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

PHASE II INVESTIGATIONS

GRATWICK-RIVERSIDE PARK
NORTH TONAWANDA, NIAGARA COUNTY, NEW YORK

SITE CODE: 932060

Prepared for:

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
50 WOLF ROAD, ALBANY, NEW YORK 12233
HENRY G. WILLIAMS, COMMISSIONER

Division of Solid and Hazardous Waste
NORMAN H. NOSENCHUCK, P.E. DIRECTOR

WEHRAN ENGINEERING, P.C.
Middletown & Grand Island, New York

WEHRAN ENGINEERING
Consulting Engineers

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DIVISION OF SOLID AND HAZARDOUS WASTE
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
50 WOLF ROAD
ALBANY, NEW YORK 12233-0001

Prepared by

WEHRAN ENGINEERING, P.C.
666 EAST MAIN STREET
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June 1985

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EXECUTIVE SUMMARY

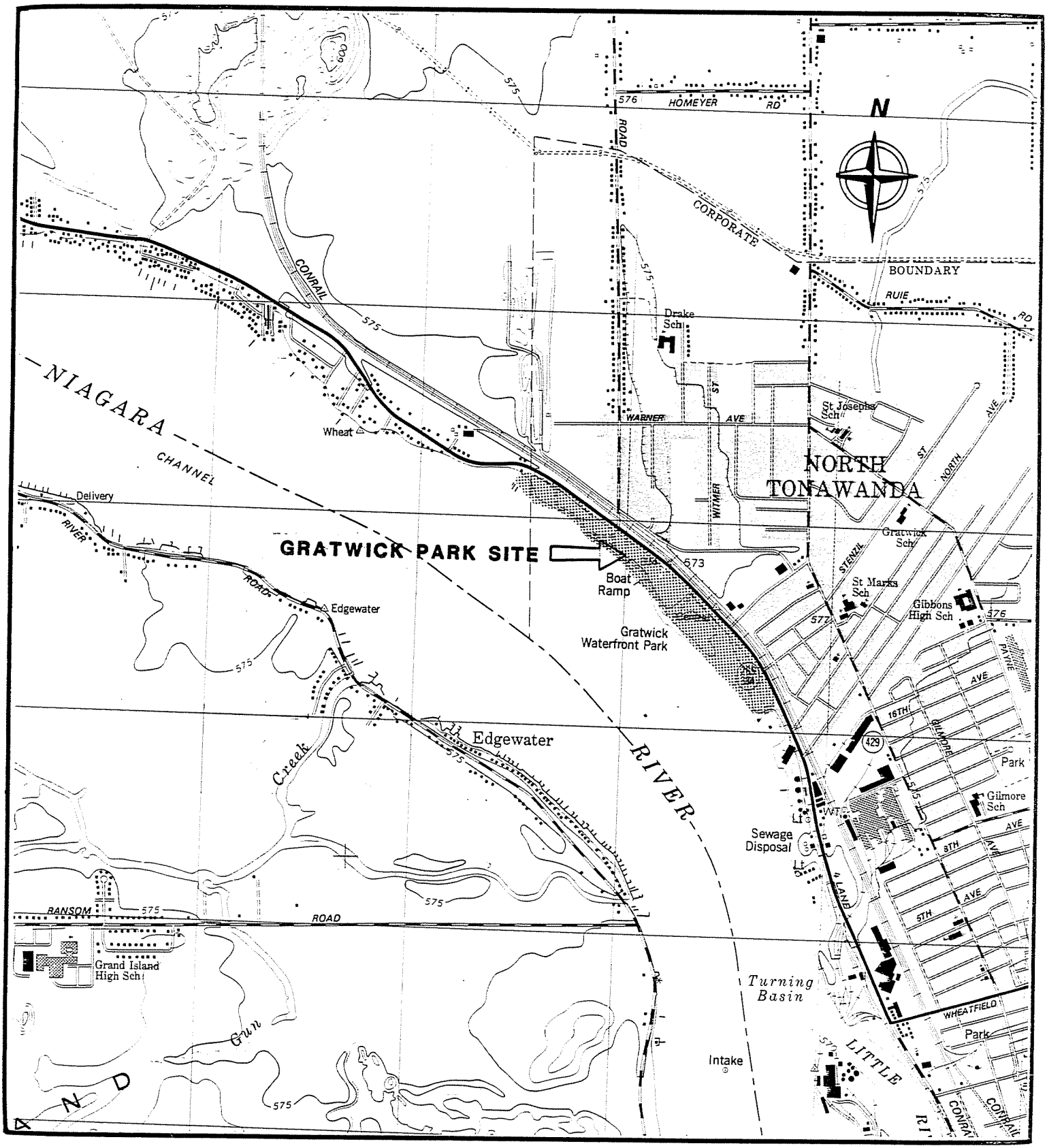
SECTION 1.0
EXECUTIVE SUMMARY

Gratwick-Riverside Park
River Road
North Tonawanda (C), Niagara County, New York

The Gratwick-Riverside Park site was first used for the disposal of industrial slag materials. The site was operated by the City of North Tonawanda for municipal refuse disposal purposes during the early 1960's until 1968. Hooker-Durez reportedly disposed of industrial wastes at the site between 1962 and 1968, including 25,000 tons of phenolic molding compounds, 25,000 tons of phenolic resins and 50 tons of grease and oil.

Analysis of groundwater samples, reported in the Phase I Investigation Report for the Gratwick-Riverside Park site, dated June 1983 and prepared pursuant to the New York State Department of Environmental Conservation (NYSDEC) Superfund Program, indicated the presence of both inorganic and organic compounds. The inorganic substances included lead (43-150 ppb), mercury (0.7 ppb), and low levels of cadmium, copper, nickel and chromium. Several types of organic compounds were noted, including total halogenated organics (THO) (less than 0.5 ug/l to 1,100 ug/l), total phenolic compounds (0.2 mg/l to 63.1 mg/l), biphenyls (11-53 ppb) and butylbenzyl phthalate (20 ppb). No surface water sampling data was reported in the Phase I Report, but the potential for surface water contamination of the adjacent Niagara River was suggested.

Qualitative and quantitative ambient air monitoring at the Gratwick Park site, performed as part of this Phase II Investigation, revealed the presence of low levels of 12 volatile organic compounds. These levels, however, did not exceed the ambient air concentrations for these substances noted at two other North Tonawanda NYSDEC Superfund sites, sampled during the same week as the Gratwick Park site. The levels detected were also significantly less than the New York State Air Guide - 1 Acceptable Ambient Air Levels (AALs) for the volatile organics in question.



SCALE: 1" 2000'
SOURCE: U.S.G.S. 7.5 MIN.
TONAWANDA WEST, N.Y.
QUADRANGLE

NEW YORK

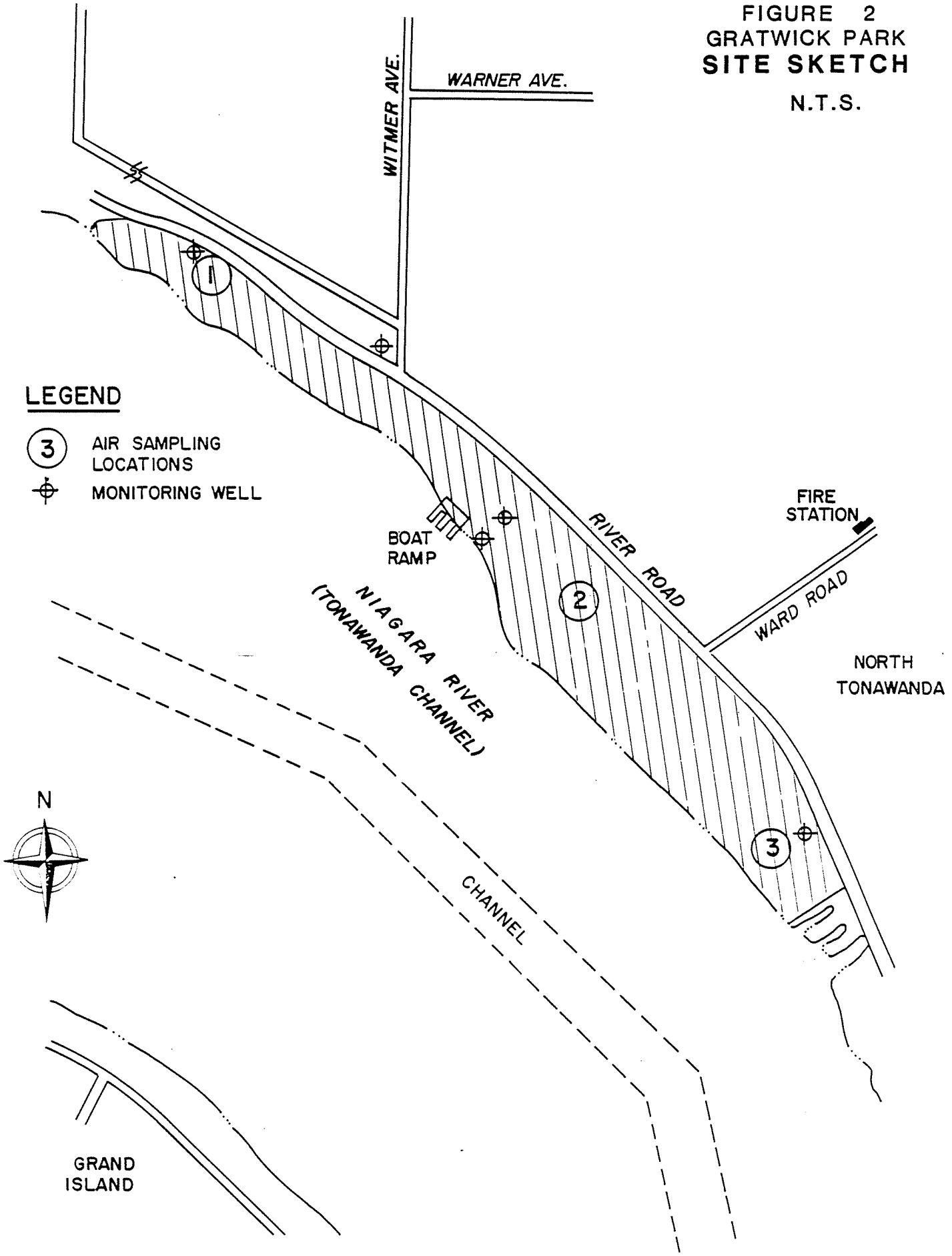
MAP LOCATION

FIGURE 1

SITE LOCATION MAP

LATITUDE: 43° 03' 29" N
LONGITUDE: 78° 54' 26.8" W

FIGURE 2
GRATWICK PARK
SITE SKETCH
N.T.S.



A comparison of this air monitoring data to previously reported Phase I groundwater data shows some relationship from a generic standpoint in terms of the chemical groups identified, but no specific compound correlations.

The results of this Phase II Investigation indicate that the ambient air concentrations of volatile organic compounds detected at the Gratwick Park site do not pose any significant environmental or public health concerns at this point in time. The air monitoring program conducted during the Phase II investigation was a characterization study only. The current results do not indicate that a potential air release problem exists. However, 1,2-dichloroethane was of similar magnitude to the AAL, and therefore further investigation would be necessary to confirm the results of this study.

The HRS score for this site, following the completion of this Phase II Investigation, is $S_M = 5.82$.

SECTION 2.0
PURPOSE

SECTION 2.0
PURPOSE

During the Phase I Investigation performed by Engineering Science Inc., it was determined that the Gratwick Park site may pose a potential threat to air quality in the immediate site vicinity. Work under the Phase II Investigation was carried out to characterize this site with regard to the potential for air contamination.

The goals of the Phase II Investigation were as follows:

- Determine the presence of volatile organic air contamination at the site and in the surrounding areas by two means:

  (1) Through eight (8) hours of continuous sampling at three (3) stationary locations; and
  (2) By conducting a pedestrian survey using an HNU PI-101 Photoionization Detector at ground level.

- Evaluate the data obtained from these field evaluations to determine if detected levels of contamination pose any environmental or public health concerns.

3.0

SECTION 3.0
SCOPE OF WORK

SECTION 3.0
SCOPE OF WORK

3.1 WORK PLAN SUMMARY

The goals of the Phase II Investigation for the Gratwick Park site were accomplished using the following work plan:

Task 1 - Collection of Existing Information

Pertinent information regarding contamination at the Gratwick Park site was obtained from a review of file data, and the NYSDEC Phase I Report prepared by Engineering Science. Existing file data was reviewed in light of air sampling requirements.

Task 2 - Qualitative and Quantitative Air Monitoring

Quantitative air sampling was conducted on each of two separate days at three locations (upwind, downwind, and on site) for eight hours. In conjunction with the quantitative sampling, a thorough pedestrian survey of the site was conducted using an HNU Model PI-101 Photoionization Detector.

Task 3 - Report Preparation

This report was prepared to provide the following information:

- Present the Phase II Investigation data developed under Tasks 1 and 2 described above.
- Develop a final HRS score and site assessment for the Gratwick Park site.

3.2 AIR SAMPLING PROCEDURES

Selection of Sampling Site Locations

As delineated in the Scope of Work, three sampling sites were selected based on wind direction and site configuration. Upon arrival at the site, a "weather station" was erected at a central location on site where initial

measurements of wind speed and direction, temperature, and relative humidity were made. Sampling locations were then selected based on prevalent wind direction, with Station 1 at the upwind border of the site, Station 2 located centrally in conjunction with the weather station, and Station 3 at a location near the downwind border of the park (see Section 1.0, Figure 2). On both sampling dates, stations were located on a northeast-southwest axis. To prevent vandalism or tampering with sample collection equipment, samplers were secured inside of steel-screened, locked, sampling boxes. The samplers within each box were located at a height of approximately 40 centimeters above the ground.

Sampling Equipment and Procedures

Gilian Hi-Flow Samplers, Model No. MFS 113 UT, were utilized to collect air samples at each location. Flow meter calibration and high flow performance checks were done prior to use. These checks were done by the use of the Gilian Calibrator, Model IHCP-HL-300, which is designed for both high and low flow applications. The pumps were calibrated to within +/-5% change on the flowmeter. Prior to samplings, each Gilian pump was calibrated to a one liter/minute flow rate. The rotometers on each pump were only used for spot check purposes and to determine whether or not there were any gross changes in pump performance. The rotometers were not used for calibration. This flow rate was field checked immediately prior to placing each pump and verified once again upon completion of the required eight hours of continuous sampling.

Sampling was conducted on two consecutive days, using charcoal sorbent on one occasion and tenax on the other, to cover the range of organics which might occur and to help assure the quality of data obtained. The sorbent air sample tubes employed were obtained from SKC, Inc., Eighty-Four, Pennsylvania, and met the following specificiations:

Sorbent	Size (mm) OD x Length	Sections	Sorbent Mg	Seal Type
Tenax	6 x 70	2	15/30	Glass
Charcoal (Coconut Base)	6 x 70	2	50/100	Glass

Field handling of sorbent tubes was limited to breaking of the tube seals, immediately prior to placement into the sampler cassette, and subsequent to removal and immediate capping of the tube upon the completion of sampling.

An operational check of each sampling location was conducted approximately once an hour. This check included:

- Flow rate spot check
- Wind direction and speed
- Relative humidity
- Temperature
- Recording of observations

Following collection and capping of the tubes, samples were sealed in shipment containers and iced for express delivery to ERCO/Energy Resources Co., Inc., Cambridge, Massachusetts, an NYSDEC-approved analytical laboratory for GC/MS analysis by EPA Method 624.

Field Quality Assurance

In accordance with the Quality Assurance Plan for Phase II Superfund Investigations submitted to NYSDEC prior to the initiation of sampling, control blanks were shipped to the laboratory. Field blanks were carried throughout the field investigation and transported with the adsorbed samples. These QA/QC results were reviewed along with other analytical data received from ERCO to ensure the accuracy of the data collected during this air sampling program.

HNU Pedestrian Survey

A pedestrian survey was conducted over a period of two days using an HNU Model PI-101 Photoionizer Detector. For the purposes of the survey, the park was divided into five areas:

- Undeveloped north end
- Undeveloped south end
- North central (picnic and boat launch area)
- South central (open field areas)
- River bank

A survey was conducted in each of the above areas in the following manner:

- The HNU Photoionizer was calibrated to 46 ppm benzene at 9.8 span, per standard HNU Systems procedure, prior to field measurements. Any atmospheric concentrations of organic gases were noted, expressed in terms of ppm as benzene.
- A background HNU reading was taken at an upwind location prior to beginning each survey.
- A series of continuous transects on the site were surveyed with measurements taken approximately 6 to 12 inches above ground level at 30 to 40 foot intervals. Battery charge was checked after every one-half hour of instrument use. The measurement interval was adapted, based on field observations, to emphasize areas likely of producing a measureable emission, such as: burrow holes, depressions, puddles of standing water, exposed waste and soil cuts.

4.0

SECTION 4.0
SITE ASSESSMENT

SECTION 4.0
SITE ASSESSMENT

4.1 SITE TOPOGRAPHY

The Gratwick Park site occupies approximately one mile of the Niagara River bank in North Tonawanda, New York. Although the site is generally flat, there are several indications of past disposal activities, including differential settling and potholes. Elevations range between 570 to 580 above MSL, with the uppermost 10 to 18 feet comprised of artificial fill over natural sand and clay.

4.2 SITE HYDROGEOLOGY

Native soils of the Gratwick Park site consist of one to two feet of loose sand over silty clay. Bedrock is reportedly camillus shale, typical of the limestones, dolostones and shales found in the Erie-Ontario Lowlands Physiographic Province.

Water table data from Niagara County Health Department files indicate a range of water table elevations from 564.8 to 569.5 in 1979. Records also indicate a shallow aquifer or water-bearing zone at depths of approximately six feet. Groundwater flow patterns are described generally southwest in direction with overall flow in the direction of the Niagara River. A deep bedrock aquifer exists in the shale bedrock. However, groundwater flow direction in this unit is undetermined.

4.3 SITE CONTAMINATION ASSESSMENT

4.3.1 Review of Previous Waste Disposal and Site Assessment Activities

File records, as presented in the Phase I Investigation Report, indicate that the Gratwick Park site was apparently first used for the disposal of "slag-like" materials. The site was used for municipal refuse disposal by the City of North Tonawanda, Department of Public Works, from the early 1960's until 1968. Hooker-Durez reportedly used the site from 1962 to 1968 for the disposal of industrial wastes, including 25,000 tons of phenolic molding compounds, 25,000 tons of phenolic resins, and 50 tons of grease and oil.

Sampling of groundwater wells on site indicate the presence of both inorganic and organic compounds. The inorganic compounds detected included lead (43-150 ppb), mercury (0.7 ppb), and low levels of cadmium, copper, nickel and chromium. The types of organic compounds found included alkyl-substituted aromatic hydrocarbons, polynuclear aromatic hydrocarbons, aliphatic hydrocarbons, oxygenated aliphatic hydrocarbons, nitrogenous hydrocarbons, alkyl-substituted benzenes, and oxygenated biphenyls. Specific compounds reported included total phenolic compounds (0.2 mg/l to 63.1 mg/l), total halogenated organics (THO) (less than 0.05 ug/l to 1,100 ug/l), biphenyls (11-53 ppb), butylbenzyl phthalate (20 ppb), and low levels of hexadecanoic acid, pentarosane, octadecanoic acid, pentatriacontane and eicosane, as indicated by a GC/MS scan/library match.

Surface water sampling data in the vicinity of the site are not available. However, the Phase I Report indicates that the possibility exists for surface water contamination due to the proximity of the Gratwick Park site to the Niagara River and past slag disposal practices, which included direct dumping into the river.

Evidence of airborne contamination is limited to reports of blowing moulding compound powder and refuse prior to site capping and seeding. There appears to be only one previous record of air monitoring performed at the site, an HNU measurement (prior to this Phase II Investigation) of 1.6 ppm. No odor problems have been noted at the park.

4.3.2 Phase II Investigation Air Sampling Program Results

Weather Conditions

As part of the Phase II Investigation, records of precipitation, wind speed and direction, temperature, and relative humidity were noted at approximately one hour intervals throughout all air sampling activities conducted at the Gratwick Park site. Field data sheets completed by the Wehran Engineering air sampling team during the two day air sampling program for this site are presented in Appendix A.

On June 29, 1984, the date when the tenax sorbent tubes were utilized, the wind direction was primarily out of the north and northeast at speeds of up to 5 mph. Temperatures ranged from 58° F to 76° F. A light drizzle with hazy conditions were noted during the morning hours with sunny conditions prevalent in the afternoon. During this period, relative humidity ranged between 69 and 89 percent.

For the charcoal tube sampling date, June 30, 1984, weather conditions were generally fair with sunny skies prevailing. Temperatures ranged from 59° F to 76° F with relative humidity ranging from 62 to 89 percent. The wind was primarily out of the north and northeast at speeds between 3 to 5 mph with occasional gusts to 11 mph.

HNU Pedestrian Surveys

In accordance with the Scope of Work developed for the Gratwick Park site, several HNU Photoionizer Surveys were conducted in conjunction with the quantitative sample collection on June 29 and 30, 1984. Results of these surveys indicated that background levels of organic compounds in ambient air were present at low levels ranging from approximately 0.0 to 0.5 ppm at both the ground and at approximately eight feet above the ground. At only a few locations readings above background concentration were observed. These measurements (1-2 ppm) were found several times in rodent holes in the central portion of the site where differential settling of the site cap had occurred.

Quantitative Air Sampling

The flow rate of each Gilian pump was field checked immediately prior to placement and verified once again upon completion of the required eight hours of continuous sampling. Estimates of accuracy are calculated from the results of independent flow rate audits. The results of the accuracy calculation are presented in Table 1. The results indicate that the performances of all the pumps were accurate. The following is a list of equations used to calculate accuracy:

TABLE 1

NYSDEC
DATA ASSESSMENT FOR CALCULATED ACCURACY

Pump Number	Date	Y_i Known Flow Rate (lpm)	X_i Post Flow Rate (lpm)	d_i Percent Difference	D Average Percent Difference	S_a Standard Deviation	95% Probability Limits Upper	95% Probability Limits Lower
1	6/25/84	1.0	1.0	0	0	2.87	5.63	-5.63
1	6/27/84	1.0	1.0	0	--	--	--	--
1	6/29/84	1.0	1.0	0	--	--	--	--
2	6/25/84	1.0	1.0	0	3.3	2.87	8.93	-2.33
2	6/27/84	1.0	1.0	0	--	--	--	--
2	6/29/84	1.0	1.1	10	--	--	--	--
3	6/25/84	1.0	1.0	0	0.5	2.87	6.13	-5.13
3	6/26/84	1.0	1.0	0	--	--	--	--
3	6/27/84	1.0	1.0	0	--	--	--	--
3	6/28/84	1.0	1.0	0	--	--	--	--
3	6/29/84	1.0	1.03	3	--	--	--	--
3	6/30/84	1.0	1.0	0	--	--	--	--
4	6/26/84	1.0	1.0	0	1.67	2.87	7.30	-3.96
4	6/28/84	1.0	1.0	0	--	--	--	--
4	6/30/84	1.0	1.05	5	--	--	--	--
5	6/26/84	1.0	1.0	0	3.33	2.87	8.96	-2.30
5	6/28/84	1.0	1.05	5	--	--	--	--
5	6/30/84	1.0	1.05	5	--	--	--	--

a. Single Analyzer Accuracy -- the percentage difference (d_i) for each flow rate audit was calculated as follows:

$$d_i = \frac{Y_i - X_i}{X_i} \times 100$$

where Y_i = flow rate from the i-th audit check
X_i = known flow rate used for the i-th audit check

b. Accuracy for Reporting Organization -- for each flow rate audit, the average (D) of the individual percentage differences (d_i) for all k Gilian pumps used was calculated as follows:

$$D = \frac{1}{k} \sum_{i=1}^{k} d_i$$

For each flow rate audit, the standard deviation (S_a) of all the individual percentage differences for all Gilian pumps audited during the sampling period was calculated as follows:

$$S_a = \sqrt{\frac{1}{k-1} \left[\sum_{i=1}^{k} d_i^2 - \frac{1}{k} \left(\sum_{i=1}^{k} d_i \right)^2 \right]}$$

For each Gilian pump, the 95 Percent Probability Limits for the accuracy of a reporting organization was calculated as follows:

Upper 95 Percent Probability Limit = $D + 1.96\ S_a$
Lower 95 Percent Probability Limit = $D - 1.96\ S_a$

Appendix A contains a copy of the laboratory report received from ERCO/Energy Resources Co., Inc. as a result of the air sampling program conducted at the Gratwick Park site during this Phase II Investigation. All air samples, including the control and field blanks, were analyzed for volatile organics by EPA Method 624. Measurable concentrations were reported for several compounds in terms of nanograms per liter (ng/l), as discussed below,

for samples collected on the tenax sorbent media. No detectable levels of volatile organics were measured for samples collected on the charcoal sorbent media or the tenax control blanks.

Table 2 summarizes the results reported for air samples collected on tenax sorbent at the three sampling stations selected for the Gratwick Park site. Results are presented by air sampling station location, as well as by Wehran Engineering and ERCO Identification Numbers, for those compouinds with detectable and reportable ambient concentrations. A complete listing of the compounds analyzed for is presented in Appendix A. In addition, the results of upwind location air sampling measurements performed at two other North Tonawanda NYSDEC Superfund Sites are also presented in this table for comparison purposes. These two other sites, Holiday Park (Site Code: 932022) and Botanical Gardens (Site Code: 932068), were monitored for volatile organic emissions by Wehran Engineering during the same week as the Gratwick Park site, using the same sampling procedures. Only the upwind locations for these sites are presented since they represent ambient air concentrations that are essentially uninfluenced by site atmospheric conditions that could conceivably be correlated to previous disposal activities.

Twelve volatile organic compounds were measured in low concentrations in the upwind or ambient sample for the Gratwick Park site. By comparison, these same 12 compounds were also detected in the upwind sample collected at the Holiday Park site, with four additional compounds also appearing at low levels. Similarly, low ambient concentrations of 12 volatile organic compounds were measured in the upwind sample for the Botanical Gardens site with the following differences: benzene was present at the Botanical Gardens site but absent at Gratwick Park; and tetrachloroethylene was found to be present in the ambient Gratwick Park sample but absent at Botanical Gardens.

The results noted by the on-site and downwind samples for the Gratwick Park site are essentially similar to the results reported for the upwind sample in terms of compounds detected and concentration levels, with the exception of acetone, which was detected at greater levels in the on-site

TABLE 2

GRATWICK-RIVERSIDE PARK SITE
AMBIENT AIR SAMPLING RESULTS

Site	Gratwick Riverside Park	Gratwick Riverside Park	Gratwick Riverside Park	Gratwick Riverside Park	Holiday[1] Park	Botanical[2] Gardens
Sampling Station No.	1	2	3	Control	1	1
Location	Upwind	On Site	Downwind	—	Upwind	Upwind
Wehran ID No.	GP-1-T	GP-2-T	GP-3-T	GP-T	HP-1-T	BG-1-T
ERCO ID No.	5352	5353	5354	5355	5154	5061
Compound	Concentration (ng/l)[3]					
Methylene chloride	0.62	0.73	0.76	N.D.	0.73	0.78
1,1-Dichloroethylene	0.28	0.32	0.34	N.D.	0.30	0.32
Chloroform	0.57	0.68	0.69	N.D.	0.66	0.69
1,2-Dichloroethane	0.25	0.35	0.32	N.D.	0.32	0.10
Trichloroethylene	0.67	0.74	0.74	N.D.	0.75	0.75
Benzene	N.D.	N.D.	N.D.	N.D.	0.04	0.09
Tetrachloroethylene	0.44	0.50	0.50	N.D.	0.49	N.D.
Toluene	0.43	0.47	0.50	N.D.	0.56	1.2
Chlorobenzene	0.07	0.07	0.08	N.D.	0.09	0.08
Ethyl benzene	0.15	0.17	0.16	N.D.	0.23	1.6
1,1,1-Trichloroethane	N.D.	N.D.	N.D.	N.D.	0.08	N.D.
Acetone	0.65	3.3	3.3	N.D.	5.3	2.6
Carbon Disulfide	2.3	2.8	2.7	N.D.	2.9	2.8
Xylenes	1.3	0.96	0.96	N.D.	1.2	2.8
2-Butanone	N.D.	N.D.	N.D.	N.D.	1.1	N.D.
2-Hexanone	N.D.	N.D.	N.D.	N.D.	0.81	N.D.
4-Methyl-2-Pentanone	N.D.	0.7	N.D.	N.D.	N.D.	N.D.

Notes:

[1]Wehran Engineering, "Phase II Investigation Report for Holiday Park, North Tonawanda, Niagara County, New York (Site Code: 932033)," August 1984.

[2]Wehran Engineering, "Phase II Investigation Report for Botanical Gardens, North Tonawanda, Niagara County, New York (Site Code: 932068)."

[3]1 ng/l = 1 ug/m^3 via the following conversion:
1 ng/l x 1 ug/10^3 x 10^3 l/m^3

1 ng/l = 0.001 mg/m_3 via the following conversion:
1 ng/l x 1 mg/10^6 ng x 10^3 l/m^3

[4]N.D. = Not detected

(3.3 ng/l) and downwind (3.3 ng/l) samples and 4-methyl-2-pentanone, which was only detected in the on-site sample. No significant concentration gradients were observed with respect to sampling locations and prevalent wind directions, except for acetone.

Data Evaluation

To permit an evaluation of the public health and environmental significance of the data collected by the Phase II Investigation air sampling program, a comparison was made between the ambient air concentrations measured at the Gratwick Park site (Table 2) and the Acceptable Ambient Levels (AALs) provided by the New York State Air Guide - 1 (Table 3).

In order to compare the data presented in Tables 2 and 3, consideration must be given to the interrelationships between units in which the concentrations or standards noted are presented. Note 3 contained in Table 2 presents the conversion factors that have been used in the interpretation of this data, in particular, the following relationships:

$$1 \text{ ng/l} = 1 \text{ ug/m}^3$$
$$1 \text{ ng/l} = 0.001 \text{ mg/m}^3$$

In comparing the Gratwick Park site data (Table 2) to the AALs in Table 3, the above ng and mg relationship indicates that permitted AALs are at least two to four orders of magnitude greater than those levels noted at the Gratwick Park site. For example, at Stations 2 and 3, similar acetone concentrations of 3.3 ng/l were measured, the highest level for any volatile organic compound detected at the site, which is significantly less than the AAL of 35,600 ug/m^3. The concentration of 1,2-Dichloroethane slightly exceeds the AAL, by less than a factor of 2.

4.3.3 Findings

Based upon a review of the information contained in the Phase I Investigation Report and the results of the air sampling program described above, a more complete site contamination assessment was possible.

TABLE 3

NEW YORK STATE AIR GUIDE - 1 AALs*
GRATWICK-RIVERSIDE PARK SITE

Compound	Hazard Classification	TLV's (mg/m^3)	AAL (Method) (ug/m3)
Methylene chloride	Moderate toxicity	350	1,167 (T)
1,1-Dichloroethylene	High toxicity	20	66.7 (T)
Chloroform	Moderate toxicity	50	167 (T)
1,2-Dichloroethane	Moderate toxicity	40	0.2 (DOH/R)
Trichloroethylene	Moderate toxicity	270	900 (T)
Benzene	High toxicity	30	100 (T)
Tetrachloroethylene	Moderate toxicity	335	1,116 (T)
Toluene	Low toxicity	375	7,500 (T)
Chlorobenzene	Moderate toxicity	350	1,167 (T)
Ethyl benzene	Moderate toxicity	435	1,450 (T)
1,1,1-Trichloroethane	Low toxicity	1,900	38,000 (T)
Acetone	Low toxicity	1,780	35,600 (T)
Carbon disulfide	Moderate toxicity	30	100 (T)
Xylenes (o-, m-, p-)	Moderate toxicity	435	1,450 (T)
2-Butanone	Moderate toxicity	590	1,967 (T)
2-Hexanone		20	66.7 (ACGIH)
4-Methyl-2-Pentanone	Moderate toxicity	205	683 (T)

T - Interim AAL derived from ACGIH TWA-TLV.
DOH/R - Contaminant specific AAL currently under review by DOH.
ACGIH - Hazard classification of moderate to high toxicity assumed to derive AAL.

High Toxicity = TLV/300
Moderate Toxicity = TLV/300
Low Toxicity = TLV/50

Comparing the general types of substances and specific compounds reported in site groundwater samples with the HNU readings noted in a few locations, and the specific compounds identified by the air quantitative monitoring program, shows some relationship from a generic standpoint in terms of organic chemical compound groups, i.e., aliphatic hydrocarbons, oxygenated aliphatic hydrocarbons, total halogentated organics (THO), etc. However, any correlation between specific compounds was not observed. In the absence of surface water data, no comparison with the reported air monitoring data was possible.

The environmental and public health significance of the ambient air concentrations of the substances measured at the site is considered negligible in light of the relatively low levels detected. Further, the levels recorded are significantly less than the limits specified by the New York State Air Guide - 1.

The air monitoring program conducted during the Phase II investigation was a characterization study only. The current results do not indicate that a potential air release problem exists. However, 1,2-dichloroethane was of similar magnitude to the AAL, and therefore further investigation would be necessary to confirm the results of this study.

SECTION 5.0
FINAL HAZARD RANKING SCORE/EPA FORMS

5.0

5.1 NARRATIVE SUMMARY

SECTION 5.0
FINAL HAZARD RANKING SCORE/EPA FORMS

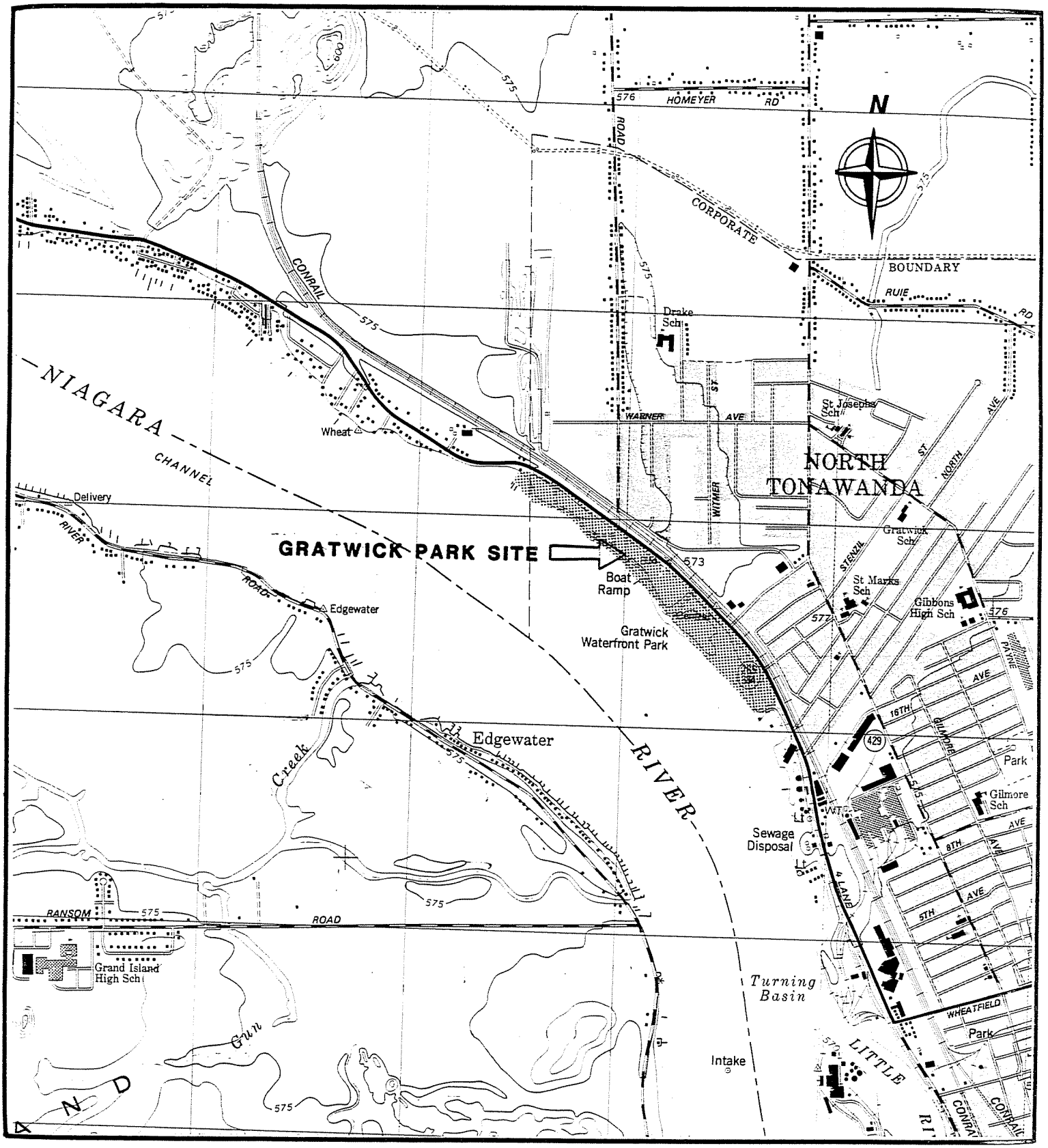
5.1 NARRATIVE SUMMARY

5.1 NARRATIVE SUMMARY

Gratwick Riverside Park
River Road
North Tonawanda
Niagara County, New York

. Site Size:	53 acres
. Demography:	Approximately 1,520 persons live within one mile of the site (estimated from 1980 U.S. Census). Park heavily utilized by community.
. Geography:	The site is generally flat and abuts the Niagara River. Elevations at the site range between 570 to 580 feet MSL.
. Type of Facility:	Inactive Municipal/Industrial Dump; currently used as a City Park
. Types of Waste:	Phenolic Resins - 25,000 tons Phenolic Moulding Compounds - 25,000 tons Oils and Grease - 50 tons Incinerator Residue Municipal Waste, Trash and Rubbish
. Affected Media:	Groundwater and possibly surface water
. Owner:	Niagara Mohawk Power Corporation 535 Washington Street Buffalo, New York 14203
. Cleanup Action:	Site has been graded, covered, and grassed in some areas. Northwest tip and southeast tip show mounding and little cover.
. Enforcement Actions:	None on record according to Phase I Report; none identified during Phase II Investigations.

LOCATION



SCALE: 1" 2000'
SOURCE: U.S.G.S. 7.5 MIN.
TONAWANDA WEST, N.Y.
QUADRANGLE

NEW YORK

MAP LOCATION

FIGURE 1

SITE LOCATION MAP

LATITUDE: 43° 03' 29" N
LONGITUDE: 78° 54' 26.8" W

HRS WORKSHEETS

Facility Name: Gratwick-Riverside Park

Location: North Tonawands, New York

EPA Region: II

Person(s) in Charge of the Facility: Niagara-Mohawk Power Corporation
Syracuse, New York 13202

Name of Reviewer: Anthony Savino **Date:** 10/11/84

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.)

Previous landfill currently used as a city park. Hooker-Durez is reported to have disposed of phenolic resins and solvents at this site. Groundwater has been monitored. Boring logs indicate a sticky clay may provide natural containment. Heavy metals phenols and other organics detected.

Scores: S_M = 5.82 (S_{gw} = 6.12 S_{sw} = 8 S_a = 0)

S_{FE} = N/A

S_{DC} = 37.50

HRS COVER SHEET

GROUND WATER ROUTE WORK SHEET

	Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)
1	Observed Release	0 (45)	1	45	45	3.1
	If observed release is given a score of 45, proceed to line 4. If observed release is given a score of 0, proceed to line 2.					
2	Route Characteristics					3.2
	Depth to Aquifer of Concern	0 1 2 3	2		6	
	Net Precipitation	0 1 2 3	1		3	
	Permeability of the Unsaturated Zone	0 1 2 3	1		3	
	Physical State	0 1 2 3	1		3	
	Total Route Characteristics Score			0	15	
3	Containment	0 1 2 3	1	0	3	3.3
4	Waste Characteristics					3.4
	Toxicity/Persistence	0 3 6 9 12 15 (18)	1	18	18	
	Hazardous Waste Quantity	0 1 2 3 4 5 6 7 (8)	1	8	8	
	Total Waste Characteristics Score			26	26	
5	Targets					3.5
	Ground Water Use	0 (1) 2 3	3	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	
	Total Targets Score			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			3510	57.330	
7	Divide line 6 by 57,330 and multiply by 100	S_{gw} = 6.12				

SURFACE WATER ROUTE WORK SHEET

	Rating Factor	Assigned Value (Circle One)	Multiplier	Score	Max. Score	Ref. (Section)
1	Observed Release	(0) 45	1	0	45	4.1
	If observed release is given a value of 45, proceed to line 4. If observed release is given a value of 0, proceed to line 2.					
2	Route Characteristics					4.2
	Facility Slope and Intervening Terrain	(0) 1 2 3	1	0	3	
	1-yr. 24-hr. Rainfall	0 1 (2) 3	1	2	3	
	Distance to Nearest Surface Water	0 1 2 (3)	2	6	6	
	Physical State	0 1 2 (3)	1	3	3	
	Total Route Characteristics Score			11	15	
3	Containment	0 1 2 (3)	1	3	3	4.3
4	Waste Characteristics					4.4
	Toxicity/Persistence	0 3 6 9 12 15 (18)	1	18	18	
	Hazardous Waste Quantity	0 1 2 3 4 5 6 7 (8)	1	8	8	
	Total Waste Characteristics Score			26	26	
5	Targets					4.5
	Surface Water Use	0 1 (2) 3	3	6	9	
	Distance to a Sensitive Environment	(0) 1 2 3	2	0	6	
	Population Served/Distance to Water Intake Downstream	(0) 4 6 8 10 12 16 18 20 24 30 32 35 40	1	0	40	
	Total Targets Score			6	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			5148	64,350	
7	Divide line 6 by 64,350 and multiply by 100	S_{SW} = 8				

AIR ROUTE WORK SHEET

	Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)
1	Observed Release	(0) 45	1	0	45	5.1
	Date and Location: 6/29/-6/30/84; See Figure 2 attached.					
	Sampling Protocol: Tenax and Charcoal Air Sampling Tubes EPA Method 624					
	If line 1 is 0, the S = 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	9	
	Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1	8	8	
		Total Waste Characteristics Score		17	20	
3	Targets					5.3
	Population Within 4-Mile Radius	0 9 12 15 18 (21) 24 27 30	1	21	30	
	Distance to Sensitive Environment	(0) 1 2 3	2		6	
	Land Use	0 1 2 (3)	1	3	3	
		Total Targets Score		24	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					

	S	S^2
Groundwater Route Score (S_{gw})	6.1	37.21
Surface Water Route Score (S_{sw})	8	64.0
Air Route Score (S_a)	0	0
$S_{gw}^2 + S_{sw}^2 + S_a^2$		101.21
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2}$		10.06
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2} \,/\, 1.73$		S_M = 5.82

WORKSHEET FOR COMPUTING S_M

FIRE AND EXPLOSION WORK SHEET

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

DIRECT CONTACT WORK SHEET

	Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)
1	Observed Incident	(0) 45	1	0	45	8.1
	If line 1 is 45, proceed to line 4 If line 1 is 0, proceed to line 2					
2	Accessibility	0 1 2 (3)	1	3	3	8.2
3	Containment	0 (15)	1	15	15	8.3
4	Waste Characteristics Toxicity	0 1 2 (3)	5	15	15	8.4
5	Targets					8.5
	Population Within a 1-Mile Radius	0 1 2 (3) 4 5	4	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			8100	21,600	
7	Divide line 6 by 21,600 and multiply by 100	S_{DC} = 37.50				

HRS DOCUMENTATION RECORDS

June 28, 1982

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: Gratwick Riverside Park

LOCATION: North Tonawanda, New York

GROUND WATER ROUTE

1 OBSERVED RELEASE

Contaminants detected (5 maximum):

Phenols, lead, mercury, various aliphatic and aromatic hydrocarbons including chlorobenzene, biphenyls, dibenxodioxin

Rationale for attributing the contaminants to the facility:

RECRA analysis of Well #13 Score=45
and Niagara County Health Department Report (attached)
* REF: Weston/SPER Gratwick Riverside Park Assessment
Niagara County Health Dept. 6/1/84
Michael Hopkins
Section 4.3 A,B,C

* D.E.C. 932060
Rev. #2
May 1984

* * *

2 ROUTE CHARACTERISTICS

Depth to Aquifer of Concern

Name/description of aquifers(s) of concern:

Perched water table in waste.

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

± 6 feet

Updated profile report - Gatwick Riverside Park Site No. 932060
Niagara County Health Department Memorandum, June 20, 1984
Appendix B

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

18.5 ft.

Test borings and logs for well No. 11, Dimension Inc.
Appendix C

Net Precipitation

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

40 inches

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

27 inches

Net precipitation (subtract the above figures):

13 inches

Permeability of Unsaturated Zone

Soil type in unsaturated zone:

Sand, silt, clay

Ref. source Appendix B
D.E.C. No. 932060
Rev. #2
May 1984

Permeability associated with soil type:

$10^{-4} - 10^{-3}$

Physical State

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

Liquids, solids, resins

* * *

3 CONTAINMENT

Containment

Method(s) of waste or leachate containment evaluated:

Landfill

Method with highest score:

N/A - Direct release observed

4 WASTE CHARACTERISTICS

Toxicity and Persistence

Compound(s) evaluated:

Phenolic resins and molding compounds
Metallurgical slag-lead, copper, mercury
phenols

Compound with highest score:

Lead, Mercury
Toxicity=3; Persistence=3

Hazardous Waste Quantity

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

25,000 tons-phenolic resin
25,000 tons-phenolic molding material

Score=8

Basis of estimating and/or computing waste quantity:

Site inspection report 8/20/80 Ref. Appendix C

* * *

5 TARGETS

Ground Water Use

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

None; use possible Score=1

Distance to Nearest Well

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

Unknown

Distance to above well or building:

Unknown

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

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

Unknown, Score=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):

Unknown

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

Unknown

SURFACE WATER ROUTE

1 OBSERVED RELEASE

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

Unknown Score=0

Rationale for attributing the contaminants to the facility:

N/A

* * *

2 ROUTE CHARACTERISTICS

Facility Slope and Intervening Terrain

Average slope of facility in percent:

0.83% Score=0

Name/description of nearest downslope surface water:

Niagara River

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

± 1% Ref. source: U.S.G.S. Quadrangle Tonawanda West, NY

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

Yes

Is the facility completely surrounded by areas of higher elevation?

No

1-Year 24-Hour Rainfall in Inches

2.1 Score=2

Distance to Nearest Downslope Surface Water

Adjacent = 0.01 mile Score=3

Physical State of Waste

Liquid, Solid

Score = 3

* * *

3 CONTAINMENT

Containment

Method(s) of waste or leachate containment evaluated:

Landfill

Method with highest score:

Landfill, Score=3

4 WASTE CHARACTERISTICS

Toxicity and Persistence

Compound(s) evaluated

Phenols
Lead
Mercury

Compound with highest score:

Lead, Mercury-Persistence=3 Toxicity=3

Hazardous Waste Quantity

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

25,000 tons-phenolic resin
25,000 tons-phenolic molding material

Basis of estimating and/or computing waste quantity:

DEC site dossier claims 25,000 tons phenolic resin and 25,000 tons of phenolic molding materials reported to be dumped by Hooker-Durez

* * *

5 TARGETS

Surface Water Use

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

Transportation, Commercial, Recreational
No Drinking Water Sources Downstream of Site.

Score=2 Source: NYS Atlas of Community Waste System Sources, 1982

Is there tidal influence?

No

Distance to a Sensitive Environment

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

None Score=0

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

None

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

None Score=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:

None

Source: NYS Atlas of Community Water System Sources, 1982

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

N/A

Total population served:

None

Name/description of nearest of above water bodies:

N/A

Niagara River

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

N/A 2 miles

AIR ROUTE

1 OBSERVED RELEASE

Contaminants detected:

Several volatile organic compounds; see attached ERCO/Energy Resource Company, Inc. report.

Date and location of detection of contaminants

6/29-6/30/84; see Figure 2 attached.

Methods used to detect the contaminants:

Tenax and charcoal Air Sampling Tubes
EPA Method 624
HNU Photoionizer

Rationale for attributing the contaminants to the site:

N/A; levels detected not significantly above background levels recorded.
Score=0

* * *

2 WASTE CHARACTERISTICS

Reactivity and Incompatibility

Most reactive compound:

All compounds Score=0

Source: 40CFR Part 261

Most incompatible pair of compounds:

N/A

Toxicity

Most toxic compound:

1,2 Dichloroethane

Source: EPA Hazardous Ranking System Waste Characterictic Values

Hazardous Waste Quantity

Total quantity of hazardous waste:

25,000T Phenolic Resins
25,000T Phenolic Molding Material

Basis of estimating and/or computing waste quantity:

N/A

Site Inspection Report 8/20/80. Ref: Appendix C

* * *

3 TARGETS

Population Within 4-Mile Radius

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

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

1520
Phase 1 Report - Gratwick Riverside Park
EPA Potential Hazardous Waste Site, Site Inspection
Report , Part 5
NY 932060

Distance to a Sensitive Environment

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

N/A

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

N/A

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

1.1 Mi.
Haliaeetus Leucocephalus
Fallo Peregrinus

Land Use

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

Yes
U.S.G.S. 7.5 min
To Tonawanda West NY Quadrangle

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:

Whitmer Road - 500 ft.

D.E.C. No. 932060
Rev. #2 May 1984

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

N/A

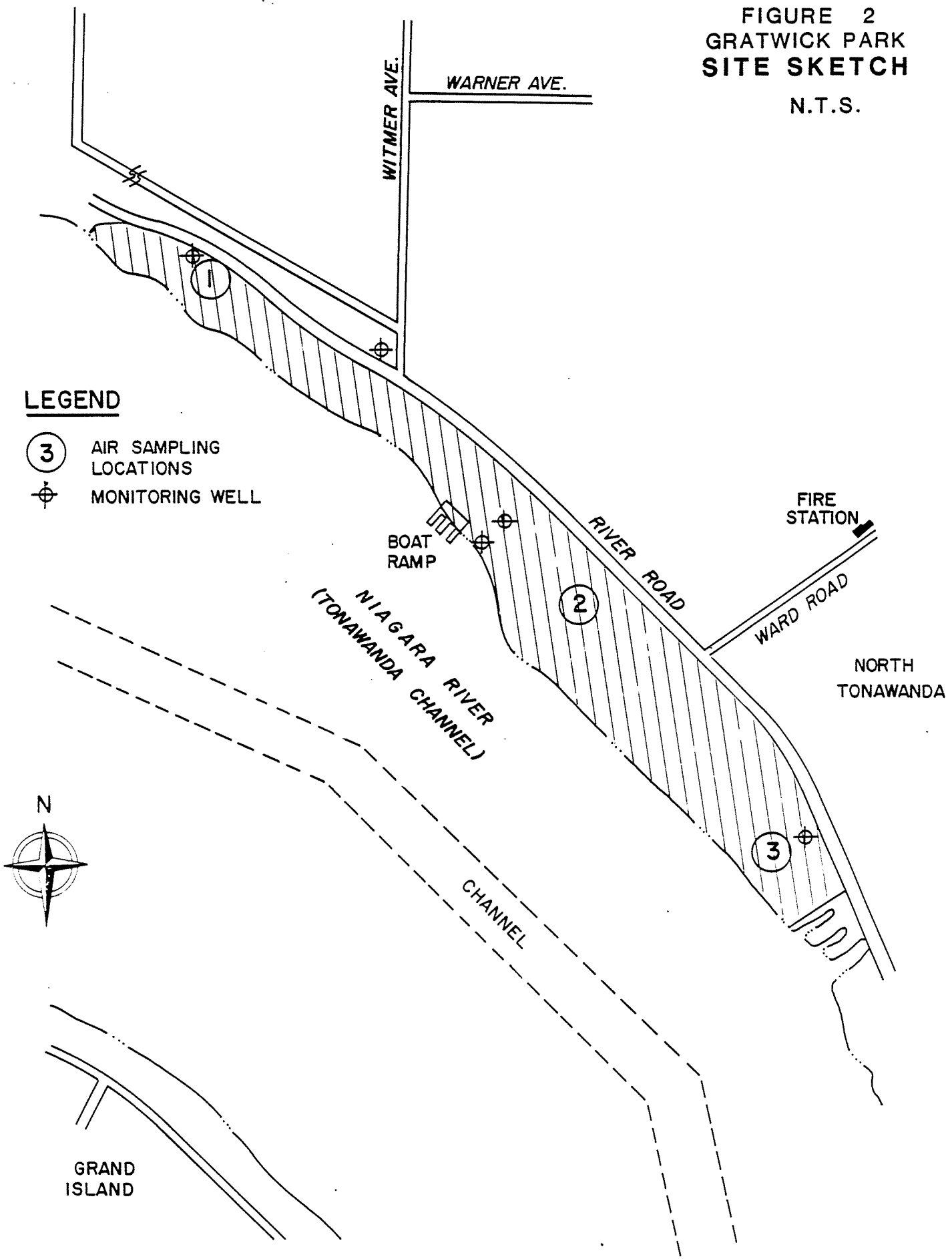
Distance to prime agricultural land in production within past 5 years, if 2 miles or less:

N/A

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

N/A

FIGURE 2
GRATWICK PARK
SITE SKETCH
N.T.S.



Sample Received: 7/3/84
Analysis Completed: 8/27/84
Results in: ng/l
Reported by: JFM
Checked by: MS

ERCO/ENERGY RESOURCES CO. INC.
VOLATILE ORGANICS ANALYSIS
BY EPA METHOD 624
- Data Report -

Client: Wehran Engineering

COMPOUNDS	Client ID: / ERCO ID:	GP1T 5352	GP2T 5353	GP3T 5354	GPT 5355
Chloromethane		ND	ND	ND	ND
Bromomethane		ND	ND	ND	ND
Vinyl chloride		ND	ND	ND	ND
Chloroethane		ND	ND	ND	ND
Methylene chloride		.62	.73	.76	ND
1,1-dichloroethylene		.28	.32	.34	ND
1,1-dichloroethane		ND	ND	ND	ND
Trans-1,2-dichloroethylene		ND	ND	ND	ND
Chloroform		.57	.68	.69	ND
1,2-dichloroethane		.25	.35	.32	ND
1,1,1-trichloroethane		ND	ND	ND	ND
Carbon tetrachloride		ND	ND	ND	ND
Bromodichloromethane		ND	ND	ND	ND
1,2-dichloropropane		ND	ND	ND	ND
Trans-1,3-dichloropropylene		ND	ND	ND	ND
Trichloroethylene		.67	.74	.77	ND
Benzene		ND	ND	ND	ND
Dibromochloromethane		ND	ND	ND	ND
Cis-1,3-dichloropropylene		ND	ND	ND	ND
1,1,2-trichloroethane		ND	ND	ND	ND
Bromoform		ND	ND	ND	ND
1,1,2,2-tetrachloroethane		ND	ND	ND	ND
Tetrachloroethylene		.44	.50	.50	ND
Toluene		.43	.47	.50	ND
Chlorobenzene		.07	.07	.08	ND
Ethyl benzene		.15	.17	.16	ND
2-chloroethyl vinyl ether		ND	ND	ND	ND

ND = Not detected.

ERCO/ENERGY RESOURCES CO. INC.

VOLATILE ORGANICS ANALYSIS

BY EPA METHOD 624

- Data Report -

Client: Wehran Engineering

COMPOUNDS	Client ID: / ERCO ID:	GP1T 5352	GP2T 5353	GP3T 5354	GPT 5355
Additional Compounds					
Acetone		.65	3.3	3.3	ND
Carbon disulfide		2.3	2.8	2.7	ND
4-Methyl-2-Pentanone		ND	.70	ND	ND
Xylenes		1.3	.96	.96	ND
Reporting Limit:		.04	.04	.04	.04

Sample Received: 7/3/84
Analysis Completed: 8/9/84
Results in: ng/l
Reported by: JFM
Checked by: NS

ERCO/ENERGY RESOURCES CO. INC.
VOLATILE ORGANICS ANALYSIS
BY EPA METHOD 624
- Data Report -

Client: Wehran Engineering

COMPOUNDS	Client ID: / ERCO ID:	GP1C 5348	GP2C 5349	GP3C 5350	GPC 5351
Chloromethane		ND	ND	ND	ND
Bromomethane		ND	ND	ND	ND
Vinyl chloride		ND	ND	ND	ND
Chloroethane		ND	ND	ND	ND
Methylene chloride		ND	ND	ND	ND
1,1-dichloroethylene		ND	ND	ND	ND
1,1-dichloroethane		ND	ND	ND	ND
Trans-1,2-dichloroethylene		ND	ND	ND	ND
Chloroform		ND	ND	ND	ND
1,2-dichloroethane		ND	ND	ND	ND
1,1,1-trichloroethane		ND	ND	ND	ND
Carbon tetrachloride		ND	ND	ND	ND
Bromodichloromethane		ND	ND	ND	ND
1,2-dichloropropane		ND	ND	ND	ND
Trans-1,3-dichloropropylene		ND	ND	ND	ND
Trichloroethylene		ND	ND	ND	ND
Benzene		ND	ND	ND	ND
Dibromochloromethane		ND	ND	ND	ND
Cis-1,3-dichloropropylene		ND	ND	ND	ND
1,1,2-trichloroethane		ND	ND	ND	ND
Bromoform		ND	ND	ND	ND
1,1,2,2-tetrachloroethane		ND	ND	ND	ND
Tetrachloroethylene		ND	ND	ND	ND
Toluene		ND	ND	ND	ND
Chlorobenzene		ND	ND	ND	ND
Ethyl benzene		ND	ND	ND	ND
2-chloroethyl vinyl ether		ND	ND	ND	ND

ND = Not detected.

ERCO/ENERGY RESOURCES CO. INC.

VOLATILE ORGANICS ANALYSIS

BY EPA METHOD 624

- Data Report -

Client: Wehran Engineering

COMPOUNDS	Client ID: / ERCO ID:	GP1C 5348	GP2C 5349	GP3C 5350	GPC 5351
Additional Compounds					
Reporting Limit:		20	20	20	20

NIAGARA COUNTY HEALTH DEPARTMENT

MEMORANDUM

DATE: June 20, 1984

TO: Peter Buechi/DEC-9, Louis Violante/DOH/Buffalo, Steven Bates/DOH/Alban
J. A. Kehoe & M. N. Vaughan/NCHD

FROM: Mike Hopkins

SUBJECT: UPDATED PROFILE REPORT -
GRATWICK RIVERSIDE PARK SITE NO. 932060

Attached is a copy of a revised profile report for your information, Please contact me with any questions.

MEH:cs
Attachment....

May 1984
Revision No. 2

NAME: DEC No. 932060

GRATWICK RIVERSIDE PARK

LOCATION: River Road, North Tonawanda, NY

Gratwick Park occupies 53 acres bounded by River Road, the Niagara River, the city line and a line running roughly east-west located several hundred feet south of the projected foot of Ward Road. All of this area is assumed to be former disposal area.

A site sketch and locator map are attached.

OWNERSHIP:

The property is owned by the Niagara Mohawk Power Corporation, 535 Washington Street, Buffalo, NY 14203. The contact person is Frederick C. McCall, Jr., General Attorney (716-856-2424).

NCHD files indicate that Niagara Mohawk owned the property during the time of active disposal operations.

OPERATIONAL HISTORY:

This area was apparently first used for disposal of a slag-like material. The earliest available inspection report (1964) lists the soil type as "slag fill". Boring logs indicate that much of this slag is below river level. The source of this material is unknown. The site was used for municipal disposal by the City of North Tonawanda from the early 1960's (or earlier) until 1968. Waste types disposed of included municipal incinerator residue, garbage and general refuse. Open burning is known to have occurred. A 1964 inspection report states that 30 tons of garbage and 100 tons of rubbish were disposed of per week. All wastes were reportedly generated within the City. Wastes were reportedly covered bi-weekly with incinerator ash, road construction debris or "molding sand".

The Durez Division of Hooker Chemical is believed to have also used the site for industrial disposal. Durez is listed as a user in the 1964 inspection reports. The Interagency Task Force Report (1979) also lists Durez as a user of the site. The IATF Report estimates that 25,000 tons of phenolic molding compounds, 25,000 tons of phenolic resin and 50 tons of grease and oil were disposed of by Durez at this site from 1962 to 1968. A 1967 NCHD memo notes that dust problems were associated with the disposal of "pink powder material (molding compound)".

It is possible that other industries have used this site for disposal. Bell Aerospace is listed as a user by IATF. Other industries operating in North Tonawanda during the 1960's produced iron and steel products, pumps, lumber, paper and abrasive wheels.

The site was closed in 1968 upon the opening of the NCSWD-Wheatfield Landfill. The site was subsequently graded, covered and grassed. The area was converted to a park by the City and is still maintained as a park. The park features open space, picnic areas and a boat launch ramp.

INVESTIGATIVE HISTORY:

In 1979, the City contracted Recra Research, Inc. to install monitoring wells (5) and collect groundwater samples from this site. Four of these wells were placed in the former disposal area and one was placed across River Road as an upgradient well.

The first round of sampling by Recra found phenol concentrations of 1.08 mg/l to 18.5 mg/l and THo concentrations of 0.12 ug/l to 22.8 ug/l in the on-site wells. Less than 0.05 ug/l THo and no detectable phenol was found in the upgradient well.

Subsequent sampling and analysis was performed on Wells No. 10 and 13 to attempt to identify the species which constituted the THo and phenol values. These analyses found that Well No. 10 contained primarily non-halogenated aliphatic compounds with some oxygenerated and biphenyl compounds present. Well No. 13 was found to contain di, tri and tetra chlorobenzenes, oxygenerated and biphenyl compounds and suspected isomers of dibenzodioxins (non-chlorinated). Various non-chlorinated aliphatic, aromatic and PNA compounds were also identified. Concentrations of THo and phenol were found to be much higher in the follow-up analyses than in the initial. THo concentrations as high as 1100 ug/l and phenol to 63.1 mg/l were reported. Recra concluded that a major portion of the THo and phenol concentration was associated with the suspended solids in the samples.

Recra concluded the groundwater passing through the site is contaminated and that the direction of flow is toward the Niagara River. Recra recommended additional testing.

NCHD conducted a preliminary investigation in 1981. Samples were collected from the existing wells. Analyses of these samples found very low (generally non-detectable) levels of Cd, Hg, Pb, Cu, Ni and Cr (total). THo concentrations ranged far less than 1.0 ug/l (Well 11) to 35 ug/l (Well 10). Phenol concentrations ranged from 0.2 mg/l to 17 mg/l. Field inspection at this time found waste materials, including steel drums of solid material to be exposed along the shoreline. The surface of the site was found to be deteriorating although no waste was found exposed in the grassed areas.

At the request of NCHD, 33 exposed drums were removed from the shore area in 1981 by Niagara Mohawk. These drums were found to contain solid phenolic resin.

The U. S. Geological Survey installed three additional wells and sampled all new and existing wells in 1982 as part of the DEC/EPA Niagara River Study. The analytical results were in general agreement with those of Recra. The final USGS Report is not yet available and details of the draft report cannot be quoted at this time.

In 1983, Weston/SPER, Inc. collected well and soil samples under contract to EPA. Weston concluded that the quantity of contaminants migrating from the site was insignificant and that immediate action is not needed. NCHD has expressed concern regarding the methods used and conclusions reached by Weston.

NCHD found additional exposed drums of solid material in 1983. Again, these drums were found to contain solid phenolic resins. These drums had apparently "floated" to the surface near River Road as opposed to the drums previously exposed by erosion. Niagara Mohawk contracted the removal of these drums in the Winter of 1984. Nine drums were removed.

Engineering Sciences, Inc. and Dames and Moore, Inc. prepared a "Phase I" report for DEC under State Superfund in 1983. This report is essentially a collection of previously obtained data and provided no new data. Preliminary HRS scores of Sm = 5.82 and Sdc = 25.00 were generated. This study will involve an OVA survey and the computation of final HRS scores.

NCHD has inspected this site quarterly since 1981.

SOILS/GEOLOGY:

Based on the data available in the 1979 Recra Report, the general soil profile for the site is 10 to 18 feet of artificial fill over native sand and clay.

The artificial fill is composed of three principal layers. Silty topsoil comprises the upper one to two feet. Below the topsoil is 8 to 12 feet of refuse, cinders and some slag. Cemented slag, several feet thick, is found beneath the refuse/cinder/slag zone. Samples of the slag and refuse/cinder mix were reported to be moderately to strongly odorous by Recra.

Native soils consist of one to two feet of loose sand over sticky, silty clay. It is suspected that these soils composed the river bottom prior to filling.

Bedrock is expected to be Camillus Shale, based on interpolation of data from nearby sites. The site is suspected to be very near the outcropping of the Lockport Dolomite.

Differential settling, potholing, surface deterioration and numerous rodent holes are noticeable over most of the site, especially in the southern half. Shoreline erosion has created problems, especially along the northern half of the site.

GROUNDWATER:

Water table elevations in the on-site wells ranged from 564.8 to 569.5 during the 1979 study by Recra. These elevations correspond to depths of 3.5 to 9 feet below the surface. It therefore appears that some of the waste material is below the water table and below River level (reported as 563.8 feet).

Recra described the flow pattern as southwesterly between Wells 14, 13 and 10, southeasterly between Wells 14, 11 and 12 and westerly between Wells 11 and 13. Overall groundwater appears to be flowing toward the River. There is no other analyses of flow patterns available. There is no information available on flow in deeper aquifers.

Groundwater contamination beneath the site is well documented. Recra, USGS and NCHD have concluded that this contamination originated on site. Weston disputed this point, argueing that the contamination originated upgradient. This department questions Weston's conclusion.

There are no wells known to be in use within two miles of the site.

SURFACE WATER:

The Niagara River is adjacent to the site. Contaminants may be entering the River via groundwater discharge. The loading and any effect on water quality in the River are unknown.

The nearest downstream drinking water intake is the Niagara Falls intake located six miles downstream. Any effect on water quality at this point (exclusive of any possible cumulative effect with other contaminant sources) is expected to be insignificant due to the distance and large dilution volume (river flow is from 100,000 to 275,000 cfs).

The primary recreational uses downstream are for non-contact recreation due to the powerful currents.

The site (except possibly for the immediate shoreline area) is above 100 year flood plains. There are no designated wetlands within one mile of this site.

AIR QUALITY:

No odors have been detected in the park. Ambient HNu readings taken by Weston in 1983 were found to be about 1.6 ppm (calibration method unknown). No other air data is available.

LAND USE:

The site itself is used as a public park. Adjacent areas are either industrial or commercial except for the residential area along Witmer Road. The nearest residence is 500 feet from the site. Several thousand people live within one mile. This site is not expected to affect land use on any surrounding property. The suitability of site for use as a park should be further explored; however, no hazard to users is known to be present.

FIRE/EXPLOSION:

The potential for fire or explosion is believed to be no greater than at any other municipal/industrial disposal site.

DIRECT CONTACT:

The exposure of park users via direct contact is possible. This potential should be further investigated. On two previous occasions, drums of phenolic resins have become exposed. Surface soil samples have never been analyzed.

CONCLUSIONS:

Based on the data available to NCHD, the following conclusions were made:

1. Gratwick Riverside Park is located on an inactive disposal site used for municipal and industrial waste including phenolic compounds.

2. Shallow groundwater beneath the site is contaminated with organics.

3. Available data indicates that contaminants may be discharging to the Niagara River. The loading and effect on water quality in the River is unknown.

4. The effect of this site on water quality at the City of Niagara Falls intakes is considered to be insignificant based on the distance to the intakes and the high dilution ratio (exclusive of possible cumulative effects with other sources).

5. The existing data is inadequate to assess potential exposures to park users.

RECOMMENDATIONS:

1. Further investigation is needed to assess potential exposures to park users. Such investigation should include surface soil sampling and identification of any substances which could become exposed in the future.

2. The integrity of the cover and shoreline should be protected and maintained.

3. Quarterly inspections of cover and shoreline integrity should continue.

REFERENCES:

Recra Research, Inc., 111 Wales Ave., Tonawanda NY - Analytical Report - Sampling and Analysis Program - North Tonawanda, NY; July 1979

Niagara County Health Department, P. O. Box 428, Niagara Falls, NY 14302 - An Investigation of Selected Inactive Toxic Landfills in Conjunction with the Niagara River Study - August 1981

United States Geological Survey, Syosset, NY - Preliminary Investigation of the Impact of Waste Disposal Sites on Groundwater and the Niagara River (Draft) - 1983

Weston-SPER; Building 10, GSA Depot, Woodbridge Avenue, Edison, NJ 08837 - Memorandum to Robert Cobiella, Emergency Response Branch, USEPA re Gratwick Park Site Assessment - September 14, 1983

Engineering Sciences, Inc. in conjunction with Dames & Moore - Phase I Report - Engineering Investigations and Evaluations at Inactive Hazardous Waste Disposal Sites - Gratwick Riverside Park - June 1983

Interagency Task Force Report on Hazardous Waste - 1979

NCHD - various memos, letters, inspection reports, etc., all contained in NCHD file entitled "Gratwick Park - Inactive Landfill"

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RESULTS OF EXAMINATION
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CCESSION NO: 04659 YR/MO/DAY/HR SAMPLE REC'D: [redacted]/11

ORTING LAB: 10 EHC ALBANY
G'AM: 650 SOLID WASTES
T ON (SOURCE) NO:
INAGE BASIN: 01 NY GAZETTEER NO: 3103 COUNTY: NIAGARA
RDINATES: DEG ' "N, DEG ' "W
M N NAME INCL SUBW'SHED: GRATWICK RIVERSIDE PARKSITE T. N.TONAWANDA

CT SAMPLING POINT: RECRA MONITERING [redacted]
E OF SAMPLE: 25 GROUND WATER
DAY/HR OF SAMPLING: FROM 00/00 TO 07/16/11
ORT SENT TO: CO (1) RO (1) LPHE (1) LHO (0) FED (0) CHEM (1)

	PARAMETER	UNIT	RESULT	NOTATION
701	CADMIUM,TOTAL	MG/L	0.02	_T
1	CHROMIUM,TOTAL	MG/L	0.1	_T
1	LEAD,TOTAL	MG/L	0.1	_T
309	MERCURY, TOTAL	MCG/_	0.4	_T
1	NICKEL,TOTAL	MG/L	0.05	

T[PRINTED: 8/05/81

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B ACCESSION NO: 04560 YR/MO/DAY/HR SAMPLE REC'D: [redacted] 11

PORTING LAB: 10 EHC ALBANY
OGRAM: 650 SOLID WASTES
ION (SOURCE) NO:
AINAGE BASIN: 01 NY GAZETTEER NO: 3103 COUNTY: NIAGARA
ORDINATES: DEG ' "N, DEG ' "W
N ON NAME INCL SUBDIVISION: GRATWICK RIVERSIDE PARKSITE T. N. TONAWANDA

ACT SAMPLING POINT: RECRA MONITERING [redacted]
P OF SAMPLE: 25 GROUND WATER
/DAY/HR OF SAMPLING: FROM 00/00 TO 07/16/11
PORT SENT TO: CO (1) RO (1) EPHE (1) LHO (0) FED (0) CHEM (1)

	PARAMETER	UNIT	RESULT	NOTATION
1701	CADMIUM, TOTAL	MG/L	0.02	LT
1 1	CHROMIUM, TOTAL	MG/L	0.1	LT
101	LEAD, TOTAL	MG/L	0.1	LT
309	MERCURY, TOTAL	MCG/L	0.4	LT
1 1	NICKEL, TOTAL	MG/L	0.05	LT

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ACCESSION NO: 04662 YR/MO/DAY/HR SAMPLE REC'D: [redacted]11

PORTING LAB: 10 EHC ALBANY
ROGRAM: 650 SOLID WASTES
TION (SOURCE) NO:
RAINAGE BASIN: 01 NY GAZETTEER NO: 3103 COUNTY: NIAGARA
OORDINATES: DEG ' "N, DEG ' "W
TION NAME INCL SUBW'SHED: GRATWICK RIVERSIDE PARKSITE N.TONAWANDA

ACT SAMPLING POINT: RECRA MONITERING [redacted]
E OF SAMPLE: 25 GROUND WATER
DAY/HR OF SAMPLING: FROM 00/00 TO 07/16/11
PORT SENT TO: 00 (1) RO (1) LPHE (1) LHO (0) FED (0) CHEM (1)

	PARAMETER	UNIT	RESULT	NOTATION
9701	CADMIUM, TOTAL	MG/L	0.02	LT
301	CHROMIUM, TOTAL	MG/L	0.1	LT
0101	LEAD, TOTAL	MG/L	0.1	LT
0309	MERCURY, TOTAL	MCG/L	0.4	LT
301	NICKEL, TOTAL	MG/L	0.05	LT

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SESSION NO: 04658 YR/MO/DAY/HR SAMPLE REC'D: [redacted] 1

REPTG LAB: 10 EHC ALBANY
PROG: 650 SOLID WASTES
LOCATION (SOURCE) NO:
DRAINAGE BASIN: 01 NY GAZETTEER NO: 3103 COUNTY: NIAGARA
COORDINATES: DEG ' "N. DEG ' "W
LOCATION NAME INCL SUBW'SHED: GRATWICK RIVERSIDE PARKSITE T. NORTH TONAWANDA
TYPE SAMPLING POINT: RECRA. MONITERING [redacted]
TYPE OF SAMPLE: 25 GROUND WATER
DATE/HR OF SAMPLING: FROM 00/00 TO 07/16/11
REPORT SENT TO: CO (1) RO (1) LPHE (1) LHO (0) FED (0) CHEM (1)

	PARAMETER	UNIT	RESULT	NOTATION
1701	CADMIUM, TOTAL	MG/L	0.02	_T
1801	CHROMIUM, TOTAL	MG/L	0.1	_T
[illegible]	LEAD, TOTAL	MG/L	0.1	
1309	MERCURY, TOTAL	MCG/_	0.4	_T
1501	NICKEL, TOTAL	MG/L	0.06	

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AR ACCESSION NO: 00654 YR/MO/DAY/HR SAMPLE REC'D: [redacted]2/13

E-ORTING LAB: 50 EHC FIELD LAB
ROGRAM: 650 SOLID WASTES
T TION (SOURCE) NO:
R-INAGE BASIN: 01 NY GAZETTEER NO: 3103 COUNTY: NIAGARA
OORDINATES: DEG ' "N, DEG ' "W
O MON NAME INCL SUBW'SHED: GRATWICK PARK SITE RIVER RD NO TONAWANDA
932060
XACT SAMPLING POINT: RECRA MONITORING [redacted]
Y E OF SAMPLE: 25 GROUND WATER
O DAY/HR OF SAMPLING: FROM 00/00 TO 08/12/10
EPORT SENT TO: CO (1) RO (2) LPHE (2) LHO (0) FED (0) CHEM (1)

	PARAMETER	UNIT	RESULT	NOTATION
02701	PHENOLS	MG/L	3.7	

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AC ACCESSION NO: 00655 YR/MO/DAY/HR SAMPLE REC'D: [redacted]13

EPORTING LAB: 50 EHC FIELD LAB
RO RAM: 650 SOLID WASTES
TA ION (SOURCE) NO:
RAINAGE BASIN: 01 NY GAZETTEER NO: 3103 COUNTY: NIAGARA
OORDINATES: DEG ' "N, DEG ' "W
IN OR NAME INCL SUBW'SHED: GRATWICK PARK SITE RIVER RD NO TONAWANDA
932060
ACT SAMPLING POINT: RECRA MONITORING [redacted]
P OF SAMPLE: 25 GROUND WATER
/DAY/HR OF SAMPLING: FROM 00/00 TO 08/12/10
PORT SENT TO: CO (1) RU (2) LPHE (2) LHO (0) FED (0) CHEM (1)

PARAMETER		UNIT	RESULT	NOTATION
2)1	PHENOLS	MG/L	2.9	

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AB ACCESSION NO: 00653 YR/MO/DAY/HR SAMPLE RECD: [redacted] 13

REPORTING LAB: 51 EHC FIELD LAB
PROGRAM: 050 SOLID WASTES
STATION (SOURCE) NO:
DRAINAGE BASIN: 01 NY GAZETTEER NO: 3103 COUNTY: NIAGARA
COORDINATES: DEG ' "N, DEG ' "W
COMMON NAME INCL SUBW'SHED: GRATWICK PARK SITE RIVER RD NO TONAWANDA
932060
EXACT SAMPLING POINT: RECRA MONITORING [redacted]
TYPE OF SAMPLE: 2S GROUND WATER
D/DAY/HR OF SAMPLING: FROM 00/00 TO 08/12/11
REPORT SENT TO: CO (1) RO (2) LPHE (2) LHO (0) FED (0) CHEM (1)

	PARAMETER	UNIT	RESULT	NOTATION
2701	PHENOLS	MG/L	17.	

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part of a report entitled Groundwater Investigation City of North Tonawanda RECRA Research 1979

s chromatographic scan for chlorinated organics, using a Coulson's
y conductivity detector, was run on these latter two samples to
n the GC/MS data. Both samples were found to contain less than 1
Chlorine, based upon Lindane as the standard.
r.lative abundance listed in Tables I - VII are determined according
h ights, relative to the most abundant peak in the RIC. These are
(proportional) to the on-column concentration of the constituents
u are not to be misinterpreted as an attempt at specific quantifica-

O :

B tanical Gardens (Well #6, 6/11/79) sample was found to contain low
f chlorinated compounds. This was not unexpected because of the pre-
r rted Total Halogenated Organics (THO) concentration of 19.1 µg/l,
s obtained from the same sample. Note that oxygenated hydrocarbons,
ous hydrocarbons and polynuclear aromatics also respond to the Elec-
t re Detector (ECD) used in the THO analysis.

[redacted]

H liday Park (Well #4) and Botanical Gardens (Well #6, 9/6/79) samples
d letectable amounts of chlorinated organics. Again, note the presence
ECD sensitive compounds.

TABLE II

CITY OF NORTH TONAWANDA
GAS CHROMATOGRAPHY/MASS SPECTROMETRY ANALYSIS
SEARCH FOR HALOGENATED COMPOUNDS

Sample Date: 6/11/79

Report Date: 10/15/79

GRATWICK-RIVERSIDE PARK WELL #10

CE	NBS LIBRARY CHOICE	COMMENT
	1,3-dimethylbenzene	confirmed as an alkyl substituted aromatic hydrocarbon
low	(1-methylethyl)-benzene	confirmed as an alkyl substituted aromatic hydrocarbon
low	1,2,4-trimethylbenzene	confirmed as an alkyl substituted aromatic hydrocarbon
	2,5-dimethylnonane	confirmed as an aliphatic hydrocarbon
l	azulene	confirmed as a polynuclear aromatic hydrocarbon
l	2,2,3,4-tetramethylpentane	confirmed as an aliphatic hydrocarbon
low	2-methylnaphthalene	confirmed as a polynuclear aromatic hydrocarbon
low	decosane	confirmed as an aliphatic hydrocarbon
low	2,7-dimethyloctane	confirmed as an aliphatic hydrocarbon
l	2-butyltetrahydrothiophene	insufficient spectral data for manual evaluation
l	dodecylphenol	insufficient spectral data for manual evaluation
l	octadecane	confirmed as an aliphatic hydrocarbon
	eicosane	confirmed as an aliphatic hydrocarbon

Continued . . . .

(Continued)

CITY OF NORTH TONAWANDA
GAS CHROMATOGRAPHY/MASS SPECTROMETRY ANALYSIS
SEARCH FOR HALOGENATED COMPOUNDS

Sample Date: 6/11/79

Report Date: 10/15/79

~~GRATWICK RIVERSIDE PARK MW-7D~~

ICE	NBS LIBRARY CHOICE	COMMENT
	eicosane	confirmed as an aliphatic hydrocarbon
	octadecane	confirmed as an aliphatic hydrocarbon
	eicosane	confirmed as an aliphatic hydrocarbon
	heneicosane	confirmed as an aliphatic hydrocarbon
	hexadecanoic acid	confirmed as an oxygenated aliphatic hydrocarbon
	pentacosane	confirmed as an aliphatic hydrocarbon
	pentacosane	confrimed as an aliphatic hydrocarbon
high	octadecanoic acid	confirmed as an oxygenated aliphatic hydrocarbon
	pentatriacontane	confirmed as an aliphatic hydrocarbon
	11-decyldocosane	confirmed as an aliphatic hydrocarbon
	pentacosane	confrimed as an aliphatic hydrocarbon,
	hexatriacone	confirmed as an aliphatic hydrocarbon
w	hexatriacone	confirmed as an aliphatic hydrocarbon

FOR RECRA RESEARCH, INC. George M. Bailis

DATE 15 October 1979

ECH INC.

TABLE III

CITY OF NORTH TONAWANDA
GAS CHROMATOGRAPHY/MASS SPECTROMETRY ANALYSIS
SEARCH FOR HALOGENATED COMPOUNDS

Sample Date: 6/11/79

Report Date: 10/15/79

~~GRATWICK-RIVERSIDE PARK WELL #1~~

NTE	NBS LIBRARY CHOICE	COMMENT
	undecane	confirmed as an aliphatic hydrocarbon
	2,3,5-trimethylpyridine	confirmed as a nitrogenous hydrocarbon
c	naphthalene	confirmed as a polynuclear aromatic hydrocarbon
c	octadecane	confrimed as an aliphatic hydrocarbon
	tridecane	confirmed as an aliphatic hydrocarbon
	pentacosane	confirmed as an aliphatic hydrocarbon
	tridecane	confrimed as an aliphatic hydrocarbon
	hexatriacontane	confirmed as an aliphatic hydrocarbon
	pentacosane	confirmed as an aliphatic hydrocarbon
	hexadecanoic acid	confirmed as an oxygenated aliphatic hydrocarbon
	eicosane	confirmed as an aliphatic hydrocarbon
	eicosane	confirmed as an aliphatic hydrocarbon
	octadecanoic acid, butylester	confirmed as an oxygenated aliphatic hydrocarbon
igh	pentacosane	confirmed as an aliphatic hydrocarbon
	pentacosane	confirmed as an aliphatic hydrocarbon
	pentacosane	confirmed as an aliphatic hydrocarbon
	eicosane	confirmed as an aliphatic hydrocarbon
	11-decyldocosane	confirmed as an aliphatic hydrocarbon
	tetratetracontane	confirmed as an aliphatic hydrocarbon

FOR RECRA RESEARCH, INC. George M. Bulis

DATE 15 October 1979

II. DISCUSSION AND COMMENT (CONTD.)

Chromatography/Mass Spectrometry (GC/MS).

Initial analysis of the basement seepage sample demonstrated elevated concentrations for both the total phenols and the halogenated organic scan. (Table 10). Results were elevated in terms of accepted ground water standards and normally encountered background conditions. Halogenated organic scan results are used for screening purposes only and are not designed for qualification or quantification of specific organic compounds. In addition, compounds other than halogenated organics will respond to the gas chromatographic detector utilized in this analysis. Hence a positive response on this test is not confirmation of the presence of halogenated organics. To fully characterize the compounds that comprised the halogenated organic scan result, the sample was analyzed by GC/MS. As a result of GC/MS analysis the sample was found to contain two polynuclear aromatic hydrocarbons, one alkyl substituted aromatic hydrocarbon, and numerous aliphatic hydrocarbons. There was some indication that the polynuclear aromatics could be the priority pollutants naphthalene and anthracene. The majority of the constituents identified were aliphatic hydrocarbons (Table 11). The complete GC/MS report can be found in Appendix C.

Concentrations for total halogenated organic scan analyses of ground water samples from wells 10 and 13 collected under Phase I of this study (July 6, 1979 Report) although not alarmingly high, were elevated above concentrations normally encountered. As a consequence, a characterization of the compounds comprising this reported value was undertaken utilizing Gas Chromatography/Mass Spectrometry (GC/MS) analysis. In addition to these analyses, wells 10 and 13 as well as newly constructed well 14 were sampled and analyzed according to Schedules A and C of the Analytical Program. Surface waters (SP-1 and SP-2) were also

SCUSSION AND COMMENT (CONTD.)

mpled from the nearshore area (Niagara River) of Gratwick-Riverside Park .

GC/MS analyses of the June 11, 1979 samples (Wells 10 and 13) indicated detectable amount of halogenated constituents. Both samples did however, ntain polynuclear aromatics, oxygenated hydrocarbons, substituted aromatics, id aliphatic hydrocarbons. In addition, well 13 was found to contain one trogenous hydrocarbon. The constituents of well 10 and well 13 are listed in bles 12 and 13 respectively. These non-halogenated compounds are believed ccount for the previously reported total halogenated organic concentrations. ie GC/MS report detailing these analyses can be found in Appendix B.

Additional analytical work performed on samples from wells 10 and 13 strated elevated concentrations for several of the parameters examined Table 14).

Conductivity, pH, chloride, total phenol and the halogenated organic scan e elevated relative to existing ground water standards and expected background oncentrations for both well 10 and 13. In addition, total organic carbon a elevated for well 13. The halogenated organic scan (1,100ug/1) and total henol (63.1 mg/1) concentrations were particularly elevated for well 13. Previous nalytical results for these two parameters were 28.8ug/1 and 18.5 mg/1 respectively.

GC/MS characterization of the November 29, 1979 well 10 sample for halogen-ted constituents indicated that the sample contained primarily aliphatic ydrocarbons. Halogenated compounds were not detected for this sample. Gas hromatographic analysis of this sample utilizing a chlorine specific detector confirmed this GC/MS analysis ([redacted] GC/MS analysis for the presence of henolic compounds demonstrated the presence of phenol and a mono-and a di-alkyl henol isomer. The complete GC/MS report for this sample can be found in

I DISCUSSION AND COMMENT (CONTD.)

Appendix D.

GC/MS characterization of the November 29, 1979 Well 13 sample for halogenated constituents demonstrated the presence of chlorinated materials. Chlorobenzene isomers, as well as alkylated aromatics and oxygenated biphenyls were detected. Also identified without the use of an internal standard was the presence of dibenzodioxin isomers. The presence of dibenzodioxin was substantiated by the presence of various biphenyl compounds occurring as oxygenated and/or chlorinated derivatives. These latter compounds belong to a group of constituents which are precursors to dibenzodioxin molecules. Table 15 provides a detailed list of all compounds identified. Chlorine specific ,s chromatographic analyses confirmed the presence of chlorinated compounds in this sample (340 µg/l; [redacted]4). GC/MS analysis for phenolic compounds confirmed the presence of phenol and alkyl and chlorinated derivatives of phenol [redacted]. he GC/MS report detailing the above analyses can be found in Appendix D.

As a result of the elevated value obtained for the halogenated organic scan or the November 29, 1979 sample (1100µg/1) well 13 was resampled on two additional ccasions, December 26, 1979 and January 10, 1980. Values obtained for the halogenated organic scan on each of these dates was 17.4µg/1 and 38.6µg/1 espectively. ([redacted]). The 17.4µg/1 halogenated organic scan value 's considered somewhat suspect because of the fact that during sample preparation, some of the material crystallized out of solution and would not redissolve in he extract solvent. Analysis of the soil boring logs indicates that Well 13 was ened at the interface of fill materials and the natural soils. Consequently, t is felt that the variability in halogenated organic scan results for the arious sampling dates is probably due to the positioning of the well point.

DISCUSSION AND COMMENTS: (CONTD.)

Variability in halogenated organic scan results is also a function of the solids contained in the sample. Analysis of both the November 29, 1979 and January 1980 samples for soluble chlorinated organics demonstrates that a significant portion of the chlorinated organics recorded for the samples is associated with contained solids (Table [illegible]). From the data it is quite apparent that Well 13 is screened in an area containing chlorinated Waste materials and that solubilization of this material into associated ground water is occurring.

Analysis of samples from Well 14 demonstrated low concentrations for both the halogenated organic scan and the chlorinated organic scan. (Table 14). Gas Chromatography/Mass Spectrometry (GC/MS) analysis of this sample indicated the absence of halogenated compounds and the fact that sample constituents contributing to the halogenated organic scan were primarily aliphatic hydrocarbons.

The absence of contaminants in well 14 coupled with the fact that it is located upgradient of Gratwick-Riverside Park tends to demonstrate that the source of constituents identified in ground water samples from wells at Gratwick-Riverside Park is materials disposed of at the site. Given this data plus the fact that ground water flow in this area is towards the Niagara River, the potential exists for constituents identified in ground waters tested at the site to be discharged into the River. Analysis of surface waters (SP-1 and SP-2; Table [illegible]) in the nearshore area of the Park, however did not demonstrate elevated concentration for parameters examined. Because of current and dilution effects in the River, this data does not totally preclude the possibility for the discharge of identified ground water constituents into the Niagara River.

Response to New York State Department of Environmental Conservation Comments

In response to the New York State Department of Environmental Conservation

TABLE 12

CITY OF NORTH TONAWANDA
GAS CHROMATOGRAPHY/MASS SPECTROMETRY ANALYSIS
SEARCH FOR HALOGENATED COMPOUNDS

Sample Date: 6/11/79

Report Date: 10/15/79

GRATWICK-RIVERSIDE PARK WELL #10

	ABUNDANCE	NBS LIBRARY CHOICE	COMMENT
	low	1,3-dimethylbenzene	confirmed as an alkyl substituted aromatic hydrocarbon
	very low	(1-methylethyl)-benzene	confirmed as an alkyl substituted aromatic hydrocarbon
	very low	1,2,4-trimethylbenzene	confirmed as an alkyl substituted aromatic hydrocarbon
	low	2,5-dimethylnonane	confirmed as an aliphatic hydrocarbon
	very low	azulene	confirmed as a polynuclear aromatic hydrocarbon
	very low	2,2,3,4-tetramethylpentane	confirmed as an aliphatic hydrocarbon
	very low	2-methylnaphthalene	confirmed as a polynuclear aromatic hydrocarbon
	very low	decosane	confirmed as an aliphatic hydrocarbon
	very low	2,7-dimethyloctane	confirmed as an aliphatic hydrocarbon
	very low	2-butyltetrahydrothiophene	insufficient spectral data for manual evaluation
	very low	dodecylphenol	insufficient spectral data for manual evaluation
	very low	octadecane	confirmed as an aliphatic hydrocarbon
	low	eicosane	confirmed as an aliphatic hydrocarbon

Continued . . . .

(Continued)

CITY OF NORTH TONAWANDA
GAS CHROMATOGRAPHY/MASS SPECTROMETRY ANALYSIS
SEARCH FOR HALOGENATED COMPOUNDS

Sample Date: 6/11/79

Report Date: 10/15/79

GRATWICK-RIVERSIDE PARK WELL #10

ANCE	NBS LIBRARY CHOICE	COMMENT
	eicosane	confirmed as an aliphatic hydrocarbon
	octadecane	confirmed as an aliphatic hydrocarbon
	eicosane	confirmed as an aliphatic hydrocarbon
	heneicosane	confirmed as an aliphatic hydrocarbon
m	hexadecanoic acid	confirmed as an oxygenated aliphatic hydrocarbon
	pentacosane	confirmed as an aliphatic hydrocarbon
m	pentacosane	confrimed as an aliphatic hydrocarbon
y high	octadecanoic acid	confirmed as an oxygenated aliphatic hydrocarbon
gh	pentatriacontane	confirmed as an aliphatic hydrocarbon
m	11-decyldocosane	confirmed as an aliphatic hydrocarbon
	pentacosane	confrimed as an aliphatic hydrocarbon
	hexatriacone	confirmed as an aliphatic hydrocarbon
low	hexatriacone	confirmed as an aliphatic hydrocarbon

FOR RECRA RESEARCH, INC. George M. Bailie

DATE 15 October 1979

RESEARCH INC

CITY OF NORTH TONAWANDA
GAS CHROMATOGRAPHY/MASS SPECTROMETRY ANALYSIS
SEARCH FOR HALOGENATED COMPOUNDS

Sample Date: 6/11/79

Report Date: 10/15/79

GRATWICK-RIVERSIDE PARK WELL #13

ABUNDANCE	NBS LIBRARY CHOICE	COMMENT
low	undecane	confirmed as an aliphatic hydrocarbon
low	2,3,5-trimethylpyridine	confirmed as a nitrogenous hydrocarbon
very low	naphthalene	confirmed as a polynuclear aromatic hydrocarbon
very low	octadecane	confrimed as an aliphatic hydrocarbon
low	tridecane	confirmed as an aliphatic hydrocarbon
low	pentacosane	confirmed as an aliphatic hydrocarbon
low	tridecane	confrimed as an aliphatic hydrocarbon
low	hexatriacontane	confirmed as an aliphatic hydrocarbon
low	pentacosane	confirmed as an aliphatic hydrocarbon
low	hexadecanoic acid	confirmed as an oxygenated aliphatic hydrocarbon
medium	eicosane	confirmed as an aliphatic hydrocarbon
high	eicosane	confirmed as an aliphatic hydrocarbon
low	octadecanoic acid, butylester	confirmed as an oxygenated aliphatic hydrocarbon
very high	pentacosane	confirmed as an aliphatic hydrocarbon
high	pentacosane	confirmed as an aliphatic hydrocarbon
medium	pentacosane	confirmed as an aliphatic hydrocarbon
low	eicosane	confirmed as an aliphatic hydrocarbon
low	11-decyldocosane	confirmed as an aliphatic hydrocarbon
low	tetratetracontane	confirmed as an aliphatic hydrocarbon

FOR RECRA RESEARCH, INC. George M. Bubis

DATE 15 October 1979

ANALYTICAL RESULTS

CITY OF NORTH TONAWANDA

Report Date: 12/19/79

Sample Dates: 11/29/79
12/3/79
12/4/79

GROUND WATER SAMPLES

	UNITS OF MEASURE	SAMPLE IDENTIFICATION (DATE)				
		W-10 (11/29/79)	W-13 (11/29/79)	W-15 (12/3/79)	W-16 (11/29/79)	W-14 (12/4/79)
	Standard Units	11.70	10.28	7.77	7.55	-
ty	µmhos/cm	2,690	2,020	660	860	-
	mg/l	390	47.5	18.1	47.0	-
arbon	mg/l	32.2	378	19	24.0	-
enol	mg/l	1.26	63.1	0.003	0.007	-
Scan	µg/l as Chlorine; Lindane Standard	2.7	1,100	2.5	2.7	<0.05
an	µg/l as Chlorine; Lindane Standard	<1.0	340	-	-	<1.0

Samples were collected and labelled by Recra personnel and received for analysis on 11/29/79, 12/3/79 and 12/4/79. All analyses were performed according to U. S. Environmental Protection Agency methodologies. Values reported as "less than" indicate the working detection limit for the particular sample/parameter. All requested analyses are reported.

FOR RECRA RESEARCH, INC. Robert K. Wyeth

DATE 12/21/79

TABLE 15

CITY OF NORTH TONAWANDA
GC/MS CHARACTERIZATION OF SAMPLE #W13

Date Received: 12/04/79
Report Date: 12/20/79

D ANCE	NBS LIBRARY CHOICE	COMMENT
	2,2,4,6,6-pentamethylheptane	confirmed as an aliphatic hydrocarbon
	1,3,5-trichlorobenzene	confirmed as a trichlorobenzene isomer
	1,2,4-trichlorobenzene	confirmed as a trichlorobenzene isomer
	1,2,3,4-tetrachlorobenzene	confirmed as a tetrachlorobenzene isomer
	10-methyleicosane	confirmed as an aliphatic hydrocarbon
	1,2,3,4-tetrachlorobenzene	confirmed as a tetrachlorobenzene isomer
	phenol	confirmed as phenol
	2-methylphenol	confirmed as a methylphenol isomer
	1,1'-biphenyl	confirmed as biphenyl
	1,1'-oxybisbenzene	interpreted as oxygenated biphenyl
	2,5-dimethylphenol	confirmed as a dimethylphenol isomer
	eicosane	confirmed as an aliphatic hydrocarbon
	2,3-dimethylphenol	confirmed as a dimethylphenol isomer
	3,4-dimethylphenol	confirmed as a dimethylphenol isomer
	4-(1-methylethyl)phenol	confirmed as an alkylated phenol isomer
	dibenzofuran	confirmed on the basis of library fit
	4-chlorophenol	confirmed as a chlorophenol isomer
	hexatriacontane	confirmed as an aliphatic hydrocarbon
	1-hexadecanol	confirmed as an oxygenated aliphatic hydrocarbon
	2-methyl-2-pentene	confirmed as an aliphatic hydrocarbon
	sec-butylethylbenzene	confirmed as an alkyl substituted benzene isomer
high	\1,1-biphenyl\-2-ol	confirmed as an oxygenated biphenyl
	dipentylphthalate	confirmed as an alkyl substituted phthalate

Continued . . . .

TABLE 15
(Continued)

CITY OF NORTH TONAWANDA
GC/MS CHARACTERIZATION OF SAMPLE #W13

Date Received: 12/04/79
Report Date: 12/20/79

NCE	NBS LIBRARY CHOICE	COMMENT
	5-propyltridecane	confirmed as an aliphatic hydrocarbon
y low	1-chloro-2-phenoxy-benzene	possibly a chloroxy biphenyl
y high	\1,1'-biphenyl\-4-ol	confirmed as an oxygenated biphenyl
m	dibenzo B,E 1,4 dioxin	confirmed in the absence of a standard
	\1,1'-biphenyl\-4-ol,4'-chloro	confirmed in the absence of a standard
	dibenzo\B,E\\1,4\dioxin	confirmed as an isomer in the absence of a standard
dium	dibenzo\B,E\\1,4\dioxin	confirmed as an isomer in the absence of a standard
	1,3-dimethylbenzene	confirmed as an alkyl substituted aromatic hydrocarbon
dium	decane	confirmed as an aliphatic hydrocarbon
	7-methyltridecane	confirmed as an aliphatic hydrocarbon
	1-ethyl-2-methylbenzene	confirmed as an alkyl substituted benzene isomer
	1-ethyl-4-methyl	confirmed as an alkyl substituted benzene isomer
m	1,2,3-trimethylbenzene	confirmed as an alkyl substituted benzene isomer
	1,4-dichlorobenzene	confirmed as a dichlorobenzene isomer
	pentachlorobenzene	confirmed in the absence of a standard
	c-BHC	confirmed in the absence of a standard

FOR RECRA RESEARCH, INC. George M. Bubi

DATE 20 December 1979

RECRA RESEARCH INC.

TABLE 16

ANALYTICAL RESULTS

CITY OF NORTH TONAWANDA

Report Date: 1/12/80
Sample Date: 12/26/79

GROUND WATER SAMPLE

PARAMETER	UNITS OF MEASURE	SAMPLE IDENTIFICATION W-13
Conductivity	umhos/cm	745
Chloride	mg/l	372
Halogenated Organic Scan	µg/l as Chlorine; Lindane Standard	17.4

COMMENTS: Samples were collected by Recra personnel and received on 12/26/79. All analyses were performed according to U. S. Environmental Protection Agency methodologies. During Halogenated organic scan preparation, solvent insoluble crystallization occurred in the concentration procedure. Halogenated organic scan results are used for screening purposes only and are not designed for qualification or quantification of any specific organic compound. Results are calculated based upon the response factor of Lindane but do not imply either the presence or absence of Lindane itself. Halogenated organic scan results do not include volatile organic constituents.

FOR RECRA RESEARCH, INC. Robert K Smith

DATE 1/14/80

RECRA INC.

ANALYTICAL RESULTS

CITY OF NORTH TONAWANDA

Report Date: 1/12/80
Sample Date: 1/10/80

GROUND WATER SAMPLE

PARAMETER	UNITS OF MEASURE	SAMPLE IDENTIFICATION W-13
Recoverable Phenols	mg/l	50.0
Halogenated Organic Scan	µg/l as Chlorine; Lindane Standard	38.6
Soluble Halogenated Organic Scan	µg/l as Chlorine; Lindane Standard	4.2
Chlorinated Organic Scan	µg/l as Chlorine; Lindane Standard	6.6

COMMENTS: Samples were collected by Recra personnel and received on 1/10/80. Analyses were performed according to U. S. Environmental Protection Agency methodologies. Sample was found to contain suspended materials. These materials, based upon their solubility in extraction solvent, were believed to be suspended organic constituents. Halogenated and Chlorinated organic scan results are used for screening purposes only and are not designed for qualification or quantification of any specific organic compound. Results are calculated based upon the response factor of Lindane but do not imply either the presence or absence of Lindane itself. Halogenated and Chlorinated organic scan results do not include volatile organic constituents. Soluble Halogenated organic scan results are based upon analysis of the sample after 0.45 µm filtration.

FOR RECRA RESEARCH, INC. Robert K. Lyttle

DATE 1/14/80

RESEARCH INC.

TABLE 18

SAMPLE IDENTIFICATION	SAMPLE DATE	CHLORINATED ORGANIC SCAN*(µg/l as CHLORINE, LINDANE STANDARD)	SOLUBLE CHLORINATED ORGANIC SCAN** (µg/l as CHLORINE, LINDANE STANDARD)
W-13	11/29/79	340.0	94.0
W-13	1/10/80	6.6	3.0

* Unfiltered Sample
** Sample Filtered Through 0.45µm Membrane Filters

TABLE 2

ANALYTICAL RESULTS
CITY OF NORTH TONAWANDA

Report Date: 7/6/79
Sample Date: 6/11/79

GROUND WATER ANALYSIS

SAMPLE IDENTIFICATION NUMBER	SAMPLE LOCATION	PARAMETER (UNITS OF MEASURE) PHENOL (mg/l)	TOTAL HALOGENATED ORGANICS (ug/l AS CHLORINE; LINDANE STANDARD)
8	Turner Farm	< 0.01	0.58
9	Forbes Street	0.02	3.93
10	Gratwick - Riverside Park	9.10	11.5
11	Gratwick - Riverside Park	4.60	2.78
12	Gratwick - Riverside Park	1.08	0.12
13	Gratwick - Riverside Park	18.5	22.8

RESULTS: (Continued from Page 1 of 2). Generally the peaks found in the THO chromatograms were indicative of early eluting, low to medium molecular weight compounds. Possible compounds include substituted phenolics. Not all compounds in the chromatographs may necessarily be halogenated. Non-halogenated materials may be carried through the procedure and analyzed as halogenated compounds. Preliminary review of THO results indicate the possible presence of PCB's in the samples from the Botanical Gardens and Turner Farm. It is recommended that further analyses be undertaken to investigate the possibility of PCB's in these samples.

FOR RECRA RESEARCH, INC. [signature]

DATE 7/6/79

RECRA RESEARCH, INC. 111 Wales Avenue / Tonawanda, New York 14150 / (716) 692-7620

EPA 2070-13

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

EPA

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	932060

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site)	02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER
Gratwick Riverside Park	River Road/Witmer Road

03 CITY	04 STATE	05 ZIP CODE	06 COUNTY	07 COUNTY CODE	08 CONG DIST
			Niagara	63	36

09 COORDINATES LATITUDE	LONGITUDE
43 03 29"	78 54 26.8

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
6/29-30/84 (MONTH DAY YEAR)	☐ ACTIVE ☒ INACTIVE	1960 (BEGINNING YEAR) 1968 (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 Wehran Engineering (Name of firm) ☐ G. OTHER _____ (Specify)

05 CHIEF INSPECTOR	06 TITLE	07 ORGANIZATION	08 TELEPHONE NO.
Anthony Savino	Senior Scientist	Wehran	(914) 343-0660
09 OTHER INSPECTORS	10 TITLE	11 ORGANIZATION	12 TELEPHONE NO.
Michael Richter	Staff Scientist	Wehran	(914) 343-0660
			( )
			( )
			( )
			( )

13 SITE REPRESENTATIVES INTERVIEWED	14 TITLE	15 ADDRESS	16 TELEPHONE NO
			( )
			( )
			( )
			( )
			( )
			( )

17 ACCESS GAINED BY (Check one)	18 TIME OF INSPECTION	19 WEATHER CONDITIONS
☒ PERMISSION ☐ WARRANT	7:00a.m.-3:00p.m.	Partly cloudy/clear and warm

IV. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency/Organization)	03 TELEPHONE NO.
Anthony Savino	Wehran Engineering	(914) 343-0660

04 PERSON RESPONSIBLE FOR SITE INSPECTION FORM	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NO.	08 DATE
Anthony Savino		Wehran	(914)343-0660	10 / 9 84 (MONTH DAY YEAR)

EPA FORM 2070-13 (7-81)

EPA

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

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	932060

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)

- [X] A. SOLID
- [ ] B. POWDER, FINES
- [ ] C. SLUDGE
- [ ] E. SLURRY
- [ ] F. LIQUID
- [ ] G. GAS
- [ ] D. OTHER _____ (Specify)

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

- TONS: ≥50,000
- CUBIC YARDS: _____
- NO. OF DRUMS: _____

03 WASTE CHARACTERISTICS (Check all that apply)

- [X] 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	50	TN	+ grease
SOL	SOLVENTS			
PSD	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS	50,000	TN	Phenols resins organic molding
IOC	INORGANIC CHEMICALS			materials
ACD	ACIDS			
BAS	BASES			
MES	HEAVY METALS			

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

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
OCC	Phenols	108-95-2	LF	1-18.5	MG/L
MES	Lead	999	LF	43-150	PPB
MES	Mercury	73-39-976	LF	.7	PPB
OCC	Hexadecanoil Acid	999	LF	*	
OCC	Pentarosane	990	LF	*	
OCC	Octadecanoic Acid	999	LF	*	
OCC	Pentatriacontane	999	LF	*	
OCC	Eicosane	999	LF		
OCC	Biphenyls	999	LF	11-53	PPB
OCC	Butylbenzyl Phthalate	999	LF	20	PPB
			*GC/MS Scan, Library match or less.		

V. FEEDSTOCKS (See Appendix for CAS Numbers)

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS	Mercury	7439-976	FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

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

Previous EPA Form #2070-13 dated 5/6/83 prepared by Engineering Science

EPA

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

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	932060

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 ☒ A. GROUNDWATER CONTAMINATION
03 POPULATION POTENTIALLY AFFECTED: unknown
02 ☒ OBSERVED (DATE: 6/19/79) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

File information documents contamination (RECRA 1979)

01 ☒ B. SURFACE WATER CONTAMINATION
03 POPULATION POTENTIALLY AFFECTED: Unknown
02 ☒ OBSERVED (DATE: 6/84) ☒ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

Site forms riverbank, solid residues observed in contact with river water.

01 ☒ C. CONTAMINATION OF AIR
03 POPULATION POTENTIALLY AFFECTED: unknown
02 ☐ OBSERVED (DATE: 6/84) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

Sampling of air by Wehran Engineering indicates only background levels.

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

Unknown

01 ☒ E. DIRECT CONTACT
03 POPULATION POTENTIALLY AFFECTED: unknown
02 ☒ OBSERVED (DATE: 6/84) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

Exposed solidified resin and tarry substance easily contacted at riverbank. Site is a public park.

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

Potential for soil contamination exists due to contaminated groundwater.

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

Unknown

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

Groundskeepers at park may be exposed through direct contact route along river bank or due to any site excavations.

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

Users of park may be exposed through direct contact route.

EPA

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

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	932060

II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

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

Unknown

01 ☐ K. DAMAGE TO FAUNA — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION (Include names(s) of species)

Unknown

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

Unknown

01 ☒ M. UNSTABLE CONTAINMENT OF WASTES (Spills/Runoff/Standing liquids, Leaking drums) — 02 ☒ OBSERVED (DATE: 6/84) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ 04 NARRATIVE DESCRIPTION

Solidification resins observed on exposed riverbank, no drums visable, ash/residue visible.

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

Unknown

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

Infiltration into storm drain through site is possible.

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

Unknown

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

Unknown

III. TOTAL POPULATION POTENTIALLY AFFECTED: unknown

IV. COMMENTS

Wheatfield NCSWD Federal Superfund site is across the street-subsurface plume of contamination may impact site.

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

Niagara County Dept. of Health, Previous EPA Form 2070-13 prepared by Engineering Science dated 5/6/83.
Wehran Engineering's site inspection 6/84

EPA

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

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	932060

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 NA				
☐ B. UIC				
☐ C. AIR				
☐ D. RCRA				
☐ E. RCRA INTERIM STATUS				
☐ F. SPCC PLAN				
☐ G. STATE (Specify)				
☐ H. LOCAL (Specify)				
☐ I. OTHER (Specify)				
☐ J. NONE				

III. SITE DESCRIPTION

01 STORAGE/DISPOSAL (Check all that apply)	02 AMOUNT	03 UNIT OF MEASURE
☐ A. SURFACE IMPOUNDMENT		
☐ B. PILES		
☐ C. DRUMS, ABOVE GROUND		
☐ D. TANK, ABOVE GROUND		
☐ E. TANK, BELOW GROUND		
☒ F. LANDFILL	50,000 +	Tons
☐ G. LANDFARM		
☐ H. OPEN DUMP		
☐ I. OTHER (Specify)		

04 TREATMENT (Check all that apply)

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

05 OTHER

- ☒ A. BUILDINGS ON SITE — Picnic Shelter

06 AREA OF SITE

52 (Acres)

07 COMMENTS

Site is a city park-resins and ash residue exposed extensively on riverbank.

IV. CONTAINMENT

01 CONTAINMENT OF WASTES (Check one)

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

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

Waste exposed continuously at riverbank (ash residue and resins) moderate cover in some areas shows differential settling and potholing.

V. ACCESSIBILITY

01 WASTE EASILY ACCESSIBLE: ☒ YES ☐ NO

02 COMMENTS

Waste is readily accessible at riverbank.

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

Wehran Engineering
Site inspection 6/84.

EPA

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

I. IDENTIFICATION
01 STATE: NY | 02 SITE NUMBER: 932060

II. DRINKING WATER SUPPLY — Unknown

01 TYPE OF DRINKING SUPPLY (Check as applicable)

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

02 STATUS

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

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

III. GROUNDWATER — Unknown

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: unknown (mi)

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

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

Four wells visible at time of inspection.
Previous Form 2070-13 prepared by Engineering Science indicates 20 wells as of 4/28/83.

10 RECHARGE AREA		11 DISCHARGE AREA	
☒ YES ☐ NO	COMMENTS: Rain percs into ground	☒ YES ☐ NO	COMMENTS: Site Borders Niagara River

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:	Potentially AFFECTED	DISTANCE TO SITE
Niagara River	☒	site forms (mi)
	☐	riverbank (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. 1520 NO. OF PERSONS	B. 4940 NO. OF PERSONS	C. 8740 NO. OF PERSONS

02 DISTANCE TO NEAREST POPULATION: 0.1 (mi)

03 NUMBER OF BUILDINGS WITHIN TWO (2) MILES OF SITE	04 DISTANCE TO NEAREST OFF-SITE BUILDING
1500	500 (mi)

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

* Population data taken from previous EPA Form 2070-13 prepared by Engineering Science 5/6/83.
Wehran Engineering site inspection 6/84.

EPA

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

I. IDENTIFICATION
01 STATE: NY | 02 SITE NUMBER: 932060

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
25.0 (ft)	4.5 (ft)	5.6-7.3

06 NET PRECIPITATION	07 ONE YEAR 24 HOUR RAINFALL	08 SLOPE: SITE SLOPE	DIRECTION OF SITE SLOPE	TERRAIN AVERAGE SLOPE
13 (in)	2.1 (in)	0.83 %	SW	1.0 %

09 FLOOD POTENTIAL

SITE IS IN >500 YEAR FLOODPLAIN

10

N/A ☐ SITE IS ON BARRIER ISLAND, COASTAL HIGH HAZARD AREA, RIVERINE FLOODWAY

11 DISTANCE TO WETLANDS (5 acre minimum)

ESTUARINE	OTHER
A. _____ (mi)	B. 1.1 (mi)

12 DISTANCE TO CRITICAL HABITAT (of endangered species)

1.1 (mi)

ENDANGERED SPECIES: See below

13 LAND USE IN VICINITY

DISTANCE TO:

COMMERCIAL/INDUSTRIAL	RESIDENTIAL AREAS; NATIONAL/STATE PARKS, FORESTS, OR WILDLIFE RESERVES	AGRICULTURAL LANDS: PRIME AG LAND	AG LAND
A. Across Street (mi)	B. Site is a park (mi)	C. N/A (mi)	D. _____ (mi)

14 DESCRIPTION OF SITE IN RELATION TO SURROUNDING TOPOGRAPHY

Site is relatively level, uniform and gentle slope toward Niagara river observed with approximately 5 feet of relief at bank.

Endangered species:

Bald Eagle: Haliaetus Leucocephalus
Peregrine Falcon: Falco Peregrinus

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

Previous EPA Form 2070-13 prepared by Engineering Science 5/6/83; Wehran Engineering site inspection 6/84.

EPA

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

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	932060

II. SAMPLES TAKEN

SAMPLE TYPE	01 NUMBER OF SAMPLES TAKEN	02 SAMPLES SENT TO	03 ESTIMATED DATE RESULTS AVAILABLE
GROUNDWATER			
SURFACE WATER			
WASTE			
AIR	6	ERCO/Energy Resources Inc.	See attached report
RUNOFF		Cambridge, MA	in Appendix A
SPILL			
SOIL			
VEGETATION			
OTHER			

III. FIELD MEASUREMENTS TAKEN

01 TYPE	02 COMMENTS
HNU Photoionizer Model PI-101	See below.

IV. PHOTOGRAPHS AND MAPS

01 TYPE ☐ GROUND ☐ AERIAL

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

03 MAPS ☐ YES ☐ NO

04 LOCATION OF MAPS _____

V. OTHER FIELD DATA COLLECTED (Provide narrative description)

A HNU photoionizer survey of the site was conducted to determine the presence of VOC's. Only background levels were recorded.

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

Site inspection and sampling activity performed by Wehran Engineering, 6/84.

EPA

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

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	932060

II. CURRENT OWNER(S)

01 NAME	02 D+B NUMBER	04 SIC CODE
Niagara Mohawk		
03 STREET ADDRESS (P.O. Box, RFD #, etc.)		
300 Erie Boulevard		
05 CITY	06 STATE	07 ZIP CODE
Syracuse	NY	13202

PARENT COMPANY (If applicable)

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

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

01 NAME	02 D+B NUMBER	04 SIC CODE
City of N. Tonawanda		
03 STREET ADDRESS (P.O. Box, RFD #, etc.)		
City Hall		
05 CITY	06 STATE	07 ZIP CODE
North Tonawanda.	N.Y	14120
01 NAME	02 D+B NUMBER	04 SIC CODE
American Radiation		
03 STREET ADDRESS (P.O. Box, RFD #, etc.)		
05 CITY	06 STATE	07 ZIP CODE
01 NAME	02 D+B NUMBER	04 SIC CODE
Standard Sanitary		
03 STREET ADDRESS (P.O. Box, RFD #, etc.)		
05 CITY	06 STATE	07 ZIP CODE

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

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

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

Previous EPA Form 2070-13 prepared by Engineering Science, 5/6/83.

EPA

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

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	932060

II. CURRENT OPERATOR (Provide if different from owner)

01 NAME	02 D+B NUMBER	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	05 CITY	06 STATE	07 ZIP CODE	08 YEARS OF OPERATION	09 NAME OF OWNER
City of North Tonawanda		216 Payne Ave.		N. Tonawanda	NY	14120	1964-Present	Niagara Mohawk

OPERATOR'S PARENT COMPANY (If applicable)

10 NAME	11 D+B NUMBER	12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE	14 CITY	15 STATE	16 ZIP CODE

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

01 NAME	02 D+B NUMBER	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	05 CITY	06 STATE	07 ZIP CODE	08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD

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

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

Previous EPA Form 2070-13 prepared by Engineering Science 5/6/83.

EPA

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

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	932060

II. ON-SITE GENERATOR

01 NAME	02 D+B NUMBER
NO	

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
Hooker Durez*		Bell Aerospace	

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

05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE
North Tonawanda	NY	14120			

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

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

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

IV. TRANSPORTER(S)

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

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)

*Alleged, NYSDEC files from Phase I Report, Gratwick-Riverside Park, June 1983.

EPA

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

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	932060

II. PAST RESPONSE ACTIVITIES

01 ☐ A. WATER SUPPLY CLOSED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
NONE

01 ☒ B. TEMPORARY WATER SUPPLY PROVIDED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
NONE

01 ☐ C. PERMANENT WATER SUPPLY PROVIDED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
NONE

01 ☒ D. SPILLED MATERIAL REMOVED — 02 DATE 11/81 — 03 AGENCY _____
04 DESCRIPTION
Exposed drums were removed from shore and tested

01 ☐ E. CONTAMINATED SOIL REMOVED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
NONE

01 ☐ F. WASTE REPACKAGED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
NONE

01 ☐ G. WASTE DISPOSED ELSEWHERE — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
NONE

01 ☐ H. ON SITE BURIAL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
NONE

01 ☐ I. IN SITU CHEMICAL TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
NONE

01 ☐ J. IN SITU BIOLOGICAL TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
NONE

01 ☐ K. IN SITU PHYSICAL TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
NONE

01 ☐ L. ENCAPSULATION — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
NONE

01 ☐ M. EMERGENCY WASTE TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
NONE

01 ☐ N. CUTOFF WALLS — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
NONE

01 ☐ O. EMERGENCY DIKING/SURFACE WATER DIVERSION — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
NONE

01 ☐ P. CUTOFF TRENCHES/SUMP — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
NONE

01 ☐ Q. SUBSURFACE CUTOFF WALL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
NONE

EPA

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

I. IDENTIFICATION
01 STATE 02 SITE NUMBER
NY 932060

II PAST RESPONSE ACTIVITIES (Continued)

01 ☐ R. BARRIER WALLS CONSTRUCTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
NONE

01 ☒ S. CAPPING/COVERING — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
Partial seawall along Niagara River, site covered with soil and grass. Wastes still exposed at riverbank

01 ☐ T. BULK TANKAGE REPAIRED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
NONE

01 ☐ U. GROUT CURTAIN CONSTRUCTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
NONE

01 ☐ V. BOTTOM SEALED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
NONE

01 ☐ W. GAS CONTROL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
NONE

01 ☐ X. FIRE CONTROL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
NONE

01 ☐ Y. LEACHATE TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
NONE

01 ☐ Z. AREA EVACUATED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
NONE

01 ☐ 1. ACCESS TO SITE RESTRICTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
NONE

01 ☐ 2. POPULATION RELOCATED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
NONE

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

1979-City of North Tonawanda contracted RECRA Research to install 4 groundwater monitoring wells and sample additional wells installed at east side of park 1/28/80.

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

Previous EPA Form 2070-13 prepared by Engineering Science 5/6/83. Site inspection by Wehran Engineering 6/84.

EPA

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

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	932060

II. ENFORCEMENT INFORMATION

01 PAST REGULATORY/ENFORCEMENT ACTION ☒ YES ☐ NO

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

Local enforcement actions to limit and control blowing debris, litter etc., by local authorities during landfill operations in 1960's.

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

File information, Phase I Report, Gratwick-Riverside Park, June 1983.

SECTION 6.0
CONCLUSIONS AND RECOMMENDATIONS

SECTION 6.0
CONCLUSIONS AND RECOMMENDATIONS

Based on the evaluations performed as part of this Phase II Investigation, the following conclusions can be drawn:

- Ambient air monitoring data obtained from two consecutive days of sampling revealed the presence of low levels of several volatile organic compounds at the Gratwick Park site. These levels, however, do not exceed the ambient air concentrations noted at two other North Tonawanda NYSDEC Superfund sites (Holiday Park, Site Code 932033 and Botanical Gardens, Site Code 932068), as well as reported for several U.S. cities. These levels are also significantly less than enforceable OSHA indoor air workplace standards.

- A comparison of the air monitoring data to previously reported Phase I Investigation groundwater data shows some relationship from a generic standpoint, in terms of the chemical groups identified, but no specific compound correlations.

- The ambient air concentrations of volatile organic compounds detected at the Gratwick Park site do not pose any significant environmental or public health concerns at this point in time.

In light of these conclusions, it is recommended that additional ground and surface water sampling be performed at the Gratwick Park site. This sampling should be performed to accomplish the following goals:

- To confirm and update the data collected from previous groundwater sampling efforts.

- To determine if contamination of the Niagara River is occurring as a consequence of previous waste disposal activities at the site.

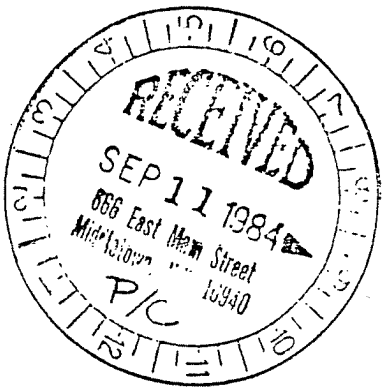
APPENDICES

Appendix A

APPENDIX A

ERCO | Energy Resources Co. Inc.

205 Alewife Brook Parkway
Cambridge, Massachusetts 02138
(617) 661-3111



September 10, 1984

Mr. Tony Savino
Wehran Engineering
666 East Main Street
Middletown, NY 10940

Dear Tony:

Enclosed please find the results for the 28 samples received on June 27, June 29, July 3, and July 13, 1984, and analyzed for volatile organic compounds using the EPA 624 Method.

If you have any questions, please do not hesitate to call me.

Sincerely,

Nancy Stewart

Nancy Stewart
Manager
GC/MS-VOA Laboratory

NS:rb
Encl.

Sample Received: 7/3/84
Analysis Completed: 8/27/84
Results in: ng/l
Reported by: JFM
Checked by: JRS

Client: Wehran Engineering

ERCO/ENERGY RESOURCES CO. INC.
VOLATILE ORGANICS ANALYSIS
BY EPA METHOD 624
- Data Report -

COMPOUNDS	Client ID: GP1T ERCO ID: 5352	GP2T 5353	GP3T 5354	GPT 5355
Chloromethane	ND	ND	ND	ND
Bromomethane	ND	ND	ND	ND
Vinyl chloride	ND	ND	ND	ND
Chloroethane	ND	ND	ND	ND
Methylene chloride	.62	.73	.76	ND
1,1-dichloroethylene	.28	.32	.34	ND
1,1-dichloroethane	ND	ND	ND	ND
Trans-1,2-dichloroethylene	ND	ND	ND	ND
Chloroform	.57	.68	.69	ND
1,2-dichloroethane	.25	.35	.32	ND
1,1,1-trichloroethane	ND	ND	ND	ND
Carbon tetrachloride	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	ND
1,2-dichloropropane	ND	ND	ND	ND
Trans-1,3-dichloropropylene	ND	ND	ND	ND
Trichloroethylene	.67	.74	.77	ND
Benzene	ND	ND	ND	ND
Dibromochloromethane	ND	ND	ND	ND
Cis-1,3-dichloropropylene	ND	ND	ND	ND
1,1,2-trichloroethane	ND	ND	ND	ND
Bromoform	ND	ND	ND	ND
1,1,2,2-tetrachloroethane	ND	ND	ND	ND
Tetrachloroethylene	.44	.50	.50	ND
Toluene	.43	.47	.50	ND
Chlorobenzene	.07	.07	.08	ND
Ethyl benzene	.15	.17	.16	ND
2-chloroethyl vinyl ether	ND	ND	ND	ND

ND = Not detected.

ERCO/ENERGY RESOURCES CO. INC.

VOLATILE ORGANICS ANALYSIS

BY EPA METHOD 624

- Data Report -

Client: Wehran Engineering

COMPOUNDS	Client ID: / ERCO ID:	GP1T 5352	GP2T 5353	GP3T 5354	GPT 5355
Additional Compounds					
Acetone		.65	3.3	3.3	ND
Carbon disulfide		2.3	2.8	2.7	ND
4-Methyl-2-Pentanone		ND	.70	ND	ND
Xylenes		1.3	.96	.96	ND
Reporting Limit:		.04	.04	.04	.04

Sample Received: 7/3/84
Analysis Completed: 8/9/84
Results in: ng/l
Reported by: JFM
Checked by: NS

ERCO/ENERGY RESOURCES CO. INC.
VOLATILE ORGANICS ANALYSIS
BY EPA METHOD 624
- Data Report -

Client: Wehran Engineering

COMPOUNDS	Client ID: / ERCO ID:	GP1C 5348	GP2C 5349	GP3C 5350	GPC 5351
Chloromethane		ND	ND	ND	ND
Bromomethane		ND	ND	ND	ND
Vinyl chloride		ND	ND	ND	ND
Chloroethane		ND	ND	ND	ND
Methylene chloride		ND	ND	ND	ND
1,1-dichloroethylene		ND	ND	ND	ND
1,1-dichloroethane		ND	ND	ND	ND
Trans-1,2-dichloroethylene		ND	ND	ND	ND
Chloroform		ND	ND	ND	ND
1,2-dichloroethane		ND	ND	ND	ND
1,1,1-trichloroethane		ND	ND	ND	ND
Carbon tetrachloride		ND	ND	ND	ND
Bromodichloromethane		ND	ND	ND	ND
1,2-dichloropropane		ND	ND	ND	ND
Trans-1,3-dichloropropylene		ND	ND	ND	ND
Trichloroethylene		ND	ND	ND	ND
Benzene		ND	ND	ND	ND
Dibromochloromethane		ND	ND	ND	ND
Cis-1,3-dichloropropylene		ND	ND	ND	ND
1,1,2-trichloroethane		ND	ND	ND	ND
Bromoform		ND	ND	ND	ND
1,1,2,2-tetrachloroethane		ND	ND	ND	ND
Tetrachloroethylene		ND	ND	ND	ND
Toluene		ND	ND	ND	ND
Chlorobenzene		ND	ND	ND	ND
Ethyl benzene		ND	ND	ND	ND
2-chloroethyl vinyl ether		ND	ND	ND	ND

ND = Not detected.

ERCO/ENERGY RESOURCES CO. INC.

VOLATILE ORGANICS ANALYSIS

BY EPA METHOD 624

- Data Report -

Client: Wehran Engineering

COMPOUNDS	Client ID: / ERCO ID:	GP1C 5348	GP2C 5349	GP3C 5350	GPC 5351
Additional Compounds					
Reporting Limit:		20	20	20	20

CONFIRMATION OF SAMPLES RECEIVED

CLIENT/BILLING ADDRESS:

Wehran Environmental
666 East Main St.,
Middletown,, NY 10940

CONTACT:
Tony Savino

INVOICE NO: 5648-04
PURCHASE ORDER:
TODAY'S DATE: 07/25/84
DUE DATE: 07/24/84
ERCO MANAGER: 118

ERCO MANAGER'S APPROVAL: _____ 8 Samples received

This document is sent as confirmation of sample receipt and cost. This is NOT an invoice. For information, please contact the ERCO manager.

SAMPLE INFORMATION: Samples Received on: 07/03/84

SAMPLE NO	CLIENT ID	MATRIX	ANALYSES	COST
5348	GP1C Charcoal	CHAR	VOA Method 624	160.00
5349	GP2C Charcoal	CHAR	VOA Method 624	160.00
5350	GP3C Charcoal	CHAR	VOA Method 624	160.00
5351	GPC Charcoal	CHAR	VOA Method 624	160.00
5352	GP1T Tenax	TEN	VOA Method 624	160.00
5353	GP2T Tenax	TEN	VOA Method 624	160.00
5354	GP2T Tenax	TEN	VOA Method 624	160.00
5355	GPT Tenax	TEN	VOA Method 624	160.00

TOTAL AMOUNT OF ORDER: 1280.00

RECEIVED AUG 1 1984 666 East Main Street Middletown, N.Y. 10940

SAMPLE NO	CLIENT ID	MATRIX	ANALYSES	COST

ERCO ACCOUNTING INFORMATION ONLY:

CENTER 17 TOTAL: 1280.00

WEHRAN ENVIRONMENTAL LABORATORY

CHAIN OF CUSTODY RECORD

PROJECT: NUREC GRATWICK PARK

CLIENT: NUREC

JOB No.: 01424288 B-5

SAMPLE IDENTIFICATION:

LOCATION No.	LAB SAMPLE No.	CONTAINERS: NUMBER/TYPE	CONTAINER CONDITION
GP1C			
GP2C			
GP3C			
GPC			

CHAIN OF CUSTODY CHRONICLE:

COLLECTED BY:

1. NAME: MICHAEL RICHTER / ANTHONY SAVINO DATE: 6/30/84
   SIGNATURE: Anthony Savino SEALS PLACED ON CONTAINERS? ☒ YES ☐ NO

CUSTODY TRANSFERRED TO:

2. NAME: ANTHONY SAVINO DATE: 7/1/84 TIME: 5:00pm
   SIGNATURE: Anthony Savino ARE SEALS INTACT? ☒ YES ☐ NO ☐ N/A

CUSTODY TRANSFERRED TO:

3. NAME: DALLAS WAIT EPCO VIA FEDERAL EXP DATE: 7/2/84 TIME:
   SIGNATURE: ARE SEALS INTACT? ☒ YES ☐ NO ☐ N/A

RECEIVED IN LABORATORY BY:

4. NAME: DATE: TIME:
   SIGNATURE: ARE SEALS INTACT? ☐ YES ☐ NO ☐ N/A

DISPOSED BY:

5. NAME: DATE:
   SIGNATURE:

REFER TO "WATER QUALITY SAMPLING FIELD DATA SHEET" FOR SPECIFIC SAMPLING DETAILS.

WERE ANY SAMPLES SPLIT WITH ANOTHER PARTY? ☐ YES ☐ NO

IF YES, IDENTIFY:

REVISED 3/85

WEHRAN ENVIRONMENTAL LABORATORY

CHAIN OF CUSTODY RECORD

PROJECT: NYDEC GRATWICK PARK

CLIENT: NYDEC

JOB No.: 01424288 B-5

SAMPLE IDENTIFICATION:

LOCATION No.	LAB SAMPLE No.	CONTAINERS: NUMBER/TYPE	CONTAINER CONDITION
GP 1T		TENAX 6X70	NEW
GP 2T		TENAX 6X70	NEW
GP 3T		TENAX 6X70	NEW
GPT		TENAX 6X70	NEW

CHAIN OF CUSTODY CHRONICLE:

COLLECTED BY:

1 NAME: MICHAEL RICHTER ANTHONY SAVINO DATE: 6/29/84

SIGNATURE: [signature] SEALS PLACED ON CONTAINERS? ☒ YES ☐ NO

CUSTODY TRANSFERRED TO:

2 NAME: ANTHONY SAVINO DATE: 7/1/84 TIME: 5:00pm

SIGNATURE: [signature] ARE SEALS INTACT? ☒ YES ☐ NO ☐ N/A

CUSTODY TRANSFERRED TO:

3 NAME: DALLAS WATERCO U/M FEDERAL EXPRESS DATE: 7/2/84 TIME: _____

SIGNATURE: _____ ARE SEALS INTACT? ☐ YES ☐ NO ☐ N/A

RECEIVED IN LABORATORY BY:

4 NAME: _____ DATE: _____ TIME: _____

SIGNATURE: _____ ARE SEALS INTACT? ☐ YES ☐ NO ☐ N/A

DISPOSED BY:

5 NAME: _____ DATE: _____

SIGNATURE: _____

REFER TO "WATER QUALITY SAMPLING FIELD DATA SHEET" FOR SPECIFIC SAMPLING DETAILS.

WERE ANY SAMPLES SPLIT WITH ANOTHER PARTY? ☐ YES ☐ NO

IF YES, IDENTIFY: _____

REVISED 3/83

WEHRAN ENGINEERING
CONSULTING ENGINEERS

AIR QUALITY SAMPLING FIELD DATA SHEET

PROJECT: GRATWICK PARK
CLIENT: NYSDEC
JOB No.: 01424288 B-8
SAMPLER: AS/MFR
LAB No.:
LOCATION: 1 (UPWIND)

DATE: 6/29/84
START TIME: 8:30 AM
FINISH TIME:
SET FLOW RATE: 1LPM PUMP 1/1
TUBE SIZE AND TYPE: TENAX GP1 T 1.2

DATE	TIME	PRECIPITATION	WIND DIRECTION	WIND SPEED	DRY BULBT	WET BULBT	RELATIVE HUMIDITY *	FLOW RATE	BAROMETRIC PRESSURE	NOTES
6/29	8:30	NO	SAME AS		62	58	79	OK	29.9*	INITIAL READINGS
	9:15	YES	LOC.	2	62	59	84	OK	—	*US WEATHER BUREAU FORECAST · DRIZZLE
	10:25	NO	↓	↓	64	60	79	OK	—	
	11:50	NO	↓	↓	66	61	75	OK	—	
	1:30	NO	↓	↓	73	66	69	OK	—	SUNNY
	2:30	NO	↓	↓	71	66	77	OK	—	
	3:35	NO	↓	↓	75	68	70	OK	—	
	4:30	NO	↓	↓	76	69	70	OK	—	FINISH

TOTAL VOLUME SAMPLED: 480 LITERS
TOTAL ELAPSED TIME: 480 MIN (AS PROGRAMMED)

DATE SHIPPED TO LAB: 7/2/84

WEHRAN ENGINEERING
CONSULTING ENGINEERS

AIR QUALITY SAMPLING
FIELD DATA SHEET

PROJECT: GRATWICK PARK
CLIENT: NJDEC
JOB No.: 014242S8 B-8
SAMPLER: ASHMER
LAB No.:
LOCATION: 2 ON-SITE

DATE: 6/29/84
START TIME: 8:07 AM
FINISH TIME:
SET FLOW RATE: 1 LPM ROTO. 1.2. PUMPING
TUBE SIZE AND TYPE: TENAX
GPRT GPT

DATE	TIME	PRECIPITATION	WIND DIRECTION	WIND SPEED	DRY BULBT	WET BULBT	RELATIVE HUMIDITY %	FLOW RATE	BAROMETRIC PRESSURE	NOTES
6/29	8:15	NO	N-NE	2	59	57	89	OK	29.9*	INITIAL READINGS
	9:10	YES	↓	0-5	61	59	84	OK	-	*US WEATHER BUREAU FORECAST DRIZZLE
	10:15	NO	NE	4	64	59.5	77	OK	-	
	11:30	NO	NE	CALM	63	60	84	OK	-	
	1:20	NO	W	2-3	71	67	81	OK	-	SUNNY
	2:35	NO	W	2-3	75	68	70	OK	-	↓
	3:45	NO	NE	3	73	66	69	OK	-	
	4:05	NO	N	CALM	75	68	70	OK		FINISH
										COOL, CLOUDY, OVERCAST AT START

TOTAL VOLUME SAMPLED: 480 LITERS
TOTAL ELAPSED TIME: 480 MIN (AS PROGRAMMED)
DATE SHIPPED TO LAB: 7/2/84

WEHRAN ENGINEERING
CONSULTING ENGINEERS

AIR QUALITY SAMPLING
FIELD DATA SHEET

PROJECT: GRATWICK PARK
CLIENT: NUSEC
JOB No.: 014-24258 B-8
SAMPLER: AS/MFR
LAB No.:
LOCATION: 3

DATE: 6/29/84
START TIME: 8:45
FINISH TIME: 4:45 PUMP NO. 3
SET FLOW RATE: 1 LPM ROTO - 1.2
TUBE SIZE AND TYPE: TENAX GP3T

DATE	TIME	PRECIPITATION	WIND DIRECTION	WIND SPEED	DRY BULBT	WET BULBT	RELATIVE HUMIDITY *	FLOW RATE	BAROMETRIC PRESSURE	NOTES
6/29	8.45	YES	SAME	AS	60	58	89	OK	29.9*	INITIAL READINGS
			LIGHT	2						* NO WEATHER BUREAU
	9:55	NO	↓	↓	62	59	84	OK	—	DRIZZLE
	11:05	~~YES~~	↓	↓	63	59	79	OK	—	
	12:10	NO	↓	↓	65	61	80	OK	—	
	1:40	NO	↓	↓	72	66	73	OK	—	SUNNY
	3:25	NO	↓	↓	75	67	66	OK	—	
	4:45	NO	↓	↓	73	66	70	OK	—	FINISH

TOTAL VOLUME SAMPLED: 480 LITERS
TOTAL ELAPSED TIME: 480 MIN (AS PROGRAMMED)
DATE SHIPPED TO LAB: 7/2/84

WEHRAN ENGINEERING
CONSULTING ENGINEERS

AIR QUALITY SAMPLING
FIELD DATA SHEET

PROJECT: GRATWICK PARK
CLIENT: MSEC
JOB No.: 04247-88 B-B
SAMPLER: AS/MER
LAB No.:
LOCATION: 1 (UPWIND)

DATE: 6/30/84
START TIME: 7:20 AM
FINISH TIME:
SET FLOW RATE: ILPM PUMP NO. 3 Rot 1.2
TUBE SIZE AND TYPE: ~~CHARCOAL~~ GP 1C

DATE	TIME	PRECIPITATION	WIND DIRECTION	WIND SPEED	DRY BULBT	WET BULBT	RELATIVE HUMIDITY *	FLOW RATE	BAROMETRIC PRESSURE *	NOTES
6/30	7:20	NO	SAME AS		63	59.5	82	OK	29.6*	INITIAL READINGS
	8:20	NO	LOC.	2	63	60	84	OK	—	*US WEATHER BUREAU
	9:10	NO	↓	↓	65	61	80	OK	—	SUNNY
	10:20	NO	↓	↓	69	64.5	79	OK	—	
	11:35	NO	↓	↓	72	66	73	OK	—	
	12:45	NO	↓	↓	74	67	69	OK	—	SUNNY + CLOUD COVER
	1:50	NO	↓	↓	74	68	74	OK	—	
	3:25	NO	↓	↓	74	66	65	OK	—	FINISH

TOTAL VOLUME SAMPLED: 430 LITERS
TOTAL ELAPSED TIME: 4:30 HRS (AS PROGRAMMED)
DATE SHIPPED TO LAB: 7/2/84

WEHRAN ENGINEERING
CONSULTING ENGINEERS

AIR QUALITY SAMPLING
FIELD DATA SHEET

PROJECT: GRANVILLE PARK
CLIENT: NUSEC
JOB No.: 042-4288 B-5
SAMPLER: ASMER
LAB No.:
LOCATION: 2 ON-SITE

DATE: 6/30/84
START TIME: 7:05 AM
FINISH TIME:
SET FLOW RATE: 1 LPM PUMP 4
TUBE SIZE AND TYPE: CHARCOAL
GP2C GPC

ROTO-1.2

DATE	TIME	PRECIPITATION	WIND DIRECTION	WIND SPEED	DRY BULBT	WET BULBT	RELATIVE HUMIDITY %	FLOW RATE	BAROMETRIC PRESSURE	NOTES
6/30	7:05	NO	N-NW	3	59	57	89	OK	29.6*	INITIAL READINGS
	8:05	NO	N-NE	1-2	63	61	89	OK	—	*NOAA WEATHER BUREAU
	9:05	↓	↓	5-6	65	62	85	OK	—	COOL, SUNNY, CLEAR SUNNY
	10:05	↓	NE	5-7	61.5	63	80	OK	—	
	11:50	↓	N-NW	4	73	61	50	OK	—	GUST 8-10 MPH
	12:55	↓	N-NE	5	74	67	67	OK	—	
	2:00	↓	N	5	76	69	70	OK	—	
	3:05	↓	N	7-11	75	60	62		—	FINISH

TOTAL VOLUME SAMPLED: 480 LITERS
TOTAL ELAPSED TIME: 480 MIN (AS PROGRAMMED)

DATE SHIPPED TO LAB: 7/2/84

WEHRAN ENGINEERING
CONSULTING ENGINEERS

AIR QUALITY SAMPLING FIELD DATA SHEET

PROJECT: GRATWICK PARK
CLIENT: NYSDEC
JOB No.: 01424188 6-5
SAMPLER: AS / MFR
LAB No.:
LOCATION: STATION 3 DOWNWIND/ONSITE

DATE: 6/30/84
START TIME: 7:35 AM
FINISH TIME:
SET FLOW RATE: 1 LPM PUMP 5 ROTO 1.2
TUBE SIZE AND TYPE: CHARCOAL GP 3C

DATE	TIME	PRECIPITATION	WIND DIRECTION	WIND SPEED	DRY BULBT	WET BULBT	RELATIVE HUMIDITY %	FLOW RATE	BAROMETRIC PRESSURE	NOTES
6/30	7:35	NO	SAME	15	63	60	84	OK	29.6*	INITIAL READINGS
	8:30	NO	LOCAT.	2	63	61	89	OK	—	*US WEATHER BUREAU
	10:00	NO	↓	↓	69	65	81	OK	—	SUNNY
	12:00	NO	↓	↓	74	68	74	OK	—	
	1:05	NO	↓	↓	75	69	74	OK	—	
	2:05	NO	↓	↓	76	68	66	OK	—	
	3:35	NO	↓	↓	76	66	59	OK	—	FINISH

TOTAL VOLUME SAMPLED: 480 LITERS
TOTAL ELAPSED TIME: 480 MIN (as programmed)

DATE SHIPPED TO LAB: 7/2/84

Appendix B

APPENDIX B

NIAGARA COUNTY

HEALTH DEPARTMENT
HUMAN RESOURCES BUILDING
MAIN POST OFFICE BOX 428
10th AND EAST FALLS STREET
NIAGARA FALLS, NEW YORK 14302

August 10, 1984

Mr. Michael Richter
Wehran Engineering, Inc.
666 East Main Street
Middletown, NY 10940

Dear Mr. Richter:

As discussed in our telephone conversation of August 9, 1984, I have attached various items from our files regarding Holiday Park and Gratwick Park in North Tonawanda.

With respect to Gratwick Park, I have attached the following documents:

1. A profile report entitled "Gratwick Riverside Park" prepared by this department in May 1984. This report is a revision of a similar report prepared in 1981. If you have a copy of the 1981 report, please discard it and replace it with the 1984 report.

2. A copy of a memo from me to Steven Bates, New York State Department of Health which expresses our comments regarding the assessment report prepared by Weston in 1983.

3. A copy of a memo to Peter Buechi, DEC Region 9, expressing comments on the Phase I report prepared by Engineering - Science, Inc. for DEC in June 1983.

4. Copies of various inspection reports, permit applications, etc., dated 1964 to 1969.

If additional information is needed please refer to the references listed in the profile report or contact me with specific questions.

With respect to the Holiday Park site, the following are attached:

1. A copy of a memo. to Peter Buechi expressing comments on the Phase I report prepared for DEC. Please note especially Point No. 1 which should answer your question regarding the specific locations where waste burial occurred.

2. Various inspection reports, summary reports, newspaper clippings and permit applications from 1964 to 1977.

3. Descriptive information regarding the experimental refuse disposal machine used at this site during the 1960's.

I understand that you already have copies of our profile reports for Holiday Park and the Botanical Gardens. If not,a copy will be provided upon request. Please note that these reports were prepared in 1981 prior to the USGS investigation in 1982. We have very little historical or file data regarding the Botanical Garden site.

If you have specific questions regarding the history or status of any of these sites, I urge you to direct them to me. If you intend to perform additional field work, I would be happy to meet you on site. I can be contacted at (716) 284-3126.

Sincerely,

Michael E. Hopkins
Assistant Public Health Engineer

MEH:cs

cc: Mr. Peter Buechi/DEC-9
Mr. M. N. Vaughan

WEHRAN
ENGINEERING
Consulting Engineers

August 9, 1984

Mr. Michael Hopkins
Assistant Public Health Engineer
Niagara County Health Department
10th Street and East Falls Street
Niagara Fall, NY 14302

Re: (WE Project No. 01424288)

Dear Mr. Hopkins:

Pursuant to our conversation earlier today, I would like to request from your office any additional recent information regarding waste disposal at the Botanical Gardens, Holiday Park, or Gratwick Park Sites. As you know, we are in possession of data and information available as late as mid 1983 (from NYSDEC Phase I Reports). Any updated information you may have for inclusion with the Phase II reports for these three sites would be gratefully received.

Very truly yours,

WEHRAN ENGINEERING, P. C.

Michael F. Richter
Environmental Scientist

MFR/mef

Research & Design Center:
666 East Main Street
Middletown, NY 10940
(914) 343-0660

NIAGARA COUNTY HEALTH DEPARTMENT

MEMORANDUM

DATE: June 20, 1984

TO: Peter Buechi/DEC-9, Louis Violante/DOH/Buffalo, Steven Bates/DOH/Alba
J. A. Kehoe & M. N. Vaughan/NCHD

FROM: Mike Hopkins

SUBJECT: UPDATED PROFILE REPORT -
GRATWICK RIVERSIDE PARK SITE NO. 932060

RECEIVED
JUN 26 1984
BUREAU OF HAZARDOUS SITE CONTRO
DIVISION OF SOLID AND
HAZARDOUS WASTE

Attached is a copy of a revised profile report for your information, Please contact me with any questions.

MEH:cs
Attachment....

May 1984
Revision No. 2

NAME: DEC No. 932060

GRATWICK RIVERSIDE PARK

LOCATION: River Road, North Tonawanda, NY

Gratwick Park occupies 53 acres bounded by River Road, the Niagara River, the city line and a line running roughly east-west located several hundred feet south of the projected foot of Ward Road. All of this area is assumed to be former disposal area.

A site sketch and locator map are attached.

OWNERSHIP:

The property is owned by the Niagara Mohawk Power Corporation, 535 Washington Street, Buffalo, NY 14203. The contact person is Frederick C. McCall, Jr., General Attorney (716-856-2424).

NCHD files indicate that Niagara Mohawk owned the property during the time of active disposal operations.

OPERATIONAL HISTORY:

This area was apparently first used for disposal of a slag-like material. The earliest available inspection report (1964) lists the soil type as "slag fill". Boring logs indicate that much of this slag is below river level. The source of this material is unknown. The site was used for municipal disposal by the City of North Tonawanda from the early 1960's (or earlier) until 1968. Waste types disposed of included municipal incinerator residue, garbage and general refuse. Open burning is known to have occurred. A 1964 inspection report states that 30 tons of garbage and 100 tons of rubbish were disposed of per week. All wastes were reportedly generated within the City. Wastes were reportedly covered bi-weekly with incinerator ash, road construction debris or "molding sand".

The Durez Division of Hooker Chemical is believed to have also used the site for industrial disposal. Durez is listed as a user in the 1964 inspection reports. The Interagency Task Force Report (1979) also lists Durez as a user of the site. The IATF Report estimates that 25,000 tons of phenolic molding compounds, 25,000 tons of phenolic resin and 50 tons of grease and oil were disposed of by Durez at this site from 1962 to 1968. A 1967 NCHD memo notes that dust problems were associated with the disposal of "pink powder material (molding compound)".

It is possible that other industries have used this site for disposal. Bell Aerospace is listed as a user by IATF. Other industries operating in North Tonawanda during the 1960's produced iron and steel products, pumps, lumber, paper and abrasive wheels.

The site was closed in 1968 upon the opening of the NCSWD-Wheatfield Landfill. The site was subsequently graded, covered and grassed. The area was converted to a park by the City and is still maintained as a park. The park features open space, picnic areas and a boat launch ramp.

INVESTIGATIVE HISTORY:

In 1979, the City contracted Recra Research, Inc. to install monitoring wells (5) and collect groundwater samples from this site. Four of these wells were placed in the former disposal area and one was placed across River Road as an upgradient well.

The first round of sampling by Recra found phenol concentrations of 1.08 mg/l to 18.5 mg/l and THo concentrations of 0.12 ug/l to 22.8 ug/l in the on-site wells. Less than 0.05 ug/l THo and no detectable phenol was found in the upgradient well.

Subsequent sampling and analysis was performed on Wells No. 10 and 13 to attempt to identify the species which constituted the THo and phenol values. These analyses found that Well No. 10 contained primarily non-halogenated aliphatic compounds with some oxygenerated and biphenyl compounds present. Well No. 13 was found to contain di, tri and tetra chlorobenzenes, oxygenerated and biphenyl compounds and suspected isomers of dibenzodioxins (non-chlorinated). Various non-chlorinated aliphatic, aromatic and PNA compounds were also identified. Concentrations of THo and phenol were found to be much higher in the follow-up analyses than in the initial. THo concentrations as high as 1100 ug/l and phenol to 63.1 mg/l were reported. Recra concluded that a major portion of the THo and phenol concentration was associated with the suspended solids in the samples.

Recra concluded the groundwater passing through the site is contaminated and that the direction of flow is toward the Niagara River. Recra recommended additional testing.

NCHD conducted a preliminary investigation in 1981. Samples were collected from the existing wells. Analyses of these samples found very low (generally non-detectable) levels of Cd, Hg, Pb, Cu, Ni and Cr (total). THo concentrations ranged far less than 1.0 ug/l (Well 11) to 35 ug/l (Well 10). Phenol concentrations ranged from 0.2 mg/l to 17 mg/l. Field inspection at this time found waste materials, including steel drums of solid material to be exposed along the shoreline. The surface of the site was found to be deteriorating although no waste was found exposed in the grassed areas.

At the request of NCHD, 33 exposed drums were removed from the shore area in 1981 by Niagara Mohawk. These drums were found to contain solid phenolic resin.

The U. S. Geological Survey installed three additional wells and sampled all new and existing wells in 1982 as part of the DEC/EPA Niagara River Study. The analytical results were in general agreement with those of Recra. The final USGS Report is not yet available and details of the draft report cannot be quoted at this time.

In 1983, Weston/SPER, Inc. collected well and soil samples under contract to EPA. Weston concluded that the quantity of contaminants migrating from the site was insignificant and that immediate action is not needed. NCHD has expressed concern regarding the methods used and conclusions reached by Weston.

NCHD found additional exposed drums of solid material in 1983. Again, these drums were found to contain solid phenolic resins. These drums had apparently "floated" to the surface near River Road as opposed to the drums previously exposed by erosion. Niagara Mohawk contracted the removal of these drums in the Winter of 1984. Nine drums were removed.

Engineering Sciences, Inc. and Dames and Moore, Inc. prepared a "Phase I" report for DEC under State Superfund in 1983. This report is essentially a collection of previously obtained data and provided no new data. Preliminary HRS scores of Sm = 5.82 and Sdc = 25.00 were generated. This study will involve an OVA survey and the computation of final HRS scores.

NCHD has inspected this site quarterly since 1981.

SOILS/GEOLOGY:

Based on the data available in the 1979 Recra Report, the general soil profile for the site is 10 to 18 feet of artificial fill over native sand and clay.

The artificial fill is composed of three principal layers. Silty topsoil comprises the upper one to two feet. Below the topsoil is 8 to 12 feet of refuse, cinders and some slag. Cemented slag, several feet thick, is found beneath the refuse/cinder/slag zone. Samples of the slag and refuse/cinder mix were reported to be moderately to strongly odorous by Recra.

Native soils consist of one to two feet of loose sand over sticky, silty clay. It is suspected that these soils composed the river bottom prior to filling.

Bedrock is expected to be Camillus Shale, based on interpolation of data from nearby sites. The site is suspected to be very near the outcropping of the Lockport Dolomite.

Differential settling, potholing, surface deterioration and numerous rodent holes are noticeable over most of the site, especially in the southern half. Shoreline erosion has created problems, especially along the northern half of the site.

GROUNDWATER:

Water table elevations in the on-site wells ranged from 564.8 to 569.3 during the 1979 study by Recra. These elevations correspond to depths of 3.5 to 9 fee below the surface. It therefore appears that some of the waste material is below the water table and below River level (reported as 563.8 feet).

Recra described the flow pattern as southwesterly between Wells 14, 13 and 10, southeasterly between Wells 14, 11 and 12 and westerly between Wells 11 and 13. Overall groundwater appears to be flowing toward the River. There is no other analyses of flow patterns available. There is no information available on flow in deeper aquifers.

Groundwater contamination beneath the site is well documented. Recra, USGS and NCHD have concluded that this contamination originated on site. Weston disputed this point, argueing that the contamination originated upgradient. This department questions Weston's conclusion.

There are no wells known to be in use within two miles of the site.

SURFACE WATER:

The Niagara River is adjacent to the site. Contaminants may be entering the River via groundwater discharge. The loading and any effect on water quality in the River are unknown.

The nearest downstream drinking water intake is the Niagara Falls intake located six miles downstream. Any effect on water quality at this point (exclusive of any possible cumulative effect with other contaminant sources) is expected to be insignificant due to the distance and large dilution volume (river flow is from 100,000 to 275,000 cfs).

The primary recreational uses downstream are for non-contact recreation due to the powerful currents.

The site (except possibly for the immediate shoreline area) is above 100 year flood plains. There are no designated wetlands within one mile of this site.

AIR QUALITY:

No odors have been detected in the park. Ambient HNu readings taken by Weston in 1983 were found to be about 1.6 ppm (calibration method unknown). No other air data is available.

LAND USE:

The site itself is used as a public park. Adjacent areas are either industrial or commercial except for the residential area along Witmer Road. The nearest residence is 500 feet from the site. Several thousand people live within one mile. This site is not expected to affect land use on any surrounding property. The suitability of site for use as a park should be further explored; however, no hazard to users is known to be present.

FIRE/EXPLOSION:

The potential for fire or explosion is believed to be no greater than at any other municipal/industrial disposal site.

DIRECT CONTACT:

The exposure of park users via direct contact is possible. This potential should be further investigated. On two previous occasions, drums of phenolic resins have become exposed. Surface soil samples have never been analyzed.

CONCLUSIONS:

Based on the data available to NCHD, the following conclusions were made:

1. Gratwick Riverside Park is located on an inactive disposal site used for municipal and industrial waste including phenolic compounds.

2. Shallow groundwater beneath the site is contaminated with organics.

3. Available data indicates that contaminants may be discharging to the Niagara River. The loading and effect on water quality in the River is unknown.

4. The effect of this site on water quality at the City of Niagara Falls intakes is considered to be insignificant based on the distance to the intakes and the high dilution ratio (exclusive of possible cumulative effects with other sources).

5. The existing data is inadequate to assess potential exposures to park users.

RECOMMENDATIONS:

1. Further investigation is needed to assess potential exposures to park users. Such investigation should include surface soil sampling and identification of any substances which could become exposed in the future.

2. The integrity of the cover and shoreline should be protected and maintained.

3. Quarterly inspections of cover and shoreline integrity should continue.

REFERENCES:

Recra Research, Inc., 111 Wales Ave., Tonawanda NY - Analytical Report - Sampling and Analysis Program - North Tonawanda, NY; July 1979

Niagara County Health Department, P. O. Box 428, Niagara Falls, NY 14302 - An Investigation of Selected Inactive Toxic Landfills in Conjunction with the Niagara River Study - August 1981

United States Geological Survey, Syosset, NY - Preliminary Investigation of the Impact of Waste Disposal Sites on Groundwater and the Niagara River (Draft) - 1983

Weston-SPER; Building 10, GSA Depot, Woodbridge Avenue, Edison, NJ 08837 - Memorandum to Robert Cobiella, Emergency Response Branch, USEPA re Gratwick Park Site Assessment - September 14, 1983

Engineering Sciences, Inc. in conjunction with Dames & Moore - Phase I Report - Engineering Investigations and Evaluations at Inactive Hazardous Waste Disposal Sites - Gratwick Riverside Park - June 1983

Interagency Task Force Report on Hazardous Waste - 1979

NCHD - various memos, letters, inspection reports, etc., all contained in NCHD file entitled "Gratwick Park - Inactive Landfill"

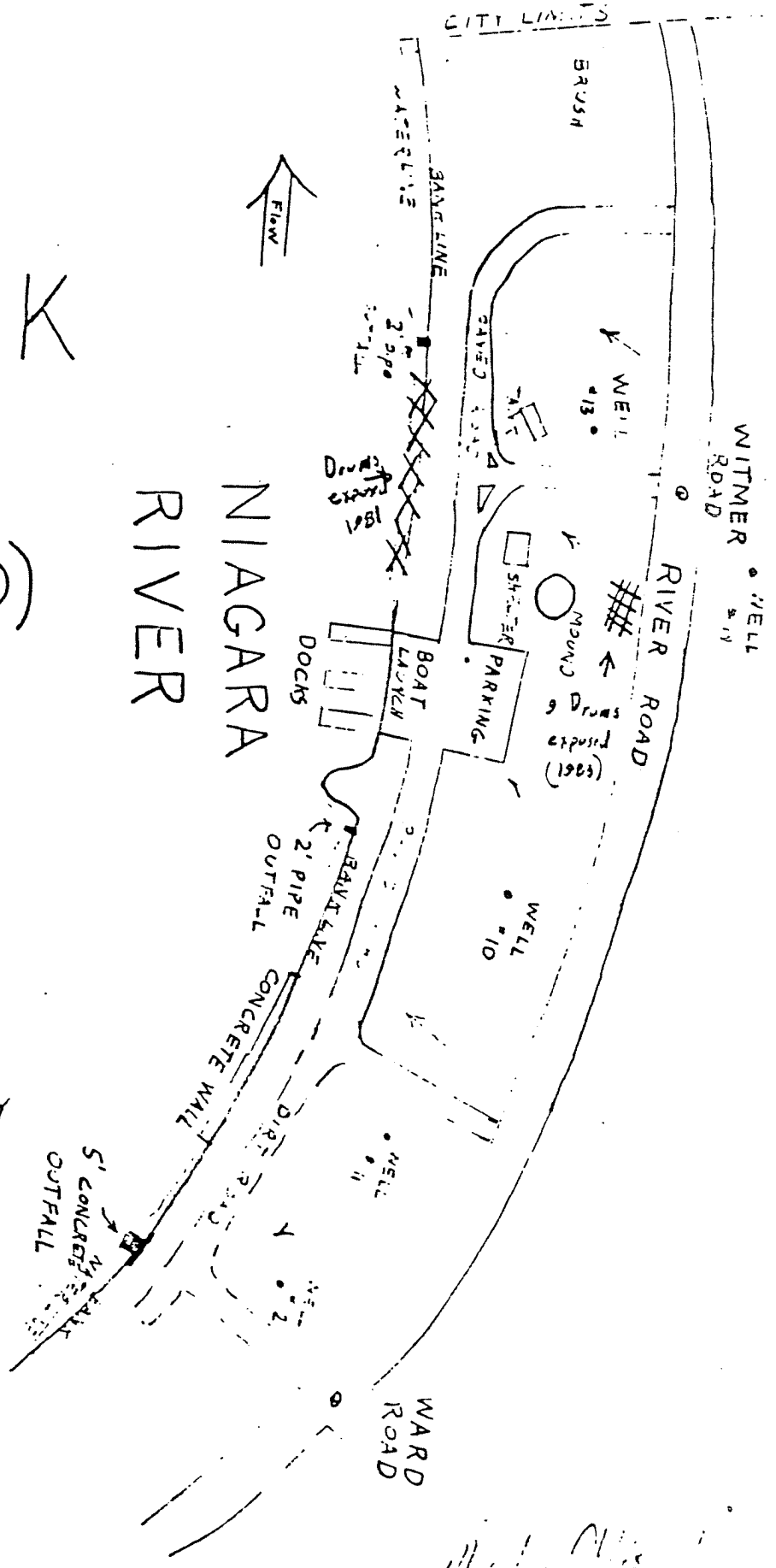
GRATWICK PARK

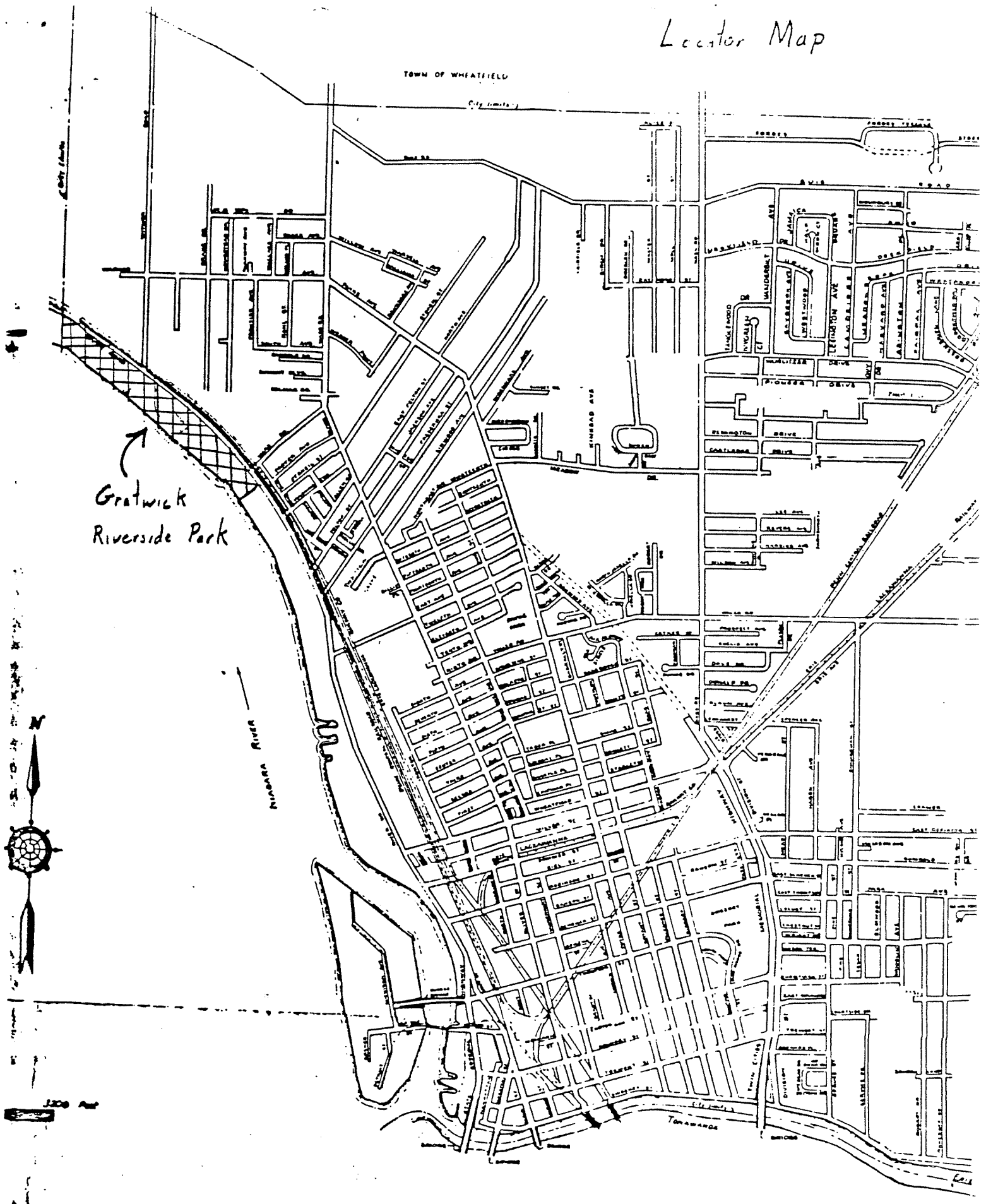
(DEC # 932060)

MAPPED FROM FIELD OBSERVATIONS ONLY

JUNE 12, 1981
NORTH TONAWANDA, NY

ARROWS INDICATE SUSPECTED DIRECTION OF GROUNDWATER MOVEMENT (RECRA)




Locator Map
TOWN OF WHEATFIELD
Gratwick
Riverside Park
NIAGARA RIVER
N

NIAGARA COUNTY HEALTH DEPARTMENT

MEMORANDUM

DATE: January 18, 1984

TO: Peter Buechi

FROM: Michael Hopkins

SUBJECT: PHASE I SUPERFUND REPORT - GRATWICK-RIVERSIDE PARK

I have reviewed the above-captioned report. The data presented in this report is essentially in agreement with the data available to this department. I also agree with the interpretation of this data for purposes of HRS scoring.

There is apparently some confusion with respect to the number and location of the monitoring wells on site. To clarify, I have attached a sketch showing the locations of the seven on-site and one off-site well. It is pointed out that the well locations shown on Figure V-2 of the report are incorrect and that the locations of the six wells shown on Figure V-1 are correct but two of the wells, USGS SA-5A and SA-5, are not shown.

It is also noted that additional soil, groundwater and OVA air testing was performed by Roy Weston Associates, Inc. under contract to EPA during the summer of 1983. If available, this information could be useful in preparation of the final HRS score.

This department is still concerned that this site may be a potential source of contamination of the Niagara River and may exhibit a potential for direct contact of park users with any contaminant present on the surface. The comments and concerns previously expressed by this department are still valid. In particular, we feel that surface soil testing for contaminants previously found in the groundwater should be done.

Please feel free to contact me with any questions.

MEH:cs
Attachment

cc: M. N. Vaughan

GRATWICK PARK

(DEC # 932060)

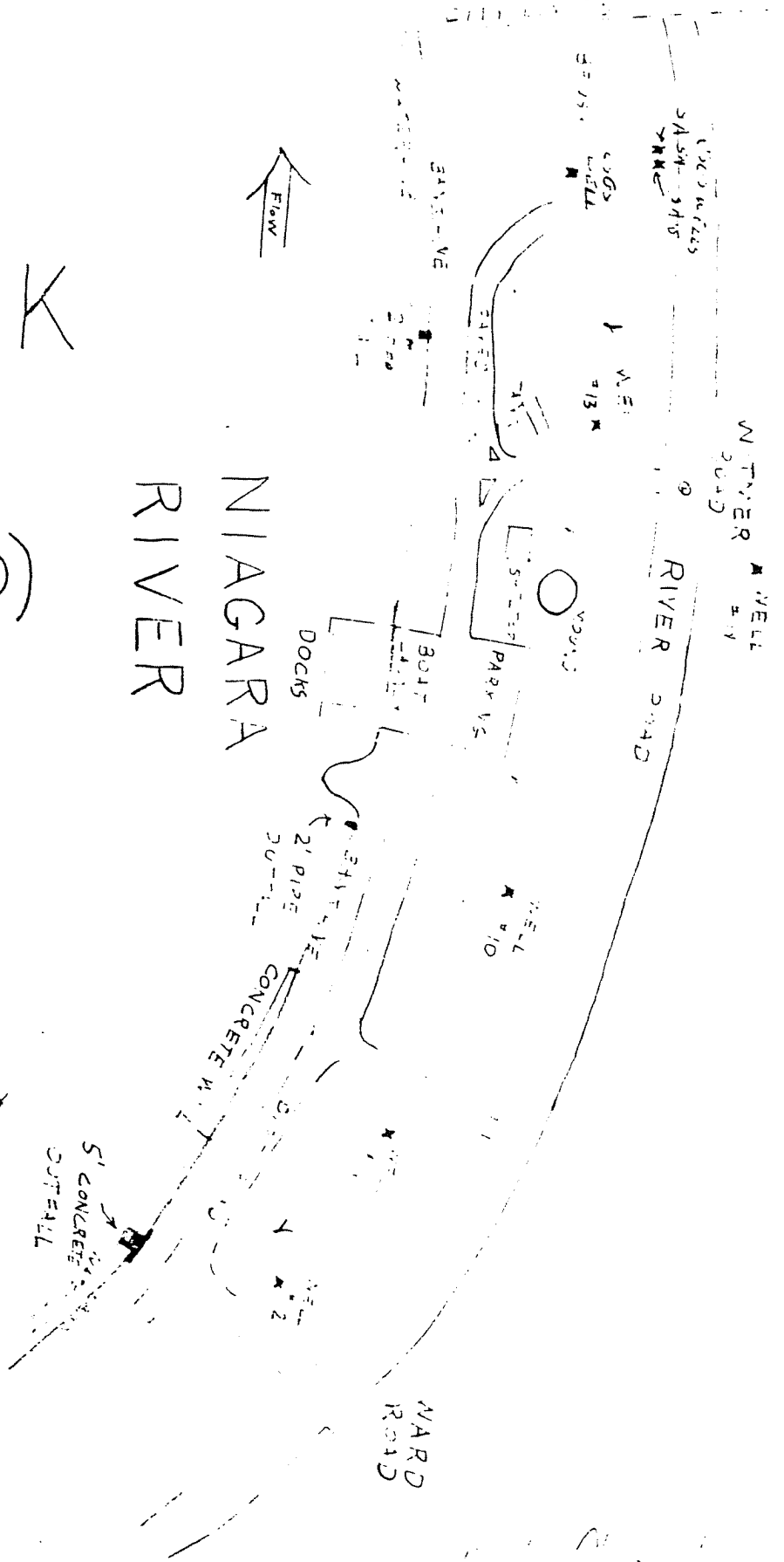
MAPPED FROM FIELD OBSERVATIONS ONLY

Base Map drawn
JUNE 12, 1981
NORTH TONAWANDA, NY

ARROWS INDICATE SUSPECTED DIRECTION OF GROUNDWATER MOVEMENT

well Locations update 1/13/84

* indicates well location



NIAGARA COUNTY HEALTH DEPARTMENT

MEMORANDUM

DATE: June 1, 1984

TO: Steven Bates

FROM: Michael Hopkins

SUBJECT: WESTON/SPER GRATWICK-RIVERSIDE PARK ASSESSMENT REPORT

As requested, I have reviewed the Weston report. In short, I have found several inaccuracies, deficiencies and the use of questionable assumptions and methods in the report. Weston's conclusions disagree with the conclusions of all previous site studies and the best judgement of this writer and this department. We cannot accept the conclusions reached by Weston based on the data presented in the report.

The following comments are made:

GENERAL COMMENTS

1. The Attachments No. 1 through 8 are not attached. This department wishes to review these documents. We already have a copy of the 1979 Recra Report (Attachment No. 2).

2. Immediately after completion of the Weston field work, this department expressed criticism of the quality and scope of field work and of the conduct of field personnel. Please see the attached memos.

SECTION 1

1. Several other sources of background data were provided to Weston by this department. These were apparently not used.

2. Weston used only the results of the first round of sampling from the Recra Report. Follow-up sampling and analyses found higher THo (up to 1100 ug/ℓ)and phenol (up to 63.1 mg/ℓ) concentrations in the groundwater. Several contaminants of potential concern were identified by Recra which are not mentioned by Weston including chlorobenzenes and non-chlorinated dibenzo dioxins (not TCDD).

SECTION 2

1. Paragraph No. 2 of Section 2. incorrectly quoted this writer. At no time did I state that "the northwest half of the site was used for chemical waste disposal and the southeastern portion was used for municipal refuse". This statement is not accurate. A more accurate statement would be that the entire site was used for municipal disposal with industrial (chemical) waste disposal also occurring in certain areas. There is strong evidence suggesting that there has been industrial disposal in the north-central quadrant of the site. However, the possibility that chemical waste is present in other areas has not been precluded. This department has always considered the entire site to be a potential industrial disposal site. This was emphasized to Weston personnel in the field by the writer.

2. Differential settling is occurring over the entire site, not just the southern portions although the settling is more severe in the southern portion.

3. I have serious doubts that any portion of the site has "an adequate clay cover". The integrity and apparent imperviousness of the cover is poor in many places. Numerous rodent holes have pierced the cap. Cave-ins and potholing have occurred, particularly in the southern most section. Shoreline erosion has previously caused waste to be exposed.

4. Based on my statement No. 2 in this section, the conclusion derived at the top of Page 2 is without basis.

SECTION 3

1. Based on the well construction details available in the Recra report and the USGS Draft Report (1982), the on-site wells are screened at the interface of the native clay and a "gray cemented slag-like material" which is several feet thick and apparently underlies much of the site. This material is visible along the shore at several locations and appears to be of low permeability. Since the wells are screened within this zone, the results of slug tests on the wells are suspected to indicate permeability lower than those of the zone above the slag-like material, which I feel is the zone of the greatest concern with respect to contaminant migration. It also follows that the hydraulic loading on the Niagara River are likely to be much higher than indicated by Weston. An increase in the loading would also affect the dilution rates presented in Section 4.

2. The locations of soil samples S-1 through S-6 are poorly chosen. This area was partially excavated in 1982 during the drum removal operation and some areas contain clean backfill. It cannot be determined which samples were taken from this material.

SECTION 4

1. The available data is not adequate to assure that the underlying native clay constitutes a continuous confining layer. It is also noted that the native clay layer is typically below river level and therefore of no benefit in restricting migration of contaminants to the river.

2. The conclusion that "the likelihood of substantial migration of contaminants from the landfill to the Niagara River is highly unlikely" is in direct disagreement with the Recra report, the USGS Draft Report and the best judgement of this department. My above arguments regarding the loading on the river apply to this point.

3. The conclusion that "the majority of the contaminants are from upgradient sources" is believed to be without merit based on the following points:

   a. The upgradient hazardous waste site referred to is the NCSWD-Wheatfield site. Two previous independent studies (under Federal Superfund) have reportedly found no evidence of significant migration via groundwater. It is my best judgement that any plume from that site would have flowed to the river north of the Gratwick Park site.

   b. Well No. 14 is upgradient of the site and would also likely intercept any contamination from the NCSWD site if migrating toward the Well 13 area in Gratwick Park. Less than 0.05 ug/l THo and no detectable phenol was reported by Recra in 1979 although considerably higher values were found in Wells 10 and 13 which are in the park area. It is also noted that all on-site wells are strongly odorous whereas well No. 14 is not.

   c. The TOC value (80,000 ug/l) reported by Weston for Well 14 is considered to be within the range of natural background for this area.

At this time, a report summarizing the available background data on this site is being prepared by this department. We will forward you a copy upon completion.

We request that your office keep us informed of any significant developments regarding this site. Feel free to contact me with any questions (284-3126). Thank you for this opportunity to comment.

MEH:cs

cc: Mr. P. Buechi/DEC-9
Mr. L. Violanti, P.E./DOH-BRO
Messrs. J. A. Kehoe & M. N. Vaughan

Attachments.....

NEW YORK STATE DEPARTMENT OF HEALTH
INSPECTION REPORT FOR REFUSE DISPOSAL AREAS

C.

Supt. - Louis Grasso

T, V, C	County	Owner	Address	Phone
City of N Tonawanda	Niagara	Niagara Mohawk	Webster St.	
Type of refuse: mixed ___ garbage ___ rubbish X other ___ *	Operator City N. Tonawanda City Engr. Clemente Teja	Address Robinson-River	Phone WX3-3200	

Municipalities served	Refuse collectors (names)
City of N Tonawanda; Durez Plastics	City Collects rubbish Rapid Disposal service Inc 852-6662
Total population ___ per cent served	

	Summer	Winter	Total amount of refuse
Business (average collections per week)	5	5	100 Tons Tons per week
Residential (average collections per week)	5	6	

Total area (acres)	Suitable cover material available Yes ☒ No ☐	Type of soil and topography	Depth to rock	Depth to ground water
5		slag fill - flat adj. to River	>10	6'

Gate and lock provided at entrance Yes ☐ No ☒	Adequate equipment available for maintaining refuse disposal area Yes ☒ No ☐	Describe type and numbers
		rent bulldozer

Fire protection available Yes ☒ No ☐	Describe	Drainage interfere with operation Yes ☐ * No ☒
[redacted]	Pump from River	

Days and hours refuse disposal site open.	Attendant on duty when refuse site open Yes ☒ No ☐	Site locked when closed Yes ☐ No ☒	Burning practiced Yes ☒ No ☐	Type of material burned?
5-Days 8-4				Papers & combustibles

Burned in a special area away from dump Yes ☐ No ☒	How often and what time of day?	How controlled?	What precautions are taken to prevent fires?
	daily upon receiving	Supervised	

How often is refuse compacted?	Covered Yes ☒ No ☐	Type of cover	Source of cover	Depth of cover?
		Ashes from Incinerator hauled in fill from Constr.	garbage incinerator road construction etc	6"

Cover graded and maintained so no nuisance is caused as the result of pooling of water, cracking, settling, etc. Yes ☒ No ☐	Dumping controlled by: Signs X Fencing ___ Supervision X
List any of the above that have been exempted by the full-time health officer ___	

Dumping confined to a narrow strip Yes ☐ No ☒	Width	Signs of leachings to a watercourse Yes ☐ * No ☐ Possibly	Signs of floating solids in a watercourse Yes ☐ * No ☒	Measures taken to control flies, rodents and other insects Yes ☒ No ☐
	—			

Papers confined to refuse site Yes ☒ No ☐ *	Scavenger wastes permitted Yes ☐ No ☒	Nuisance created Yes ☐ No ☒	Hazard created by the disposal of hazardous industrial wastes Yes ☐ No ☒

Methods of disposal of large items (furniture, tanks, appliances, stumps, etc.)
Crushed + burned 1

Salvaging permitted Yes ☐ No ☒	Nuisance created Yes ☐ * No ☒	Do swine feed on dump Yes ☐ No ☒	Is approach road passable to vehicular traffic during all seasons of year Yes ☒ No ☐

Have there been any complaints (smoke, odor, rodent, insects, water pollution) from people in the area Yes ☒ * No ☐

Remarks:

1 only one person allowed to salvage

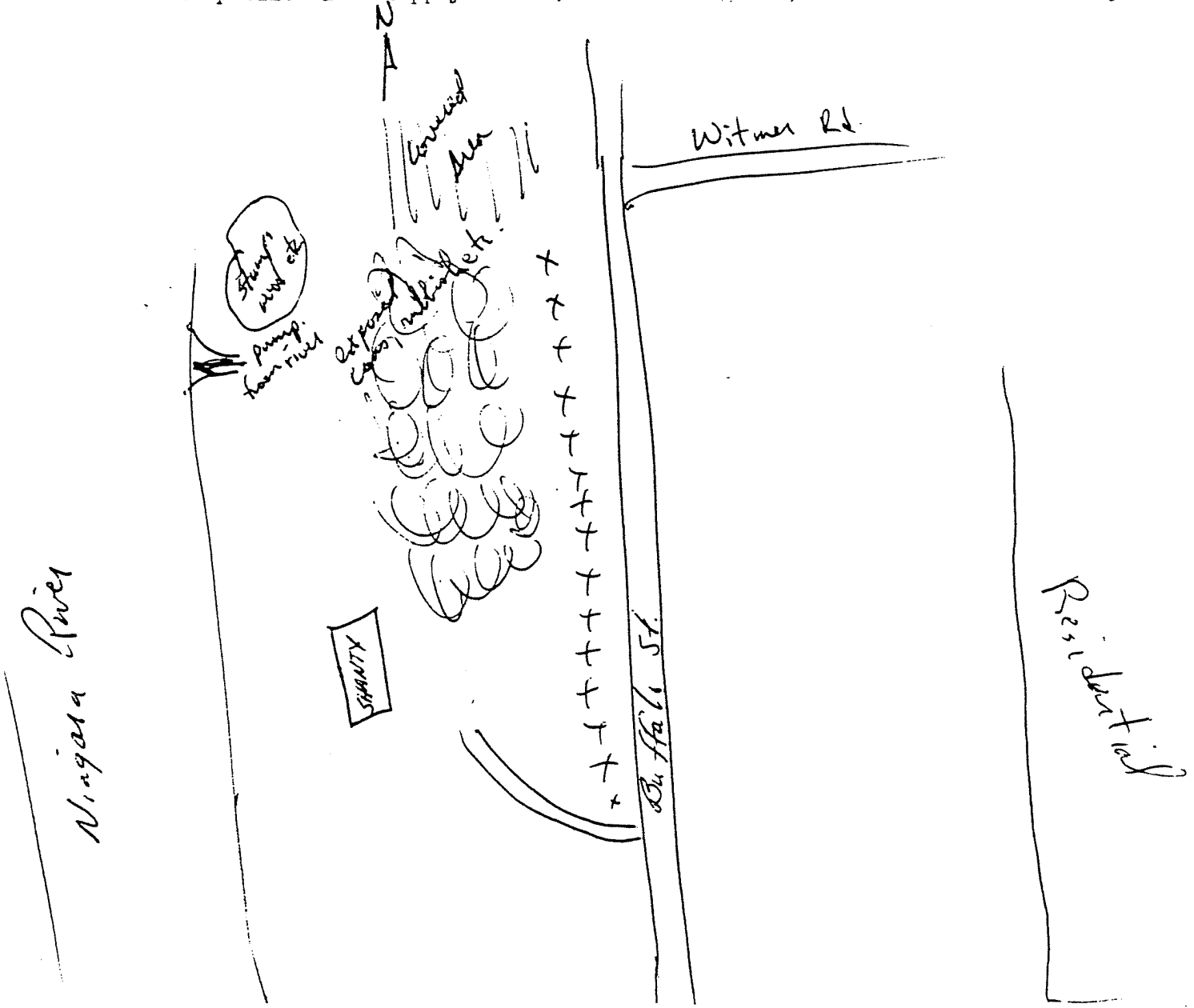
Garbage - 30 T/wk.
Rubbish - 20 T/Day ⇒ 100 T/wk.

2. City considering D-T Process to Entire

3. Smoke Complaints

*State details under Remarks.

Sketch: (Include location from a known point, access road, prevailing wind, refuse site boundaries, dumping face location, water courses, areas subject to flooding, natural drainage channels or gulleys, general land slope and slope of fill, distance to nearest public water supply source, fences and gates, and habitation within 1500 ft.)



Recommendations:
Note: Combustibles not to be dumped at site; should go to Incinerator; Only thing supposed to be dumped is tin cans, trash, logs etc.

Person Interviewed	Title	Date
Mr. Louis Grasso	Supt. Public Works	2/27/64

Inspected By (signature)	Date Inspected	Time Inspected	Report rec'd by (sign)	Date rec'd
R.C. Mt. Pleasant	2/27/64	From 12 00 To 1 00		

NEW YORK STATE DEPARTMENT OF HEALTH
APPLICATION FOR APPROVAL TO OPERATE A NEW REFUSE DISPOSAL AREA

Operator	Address	Days and hours attendant on duty
City of North Tonawanda	North Tonawanda, N. Y.	5 days 8 AM - 4 PM
Owner	**Address**	**Total usable area**
		_____ acres
Attendant	**Address**	**Type of soil**
City of North Tonawanda	North Tonawanda, N. Y.	Molding sand

Municipalities to be served
City of North Tonawanda, New York

Detailed site location and distance to centers of communities served
Niagara River front
Two miles

Total population 35,000 per cent served 100

Depth to rock	Depth to water	Will a gate and sign (showing rules) be provided at entrance*	Will area be locked when closed
8 feet		Yes [X] No [ ]	Yes [ ] No [X]

Days and hours site to be open Monday thru Friday 8AM - 4 PM

What precautions will be taken to prevent burning and to extinguish fires* No burning.

Describe method to be used for confining dumping to a narrow face and for compacting and covering all refuse daily.* Include source of cover material, type and number of equipment and times of operation. Sanitary land fill method. Molding sand available at dump site. One crawler tractor (bulldozer)

What measures will be taken to control insects and rodents?
Insecticides, rat poison

What means will be used to confine paper and refuse to site?
Material will be covered with molding sand.

Will salvaging be permitted Yes [ ] ** No [X]

What measures will be taken to keep approach road passable to vehicular traffic during all seasons of the year? All measures necessary i.e. snow removal, etc.

Attach a plot plan of the refuse disposal area sufficient to locate area with certainty, and include the following information: boundaries, habitation within 1500 ft., prevailing wind, access road, nearest public highway, sequence of dumping areas to be used, distance to nearest public water supply source, watercourses, direction of surface slope and rock slope, natural drainage channels, swamps, areas subject to flooding, fences and gates, topography (include contours at 2-5 ft. intervals or spot elevations, road elevations, final elevation of fill, flood level), portable shed for tools and maintance equipment, movable snow fences for paper and snow control, future use, final grade slope (1/2% to 1%), proposed seeding.

Signature of Operator	Date	Signature of Owner	Date
[signature]	1/13/65		

* If an exemption to this requirement is requested, it must be accompanied by adequate justification to show that a public health nuisance will not be created thereby.
**Explain on reverse side what means will be taken to prevent a nuisance.

THE HEALTH OFFICER MAY REQUIRE SUCH PLANS, REPORTS, SPECIFICATIONS AND OTHER DATA AS IS NECESSARY FOR HIM TO DETERMINE WHETHER THE SITE IS SUITABLE AND THE PROPOSED METHOD OF OPERATION FEASIBLE.

San 241 (4/63)

4. Due to the differences in analytical techniques, I do not believe that it is acceptable to compare TOC and phenol concentrations by the method used in Paragraph 3 of Section No. 4. Therefore, I consider the conclusions drawn in that paragraph to be invalid.

5. I do not agree with the recommendation that further investigation is not needed at this time. This department has maintained the position that additional investigation is still needed at this site in order to assess potential exposures to park users and the effects, if any, on water quality in the Niagara River.

6. We do not agree that phenol and TOC only are adequate parameters for follow-up study. We feel that identification and quantification of individual species, if possible, would be needed in follow-up studies.

7. We agree that protection of the shoreline from erosion is needed.

8. Please note that the exposed drums referred to by Weston were removed during the winter of 1984 at the direction of this department.

ATTACHED ANALYTICAL RESULTS

1. The sample obtained from Well No. 13 was observed in the field by the writer to contain a small amount of a second phase (apparently organic) material and considerable suspended solids. The analytical report does not specify whether or not this material was separated prior to analysis.

2. Volatiles analysis is not included. Appropriate vials for volatiles analyses were filled in the field but there is no indication that they were analyzed. The presence of volatiles is considered likely based on the strong solvent-like odor present in the wells and OUA readings as high as 1300 ppm from freshly opened wells.

In summary, this department disagreed with the major conclusions drawn by Weston. We feel that follow-up investigation is necessary.

Code Activity Rabies

NIAGARA COUNTY
DEPARTMENT OF HEALTH

Code Location

Service Request No.

Date Received Complaint

Service Request Inspection of North Tonawanda Dump

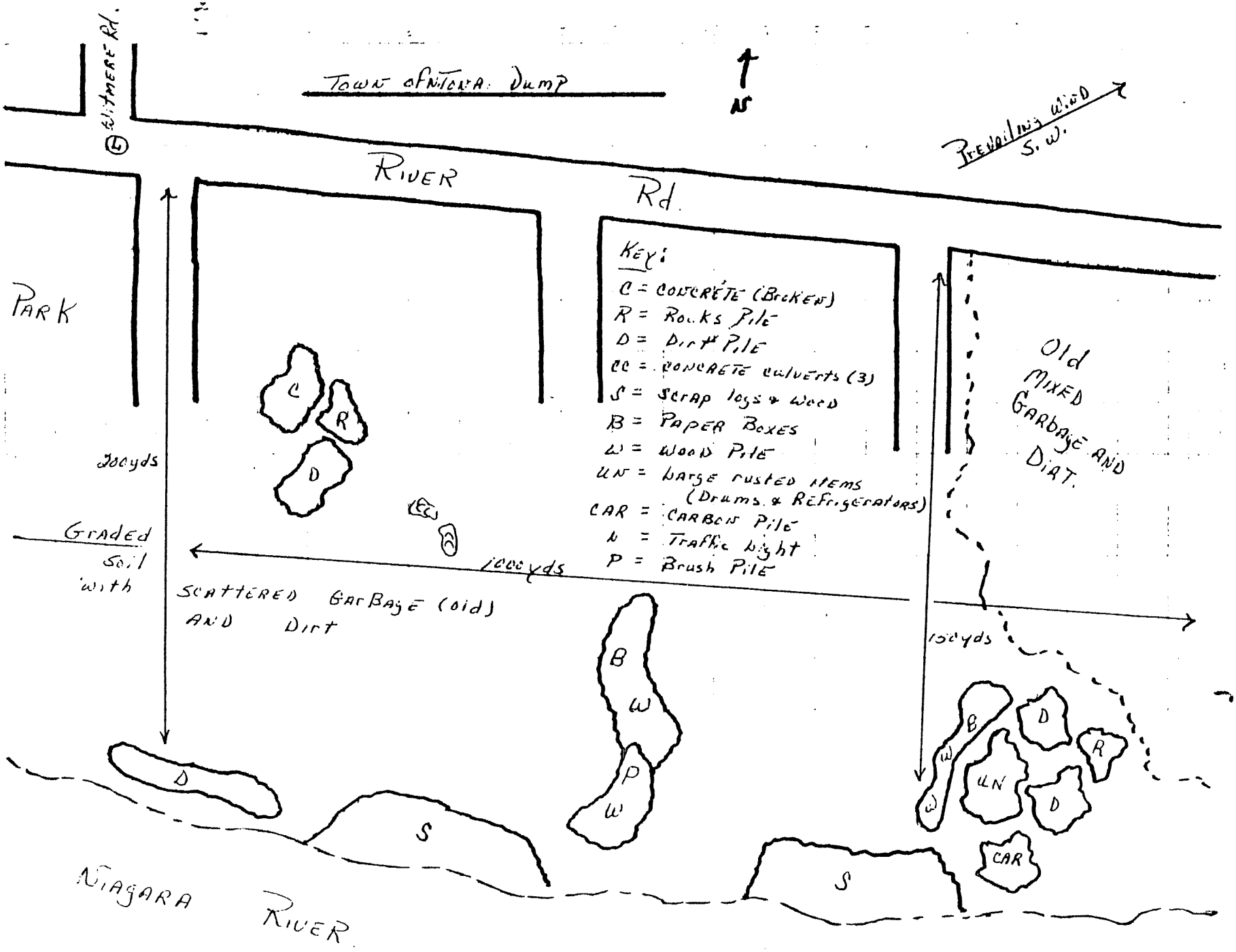
Originator of Complaint ..... Address .....

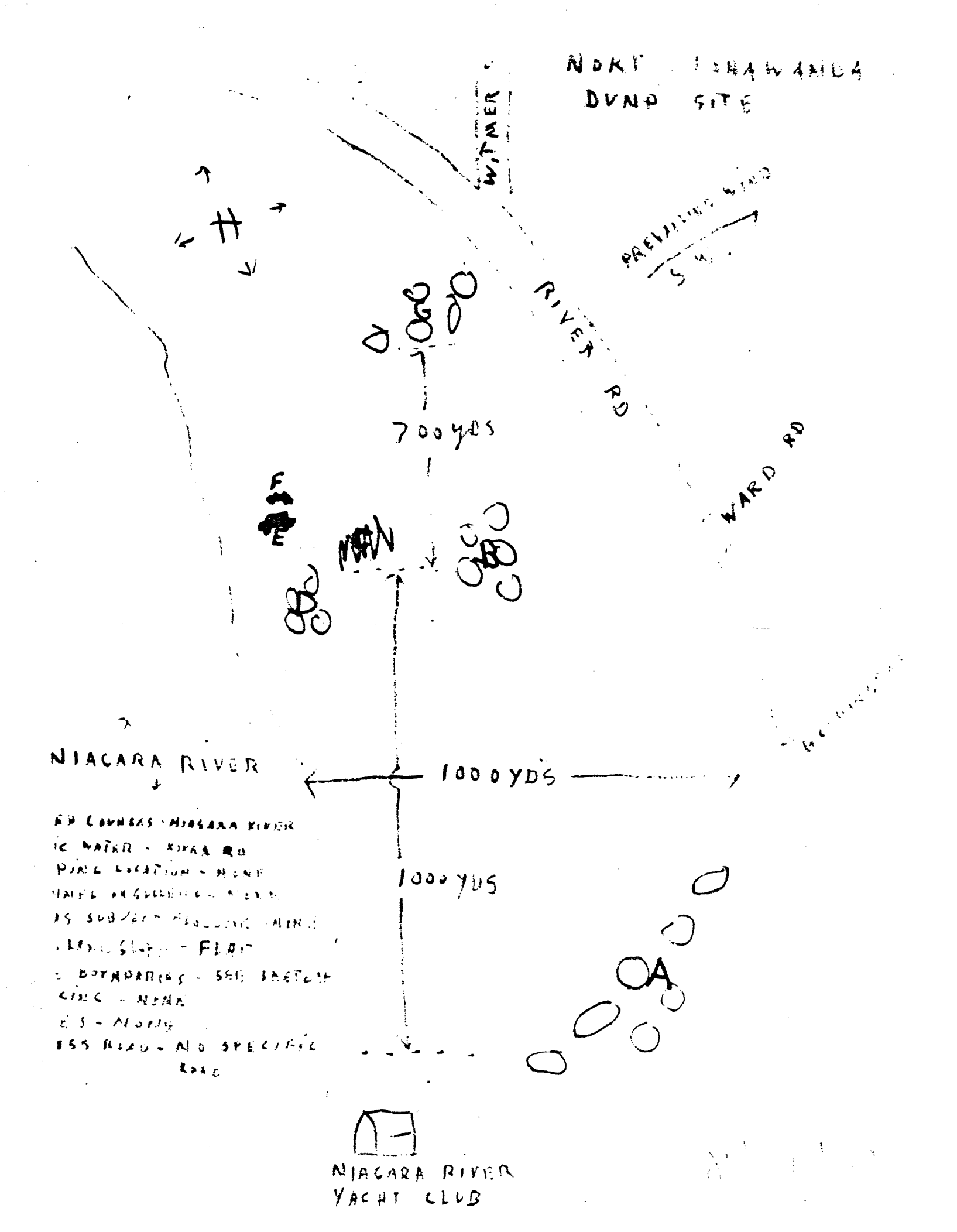
Owner Town of North Tonawanda Address .....

Occupant ..... Address .....

Date	Hours	REPORT OF INVESTIGATION
		Inspection of the North Tonawanda dump site revealed that approx. 75% of the area had a rough grading. This area had spotted areas of mixed garbage and dirt. The other 25% of the area located at the east end of the dump was composed mainly of a rough terrain of a mixed garbage composition. In one section there was located a pile of broken concrete surrounded by dirt piles on three sides. In another area near the edge of the town was located two piles of brush in between which was located a pile of old rusted uncrushed items. Signs were located along town road which stated; No dumping Police action and $50 dollar fine for dumping. For exact location of above described areas see map on following page. This dump has been closed since 1968. All refuse is now deposited at Niagara County Solid waste disposal agency on Witmer Rd.

Date Abated 3/13/69 By John C. Schreiber


Elizabeth Rd.
Town of Niagara Dump
N
Prevailing wind S. W.
River Rd.
Park
Key:
C = Concrete (Broken)
R = Rocks Pile
D = Dirt Pile
CC = Concrete culverts (3)
S = Scrap Iron & Wood
B = Paper Boxes
W = Wood Pile
UN = Large rusted items (Drums & Refrigerators)
CAR = Carbon Pile
L = Traffic light
P = Brush Pile
Old Mixed Garbage and Dirt
300 yds
Graded soil with
1000 yds
Scattered Garbage (old) and Dirt
150 yds
Niagara River


NORT
DUMP SITE
WATER
RIVER RD
700 yds
WARD RD
NIAGARA RIVER
1000 YDS
1000 YDS
NIAGARA RIVER
YACHT CLUB

A - 15 PILES DIRT WITH MIXED IN TREE ROOTS

B - TREE LIMBS MIXED INTO PILES OF DIRT + SOME CON

C - TREE LIMBS, CARD BOARD, WOOD, MATTRESSES

D - 20 PILES OF DIRT.

E - CAR BODY

F - SMALL PILE BROKEN MILK BOTTLES

G - PILES MIXED CRUSH STONE AND ASHPHALT + SOME DIRT

H - PARK

THE KEY ABOVE + THE SKETCH DECRIBES THE CONDITION OF THE NORTH TONAWAPH SWAMP. NO FRESH FOOD STUFFS WERE PRESENT. EXCEPT ~~FOR~~ AREAS C-E-F-, OTHER AREA HAD DUMPED MATERIAL WHICH COULD BE GRADED. FROM AREA H ON SKETCH MOVING SOUTH IT APPEARS THAT A SLOW EFFORT IS BEING MADE TO RECLAIM LAND AS A PARK. AREA TO THE SOUTH OF PARK IS COVERED WITH WEEDS.

NIAGARA COUNTY
DEPARTMENT OF HEALTH

Code Activity ....

Code Location ....

Service Request No. ....

Date Received Complaint ....

Service Request: North Tonawanda City Dump Site

Originator of Complaint: NCDH — Address: City Hall, Niagara Falls

Owner: NA — Address: NA

Occupant: NA — Address: NA

Date	Hours	REPORT OF INVESTIGATION
		Not in compliance with Chapter I State Sanitary Code, Part 19.2 Section #4
		... and a final compacted cover of at least two feet of a suitable cover material shall be placed within one week after the final deposit of refuse at any portion of such refuse disposal area unless an exemption in writing is granted by the full time health officer within whose jurisdiction said refuse disposal area is located.
		Dump closed
		[signature]

Date Abated 3/11/69 By: Pasquarelli

August 27, 1969

Mayor and Common Council
City of North Tonawanda
City Hall
Payne Avenue
North Tonawanda, New York 14120

City of North Tonawanda
City Hall
North Tonawanda, N. Y.

Re: Abandoned North Tonawanda City Disposal Site

Gentlemen:

On July 23, 1968, Mr. Ernest R. Gedeon, Associate Public Health Sanitarian, with the Niagara County Health Department, sent a letter to the Superintendent of Public Works of the City of North Tonawanda requesting that the City immediately cease the operation of the City of North Tonawanda site on River Road. The City at that time was very cooperative. The disposal operations on this site did cease, and the City of North Tonawanda converted the disposal of their refuse to the Niagara County Solid Waste Agency site.

As is the policy of the Niagara County Health Department, a reinspection was made of this refuse disposal site to determine whether the abandoned site was in conformance with Part 19 of the New York State Sanitary Code in that two feet of clean fill have been provided and graded over the entire dump site area. Associate Public Health Sanitarian

Our inspectors stated that not only had this area been properly graded but that approximately 40% of the river front area has been beautified and now stands forth as the botanical river front park site. The Niagara County Health Department would like to take this opportunity to thank the City of North Tonawanda for their cooperation in the elimination of this unsightly refuse area.

Very truly yours,

Michael Popovici
Acting Chief of Air
Pollution Control

MP:ms

MP:3

C

c. Mr. [illegible] File

July 23, 1968

Mr. Louis Grasso
Superintendent of Public Works
City of North Tonawanda
City Hall
North Tonawanda, N. Y.

Dear Mr. Grasso:

The Niagara County Solid Waste Agency is currently in operation and you are requested to immediately cease the operation of the City of North Tonawanda disposal site on River Road.

It is requested that you immediately notify this office when it can expect the present site at River Road to have all exposed refuse leveled and covered with the required fill.

Please contact me if I can give you any assistance in this matter.

Very truly yours,

Ernest R. Gedeon,
Associate Public Health Sanitarian

ERG:Z

[illegible] 1967

Mr. Ernest R. Gedeon, Associate Public Health Sanitarian, Niagara Falls

Michael Popovici, Sanitarian, Niagara Falls

North Tonawanda City Refuse Dump - River Road

On Sep[illegible] Mr. Al. McMurray, 26 Stenzil St., No. Tonawanda, registered a comp[illegible] fice regarding the No. Tonawanda City dump. His pr[illegible] No. Tonawanda was dumping refuse at the No. Tonawanda Dump a[illegible].

The initial complaint was answered by Edward Cassata on [illegible]. His investi[illegible] pink, fine dust compound had been dumped near the water's edge on the shore line. A dozer was pushing barrels of [illegible] the bank [illegible] surry[illegible] (about [illegible]

Mr. Ca[illegible] immedi[illegible] that [illegible]

The di[illegible] city had received permission from the Corp. of Engineers [illegible] dump area into the river. I told him that this seemed impossible because of the creation of a water pollution problem. He ordered the employees at the dump to cease dumping on the shore line.

Investigation of this by me on September 27, 1967 at 3:00 P.M. [illegible] dumping had ceased at the shore line; a [illegible] had been [illegible] was presently being used.

September 29, 1967 called Mr. Grasso, Superintendent of [illegible], No. Tonawanda. Requested that he send us a copy of [illegible] permission to the City of No. Tonawanda by U.S. Army Corp [illegible] dump into shore line - approximately 4 - 5 ft. from water's [illegible] said that he had no letter - that they have always received verbal permission. I then asked for the name of the person who had granted permission. [illegible] stated that he could not remember the person's name right now.

I told him to cease this practice immediately and not [illegible] river's edge, until a copy of permission has been received by [illegible] Health Department.

October 2, 1967 investigation by Rudy Baida showed [illegible] dumped 7 - 8 feet from water's edge. No rubbish or trash [illegible] requested to cease this practice.

MP:E

NIAGARA COUNTY HEALTH DEPT.
[illegible] 1968
RECEIVED

October 2, 1967

Mr. Ernest R. Gedeon, Associate Public Health Sanitarian, Niagara Falls

Michael Popovici, Sanitarian, Niagara Falls

North Tonawanda City Refuse Dump - River Road

On September 25, 1967 Mr. Al. McMurray, 26 Stenzil St., No.Tonawanda, registered a complaint with the No. Tonawanda office regarding the No.Tonawanda City Dump. His prime complaint was that No.Tonawanda was dumping refuse at the No.Tonawanda Dump and not covering.

The initial complaint was answered by Edward Ceccato on September 26, 1967. His investigation showed a pink, fine dust compound had been dumped near the water's edge on the shore line. A dozer was pushing barrels of this material over the bank edge on to the shore line. Wind velocity - 15-20 m.p.h. from the west was carrying this pink powder material (molding compound) across to Stenzil Street (about 2000 ft.)

Mr. Ceccato informed me of this condition at 2:00 P.M. September 26, 1967. I immediately called the North Tonawanda Department of Public Works and requested that they cease dumping or pushing this material onto the shore line.

The dispatcher at the No. Tonawanda Department of Public Works stated that the city had received permission from the Corp. of Engineers to extend the dump area into the river. I told him that this sounded impossible because of the creation of a water pollution problem. He ordered the employees at the dump to cease dumping on the shore line.

Investigation of this by me on September 27, 1967 at 3:00 P.M. ~~showed that~~ SHOWED dumping had ceased at the shore line; a large excavation had been dug near River Road and was presently being used.

September 29, 1967 called Mr. Grosso, Superintendent of Department of Public Works, No. Tonawanda. Requested that he send us a copy of authoritative letter granting permission to the City of No. Tonawanda by U.S. Army Corp. of Engineers to extend dump into shore line - approximately 4 - 5 ft. from water's edge. Mr. Grosso said that he had no letter - that they have always received verbal permission. I then asked for the name of the person who had granted permission. Mr. Grosso stated that he could not remember the person's name right now.

I told him to cease this practice immediately and not extend dump any closer to river's edge, until a copy of permission has been received by the Niagara County Health Department.

October 2, 1967 investigation by Rudy Maida showed ~~five~~ 25 loads of dirt recently dumped 7 - 8 feet from water's edge. No rubbish or trash dumped here since requested to cease this practice.

MP:z

September 16, 1966

Mr. Seebald

Mr. Friedman

Solid Waste Demonstration Grant

On September 7, 1966 I met with Mr. Hardleben, City Engineer for North Tonawanda to discuss the city's application for a demonstration grant for solid wastes disposal.

At the present time, the city provides seperate solid waste collection, one collection a week for garbage and one collection a week for refuse. The garbage is directed to the city incinerator with the traffic averaging slightly over one million pounds a month. The residue from the incinerator including quenching water averages between one and two hundred thousand pounds per month. The refuse together with the residue from the incinerator is disposed of on property owned by the Niagara Mohawk Power Corporation between River Road and the River on the north end of the city. Molding sand has been used for a cover material.

This site is almost completely filled and a new site will be necessary soon. If this grant were approved the compacting, and trenching machine would not be expected to be routinely used for garbage but would handle both the refuse and the incinerated residue. The area being considered for use is a tract of land in the city between Robinson and Walck Roads and between Zimmerman Road and Niagara Falls Blvd. The parcels of land in this area are presently being purchased for park use (golf course, etc.) under a State Grant. There is a question that has not yet been resolved as to whether land dedicated for park use may be used for a sanitary land fill. If not, the city will have to find another site which is becoming increasingly difficult as the land within the city limits is being built up.

The capacity of the machine is approximately 28 loads in an eight hour period, approximately 16 cubic yards per load. The capacity of the machine therfore would far exceed the demands that would be placed on it by the City of North Tonawanda. While there has been much critism over the adviseability of this machine much of the critism has been aimed at its immobility over muddy terrain during wet weather. Since it has not been adequately tested as yet, and since duel wheels can be provided for better traction such critism might better wait for the actual demonstration period. There is no question that the compaction equipment is far superior to any other system now in use.

Can machine - 100,000 pop - 1 5[illegible]

Compaction being achieved by a pressure of 350 tons over an area 24 inches by 52 inches. One question that might be resolved during the demonstration is whether the three operations, (trenching, compaction, and burial) should be performed by one machine or three seperate machines?

On the application under Item 3 "Method of Procedure (m) on page 7b it is noted that the demonstration will study expansion of operation beyond limits of the city of North Tonawanda with view to inclusion of other area muncipalities." I would much prefere that the expansion into a regional or a county-wide basis be an absolute must for this project, perferable with a county direction rather then city direction. This matter is therefore being referred to you for your determination.

Appendix C

APPENDIX C

EXHIBIT 1

FILE DATA

APPENDIX A

Bibliography

Gratwick Riverside Park

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NEW YORK STATE GEOLOGICAL ASSOCIATION

38th Annual Meeting

April 29 - May 1, 1966

GUIDEBOOK

Geology of Western New York

Edward J. Buehler, Editor

Department of Geological Sciences
State University of New York at Buffalo

Additional copies are available from the permanent secretary of the New York State Geological Association: Dr. Kurt E. Lowe, Department of Geology, City College of the City University of New York, 139th St. at Convent Ave., New York, N. Y.

NEW YORK STATE GEOLOGICAL ASSOCIATION

54th ANNUAL MEETING

October 8-10, 1982

Amherst, New York

GUIDEBOOK FOR FIELD TRIPS IN WESTERN NEW YORK, NORTHERN PENNSYLVANIA AND ADJACENT, SOUTHERN ONTARIO

Edward J. Buehler

and

Parker E. Calkin

Editors

Department of Geological Sciences
State University of New York at Buffalo

Held in Conjunction with
11th Annual Meeting Eastern
Section American Association
of Petroleum Geologists

Published by the New York State Geological Association. Guidebook available from the executive secretary: M.P. Wolf, Geology Department, Gittleson Hall, Hofstra University, Hempstead, New York 11550.

k Dobbs
February 14, 1980

Hazardous Waste Site Dossier

. Site Name

Gratwick Park (also known as Gratwick-Riverside Park) River Road, North Tonawanda, N.Y.

II. Background to Investigation and Source of Initial Referral

EPA learned of the site through the work on the Interagency Task Force on hazardous wastes study, and through their draft report, dated March 1979.

II. Site Description

This inactive 25 acre site, owned by the city of North Tonawanda, N.Y., is currently used as a park. (It is also known as Veterans park). Some sections are used as a re-storage area for wood chips, forestry products and fire wood for the use of residents.

It is located between River Road and the Niagara River. The widest point is 600-700 feet. The site was used from 1960 to 1968. Durez hauled approximately 5,000 tons of solid phenolic resin, 25,000 tons of solid phenolic molding compound, nearby 50 tons of oil and grease drippings, 50,000 tons of rubbish (wood, paper and garbage) and an unknown quantity of solvents to this site. Niagara Mohawk power corporation, (NMPC) also indicated that approximately 650 tons of liquid phenol tar from the durez plant of Hooker Chemicals and Plastics Corporation were disposed of at Gratwick park in North Tonawanda pursuant to an agreement between (NMPC) the owner of the site, and Hooker. some municipal refuse was also received.

IV. Allegations of "Imminent Hazard" Pollution

Recra Research Inc., Tonawanda, N.Y., has verefied contamination of the groundwater beyond potable water standards. Recra analyzed samples from three monitoring wells on the site, and found phenols ranging from 1.08 mg/L to 18.5 mg/L. Potable water standards for phenols is 1 mg/L.

The levels for total halogenated organics ranged from 0.12 to 22.8 ug/L (see attachment 1). I asked Mel Larsen and Dr. Esther Rende, Region II Toxic Program, for drinking water standards for total halogenated organics. Dr. Rende referred me to Dr. Kris Khanna, office of Drinking Water Standards, Washington D.C., re: drinking water standards for total halogenated organics. He stated that there are no standards for total halogenated organics expressed as, ug/L as chlorine; lindane standard. The mixture is run and if lindane is detected the mixture is separated, and analyzed for lindane. The standard for potable water for lindane is 0.004 mg/L. New York State Department of Environmental Conservation (D.E.C.), and the city of North Tonawanda, N.Y., have discussed the possibility of phenols leaching out of the landfill and into the Niagara River. The D.E.C. does not know whether an imprevious boundary was ever installed along the Niagara River's edge.

The city of North Tonawanda, has a public water supply. The D.E.C., and the Niagara County, Health Department, state that there are no private wells in the area.

. Current Involvement

The city of North Tonawanda, N.Y., engaged Recra Research Inc., to install monitoring wells and analyze the ground water samples. Recra installed four monitoring wells. (see figure 1) . Samples were collected June 11, 1979, the analyses report was submitted on July 6, 1979. (see attachment 1). John C. Mc Mahon Regional Engineer D.E.C., reviewed the report. He informed the city of North Tonawanda, that the

k Dobbs
February 14, 1980

following results warrant identification, of the constituents that, contribute to
ne phenol, and total halogenated organics:

Monitoring Wells	phenol mg/L	Total halogenated organics ug/L
well- no. 10	9.10	11.5
ell- no. 11	4.60	2.78

(see attachment 1)

.E.C. recommended that the program be expanded to determine the direction of migration
rom the park. Recra Research Inc., recommends that additional analyses be performed
on these samples to fully characterize the halogenated fraction.
he analytical procedure is a screening technique, some nonhalogenated materials, may
e carried through the procedure, and analyzed, as halogenated compounds. There is
no indication of a remedial program, or whether one is planned. D.E.C. recommended
hat the city of North Tonawanda install an additional monitoring well on the east
ide of the park near the Niagara River. It will be used to determine the elevation
and direction of ground water flow. The D.E.C., has requested that analyses be per-
formed to determine levels of the various parameters.

Up Date: D.E.C., stated 1/28/80, that a monitoring well had been installed on the east
side of the park near the Niagara River. They have not received any data concerning
he monitoring well.

VI. Recommendations

PA make a site visit. EPA collect samples for phenols, and total halogenated organics,
and analyze same to determine levels.

Check back within six months with D.E.C., on data from the newly installed mon-
itoring well.
e: Groundwater flow, elevation, and levels of parameters from the site.

EPA

POTENTIAL HAZARDOUS WASTE SITE
IDENTIFICATION AND PRELIMINARY ASSESSMENT

REGION: 2
SITE NUMBER (to be assigned by Hq): NY 3?

NOTE: This form is completed for each potential hazardous waste site to help set priorities for site inspection. The information submitted on this form is based on available records and may be updated on subsequent forms as a result of additional inquiries and on-site inspections.

GENERAL INSTRUCTIONS: Complete Sections I and III through X as completely as possible before Section II (*Preliminary Assessment*). File this form in the Regional Hazardous Waste Log File and submit a copy to: U.S. Environmental Protection Agency; Site Tracking System; Hazardous Waste Enforcement Task Force (EN-335); 401 M St., SW; Washington, DC 20460.

I. SITE IDENTIFICATION

A. SITE NAME: Gratwick Park		B. STREET (or other identifier): River Rd.	
C. CITY: No. Tonawanda	D. STATE: NY	E. ZIP CODE:	F. COUNTY NAME:

G. OWNER/OPERATOR (if known)
1. NAME: City of No Tonawanda
2. TELEPHONE NUMBER:

H. TYPE OF OWNERSHIP
☐ 1. FEDERAL ☐ 2. STATE ☐ 3. COUNTY ☒ 4. MUNICIPAL ☐ 5. PRIVATE ☐ 6. UNKNOWN

I. SITE DESCRIPTION: Public park – located between River Rd + Niagara Ri[ver]. 50,000 tons phenolic resin + molding cmpds – 650 tons liquid che[micals]

J. HOW IDENTIFIED (i.e., citizen's complaints, OSHA citations, etc.): Hazardous Waste Interagency Task Force on

K. DATE IDENTIFIED (mo., day, & yr.): Mar 1979

L. PRINCIPAL STATE CONTACT
1. NAME: John Beecher
2. TELEPHONE NUMBER: 716-842-4311

II. PRELIMINARY ASSESSMENT (complete this section last)

A. APPARENT SERIOUSNESS OF PROBLEM
☒ 1. HIGH ☐ 2. MEDIUM ☐ 3. LOW ☐ 4. NONE ☐ 5. UNKNOWN

B. RECOMMENDATION
☐ 1. NO ACTION NEEDED (no hazard)
☒ 2. IMMEDIATE SITE INSPECTION NEEDED
a. TENTATIVELY SCHEDULED FOR:
b. WILL BE PERFORMED BY:
☐ 3. SITE INSPECTION NEEDED
a. TENTATIVELY SCHEDULED FOR:
b. WILL BE PERFORMED BY:
☐ 4. SITE INSPECTION NEEDED (low priority)

C. PREPARER INFORMATION
1. NAME: Jack Dobbs
2. TELEPHONE NUMBER: 212-264-1573
3. DATE (mo., day, & yr.): 2/26/80

III. SITE INFORMATION

A. SITE STATUS
☐ 1. ACTIVE (Those industrial or municipal sites which are being used for waste treatment, storage, or disposal on a continuing basis, even if infrequently.)
☒ 2. INACTIVE (Those sites which no longer receive wastes.)
☐ 3. OTHER (specify): (Those sites that include such incidents like "midnight dumping" where no regular or continuing use of the site for waste disposal has occurred.)

B. IS GENERATOR ON SITE?
☒ 1. NO ☐ 2. YES (specify generator's four-digit SIC Code):

C. AREA OF SITE (in acres): 25

D. IF APPARENT SERIOUSNESS OF SITE IS HIGH, SPECIFY COORDINATES
1. LATITUDE (deg.-min.-sec.):
2. LONGITUDE (deg.-min.-sec.):

E. ARE THERE BUILDINGS ON THE SITE?
☐ 1. NO ☒ 2. YES (specify): Public Park

... MONITORING WELLS INSTALLED

WELLS HAVE BEEN INSTALLED BY CITY.

WELL ON EASTSIDE OF RIVER RD.

WELL ON THE EAST SIDE HAS BEEN INSTALLED

V. WASTE RELATED INFORMATION

✓ SOLID

		B. CHEMICALS	C. SOLIDS	
		~~650~~ 50,000 TONS	50,400 TONS	
		650 TONS LIQUID PHENOL TAR	X RUBBISH	
		X 25,000 TONS RESINS		
		X 25,000 TONS PHENOLIC RESINS		

[illegible] ORGANICS

The ground water exceeds the ground water standards for phenols. Range for phenol [illegible] 1.08 – 18.5 mg/l. Total Halogenated Organics range from 0.12 to 22.8 ug/l

VI. HAZARD DESCRIPTION

A. TYPE OF HAZARD	B. [illegible] HAZARD (mark 'X')	C. ALLEGED INCIDENT (mark 'X')	D. DATE OF INCIDENT	E. REMARKS
NO HAZARD				
[illegible] HEALTH				
[illegible] EXPOSURE				
[illegible]				
CONTAMINATION OF WATER SUPPLY				
CONTAMINATION OF FOOD CHAIN				
CONTAMINATION OF GROUND WATER	X			Test from on-monitoring wells on River Creek on Phenols + Total Halogenated Organics.
CONTAMINATION OF SURFACE WATER	X			
[illegible]				
[illegible]				
[illegible]				
[illegible]				
[illegible]				
[illegible]				
[illegible]				
[illegible]				
[illegible]				
[illegible]				
[illegible]				
[illegible]				
[illegible]				

VIII. PAST REGULATORY ACTIONS

IX. INSPECTION ACTIVITY (past or ongoing)

1. TYPE OF ACTIVITY	2. DATE OF PAST ACTION (mo., day, & yr.)	3. REPORTED BY (EPA/State)	4. DESCRIPTION

X. REMEDIAL ACTIVITY (past or ongoing)

1. TYPE OF ACTIVITY	2. DATE OF PAST ACTION (mo., day, & yr.)	3. REPORTED BY (EPA/State)	4. DESCRIPTION

1. Based on the information in Sections III through X, fill out the Preliminary Assessment (Section II) information on the first page of this form.

P. Counterman

GDK
FYI

Gratwick - Riverside
Park file
cc
Niagara
Reg 9

584 Delaware Avenue, Buffalo, New York 14202

October 15, 1980

Mr. Richard Clock
City Attorney's Office
North Tonawanda City Hall
216 Payne Avenue
North Tonawanda, New York 14120

Dear Mr. Clock:

Please be advised that the Department has not received any information if and when the City of North Tonawanda will be undertaking any additional hydro-geological investigation for the landfills located in various parts of the City, particularly the Botanical Gardens and the Gratwich Park area.

Please do not hesitate to call this office at 716/842-4311 if you have any questions regarding this matter.

Very truly yours,

Robert Mitrey by Yavuz Erk

Robert J. Mitrey, P.E.
Associate Sanitary Engineer

YE:
RJM:las

cc: P. Counterman

EPA SITE INSPECTION REPORT | II | NY Camm 3200

GENERAL INSTRUCTIONS: Complete Sections I and III through XV of this form as completely as possible. Then use the information on this form to develop a Tentative Disposition (Section II). File this form in its entirety in the regional Hazardous Waste Log File. Be sure to include all appropriate Supplemental Reports in the file. Submit a copy of the forms to: U.S. Environmental Protection Agency; Site Tracking System; Hazardous Waste Enforcement Task Force (EN-335), 401 M St., SW; Washington, DC 20460.

I. SITE IDENTIFICATION

A. SITE NAME: Gratwick Park	B. STREET (or other identifier): River Road/Witmer Rd		
C. CITY: North Tonawanda	D. STATE: NY	E. ZIP CODE: 14120	F. COUNTY NAME: Niagara

G. SITE OPERATOR INFORMATION

1. NAME: City of North Tonawanda		2. TELEPHONE NUMBER: 716-694-4340	
3. STREET: City Hall	4. CITY: North Tonawanda	5. STATE: N.Y.	6. ZIP CODE: —

H. REALTY OWNER INFORMATION (if different from operator of site)

1. NAME: Niagara-Mohawk Power Corp.		2. TELEPHONE NUMBER: 716-856-2424	
3. CITY: Buffalo, N.Y.		4. STATE: N.Y.	5. ZIP CODE: —

I. SITE DESCRIPTION: Filled Area Between River Road and Niagara River (see photos)

J. TYPE OF OWNERSHIP

☐ 1. FEDERAL ☐ 2. STATE ☐ 3. COUNTY ☒ 4. MUNICIPAL ☒ 5. PRIVATE (Business) — Rents or lease

II. TENTATIVE DISPOSITION (complete this section last)

A. ESTIMATE DATE OF TENTATIVE DISPOSITION (mo., day, & yr.):

B. APPARENT SERIOUSNESS OF PROBLEM

☐ 1. HIGH ☐ 2. MEDIUM ☒ 3. LOW ☐ 4. NONE

C. PREPARER INFORMATION

1. NAME: L. R. Moriarty	2. TELEPHONE NUMBER: 8-473-6841	3. DATE (mo., day, & yr.): 8-28-80

III. INSPECTION INFORMATION

A. PRINCIPAL INSPECTOR INFORMATION

1. NAME: L. R. Moriarty	2. TITLE: Sanitary Engineer
3. ORGANIZATION: US-EPA-II-S&A-RPSB	4. TELEPHONE NO. (area code & no.): 8-473-6841

B. INSPECTION PARTICIPANTS

1. NAME	2. ORGANIZATION	3. TELEPHONE NO.
Mark Tygert	N.Y.S. Dept of Env. Conserv.	716-842-4311

C. SITE REPRESENTATIVES INTERVIEWED (corporate officials, workers, residents)

1. NAME	2. TITLE & TELEPHONE NO.	3. ADDRESS
None —	No Contact with City or Niagara Mohawk	

from: Preliminary Report
An Investigation of Selected Inactive
Toxic Landfills in Conjunction with the
Niagara River Study.
August 1981 USGS

NAME OF LANDFILL

[redacted] (932060)

LOCATION

River Road, North Tonawanda, New York

Gratwick Park is located between the Niagara River and River Road, extending from the city limits southeast to a point south of the Ward Road intersection. The extent of the disposal area within the park is unknown, but it is suspected that most or all of the area was used.

OWNERSHIP

The site is currently owned by the Niagara Mohawk Power Corporation.

HISTORY

The initial use of this site appears to be as a disposal area for metallurgical slag. From well records, the slag layers appear to be 11 to 12 feet deep, with the top of the slag roughly level with the river level. This suggests that the slag was placed into the river directly, most likely by expanding the shoreline into the river. The location of the original shoreline has not been determined. The generator of this slag has not been ascertained at this time.

The site was used by the City of North Tonawanda for disposal of municipal and industrial wastes from 1964 to 1968. During this period, open burning was practiced, accounting for the cinders present in the soils. Well records show [redacted] to extend from 2 feet below the surface to about 6 feet. It is not known whether any industrial wastes were burned. The site was reported 75 percent covered and graded in 1969.

According to the Interagency Task Force On Hazardous Wastes, Bell Aerospace Textron used the site from 1962 to 1966 to dispose of scrap wood, plaster molds, small quantities of scrap adhesives and laboratory chemicals. Hooker-Durez reportedly disposed of 25,000 tons of phenolic resins, 25,000 tons of phenolic molding compounds, 50 tons of oil and grease and 50,000 tons of rubbish from 1960 to 1968. A 1964 New York State Health Department inspection report lists Hooker-Durez and Rapid Disposal as users of the site. The type or quantity of material disposed of at this site by Rapid Disposal is unknown. Niagara County Health Department files indicate tha other firms may have used this site.

The site is now used as a park with a picnic shelter, s and a boat launch ramp.

INVESTIGATION

A preliminary site visit was made on June 12, 1981 by Mr. M.E. Hopkins of the Niagara County Health Department and Mr. M. Eisenhower of the City of North Tonawanda Engineer's Office. At this time, the locations of four sampling wells in Gratwick Park and one well east of River Road were located. The locations of these wells are shown on the attached drawing. The

INVESTIGATION (continued)

surface of the park showed uneven settling over most of its surface.

A second visit was made by Mr. M.E. Hopkins on June 23. At this time, it was noted that the river edge contained numerous steel drums and remnants of drums, some containing a hardened slag-like substance. Also found were numerous hard, glass-like black or yellow to amber-brown nodules of unknown material, several of which were over one foot in diameter. Much of the river-front had been riprapped with concrete debris and a concrete wall was built along approximately 100 yards of riverfront. A five-foot sewer outfall was found at a point west of the foot of Ward Road. There was approximately one foot of water in the outfall, which was flowing into the river. Two 12 inch corrugated galvanized steel pipes were found emptying to the river. The northern most pipe was dry at this time. The pipe immediately south of the boat launch ramp was approximately one-third clogged with gravel and sediment, apparently washed in from the river. This pipe contained a small amount of water, which did not appear to be flowing and was suspected to be river water.

SOILS

Soil data was extracted from well boring records for the four sampling wells placed by RECRA Research in June, 1979. The general profile appears to be 1.5 to 2 feet of clayey-silt over about 4 feet of mixed cinders, garbage and wood over 7 to 9 feet of partially cemented slag, over about 2 feet of sand abruptly changing to clay at about 18 feet. It was noted that the slag material and possibly part of the cinder-garbage mix are below river level. The records state that the samples taken from these two layers are slightly to strongly odorous. It was noticed that pockets of the surface have settled as much as 2 feet relative to the surrounding surface.

GROUNDWATER

A perched water table in unconsolidated material is present. The water table rose to about six feet from the surface in all wells (June 5, 1979) according to well records. This perched aquifer flows generally south-easterly toward the river, except between wells 10 and 11 where the flow appears to flow southwesterly to the river, according to RECRA. The method of determining the direction of movement is not known. No information was obtained regarding bedrock or deeper aquifers..

CONCLUSIONS

The potential for migration of toxic substances to the river is high due to the proximity of the site to the river. The confirmed presence of hazardous materials and the direction of groundwater flow toward the river. It was noted that RECRA Research, Inc. found [redacted] in groundwater in 1979.

SAMPLING

This department sampled water from each of the 4 wells for THO, heavy metals and phenol. It was noted that all samples were discolored

SAMPLING (continued)

and odorous. The odor was strongest in well #10. The odors in wells #13, #10 and #11 were organic in character. The odor in well #12 was similar to a garbage odor.

RECOMMENDATIONS

The site should be monitored and inspected periodically. The sampling wells appear adequate, but should be maintained. The exposed drums along the river front should be removed.

SUMMARY OF SAMPLES TAKEN

SAMPLE #	LOCATION	TYPE	PARAMETER	DATE	NEAREST HOUR
1	[redacted]	Well	Metals	7/16/81	11:00
2	[redacted]	Well	Metals	7/16/81	11:00
3	[redacted]	Well	Metals	7/16/81	11:00
4	[redacted]	Well	Metals	7/16/81	11:00
5	[redacted]	Well	THO	7/16/81	11:00
6	[redacted]	Well	THO	7/16/81	11:00
7	[redacted]	Well	THO	7/16/81	11:00
8	[redacted]	Well	THO	7/16/81	11:00
9	Nia. Sanitation	Well	Metals	7/16/81	1:00
10	Nia. Sanitation	Well	THO	7/16/81	1:00
11	Zimmerman	Well	THO	7/16/81	12:00
12	Old Falls	Well	THO	7/16/81	12:00
13	Artpark	Leachate	Metals	7/17/81	12:00
14	Artpark	Leachate	THO	7/17/81	12:00
15	PASNY	Soil	Metals	7/21/81	10:00
16	PASNY	Soil	THO	7/21/81	10:00
17	Nia. Sanitation	Soil	Metals	7/24/81	12:00
18	Nia. Sanitation	Soil	THO	7/24/81	12:00
19	Nia. Sanitation	Soil	Metals	7/24/81	12:00
20	Nia. Sanitation	Soil	THO	7/24/81	12:00
21	Walck Road	Soil	~~THO~~	7/24/81	12:00
22	[redacted]	Well	~~Phenol~~ →	8/12/81	10:00
23	[redacted]	Well	~~Phenol~~	8/12/81	10:00
24	[redacted]	Well	Phenol	8/12/81	10:00
25	[redacted]	Well	Phenol	8/12/81	10:00
26	Zimmerman	Well	Phenol	8/12/81	11:00
27	Old Falls	Well	Phenol	8/12/81	11:00
28	Nia. Sanitation	Well	Phenol	8/12/81	12:00
29	Olin-Industrial Welding	Soil	THO, TOC Lindane	9/07/81	12:00

ANALYTICAL RESULTS FOR SAMPLES TAKEN AT [redacted]

[redacted]

Sample # 2	Sampled 11:00	7/16/81
Cadmium, total	L.T. 0.02 MG/L	
Chromium, total	L.T. 0.1 MG/L	
Lead, total	L.T. 0.1 MG/L	
Mercury, total	L.T. 0.4 MCG/L	
Nickle, total	0.05 MG/L	
Sample # 6	Sampled 11:00	7/16/81
THO	35 MCG/L	
Sample #24	Sampled 10:00	8/12/81
Phenol	3 MG/L	

[redacted]

Sample # 3	Sampled 11:00	7/16/81
Cadmium, total	L.T. 0.02 MG/L	
Chromium, total	L.T. 0.1 MG/L	
Lead, total	L.T. 0.1 MG/L	
Mercury, total	L.T. 0.4 MCG/L	
Nickle, total	L.T. 0.05 MG/L	
Sample # 7	Sampled 11:00	7/16/81
THO	Less than 1 MCG/L	
Sample # 25	Sampled 10:00	8/12/81
Phenol	3 MG/L	

[redacted]

Sample # 4	Sampled 11:00	7/16/81
Cadmium, total	L.T. 0.02 MG/L	
Chromium, total	L.T. 0.1 MG/L	
Lead, total	L.T. 0.1 MG/L	
Mercury, total	L.T. 0.4 MCG/L	
Nickle, total	L.T. 0.05 MG/L	
Sample # 8	Sampled 11:00	7/16/81
THO	4 MCG/L	
Sample # 26	Sampled 10:00	8/12/81
Phenols	0.2 MG/L	

GRATWICK - RIVERSIDE PARK (continued)

WELL [redacted]

Sample # 1	Sampled 11:00			7/16/81
Cadmium, total	L.T.	0.02	MG/L	
Chromium, total	L.T.	0.1	MG/L	
Lead, total		0.1	MG/L	
Mercury, total	L.T.	0.4	MCG/L	
Nickle, total		0.05	MG/L	
Sample # 5	Sampled 11:00			7/16/81
THO	18	MCG/L		
Sample # 22	Sampled 10:00			8/12/81
Phenols	17	MG/L		

RESULTS OF SAMPLES TAKEN AT NIAGARA SANITATION SITE

WELL SAMPLES

Sample # 9	Sampled 1:00			7/16/81
Cadmium, total	L.T.	0.02	MG/L	
Chromium, total	L.T.	0.1	MG/L	
Lead, total		0.2	MG/L	
Mercury, total	L.T.	0.4	MCG/L	
Nickle, total		0.12	MG/L	
Sample # 10	Sampled 1:00			7/16/81
THO	4	MCG/L		
Sample # 28	Sampled 12:00			8/12/81
Phenol		0.008	MG/L	

SOIL SAMPLES

Samples # 17,18,19 & 20 all Sampled 10:00 7/24/81
Samples # 17 & 18 Metals - Results not yet available
Sample # 19 L.T. 10 PPB THO
Sample # 20 L.T. 10 PPB THO

EXHIBIT 2

RESULTS OF SAMPLING AND ANALYSES

NEW YORK STATE DEPARTMENT OF HEALTH
DIVISION OF LABORATORIES AND RESEARCH
ENVIRONMENTAL HEALTH CENTER

AL REPORT FINAL REPORT FINAL REPORT

RESULTS OF EXAMINATION
(PAGE 1 OF 1)

CCESSION NO: 04659 YR/MO/DAY/HR SAMPLE REC'D: [redacted]/11

ORTING LAB: 10 EHC ALBANY
GRAM: 650 SOLID WASTES
T ON (SOURCE) NO:
INAGE BASIN: 01 NY GAZETTEER NO: 3103 COUNTY: NIAGARA
DINATES: DEG ' "N, DEG ' "W
M N NAME INCL SUBW'SHED: GRATWICK RIVERSIDE PARKSITE T. N.TONAWANDA

CT SAMPLING POINT: RECRA MONITERING [redacted]
E OF SAMPLE: 25 GROUND WATER
DAY/HR OF SAMPLING: FROM 00/00 TO 07/16/11
ORT SENT TO: CO (1) RO (1) LPHE (1) LHO (0) FED (0) CHEM (1)

	PARAMETER	UNIT	RESULT	NOTATION
9701	CADMIUM,TOTAL	MG/L	0.02	_T
28 1	CHROMIUM,TOTAL	MG/L	0.1	_T
01 1	LEAD,TOTAL	MG/L	0.1	_T
0309	MERCURY, TOTAL	MCG/_	0.4	_T
28 1	NICKEL,TOTAL	MG/L	0.05	

TE PRINTED: 8/05/81

MR.C.DAVID KNOWLES,BUR.OF SOLID WASTES
NYS DEPT.OF ENVIRONMENTAL CONSERVATION

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NEW YORK STATE DEPARTMENT OF HEALTH
DIVISION OF LABORATORIES AND RESEARCH
ENVIRONMENTAL HEALTH CENTER

FINAL REPORT FINAL REPORT FINAL REPORT

RESULTS OF EXAMINATION
(PAGE 1 OF 1)

B ACCESSION NO: 04560 YR/MO/DAY/HR SAMPLE REC'D: [redacted] 11

PORTING LAB: 10 EHC ALBANY
OGRAM: 650 SOLID WASTES
A ION (SOURCE) NO:
AINAGE BASIN: 01 NY GAZETTEER NO: 3103 COUNTY: NIAGARA
ORDINATES: DEG ' "N, DEG ' "W
H ON NAME INCL SUBH'SHED: GRATWICK RIVERSIDE PARKSITE T. N.TONAWANDA

ACT SAMPLING POINT: RECRA MONITERING [redacted]
P OF SAMPLE: 25 GROUND WATER
/_AY/HR OF SAMPLING: FROM 00/00 TO 07/16/11
PORT SENT TO: CO (1) RO (1) LPHE (1) LHO (0) FED (0) CHEM (1)

PARAMETER		UNIT	RESULT	NOTATION
9701	CADMIUM, TOTAL	MG/L	0.02	LT
1	CHROMIUM, TOTAL	MG/L	0.1	LT
1	LEAD, TOTAL	MG/L	0.1	LT
0309	MERCURY, TOTAL	MCG/L	0.4	LT
1	NICKEL, TOTAL	MG/L	0.05	LT

RINTED: 8/05/81

M. G. DAVID KNOWLES, DIR. OF SOLID WASTES
NYS DEPT. OF ENVIRONMENTAL CONSERVATION
ROOM 401, 50 WOLF ROAD
ALBANY, N.Y. 12233

SUBMITTED BY: P BUECHL

NEW YORK STATE DEPARTMENT OF HEALTH
DIVISION OF LABORATORIES AND RESEARCH
ENVIRONMENTAL HEALTH CENTER

REPORT FINAL REPORT FINAL REPORT

RESULTS OF EXAMINATION
(PAGE 1 OF 1)

ACCESSION NO: 04662 YR/MO/DAY/HR SAMPLE REC'D: [redacted]11

REPORTING LAB: 10 EHC ALBANY
PROGRAM: 650 SOLID WASTES
STATION (SOURCE) NO:
DRAINAGE BASIN: 01 NY GAZETTEER NO: 3103 COUNTY: NIAGARA
COORDINATES: DEG ' "N, DEG ' "W
STATION NAME INCL SUBWATERSHED: GRATWICK RIVERSIDE PARKSITE N.TONAWANDA

EXACT SAMPLING POINT: RECRA MONITERING [redacted]
TYPE OF SAMPLE: 25 GROUND WATER
BEG DAY/HR OF SAMPLING: FROM 00/00 TO 07/16/11
REPORT SENT TO: CO (1) RO (1) LPHE (1) LHO (0) FED (0) CHEM (1)

PARAMETER		UNIT	RESULT	NOTATION
09701	CADMIUM, TOTAL	MG/L	0.02	LT
01301	CHROMIUM, TOTAL	MG/L	0.1	LT
01101	LEAD, TOTAL	MG/L	0.1	LT
71909	MERCURY, TOTAL	MCG/L	0.4	LT
01301	NICKEL, TOTAL	MG/L	0.05	LT

DATE PRINTED: 8/05/91

MR.G.DAVID KNOWLES, BUR.OF SOLID WASTES
NYS DEPT.OF ENVIRONMENTAL CONSERVATION
ROOM 401, 50 WOLF ROAD
ALBANY, N.Y. 12233

SUBMITTED BY: P.BUECHL

NEW YORK STATE DEPARTMENT OF HEALTH
DIVISION OF LABORATORIES AND RESEARCH
ENVIRONMENTAL HEALTH CENTER
FINAL REPORT FINAL REPORT

RESULTS OF EXAMINATION
(PAGE 1 OF 1)

SESSION NO: 04658 YR/MO/DAY/HR SAMPLE REC'D: [redacted]1

ING LAB: 10 EHC ALBANY
AM: 650 SOLID WASTES
ION (SOURCE) NO:
E BASIN: 01 NY GAZETTEER NO: 3103 COUNTY: NIAGARA
INATES: DEG ' "N, DEG ' "W
N NAME INCL SUBW'SHED: GRATWICK RIVERSIDE PARKSITE T. NORTH TONAWANDA
SAMPLING POINT: RECRA. MONITERING [redacted]
OF SAMPLE: 25 GROUND WATER
/DAY/HR OF SAMPLING: FROM 00/00 TO 07/16/11
RT SENT TO: CO (1) RO (1) LPHE (1) LHO (0) FED (0) CHEM (1)

	PARAMETER	UNIT	RESULT	NOTATION
9701	CADMIUM, TOTAL	MG/L	0.02	_T
9801	CHROMIUM, TOTAL	MG/L	0.1	_T
01	LEAD, TOTAL	MG/L	0.1	
0309	MERCURY, TOTAL	MCG/_	0.4	_T
2501	NICKEL, TOTAL	MG/L	0.06	

TE PRINTED: 8/05/81

G. DAVID KNOWLES, BUR. OF SOLID WASTES
NYS DEPT. OF ENVIRONMENTAL CONSERVATION
ROOM 401, 50 WOLF ROAD
ALBANY, N.Y. 12233

SUBMITTED BY: P. BUECHL

NEW YORK STATE DEPARTMENT OF HEALTH
DIVISION OF LABORATORIES AND RESEARCH
ENVIRONMENTAL HEALTH CENTER

FINAL REPORT FINAL REPORT FINAL REPORT

RESULTS OF EXAMINATION
(PAGE 1 OF 1)

LAB ACCESSION NO: 00654 YR/MO/DAY/HR SAMPLE REC'D: [redacted]2/13

REPORTING LAB: 50 EHC FIELD LAB
PROGRAM: 650 SOLID WASTES
STATION (SOURCE) NO:
DRAINAGE BASIN: 01 NY GAZETTEER NO: 3103 COUNTY: NIAGARA
COORDINATES: DEG ' "N, DEG ' "W
SITE NAME INCL SUBW'SHED: GRATWICK PARK SITE RIVER RD NO TONAWANDA
932060
EXACT SAMPLING POINT: RECRA MONITORING [redacted]
TYPE OF SAMPLE: 25 GROUND WATER
MO DAY/HR OF SAMPLING: FROM 00/00 TO 08/12/10
REPORT SENT TO: CO (1) RO (2) LPHE (2) LHO (0) FED (0) CHEM (1)

	PARAMETER	UNIT	RESULT	NOTATION
02701	PHENOLS	MG/L	3.7	

DATE PRINTED: 9/08/81

MR.G.DAVID KNOWLES,BUR.OF SOLID WASTES
NYS DEPT.OF ENVIRONMENTAL CONSERVATION
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ALBANY,N.Y. 12233

NEW YORK STATE DEPARTMENT OF HEALTH
DIVISION OF LABORATORIES AND RESEARCH
ENVIRONMENTAL HEALTH CENTER

L REPORT FINAL REPORT FINAL REPORT

RESULTS OF EXAMINATION
(PAGE 1 OF 1)

AC ACCESSION NO: 00655 YR/MO/DAY/HR SAMPLE REC'D: [redacted] 13

EPORTING LAB: 50 EHC FIELD LAB
RO RAM: 650 SOLID WASTES
TA ION (SOURCE) NO:
RAINAGE BASIN: 01 NY GAZETTEER NO: 3103 COUNTY: NIAGARA
OORDINATES: DEG ' "N, DEG ' "W
ON OR NAME INCL SUBW'SHED: GRATWICK PARK SITE RIVER RD NO TONAWANDA
932060
ACT SAMPLING POINT: RECRA MONITORING [redacted]
P OF SAMPLE: 25 GROUND WATER
/DAY/HR OF SAMPLING: FROM 00/00 TO 08/12/10
PORT SENT TO: CO (1) RU (2) LPHE (2) LHO (0) FED (0) CHEM (1)

PARAMETER		UNIT	RESULT	NOTATION
2 11	PHENOLS	MG/L	2.9	

PRINTED: 9/08/81

MR.G.DAVID KNOWLES,BUR.OF SOLID WASTES
NYS DEPT.OF ENVIRONMENTAL CONSERVATION
ROOM 401, 50 WOLF ROAD
ALBANY,N.Y. 12233

[illegible] OF HEALTH
DIVISION OF LABORATORIES AND RESEARCH
ENVIRONMENTAL HEALTH CENTER

I AL REPORT FINAL REPORT FINAL REPORT

RESULTS OF EXAMINATION
(PAGE 1 OF 1)

AB ACCESSION NO: 00653 YR/MO/DAY/HR SAMPLE RECD: [redacted] 13

EPORTING LAB: 50 EHC FIELD LAB
ROGRAM: 650 SOLID WASTES
TATION (SOURCE) NO:
RAINAGE BASIN: 01 NY GAZETTEER NO: 3103 COUNTY: NIAGARA
OORDINATES: DEG ' "L, DEG ' "W
OMMON NAME INCL SUBW'SHED: GRATWICK PARK SITE RIVER RD NO TONAWANDA
932060
XACT SAMPLING POINT: RECRA MONITORING [redacted]
YPE OF SAMPLE: 25 GROUND WATER
D. DAY/HR OF SAMPLING: FROM 00/00 TO 08/12/11
EPORT SENT TO: CO (1) RO (2) LPHE (2) LHO (0) FED (0) CHEM (1)

PARAMETER		UNIT	RESULT	NOTATION
32701	PHENOLS	MG/L	17.	

TE PRINTED: 9/08/81

...G.DAVID KNOWLES,BUR.OF SOLID WASTES
NYS DEPT.OF ENVIRONMENTAL CONSERVATION
ROOM 401, 50 WOLF ROAD
LBANY,N.Y. 12233

part of a report entitled Groundwater Investigation City of North Tonawanda RECRA Research 1979

is chromatographic scan for chlorinated organics, using a Coulson's
y conductivity detector, was run on these latter two samples to
n the GC/MS data. Both samples were found to contain less than 1
Chlorine, based upon Lindane as the standard.
relative abundance listed in Tables I - VII are determined according
h ights, relative to the most abundant peak in the RIC. These are
(proportional) to the on-column concentration of the constituents
ou are not to be misinterpreted as an attempt at specific quantifica-

O :

B tanical Gardens (Well #6, 6/11/79) sample was found to contain low
of chlorinated compounds. This was not unexpected because of the pre-
r rted Total Halogenated Organics (THO) concentration of 19.1 ug/1,
s obtained from the same sample. Note that oxygenated hydrocarbons,
ous hydrocarbons and polynuclear aromatics also respond to the Elec-
t e Detector (ECD) used in the THO analysis.

[redacted]

H liday Park (Well #4) and Botanical Gardens (Well #6, 9/6/79) samples
d letectable amounts of chlorinated organics. Again, note the presence
ECD sensitive compounds.

TABLE II

CITY OF NORTH TONAWANDA
GAS CHROMATOGRAPHY/MASS SPECTROMETRY ANALYSIS
SEARCH FOR HALOGENATED COMPOUNDS

Sample Date: 6/11/79

Report Date: 10/15/79

GRATWICK-RIVERSIDE PARK WELL #10

CE	NBS LIBRARY CHOICE	COMMENT
	1,3-dimethylbenzene	confirmed as an alkyl substituted aromatic hydrocarbon
low	(1-methylethyl)-benzene	confirmed as an alkyl substituted aromatic hydrocarbon
low	1,2,4-trimethylbenzene	confirmed as an alkyl substituted aromatic hydrocarbon
	2,5-dimethylnonane	confirmed as an aliphatic hydrocarbon
l w	azulene	confirmed as a polynuclear aromatic hydrocarbon
l	2,2,3,4-tetramethylpentane	confirmed as an aliphatic hydrocarbon
low	2-methylnaphthalene	confirmed as a polynuclear aromatic hydrocarbon
low	decosane	confirmed as an aliphatic hydrocarbon
low	2,7-dimethyloctane	confirmed as an aliphatic hydrocarbon
l	2-butyltetrahydrothiophene	insufficient spectral data for manual evaluation
l	dodecylphenol	insufficient spectral data for manual evaluation
l	octadecane	confirmed as an aliphatic hydrocarbon
	eicosane	confirmed as an aliphatic hydrocarbon

Continued . . . .

(Continued)

CITY OF NORTH TONAWANDA
GAS CHROMATOGRAPHY/MASS SPECTROMETRY ANALYSIS
SEARCH FOR HALOGENATED COMPOUNDS

Sample Date: 6/11/79

Report Date: 10/15/79

~~GRATWICK-RIVERSIDE PARK WELL #10~~

ID ICE	NBS LIBRARY CHOICE	COMMENT
	eicosane	confirmed as an aliphatic hydrocarbon
	octadecane	confirmed as an aliphatic hydrocarbon
	eicosane	confirmed as an aliphatic hydrocarbon
	heneicosane	confirmed as an aliphatic hydrocarbon
u	hexadecanoic acid	confirmed as an oxygenated aliphatic hydrocarbon
	pentacosane	confirmed as an aliphatic hydrocarbon
u	pentacosane	confrimed as an aliphatic hydrocarbon
high	octadecanoic acid	confirmed as an oxygenated aliphatic hydrocarbon
	pentatriacontane	confirmed as an aliphatic hydrocarbon
u	11-decyldocosane	confirmed as an aliphatic hydrocarbon
	pentacosane	confrimed as an aliphatic hydrocarbon
	hexatriacone	confirmed as an aliphatic hydrocarbon
w	hexatriacone	confirmed as an aliphatic hydrocarbon

FOR RECRA RESEARCH, INC. George M. Bailis

DATE 15 October 1979

SCH INC.

TABLE III

CITY OF NORTH TONAWANDA
GAS CHROMATOGRAPHY/MASS SPECTROMETRY ANALYSIS
SEARCH FOR HALOGENATED COMPOUNDS

Sample Date: 6/11/79

Report Date: 10/15/79

~~GRAIWICK-RIVERSIDE PARK WELL #13~~

ANCE	NBS LIBRARY CHOICE	COMMENT
	undecane	confirmed as an aliphatic hydrocarbon
	2,3,5-trimethylpyridine	confirmed as a nitrogenous hydrocarbon
.c	naphthalene	confirmed as a polynuclear aromatic hydrocarbon
.c	octadecane	confrimed as an aliphatic hydrocarbon
	tridecane	confirmed as an aliphatic hydrocarbon
	pentacosane	confirmed as an aliphatic hydrocarbon
	tridecane	confrimed as an aliphatic hydrocarbon
	hexatriacontane	confirmed as an aliphatic hydrocarbon
	pentacosane	confirmed as an aliphatic hydrocarbon
	hexadecanoic acid	confirmed as an oxygenated aliphatic hydrocarbon
1	eicosane	confirmed as an aliphatic hydrocarbon
	eicosane	confirmed as an aliphatic hydrocarbon
	octadecanoic acid, butylester	confirmed as an oxygenated aliphatic hydrocarbon
High	pentacosane	confirmed as an aliphatic hydrocarbon
	pentacosane	confirmed as an aliphatic hydrocarbon
	pentacosane	confirmed as an aliphatic hydrocarbon
	eicosane	confirmed as an aliphatic hydrocarbon
	11-decyldocosane	confirmed as an aliphatic hydrocarbon
	tetratetracontane	confirmed as an aliphatic hydrocarbon

FOR RECRA RESEARCH, INC. George M. Bulis

DATE 15 October 1979

VII. DISCUSSION AND COMMENT (CONTD.)

Chromatography/Mass Spectrometry (GC/MS).

Initial analysis of the basement seepage sample demonstrated elevated concentrations for both the total phenols and the halogenated organic scan. (Table 10). Results were elevated in terms of accepted ground water standards and normally encountered background conditions. Halogenated organic scan results are used for screening purposes only and are not designed for qualification or quantification of specific organic compounds. In addition, compounds other than halogenated organics will respond to the gas chromatographic detector utilized in this analysis. Hence a positive response on this test is not confirmation of the presence of halogenated organics. To fully characterize the compounds that comprised the halogenated organic scan result, the sample was analyzed by GC/MS. As a result of GC/MS analysis the sample was found to contain two polynuclear aromatic hydrocarbons, one alkyl substituted aromatic hydrocarbon, and numerous aliphatic hydrocarbons. There was some indication that the polynuclear aromatics could be the priority pollutants naphthalene and anthracene. The majority of the constituents identified were aliphatic hydrocarbons (Table 11). The complete GC/MS report can be found in Appendix C.

[redacted]

Concentrations for total halogenated organic scan analyses of ground water samples from wells 10 and 13 collected under Phase I of this study (July 6, 1979 Report) although not alarmingly high, were elevated above concentrations normally encountered. As a consequence, a characterization of the compounds comprising this reported value was undertaken utilizing Gas Chromatography/Mass Spectrometry (GC/MS) analysis. In addition to these analyses, wells 10 and 13 as well as newly constructed well 14 were sampled and analyzed according to Schedules A and C of the Analytical Program. Surface waters (SP-1 and SP-2) were also

SC"ISSION AND COMMENT (CONTD.)

mpled from the nearshore area (Niagara River) of Gratwick-Riverside Park .

GC/MS analyses of the June 11, 1979 samples (Wells 10 and 13) indicated detectable amount of halogenated constituents. Both samples did however, ontain polynuclear aromatics, oxygenated hydrocarbons, substituted aromatics, id aliphatic hydrocarbons. In addition, well 13 was found to contain one itrogenous hydrocarbon. The constituents of well 10 and well 13 are listed in abies 12 and 13 respectively. These non-halogenated compounds are believed o ccount for the previously reported total halogenated organic concentrations. he GC/MS report detailing these analyses can be found in Appendix B.

Additional analytical work performed on samples from wells 10 and 13 e strated elevated concentrations for several of the parameters examined Table 14).

Conductivity, pH, chloride, total phenol and the halogenated organic scan e elevated relative to existing ground water standards and expected background concentrations for both well 10 and 13. In addition, total organic carbon a elevated for well 13. The halogenated organic scan (1,100µg/l) and total phenol (63.1 mg/l) concentrations were particularly elevated for well 13. Previous nalytical results for these two parameters were 28.8µg/l and 18.5 mg/l respectively.

GC/MS characterization of the November 29, 1979 well 10 sample for halogenated constituents indicated that the sample contained primarily aliphatic ydrocarbons. Halogenated compounds were not detected for this sample. Gas ch omatographic analysis of this sample utilizing a chlorine specific detector confirmed this GC/MS analysis ([redacted] GC/MS analysis for the presence of h nolic compounds demonstrated the presence of phenol and a mono-and a di-alkyl phenol isomer. The complete GC/MS report for this sample can be found in

I DISCUSSION AND COMMENT (CONTD.)

Appendix D.

GC/MS characterization of the November 29, 1979 Well 13 sample for halogenated constituents demonstrated the presence of chlorinated materials. Chlorobenzene isomers, as well as alkylated aromatics and oxygenated biphenyls were detected. Also identified without the use of an internal standard was the presence of dibenzodioxin isomers. The presence of dibenzodioxin was substantiated by the presence of various biphenyl compounds occurring as oxygenated and/or chlorinated derivatives. These latter compounds belong to a group of constituents which are precursors to dibenzodioxin molecules. Table 15 provides a detailed list of all compounds identified. Chlorine specific ,.s chromatographic analyses confirmed the presence of chlorinated compounds in this sample (340 µg/1; [redacted]4). GC/MS analysis for phenolic compounds confirmed the presence of phenol and alkyl and chlorinated derivatives of phenol ([redacted]). The GC/MS report detailing the above analyses can be found in Appendix D.

As a result of the elevated value obtained for the halogenated organic scan or the November 29, 1979 sample (1100 µg/1) well 13 was resampled on two additional ccasions, December 26, 1979 and January 10, 1980. Values obtained for the halogenated organic scan on each of these dates was 17.4 µg/1 and 38.6 µg/1 espectively. ([redacted]). The 17.4 µg/1 halogenated organic scan value is considered somewhat suspect because of the fact that during sample preparation, some of the material crystallized out of solution and would not redissolve in he extract solvent. Analysis of the soil boring logs indicates that Well 13 was ened at the interface of fill materials and the natural soils. Consequently, t is felt that the variability in halogenated organic scan results for the arious sampling dates is probably due to the positioning of the well point.

TABLE 12

CITY OF NORTH TONAWANDA
GAS CHROMATOGRAPHY/MASS SPECTROMETRY ANALYSIS
SEARCH FOR HALOGENATED COMPOUNDS

Sample Date: 6/11/79

Report Date: 10/15/79

GRATWICK-RIVERSIDE PARK WELL #10

	ABUNDANCE	NBS LIBRARY CHOICE	COMMENT
	low	1,3-dimethylbenzene	confirmed as an alkyl substituted aromatic hydrocarbon
	very low	(1-methylethyl)-benzene	confirmed as an alkyl substituted aromatic hydrocarbon
	very low	1,2,4-trimethylbenzene	confirmed as an alkyl substituted aromatic hydrocarbon
	low	2,5-dimethylnonane	confirmed as an aliphatic hydrocarbon
5	very low	azulene	confirmed as a polynuclear aromatic hydrocarbon
9	very low	2,2,3,4-tetramethylpentane	confirmed as an aliphatic hydrocarbon
3	very low	2-methylnaphthalene	confirmed as a polynuclear aromatic hydrocarbon
	very low	decosane	confirmed as an aliphatic hydrocarbon
7	very low	2,7-dimethyloctane	confirmed as an aliphatic hydrocarbon
8	very low	2-butyltetrahydrothiophene	insufficient spectral data for manual evaluation
6	very low	dodecylphenol	insufficient spectral data for manual evaluation
5	very low	octadecane	confirmed as an aliphatic hydrocarbon
2	low	eicosane	confirmed as an aliphatic hydrocarbon

Continued . . . .

(Continued)

CITY OF NORTH TONAWANDA
GAS CHROMATOGRAPHY/MASS SPECTROMETRY ANALYSIS
SEARCH FOR HALOGENATED COMPOUNDS

Sample Date: 6/11/79

Report Date: 10/15/79

GRATWICK-RIVERSIDE PARK WELL #10

U[ANCE	NBS LIBRARY CHOICE	COMMENT
w	eicosane	confirmed as an aliphatic hydrocarbon
w	octadecane	confirmed as an aliphatic hydrocarbon
w	eicosane	confirmed as an aliphatic hydrocarbon
w	heneicosane	confirmed as an aliphatic hydrocarbon
d m	hexadecanoic acid	confirmed as an oxygenated aliphatic hydrocarbon
w	pentacosane	confirmed as an aliphatic hydrocarbon
d m	pentacosane	confrimed as an aliphatic hydrocarbon
ry high	octadecanoic acid	confirmed as an oxygenated aliphatic hydrocarbon
gh	pentatriacontane	confirmed as an aliphatic hydrocarbon
d m	11-decyldocosane	confirmed as an aliphatic hydrocarbon
w	pentacosane	confrimed as an aliphatic hydrocarbon
w	hexatriacone	confirmed as an aliphatic hydrocarbon
r low	hexatriacone	confirmed as an aliphatic hydrocarbon

FOR RECRA RESEARCH, INC. George M. Bailie

DATE 15 October 1979

RCH INC

CITY OF NORTH TONAWANDA
GAS CHROMATOGRAPHY/MASS SPECTROMETRY ANALYSIS
SEARCH FOR HALOGENATED COMPOUNDS

Sample Date: 6/11/79

Report Date: 10/15/79

GRATWICK-RIVERSIDE PARK WELL #13

ABUNDANCE	NBS LIBRARY CHOICE	COMMENT
low	undecane	confirmed as an aliphatic hydrocarbon
low	2,3,5-trimethylpyridine	confirmed as a nitrogenous hydrocarbon
very low	naphthalene	confirmed as a polynuclear aromatic hydrocarbon
very low	octadecane	confrimed as an aliphatic hydrocarbon
low	tridecane	confirmed as an aliphatic hydrocarbon
low	pentacosane	confirmed as an aliphatic hydrocarbon
low	tridecane	confrimed as an aliphatic hydrocarbon
low	hexatriacontane	confirmed as an aliphatic hydrocarbon
low	pentacosane	confirmed as an aliphatic hydrocarbon
low	hexadecanoic acid	confirmed as an oxygenated aliphatic hydrocarbon
medium	eicosane	confirmed as an aliphatic hydrocarbon
high	eicosane	confirmed as an aliphatic hydrocarbon
low	octadecanoic acid, butylester	confirmed as an oxygenated aliphatic hydrocarbon
very high	pentacosane	confirmed as an aliphatic hydrocarbon
high	pentacosane	confirmed as an aliphatic hydrocarbon
medium	pentacosane	confirmed as an aliphatic hydrocarbon
low	eicosane	confirmed as an aliphatic hydrocarbon
low	11-decyldocosane	confirmed as an aliphatic hydrocarbon
low	tetratetracontane	confirmed as an aliphatic hydrocarbon

FOR RECRA RESEARCH, INC. George M. Bulis

DATE 15 October 1979

ANALYTICAL RESULTS

CITY OF NORTH TONAWANDA

Report Date: 12/19/79

Sample Dates: 11/29/79
12/3/79
12/4/79

GROUND WATER SAMPLES

[illegible]	UNITS OF MEASURE	SAMPLE IDENTIFICATION (DATE) W-10 (11/29/79)	W-13 (11/29/79)	W-15 (12/3/79)	W-16 (11/29/79)	W-14 (12/4/79)
	Standard Units	11.70	10.28	7.77	7.55	-
i: ty	µmhos/cm	2,690	2,020	660	860	-
e	mg/l	390	47.5	18.1	47.0	-
: arbon	mg/l	32.2	378	19	24.0	-
ienol	mg/l	1.26	63.1	0.003	0.007	-
t i Scan	µg/l as Chlorine; Lindane Standard	2.7	1,100	2.5	2.7	<0.05
t: ..an	µg/l as Chlorine; Lindane Standard	<1.0	340	-	-	<1.0

: Samples were collected and labelled by Recra personnel and received for analysis on 11/29/79, 12/3/79 and 12/4/79. All analyses were performed according to U. S. Environmental Protection Agency methodologies. Values reported as "less than" indicate the working detection limit for the particular sample/parameter. All requested analyses are reported.

FOR RECRA RESEARCH, INC. Robert K. Wyeth

DATE 12/21/79

CH IC.

TABLE 15

CITY OF NORTH TONAWANDA
GC/MS CHARACTERIZATION OF SAMPLE #W13

Date Received: 12/04/79
Report Date: 12/20/79

UNDANCE	NBS LIBRARY CHOICE	COMMENT
w	2,2,4,6,6-pentamethylheptane	confirmed as an aliphatic hydrocarbon
w	1,3,5-trichlorobenzene	confirmed as a trichlorobenzene isomer
w	1,2,4-trichlorobenzene	confirmed as a trichlorobenzene isomer
w	1,2,3,4-tetrachlorobenzene	confirmed as a tetrachlorobenzene isomer
w	10-methyleicosane	confirmed as an aliphatic hydrocarbon
w	1,2,3,4-tetrachlorobenzene	confirmed as a tetrachlorobenzene isomer
w	phenol	confirmed as phenol
w	2-methylphenol	confirmed as a methylphenol isomer
w	1,1'-biphenyl	confirmed as biphenyl
w	1,1'-oxybisbenzene	interpreted as oxygenated biphenyl
w	2,5-dimethylphenol	confirmed as a dimethylphenol isomer
w	eicosane	confirmed as an aliphatic hydrocarbon
w	2,3-dimethylphenol	confirmed as a dimethylphenol isomer
w	3,4-dimethylphenol	confirmed as a dimethylphenol isomer
w	4-(1-methylethyl)phenol	confirmed as an alkylated phenol isomer
	dibenzofuran	confirmed on the basis of library fit
w	4-chlorophenol	confirmed as a chlorophenol isomer
	hexatriacontane	confirmed as an aliphatic hydrocarbon
	1-hexadecanol	confirmed as an oxygenated aliphatic hydrocarbon
	2-methyl-2-pentene	confirmed as an aliphatic hydrocarbon
	sec-butylethylbenzene	confirmed as an alkyl substituted benzene isomer
y high	\1,1-biphenyl\-2-ol	confirmed as an oxygenated biphenyl
	dipentylphthalate	confirmed as an alkyl substituted phthalate

Continued . . . .

TABLE 15
(Continued)

CITY OF NORTH TONAWANDA
GC/MS CHARACTERIZATION OF SAMPLE #W13

Date Received: 12/04/79
Report Date: 12/20/79

...NCE	NBS LIBRARY CHOICE	COMMENT
...	5-propyltridecane	confirmed as an aliphatic hydrocarbon
...y low	1-chloro-2-phenoxy-benzene	possibly a chloroxy biphenyl
...y high	\1,1'-biphenyl\-4-ol	confirmed as an oxygenated biphenyl
...m	dibenzo B,E 1,4 dioxin	confirmed in the absence of a standard
...	\1,1'-biphenyl\-4-ol,4'-chloro	confirmed in the absence of a standard
...	dibenzo\B,E\\1,4\dioxin	confirmed as an isomer in the absence of a standard
...dium	dibenzo\B,E\\1,4\dioxin	confirmed as an isomer in the absence of a standard
...	1,3-dimethylbenzene	confirmed as an alkyl substituted aromatic hydrocarbon
...dium	decane	confirmed as an aliphatic hydrocarbon
...	7-methyltridecane	confirmed as an aliphatic hydrocarbon
...	1-ethyl-2-methylbenzene	confirmed as an alkyl substituted benzene isomer
...	1-ethyl-4-methyl	confirmed as an alkyl substituted benzene isomer
...m	1,2,3-trimethylbenzene	confirmed as an alkyl substituted benzene isomer
...	1,4-dichlorobenzene	confirmed as a dichlorobenzene isomer
...	pentachlorobenzene	confirmed in the absence of a standard
...	α-BHC	confirmed in the absence of a standard

FOR RECRA RESEARCH, INC. George M. Bubi

DATE 20 December 1979

...RCH INC.

TABLE 16

ANALYTICAL RESULTS

CITY OF NORTH TONAWANDA

Report Date: 1/12/80
Sample Date: 12/26/79

GROUND WATER SAMPLE

PARAMETER	UNITS OF MEASURE	SAMPLE IDENTIFICATION W-13
Conductivity	umhos/cm	745
Chloride	mg/l	372
Halogenated Organic Scan	μg/l as Chlorine; Lindane Standard	17.4

COMMENTS: Samples were collected by Recra personnel and received on 12/26/79. All analyses were performed according to U. S. Environmental Protection Agency methodologies. During Halogenated organic scan preparation, solvent insoluble crystallization occurred in the concentration procedure. Halogenated organic scan results are used for screening purposes only and are not designed for qualification or quantification of any specific organic compound. Results are calculated based upon the response factor of Lindane but do not imply either the presence or absence of Lindane itself. Halogenated organic scan results do not include volatile organic constituents.

FOR RECRA RESEARCH, INC. Robert K [signature]

DATE 1/14/80

ANALYTICAL RESULTS

CITY OF NORTH TONAWANDA

Report Date: 1/12/80
Sample Date: 1/10/80

GROUND WATER SAMPLE

PARAMETER	UNITS OF MEASURE	SAMPLE IDENTIFICATION W-13
Recoverable Phenols	mg/l	50.0
Halogenated Organic Scan	µg/l as Chlorine; Lindane Standard	38.6
Soluble Halogenated Organic Scan	µg/l as Chlorine; Lindane Standard	4.2
Chlorinated Organic Scan	µg/l as Chlorine; Lindane Standard	6.6

COMMENTS: Samples were collected by Recra personnel and received on 1/10/80. Analyses were performed according to U. S. Environmental Protection Agency methodologies. Sample was found to contain suspended materials. These materials, based upon their solubility in extraction solvent, were believed to be suspended organic constituents. Halogenated and Chlorinated organic scan results are used for screening purposes only and are not designed for qualification or quantification of any specific organic compound. Results are calculated based upon the response factor of Lindane but do not imply either the presence or absence of Lindane itself. Halogenated and Chlorinated organic scan results do not include volatile organic constituents. Soluble Halogenated organic scan results are based upon analysis of the sample after 0.45 µm filtration.

FOR RECRA RESEARCH, INC. Robert K. Wyeth

DATE 1/14/80

RESEARCH INC.

TABLE 18

SAMPLE IDENTIFICATION	SAMPLE DATE	CHLORINATED ORGANIC SCAN*(µg/l as CHLORINE, LINDANE STANDARD)	SOLUBLE CHLORINATED ORGANIC SCAN** (µg/l as CHLORINE, LINDANE STANDARD)
W-13	11/29/79	340.0	94.0
W-13	1/10/80	6.6	3.0

* Unfiltered Sample
** Sample Filtered Through 0.45µm Membrane Filters

TABLE 2

ANALYTICAL RESULTS
CITY OF NORTH TONAWANDA

Report Date: 7/6/79
Sample Date: 6/11/79

GROUND WATER ANALYSIS

SAMPLE IDENTIFICATION NUMBER	SAMPLE LOCATION	PARAMETER (UNITS OF MEASURE) PHENOL (mg/l)	TOTAL HALOGENATED ORGANICS (µg/l AS CHLORINE; LINDANE STANDARD)
8	Turner Farm	< 0.01	0.58
9	Forbes Street	0.02	3.93
10	Cratwick - Riverside Park	9.10	11.5
11	Cratwick - Riverside Park	4.60	2.78
12	Cratwick - Riverside Park	1.08	0.12
13	Cratwick - Riverside Park	18.5	22.8

NOTES: (Continued from Page 1 of 2). Generally the peaks found in the THO chromatograms were indicative of early eluting, low to medium molecular weight compounds. Possible compounds include substituted phenolics. Not all compounds in the chromatographs may necessarily be halogenated. Non-halogenated materials may be carried through the procedure and analyzed as halogenated compounds. Preliminary review of THO results indicate the possible presence of PCB's in the samples from the Botanical Gardens and Turner Farm. It is recommended that further analyses be undertaken to investigate the possibility of PCB's in these samples.

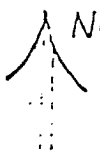
FOR RECRA RESEARCH, INC. R. Kirk Light

DATE 7/6/79

RECRA RESEARCH, INC. 111 Wales Avenue / Tonawanda, New York 14150 / (716) 692-7620

GRATWICK PARK

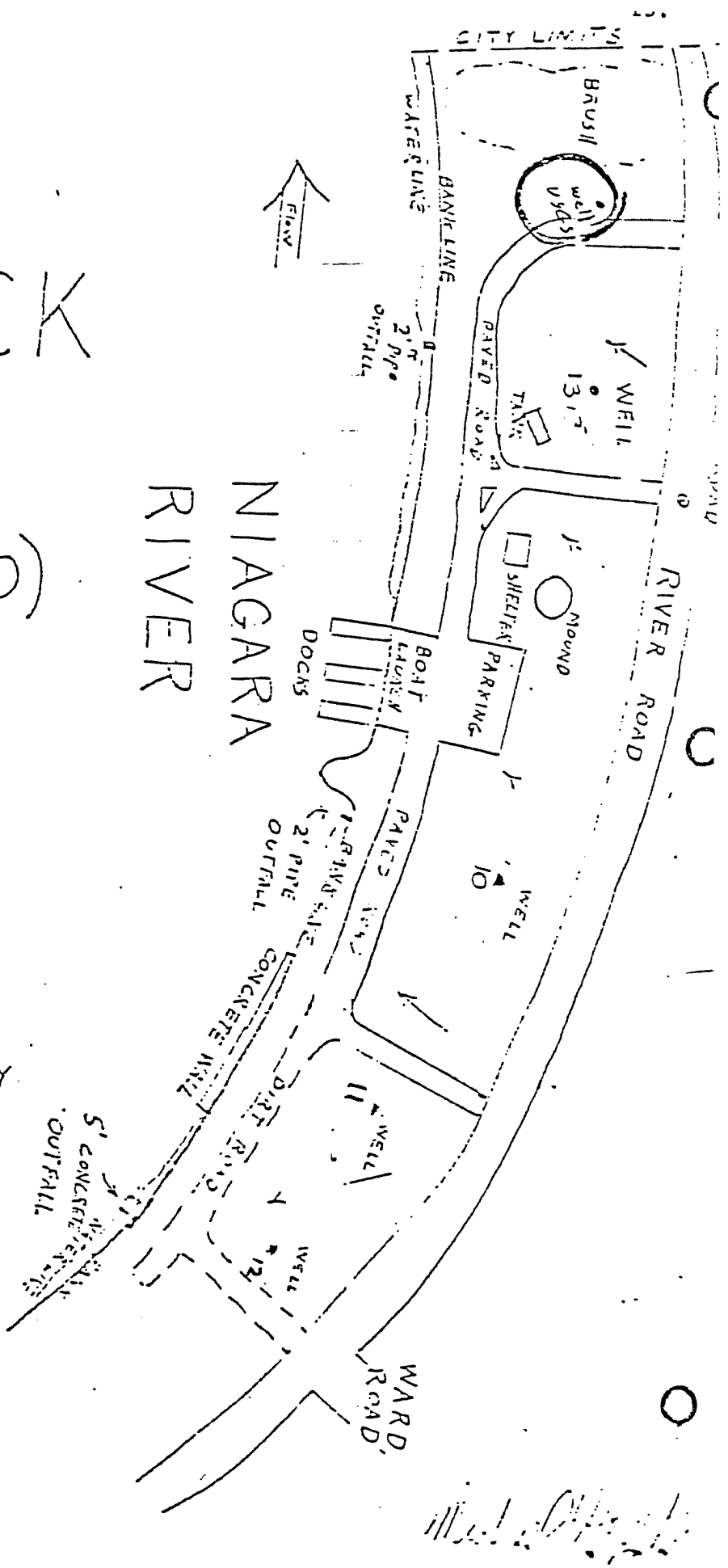
(DEC # 932060)

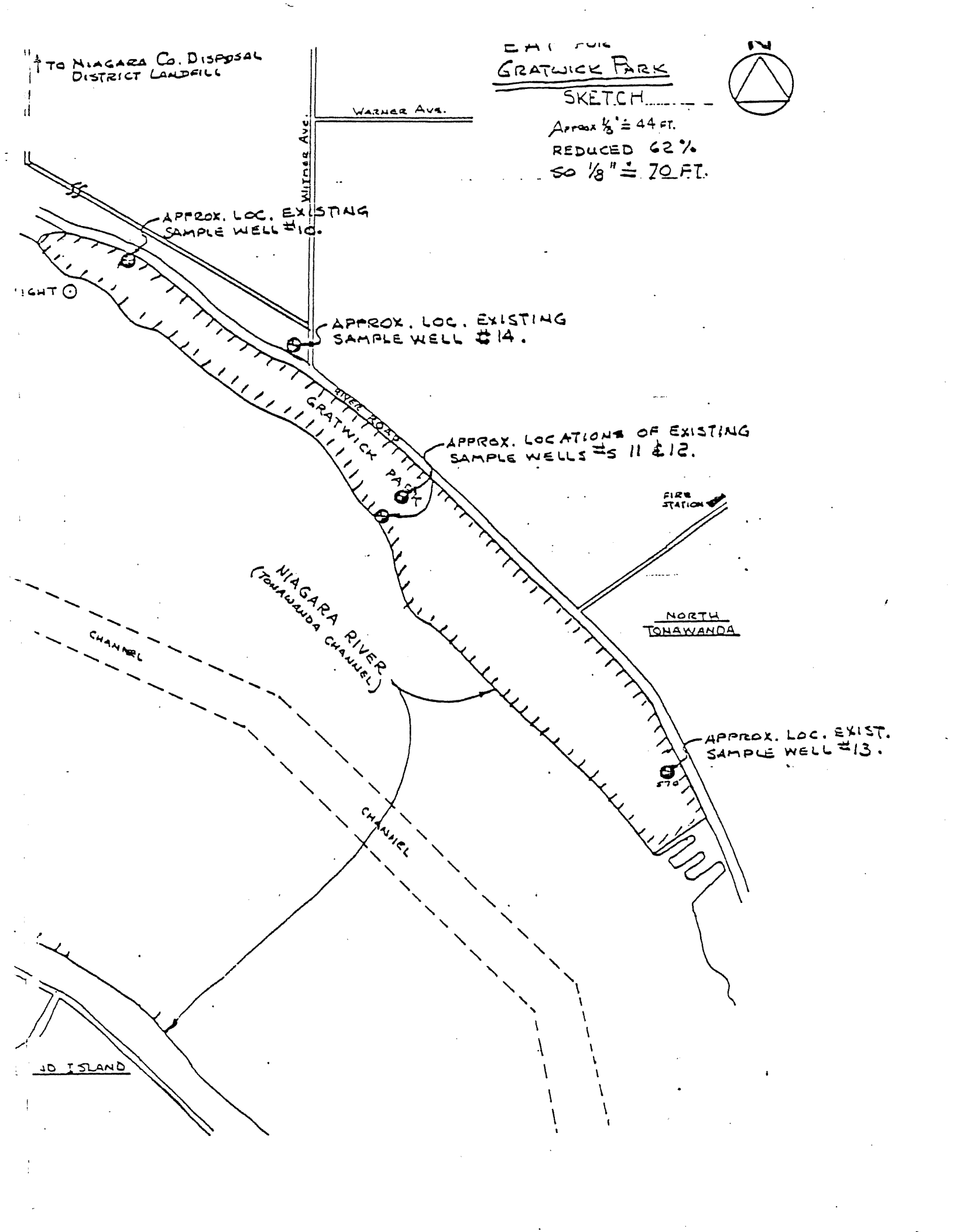


MAPPED FROM FIELD OBSERVATIONS ONLY

JUNE 12, 1981
NORTH TONAWANDA, NY

ARROWS INDICATE SUSPECTED DIRECTION OF GROUNDWATER MOVEMENT




TO NIAGARA CO. DISPOSAL DISTRICT LANDFILL
GRATWICK PARK
SKETCH
APPROX 1/8" = 44 FT.
REDUCED 62%
SO 1/8" = 70 FT.
WARNER AVE.
WITMER AVE.
APPROX. LOC. EXISTING SAMPLE WELL #10.
APPROX. LOC. EXISTING SAMPLE WELL #14.
RIVER ROAD
GRATWICK PARK
APPROX. LOCATIONS OF EXISTING SAMPLE WELLS #S 11 & 12.
FIRE STATION
NORTH TONAWANDA
NIAGARA RIVER (TONAWANDA CHANNEL)
CHANNEL
CHANNEL
APPROX. LOC. EXIST. SAMPLE WELL #13.
570
ND ISLAND

DIMENSIONS, INC.

Test Borings and Logs
797 Center Street • East Aurora, New York 14052 • (716) 655-1717

NO. 11 SURF. ELEV. _____

T Monitoring well installation
City of North Tonawanda
Ecora Research, Inc.

LOCATION 80 ft. East northeast of storm sewer outlet at southern end of park.

DATE STARTED 6/1/79 COMPLETED 6/4/79

BLOWS ON SAMPLER	DESCRIPTION & CLASSIFICATION	WELL	WATER TABLE & REMARKS
3 3 2	Moist black cinders, silt size, very friable	2 inch carbon steel pipe; Bentonite seal	Strong odors noted in samples #2-5, moderate odors in samples #6-9.
2 2 2 2	4.0		
4 5 2	Moist partially decomposed paper 5.5		
2 2	Wet black highly decomposed organic material, soft 7.0		Sample #4 crosses abrupt boundary.
5 21 23 5	Wet gray and dark gray slag, angular size gravel, partially cemented in place		Cinder, partially decomposed paper and other organic debris and partially cemented slag to 18.5 ft. over clayey lake sediments.
4 3 4			
5 5 10 10			
6 8 9		Sand pack 15.5	
4 3 2 2		17.5	

NUMBER OF BLOWS TO DRIVE 2 " SPOON 6 " WITH 300 lb WT. FALLING 30 " PER BLOW.

DIMENSIONS, INC.

Test Borings and Logs
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3. 11, continued

SURF. ELEV. _____

Monitoring well installation
City of North Tonawanda
Recra Research, Inc.

LOCATION 80 ft. East northeast of storm sewer outlet at southern end of park

DATE STARTED 6/1/79 COMPLETED 6/4/79

BLOWS ON SAMPLER	DESCRIPTION & CLASSIFICATION	WELL	WATER TABLE & REMARKS
	Partially cemented slag 18.5	Well Screen / Sand pack	17.5
1	Wet grayish pink SILTY-CLAY, thinly laminated clays, soft, plastic, sticky 21.0		19.5
	Boring completed at 21.0 feet.		Sample #9 crosses abrupt boundary. A one inch thick wet black very fine sandy loam (SILTY-SAND) lense rested on top of the SILTY-CLAY.
			2 foot stickup
			Water table 6 ft. below surface at completion.

* NUMBER OF BLOWS TO DRIVE 2 " SPOON 6 " WITH 300 lb. WT. FALLING 30 " PER BLOW.

DIVERSIFIED, INC.

Test Boring and Logs
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12

SURF. ELEV.

PROJECT Monitoring well installation — City of North Tonawanda — Recra Research, Inc.

LOCATION 400 ft. NW of Well #11, 290 ft. of Niagara River.

DATE STARTED 6/5/79 COMPLETED 6/5/79

BLOWS ON SAMPLER	DESCRIPTION & CLASSIFICATION	WELL	WATER TABLE & REMARKS
2 2 3 1	Moist dark brown and grayish brown CLAYEY-SILT fill, friable, slightly plastic — 2.0		Slight odor from samples #3-6, moderate odor from samples #7-9.
3 4 3 1	Moist brown and black mixed cinder, household metal garbage, wood fragments		Mixed fill to 6.0 ft. over cemented slag to 10.5 ft. over partially cemented slag to 15.5 ft. over water sorted sands to 18.5 ft. over clayey lake sediment.
4 3 3 3	Soft consistency — 6.0		
50/3"	Moist cemented gray slag — 10.5	2 inch carbon steel pipe	Sample #8 crosses abrupt boundary.
12 8 9 10	Wet dark gray and black partially cemented slag		
5 6 7 2	— 15.5		
4 2 2	Wet dark gray loamy fine sand (SAND), loose	Bentonite / Sand	16.0

NUMBER OF BLOWS TO DRIVE 2 " SPOON 6 " WITH 300 lb. WT. FALLING 30 " PER BLOW

DIMENSIONS, INC.

Test Borings and Logs
727 Center Street • East Aurora, New York 14052 • (716) 655-1717

13

SURF. ELEV. ______

Monitoring well installation
City of North Tonawanda
-Recra Research, Inc.

LOCATION Gratwick - Riverside Park
150 ft. northwest of [illegible]

DATE STARTED 6/5/79 COMPLETED 6/5/79

Blows on Sampler				Description & Classification	Well	Water Table & Remarks
3	3	5		Moist dark brown (CLAYEY-SILT) fill, friable — 2.0	2 inch carbon steel pipe; Bentonite	
6	4	3		Moist black cinders, with household metal garbage		Samples #2-4 & 7 had a moderate odor, samples #5 & 6 had strong odors.
6	6	5				
6	6	5		— 8.0		Soil fill to 2.0 ft. over mixed fill to 8.0 ft. over partially cemented slag to 15.0 ft. over very dense loamy glacial till.
9	11	12		Wet partially cemented dark gray and black slag		
13	14	16			12.0	
10	40	37			14.0	
10	40	37		— 15.0	Well Screen; Sand pack	
34	42	100		Moist reddish brown loam (SAND-SILT-CLAY) with 10-15% subangular dolomitic gravel, extremely firm, massive soil structure — 17.8	16.0	

Boring completed at 17.8 feet.

NUMBER OF BLOWS TO DRIVE 2 " SPOON 6 " WITH 300 lb. WT. FALLING 30 " PER BLOW.

[illegible] BORINGS, INC.

Test Borings and Logs
797 Center Street • East Aurora, New York 14052 • (716) 655 1717

[illegible]

SURF. ELEV. _____

[illegible] well installation
[illegible] of North Tonawanda
Recra Research, Inc.

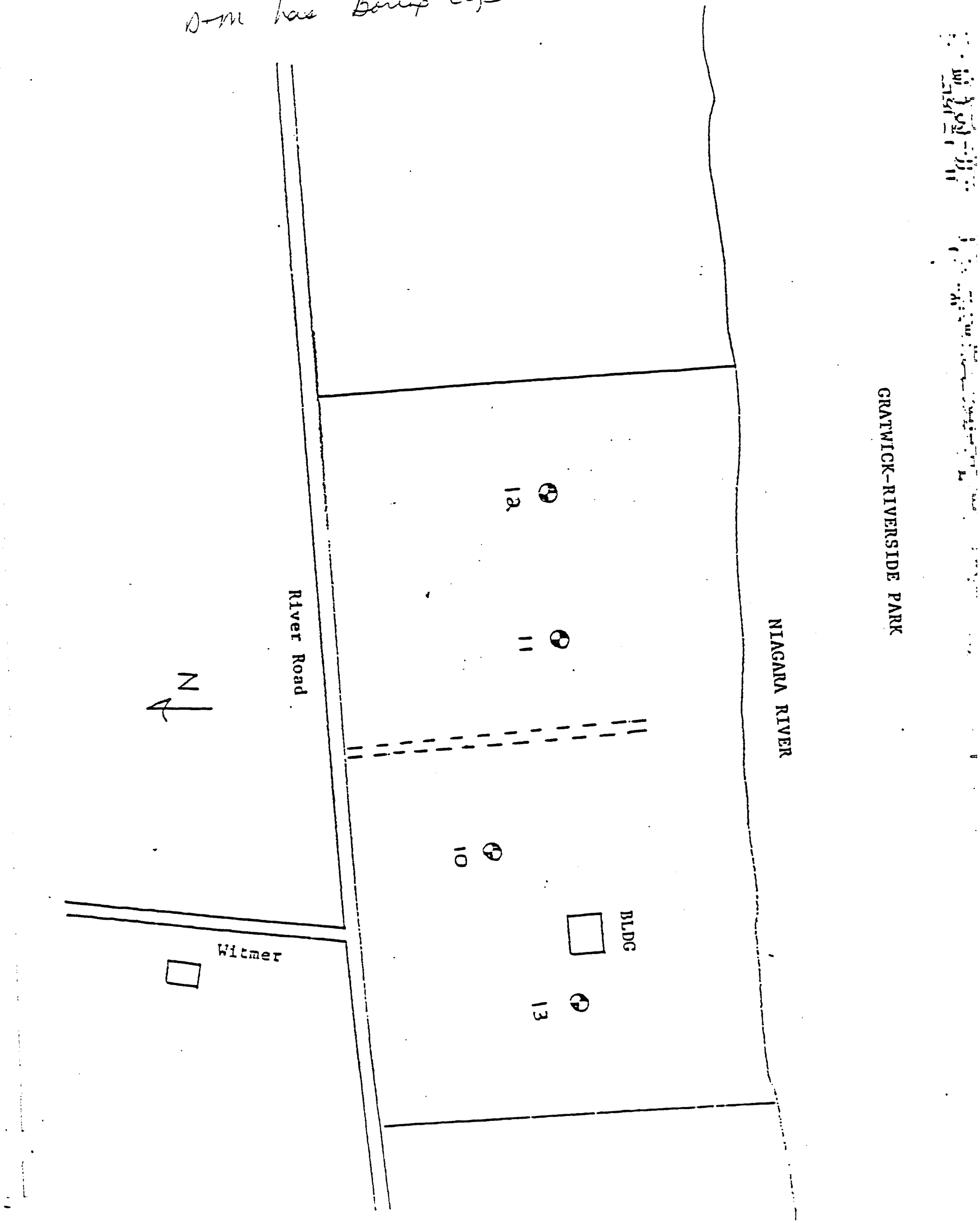
LOCATION 400 ft. NW of Well #11, 290 ft. of Niagara River.

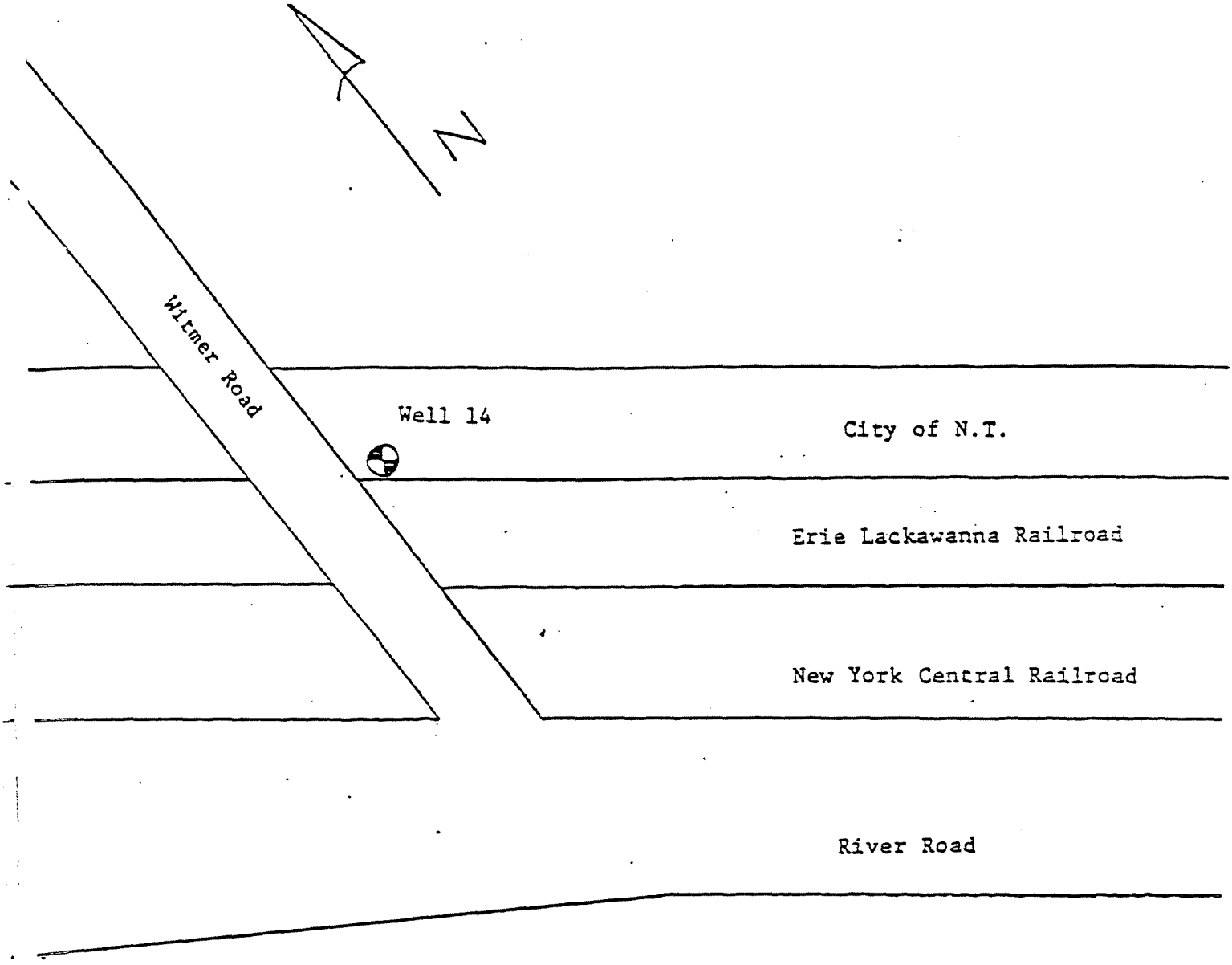
DATE STARTED 6/5/79 COMPLETED 6/5/79

BLOWS ON SAMPLER	DESCRIPTION & CLASSIFICATION	WELL	WATER TABLE & REMARKS
1	Wet SAND, continued 18.5	Well Screen / Sand pack	Water table 6.5 ft. below surface.
	Wet grayish pink SILTY-CLAY, finely laminated clays, soft, sticky 20.0		Sample #10 may have been contaminated from above through the sampling method.
			Split spoon was overdriven below 20 ft. to secure sample #10 of the soft SILTY-CLAY.
			Well stick-up was 3 ft. above surface.

= NUMBER OF BLOWS TO DRIVE 2 " SPOON 6 " WITH 300 lb. WT FALLING 30 " PER BLOW.

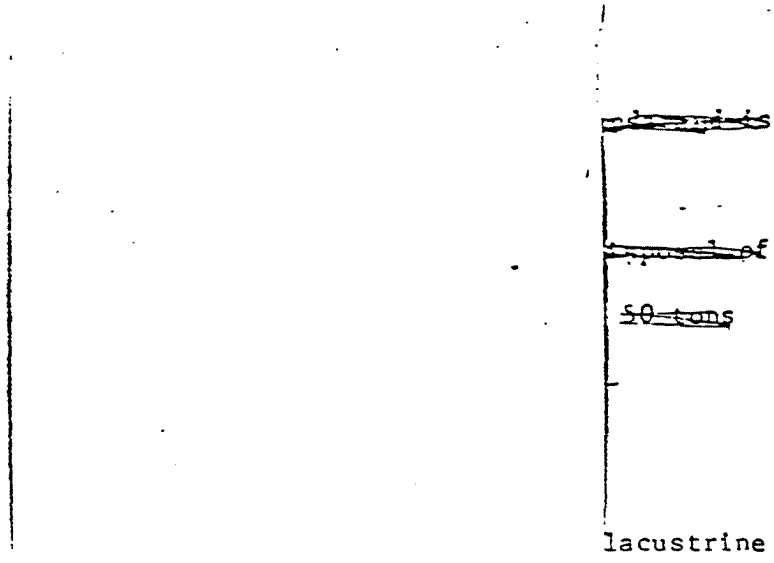
Location of Borings
D+M has Boring Logs




N
Witmer Road
Well 14
City of N.T.
Erie Lackawanna Railroad
New York Central Railroad
River Road

USGS (1982)

68. GRATWICK-RIVERSIDE PARK #932060



... which overlies a bedrock of Camillus Shale. The depth to bedrock is approximately 25 ft. One test boring was drilled on the site and its location is shown on figure 1 (number 1). The geologic description of the boring is as follows:

Well No.	Depth (ft)	Description
1	0 - 4.5	Topsoil, fill, dark.
	4.5 - 5.5	Debris, pottery, tile.
	5.5 - 9.0	Soil, dark, black, wet.
	9.0 - 11.5	Gravel, very little or no return, bricks.
	11.5 - 16.0	No returns.
	16.0 - 21.5	Clay, sandy, gravel, wet, hard drilling.

Hydrologic Information

Water levels measured in the installed well and from four existing wells on the property indicate that ground water is encountered approximately 6 ft below land surface. The apparent ground-water flow direction is southwesterly toward the Niagara River.

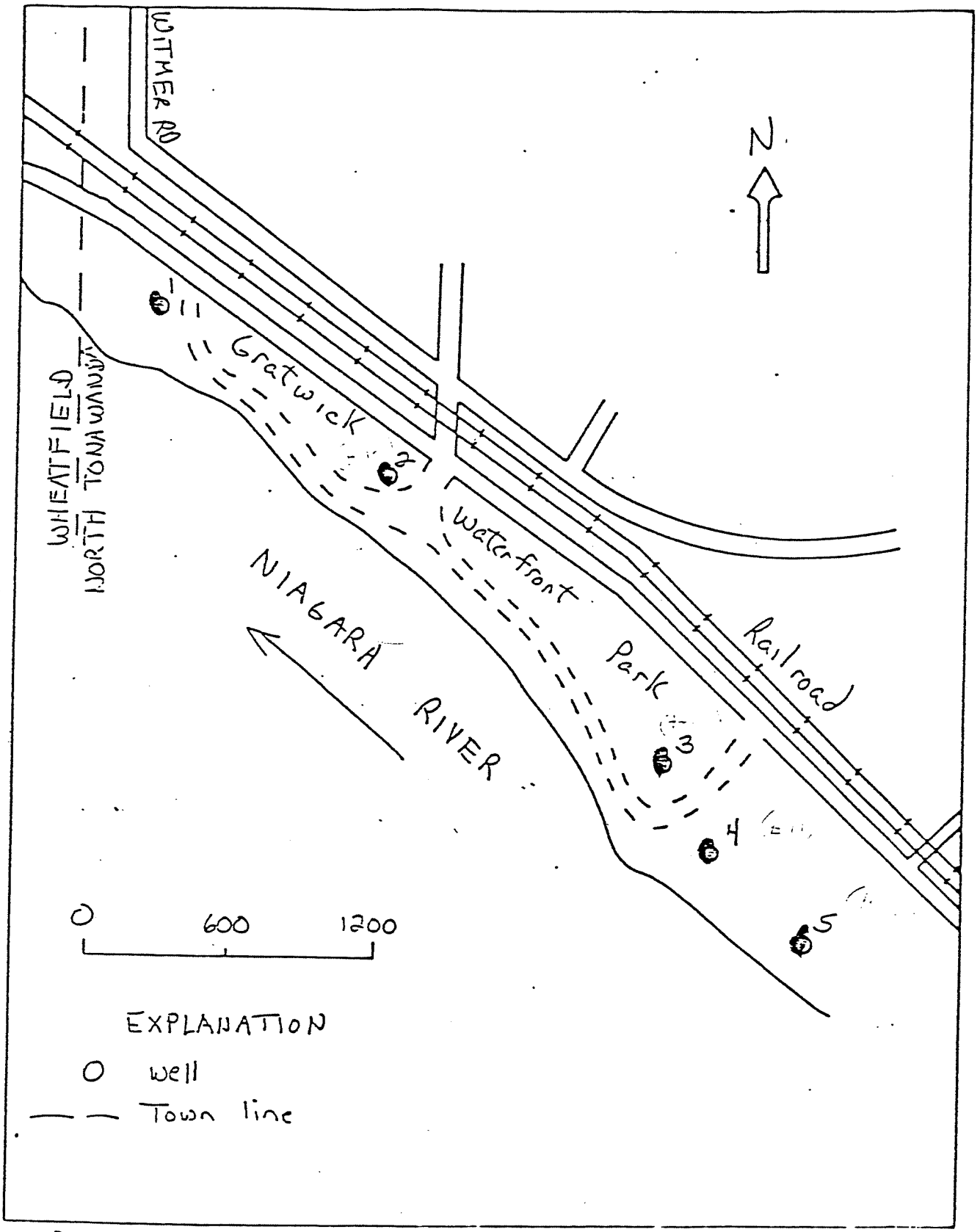


Figure 1.- Location of monitoring wells at Gratwick - Riverside Park.

Table 1.—Analyses of ground-water samples from Gratwick Riverside Park, Tonawanda, New York

	Sample Number				
	1[7]	2[7]	3	4	5
Date collected	062882	062882	062882	062882	062882
Depth (ft)	15.3	15.0	11.7	19.4	19.2
Sample Type[1]	gw	gw	gw	gw	gw
pH	11.4	10.6	10.8	10.0	11.2
Conductivity (uMHOS)	2110	1650	2450	504	1780
Temperature (°C)	10.0	12.0	12.0	13.0	13.0
Inorganic Constituents[2]					
Antimony					
Arsenic	1	10	1	1	1
Cadmium	3	1	<1	1	<1
Chromium	3	<1	-	<1	<1
Copper	56	25	12	22	10
Iron	8800	6400	4400	15000	3100
Lead	100	150	64	140	43
Mercury	0.7	<0.1	<0.1	0.1	0.7
Nickel	<1	5	3	20	5
Selenium					
Zinc					
Flouride					
Sulfide					
Cyanide					
Molecular sulfur					546[5]
Organic Compounds[2]					
1-(2-butoxyethoxy) ethanol[4]	85	-	-	-	-
[1-1'-biphenyl]-2-ol[4]	32	-	4[8]	5.2	4.6[8]
[1-1'-biphenyl]-3-ol[4]	11	53	-	-	-
[1-1'-biphenyl]-4-ol[5]	5.2	35	-	5.0	-
2-dibenzofuranol[4]	8.8	15	-	-	-
1-chloro-3-phenoxybenzene[5]	-	2.8[8]	-	-	-
4-chloro[1,1'-biphenyl]-4-ol[5]	-	1.3[8]	-	-	-

1 Sample type: gw=ground water, sw=surface water, and s=substrate.
2 Concentrations: ug/L for water and ug/Kg for substrate. Blank spaces indicate that no analyses were performed; dashes indicate that constituents and compounds were not found.
3 Cu(D): analysis done by direct aspiration because of high iron concentration.
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5 Identity based on less than library match; identification seemed reasonable. As for footnote 4, concentration results are semiquantitative.
6 Volatile found in GC/ms extractions. Concentration results probably less than actual.
7 Low surrogate recoveries.
8 Estimated value less than detection limit.

Table 1.--Analyses of ground-water samples from Gratwick Riverside Park, Tonawanda, New York--continued

	Sample Number				
	1[7]	2[7]	3	4	5
Organic Compounds[2] (continued)					
1-chloro-4-phenoxybenzene[5]	-	<5	-	-	-
Phenol	-	-	97	1914	13.7
Napthalene	-	-	-	50.3	-
O-cresol	-	-	-	1.8[8]	-
3-(1,1-dimethylethyl)-phenol[5]	-	-	-	31.2	-
1-H-indole[5]	-	-	-	2.7[8]	-
1,6-dimethyl-4-(1-methylethyl) napthalene[5]	-	-	-	1.1[8]	-
2-[(4-hydroxyphenyl)methyl] phenol[5]	-	-	-	3.8[8]	-
4,4'-methylenebisphenol[5]	-	-	-	4.5[8]	-
Butylbenzylphthalate	-	-	-	20.9	-
m-cresol	-	-	370	-	194
Dibenzo[B,E][1,4]dioxin[5]	13	160	-	-	-
1,1'-(1,2-ethanediyl)bis [3,4-dimethyl]benzene[5]	4.4[8]	-	-	-	-
2-butoxyethyl butylphthalate[5]	7.4	-	-	-	-
Di-n-butylphthalate[5]	1.3[8]	-	-	-	-
1,6-hexanediol[5]	-	3.4[8]	-	-	-
1-1'-oxybisbenzene[4]	-	6.2	-	-	-
1-(1,1'-dimethylethyl) benzene[5]	-	<5	-	-	-
3,8-dimethylundeane[5]	-	2.5	-	-	-
Dibenzofluran[5]	-	3.2	-	-	-
[1-1'-biphenyl]-2-ol[4]		44	-	-	-
2-phenoxylphenol[4]	-	4.8	-	-	-
3-ethyl-3-methyl hexane[5]	-	1.3	-	-	-
4-phenoxylphenol[4]	-	16	-	-	-

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Table 1.—Analyses of ground-water samples from Gratwick Riverside Park, Tonawanda, New York—continued

	Sample Number				
	1[7]	2[7]	3	4	5
Organic Compounds[2] (continued)					
4-(1,1-Dimethylethyl)-phenol[5]	–	–	–	–	14.7
1,4-Dimethyl-7-(1-methylethyl) azulene[5]	–	–	–	–	1.0[8]
2-ethylhexyl phthalate	8	–	–	–	–
Tetrachloroethene [5]	–	–	1[8]	–	–
Ethylbenzene [5]	–	–	6	–	–
1,2-Dimethylbenzene[5]	–	–	3[8]	–	–
1,3-Dimethylbenzene[5]	–	–	3[8]	–	–
1-Ethyl-3-methylbenzene[5]	–	–	3[8]	–	–
1-Ethyl-4-methylbenzene[5]	–	–	1[8]	–	–
1,2,3-Trimethylbenzene [5]	–	–	5	–	–
P-cresol	–	–	18	–	–
1-Ethyl-2-methylbenzene[5]	–	–	3[8]	–	–
Dihydro-5-methyl-5-phenyl-2(3H)-furanone [5]	–	–	1[8]	–	–
a,a,-Dimethylbenzene-methanol [5]	–	–	3[8]	–	–
2,4-Dimethylphenol	–	–	5	–	–
1,2,3,4-Tetramethylbenzene[5]	–	–	<5	–	–
3,4-Dimethylphenol [5]	–	–	15	–	–
2,3-Dihydro-4-methyl-4-indene [5]	–	–	<5	–	–
2-Ethylphenol	–	–	<5	–	–
2,3-Dimethylphenol [5]	–	–	3[8]	–	–
2-[2-(2-Butoxyethoxy)-ethoxy]ethanol [5]	–	–	<5	–	–
1,4-Dihydro-1,4-methano-naphthalene [5]	–	–	2[8]	–	–
1-Methylnaphthalene[5]	–	–	2[8]	–	–
5-(1,1-Dimethylethyl-butanethioate [5]	–	–	<5	–	–

[1] Sample type: gw=ground water, sw=surface water, and s=substrate.
[2] Concentrations: ug/L for water and ug/Kg for substrate. Blank spaces indicate that no analyses were performed; dashes indicate that constituents and compounds were not found.
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[7] Low surrogate recoveries.
[8] Estimated value less than detection limit.

from: onpoing USGS study 1758-93

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Conductivity (uMHOS)	2110	1650	2450	504	1780
Temperature (°C)	10.0	12.0	12.0	13.0	13.0
Inorganic Constituents[2]					
Antimony					
Arsenic	1	10	1	1	1
Cadmium	3	1	<1	1	<1
Chromium	3	<1	–	<1	<1
Copper	56	25	12	22	10
Iron	8800	6400	4400	15000	3100
Lead	100	150	64	140	43
Mercury	0.7	<0.1	<0.1	0.1	0.7
Nickel	<1	5	3	20	5
Selenium					
Zinc					
Flouride					
Sulfide					
Cyanide					
Molecular sulfur					546[5]
Organic Compounds[2]					
1-(2-butoxyethoxy) ethanol[4]	85	–	–	–	–
[1-1'-biphenyl]-2-ol[4]	32	–	4[8]	5.2	4.6[8]
[1-1'-biphenyl]-3-ol[4]	11	53	–	–	–
[1-1'-biphenyl]-4-ol[5]	5.2	35	–	5.0	–
2-dibenzofuranol[4]	8.8	15	–	–	–
1-chloro-3-phenoxybenzene[5]	–	2.8[8]	–	–	–
4-chloro[1,1'-biphenyl]-4-ol[5]	–	1.3[8]	–	–	–

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Table 1.—Analyses of ground-water samples from Gratwick Riverside Park, Tonawanda, New York—continued

	Sample Number				
	1[7]	2[7]	3	4	5
Organic Compounds[2] (continued)					
4-(1,1-Dimethylethyl)-phenol[5]	–	–	–	–	14.7
1,4-Dimethyl-7-(1-methylethyl) azulene[5]	–	–	–	–	1.0[8]
2-ethylhexyl phthalate	8	–	–	–	–
Tetrachloroethene [5]	–	–	1[8]	–	–
Ethylbenzene [5]	–	–	6	–	–
1,2-Dimethylbenzene[5]	–	–	3[8]	–	–
1,3-Dimethylbenzene[5]	–	–	3[8]	–	–
1-Ethyl-3-methylbenzene[5]	–	–	3[8]	–	–
1-Ethyl-4-methylbenzene[5]	–	–	1[8]	–	–
1,2,3-Trimethylbenzene [5]	–	–	5	–	–
P-cresol	–	–	18	–	–
1-Ethyl-2-methylbenzene[5]	–	–	3[8]	–	–
Dihydro-5-methyl-5-phenyl-2(3H)-furanone [5]	–	–	1[8]	–	–
a,a,-Dimethylbenzene-methanol [5]	–	–	3[8]	–	–
2,4-Dimethylphenol	–	–	5	–	–
1,2,3,4-Tetramethylbenzene[5]	–	–	<5	–	–
3,4-Dimethylphenol [5]	–	–	15	–	–
2,3-Dihydro-4-methyl-4-indene [5]	–	–	<5	–	–
2-Ethylphenol	–	–	<5	–	–
2,3-Dimethylphenol [5]	–	–	3[8]	–	–
2-[2-(2-Butoxyethoxy)-ethoxy]ethanol [5]	–	–	<5	–	–
1,4-Dihydro-1,4-methano-naphthalene [5]	–	–	2[8]	–	–
1-Methylnaphthalene[5]	–	–	2[8]	–	–
5-(1,1-Dimethylethyl-butanethioate [5]	–	–	<5	–	–

1 Sample type: gw=ground water, sw=surface water, and s=substrate.
2 Concentrations: ug/L for water and ug/Kg for substrate. Blank spaces indicate that no analyses were performed; dashes indicate that constituents and compounds were not found.
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EXHIBIT 3

UPDATED NYSDEC REGISTRY FORM

HAZARDOUS WASTE DISPOSAL SITES REPORT
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Code: _____

Site Code: 932060

Name of Site: Gratwick - Riverside Park Region: 9

County: Niagara Town/City North Tonawanda

Street Address River Road

Status of Site Narrative:

Used by Hooker Durez and Bell Aerospace.

Although recent analysis of groundwater samples indicate that materials containing phenolic and halogenated compounds are leaching into the groundwater in low concentrations, similar analysis of near shore Niagara River found no incidence of elevated concentrations.

Periodic analysis of groundwater and river water is recommended.

Type of Site: Open Dump ☐ Treatment Pond(s) ☐ Number of Ponds ____
Landfill ☒ Lagoon(s) ☐ Number of Lagoons ____
Structure ☐

Estimated Size 52 Acres

Hazardous Wastes Disposed? Confirmed ☒ Suspected ☐

*Type and Quantity of Hazardous Wastes:

TYPE	QUANTITY (Pounds, drums, tons, gallons)
phenoloc resin	25,000 tons
phenolic molding cpd	25,000 tons
oil and grease	50 tons
rubbish	50,000 tons

* Use additional sheets if more space is needed.