite are not significant water-bearing openings except (1) in the upper 10 to 25 ft of rock, (2) within about 200 ft of the Niagara River Gorge, and (3) in the vicinity of the buried conduits. Physical and chemical weathering have increased the number, continuity, and size of vertical fractures in the upper part of the Lockport. The major joints, oriented N 70°E to N 80°E, are generally straight, spaced 10 to 80 ft apart, and penetrate 10 to 25 ft (American Falls International Board, 1974). Intersecting the major joint set are less extensive high-angle joints that are confined to particular beds. Vertical joints become narrower, less numerous, and less connected with depth.

In addition to the major regional fractures, extensive tension-release fractures were formed near the gorge wall by the erosion and removal of the supporting rock mass in the gorge; openings up to 0.3 ft wide have been observed (American Falls International Board, 1974). Less developed tension-release joints and blasting-originated joints are common along the twin conduits. These fractures probably extend less than 100 ft from the trench walls.

Solution cavities.--Solution cavities are formed by the dissolution of gypsum pockets and stringers by percolating ground water. These cavities range in diameter from 1/16 in to 5 in; they are most abundant in the upper 10 to 15 ft of rock but occur also along water-bearing bedding zones throughout the Lockport. The solution cavities become less continuous with depth and therefore have little effect on the water-transmitting ability of the lower parts of the formation.

Recharge

Most of the recharge to the Lockport Dolomite results from infiltration of rainfall and snowmelt through the soil to the water table. Precipitation in the Niagara Falls area averages 30 in/yr and is fairly evenly distributed throughout the year (Dethier, 1966). Snow usually accumulates from mid-December to mid-March, during which time several thaws may reduce or entirely melt the snow pack. Seven 14-month hydrographs of U.S. Geological Survey wells installed in the upper part of the Lockport (fig. 3) and a 10-year hydrograph of a long-term observation well, Ni-69 (fig. 4) indicate that most recharge occurs from late fall through winter (November to April), when evapotranspiration is low. Generally, water levels fluctuate less than 6 ft annually.

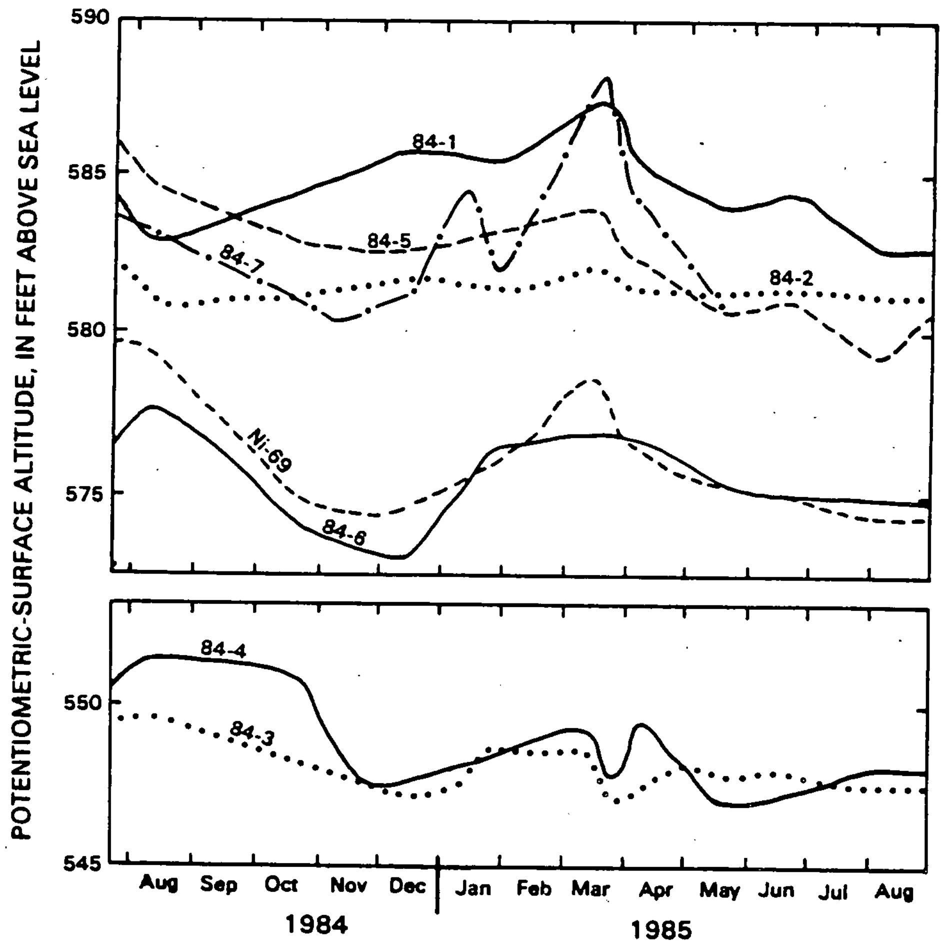

Figure 3.--Hydrographs of wells 84-1 through 84-7 in and near the City of Niagara Falls.

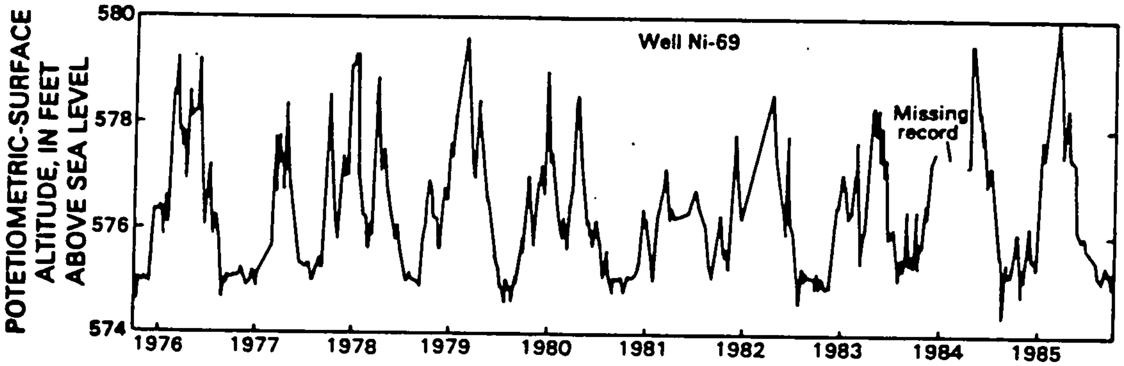

Figure 4.--Hydrograph of well Ni-69 in northern part of the city of Niagara Falls.

The rate and amount of recharge to a formation from precipitation depends on the permeability of the overlying lacustrine fine sand, silt, clay, and till, which in the Niagara Falls area is relatively low, with hydraulic conductivity ranging from 0.0014 to 0.27 ft/d. The average annual recharge from precipitation is estimated to be 5 to 6 in/yr (LaSala, 1967) but is probably greater in several small areas where the Lockport, whose hydraulic conductivity ranges from 5 to 15 ft/d, crops out at land surface.

Movement and Discharge

Before construction of Niagara Power project and Falls Street tunnel.--Little information is available on ground-water levels in the Niagara Falls area before 1960; therefore, interpretation of ground-water movement in the upper part of the Lockport Dolomite before that time is based largely on fundamental assumptions governing ground-water flow. These assumptions are that (1) ground-water divides coincide with topographic highs; thus the major divides in the region were at the Niagara Escarpment, north of the study area (fig. 1), and in the central part of the City of Niagara Falls (pl. 1A); (2) regional flow of ground water followed the south-southwestward slope of the land surface and the southwestward dip of major bedding planes, (3) local ground-water movement followed the configuration of the buried bedrock surface; and (4) ground water in the central and southern parts of the city discharged to the upper Niagara River, while water in the western part discharged to the lower Niagara River in the gorge. The general inferred directions of ground-water movement in the upper part of the Lockport Dolomite before any major construction or industrial pumping is shown in figure 5.

Effect of Falls Street tunnel.--In the early 1900's, the Falls Street tunnel was excavated through the upper part of the Lockport Dolomite from 56th Street to the Niagara gorge (fig. 6). This 3.5-mi-long unlined tunnel trends

REFERENCE 7

WATER ATLAS of the UNITED STATES

GERAGHTY • MILLER • VAN DER LEEDEN • TROISE

A WATER INFORMATION CENTER PUBLICATION — *44 Sintsink Drive East, Port Washington, N.Y. 11050*

HRS Reference 7

REFERENCE 12

HRS Reference 12

United States
Environmental Protection
Agency

Office of
Solid Waste and
Emergency Response

EPA

DIRECTIVE NUMBER: 9355.0-3

TITLE: Uncontrolled Hazardous Waste Site Ranking System -
A Users Manual

APPROVAL DATE: 07/16/82

EFFECTIVE DATE: 07/16/82

ORIGINATING OFFICE: OERR/OPM

☒ FINAL

☐ DRAFT

STATUS:

REFERENCE (other documents):

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1685

REFERENCE 13

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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

EFERENCE

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1982

HRS Reference 13

ERIE COUNTY

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

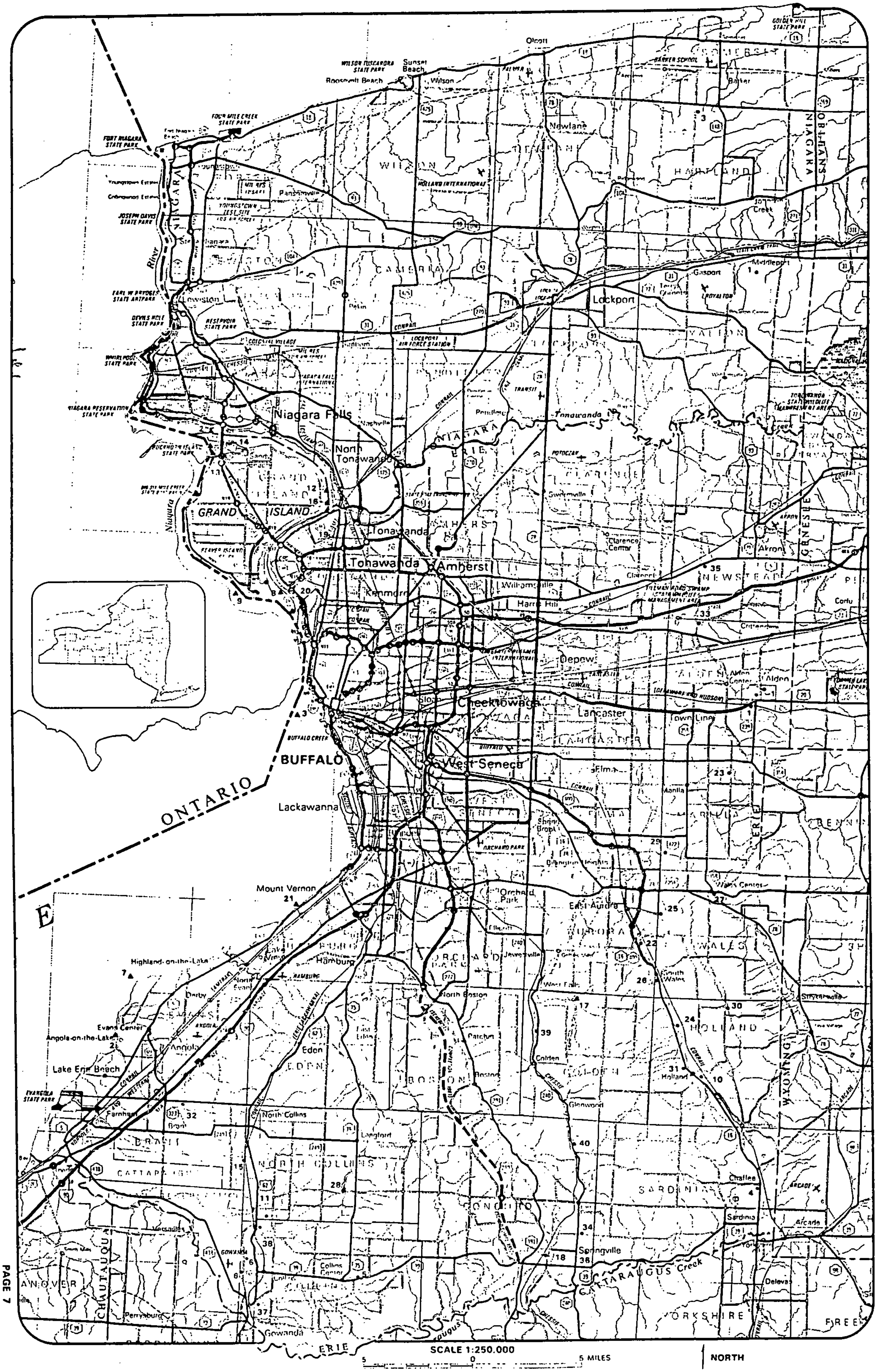
NIAGARA COUNTY

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

LOCATION OF COMMUNITY WATER SYSTEM SOURCES-1982

ERIE and NIAGARA COUNTIES

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



REFERENCE 16

REFERENCE REF QC 925

U.S. DEPARTMENT OF COMMERCE
Luther H. Hodges, Secretary

WEATHER BUREAU
F. W. Reichelderfer, Chief

TECHNICAL PAPER NO. 40

RAINFALL FREQUENCY ATLAS OF THE UNITED STATES

for Durations from 30 Minutes to 24 Hours and Return Periods from 1 to 100 Years

Prepared by
DAVID M. HERSHFIELD
Cooperative Studies Section, Hydrologic Services Division
for
Engineering Division, Soil Conservation Service
U.S. Department of Agriculture

For Reference
Not to be taken from this room

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HRS Reference 16

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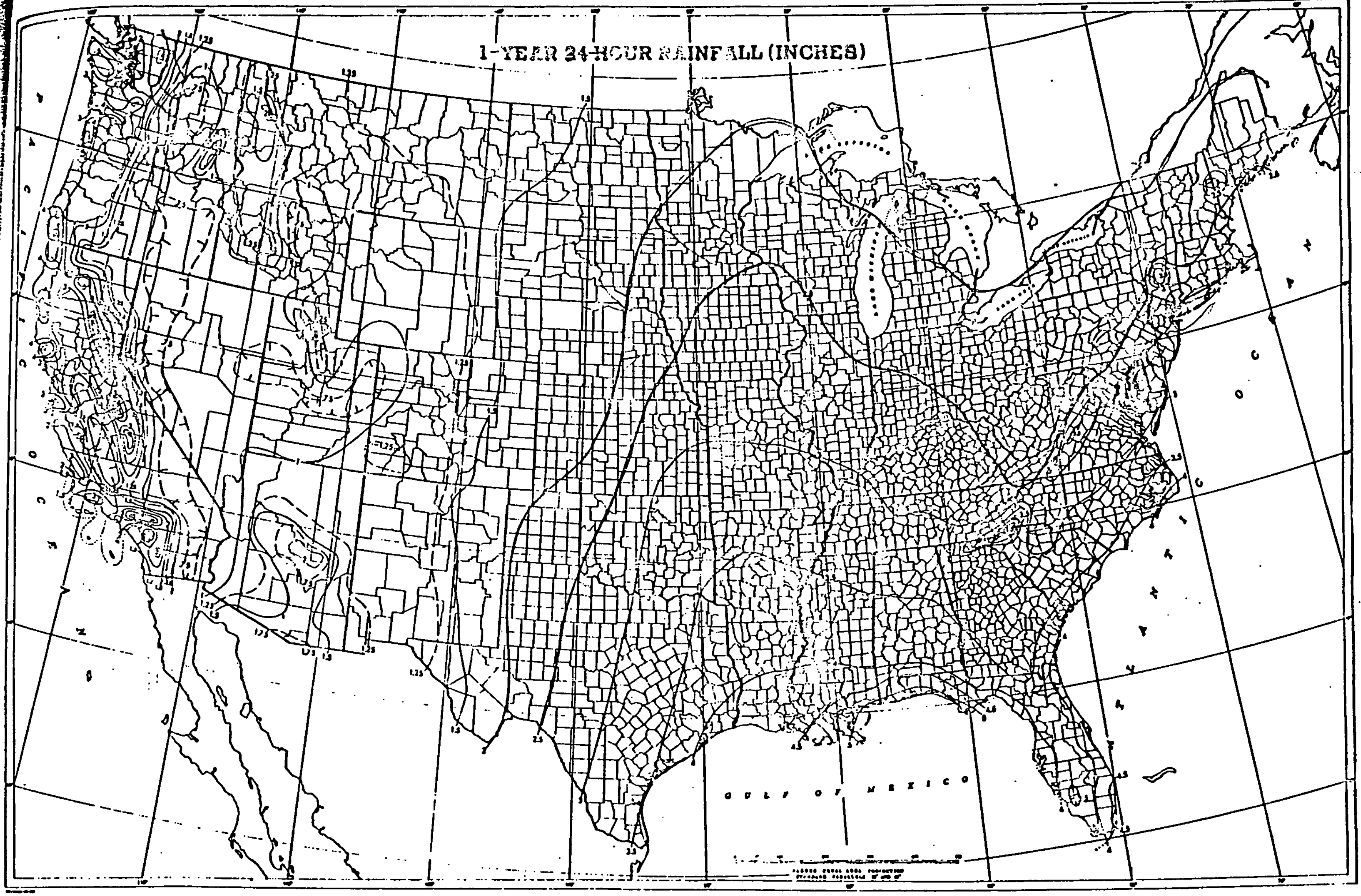
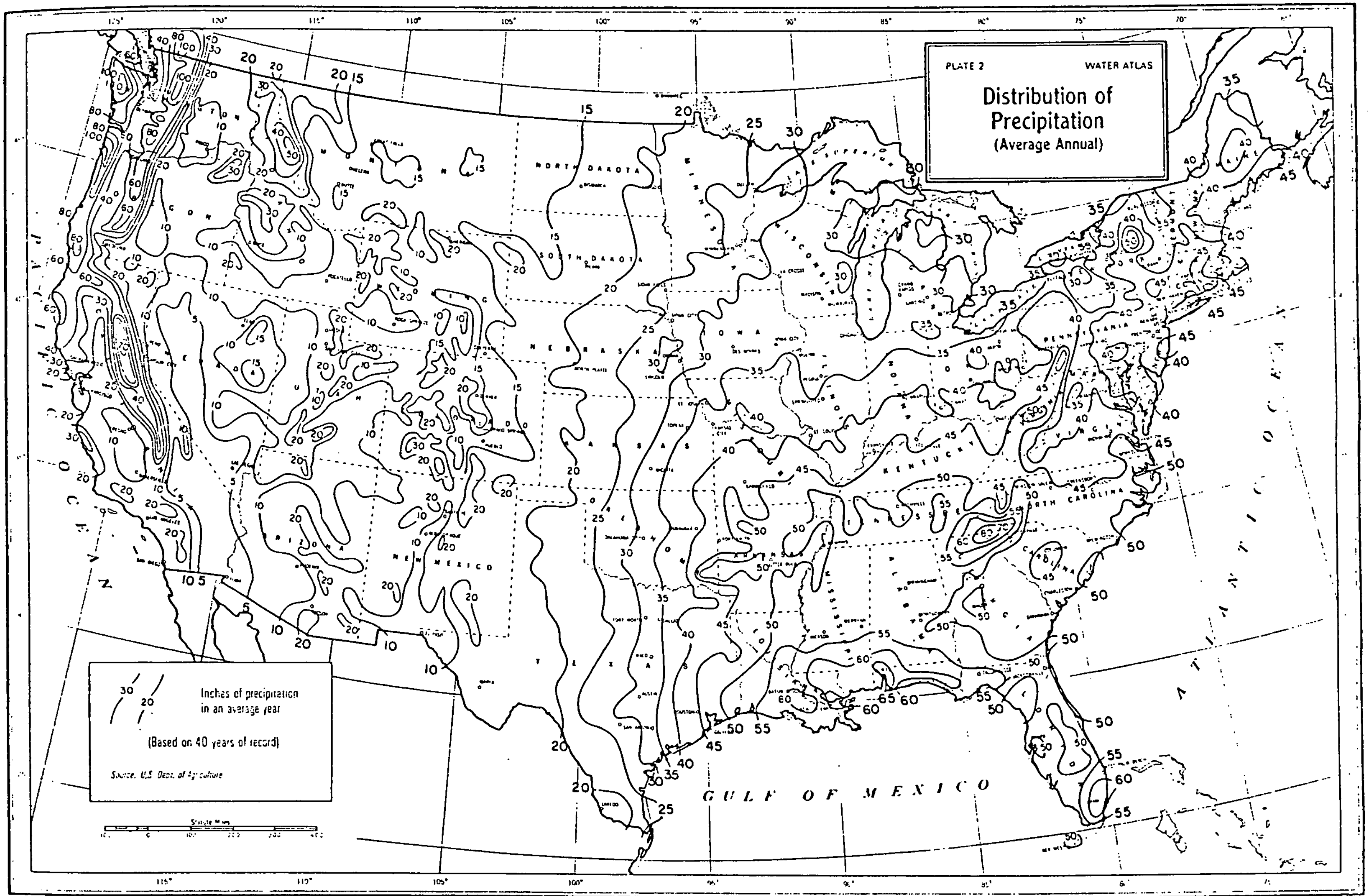
Chart 43





Base Map by U.S.C.&G.S.

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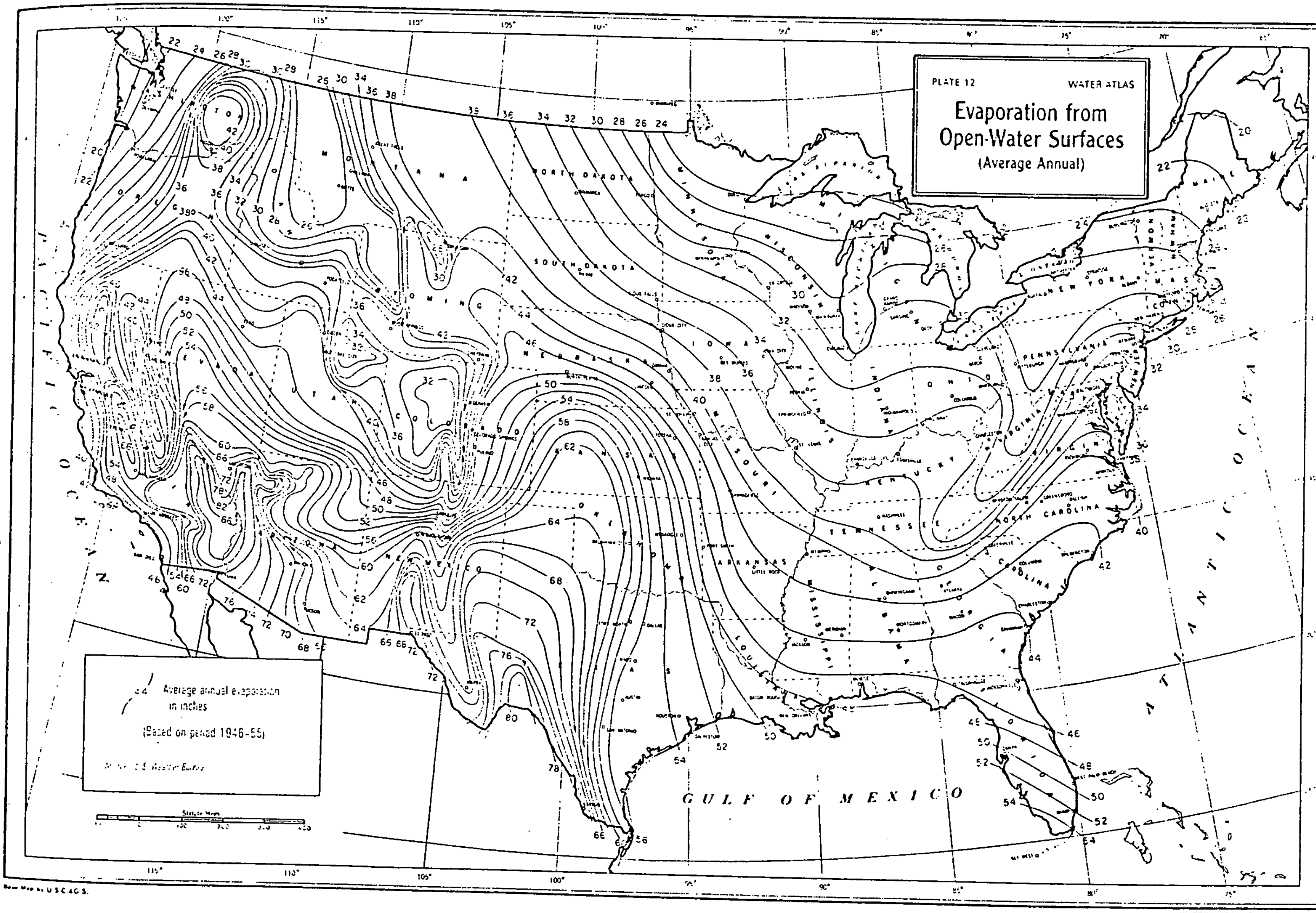

Base Map by U.S.C.&G.S.

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REFERENCE 17

Lawler, Matusky & Skelly Engineers
Environmental Science & Engineering Consultants
One Blue Hill Plaza
Pearl River, New York 10965

MEMORANDUM OF CONVERSATION

JOB Brezezinski JOB No. 576-017

DATE 3-14-90 TIME ~1 50 PM

THE WRITER SPOKE TO:

M Donald Johnston OF City of Niagara Water
Operations Dept. Dept.

CONCERNING: 716 236 0803
Future or Possible uses of
~~AND DECIDED~~: the intake line that is 2.9 miles down
Stream of Brezezinski's

He said:

- the pipe at 54th St was pipe originally used by the city until they built a new one
- the New Pipe is larger and is called the Primary Pipe and is not longer in use. It is 2.9 miles down stream of Brezezinski. ~~It~~ The Primary Pipe was and is still contaminated from the S Area Dump. They were thinking of relining the pipe, but now they decided not to. They are talking about building a new water plant

I asked "Probably won't be using Primary Pipe Again"?
he said "yes - looks that way".

CC: SIGNED: C. Fern
CC: SIGNED:

HRS Ref. 17

Lawler, Matusky & Skelly Engineers
Environmental Science & Engineering Consultants
One Blue Hill Plaza
Pearl River, New York 10965

MEMORANDUM OF CONVERSATION

JOB Brezezinski JOB No. 576-017

DATE 3-15-90 TIME ~10:30 AM

THE WRITER SPOKE TO:

M r Robert Pozzelli OF Niagara County Dept of Health 716 284 3124

CONCERNING: Industrial, Commercial or Agricultural water

~~AND DECIDED~~: intakes on Niagara River inter Williams Rd & 56th St

Oxy is at 53rd St
intakes between Williams Rd and 54th St — NO
Lockport intake — is upstream
Pretty sure there are no intakes — verify with
Ronald Gwuzdec — he would know for sure

3-15-90 ~11:30 — Ronald Gwuzdec
716 439 0158 to confirm
— he'll be back

PM Intakes on River between Williams Rd & 54th St
Commercial? — NO
Industrial? — NO
Agricultural? — NONE

Spell last name: Gwozdek

City of Lockport & Tonawanda intake upstream of Brezezinski

CC: SIGNED: C. Ferro
CC: SIGNED:

HRS Reference 17

Lawler, Matusky & Skelly Engineers
Environmental Science & Engineering Consultants
One Blue Hill Plaza
Pearl River, New York 10965

MEMORANDUM OF CONVERSATION

JOB Brzezinski Property JOB No. 576017

DATE 2-27-90 TIME ~845 AM

THE WRITER SPOKE TO:

Mr John Coleman OF Niagra County Water District

Supervisor of Water Maintenance Niagra County, NY

CONCERNING:

Phoned

~~AND DECIDED:~~

~~The~~

The distance between the County's water pipes that run along the eastside of Brzezinski property and the citys Auxilary intake at 53rd st is 3.5 miles

CC:

CC:

SIGNED:

SIGNED: [signature]

HRS Ref 17

Lawler, Matusky & Skelly Engineers
Environmental Science & Engineering Consultants
One Blue Hill Plaza
Pearl River, New York 10965

MEMORANDUM OF CONVERSATION

JOB Brzezinski JOB No. 576 017

DATE 2-23-90 TIME ~10:45 AM

THE WRITER SPOKE TO:

Mr John Kollman OF Niagara County Water
Distribution Forman District
716 283 9414
716 434 8835

CONCERNING:

~~AND DECIDED:~~ Pipes inside right of way that borders Brzezinski's

Pipe #1 42" RAW WATER LINE
intake water from Grand ~~Isle~~ ISLAND to
Treatment plant on Williams Rd

Pipe #2 16" potable line - drinking water
Carries treated water from Williams Rd TREATMENT
(Filtration) plant to Grand Island and supplies
Grand Island

Pipe #3 24-30" outflow into River
dumps Plant water into River (washwater)
Not really used - EMPTY LINE

~~Plant~~ Plant on Williams Rd is not a Sewage
treatment plant discharging into River

CC: SIGNED: C. Few

CC: SIGNED:

MRS Reference 17

Lawler, Matusky & Skelly Engineers

Environmental Science & Engineering Consultants

One Blue Hill Plaza

Pearl River, New York 10965

MEMORANDUM OF CONVERSATION

JOB Brzezinski JOB No. 576 017

DATE 2-23 ~~89~~ 90 TIME ~~[illegible]~~ ~ 9AM

THE WRITER SPOKE TO:

M r Paul Dickey OF Niagra County Dept. of Health

Niagra Falls NY

CONCERNING: water intakes 716 284 3124

AND DECIDED:

City of Niagra Falls : 2 water intakes

*1 - 2.9 miles down stream of Brzezinski property

intake is 5300 ft from shore

This is the City's Primary Intake & is currently shut down (due to contamination from another land fill)

*2 Auxiliary intake - now in use 48 inch

Lines up with 54th street ~54th

intake ~ 1400 ft from shore

draws from the ~~West~~ EAST Niagra River

Niagra County Water District - supplies all the town of Niagra - not city - huge district

The Water Plant is on Williams Rd ~ 1/4 mi down Rd from Brzezinski property

The H2O pipe follows River Rd, goes past Brzezinski site and into river & runs North & south across River and then heads E & west to the other channel. This pipe draws water from the west channel (the ~~[illegible]~~ Chipawa).

Its intake is on the other side of Grand Isle. On the NW corner

Pipe runs along Brzezinski property 1 1/2 mile - 1 3/4 miles

CC:

CC:

SIGNED: → pg 2

SIGNED: C. Fenn

HRS Reference 17

Lawler, Matusky & Skelly Engineers
Environmental Science & Engineering Consultants
One Blue Hill Plaza
Pearl River, New York 10965

MEMORANDUM OF CONVERSATION

JOB Brzezinski Cont. JOB No. 576017

DATE 2-23-90 TIME

page (2)

THE WRITER SPOKE TO:

M Paul Dofey OF

CONCERNING:

AND DECIDED:

Niagra County Water District is planning expansion. pipe will probably run parallel to current pipe. So expect construction near Brzezinski property. Along side ~~[illegible]~~ Brzezinski property. Intact will probably be sited next to current one. NW corner of Grand Isle

- He will send copy of Permit letter dated ~~[illegible]~~ September 21, 1970 to John Brzezinski re: Refuse Disposal Area.

10:30 AM

- says no inspection of site after 1982 but will look & send me one if there was
- says - believes 70 ft right of way pipe is intake not discharge - call H2O Dept 716 283 9414

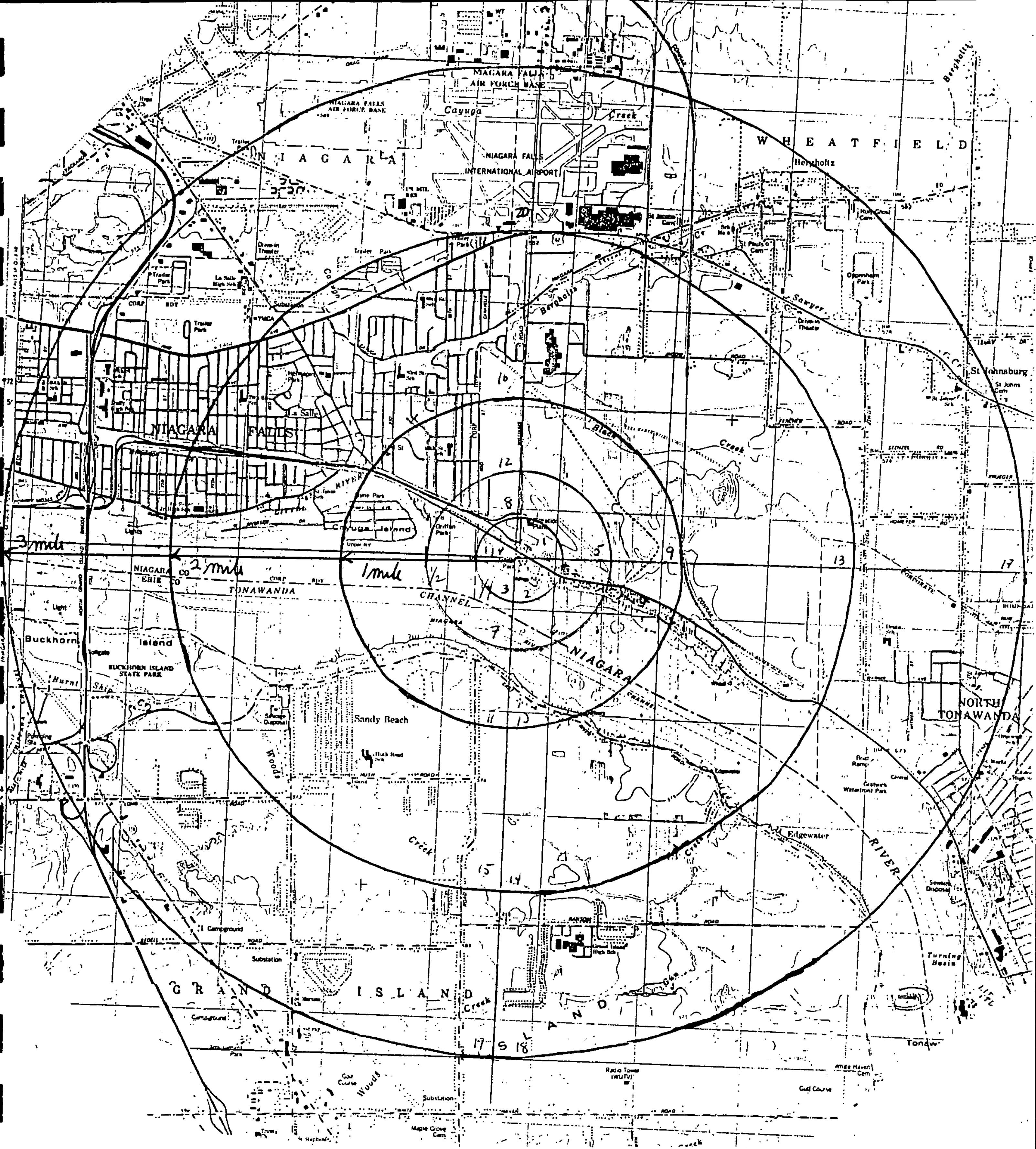
CC:

CC:

SIGNED:

SIGNED: [signature]

REFERENCE 20



MRS Reference 20

HRS REFERENCE 20

HOUSE COUNT

DISTANCE (mi)	QUADRANT NE	SE	SW	NW	HOUSE TOTAL	POPULATION ESTIMATE
0-1	12	185	84	a	281[a]	1068[a]
1-2	133	156	520	a	809[a]	3075[a]
2-3	509	500[b]	523	400[b]	1932[b]	7342[a]

[a]Love Canal lies approximately 3900 ft northwest of the site. Most of the houses near the canal have been abandoned. Population estimates for the northwest quadrant would be inaccurate because the quadrant is designated as an undifferentiated urbanized area.

[b]Quadrant includes undifferentiated urban areas and is not included in the estimate.

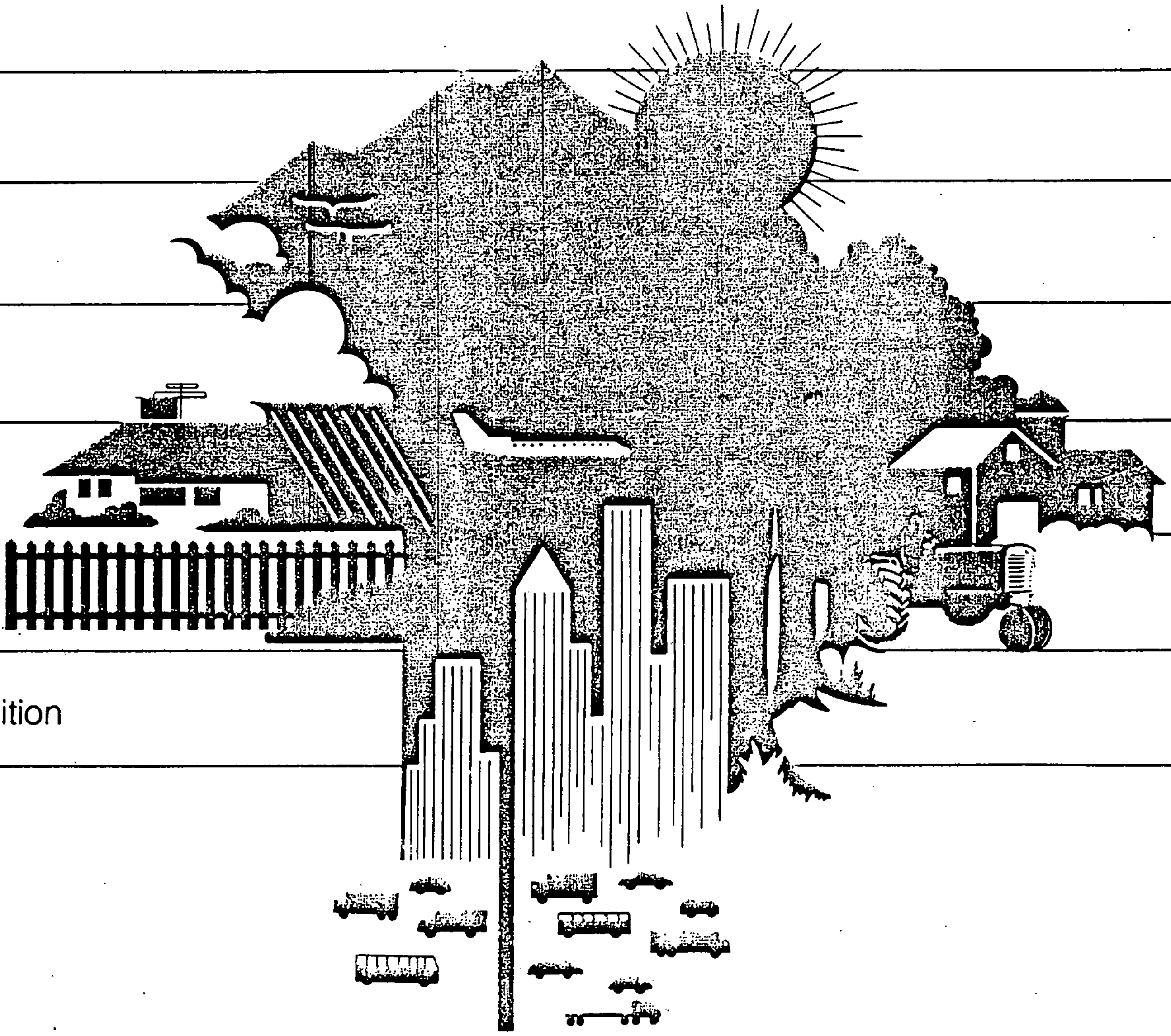
REFERENCE 21

MRS
Reference 21

A Statistical Abstract Supplement

County and City Data Book

1983

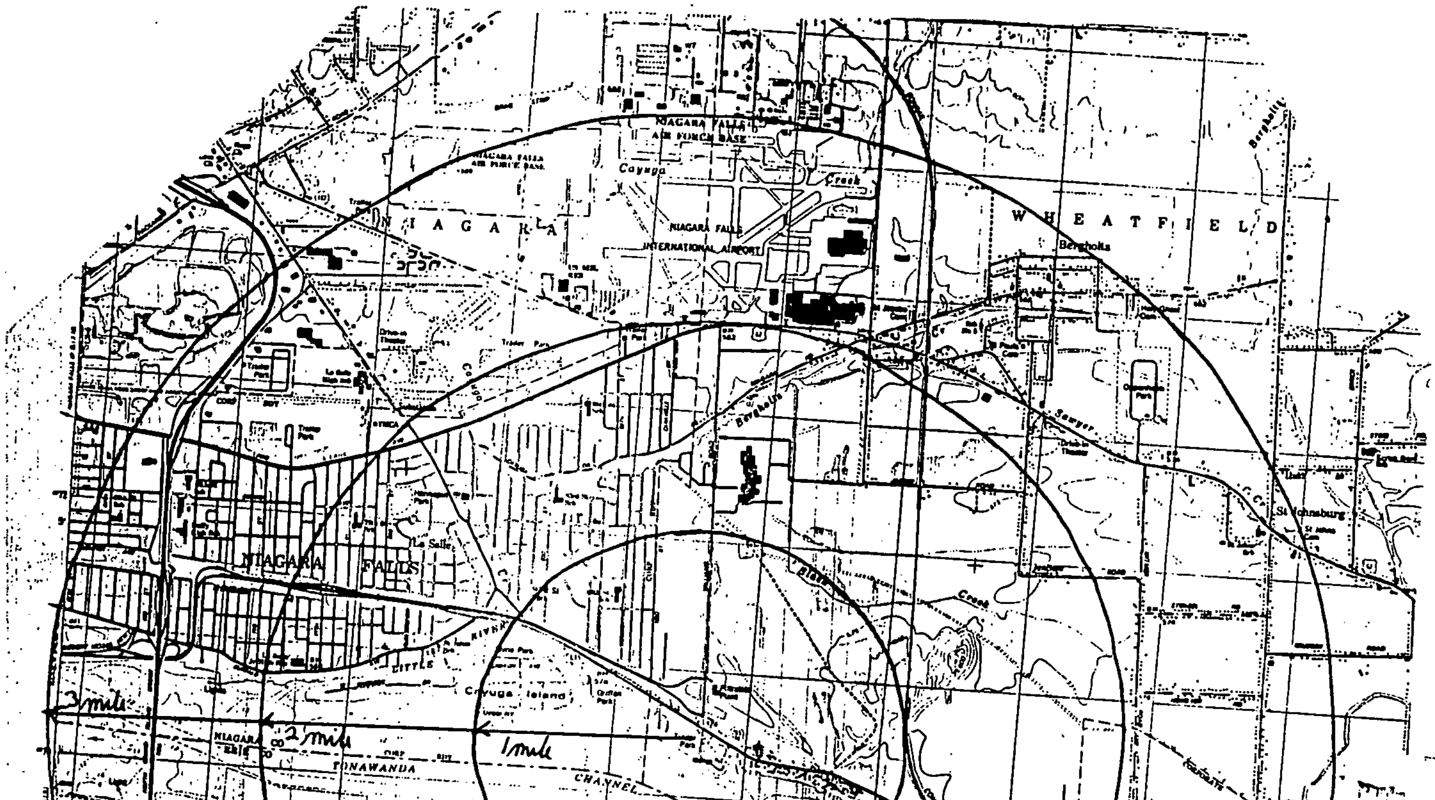


10th Edition

U.S. Department of Commerce BUREAU OF THE CENSUS

State and place[*] code	State and place (county name)	Land area,[1] 1980 (Sq. mi.)	Population, 1980 (Apr. 1): Total persons	Percent: Change, 1970-1980	Percent: Black	Percent: Spanish origin[2]	Percent: 65 yrs. and over	Percent: High school graduates[3]	Percent: Below poverty level[4]	Money income, 1979: Per capita (Dol.)	Money income, 1979: Median household (Dol.)	Total housing units	Occupied housing units, 1980 (Apr. 1): Total[6]	Owner-occupied: Percent	Owner-occupied: Median value[4] (Dol.)	Median gross rent (Dol.)
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1770	Jericho CDP (Nassau)	4.2	12 739	-9.1	.7	1.5	6.1	88.3	2.9	12 636	35 383	4 079	4 053	84.3	85 700	451
1775	Johnson City village (Broome)	4.5	17 126	-5.0	.5	.5	17.7	61.8	10.9	6 527	13 597	7 367	7 012	57.1	34 500	199
1780	Johnstown (Fulton)	3.4	9 360	-6.8	.7	.5	17.5	64.1	11.3	6 539	14 030	3 912	3 661	62.6	28 000	164
1800	Kenmore village (Erie)	1.4	18 474	-11.9	.4	.5	15.7	74.6	4.3	7 461	17 997	7 272	7 090	69.6	35 100	231
1815	Kings Park CDP (Suffolk)	6.2	16 131	190.4	.8	2.4	7.9	80.5	3.8	7 513	25 281	4 680	4 566	84.5	51 400	347
1820	Kings Point village (Nassau)	3.6	5 234	-6.8	2.7	1.2	7.2	90.7	3.0	26 045	72 391	1 362	1 317	94.7	200 100	501
1825	Kingston (Ulster)	7.4	24 481	-4.2	8.7	1.6	19.2	57.9	14.1	6 560	12 779	10 600	9 791	52.1	31 100	225
1830	Lackawanna (Erie)	5.7	22 701	-20.8	9.5	4.1	12.6	52.0	11.2	6 723	15 991	9 168	8 467	56.1	33 600	187
1840	Lake Carmel CDP (Putnam)	2.5	7 295	52.1	.1	1.6	12.2	71.2	4.6	6 689	20 464	2 712	2 285	83.5	48 100	363
1845	Lake Erie Beach CDP (Erie)	3.7	4 625	33.4	-	1.5	9.0	63.4	10.3	5 986	17 028	2 044	1 471	82.6	28 000	246
1857	Lake Grove village (Suffolk)	3.0	9 692	19.2	.3	2.3	7.8	76.8	5.3	6 818	21 272	3 092	2 962	74.9	45 100	353
1888	Lake Ronkonkoma CDP (Suffolk)	13.4	38 336	X	.2	3.4	7.6	71.6	7.0	6 569	21 017	11 951	11 487	75.7	40 300	350
1903	Lakeview CDP (Nassau)	.6	5 276	-3.6	88.6	1.6	7.6	76.9	4.6	7 834	25 712	1 471	1 444	87.4	46 700	404
1905	Lakewood village (Chautauqua)	2.0	3 941	2.0	.2	.2	13.6	75.9	5.0	8 328	17 357	1 605	1 506	74.9	38 100	243
1910	Lancaster village (Erie)	2.7	13 056	-2.3	.2	.6	13.6	66.6	5.7	6 998	18 699	4 804	4 651	69.6	39 100	228
1913	Lansing village (Tompkins)	4.7	3 039	X	2.6	4.1	5.0	92.7	12.5	9 058	14 495	1 501	1 430	17.6	64 600	296
1915	Larchmont village (Westchester)	1.0	6 308	-12.4	.3	2.9	12.5	88.7	4.3	15 764	32 520	2 218	2 190	66.0	126 800	315
1918	Latham CDP (Albany)	5.5	11 182	15.7	1.0	.5	11.1	80.1	9.8	7 620	21 951	3 601	3 484	74.9	44 900	287
1935	Lawrence village (Nassau)	4.3	6 175	-6.0	1.2	2.6	14.2	90.5	3.4	16 956	37 079	2 201	2 087	70.3	125 000	462
1945	Le Roy village (Genesee)	2.5	4 900	-4.3	3.1	-	15.0	68.7	8.9	7 184	17 580	1 868	1 777	61.1	37 900	230
1950	Levittown CDP (Nassau)	6.8	57 045	-12.8	Z	3.1	6.0	78.4	3.6	7 830	25 493	16 587	16 481	90.5	43 300	436
1955	Lewiston village (Niagara)	1.0	3 326	1.0	-	.5	16.1	81.3	2.3	9 228	21 989	1 292	1 255	63.0	45 400	291
1960	Liberty village (Sullivan)	2.7	4 293	-4.9	7.7	7.6	22.9	57.3	17.7	5 945	11 073	2 007	1 764	47.8	35 000	216
1975	Lincoln Park CDP (Ulster)	1.5	2 664	-6.6	4.4	.8	16.5	69.0	3.5	7 672	17 400	1 157	1 117	61.3	34 700	255
1980	Lindenhurst village (Suffolk)	3.8	26 919	-5.1	.2	3.0	8.6	66.3	4.3	6 941	20 972	8 665	8 409	78.4	41 200	320
1990	Little Falls (Herkimer)	3.9	6 156	-19.3	-	.1	23.3	57.2	11.0	5 781	11 509	2 716	2 563	54.2	19 500	154
2000	Liverpool village (Onondaga)	1.0	2 849	-13.8	.9	1.1	17.5	83.1	2.7	7 912	16 195	1 204	1 168	65.0	38 700	243
2015	Lloyd Harbor village (Suffolk)	9.2	3 405	1.0	.6	1.4	7.2	97.6	1.7	21 649	56 346	1 037	968	90.6	165 600	279
2020	Lockport (Niagara)	7.6	24 844	-2.2	4.5	1.7	14.9	63.3	9.0	7 386	16 476	10 094	9 635	58.3	33 900	212
2025	Locust Grove CDP (Nassau)	2.1	9 670	-16.8	.2	2.1	5.7	85.9	1.1	10 897	32 093	2 996	2 978	96.7	70 500	378
2035	Long Beach (Nassau)	2.1	34 073	2.9	9.6	7.6	21.5	69.0	13.3	8 285	16 308	15 203	13 227	40.1	42 500	332
2038	Loudonville CDP (Albany)	5.0	11 480	23.5	1.7	.6	8.9	84.7	1.6	10 351	28 114	3 663	3 605	91.0	53 500	341
2040	Lowville village (Lewis)	1.7	3 364	-8.4	-	.8	17.7	71.9	9.4	6 862	15 048	1 439	1 342	66.2	31 400	165
2045	Lynbrook village (Nassau)	2.5	20 424	-11.8	Z	3.0	14.7	72.9	3.8	9 191	22 764	7 524	7 330	66.3	56 500	344
2047	Lyncourt CDP (Onondaga)	1.2	5 129	X	1.5	-	15.1	62.8	4.1	7 305	18 379	1 968	1 933	73.8	33 000	253
2063	Lyons village (Wayne)	4.4	4 160	-7.5	7.5	2.5	14.1	59.7	12.4	6 221	13 769	1 673	1 559	63.4	26 200	213
2085	Mahopac CDP (Putnam)	5.4	7 681	45.9	.1	1.2	8.4	76.8	2.4	8 008	24 575	2 554	2 348	75.6	65 600	348
2090	Malone village (Franklin)	3.0	7 668	-4.7	.2	.1	18.5	60.6	19.1	6 109	11 499	3 020	2 867	55.1	29 200	165
2095	Malverne village (Nassau)	1.3	9 262	-7.7	.7	.9	14.9	80.7	2.8	10 070	27 840	3 073	3 052	93.8	61 100	322
2100	Mamaroneck village (Westchester)	3.0	17 616	-6.8	6.0	5.3	14.4	73.4	4.0	11 414	23 349	6 482	6 386	53.9	88 100	310
2110	Manhasset CDP (Nassau)	2.4	8 485	-.7	14.4	3.2	17.9	77.5	5.8	12 304	30 272	2 897	2 832	74.7	113 000	277
2120	Manlius village (Onondaga)	1.7	5 241	22.0	.3	.4	10.7	88.7	3.2	9 462	22 436	1 958	1 917	57.9	62 600	264
2130	Manorhaven village (Nassau)	.6	5 384	-1.9	.3	5.1	9.2	74.9	5.4	8 980	22 008	2 129	2 024	43.0	63 400	472
2165	Massapequa CDP (Nassau)	3.9	24 454	-8.8	-	1.5	8.1	81.0	3.5	9 556	27 100	7 342	7 266	92.6	60 200	376
2170	Massapequa Park village (Nassau)	2.3	19 779	-10.6	-	2.2	6.4	81.7	1.8	9 059	29 112	5 571	5 531	97.3	55 500	336
2175	Massena village (St. Lawrence)	1.7	12 851	-8.5	.3	1.0	13.1	65.7	12.9	7 054	16 926	4 935	4 733	67.2	33 100	200
2179	Mastic CDP (Suffolk)	5.1	10 413	X	2.0	7.6	6.1	62.3	10.9	4 970	16 788	3 356	2 961	82.5	31 500	344
2180	Mastic Beach CDP (Suffolk)	4.3	8 318	70.8	.5	3.9	13.2	59.8	18.2	5 143	13 551	3 932	2 739	80.4	28 900	363
2195	Mattituck CDP (Suffolk)	8.8	3 923	96.6	1.6	1.4	18.9	74.6	3.4	8 476	20 931	1 910	1 433	86.2	58 500	316
2197	Mattydale CDP (Onondaga)	1.4	7 511	-9.4	-	2.0	12.1	62.7	5.1	6 847	17 651	2 841	2 774	74.7	30 000	275
2215	Mechanicville (Saratoga)	.9	5 500	-12.0	.1	1.7	17.1	60.2	10.3	6 940	14 851	2 277	2 143	45.8	31 000	200
2218	Medford CDP (Suffolk)	10.7	20 418	X	4.7	7.4	4.3	76.0	6.3	6 290	22 387	5 917	5 606	88.3	37 300	450
2220	Medina village (Orleans)	3.9	6 392	-.4	6.1	2.5	15.7	60.9	10.6	6 732	14 443	2 561	2 404	64.5	29 700	225
2227	Melville CDP (Suffolk)	10.2	8 139	22.6	2.8	1.5	5.4	87.6	3.7	11 834	37 267	2 295	2 264	89.1	97 300	336
2230	Menands village (Albany)	3.1	4 012	16.3	3.8	.1	17.9	79.1	2.7	11 780	19 744	1 991	1 873	34.7	47 400	276
2240	Merrick CDP (Nassau)	4.2	24 478	-5.5	.1	1.2	7.9	86.1	3.4	10 749	30 834	7 462	7 407	94.0	63 900	350
2242	Merriewold Lake CDP (Orange)	3.9	3 661	42.8	-	2.0	5.1	82.1	5.4	6 892	26 147	995	961	74.7	56 400	346
2252	Middle Hope CDP (Orange)	4.5	3 229	38.8	1.0	1.8	8.4	76.7	5.6	8 205	21 164	1 185	1 120	62.3	47 200	281
2254	Middle Island CDP (Suffolk)	8.2	5 703	X	2.8	3.3	11.2	72.5	5.9	6 364	18 528	2 075	1 877	68.0	37 300	355
2260	Middletown (Orange)	4.7	21 454	-5.1	7.4	8.0	15.1	61.4	14.1	6 410	13 829	8 304	7 834	53.7	35 700	249
2278	Miller Place CDP (Suffolk)	6.5	7 877	X	.4	1.5	7.9	83.3	2.6	8 423	26 034	2 529	2 376	87.3	49 600	347
2295	Mineola village (Nassau)	1.8	20 757	-5.0	1.2	4.5	12.8	68.0	3.8	8 742	22 042	7 653	7 513	57.7	61 400	349
2305	Minoa village (Onondaga)	1.1	3 640	62.1	.1	.3	10.3	78.3	4.5	6 756	20 672	1 156	1 141	78.9	38 900	213
2310	Mohawk village (Herkimer)	.8	2 956	-10.5	-	-	14.7	72.7	10.1	5 921	14 231	1 160	1 130	68.8	26 900	163
2320	Monroe village (Orange)	3.5	5 996	35.1	-	2.4	8.6	78.2	3.4	7 622	23 081	1 965	1 861	77.5	58 800	306
2325	Monsey CDP (Rockland)	3.2	12 380	40.7	3.2	2.8	6.5	81.2	19.1	6 456	24 777	2 911	2 825	74.9	70 900	363
2330	Montauk CDP (Suffolk)	15.7	2 828	X	1.5	5.0	17.3	71.5	10.1	8 402	16 833	3 511	1 149	73.4	74 500	301
2340	Monticello village (Sullivan)	3.5	6 306	5.3	21.6	8.2	15.1	67.0	19.3	6 175	11 570	3 593	2 590	35.9	36 100	220
2375	Morrisville village (Madison)	1.0	2 707	17.9	3.7	1.9	4.0	76.0	19.4	3 382	15 469	392	348	61.5	33 900	168
2380	Mount Kisco village (Westchester)	2.7	8 025	-1.8	7.3	4.7	14.1	69.8	5.0	9 302	20 313	3 188	3 096	38.6	72 200	353
2385	Mount Morris village (Livingston)	2.0	3 039	-11.1	.6	1.7	15.3	54.9	10.5	6 249	13 683	1 275	1 203	64.8	32 700	215
2388	Mount Sinai CDP (Suffolk)	6.1	6 591	X	1.2	3.1	5.7	83.8	6.2	7 371	24 136	1 995	1 843	91.2	44 900	462
2390	Mount Vernon (Westchester)	4.2	66 713	-8.3	48.4	5.1	14.6	63.9	14.6	7 492	15 993	26 189	25 377	31.3	63 200	274
2400	Munsey Park village (Nassau)	.5	2 806	-5.8	.6	4.7	11.3	96.0	2.0	16 234	49 426	845	834	97.8	144 700	501
2405	Muttontown village (Nassau)	6.6	2 725	30.9	1.4	1.5	6.1	91.8	4.4	19 582	50 531	831	774	90.1	187 500	501
2406	Myers Corner CDP (Dutchess)	4.2	5 180	83.3	3.2	.5	3.7	89.4	3.7	8 368	30 924	1 455	1 430	95.6	63 200	406
2407	• Nanuet CDP (Rockland)	5.1	12 578	20.4	7.3	4.3	11.6	77.3	2.8	8 892	25 791	4 029	3 930	75.6	66 000	379
2435	Nesconset CDP (Suffolk)	3.8	10 706	6.5	.2	1.2	5.4	83.5	5.1	7 170	24 933	3 080	2 977	83.6	58 100	373
2442	Newark village (Wayne)	4.9	10 017	-14.0	1.3	4.0	15.4	56.3	7.5	6 466	15 070	3 652	3 536	58.9	34 600	232
2455	Newburgh (Orange)	4.0	23 438	-10.6	32.9	14.2	13.6	48.1	26.7	4 849	10 923	9 895	8 565	38.4	24 500	216
2458	New Cassel CDP (Nassau)	1.5	9 635	10.5	69.5	7.6	6.4	63.6	16.6	6 460	20 293	2 780	2 723	66.4	45 000	352
2460	New City CDP (Rockland)	16.2	35 859	31.1	1.6	1.9	5.1	86.1	2.5	9 927	32 267	10 079	9 924	90.0	79 700	358
2470	Newfane CDP (Niagara)	4.4	3 120	20.6	-	-	17.0	67.2	4.2	7 181	19 677	1 078	1 040	78.6	37 900	234
2480	New Hyde Park village (Nassau)	1.0	9 801	-3.1	-	1.3	14.2	68.3	2.4	8 814	23 073	3 275	3 213	83.5	62 600	308
2485	New Paltz village (Ulster)	1.5	4 938	-18.5	11.9	4.6	6.4	82.0	34.3	4 262	10 344	1 585	1 426	30.2	38 700	291
2495	New Rochelle (Westchester)	10.4	70 794	-6.1	17.8	5.1	15.4	74.6	8.0	10 343	20 906	26 225	25 789	44.3	89 300	292
2501	New Windsor CDP (Orange)	4.5	7 812	-11.3	2.4	3.5	14.4	67.2	6.0	7 488	18 256	3 050	2 946	66.0	39 100	279
2505	New York (Bronx, Kings, New York, Queens, Richmond)	301.5	7 071 639	-10.4	25.3	19.9	13.5	60.2	20.0	7 271	13 854	2 946 410	2 788 530	23.4	53 800	246
2510	New York Mills village (Oneida)	.9	3 549	-6.7	-	.3	18.6	60.1	9.3	6 918	14 423	1 632	1 567	51.8	33 000	220
2515	Niagara Falls (Niagara)	13.0	71 384	-16.6	12.7	1.0	14.8	59.8	13.7	6 443	14 805	29 504	27 272	57.5	31 100	194

See footnotes at end of table D.



NIAGARA FALLS AIR FORCE BASE
NIAGARA FALLS INTERNATIONAL AIRPORT
W H E A T F I E L D
Bergholtz
N I A G A R A
NIAGARA FALLS
La Salle
Cayuga Island
3 mile
2 mile
1 mile
TONAWANDA
CHANNEL
NIAGARA
Buckhorn Island
Sandy Beach
Edgewater
RIVER
St Johnsburg
NORTH TONAWANDA
G R A N D I S L A N D

EPA 2070-13

EPA 2070-13

5.6 EPA POTENTIAL HAZARDOUS WASTE SITE,
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	D0980507008

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site)	02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER
Brzezinski Property	2040 River Road

03 CITY	04 STATE	05 ZIP CODE	06 COUNTY	07 COUNTY CODE	08 CONG DIST
Wheatfield	NY	14034	Niagara		

09 COORDINATES: LATITUDE 43 04 13. N LONGITUDE 078 56 29. W

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
8 / 9 / 88 (MONTH DAY YEAR)	☐ ACTIVE ■ INACTIVE	1965 / 1971 (BEGINNING YEAR / 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 LMS Engineers (Name of firm) ☐ G. OTHER ________ (Specify)

05 CHIEF INSPECTOR	06 TITLE	07 ORGANIZATION	08 TELEPHONE NO.
Edward A. Maikish	Environmental Engineer	LMS Engineers	(914) 735-8300

09 OTHER INSPECTORS	10 TITLE	11 ORGANIZATION	12 TELEPHONE NO.
Kevin McGuinness	Project Geologist	LMS Engineers	(914) 735-8300
Anthony Magliocchino	Geologist	LMS Engineers	(914) 735-8300
			( )
			( )
			( )

13 SITE REPRESENTATIVES INTERVIEWED	14 TITLE	15 ADDRESS	16 TELEPHONE NO.
Stanley Brzezinski	Co-owner	2080 River Rd. Wheatfield	(716) 639-9948
		New York 14034	( )
			( )
			( )
			( )
			( )

17 ACCESS GAINED BY (Check one)	18 TIME OF INSPECTION	19 WEATHER CONDITIONS
■ PERMISSION ☐ WARRANT	0950	85° F, light breeze (0-5 knots-NNW) 40% humidity

IV. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency/Organization)	03 TELEPHONE NO.
Michael Komoroske	NYSDEC/DHWR/BHSC	(518) 457-0639

04 PERSON RESPONSIBLE FOR SITE INSPECTION FORM	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NO.	08 DATE
Edward A. Maikish		LMS Engineers	(914) 735-8300	5 / 12 / 89 (MONTH DAY YEAR)

EPA

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

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	D0980507008

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 561
- NO OF DRUMS (estimate)

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	unknown		
PSD	PESTICIDES	unknown		
OCC	OTHER ORGANIC CHEMICALS	unknown		
IOC	INORGANIC CHEMICALS			
ACD	ACIDS			
BAS	BASES			
MES	HEAVY METALS	unknown		

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
SOL	Trichloroethene	79-01-6	Landfill[a]	1,200,000	ug/kg
OCC	Phenanthrene	85-01-8	"	1,200	"
"	Fluoranthene	206-44-0	"	1,500	"
"	Pyrene	129-00-0	"	1,400	"
MES	Cadmium	7440-43-9	"	1.7	"
"	Cobalt	7440-48-4	"	15.3	"
"	Magnesium	7439-95-4	"	35,600	"
"	Zinc	7440-66-6	"	1,250	"
OCC	Chloroethane	75-00-3	"	55	ug/l
"	Benzene	71-43-2	"	2	"
"	Total Xylenes	1330-20-7	"	31	"
"	Arcolor 1254	11097-69-1	"	5.1	"
PES	4-4' DDT	50-29-3	"	0.12	"
MES	Iron	7439-89-6	"	53,000	"
"	Lead	7439-92-1	"	46	"
"	Chromium	7440-47-3	"	48	"

V. FEEDSTOCKS (See Appendix for CAS Numbers)

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS	n/a		FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

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

1988 NYSDEC Phase II investigation

[a] Industrial solid waste landfill

EPA

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

I. IDENTIFICATION
01 STATE: NY | 02 SITE NUMBER: D0980507008

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 ● A GROUNDWATER CONTAMINATION — 02 ● OBSERVED (DATE 11/88) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: unknown
04 NARRATIVE DESCRIPTION
Contaminated with organics, metals and one pesticide (4,4-DDT).

01 ● B SURFACE WATER CONTAMINATION — 02 ● OBSERVED (DATE 1986) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: unknown
04 NARRATIVE DESCRIPTION
Small on-site marsh has organics and metals.

01 ☐ C CONTAMINATION OF AIR — 02 ☐ OBSERVED (DATE ______) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: ______
04 NARRATIVE DESCRIPTION
None known.

01 ☐ D FIRE EXPLOSIVE CONDITIONS — 02 ☐ OBSERVED (DATE ______) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: ______
04 NARRATIVE DESCRIPTION
None known.

01 ● E. DIRECT CONTACT — 02 ● OBSERVED (DATE 86/88) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: ______
04 NARRATIVE DESCRIPTION
Surface soils and surface water have organics and metals.

01 ● F. CONTAMINATION OF SOIL — 02 ● OBSERVED (DATE 1986) ☐ POTENTIAL ☐ ALLEGED
03 AREA POTENTIALLY AFFECTED: 10 (Acres)
04 NARRATIVE DESCRIPTION
Site has soil with metals and organics. Soil consists of surface mounds. Sub-surface soil includes fill.

01 ● G DRINKING WATER CONTAMINATION — 02 ☐ OBSERVED (DATE ______) ● POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: ______
04 NARRATIVE DESCRIPTION
Groundwater not currently used:

01 ☐ H. WORKER EXPOSURE/INJURY — 02 ☐ OBSERVED (DATE ______) ☐ POTENTIAL ☐ ALLEGED
03 WORKERS POTENTIALLY AFFECTED: ______
04 NARRATIVE DESCRIPTION
None known.

01 ☐ I POPULATION EXPOSURE/INJURY — 02 ☐ OBSERVED (DATE ______) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: ______
04 NARRATIVE DESCRIPTION
None known.

EPA

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

I. IDENTIFICATION
01 STATE: NY | 02 SITE NUMBER: D0980507008

II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

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

None known.

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

None known.

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

None known.

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

Fill material is suspected not to have been placed in a liner.

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

None known.

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

None known.

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

A 1988 NYSDEC soil sample contained 0.1% trichloroethene at 14 to 16 ft. near a major road. Illegal "midnight" dumping may have occurred in that spot.

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

III. TOTAL POPULATION POTENTIALLY AFFECTED: unknown.

IV. COMMENTS

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

1988 NYSDEC Phase II site inspection and file review.

EPA

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

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	D0980507008

II. PERMIT INFORMATION

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

III. SITE DESCRIPTION

01 STORAGE DISPOSAL (Check all that apply)	02 AMOUNT	03 UNIT OF MEASURE
☐ A. SURFACE IMPOUNDMENT		
☐ B. PILES		
☐ C. DRUMS, ABOVE GROUND		
☐ D. TANK, ABOVE GROUND		
☐ E. TANK, BELOW GROUND		
☐ F. LANDFILL b	561	cu. yds.
☐ G. LANDFARM		
☐ H. OPEN DUMP		
☐ I. OTHER (Specify)		

04 TREATMENT (Check all that apply)

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

05 OTHER

☒ A. BUILDINGS ON SITE 2

06 AREA OF SITE

11 (Acres)

07 COMMENTS

The original 20 acre site extended into the Niagara River. Approximately 11 acres are land and contain the fill material. a Niagara County Health Department permit to operate a disposal area (unconfirmed). A U.S. Army Corp of Engineer permit to dike cove (unconfirmed).

IV. CONTAINMENT

01 CONTAINMENT OF WASTES (Check one)

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

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

No liner known.

V. ACCESSIBILITY

01 WASTE EASILY ACCESSIBLE ☐ YES ☐ NO

02 COMMENTS

Fill material is covered.

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

1988 NYSDEC Phase II file review.

b industrial solid waste landfill

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

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	D0980507008

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
COMMUNITY	A. ☐	B ☐	C ■
NON-COMMUNITY	D. ☐	E. ☐	F. ☐

03 DISTANCE TO SITE
A. 2.9 (mi)
B. ______ (mi)

III. GROUNDWATER

01 GROUNDWATER USE IN VICINITY (Check one)

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

02 POPULATION SERVED BY GROUND WATER unknown

03 DISTANCE TO NEAREST DRINKING WATER WELL 25NE (mi)

04 DEPTH TO GROUNDWATER 9-13 (ft)

05 DIRECTION OF GROUNDWATER FLOW SE

06 DEPTH TO AQUIFER OF CONCERN ______ (ft)

07 POTENTIAL YIELD OF AQUIFER ______ (gpd)

08 SOLE SOURCE AQUIFER ☐ YES ☐ NO

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

10 RECHARGE AREA
☐ YES
☐ NO
COMMENTS

11 DISCHARGE AREA
☐ YES
☐ NO
COMMENTS

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	☐	0.00 (mi)
	☐	(mi)
	☐	(mi)

V. DEMOGRAPHIC AND PROPERTY INFORMATION

01 TOTAL POPULATION WITHIN

ONE (1) MILE OF SITE	TWO (2) MILES OF SITE	THREE (3) MILES OF SITE
A. 2577+ NO. OF PERSONS	B. 3075+ NO. OF PERSONS	C. 7342+ NO. OF PERSONS

02 DISTANCE TO NEAREST POPULATION 0.038 (mi)

03 NUMBER OF BUILDINGS WITHIN TWO (2) MILES OF SITE 1090+

04 DISTANCE TO NEAREST OFF-SITE BUILDING 0.038 (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)

A trailer park is adjacent to the site. Niagara Falls lies to the northwest. Tonawanda is to the southeast. An Air Force base and fields lie to the north and east.

EPA

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

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	D0980507008

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
30 (ft)	(ft)	

06 NET PRECIPITATION	07 ONE YEAR 24 HOUR RAINFALL	08 SLOPE: SITE SLOPE	DIRECTION OF SITE SLOPE	TERRAIN AVERAGE SLOPE
13 (in)	2.25 (in)	1.43 %	SW	2.14 %

09 FLOOD POTENTIAL

SITE IS IN ______ YEAR FLOODPLAIN

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

11 DISTANCE TO WETLANDS (5 acre minimum)

ESTUARINE	OTHER
A ______ (mi)	B 0.4 N (mi)

12 DISTANCE TO CRITICAL HABITAT (of endangered species)

3 (mi)

ENDANGERED SPECIES: unknown

13 LAND USE IN VICINITY

DISTANCE TO

COMMERCIAL/INDUSTRIAL	RESIDENTIAL AREAS NATIONAL/STATE PARKS, FORESTS, OR WILDLIFE RESERVES	AGRICULTURAL LANDS: PRIME AG LAND	AGRICULTURAL LANDS: AG LAND
A -.037 (mi)	B 0.037 (mi)	C. ______ (mi)	D 0.5 (mi)

14 DESCRIPTION OF SITE IN RELATION TO SURROUNDING TOPOGRAPHY

The site lies next to the Niagara River. The surrounding area consists of sporatic low hills. The relatively flat area consists of fields and urbanized areas.

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

USGS Tonawanda West 1980 7.5 minute topographic map.
1988 NYSDEC Phase II investigation.

EPA

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

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	D0980507008

II. SAMPLES TAKEN

SAMPLE TYPE	01 NUMBER OF SAMPLES TAKEN	02 SAMPLES SENT TO	03 ESTIMATED DATE RESULTS AVAILABLE
GROUNDWATER	2	RECRA, Amhearst, NY	
SURFACE WATER	2	RECRA, Amhearst, NY	
WASTE			
AIR			
RUNOFF			
SPILL			
SOIL	7	RECRA/USGS	
VEGETATION			
OTHER			

III. FIELD MEASUREMENTS TAKEN

01 TYPE	02 COMMENTS
Air (HNU)	No readings above background.
Water	Wet chemistry when collecting groundwater sample.

IV. PHOTOGRAPHS AND MAPS

01 TYPE ■ GROUND ☐ AERIAL

02 IN CUSTODY OF LMS Engineers, Pearl River, NY
(Name of organization or individual)

03 MAPS ■ YES ☐ NO

04 LOCATION OF MAPS LMS/NYSDEC

V. OTHER FIELD DATA COLLECTED (Provide narrative description)

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

1988 NYSDEC Phase II investigation.

EPA

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

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	D0980507008

II. CURRENT OWNER(S) / **PARENT COMPANY** (if applicable)

01 NAME	02 D+B NUMBER	08 NAME	09 D+B NUMBER
Stanley Brzezinski			

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	10 STREET ADDRESS (P.O. Box, RFD #, etc.)	11 SIC CODE
2080 River Road			

05 CITY	06 STATE	07 ZIP CODE	12 CITY	13 STATE	14 ZIP CODE
Wheatfield	NY	14034			

01 NAME	02 D+B NUMBER	08 NAME	09 D+B NUMBER
Vivian Newman			

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	10 STREET ADDRESS (P.O. Box, RFD #, etc.)	11 SIC CODE
215 S.W. First Terrace			

05 CITY	06 STATE	07 ZIP CODE	12 CITY	13 STATE	14 ZIP CODE
Dania	FL	33004			

01 NAME	02 D+B NUMBER	08 NAME	09 D+B NUMBER
Anthony Brzezinski			

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	10 STREET ADDRESS (P.O. Box, RFD #, etc.)	11 SIC CODE
2089 River Road			

05 CITY	06 STATE	07 ZIP CODE	12 CITY	13 STATE	14 ZIP CODE
Wheatfield	NY	14034			

01 NAME	02 D+B NUMBER	08 NAME	09 D+B NUMBER
Sennie Smith			

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	10 STREET ADDRESS (P.O. Box, RFD #, etc.)	11 SIC CODE
2649 N. Federal Highway			

05 CITY	08 STATE	07 ZIP CODE	12 CITY	13 STATE	14 ZIP CODE
Boynton Beach	FL	33455			

III. PREVIOUS OWNER(S) (List most recent first) / **IV. REALTY OWNER(S)** (If applicable; list most recent first)

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
John & Anna Brzezinski[a]			

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
2056 River Road			

05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE
Wheatfield	NY	14034			

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

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

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

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

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

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

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

[a] Deceased

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - OPERATOR INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	D0980507008

II. CURRENT OPERATOR (Provide if different from owner)

01 NAME	02 D+B NUMBER
site inactive	

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

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
Stanley Brzezinski	

03 STREET ADDRESS (P O Box, RFD #, etc.)	04 SIC CODE
2080 River Road	

05 CITY	06 STATE	07 ZIP CODE
Wheatfield	NY	14034

08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD
1965-1972	as above

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 analysis, reports)

1988 NYSDEC Phase II investigation

EPA

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

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	D0980507008

II. ON-SITE GENERATOR

01 NAME	02 D+B NUMBER
None	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	**04 SIC CODE**

05 CITY	06 STATE	07 ZIP CODE

III. OFF-SITE GENERATOR(S)

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
Carborundum		Abrasives Division	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	**04 SIC CODE**	**03 STREET ADDRESS (P.O. Box, RFD #, etc.)**	**04 SIC CODE**
Walmore Road		Headquarters: P.O. Box 350	

05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE
Wheatfield	NY	14034	Niagara Falls	NY	

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
Bell Aerospace Textron			
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	**04 SIC CODE**	**03 STREET ADDRESS (P.O. Box, RFD #, etc.)**	**04 SIC CODE**
Niagara Falls Blvd.			

05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE
Wheatfield	NY	14034			

IV. TRANSPORTER(S)

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
Carborundum			
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	**04 SIC CODE**	**03 STREET ADDRESS (P.O. Box, RFD #, etc.)**	**04 SIC CODE**
Walmore Road			

05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE
Wheatfield	NY	14034			

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	**04 SIC CODE**	**03 STREET ADDRESS (P.O. Box, RFD #, etc.)**	**04 SIC CODE**

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

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

1988 NYSDEC Phase II file review.

EPA

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

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	D0980507008

II. PAST RESPONSE ACTIVITIES

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

None known.

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

None known.

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

None known.

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

None known.

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

None known.

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

None known.

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

None known.

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

None known.

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

None known.

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

None known.

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

None known.

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

None known.

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

None known.

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

None known.

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

None known.

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

None known.

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

None known.

EPA

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

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	D0980507008

II PAST RESPONSE ACTIVITIES (Continued)

01 ☐ R BARRIER WALLS CONSTRUCTED — 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION

None known.

01 ■ S CAPPING/COVERING — 02 DATE 1972 03 AGENCY ______
04 DESCRIPTION

The site was covered with soil sometime in 1972.

01 ☐ T BULK TANKAGE REPAIRED — 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION

None known.

01 ☐ U GROUT CURTAIN CONSTRUCTED — 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION

None known.

01 ☐ V BOTTOM SEALED — 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION

None known.

01 ☐ W GAS CONTROL — 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION

None known.

01 ☐ X FIRE CONTROL — 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION

None known.

01 ☐ Y LEACHATE TREATMENT — 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION

None known.

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

None known.

01 ☐ 1 ACCESS TO SITE RESTRICTED — 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION

None known.

01 ☐ 2 POPULATION RELOCATED — 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION

None known.

01 ☐ 3 OTHER REMEDIAL ACTIVITIES — 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION

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

1988 NYSDEC Phase II file review.

EPA

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

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	D0980507008

II. ENFORCEMENT INFORMATION

01 PAST REGULATORY/ENFORCEMENT ACTION ☐ YES ● NO

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

Open burning complaint. River Fouling complaint. No known legal action.

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

1988 NYSDEC Phase II file review.