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ERP - e
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BCP - c

non-releasable - put .nf.pdf
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ENGINEERING INVESTIGATIONS AT INACTIVE HAZARDOUS WASTE SITES

PHASE I INVESTIGATION

Town of Marilla — Site No. 915093

Town of Marilla — Erie County

Prepared for:

New York State Department of Environmental Conservation

50 Wolf Road, Albany, New York 12233

Thomas C. Jorling, *Commissioner*

Division of Hazardous Waste Remediation

Michael J. O'Toole, P.E., *Director*

By:

ENGINEERING-SCIENCE

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

TOWN OF MARILLA LANDFILL
NYS SITE NUMBER 915093
TOWN OF MARILLA
ERIE COUNTY
NEW YORK STATE

Prepared For

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

Prepared By

ENGINEERING-SCIENCE
290 ELWOOD DAVIS ROAD
LIVERPOOL, NEW YORK 13088

In Association With

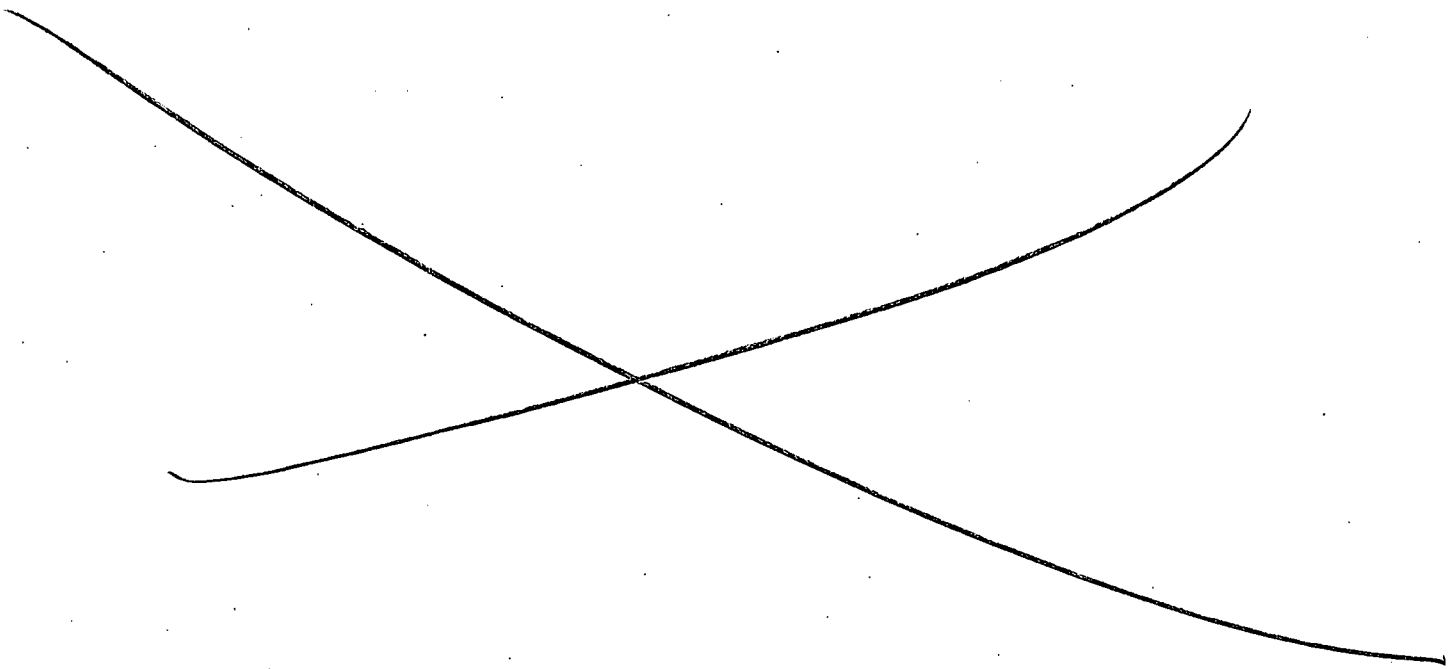
DAMES & MOORE
2996 BELGIUM ROAD
BALDWINSVILLE, NEW YORK 13027

DATE OF SUBMITTAL: JANUARY, 1988

56510-6R:40

TOWN OF MARILLA LANDFILL

TABLE OF CONTENTS



SECTION I
EXECUTIVE SUMMARY

This report, prepared for the New York State Department of Environmental Conservtion (NYSDEC), presents the results of the Phase I investigation for the Town of Marilla Landfill site (NYS Site Number 915093, No EPA Site Number Given) located in the Town of Marilla, Erie County, New York (see Figure I-1).

SITE BACKGROUND

The Town of Marilla site, a 10-acre municipal landfill, was purchased by the Town of Marilla in 1965. Beginning in 1969 or 1970, the landfill was operated by the Town Highway Department using the area and trench method, to landfill municipal wastes from the Town of Marilla. Since its existence, the site has operated on Saturdays only. The landfill has continuously been plagued by problems which include: inadequate daily cover of refuse, leachate outbreaks, pooling of surface water onsite, litter, and inadequate vegetative cover. Leachate outbreaks continue to present a problem on the northwest side of the site, despite efforts to cover the landfill, and to provide adequate surface water drainage and vegetative cover (NYSDEC Site Inspection Reports, 1980-85).

From 1981 to 1985, groundwater samples have been collected and analyzed to monitor leachate migration and to detect groundwater contaminants (Tallamy, Van Kuren, Gertis & Associates 1982, and Ecology and Environment, Inc. 1985). Contaminants detected include PCBs, phenols, cyanide, heavy metals, and total organic carbon (TOC). Constituents that exceeded the New York State Groundwater Standards and background levels were chloride, phenol, iron, manganese, barium, cadmium, and lead.

In 1982 and 1985 surface water samples were obtained by Ecology and Environment, and Tallamy, Van Buren, Gertis and Associates, and analyzed for PCBs, phenol, cyanide, TOC, and heavy metals. The Ecology and Environment showed that iron contamination exceeded the New York State Class D surface water standards, and the Tallamy, Van Buren, Gertis and Associates analysis showed iron, phenol and cyanide contamination exceeded the New York State Class D surface water samples. An upgradient/downgradient comparision could not be made because exact sample locations were not identified.

ASSESSMENT

In an attempt to quantify the risk associated with this site, the Hazard Ranking System (HRS) was applied as currently being used by the NYSDEC to evaluate abandoned hazardous waste sites in New York State. This system takes into account the types of wastes at the site, receptors, and transport routes to apply a numerical ranking of the site. As stated in 40 CFR Subpart H Section 300.81, the HRS scoring system was developed for use in evaluating the relative potential of uncontrolled hazardous disposal substances to cause health or safety problems or ecological or environmental damage. EPA assumed that a uniform application of the ranking system in each state will permit them to identify those releases of hazardous substances that pose the greatest hazard to humans or the environment.

Under the HRS, three numerical scores are computed for each site, to express the relative rsk or danger from the site; taking into account the population at risk; the hazardous potential of the substance at a facility; the potential for contamination of drinking water supplies; for direct human contact, and for destruction of sensitive ecological systems and other appropriate factors. The three scores are:

- S_m reflects the potential for harm to humans for the environment from migration of a hazardous substance away from the facility by routes involving groundwater, surface water or air. It is a composite of separate scores for each of the three routes (S_{GW} = groundwater route score, S_{SW} = surface water route socore, and S_A = air route score).

- S_{FE} reflects the potential for harm from substances that can explode or cause fires.
- S_{DC} reflects the potential for harm from direct contact with hazardous substances at the facility (i.e., no migration need be involved).

The preliminary HRS score was:

S_M	= 38.20	S_{GW}	= 65.62
S_{FE}	= 0	S_{SW}	= 7.79
S_{DC}	= 25	S_A	= 0

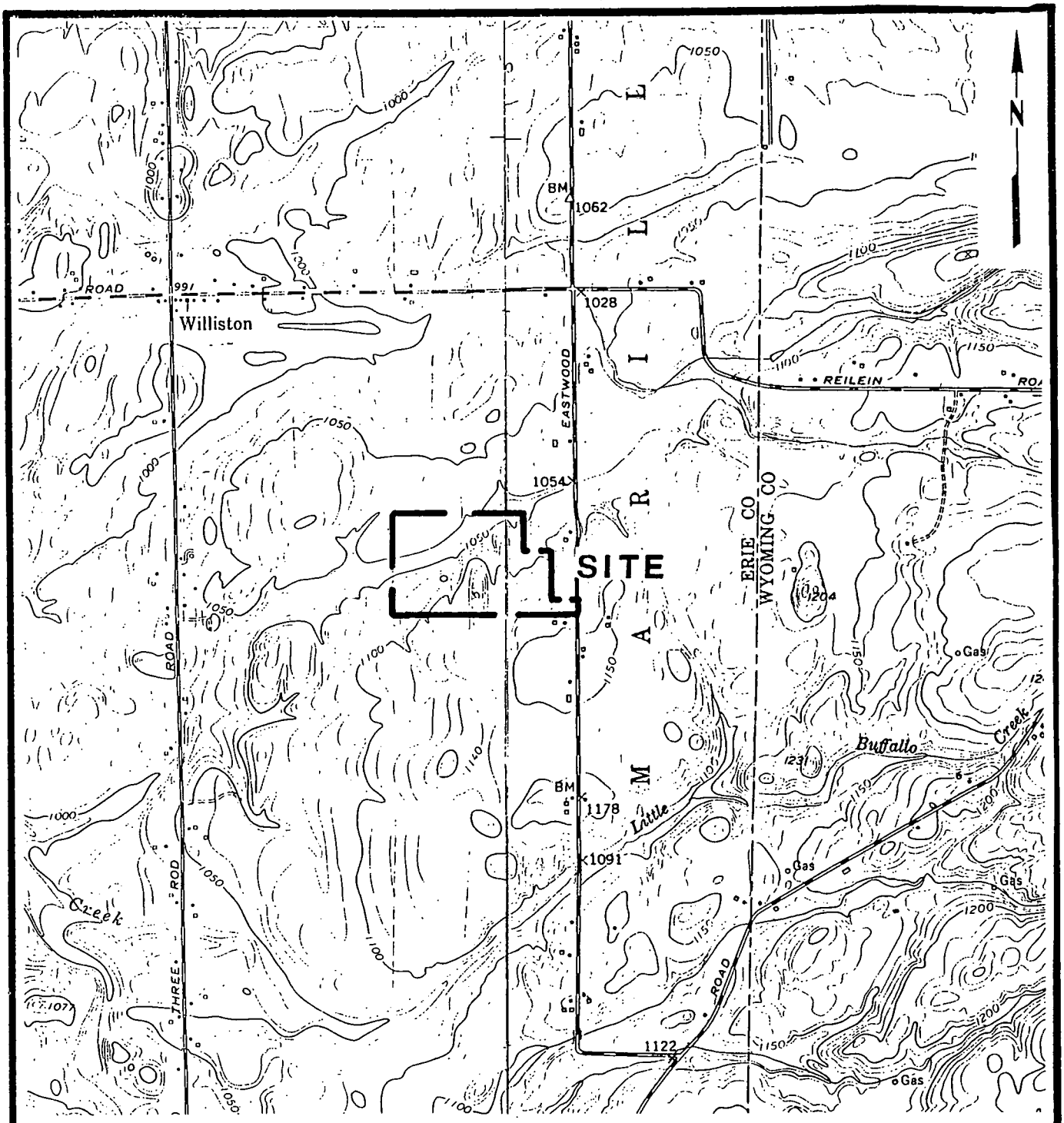
These scores reflect that there was an observed release of manganese to the groundwater and residents living in the vicinity of the landfill site have private drinking water wells that withdraw water from the aquifer of concern.

RECOMMENDATIONS

The groundwater data are adequate to score an observed release of metal contamination; however, there are no data for organic contamination. Based on this information, it is recommended that the existing upgradient and downgradient groundwater wells be sampled and the samples be analyzed for organic contamination. The locations where surface water samples were taken was not specific enough to determine if one of the sample locations was upgradient of the site. If it is determined during the Phase II investigation that there was no upgradient surface water sample location, then an upgradient surface water sample should be taken during the Phase II investigation.

Additionally, it is recommended that the Town of Marilla continue remedial actions to correct leachate outbreaks.

The estimated man-hour requirements to complete Phase II are 962, while the estimated cost is $36,883.



LATITUDE: 42°48'58" N
LONGITUDE: 78°30'05" W

SCALE

0 1000 2000 3000 4000 FEET

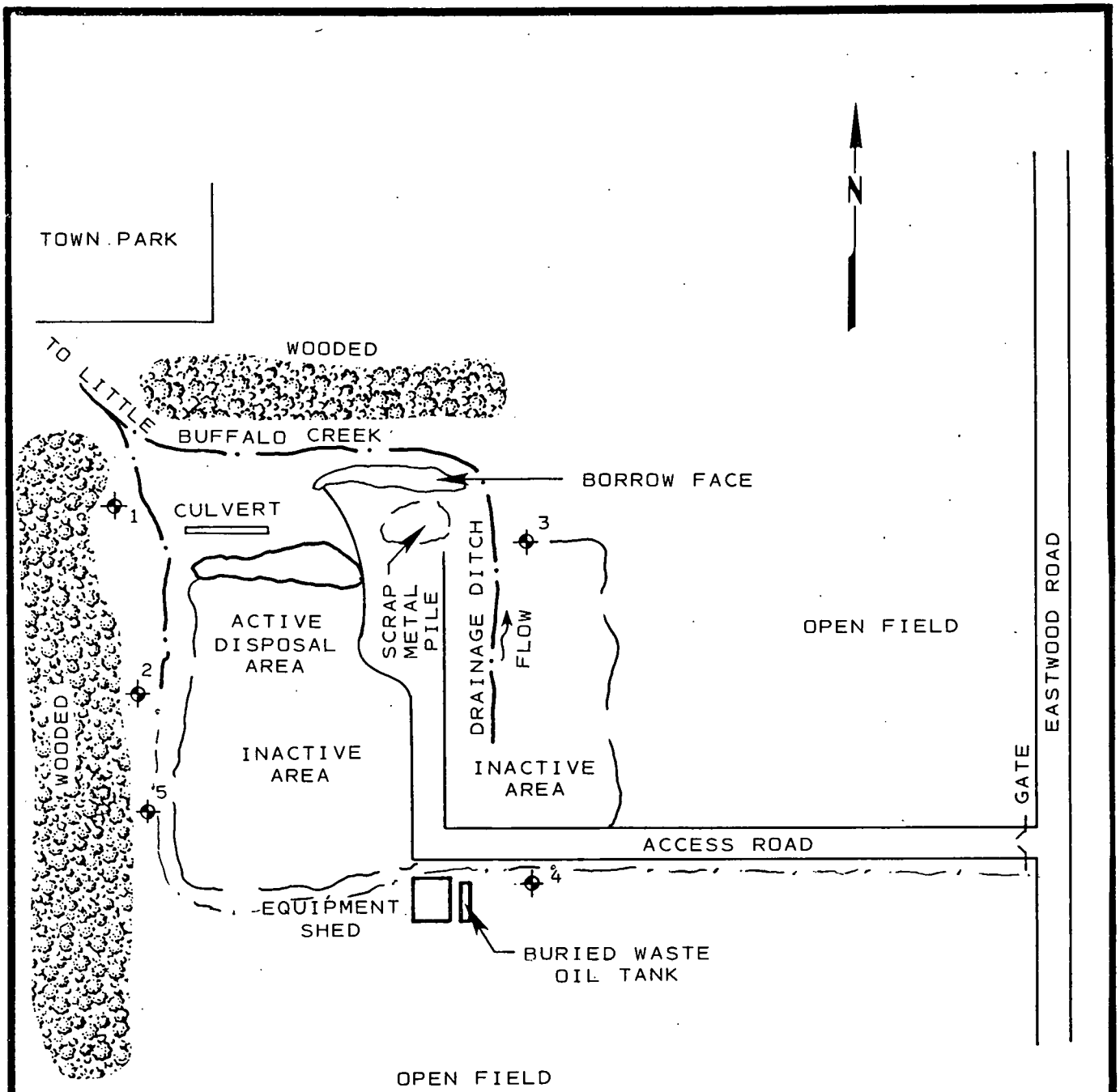
REFERENCE: U.S.G.S. 7.5' Topographic Map
East Aurora, NY (1965) and Cowlesville,
NY (1949) Quadrangles

ENGINEERING-SCIENCE, INC.
IN ASSOCIATION WITH
DAMES & MOORE

NEW YORK STATE DEPARTMENT
OF ENVIRONMENTAL CONSERVATION
PHASE I REPORT

SITE LOCATION MAP
TOWN OF MARILLA

FIGURE I-1



EXPLANATION:

⊕ EXISTING MONITORING WELL

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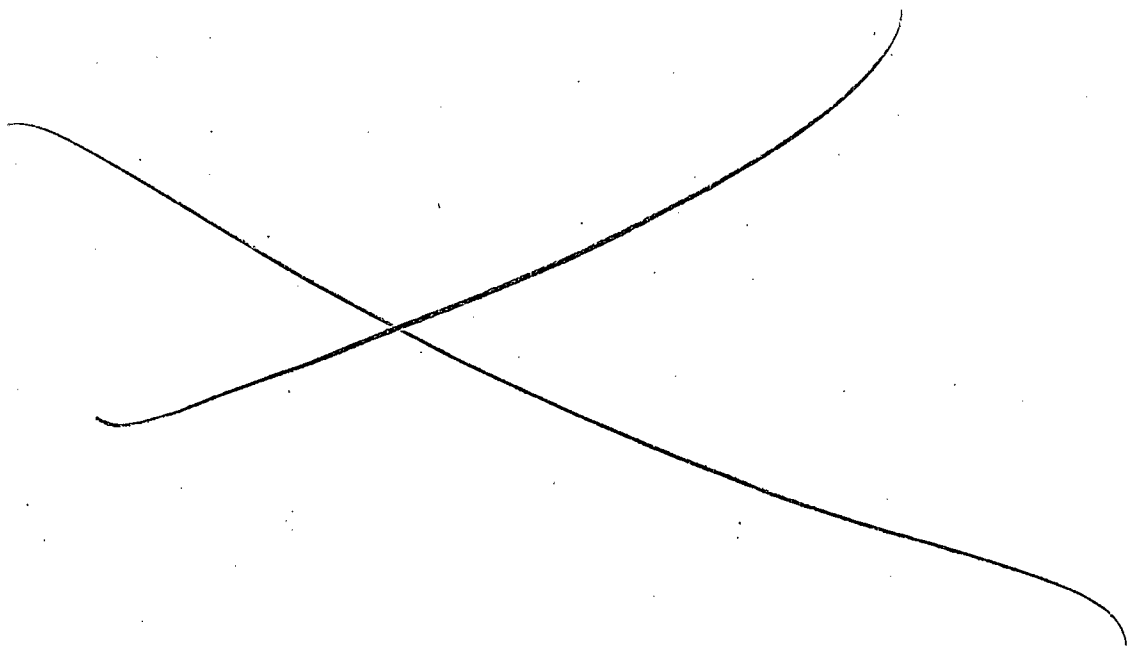
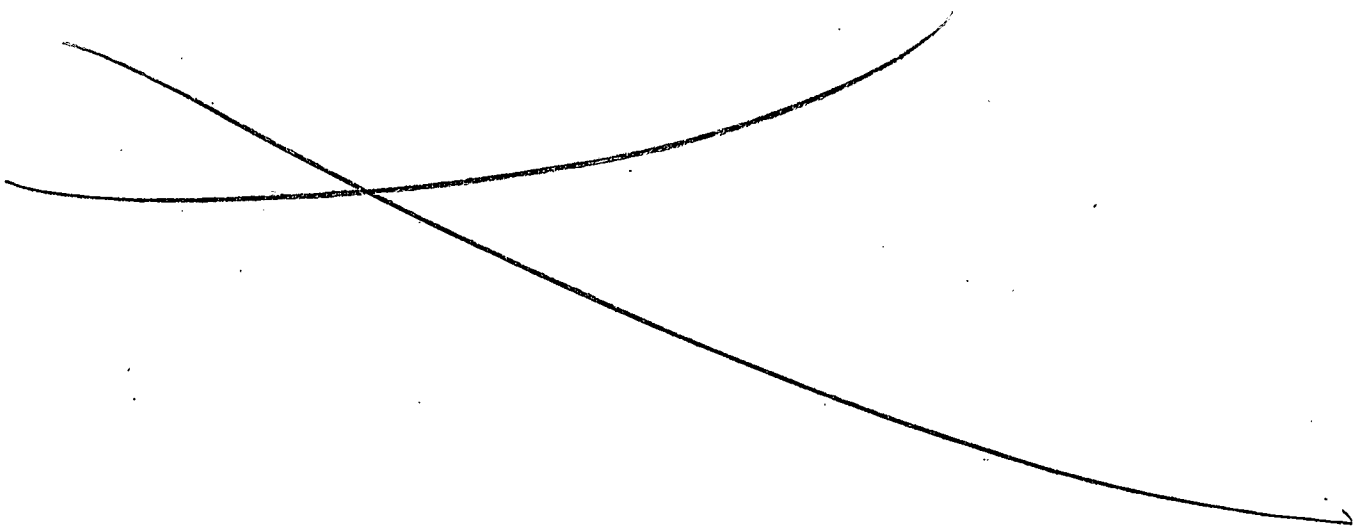
PLOT PLAN
TOWN OF MARILLA

FIGURE I-2



SECTION II
PURPOSE

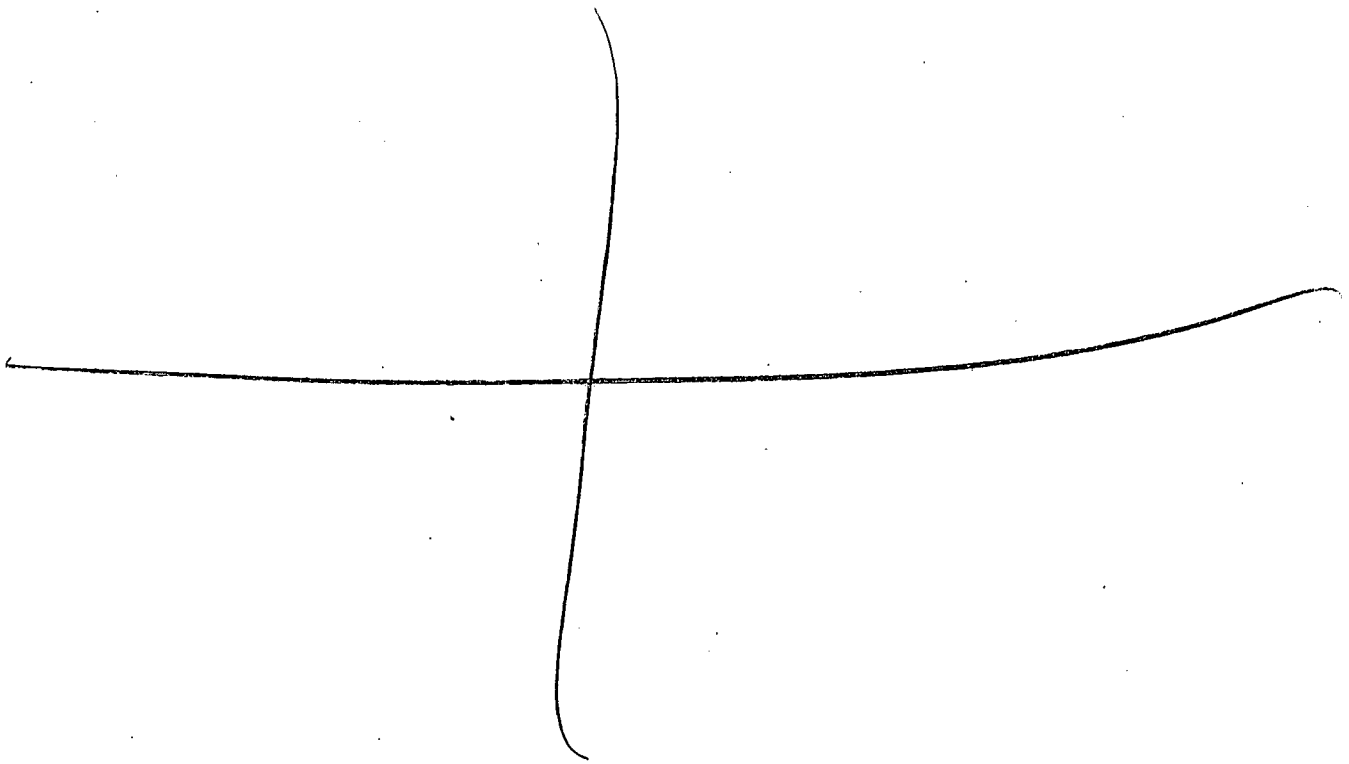
The purpose of the Phase I investigation at the Town of Marilla Landfill site was to assess the hazard to the environment caused by the present condition of the site. This assessment is based on the Hazard Ranking System, which involves the compilation and rating of numerous geological, toxicological, environmental, chemical, and demographic factors and the calculation of an HRS score. Details of HRS implementation are included in Section V. During the initial portion of the investigation, available data and records, combined with information collected from a site inspection, were reviewed and evaluated. The investigation at this site focused on burial of an estimated 95,000 cubic yards of municipal wastes in Marilla, New York.



SECTION III
SCOPE OF WORK

The scope of work for the New York State Inactive Site Investigation Program (Phase I) was to collect and review available information necessary for the documentation and preparation of Hazard Ranking System score and a Phase II work plan and cost estimate if required. The work activities performed included data collection and review, a site inspection, and interviews with individuals knowledgeable about past and present disposal activities at the site.

The sources contacted during this Phase I investigation included government agencies (federal, state, and local), present site owners and operators, and any other individuals who may have knowledge of the site, as identified during the performance of the investigation. These sources are listed in Appendix A. The intent of this list is to identify all persons, departments, and/or agencies contacted during the fourth round of the Phase I investigation even though useful information may not have been collected from each source contacted.



SECTION IV
SITE ASSESSMENT

SITE HISTORY

In 1965, the Town of Marilla Highway Department purchased the Town of Marilla landfill site from Oscar Tankusley to operate a sanitary landfill. According to Russell Webster and Paul Sharpe of the Town of Marilla, the Tankusley brothers (Oscar and Hubert), operated the landfill under a lease from the Town of Marilla for four or five years, after which the Town of Marilla began its operation. The landfill has been and is currently in operation as of December 1985, Saturdays only.

The landfill site has been plagued with problems resulting from its operation, including inadequate daily cover of refuse, leachate outbreaks, litter, pooling of surface water, and inadequate vegetative cover. Site inspections conducted during the 1980s by the NYSDEC and Erie County Department of Environment and Planning (ECDEP) have indicated leachate outbreaks in the southeast, northeast, and northwest portions of the landfill. In 1981, monitoring wells were installed by Tallamy, Van Kuren, Gertis, and Associates to determine the extent of leachate migration from the landfill. Inadequate maintenance of a proper soil cover, protrusion of refuse, and ponded water resulting from inadequate grading at the northwest portion of the landfill have been recurring problems at the northwest portion of the landfill (NYSDEC Site Inspections, 1980-85).

In April 1983, an unknown quantity of leaking waste oil barrels were found next to an on-site maintenance shed during a NYSDEC site inspection (NYSDEC, July 83). As required by the NYSDEC, soils saturated with waste oil were excavated and disposed of in the on-site landfill. Further, a new 550-gallon storage tank was installed and a

waste oil contractor was retained to pick up the waste oil barrels for off-site recycling (Webster, R. and Sharpe P., December 85).

To resolve the reoccurring landfill problems and to renew the landfill's operating permit, the Town of Marilla capped portions of the landfill on several occasions between 1982-85. Other corrective actions taken include bagging of litter, regrading the site to promote surface water runoff, and providing adequate vegetative cover.

An estimated 95,000 cubic yards of municipal waste has been disposed of in the landfill since 1965. No hazardous wastes, liquids, or drums are known to have been disposed of in the landfill (Webster, R. and Sharpe P., 12/85).

The Town of Marilla Landfill site has had continuous problems with leachate outbreaks, as observed along the north side during an inspection by NYSDEC on 22 August 1985. During the site inspection conducted by ES and D&M on 12 December 1985, no leachate outbreaks were observed. However, reddish brown leachate was visible in the drainage ditch located along the west side of the landfill.

SITE TOPOGRAPHY

The Town of Marilla Landfill is located between Three Rod Road and Eastwood Road in the Town of Marilla, Erie County, New York. The site consists of approximately 10 acres, of which approximately seven acres have been used as a sanitary landfill. It is situated within a 40-acre parcel owned by the Town of Marilla. Prior to landfilling operations, the topography of the site consisted primarily of open fields in a kame and kettle area sloping northward to a small stream.

Soils underlying and immediately adjacent to the site are primarily Howard Gravelly Loam, Palmyra Gravelly Loam, Darien Silt Loam, Hornell Silt Loam, and Manlius Shaly Silt Loam. Characteristically, these soil types are moderately deep to deep and moderately drained, exhibit seasonally perched water tables within one to three feet of ground surface, and have a permeability range of 10^{-3} to 10^{-5} cm/sec.

Land use adjacent to the Town of Marilla landfill is primarily agricultural/residential. A town park borders the northwest edge of the site.

Facility slope of the landfill is less than three percent, and slope is generally to the north. The slope of the intervening terrain, measured from the northern edge of the landfill to the small tributary of Little Buffalo Creek, is approximately 15-16%, sloping north to northwest.

Access to the site is provided by a single unpaved road with a gate on Eastwood Road. Drainage ditches on both sides of the access road prevent vehicles from bypassing the gate. Access to the site by foot and all-terrain type vehicles is unlimited from both Eastwood Road and Three Rod Road. The site consists of unused areas, landfill areas and an active disposal area. The inactive portions are all covered and seeded. An active disposal cell is located on the northwest side of the site. This cell was covered but not seeded; some domestic refuse protrudes the cover. A scrap metal staging/holding area is located on the northeast side of the landfill adjacent to a borrow face. The scrap metal consisted of domestic appliances and miscellaneous scrap metal. The approximate dimensions of the scrap pile is 20' x 20' x 5' high. A 550-gallon underground waste oil storage tank is located adjacent to the maintenance shed, on the southeast side of the landfill. Currently, there is no information to indicate whether the tank is leaking.

Surface water runoff from the landfill is primarily to the north and northwest into the tributary of Little Buffalo Creek which flows northwest. Additionally, drainage channels immediately east and west of the site divert other runoff to the tributary of Little Buffalo Creek. There are no known uses of this tributary, although Little Buffalo Creek has recreational uses (swimming, fishing, etc.).

Residents within three miles of the Town of Marilla Landfill use private groundwater wells for their water supply. Municipal water

supply is not available in this area, although non-municipal community wells serve two local trailer parks (Webster, R. and Sharpe, P., December 85).

Local Sensitive Environment

A NYS registered wetland is located approximately one mile northwest of the site. This wetland is designated as EA-25 (NYS Wetlands Map, 1984).

SITE HYDROLOGY

This summary of site hydrology is based on information from USGS topographic maps, NYS Museum and Science Service Bedrock Geology Map and Quaternary Map, NYSGA Guidebook (1982), and Soils Report by Earth Dimensions (1981).

Regional Geology and Hydrology

The site is located in the Erie-Ontario lowlands physiographic province. The bedrock of this region is predominantly limestone, dolostone, and shale (NYS Museum & Science).

In the recent past, most of New York State, including the site, has been repeatedly covered by a series of continental ice sheets. The activity of the glacier widened pre-existing valleys and deposited widespread accumulations of till. The melting of ice, ending approximately 12,000 years ago, produced large volumes of meltwater; this water subsequently shaped channels and deposited thick accumulations of stratified, granular sediments.

As glacial ice retreated from the region, meltwater formed lakes in front of the ice margin. The Erie County region is covered by lake sediments, the most recent being from Lake Warren (a larger predecessor to Lake Ontario and Lake Erie). The sediments consist of blanket sands and beach ridges occasionally underlain by lacustrine silts and clays (indicating quiet, deeper water deposition).

Granular deposits in this region frequently act as shallow aquifers, whereas lacustrine clays, as well as tills, often inhibit groundwater movement. However, fine-grained, water-lain sediments, such as silts and clays, frequently contain horizontal laminations and sand seams. These internal features facilitate lateral groundwater movement through otherwise low permeability materials.

Site Hydrogeology

Bedrock beneath the site is reported to be soft shale, occurring at depths of six to fifteen feet, sloping generally westward. Onsite borings indicate that the general soil stratigraphy overlying the bedrock is expected to be (Earth Dimensions, 1981):

Unit	Depth Range (ft)
Top soil, dark brown silt loam	0 - 0.5
Brown silty clay loam	0.5 - 4.5
Olive brown shaly silt loam	4.5 - 7.5
Gray shaly silty clay loam	7.5 to top of bedrock

The site soils are expected to be moderately drained; for HRS scoring a permeability range of 10^{-3} cm/sec to 10^{-5} cm/sec has been assumed.

A shallow perched water table exists at depths of three to eight feet below ground surface (Earth Dimensions, 1981). The flow in the perched water table is to the north/northwest. The true groundwater table, the aquifer of concern, is located within the bedrock at depths of less than 20 feet. There are no data to indicate which aquifer residents use for their wells, however it is expected to be the bedrock aquifer. Groundwater flow direction is expected to be north/northwest.

SITE CONTAMINATION

The 10-acre Town of Marilla Landfill has been operating since 1965 for the disposal of municipal refuse from the Town of Marilla. An estimated 95,000 cubic yards of municipal waste has been landfilled on-site. No hazardous wastes, liquid, or drums are known to be disposed of on-site (Webster, R. and Sharpe, P., 12/85). LEachate seeps from the northwest corner of the landfill continue to be a problem, despite vegetative and clay covering, and regrading of the site.

As a result of continuous leachate outbreaks and other problems at the site, in 1981 NYSDEC required the town to install five groundwater monitoring wells and to collect and analyze both groundwater and surface water samples. The location of the groundwater monitoring wells at the landfill site are illustrated in Figure IV-1. The groundwater and surface water samples were analyzed by Tallany, Van Kuren, Gertis, and Associates; and Ecology and Environmental, Inc. from 1981 to 1985. A summary of the sampling results are provided in Tables IV-1 and IV-2.

The contaminant concentrations listed in Table IV-1, that exceeded the NYS groundwater (GA) standards and which can be attributed to the landfill site, are: chloride, phenol, iron, manganese, and to a lesser extent barium, cadmium, and lead. Although there are no standards for nickel, downgradient concentrations of nickel exceeded upgradient levels (Tallamy, et al, 1981-85; Ecology and Environment, Inc., 1985).

It is difficult to properly assess the surface water results because there are no NYS Class D surface water standards for some constituents. Further, the exact sample locations are not provided with the results, so an upgradient/downgradient comparison cannot be made. However, based on the information provided, iron concentrations in the north, east, and south ditches exceeded the standards, and phenol and cyanide exceed the standard, in at least one un-identified location (TTallamy et al, 1981-1985).

TABLE IV-1
SUMMARY OF GROUNDWATER SAMPLING DATA

Constituent	Well No. 1 Dngr. Deep Well	Well No. 2* Dngr. of Well 3	Well No. 3* At Site	Well No. 4* Upgradient	Well No. 5* At Site	NYS GA Standard
Chlorides	207-4974	61-715	1-100	4.2-181	17.2-263	250
Cyanides	.002-.004	.002-.004	LT0.001	LT0.001	LT0.001	0.2
Nitrates	0.59-0.76	0.81-1.23	0.18-0.27	0.18-0.32	1.46-1.79	10.0
Phenols	0.003-.007	LT0.005-.034	0.011-0.019	.003-.02	.004-.006	0.001
Arsenic	LT.001-.002	.005-.007	.002-.004	.012-.02	.009-.012	0.025
Barium	0.13-5.73	0.58-1.73	0.31-1.09	0.20-1.70	LT0.2-.47	1.0
Cadmium	.002-.058	.003-.007	.002-.004	LT.002-.006	LT.002-.006	0.01
Chromium	.001-0.06	.003-.104	.001-.09	.015-.097	LT.001-.20	0.05
Copper	.016-.031	.05	.006-.096	LT.05-.028	.005-.56	1.0
Iron	2.37-6.57	4.31-138	1.5-104	4.7-67.4	0.08-176	0.3
Lead	.003-0.23	.002-0.09	.003-0.06	.005-.06	.002-.25	0.025
Manganese	.9212.98	.88-18.2	.64-1.7	.13-1.11	LT.05-1.46	0.3
Mercury	LT.0004	LT.0004	.001	.0007	.0005	0.02
Nickel	.33-8.3	.07-.26	LT.05	0.05	.002	-
Zinc	LT.001-0.07	0.25-1.87	0.17-0.30	LT0.001-.114	LT.001-1.14	5.0

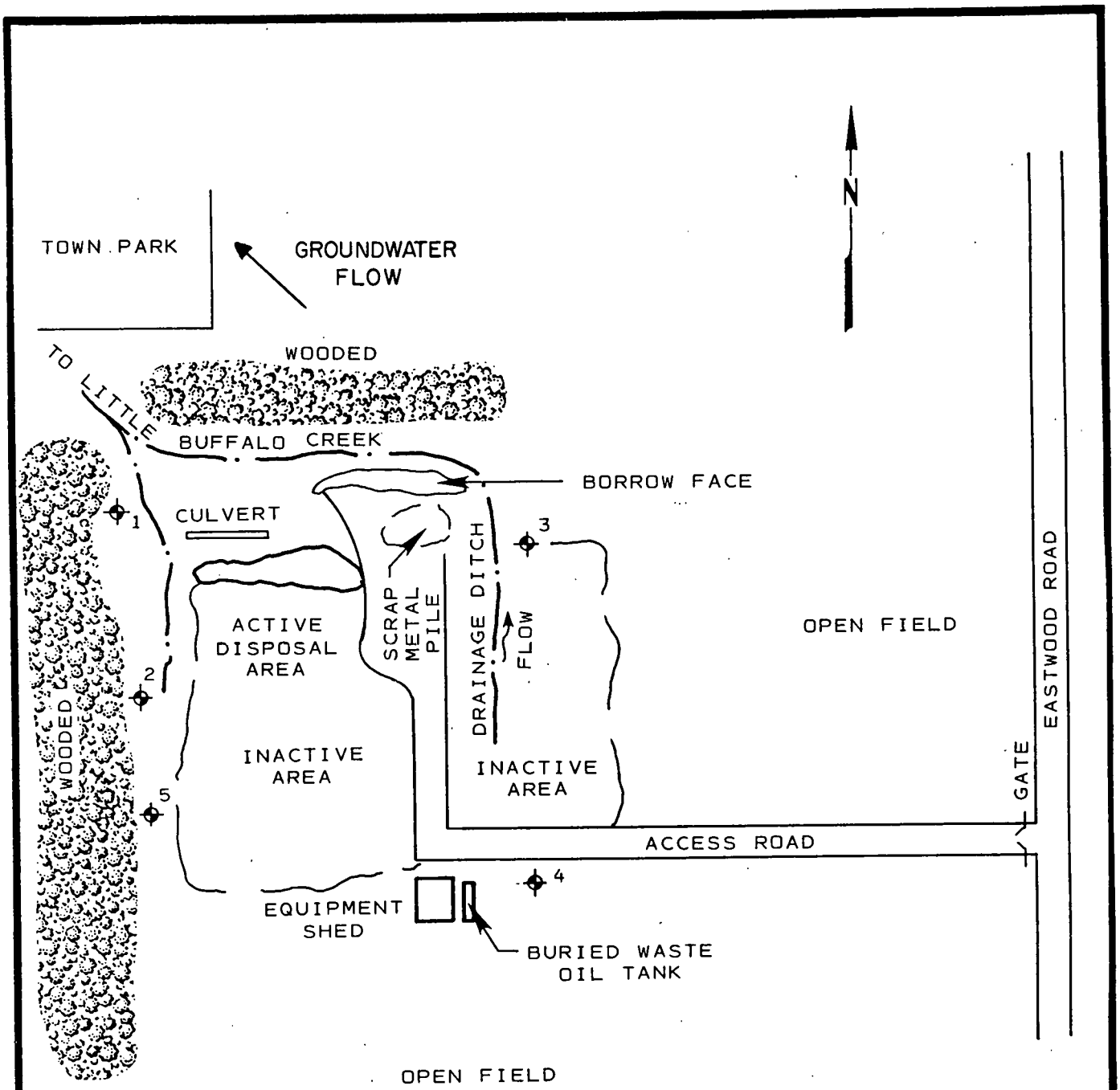
*Well samples taken above bedrock layer
NOTE: All concentrations are in ppm

Concentrations underlined indicate an exceedence of background levels (Well 4) and NYS GA Standards
dngr: downgradient
LT: less than

TABLE IV-2
SUMMARY OF SURFACE WATER SAMPLING DATA

Constituent	NW Ravine	NE Drainage Channel	North Ditch	East Ditch	South Ditch	NYS Class D Surface Water Standards
Chloride	2060-4216	22-160	.31-365	20-70	85-110	-
Phenols			.001		.001	0.001
Barium			.10-.33	LT0.2	.14-.27	-
Cadmium	.013	LT0.002				-
Chromium	0.014	LT0.01	0.013		0.01	0.011
Copper	LT0.05	LT0.05				-
Iron			.84-38	.49-.87	3.9-33.	0.30
Lead	0.112	LT0.01	LT0.005		.018	-
Manganese			.22-2.88	.58	.67-1.84	-
Mercury	LT0.0004	LT0.0004	LT.0004		LT.0004	0.0002
Nickel	4.43	LT0.05				-
Zinc	0.15	LT0.05				-

Note: All concentrations are in ppm.
Exact sample locations were not provided; therefore, an accurate upgradient/downgradient comparison cannot be made.



EXPLANATION:

⌖ EXISTING MONITORING WELL

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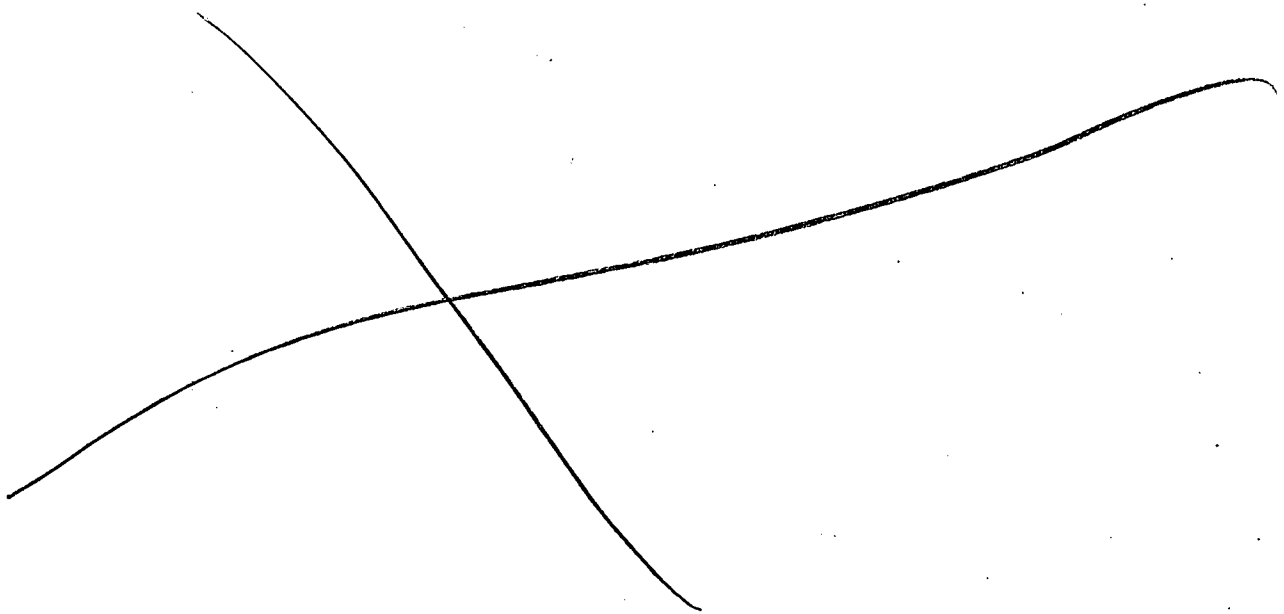
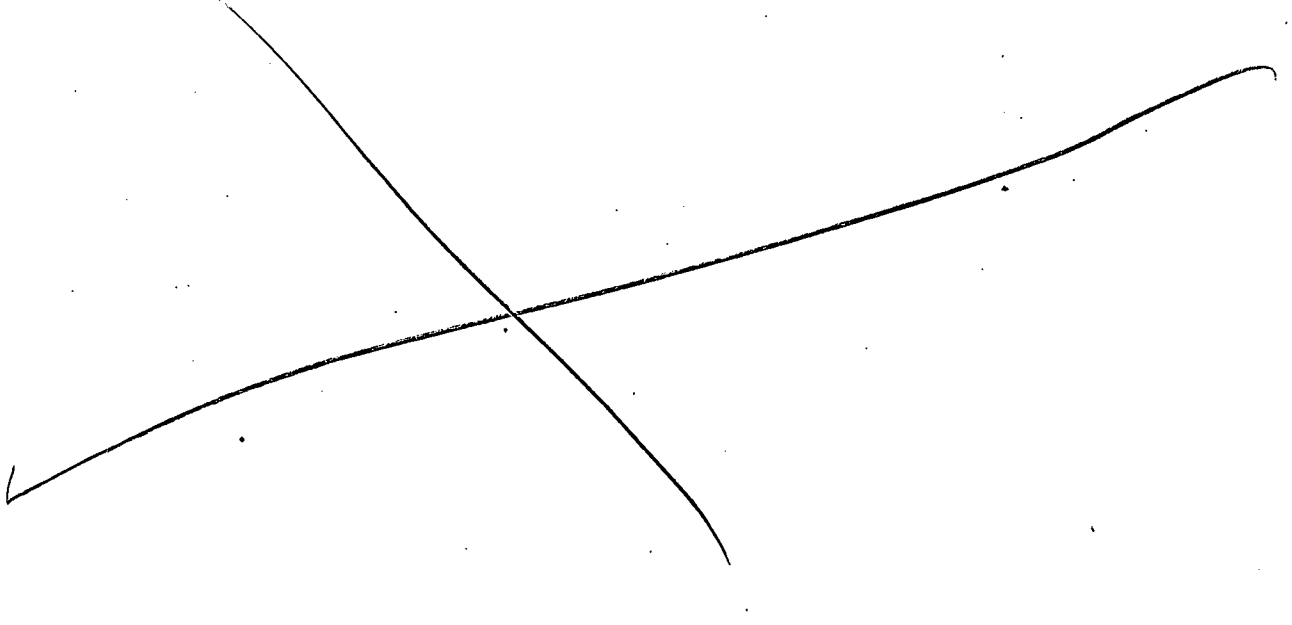
NEW YORK STATE DEPARTMENT
OF ENVIRONMENTAL CONSERVATION
PHASE I REPORT

PLOT PLAN
TOWN OF MARILLA

FIGURE IV-1





NARRATIVE SUMMARY

The Town of Marilla Landfill, approximately 10 acres, is located in the Town of Marilla, Erie County, New York. In 1965, the Town of Marilla Highway Department purchased the site from Oscar Tankusley for purposes of operating a landfill. Oscar and his brother, Hubert, operated the landfill from 1965 until approximately 1970 when the Town of Marilla took over the operation. The landfill has been and is currently operated to accept municipal wastes, Saturdays only. Approximately 95,000 cubic yards of municipal waste have been disposed of in the landfill since 1965. No hazardous wastes are known to be disposed of on-site (Tallamy, Van Kuren, Gertis and Associates, 1982; and Webster, R. and Sharpe, P., December 1985).

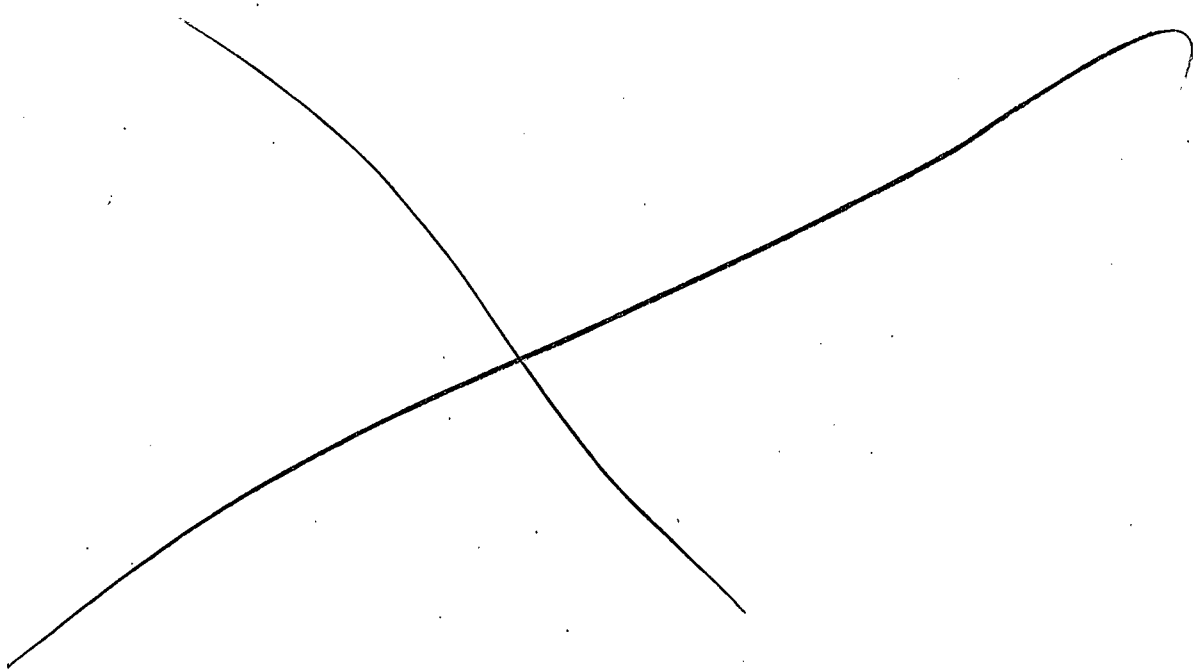
The contaminants that exceed the NYS groundwater standards and which can be attributed to the landfill site include: chloride, phenol, iron, manganese, and to a lesser extent, barium, cadmium and lead. Manganese is the only constituent which was found at signifcant concentrations in the groundwater (Tallamy, et al, 1981-85, and Ecology and Environmental, Inc. 1985). Leachate outbreaks at the landfill remain a problem, notably in the northwest portion of the site (NYSDEC Site Inspections).

A proper assessment of the surface water samples could not be made since there were inadequate data to make an upgradient/downgradient comparison. However, based on the information provided, iron concentrations in the north, east, and south ditches exceeded the NYS standards.

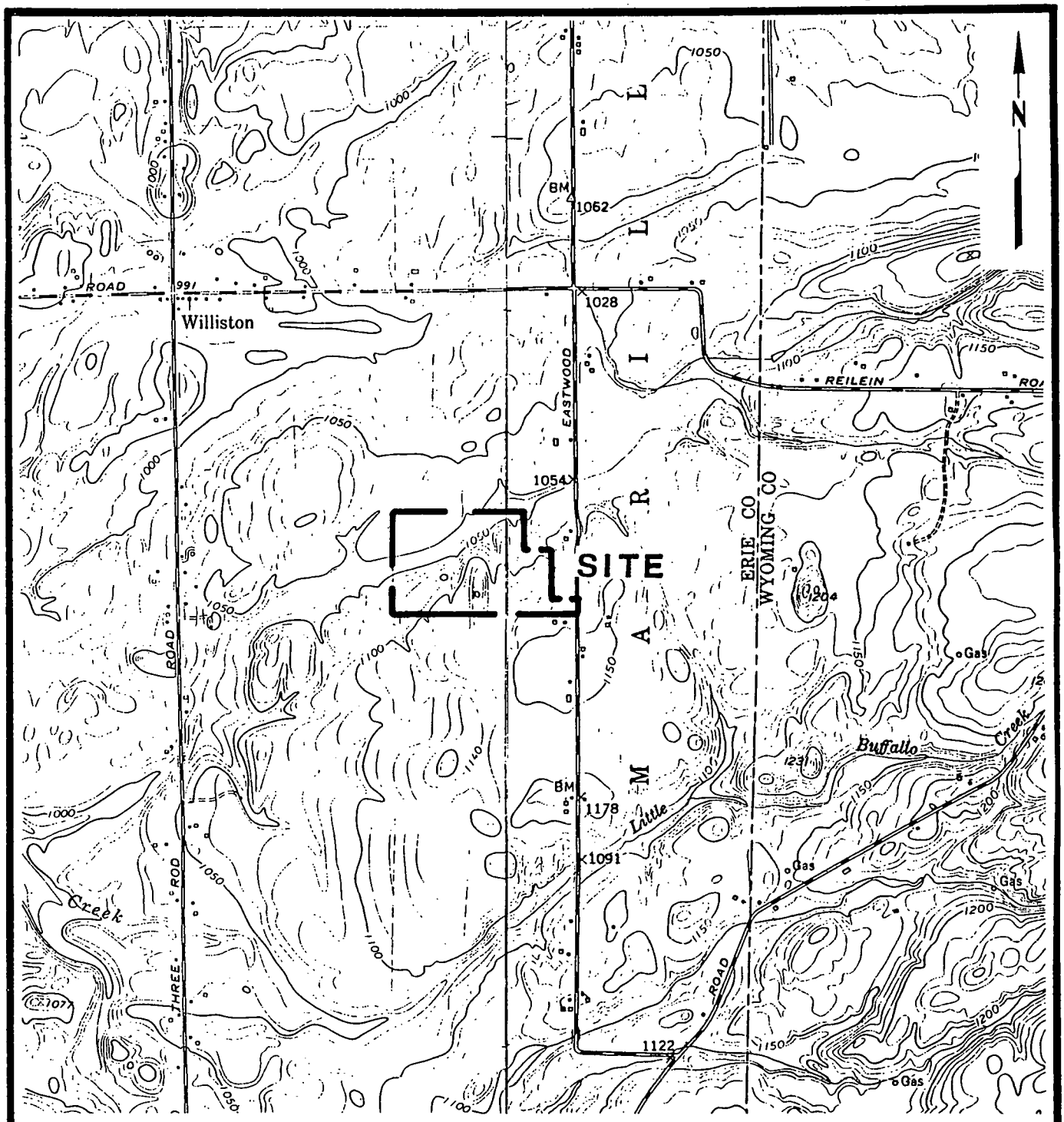
Residents within a half mile of the landfill site use private groundwater wells for water supply. Municipal water supply is not available in this area. A NYS registered wetland is located one mile northwest of the site.

HNu meter readings were taken upwind and downwind of the site in April 1986 by ES and D&M. As a result, the HNu meter readings indicated no measurable concentrations of volatile organics above background levels (1 ppm).

LOCATION



LOCATION



LATITUDE: 42°48'58" N
LONGITUDE: 78°30'05" W

SCALE

0 1000 2000 3000 4000 FEET

REFERENCE: U.S.G.S. 7.5' Topographic Map
East Aurora, NY (1965) and Cowlesville,
NY (1949) Quadrangles

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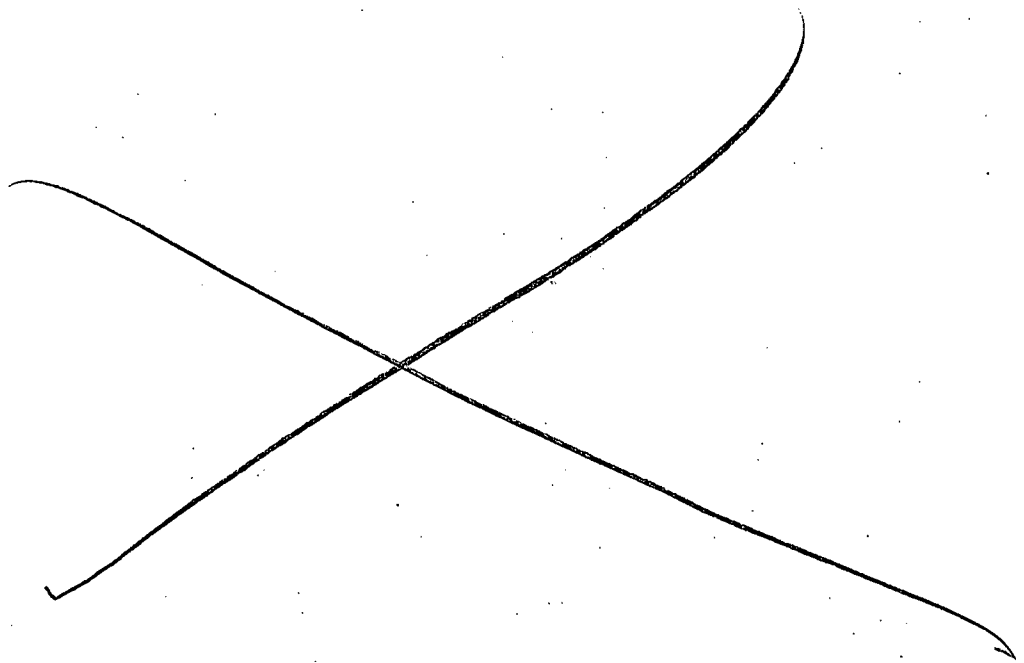
OF ENVIRONMENTAL CONSERVATION
PHASE I REPORT

SITE LOCATION MAP
TOWN OF MARILLA

FIGURE V-1



HRS COVER SHEET

Facility Name: Town of Marilla Landfill

Location: Eastwood Road, Town of Marilla, Erie County, New York

EPA Region: II

Person(s) in charge of the facility: Russell Webster, Town of Marilla Superintendent of Highways

Name of Reviewer: Cathy J. Bosma Date: 12-30-85

General Description of the facility:

The Town of Marilla site, an active ten-acre municipal landfill, has been in operation, on Saturdays only, since 1965. An estimated 95,000 cubic yards of municipal refuse have been disposed of at the site. No hazardous wastes are known to be disposed of on-site. However, contaminants including chloride, phenol, iron, manganese, barium, cadmium, and lead were detected in the groundwater in levels exceeding NYS Groundwater Standards and exceeding concentration found in upgradient wells. Iron levels in the surface water exceeded NYS Class D surface water standards; however, there were inadequate data to make an upgradient/downgradient comparison. Additionally, leachate outbreaks have been a continuous problem of the landfill.

Scores: $S_M = 38.20$ ($S_{GW} = 65.62$ $S_{SW} = 7.79$ $S_A = 0$)

$S_{FE} = 0$

$S_{DC} = 25$

56510-6R:43

Facility Name: TOWN OF MARILLA Date: 12-30-87

Ground Water Route Work Sheet

Rating Factor	Assigned Value (Circle One)	Multiplier	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	6	
Net Precipitation	0 1 (2) 3	1	2	3	
Permeability of the Unsaturated Zone	0 1 (2) 3	1	2	3	
Physical State	0 (1) 2 3	1	1	3	
Total Route Characteristics Score			11	15	
3 Containment	0 1 (2) 3	1	2	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	1	8	
Total Waste Characteristics Score			19	26	
5 Targets					3.5
Ground Water Use	0 1 2 (3)	3	9	9	
Distance to Nearest Well/Population Served	0 4 6 8 10 12 16 18 20 24 30 32 (35) 40	1	35	40	
Total Targets Score			44	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			37,620	57,330	
7 Divide line 6 by 57,330 and multiply by 100			S_{gw} = 65.62		

GROUND WATER ROUTE WORK SHEET

Facility Name: TOWN OF MARILLA Date: 12-30-87

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	2	3	
1-yr. 24-hr. Rainfall	0 1 (2) 3	1	2	3	
Distance to Nearest Surface Water	0 1 2 (3)	2	6	6	
Physical State	0 (1) 2 3	1	1	3	
Total Route Characteristics Score			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	1	8	
Total Waste Characteristics Score			19	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	2	6	
Population Served/ Distance to Water Intake Downstream	(0) 4 6 8 10 12 16 18 20 24 30 32 35 40	1	0	40	
Total Targets Score			8	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			5016	64,350	
7 Divide line 6 by 64,350 and multiply by 100			S_{sw} = 7.79		

SURFACE WATER ROUTE WORK SHEET

Facility Name: TOWN OF MARILLA Date: 12-30-87

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: April 1986, Upwind and downwind of site					
Sampling Protocol: HNu Meter					
If line [1] is 0, the S_a = 0. Enter on line [5]. If line [1] is 45, then proceed to line [2].					
[2] Waste Characteristics					5.2
Reactivity and Incompatibility	0 1 2 3	1		3	
Toxicity	0 1 2 3	3		9	
Hazardous Waste	0 1 2 3 4 5 6 7 8	1		8	
	Total Waste Characteristics Score			20	
[3] Targets					5.3
Population Within 4-Mile Radius	0 9 12 15 18 21 24 27 30	1		30	
Distance to Sensitive Environment	0 1 2 3	2		6	
Land Use	0 1 2 3	1		3	
	Total Targets Score			39	
[4] Multiply [1] x [2] x [3]				35,100	
[5] Divide line [4] by 35,100 and multiply by 100			S_a = 0		

AIR ROUTE WORK SHEET

Facility Name: TOWN OF MARILLA Date: 12-30-87

Worksheet for Computing S_M

	S	S^2
Groundwater Route Score (S_{gw})	65.62	4305.98
Surface Water Route Score (S_{sw})	7.79	60.68
Air Route Score (S_a)	0.	0
$S_{gw}^2 + S_{sw}^2 + S_a^2$		4,366.66
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2}$		66.08
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2} / 1.73 = S_M =$		38.20

WORK SHEET FOR COMPUTING S_M

Facility Name: TOWN OF MARILLA Date: 12-30-87

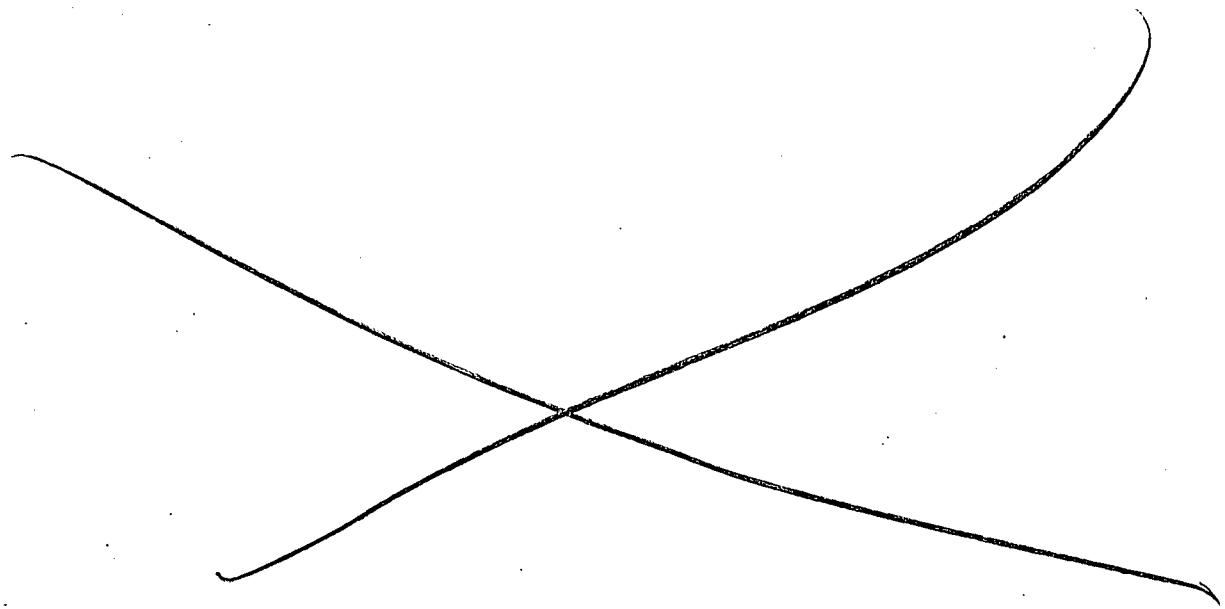
Fire and Explosion Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multiplier	Score	Max. Score	Ref. (Section)
1 Containment	1 3	1		3	7.1
2 Waste Characteristics					7.2
Direct Evidence	0 3	1		3	
Ignitability	0 1 2 3	1		3	
Reactivity	0 1 2 3	1		3	
Incompatibility	0 1 2 3	1		3	
Hazardous Waste 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 4 by 1,440 and multiply by 100			S_{FE} = 0		

FIRE AND EXPLOSION WORK SHEET

Facility Name: TOWN OF MARILLA Date: 12-30-87

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		8.3
4 Waste Characteristics Toxicity	0 1 2 (3)	5	15	15	8.4
5 Targets					8.5
Population Within 1-Mile Radius	0 1 (2) 3 4 5	4	8	20	
Distance to a Critical Habitat	(0) 1 2 3	4	0	12	
Total Targets Score			8	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			5400	21,600	
7 Divide line 6 by 21,600 and multiply by 100			S_{DC} = 25		

DIRECT CONTACT WORK SHEET



DOCUMENTATION RECORDS
FOR
HAZARD RANKING SYSTEM

FACILITY NAME: Town of Marilla

LOCATION: Eastwood Road, Town of Marilla, Erie County, New York

56510-6R:43

GROUND WATER ROUTE

1. OBSERVED RELEASE

Contaminants detected (5 maximum):

Manganese will be used to score the site since the downgradient concentrations were significantly greater than concentrations found in the upgradient wells. Other constituents which also were found to exceed the NYS GA Standards include barium, manganese, phenol, cadmium, and lead
(Engineers Report and Plan of Operation for Town of Marilla Sanitary Landfill, 1982)

Rationale for attributing the contaminants to the facility:

Groundwater samples from monitoring wells downgradient of site contained contaminants in concentration exceeding NYS GA Standards and upgradient well (background) concentrations.
(Engineers Report and Plan of Operation for Town of Marilla Sanitary Landfill, 1982)

* * *

2. ROUTE CHARACTERISTICS

Depth to Aquifer of Concern

Name/description of aquifer(s) in concern:

Bedrock aquifer in shale (depth 6-18 ft.).
(Borings performed by Earth Dimensions, 1981)

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

Perched water table occurs within 1 foot of ground surface during wet season. This water table and the bedrock aquifer are assumed to be hydraulically connected. The depth of the water in the bedrock aquifer varies from 6 to 18 feet.
(Engineers Report and Plan of Operation for Town of Marilla Sanitary Landfill, 1982)

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

Approximately 10'.
(Engineers Report and Plan of Operation for Town of Marilla Sanitary Landfill, 1982)

Net Precipitation

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

32".
(Climatic Atlas of the United States, U.S. Dept. of Commerce, National Climatic Center, 1979).

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

27".
(Climatic Atlas of the United States, U.S. Dept. of Commerce, National Climatic Center, 1979).

Net precipitation (subtract the above figures):

32" - 27" = 5"
(Climatic Atlas of the United States, U.S. Dept. of Commerce, National Climatic Center, 1979).

Permeability of Unsaturated Zone

Soil type in unsaturated zone:

Silty, clay loams.
(Earth Dimensions Soil Investigation, 1981)

Permeability associated with soil type

Range of 10^{-3} cm/sec to 10^{-5} cm/sec
(USDA Soils Map for Erie County)

Physical State

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

Solid, unconsolidated domestic refuse
(Webster, R. and Sharpe, P., December 1985)

3. CONTAINMENT

Containment

Method(s) of waste or leachate containment evaluated:

Moderately permeable liner (natural soils), drainage ditch for leachate diversion to creek (no leachate collection system).
(Engineers Report and Plan of Operation for Town of Marilla Sanitary Landfill and drawings, 1982)

Method with highest score:

Same as above.

4. WASTE CHARACTERISTICS

Toxicity and Persistence

Compound(s) evaluated:

Phenols, chloride, and heavy metals.
(Engineers Report and Plan of Operation for Town of Marilla Sanitary Landfill, 1982)

Compound with highest score:

Manganese - 18
(Uncontrolled Hazardous Waste Site Ranking System, A Users Manual, HW-10, 1984)

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):

An estimated 95,000 cubic yards of municipal waste were disposed of in the landfill from 1965 to 1985. However, hazardous wastes are not known to be disposed of in the landfill. It is unknown what quantity of waste contributes to the manganese concentrations, however, for purpose of scoring the site, 1 to 10 cubic yards of waste is used since contamination has been detected.
(Webster, R. and Sharpe, P., 12/85; and Tallamy, van Kuren, Gertis and Assoc. Engineers' Report 1982)

Basis of estimating and/or computing waste quantity:

Municipal waste estimate: 90 yd^3/wk (52 wk/yr)(20 yrs) = 93,600 yd^3 (say 95,000 yd^3)
Although no records exist which indicate that hazardous wastes have been disposed of in the landfill, an estimated 1-10 cu yds are assumed to contribute to the manganese release.

* * *

5. TARGETS

Ground Water Use

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

Drinking water, no municipal water from alternate untreatened sources presently available.
(NYS Atlas of Community Water System Sources, 1982)

Distance to Nearest Well

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

Residents on Three Rod Road, west of Site A.
(USGS Topographic Map, Cowelsville Quadrangle)

Distance to above well or building:

Approximately 1500'
(USGS Topographic Map, Cowelsville Quadrangle)

Note: Residents on Eastwood Road approx. 1500' from site, but are upgradient.

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:

Estimated population of 5,000 to 7,500 served.
(Engineers Report and Plan of Operation for Town of Marilla Sanitary Landfill, 1982 and 1980 US Census Bureau)

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):

Estimated population of 5,000 to 7,500 served.
(**Engineers Report and Plan of Operation for Town of Marilla Sanitary Landfill, 1982**, and 1980 US Census Bureau)

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

Estimated population of 5,000 to 7,500 served.
(**Engineers Report and Plan of Operation for Town of Marilla Sanitary Landfill, 1982**. and 1980 US Census Bureau)

SURFACE WATER ROUTE

1. OBSERVED RELEASE

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

Iron, phenol and cyanide were detected above surface water standards however there was inadequate data (upgradient vs. downgradient comparison) to score an observed release.
(Analytical results of sampling, Ecology and Environment, Inc., 1985 and Tallamy, et.al, 1982)

Rationale for attributing the contaminants to the facility:

See above comment.

2. ROUTE CHARACTERISTICS

Facility Slope and Intervening Terrain

Average slope of facility in percent:

0-3%.
(ES and D&M Site Visit, 1985; USGS Topographic Map, East Aurora Quadrangle)

Name/description of nearest downslope surface water:

Tributary of Little Buffalo Creek - less than 700' from site.
(ES and D&M Site Visit, December 1985)

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

15-16% sloping north to northwest.
(USGS Topographic Map, East Aurora Quadrangle)

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

No.
(ES and D&M Site Visit, December 1985)

Is the facility completely surrounded by areas of higher elevation?

No.
(USGS Topographic Map, East Aurora Quadrangle)

1-Year 24-Hour Rainfall in Inches

2.3"
(CFR 40, Part 300, App. A, 1983)

Distance to Nearest Downslope Surface Water

Approximately 700' north of site.

Physical State of Waste

Solid, unconsolidated domestic refuse.
(Webster, R., and Sharpe, P., December 1985)

* * *

3. CONTAINMENT

Containment

Method(s) of waste or leachate containment evaluated:

Landfill cover unsound (leachate outbreaks and protruding refuse) and diversion system unsound (ponding surface water).
(ES and D&M Site Visit, December 1985)

Method with highest score:

Same as above.

4. WASTE CHARACTERISTICS

Toxicity and Persistence

Compound(s) evaluated:

Iron, however, could not identify this as an observed release. **(Ecology and Environment, Inc., 1985)**

Compound with highest score: Iron-18

Iron was detected in the surface water drainage ditch at concentration exceeding NYS Standards.

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):

An estimated 95,000 cubic yards of municipal waste were disposed in the landfill from 1965 to 1985. However, no hazardous wastes are known to be disposed of on-site. **(Webster, R., and Sharpe, P., December 1985 and Tallamy, Van Kuren, Gertis & Assoc. report 1982)**

Basis of estimating and/or computing waste quantity:

Because only low concentrations of contaminants have been detected and no records exist which indicate that hazardous wastes have been disposed on-site, the hazardous waste quantity score for this site is one.

* * *

5. TARGETS

Surface Water Use

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

Tributary of Little Buffalo Creek - No known use.
Little Buffalo Creek - recreational use only - flows through Town Park.
(ES and D&M Site Visit, December 1985; NYS Atlas of Community Water System Sources, 1982)

Is there tidal influence?

No.
(USGS Topographic Map, East Aurora Quadrangle)

Distance to a Sensitive Environment

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

None within 2 miles.
(USGS Topographic Map, East Aurora Quadrangle)

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

1 mile northwest of site - EA-25
(NYSDEC Interview - Mike McMurry, January 1986)

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

None within one mile.

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:

No surface water intakes within 3 miles of site.
(NYS Atlas of Community Water System Sources, 1982)

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

No surface water intakes within 3 miles of site.
(NYS Atlas of Community Water System Sources, 1982)

Total population served:

Not applicable.

Name/description of nearest of above water bodies:

Not applicable.

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

Not applicable.

AIR ROUTE

1. OBSERVED RELEASE

Contaminants detected:

HNu meter readings were taken upwind and downwind of the site in April 1986 by ES and D&M. As a result, the HNu meter readings indicated no measurable concentrations of organics.

Date and location of detection of contaminants:

April 1986 - no contaminants detected
(ES and D&M Site Inspection Apr 86)

Methods used to detect the contaminants:

HNu meter.

Rationale for attributing the contaminants to the site:

Not applicable.

* * *

2. WASTE CHARACTERISTICS

Reactivity and Incompatibility

Most reactive compound:

No reactive or incompatible compounds are known to exist on-site (NYSDEC) Registry Sheet, 1985)

Most incompatible pair of compounds:

No incompatible pair of compounds are known to exist on-site (NYSDEC Registry Sheet, 1985)

Toxicity

Most toxic compound:

No toxic compounds with the potential to impact the air pathway are known to exist on-site (NYSDEC Registry Sheet, 1985).

Hazardous Waste Quantity

Total quantity of hazardous waste:

No hazardous wastes have been known to be disposed on-site **(Webster, R., and Sharpe, P., December 1985).**

Basis of estimating and/or computing waste quantity:

Because no hazardous wastes are known to be disposed on-site and HNu meter readings did not indicate the presence of volatile organic constituents, the hazardous waste quantity score for the air pathway is zero.

* * *

3. TARGETS

Population Within 4-Mile Radius

Underline 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

382 people

(Bureau of the Census Data, 1980)

Distance to a Sensitive Environment

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

None within 2 miles. (Western NYS is not a coastal area.)

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

1 mile northwest of site EA-25.

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

None within 1 mile.
(NYSDEC - Region 9, Division of Fisheries and Wildlife, Department of Regulatory Affairs, 1985)

Land Use

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

None within 1 mile.
(ES and D&M site visit, 1985 and USGS Topographic Map, East Aurora Quadrangle)

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

Approximately 450' to Marilla Town Park.

Distance to residential area, if 2 miles or less:

Approximately 1.1 miles to the nearest population center, the Hamlet of Williston.
(Tallamy, Van Kuren, Gertis & Assoc., 1982)

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

Adjacent and south of site; land has not been used in past 5 years except for a garden.
(ES and D&M Site Visit, Dec. 1985)

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

None.

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

No.

FIRE AND EXPLOSION

1. CONTAINMENT

Hazardous substances present:

No information was discovered during the Phase I study which indicates that a Fire and Explosion Situation existed or presently exists at the site.

Type of containment, if applicable:

* * *

2. WASTE CHARACTERISTICS

Direct Evidence

Type of instrument and measurements:

No measurements to determine the fire and explosion potential were taken on-site.

Ignitability

Compound used:

No ignitable compounds are known to exist on-site.
(NYSDEC, Registry Sheet, 1985)

Reactivity

Most reactive compound:

No reactive compounds are known to exist on-site.
(NYSDEC, Registry Sheet, 1985)

Incompatibility

Most incompatible pair of compounds:

No incompatible compounds are known to exist on-site.
(NYSDEC, Registry Sheet, 1985)

Hazardous Waste Quantity

Total quantity of hazardous substances at the facility:

No hazardous waste with the potential to create a fire or explosion hazard is known to exist on-site.
(NYSDEC Registry Sheet, 1985)

Basis of estimating and/or computing waste quantity:

See above comment.

* * *

3. TARGETS

Distance to Nearest Population

Landfill is < 1/4 mile from the nearest population.
(ES and D&M Site Visit, December 1985; Topographic Map)

Distance to Nearest Building

Landfill is < 1/4 mile from nearest building.
(ES and D&M Site Visit, December 19 85; Topographic Map)

Distance to Sensitive Environment

Distance to wetlands:

A NYS registered wetland (EA-25) is located approximately 1 mile northwest of the site.
(NYS Wetlands Maps)

Distance to critical habitat:

None within one mile.
(NYSDEC Interview - Mike McMurry, January 1986)

Land Use

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

None within one mile.
(ES and D&M Site Visit, 1985 and USGS Topographic Map, East Aurora Quadrangle)

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

Approximately 450 feet to Marilla Town Park.
(Engineers Report - Tallamy, 1982)

Distance to residential area, if 2 miles or less:

Approximately 1.1 miles to the Hamlet of Williston.
(USGS Topographic Map, East Aurora Quadrangle; Tallamy Report, 1982)

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

Adjacent and south of site, not in production.
(ES and D&M Site Visit, 1985)

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

None.

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

No.

Population within 2-Mile Radius

Approximately 3,000.
(Tallamy, 1982; Topographic Map)

Buildings Within 2-Mile Radius

Residential Houses on Eastwood Road approximately 1,500 ft. from site.

DIRECT CONTACT

1. OBSERVED INCIDENT

Date, location, and pertinent details of incident:

Based on review of available information during the Phase I Study, there is no confirmed instance in which contact with hazardous substances at the site has caused injury, illness or death to humans or animals.

* * *

2. ACCESSIBILITY

Describe type of barrier(s):

Chain fence at entrance road prevents vehicle entry; however, barriers do not completely surround the facility to prevent unauthorized entry.
(ES and D&M Site Visit, 1985)

* * *

3. CONTAINMENT

Type of containment, if applicable:

Landfill has a soil cover system, but protruding refuse is an ongoing problem at the site. However, no hazardous wastes are known to exist on-site so hazardous susbstances are not accessible to direct contact.

* * *

4. WASTE CHARACTERISTICS

Toxicity

Compounds evaluated:

Phenol has been detected in surface water samples at concentrations exceeding NYS Class D Standards (Tallamy, VanBuren, Gertis & Associates, 1982)

Compound with highest score:

Phenol - 3 (HRS Users Manual, 1982)

5. TARGETS

Population within one-mile radius

382 people.
(Bureau of the Census Data, 1980)

Distance to critical habitat (of endangered species)

None within 1 mile.
(NYSDEC - Region 9, Division of Fisheries and Wildlife, Department of Regulation Affairs, 1985)

HRS REFERENCES*
TOWN OF MARILLA LANDFILL

1. Earth Dimensions, Inc. (1981). Town of Marilla Landfill Soils Report. August 4, 1981.

2. Ecology and Environment, Inc. (1985). Laboratory and Analysis Report. August 16, 1985.

3. Engineering-Science (ES) and Dames and Moore (D&M) Site Visit, Dec. 85, and April, 1986.

4. EPA (1983). Code of Federal Regulations, 40 CFR.

5. McMurray, M. (1986), NYSDEC, Div. of Fisheries and Wildlife, Dept. of Regulatory Affairs - Region 9, Interview for Phase I Investigation, 1/3/86.

6. NYSDEC, Inactive Hazardous Waste Disposal Site Report (Registry Sheet), 1985.

7. NYSDOH (1982). "NYS Atlas of Community Water System Sources".

8. Tallamy, Van Kuren, Gertis and Associates (1982). "Town of Marilla Landfill Engineer's Report and Plan of Operation". Feburary, 1982.

9. US Bureau of the Census (1980). "Erie County Planning Department 1980 Census Tracts".

10. USDA, Erie County General Soil Map and Interpretations.

11. US Dept. of Commerce, National Climatic Center, Climatic Atlas of the United States, 1979.

12. USGS, Topographic Map: East Aurora and Cowlesville Quadrangles.

13. Webster, R. and Sharpe, P. (1985), Town of Marilla Superintendent and Councilman. Interview for Phase I Investigation, 12/10/85.

*For general references, see Appendix A.

REF. 1

EARTH DIMENSIONS, INC.

Soil Investigations and Natural Resource Assessments

Roycroft Campus, 31 S. Grove St. • East Aurora, N.Y. 14052 • (716) 655-1717

SOILS REPORT

Marilla Landfill

Town of Marilla, New York

INTRODUCTION:

Four (4) soil borings were augered, sampled and described to define the soil characteristics around the above named landfill. Two of these borings were located east of the landfill in the open field to determine the presence of impervious soil material. This investigation was requested by Nicholas J. Pinto with Tallamy, Van Kuren, Gertis and Thielman.

INVESTIGATIVE PROCEEDURE:

The soil samples were obtained with a split spoon sampler that was driven into the ground with the standard penetration test of a 140 pound hammer dropping 30 inches. This split spoon sampler was advanced below hollow stem augers after the surficial two (2) foot sample was collected.

A Professional Soil Scientist supervised this investigation and logged the soil profiles.

SITE CHARACTERISTICS:

The Marilla landfill is located in a kame consisting of stratified mostly shaly gravel and sand. Soil boring #4 reflects the soil characteristics of this kame. The other borings (#1 -#3) indicate that a thin silty soil material mantles the shale bedrock. Following is a summary of the soil characteristics described during this investigation:

DIMENSIONS, [illegible] C.
Test Borings and Logs
797 Center Street • East Aurora, New York 14052 • (716) 655-1717

(1)

MONITORING WELL #5 continued

SURF. ELEV. _____

G81a PROJECT Monitoring well installation
Town of Marilla Sanitary Landfill

LOCATION near southwest corner of landfi

CLIENT Town of Marilla, New York

DATE STARTED 8/24/81 COMPLETED 8/24/81

DEPTH Feet	SAMPLE NO	BLOWS ON SAMPLER	DESCRIPTION & CLASSIFICATION	WATER TABLE & REMARKS
			See sheet 1A of 1B	
5				
			- - - -grades downward to - - - 7.5	
			Moist gray shaly silty clay loam (CLAYEY-SILT) with 15 to 25% mostly shale gravel and occasional cobble, extremely firm, massive soil structure	
10			- - - -clear transition to - - 11.5	
			Wet gray shale bedrock, thinly bedded, very soft, shale, bedrock can easily be crushed into a CLAYEY-SILT between fingers	
				12.0
			Refusal at 12.0 feet	Water table at 11.5 feet below surface prior to installing well.
15				

N = NUMBER OF BLOWS TO DRIVE 2 " SPOON 12 " WITH 140 lb. WT. FALLING 30 " PER BLOW.

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SHEET 1B OF 1B

EARTH DIMENSIONS, P.C.
Test Borings and Logs
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(1)

MONITORING WELL #5

SURF. ELEV. _____

G81a PROJECT Monitoring well installation
Town of Marilla Sanitary Landfill

LOCATION near southwest corner of landfi

CLIENT Town of Marilla, New York

DATE STARTED 8/24/81 COMPLETED 8/24/81

DEPTH Feet	SAMPLE NO.	BLOWS ON SAMPLER 0"/6"	6"/12"	12"/18"	18"/24"	N	DESCRIPTION & CLASSIFICATION	WELL	WATER TABLE & REMARKS
	1	4	6	10	17	16	Moist black shaly silt loam (CLAYEY-SILT) topsoil with 15 to 25% mostly shale gravel, very friable		
							0.5		
	2	10	13	17	17	30	Moist distinctly mottled brown shaly silt loam (CLAYEY-SILT) with 15 to 25% mostly shale gravel, very firm, blocky soil structure	Bentonite seal	2.0
							- - - -clear transition to - - - - 2.0		
	3	7	7	10	17	17	Moist distinctly mottled olive brown very shaly silt loam (CLAYEY-SILT) with 40 to 60% mostly fine size shale gravel, very firm in place, loose when disturbed	2" diameter PVC well pipe	Water sorted a deposited silt clay and shaly gravel in vary ing amounts to 7.5 feet over dense silty glacial till to 11.5 feet over soft shale bedrock to refusal.
5							- - - -clear transition to - - - - 2.5		
	4	9	12	14	13	26	Moist distinctly mottled olive brown silty clay loam (CLAYEY-SILT) with 5 to 15% mostly black shale gravel, very firm, blocky soil structure		
							- - - -clear transition to - - - - 3.0		
10	5	7	13	23	33	36	Extremely moist distinctly mottled olive brown very shaly silt loam (CLAYEY-SILT) with 40 to 70% mostly shale gravel, loose when disturbed	(1)	9.5
							- - - -clear transition to - - - - 4.3	Number 4 size sand pack	11.5
	6	22	31	100/2.5"			Moist distinctly mottled shaly silt clay loam (CLAYEY-SILT) with 15 to 20% mostly shale gravel, very firm, massive soil structure		12.0
	7	100					- - - -clear transition to - - - - 5.0		
15							Extremely moist distinctly mottled olive brown very shaly silt loam (CLAYEY-SILT) with 40 to 70% mostly shale gravel, loose when disturbed		

(1) Number 15 slotted PVC wel screen.

continued on next sheet

N = NUMBER OF BLOWS TO DRIVE 2 " SPOON 12 " WITH 140 lb. WT FALLING 30 " PER BLOW

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SHEET 1A OF 1B

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MONITORING WELL #4 continued

SURF. ELEV _____

PROJECT Monitoring well installation
Town of Marilla Sanitary Landfill

LOCATION Southeast corner of landfill

CLIENT Town of Marilla, New York

DATE STARTED 8/24/81 COMPLETED 8/24/81

DEPTH feet	SAMPLE NO	BLOWS ON SAMPLER	DESCRIPTION & CLASSIFICATION	WATER TABLE & REMARKS
			See sheet 1A	
5				
10				
			- - - - clear transition to - - - - 11.5	
			Extremely moist dark gray shaly silt loam (CLAYEY-SILT) with 20 to 40% black shale gravel and occasional cobble, very firm, massive soil structure	
			13.3	
15			Refusal at 13.3 feet	

N = NUMBER OF BLOWS TO DRIVE 2 " SPOON 12 " WITH 140 lb. WT. FALLING 30 " PER BLOW.

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SHEET 1B OF 1B

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(1)

MONITORING WELL #4

SURF. ELEV. _____

PROJECT Monitoring well installation
Town of Marilla Sanitary Landfill

LOCATION Southeast corner of landfill

CLIENT Town of Marilla, New York

DATE STARTED 8/24/81 COMPLETED 8/24/81

DEPTH	SAMPLE NO	BLOWS ON SAMPLER 0"/6"	6"/12"	12"/18"	18"/24"	DESCRIPTION & CLASSIFICATION	WELL	WATER TABLE & REMARKS
	1	6	6	10	18	16	Moist dark brown gray silt loam (CLAYEY-SILT) topsoil with 15 to 30% gravel, friable		
							0.3	Bentonite seal	
	2	14	19	18	21	37	Moist brown silty clay loam (CLAYEY-SILT) with 10-15% mostly black shale gravel, firm, blocky soil structure		2.0
							- - - -clear transition to - - - - 0.9	Two inch diameter PVC well pipe	Water sorted and deposited silt, clay, sand and shaly gravel in varying amounts to 9.5 feet over dense silty glacial till to refusal.
5	3	9	10	12	14	22	Moist faintly mottled sandy loam (SILTY-SAND) thinly bedded, non-plastic		
							- - - -clear transition to - - - - 4.5		
	4	9	11	14	12	25	Moist distinctly mottled brown silty clay loam (CLAYEY-SILT) with 10-15% mostly black shale gravel, firm		
							- - - -grades downward to- - - - 6.0	Number 4 size sand pack	
	5	6	10	20	38	30	Moist olive brown shaly silty clay loam (CLAYEY-SILT) with 15 to 25% mostly shale gravel, very firm, massive soil structure		
10							- - - -clear transition to - - - - 8.5		
	6	9	15	22	25	37	Extremely moist distinctly mottled brown shaly loam (SAND-SILT-CLAY), loose		11.3
	7	14	23	100/3"			9.5	(1)	(1) Number 15 slotted PVC well screen.
							Moist distinctly mottled olive brown shaly silt loam (CLAYEY-SILT) with 15-25% mostly black shale gravel and occasional cobble, very firm, massive soil structure		13.3
15							- - - -clear transition to - - - 10.5		Refusal likely shale bedrock.
							Moist dark gray shaly silt loam (CLAYEY-SILT) with 20-40% black shale gravel and occasional cobble, very firm, massive soil structure 11.5		No water at completion.

see description on next page

N = NUMBER OF BLOWS TO DRIVE 2 " SPOON 12 " WITH 140 lb. WT. FALLING 30 " PER BLOW

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SHEET 1A OF 1B

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(1)

MONITORING WELL #3

SURF. ELEV. _____

581a PROJECT Monitoring well installation
Town of Marilla Sanitary Landfill

LOCATION Northeast of landfill

CLIENT Town of Marilla, New York

DATE STARTED 8/24/81 COMPLETED 8/24/81

DEPTH Feet	SAMPLE NO	BLOWS ON SAMPLER 0"/6"	6"/12"	12"/18"	18"/24"	N	DESCRIPTION & CLASSIFICATION
	1	6	7	18	23	25	Moist black silt loam (CLAYEY-SILT) topsoil with 5 to 15% mostly shale gravel, very friable
	1						
	1						
	2	13	11	13	15	24	Moist faintly mottled brown silt loam (SANDY-SILT) with 5 to 15% mostly shale gravel, very friable
	2						
	2						
	2						
	3	3	9	12	13	21	Moist distinctly mottled olive brown shaly silty clay loam (CLAYEY-SILT) with 15 to 25% mostly black shale gravel
5	3						
	3						
	3						
	4	10	100				
	4						
10							
15							

0.6

1.2

- - - clear transition to - - - 2.0

3.5

- - - clear transition to - - - 3.5

4.5

- - - clear transition to - - - 4.5

6.5

- - - clear transition to - - - 6.5

7.0

Refusal at 7.0 feet

WELL

2" diameter PVC well pipe

Bentonite seal

2.0

Number 4 size sand pack

6.0

(1)

7.0

WATER TABLE & REMARKS

Water sorted and deposited mostly silt, clay and shaly gravel in vary ing amounts to 3.5 feet over dense silty glacial till to 6.5 feet ov very soft bedr to refusal.

(1) Number 15 slotted PVC well screen.

No water at completion

N = NUMBER OF BLOWS TO DRIVE 2 " SPOON 12 " WITH 140 lb. WT. FALLING 30 " PER BLOW.

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SHEET 1 OF 1

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(1)

MONITORING WELL #2

SURF. ELEV _____

81a PROJECT Monitoring well installation
Town of Marilla Sanitary Landfill

LOCATION West side of landfill

CLIENT Town of Marilla

DATE STARTED 8/25/81 COMPLETED 8/25/81

DEPTH	SAMPLE NO.	BLOWS ON SAMPLER	DESCRIPTION & CLASSIFICATION	WELL	WATER TABLE & REMARKS
	1	1 3 6 13 9	Moist black silt loam (CLAYEY-SILT) topsoil with 5 to 10% mostly black shale fragments, very friable		
	2	16 26 37 61 63	0.6	Bentonite seal	Dense silty glacial till to 4.0 feet over silty residual soil material to 6.0 feet over shale bedrock to refusal.
	3	29 34 43 70 77	Moist distinctly mottled brown silt loam (CLAYEY-SILT) with 5 to 15% mostly shale gravel and occasional cobble, very firm, blocky soil structure		
5			- - - -clear transition to - - - 4.0		
	4	23 43 100/5.5"	Moist highly mottled olive brown shaly silt loam (CLAYEY-SILT) with 15-30% shale gravel, extremely firm, weak platy soil structure		
	5	61 100/5.0"	- - - -clear transition to - - - 6.0		
	6	37 91 100/3"	Moist olive gray very soft shale bedrock, thinly bedded, bedrock can be easily crushed between fingers to a (CLAYEY-SILT)		
10			- - - -clear transition to - - - 8.0		
			Moist distinctly mottled dark gray shale bedrock, thinly bedded, moderately hard, bedrock can be easily etched with a knife		
			9.8		
			Refusal at 9.8 feet		

Two inch diameter PVC well pipe

2.0

Number 4 size sand pack

7.5

(1)

9.5

9.8

(1) Number 15 slotted 2 inch diameter PVC well screen

No water at completion.

N = NUMBER OF BLOWS TO DRIVE 2 " SPOON 12 " WITH 140 lb. WT. FALLING 30 " PER BLOW.

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SHEET 1 OF 1

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(1)

MONITORING WELL
HOLE NO. 1 SURF. ELEV.

481 PROJECT Landfill Investigation
Town of Marilla Sanitary Landfill
LOCATION Northwest of landfill

CLIENT Town of Marilla, New York
DATE STARTED 7/22/81 COMPLETED 7/24/81

DEPTH feet	SAMPLE NO	BLOWS ON SAMPLER 0-6 / 6-12 / 12-18 / 18-24	N	DESCRIPTION & CLASSIFICATION	WELL #1	WATER TABLE & REMARKS
	1	1 / 2 / 9 / 10	11	Moist faintly mottled black silt loam (CLAYEY-SILT), firm, blocky soil structure		Thin mantle of dense silty glacial till or residual to 5.5 feet over silty residual over soft shale bedrock becoming harder with depth.
				- - - -clear transition to - - 1.0		
2	2	10 / 10 / 14 / 19	24	Moist distinctly mottled olive brown silty clay loam (CLAYEY-SILT) with 10 to 15% mostly black shale fragments, very firm		
5	3	4 / 7 / 14 / 21	21	- - - -clear transition to - - 5.5		
	4	13 / 21 / 30 / 67	51	Moist faintly mottled gray silty clay loam (CLAYEY-SILT), extremely firm, thinly bedded		
				- - - -clear transition to - - 7.5		
10		10'0"		Moist black shale bedrock, soft, thinly bedded, bedrock can easily be crushed between fingers to a (CLAYEY-SILT) soil material 8.5		Diameter of monitoring well backfill 9 inches above 10.0 feet, 3 inches below.
	R			Gray shale bedrock, core separated in 1/8 to 2 inch lengths, moderately hard shale bedrock can be etched with a knife		Advanced augers to 10.0 feet, bedrock cored with NX diamond bit to 62.7 feet
				- - - -clear transition to - - 13.9		
15	1	100% recovery		Dark gray shale bedrock, core separated in 1/8 to 4 inch lengths, moderately hard to hard, shale bedrock can be etched with knife but with some effort		

Cement bentonite plug
7.5
2" diameter PVC well pipe
#4 size sand pack

continued on sheet

N = NUMBER OF BLOWS TO DRIVE 2 " SPOON 12 " WITH 140 lb. WT. FALLING 30 " PER BLOW.

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MONITORING WELL

HOLE NO. 1 continued SURF. ELEV

PROJECT Landfill Investigation
Town of Marilla Sanitary Landfill
LOCATION Northwest of landfill

CLIENT Town of Marilla, New York
DATE STARTED 7/22/81 COMPLETED 7/24/81

DEPTH feet	SAMPLE NO	BLOWS ON SAMPLER	DESCRIPTION & CLASSIFICATION	WELL	WATER TABLE & REMARKS
		Run 1 RDQ 0.3'	See previous sheet		
			- - - -clear transition to - - - 17.7		
20		19.6	Dark gray shale bedrock, core separated into 3 to 18 inch lengths, moderately hard to hard, shale bedrock can be etched with a knife but with some effort		
			- - - -clear transition to - - - 20.5		
	R u n #2	Recovered 9.9'	Dark gray shale bedrock, core separated into 1/8 to 1½ inch lengths with one (1) ½ inch soft silty interbed at 20.9 foot depth, moderately hard to hard, shale bedrock can be etched with a knife but with some effort		
25		RDQ 7.3'	22.0		
		23.8	Dark gray shale bedrock, core separated into 3 to 20 inch lengths with two (2) ½ inch soft silty interbeds at 21.3 and 21.7 foot depths, moderately hard to hard, shale bedrock can be etched with a knife but with some effort	Two inch PVC well pipe; #4 size sand pack	
30	R u n #3	Recovered 9.4' RQD 8.6'			
35					

continued on sheet 3.

N = NUMBER OF BLOWS TO DRIVE 2 " SPOON 12 " WITH 140 lb. WT. FALLING 30 " PER BLOW.

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ONITORING WELL

HOLE NO. 1 continued

SURF ELEV. _____

G81 PROJECT Landfill Investigation
Town of Marilla Sanitary Landfill

LOCATION Northwest of landfill

CLIENT Town of Marilla, New York

DATE STARTED 7/22/81 COMPLETED 7/24/81

DEPTH Feet	SAMPLE NO	BLOWS ON SAMPLER	DESCRIPTION & CLASSIFICATION		WATER TABLE & REMARKS
	R u n #3		Dark gray shale bedrock, core separated into 3 to 20 inch lengths with two (2) ½ inch soft silty interbeds at 21.3 and 21.7 foot depths, moderately hard to hard, shale bedrock can be etched with a knife but with some effort		
		38.9			
			clear transition to - 39.3		
40	R u n	Recovery 3.3' RDQ 1.5'	Dark gray shale bedrock, core separated into 1/8 to 6 inch lengths with numerous soft silt lenses, moderately hard to hard, shale bedrock can be etched with a knife but with some effort		
			clear transition to - 44.0		
45		RUN 5 Core 9.4' Recovery 9.4'			
	R u n	RDQ 9.4'	Dark gray shale bedrock, core separated into 2 to 20 inch lengths, bedrock is distinctly more massive, moderately hard to hard, shale bedrock can be etched with a knife but with some effort		
	#5				
50					

Two inch PVC well pipe

#4 size sand pack

continued on sheet 4....

N = NUMBER OF BLOWS TO DRIVE 2 " SPOON 12 " WITH 140 lb. WT. FALLING 30 " PER BLOW.

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(1)

MONITORING WELL

HOLE NO. 1 continued SURF. ELEV

481 PROJECT Landfill Investigation LOCATION Northwest of landfill
Town of Marilla Sanitary Landfill

CLIENT Town of Marilla, New York DATE STARTED 7/22/81 COMPLETED 7/24/81

DEPTH	SAMPLE NO	BLOWS ON SAMPLER	DESCRIPTION & CLASSIFICATION	WBU	WATER TABLE & REMARKS
cor					
55		Cored 10.0'	Dark gray shale bedrock, core separated into 3 to 20 inch lengths, bedrock becomes more massive with one unbroken length 4.9 feet long.	Two inch PVC well pipe	
	R	Recovered 9.7'			
	u	RDQ 3.8'			
	n				
	#6			#4 size sand puck	60.7
60					
					62.7
			Coring completed at 62.7'		Water table at 3.9 feet below surface after coring.
65					

N = NUMBER OF BLOWS TO DRIVE 2 " SPOON 12 " WITH 140 lb. WT. FALLING 30 " PER BLOW.

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(1)

BORE HOLE NO. 4 SURF ELEV _____

PROJECT Landfill Investigation
Town of Marilla Sanitary Landfill

LOCATION 20' east of southeast corner of landfill storage building

CLIENT Town of Marilla, New York

DATE STARTED 7/24/81 COMPLETED 7/24/81

DEPTH Feet	SAMPLE NO	BLOWS ON SAMPLER					DESCRIPTION & CLASSIFICATION	WATER TABLE & REMARKS
	1	12	9	10	13	19	Moist mixed brown and gray gravelly silt loam (CLAYEY-SILT) fill, very firm	Fill to 1.0 foot over water sorted and deposited mostly shale gravel, some that has weathered i a (CLAYEY-SILT) and (SAND-SILT-CLAY) to 12.0 feet over dense silty lake sediment to 15.3 fee over shale bedrock.
							1.0	
	2	13	12	16	15	28	Moist faintly motted olive brown very shaly silty clay loam (CLAYEY-SILT) with 40 to 60% mostly soft shale fragments, very firm becoming friable below 4.0 feet, blocky soil structure	
	3	2	6	6	5	12		
5								
							- - - - clear transition to - - - - - -	
							6.0	
	4	7	12	14	15	26	Extremely moist olive gray very shaly silty clay loam (CLAYEY-SILT) with 40 to 60% mostly soft shale fragments, very firm	
	5	10	15	16	14	31		
							- - - - clear transition to - - - - - -	
10							8.0	
	6	9	12	15	15	27	Wet faintly mottled olive gray very shaly clay loam (SAND-SILT-CLAY) with 40 to 60% mostly soft shale fragments, very firm, stratified	
	7	7	10	14	20	24		
							12.0	
							Wet gray silty clay loam (CLAYEY-SILT), very firm, thinly bedded	
							15.3	
	8	7	10	47	100/0			
15							Dark gray shale bedrock, thinly bedded, moderately hard bedrock can be etched with a knife	
							15.5	
							Refusal at 15.5 feet	Water table at 9.3 feet below surface at completion.

N = NUMBER OF BLOWS TO DRIVE 2 " SPOON 12 " WITH 140 lb. WT. FALLING 30 " PER BLOW.

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SHEET 1 OF 1

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(1)

BORE HOLE NO. 3 SURF. ELEV

G81 PROJECT Landfill Investigation
Town of Marilla Sanitary Landfill
LOCATION 160' west of property, road hedgerow, 230' north of entranc

CLIENT Town of Marilla, New York
DATE STARTED 7/24/81 COMPLETED 7/24/8

DEPTH Feet	SAMPLE NO	BLOWS ON SAMPLER 0/6 6/12 12/18 18/24 N	DESCRIPTION & CLASSIFICATION	WATER TABLE & REMARKS
	1	2 4 9 15 13	Moist dark brown silt loam (CLAYEY-SILT) topsoil, friable	0.6
			Moist distinctly mottled olive brown silty clay loam (CLAYEY-SILT) with 5 to 15% mostly black shale fragments, very firm, prismatic soil structure	Dense silty glacial till (residual) to 4.0 feet over silty residual soil mater to 5.0 feet over very soft shale bedrock becoming harder at 6.0 feet.
			- - - -grades downward to - - - - - -	4.0
5	2	6 17 29 100 46	Moist distinctly mottled olive gray very shaly silty clay loam (CLAYEY-SILT) with 40 to 60% mostly soft shale fragments, very firm, very thin platy structure	
	3	106	- - - -clear transition to - - - - - -	5.0
			Moist olive gray very soft shale bedrock, bedrock can easily be crushed into a (CLAYEY-SILT) soil material	
10			- - - -clear transition to - - - - - -	6.0
			Moist dark gray shale bedrock, thinly bedded, moderately hard, bedrock can be etched with a knife	
				7.0
			Refusal at 7.0 feet	No water at completion.

N = NUMBER OF BLOWS TO DRIVE 2 " SPOON 12 " WITH 140 lb. WT. FALLING 30 " PER BLOW.

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SHEET 1 OF 1

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ORE HOLE NO. 2 SURF. ELEV. _____

G-1 PROJECT Landfill Investigation
Town of Marilla Sanitary Landfill
LOCATION 185' north of entrance road, 300' east of landfill

CLIENT Town of Marilla, New York
DATE STARTED 7/24/81 COMPLETED 7/24/81

DEPTH feet	SAMPLE NO	BLOWS ON SAMPLER	DESCRIPTION & CLASSIFICATION	WATER TABLE & REMARKS
	1	1 2 4 11 20 15	Moist dark brown silt loam (SANDY-SILT) topsoil with 5 to 10% gravel, friable	
				0.7
			Moist highly mottled grayish brown silt loam (SANDY-SILT) with 5 to 10% gravel, firm, blocky soil structure	Dense silty glacial till to 4.0 feet over silty residual soil material to 5.5 feet over very soft shale bedrock becoming harder at 6.0 feet
			- - - -clear transition to - - - - -	1.5
5	2	30 59 100/4"	Moist distinctly mottled brownish gray shaly silty clay loam (CLAYEY-SILT) with 15 to 30% shale fragments, extremely firm with brittle consistence, prismatic soil structure	
	3	100/5"		
			- - - -clear transition to - - - - -	4.0
10			Moist distinctly mottled olive gray very shaly silty clay loam (CLAYEY-SILT) with 40 to 60% mostly soft shale fragments, extremely firm, very thin platy structure	
			- - - -clear transition to - - - - -	5.5
			Moist very soft gray shale bedrock, bedrock can easily be crushed into a (CLAYEY-SILT) soil material	
			- - - -clear transition to - - - - -	6.0
			Wet dark gray shale bedrock, thinly bedded, moderately hard, bedrock can be etched with a knife	Water table at 6.0 feet below surface at completion.
				6.9
			Refusal at 6.9 feet	

N = NUMBER OF BLOWS TO DRIVE 2 " SPOON 12 " WITH 140 lb. WT. FALLING 30 " PER BLOW.

EA[illegible] DIMENSIONS, I. C.
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(1)

BORE HOLE NO. 1 SURF. ELEV

81 PROJECT Landfill Investigation
Town of Marilla Sanitary Landfill
LOCATION 20' west of west central edge of landfill

CLIENT Town of Marilla, New York
DATE STARTED 7/21/81 COMPLETED 7/21/81

DEPTH feet	SAMPLE NO	BLOWS ON SAMPLER	DESCRIPTION & CLASSIFICATION	WATER TABLE & REMARKS
	1	2 8 16 27 24	Moist brown silt loam (CLAYEY-SILT), firm, weak blocky soil structure	
			- - - -clear transition to - - - - - -	1.0
	2	12 17 21 26 38	Moist distinctly mottled olive gray silty clay loam (CLAYEY-SILT), with 5 to 15% shale gravel, very firm, massive soil structure	Dense silty till sediment.
	3	8 18 18 25 36		
5			- - - -clear transition to - - - - - -	4.5
	4	9 16 22 38 38	Moist gray shaly silt loam (CLAYEY-SILT) with 15 to 40% mostly soft shale fragments, very firm, massive soil structure	Samples 3-7 emitte slight sulfur odor probably indigenou to the till.
			- - - -clear transition to - - - - - -	7.0
	5	21 40 46 50 86		Topsoil removed by bulldozer leveling drilling site before augering.
10				
	6	16 24 23 29 47	Moist gray very shaly silt loam (CLAYEY-SILT) with 40 to 50% mostly soft shale fragments, extremely firm, massive soil structure	
	7	12 45 100/3"		Refusal likely sha bedrock.
				13.8
15			Refusal at 13.8 feet	No water at comple

N = NUMBER OF BLOWS TO DRIVE 2 " SPOON 12 " WITH 140 lb. WT. FALLING 30 " PER BLOW

bh LOGGED BY Donald W. Owens/Soil Scientist

SHEET 1 OF 1

(1)

A north flowing intermittent drainageway at the western edge of this kame has been recently landfilled. The area west of this drainageway is similar to the open field east of the landfill with glacial till or residual soil material mantling shale bedrock.

A water table was recorded at the contact of the stratified shaly sand and gravel (8.0 to 12.0 foot depths) in boring #4 at the southern end of this kame. A perched water table exists near the surface most of the year in the glacial till or residual soils (borings #1 - 3).

The very soft shale bedrock and the soil material above this strata is highly suitable soil cover material for landfilling. The thickness is the major limiting factor.

Prepared by

Donald W. Owens
Soil Scientist

DWO/djo

4G81

Bore number	Topsoil-Fill	Stratified Shaly Gravels and CLAYEY-SILT	CLAYEY-SILT lake sediment	CLAYEY-SILT glacial till or residual	Shale Bedrock soft	Shale Bedrock moderately hard
1				0 - 13.8		
2*	0 - 0.7			1.5 - 5.5	5.5 - 6.0	6.0 - 6.9
3	0 - 0.6			0.6 - 5.0	5.0 - 6.0	6.0 - 7.0
4	0 - 1.0	1.0 - 12.0	12.0 - 15.3			15.3 - 15.5

Feet below the surface

* - SANDY-SILT between 0.7 and 1.5 foot depths

S10406-11

REF. 2

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LABORATORY REPORT

FOR

TOWN OF MARILLA
SANITARY LANDFILL

Job No. TM-540

Sample Date: 6/18/82 — Sampled By: E & E

Date Received: 6/13/82 — Sample Type: Monitoring Wells

E & E Lab Number 82-	1142	1144	1145	1146	1147	1143
Customer Number MW-	#1	#2	#3	#4	#5	Surface Water
pH, S.U.	7.3	6.4	7.6	7.3	6.7	7.3
Specific Conductance, umhos/cm	2500	2100	400	660	1080	3400
Total Dissolved Solids, mg/L	1940	1750	306	488	940	2900
Chloride, mg/L	842	437	25.7	46.2	334	873
Total Organic Carbon, mg/L	71.4	182	12.3	8.5	9.1	181
Depth of Well, Ft.	65.1	12.7	7.6	12.3	9.5	N.A.
Water Height in Well, Ft.	45.9	7.6	7.0	7.3	5.2	N.A.*

*N.A. = Not Applicable

Analytical References: "Standard Methods for the Examination of Water and Wastewater," 15th edition, 1981.

Supervising Analyst Preston J. Walker

Date July 7, 1982

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(2)

LABORATORY REPORT
FOR
TOWN OF HARILLA

Job No. TH-540

Sample Date: 7/13/82
Date Received: 7/13/82
Sample Type: Grab

Sampled By: E & E
Picked Up By: E & E

E & E Lab Number 82-	1296	1297	1298	1299	1300	1301
Sample Identity	Well #1	Well #2	Well #3	Well #4	Well #5	Surface Water
pH, S.U.	6.4	6.3	6.8	7.2	6.4	7.3
Specific Conductance, umhos/cm	14500	1520	310	440	880	2100
Total Dissolved Solids, mg/L	19200	1830	318	447	904	2370
Chloride, mg/L	9480	625	20.8	50.9	375	890
Total Organic Carbon, mg/L	88.2	348	40.0	57.0	27.4	156
Cadmium, mg/L	0.058	0.003	0.003	<0.002	<0.002	<0.002
Copper, mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chromium, mg/L	0.232	0.026	0.027	0.035	0.037	0.024
Lead, mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Mercury, mg/L	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004
Nickel, mg/L	0.328	0.089	<0.050	<0.050	0.050	0.061
Zinc, mg/L	0.119	0.179	<0.050	<0.050	<0.050	0.099
Depth of Well, Ft.	64.0	10.5	7.5	11.0	12.5	N.A.*
Water Height, Ft.	42.0	1.5	1.5	2.5	6.0	N.A.*

*N.A. = Not Applicable

Analytical References: "Standard Methods for the Examination of Water and Wastewater," 15th edition, 1981.

Supervising Analyst Preston Goldstein

Date July 28, 1982

(2)

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LABORATORY REPORT

FOR

TOWN OF MARILLA

Job No. TM-540

Sample Date: 10/3/82 Sampled By: E & E

Date Received: 10/6/82 Picked Up By: E & E

Sample Type: Grab

E & E Lab Number 82-	2117	2118	2119	2120	2121	2122
Sample Identity	Well #1	Well #2	Well #3	Well #4	Well #5	Running Water
Chloride, mg/L	5940	630	7.82	35.6	429	454
Specific Conductance, umhos/cm	13,200	2500	390	490	1260	1550
pH, S.U.	6.7	6.3	7.1	7.2	6.1	7.0
Total Organic Carbon, mg/L	89.2	121	40.0	32.7	24.3	97.9
Total Dissolved Solids, mg/L	12,400	2040	308	368	1140	1520
Depth of Well, Ft.	64.0	10.5	7.5	11.0	12.5	----
Water Height, Ft.	42.4	1.2	1.4	0.3	5.5	----

Analytical References: "Standard Methods for the Examination of Water and Wastewater," 15th edition, 1980.

Supervising Analyst Preston Johnston

Date October 18, 1982

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International Specialists in the Environmental Sciences

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LABORATORY REPORT

FOR

TOWN OF MARILLA

Job No.: TM-540

Sample Date: 12/28/82 Sampled By: E & E

Date Received: 12/28/82 Delivered By: E & E

Sample Type: Monitoring Wells

E & E Lab Number 82-	2886	2887	2888	2889	2890	Surface Water*
Well Number	1	2	3	4	5	
Chloride, mg/L	6590	105	6.1	26.3	263	
Specific Conductance UMHOS/cm	10,400	1500	470	380	880	
pH, S.U.	6.9	6.4	6.9	7.1	6.7	
Total Organic Carbon, mg/L	110	62.5	37.4	25.6	19.2	
Total Dissolved Solids, mg/L	10,400	752	316	356	658	
Depth of Well, Ft.	64.0	10.5	7.5	11.0	12.5	
Water Height, Ft.	20.5	7.5	6.0	8.8	4.5	

*Not running

Analytical References:

"Standard Methods for the Examination of Water and Wastewater," 15th edition, 1980.

Supervising Analyst [signature]

Date: 1-6-83

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LABORATORY REPORT

FOR

TOWN OF MARILLA
TOWN LANDFILL

Job No.: TM-540-3

Sample Date: 5/4/83 Sampled By: E & E

Date Received: 5/4/83

Sample Type: Grab

E & E Lab Number 83-	1279	1280	1281	1282	1283	1284	1285
Sample Identity	Well #1	Well #2	Well #3	Well #4	Well #5	North West Revine	North East Drainage Channel
Chloride, mg/L	4000	61.7	1.00	4.20	80.8	2060	22.0
Total Dissolved Solids, mg/L	7920	412	276	214	320	4930	174
Total Organic Carbon, mg/L	28.5	8.74	1.74	2.13	9.13	257	6.49
Specific Conductance, umhos/cm	8800	760	340	250	480	5200	320
pH, S.U.	6.9	6.2	6.8	7.7	6.1	6.9	7.6
Depth of Well, ft.	64.0	10.5	7.5	11.0	12.5	-	-
Water Height, ft.	41.9	3.46	2.84	2.84	8.25	-	-

Analytical References:

"Standard ethods for the Examination of Water and Wastewater," 15th edition, 1980.

Supervising Analyst _____

Date: _____

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LABORATORY REPORT

FOR

TOWN OF MARILLA

Job No.: TM-540-3

Sample Date: 7/6/83

Sampled By: E & E

Date Received: 7/6/83

Sample Type: Monitoring Wells

E & E Lab Number 83-	2155	2156	2157	2158	2159	2160	2161
Sample Identity:	Well #1	Well #2	Well #3	Well #4	Well #5	North West Ravine	North East Drainage Channel
Chloride, mg/L	4416	292	6.14	11.6	57.2	3964	120
Total Dissolved Solids, mg/L	5240	640	260	208	240	8800	500
Total Organic Carbon, mg/L	94.2	86.0	51.0	35.6	22.9	119	36.9
Specific Conductance, umhos/cm	8000	1200	460	290	380	7800	1000
pH, S.U.	7.23	6.82	7.23	7.80	6.55	6.83	8.11
Depth of Well, ft.	64.0	10.5	7.5	11.0	12.5	--	--
Water Height, ft.	40.9	0.67	0.25	2.17	4.50	--	--

Analytical References: "Standard Methods for the Examination of Water and Wastewater", 15th edition, 1980.

Supervising Analyst [signature]

Date: 7-21-83

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LABORATORY REPORT

FOR

TOWN OF MARILLA

Job No.: TM-540

Sample Date: 10/4/83 Sampled By: G. Jones (E & E)

Date Received: 10/4/83 Delivered By: G. Jones (E & E)

Sample Type: Monitoring Wells and Surface Water

E & E Lab Number 83-	3664	3665	3666	3668	3669	3663	3667
Well No.:	1	2	3	4	5	North West Ravine	North East Drainage Channel
pH, S.U.	6.95	6.13	6.92	7.26	6.04	6.81	7.44
Specific Conductance, umhos/cm	10,600	1650	420	460	440	9250	765
Total Dissolved Solids, mg/L	11,680	1440	208	240	1990	11,170	566
Chloride, mg/L	4974	564	19.5	181	17.2	4216	160
Total Organic Carbon, mg/L	29	35	15	17	20	70	12
Cadmium, mg/L	0.0138	0.0054	0.002	0.004	0.006	0.013	< 0.002
Copper, mg/L	< 0.050	0.050	0.096	< 0.050	0.561	< 0.050	< 0.050
Chromium, mg/L	0.011	0.015	0.019	0.015	0.036	0.014	< 0.010
Lead, mg/L	0.229	0.0366	0.0542	0.0178	0.247	0.112	< 0.010
Mercury, mg/L	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004
Nickel, mg/L	8.30	0.258	< 0.050	0.053	0.002	4.43	< 0.050
Zinc, mg/L	0.0673	0.250	0.174	0.114	1.145	0.150	< 0.05
Water Height, Ft.	22.6	10.5	7.5	11	8.7		

Analytical References: "Standard Methods for the Examination of Water and Wastewater", 15th edition, 1980.

Supervising Analyst M. Hu

Date: 10-25-83

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LABORATORY REPORT
FOR
TOWN OF MARILLA

Job No.: TM-540

Sample Date: 12/15/83 Sampled By: Ecology and Environment, Inc.

Date Received: 12/15/83 Picked Up By: Ecology and Environment, Inc.

Sample Type: Grab

E & E Lab Number 83-	4720	4721	4722	4723	4724	4725
Sample Identity	Well #2	Well #3	Well #4	Well #5	North Ravine	North East Drainage Channel
Total Organic Carbon, mg/L	106	57.0	58.2	24.3	16.0	26.7
Total Dissolved Solids, mg/L	760	200	138	76	62	214
Chloride, mg/L	214	3.29	27.4	37.0	31.0	24.6
Specific Conductivity, umhos/cm	905	295	275	200	180	179
pH, S.U.	6.01	7.19	7.50	6.15	6.92	7.63
Water Elevation	11'½"	6'1-3/4"	7'3"	5'	NA	NA

NOTE: Well No. 1 appears to be contaminated with an oil like substance. No analyses performed per engineer.

Analytical References:

"Standard Methods for the Examination of Water and Wastewater", 15th edition, 1980.

Supervising Analyst [signature]

Date: 1-15-83

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LABORATORY REPORT FOR TOWN OF MARILLA

Job No.: U-0731

Sample Date: 9/27/84 Sampled By: E & E

Date Received: 9/27/84 Delivered By: E & E

Sample Type: Water Grab

E & E Lab Number 84-	4936	4937	4938	4939	4940	4941	4942
Sample Identity	Well #1	Well #2	Well #3	Well #4	Well #5	South Stream	North Stream
Chloride, mg/L	284	340	11.8	18.5	21.8	85.4	175
Specific Conductance, umhos/cm	4200	1300	380	580	240	480	780
pH, S.U.	6.43	5.74	6.78	6.66	5.82	7.67	6.94
Total Organic Carbon, mg/L	50	77	44	52	31	12	10
Total Dissolved Solids, mg/L	476	642	286	838	186	382	680
Phenol, mg/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Iron, mg/L	5.45	137	59.6	67.4	176	3.56	5.88
Manganese, mg/L	2.63	13.4	0.720	0.755	1.46	0.671	0.292
Barium, mg/L	5.58	0.580	0.309	0.227	0.303	0.141	0.103
Chromium, mg/L	0.061	0.104	0.093	0.097	0.199	0.010	0.013
Lead, mg/L	0.191	0.091	0.060	0.060	0.079	0.018	<0.005
Mercury, mg/L	0.0005	<0.0004	0.0010	0.0007	0.0005	<0.0004	<0.0004

Analytical References:

"Standard Methods for the Examination of Water and Wastewater," 14th edition, 1975.

"Methods for the Evaluation of Water and Wastewater", EPA-600/4-79-020, U.S. EPA, Environmental Monitoring and Support Laboratory, Cincinnati, OH 45268

Supervising Analyst Gary Hahn JFB

Date: October 22, 1984

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(2)

LABORATORY REPORT

FOR

Town of Marilla Landfill

Job No.: U-0821

Sample Date: 10/24/84 Sampled By: E & E

Date Received: 10/24/84 Delivered By: E & E

Sample Type: Water Grabs

E & E Lab Number 84-	5443	5444	5445	5446	5447	5448	5449
Sample Identity	Well #1	Well #2	Well #3	Well #4	Well #5	North Stream	South Stream
Chloride, mg/L	1580	480	100	53	28	365	110
Specific Conductance, umhos/cm	4600	1690	450	800	270	1200	600
pH, S.U.	6.17	6.10	6.75	6.82	5.86	6.72	7.40
Total Organic Carbon, mg/L	16	42	22	23	17	28	36
Total Dissolved Solics, mg/L	3750	1100	352	556	240	1020	460
Phenol, mg/L	<0.005	0.034	<0.005	<0.005	<0.005	<0.005	<0.005
Iron, mg/L	6.57	138	44.0	44.8	89.8	38.0	33.2
Manganese, mg/L	2.52	14.3	0.642	0.956	1.08	2.60	1.84
Barium, mg/L	5.06	0.685	0.402	0.242	0.258	0.329	0.271

Analytical References:

"Methods for the Evaluation of Water and Wastewater", EPA-600/4-79-020, U.S. EPA, Environmental Monitoring and Support Laboratory, Cincinnati, OH 45268.

Supervising Analyst Gary Hahn/FB

Date: December 03, 1984

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(2)

LABORATORY REPORT

FOR

TOWN OF MARILLA LANDFILL

Job No.: U-1046

Sample Date: 12/20/84 Sampled By: E & E

Date Received: 12/20/84 Delivered By: E & E

Sample Type: Water Grab

E & E Lab Number 84-	6826	6827	6828	6829	6830	6831	6832
Sample Identity	Well 1	Well 2	Well 3	Well 4	Well 5	North Stream	Sout Stre
Chloride, mg/L	780	510	2.0	25	36	50	20
Specific Conductance, umhos/cm	4000	1600	360	530	290	300	260
pH, S.U.	6.78	5.93	7.04	7.11	5.98	7.24	7.30
Total Dissolved Solids, mg/L	3300	1200	260	370	200	220	230
Total Organic Carbon, mg/L	150	220	82	94	50	16	21
Phenol, mg/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.0
Barium, mg/L	5.73	0.66	0.37	0.20	<0.20	<0.20	<0.2
Iron, mg/L	6.28	117	104	6.70	0.076	0.838	0.87
Manganese, mg/L	2.98	18.2	1.70	0.132	<0.050	0.216	0.58

Analytical References:

"Methods for the Evaluation of Water and Wastewater", EPA-600/4-79-020, U.S. EPA, Environmental Monitoring and Support Laboratory, Cincinnati, OH 45268.

Supervising Analyst Gary Haller IF23

Date: January 16, 1985

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ANALYTICAL SERVICES CENTER, P.O. BOX D, BUFFALO, NEW YORK 14225, TEL. 716-631-0360
International Specialists in the Environmental Sciences

May 22, 1985

Mr. Nick Pinto
Tallamy, Van Kuren, Gertis and Associates, Inc.
70 Linwood Avenue
Orchard Park, New York 14127

Dear Mr. Pinto:

Attached is the laboratory report of the analysis conducted on seven samples received at the Analytical Services Center on April 25, 1985. Analysis was performed according to the procedures set forth in "Methods for the Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983.

Very truly yours,

Gary Hahn

Gary Hahn, Manager
Analytical Services Center

GH/cp
enclosure

cc: Town of Marilla
via Fred McKosky

(2)

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International Specialists in the Environment

LABORATORY REPORT

FOR

Town of Marilla

Job No.: U-1632

Sample Date: 4/25/85 Sampled By: E & E, Inc.

Date Received: 4/25/85 Delivered By: E & E, Inc.

Sample Type: Water Grab

E & E Lab Number 85-	2725	2726	2727	2728	2729	2730	2731
Sample Identity	Well #1	Well #2	Well #3	Well #4	Well #5	East Ditch	North Ditch
pH, S.U.	6.86	6.20	7.32	7.66	6.34	6.95	7.25
Specific Conductance, umhos/cm	2400	1100	360	280	230	460	460
Total Dissolved Solids, mg/L	3300	900	190	130	120	300	350
Chloride, mg/L	1500	360	2	8	19	70	140
Total Organic Carbon, mg/L	23	36	11	8	9	7	14

Analytical References:

"Methods for the Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983.

Supervising Analyst [signature]

Date: May 28, 1985

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ANALYTICAL SERVICES CENTER, P.O. BOX D, BUFFALO, NEW YORK 14225, TEL. 716-631-0360

International Specialists in the Environmental Sciences

July 29, 1985

Mr. Nick Pinto
Tallamy, Van Kuren, Gertis and Assoc.
70 Linwood Avenue
Orchard Park, New York 14127

Dear Mr. Pinto:

Attached is the laboratory report of the analysis conducted on two samples received at the Analytical Services Center on June 21, 1985. Analysis was performed according to the procedures set forth in "Methods for the Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983.

Very truly yours,

Gary Hahn 1/26

Gary Hahn, Manager
Analytical Services Center

GH/cp
enclosure

cc: Mr. John Foss

ecology and environment, inc.
International Specialists in the Environment

(2)

LABORATORY REPORT

FOR

Town of Marilla

Job No.: U-1945

Sample Date: 6/21/85 Sampled By: E & E, Inc.

Date Received: 6/21/85 Delivered By: E & E, Inc.

Sample Type: Water Grab

E & E Lab Number 85-	4139	4140
Customer Number	North Ditch	East Ditch
	all results in mg/L unless otherwise noted	
Biochemical Oxygen Demand	<2	<2
Chemical Oxygen Demand	66	62
Total Dissolved Solids	560	400
Specific Conductance, umhos/cm	770	580
Iron, mg/L	1.77	0.494
pH, S.U.	7.46	7.99

Analytical References:

"Methods for the Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983.

Supervising Analyst [signature]

Date: July 29, 1985

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ANALYTICAL SERVICES CENTER, P.O. BOX D, BUFFALO, NEW YORK 14225, TEL. 716-631-0360

International Specialists in the Environmental Sciences

August 16, 1985

Mr. Nick Pinto
Tallamy, Van Kuren, Gertis and Assoc.
70 Linwood Avenue
Orchard Park, New York 14127

Dear Mr. Pinto:

Attached is the laboratory report of the analysis conducted on five samples received at the Analytical Services Center on August 6, 1985. Analysis was performed according to the procedures set forth in "Methods for the Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983.

Very truly yours,

Gary Hahn/KPS

Gary Hahn/Manager
Analytical Services Center

GH/cp
enclosure

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International Specialists in the Environment

(2)

LABORATORY REPORT

FOR

Town of Marilla

Job No.: U-2161

Sample Date: 8/6/85 Sampled By: E & E, Inc.

Date Received: 8/6/85 Delivered By: E & E, Inc.

Sample Type: Water Grab

E & E Lab Number 85-	5161	5162	5163	5164	5165
Customer Number	Well (#1)	Well (#2)	Well #3	Well #4	Well (#5)
Total Organic Carbon, mg/L	44	85	30	30	68
pH, S.U.	6.82	6.24	7.32	7.09	6.05
Chloride, mg/L	1800	430	11	30	24
Specific Conductance, umhos/cm	5800	1600	430	630	250
Total Dissolved Solids, mg/L	4700	1300	280	450	150

Analytical References:

"Methods for the Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983.

Supervising Analyst Gary Stahn/KAS

Date: August 13, 1985

REF. 3

ES AND D&M SITE INSPECTION

Observations made during the ES and D&M Site Inspections are provided on US EPA Forms 2070-12 and 2070-13. Field notes were used to complete these EPA Forms, and are not included herein.

code of federal regulations

Protection of Environment

40

PARTS 190 TO 399

Revised as of July 1, 1983

REF. 4

REF. 4

3.0 Ground Water Migration Route

3.1 *Observed Release.* If there is direct evidence of release of a substance of concern from a facility to ground water, enter a score of 45 on line 1 of the work sheet for the ground water route (Figure 2); then you need not evaluate route characteristics and containment factors (lines 2 and 3). Direct evidence of release must be analytical. If a contaminant is measured (regardless of frequency) in ground water or in a well in the vicinity of the facility at a significantly (in terms of demonstrating that a release has occurred, not in terms of potential effects) higher level than the background level, then quantitative evidence exists, and a release has been observed. Qualitative evidence of release (e.g., an oily or otherwise objectionable taste or smell in well water) constitutes direct evidence only if it can be confirmed that it results from a release at the facility in question. If a release has been observed, proceed to "3.4 *Waste Characteristics*" to continue scoring. If direct evidence is lacking, enter a value of 0 on line 1 and continue the scoring procedure by evaluating *Route Characteristics.*

3.2 *Route Characteristics. Depth to aquifer of concern* is measured vertically from the lowest point of the hazardous substances to the highest seasonal level of the saturated zone of the aquifer of concern (Figure 3). This factor is one indicator of the ease with which a pollutant from the facility could migrate to ground water. Assign a value as follows:

Depth

Distance (feet)	Assigned value
150	0
50 to 150	1
21 to 75	2
0 to 20	3

Net precipitation (precipitation minus evaporation) indicates the potential for leachate generation at the facility. Net seasonal rainfall (seasonal rainfall minus seasonal evaporation) data may be used if available. If net precipitation is not measured in the region in which the facility is located, calculate it by subtracting the mean annual lake evaporation for the region (obtained from Figure 4) from the normal annual precipitation for the region (obtained from Figure 5). EPA Regional Offices will have maps for areas outside the continental U.S. Assign a value as follows:

Net precipitation (inches)	Assigned value
< −10	0
−10 to +5	1
+5 to +15	2
> +15	3

Permeability of unsaturated zone (or intervening geological formations) is an indicator of the speed at which a contaminant could migrate from a facility. Assign a value from Table 2.

TABLE 2—PERMEABILITY OF GEOLOGIC MATERIALS[1]

Type of material	Approximate range of hydraulic conductivity	Assigned value
Clay, compact till, shale; unfractured metamorphic and igneous rocks.	$<10^{-7}$ cm/sec	0
Silt, loess, silty clays, silty loams, clay loams; less permeable limestone, dolomites, and sandstone; moderately permeable till.	$<10^{-6}>10^{-7}$ cm/sec.	1
Fine sand and silty sand; sandy loams; loamy sands; moderately permeable limestone, dolomites, and sandstone (no karst); moderately fractured igneous and metamorphic rocks, some coarse till.	$<10^{-3}>10^{-6}$ cm/sec.	2
Gravel, sand; highly fractured igneous and metamorphic rocks; permeable basalt and lavas; karst limestone and dolomite.	$>10^{-3}$ cm/sec	3

[1] Derived from: Davis, S. N., *Porosity and Permeability of Natural Materials in Flow-Through Porous Media,* R.J.M. DeWest ed., Academic Press, New York, 1969; Freeze, R.A. and J.A. Cherry, *Groundwater,* Prentice-Hall, Inc., New York, 1979.

REF. 5

NYS WETLANDS MAPS

NYS Wetlands Maps were reviewed during the Phase I investigation. Individual maps for each site were not obtained and are, therefore, not included in the Phase I reports. Site specific information collected concerning the location of a wetland within 1 mile of a given site is recorded in the documentation section of each report.

REF. 5

INTERVIEW FORM

INTERVIEWEE/CODE Mike McMurry /

TITLE - POSITION Environmental Analyst

ADDRESS 600 Delaware Ave.

CITY Buffalo STATE NY ZIP 14202

PHONE (716) 847-4551 RESIDENCE PERIOD _____ TO _____

LOCATION DEC Regulatory Affairs Buffalo INTERVIEWER NYE - DIM

DATE/TIME 1/3/86 / _____

SUBJECT: Wetlands & Flood info - Region 9

REMARKS: Met with Mike who gave me access to both Wetland and Floodway maps for the local region

Also left site locations for the identification of Wildlife Critical Habitat & National Wildlife Refuges

NYS Wetland Maps

NYS Wetlands Maps were reviewed during the Phase I investigation. Individual maps for each site were not obtained and are, therefore, not included in the Phase I reports. Site specific information collected concerning the location of a wetland within 1 mile of a given site is recorded in the documentation section of each report.

I AGREE WITH THE ABOVE SUMMARY OF THE INTERVIEW:

SIGNATURE:

COMMENTS:

REF. 5

INTERVIEW FORM

INTERVIEWEE/CODE ~~Mc Murray~~ Mc Murray / MIKE ~~MACMURRY~~ /

TITLE - POSITION ENVIRONMENTAL ANALYST

ADDRESS 600 Delaware Ave

CITY Buffalo STATE N.Y. ZIP 14202

PHONE (716) ~~640-215~~ 847-4551 RESIDENCE PERIOD ____ TO ____

LOCATION DEC REGULATORY AFFAIRS, BUFFALO INTERVIEWER ERIC NYE - DIM

DATE/TIME 1/3/96 /

SUBJECT: WETLANDS & FLOOD INFO - REGION 9

REMARKS: MET WITH MIKE WHO GAVE ME ACCESS TO BOTH WETLAND AND FLOODWAY MAPS FOR THE LOCAL REGION

~~of~~ ALSO LEFT SITE LOCATIONS FOR THE IDENTIFICATION OF WILDLIFE CRITICAL HABITAT & NATIONAL WILDLIFE REFUGES

I agree with the above interview summary:

Signature/Title: Michael J. McMurray, Environmental Analyst

Comments:

REF. 6

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF SOLID AND HAZARDOUS WASTE
INACTIVE HAZARDOUS WASTE DISPOSAL SITE REPORT

CLASSIFICATION CODE: 2a **REGION: 9** **SITE CODE: 915093**

NAME OF SITE : Town of Marilla
STREET ADDRESS: Eastwood Road
TOWN/CITY: **COUNTY:** **ZIP:**
Marilla Erie

SITE TYPE: Open Dump- Structure- Lagoon- Landfill-X Treatment Pond-
ESTIMATED SIZE: 41 Acres

SITE OWNER/OPERATOR INFORMATION:
CURRENT OWNER NAME....: Town of Marilla
CURRENT OWNER ADDRESS.: 1740 Two Road, Marilla, NY
OWNER(S) DURING USE...: Town of Marilla
OPERATOR DURING USE...: Town of Marilla
OPERATOR ADDRESS.....: 1740 Two Rod Road, Marilla, NY
PERIOD ASSOCIATED WITH HAZARDOUS WASTE: From To

SITE DESCRIPTION:
Site accepts municipal and commercial wastes from town residents.

HAZARDOUS WASTE DISPOSED: Confirmed- Suspected -X

TYPE	QUANTITY (units)
None Known	

REF. 6

SITE CODE: 915093

ANALYTICAL DATA AVAILABLE:

Air- Surface Water- Groundwater-X Soil- Sediment- None-

CONTRAVENTION OF STANDARDS:

Groundwater- Drinking Water- Surface Water- Air-

LEGAL ACTION:

TYPE..: State- Federal-
STATUS: In Progress- Completed-

REMEDIAL ACTION:

Proposed- Under Design- In Progress- Completed-
NATURE OF ACTION:

GEOTECHNICAL INFORMATION:
SOIL TYPE: Unknown
GROUNDWATER DEPTH: Unknown

ASSESSMENT OF ENVIRONMENTAL PROBLEMS:

No apparent environmenal problems.

ASSESSMENT OF HEALTH PROBLEMS:

Insufficient information

PERSON(S) COMPLETING THIS FORM:

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

NAME.: John S. Tygert, P.E.
TITLE: Sr. Sanitary Eng.

NAME.: Roberto Olazagasti
TITLE: Solid Waste Managemen t Spec.

DATE.: 01/24/85

NEW YORK STATE DEPARTMENT OF HEALTH

NAME.: Ronald Tramontano
TITLE: Bur. Tox. Stust. Assess.

NAME.:
TITLE:

DATE.: 01/24/85

New York State Atlas of Community Water System Sources 1982

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

New York State Atlas of Community Water System Sources 1982

NEW YORK STATE DEPARTMENT OF HEALTH

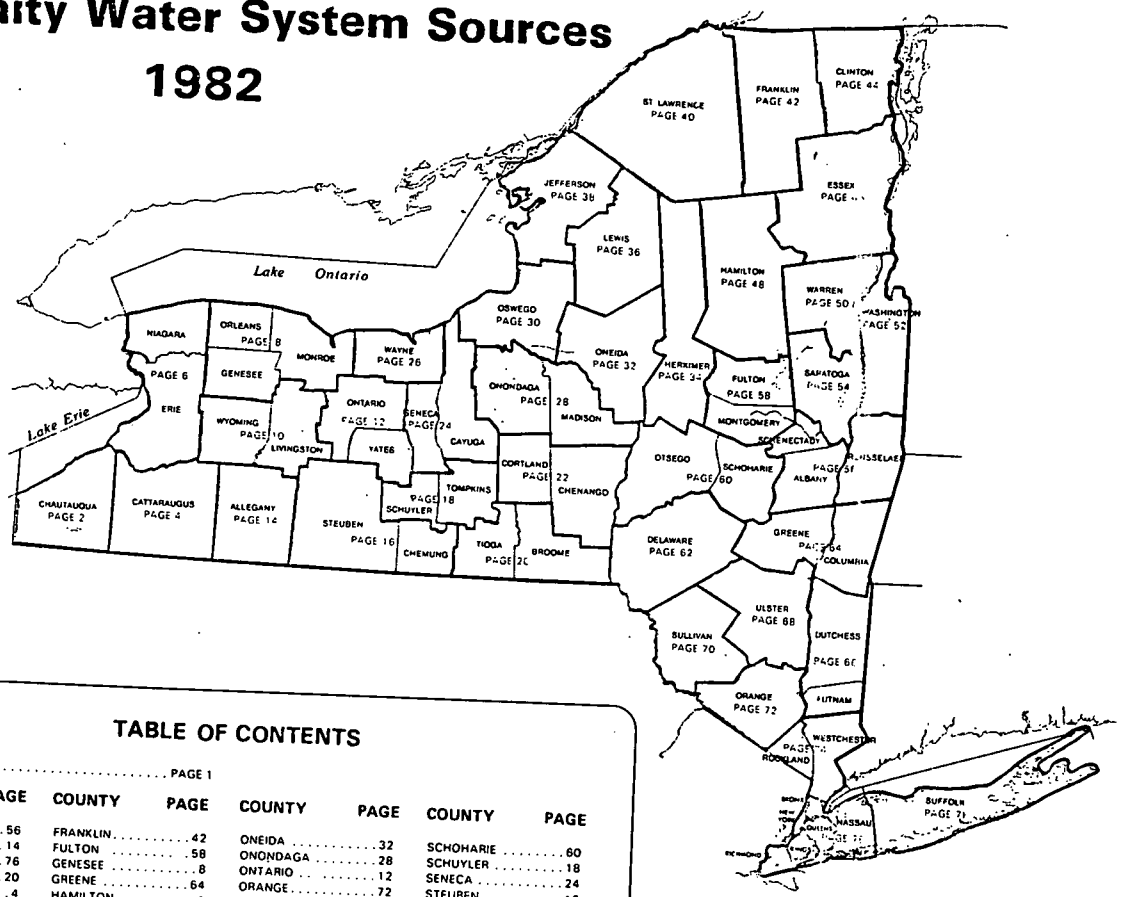


TABLE OF CONTENTS

LEGEND

BOUNDARIES AND PLACES

International
State
County
Town
Indian Reservation
City
Village
Unincorporated Place
Federal Reservation
Built-up Area (Over 25,000 population including any contiguous city or village)

CLASSIFICATION OF POPULATED PLACES

100,000 or more . . . YONKERS
50,000 to 100,000 . . . Levittown
12,500 to 50,000 . . . Poughkeepsie
2,500 to 12,500 . . . Hampton Bays
250 to 2,500 . . . Boiceville
250 or less . . . Corbett

TRANSPORTATION

Highways
- Divided Highways (UNDER CONSTRUCTION)
  - Full Control of Access
  - Partial or No Control of Access
- Undivided Highway
- Interchange (23 INTERCHANGE NUMBER; FULL; PARTIAL)
- Touring Route (State, U.S., Interstate) or State Parkway
- Touring Route Markers: State; U.S.; Interstate (17, 5, 81)

Railroads
- Operating Line
- Service Discontinued
- Operator
- Owner (If Other than Operator) (DELAWARE AND HUDSON)
- Company Having Trackage Rights (PENN CENTRAL) (CONRAIL)

Airports (Open to the Public, Military)
- Runway under 4000'
- Runway over 4000'

Rest Areas
- Food, Gas, Rest Rooms
- Rest Rooms
- Gas, Rest Rooms
- Parking Only

RECREATION FACILITIES

- State or National Recreation Area
- State Campground (A)
- State Boat Launching Site
- State Canal Park
- State Fish Hatchery
- Other State Recreation Site

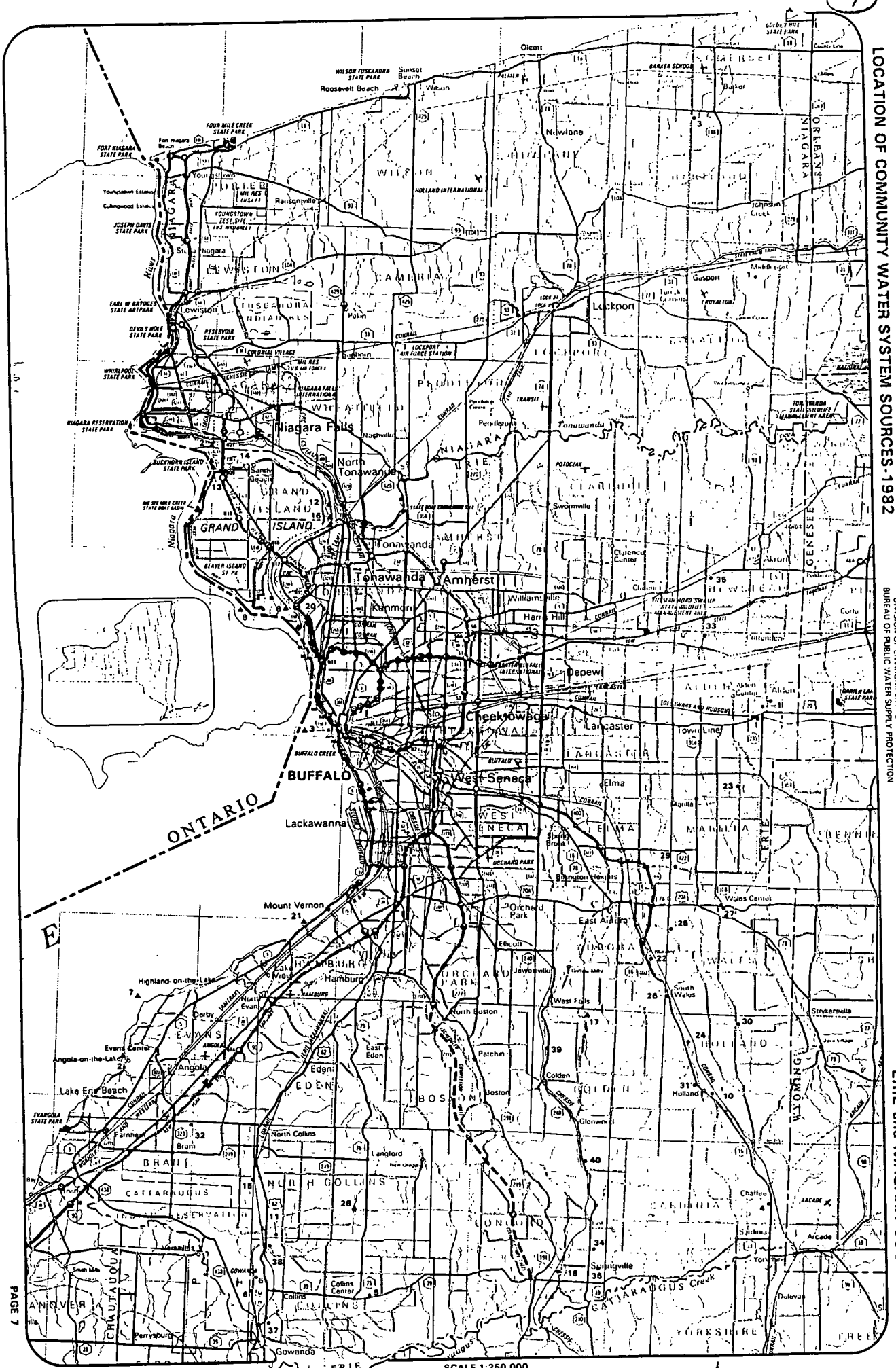
ERIE COUNTY

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

NIAGARA COUNTY

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

LOCATION OF COMMUNITY WATER SYSTEM SOURCES-1982



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

ERIE and NIAGARA COUNTIES

REF. 8

TOWN OF MARILLA
NEW YORK
SANITARY LANDFILL

ENGINEER'S REPORT
AND
PLAN OF OPERATION

February, 1982

Prepared by:

Tallamy, Van Kuren, Gertis and Associates
70 Linwood Avenue
Orchard Park, New York 14127

810406-1B

(8)

1.0 AUTHORIZATION

The firm of Tallamy, Van Kuren, Gertis and Associates was authorized on December 30, 1981 to prepare an engineering and operations report for the Town of Marilla Sanitary Landfill. This report is the culmination of that authorization.

2.0 SCOPE

This report will provide information on the existing condition and operating procedures of the landfill site and site area. This report will also provide an analysis of the proposed project design so that operations may continue on the existing site. This analysis will include projected waste generation rates and cover requirements, the estimated life of the facility, the recommended operation plan, a contingency plan for the control of undesirable conditions, and final closure plans. Accompanying this report will be those maps, site plans, and detail plans which the New York State Department of Environmental Conservation requires for obtaining a Landfill Operating Permit.

3.0 EXISTING SITUATION

3.1 Background

The landfill is owned and operated by the Town of Marilla, solely for the use of Town residents. There is no commercial dumping at the facility, as Town residents are responsible for transporting their own refuse to the working face area of the landfill. The only waste allowed on the site is residential debris and refuse. No hazardous, toxic, or liquid wastes are accepted at the site.

3.2 Site Analysis

3.2.1 Location —

As can be seen from Exhibits 1 and 2, the existing Town of Marilla Landfill and Park area are located between Three Rod Road and Eastwood Road in the Town of Marilla, Erie County, New York. The landfill site is approximately 1.1 miles from the nearest population center, the Hamlet of Williston, and is estimated to be 3.1 miles from the larger Town population centers of the Hamlet of Marilla and the Hamlet of Porterville. Access to the landfill site is from Eastwood Road which is designated as a medium duty road. There are no airparks or railway systems near the landfill site or in the Town of Marilla.

— Popul. data in report also used to predic Landfill expansion.

(3)

3.2.2 Topography --

As can be seen from the topographical map displayed in Exhibit 2, the landfill site is located in a kame and kettle area which has been cut by drainage channels sloping northward to a small stream.

3.2.3 Sub-Surface Conditions* --

The geology of the Town of Marilla Landfill and surrounding area is largely composed of stratified shaly sand and gravel, covered by a layer of dense silty glacial till over a predominantly shale bedrock.

As displayed on the U.S.D.A. soils map of the landfill and surrounding area, Exhibit 3, the dominant soils underlying and immediately adjacent to the actual site are as follows: Howard Gravelly Loam (20E), Palmyra Gravelly Loam (13B), Darien Silt Loam (72B), Hornell Silt Loams (82-C and 82-D), and Manlius Shaly Silt Loam (86C).

The Howard Gravelly Loams are generally deep, well drained soils, that have a moderately coarse textured, gravelly subsoil. They were formed in glacial outwash deposits, which are mainly composed of a mixture of limestone and sandstone gravel, however, shale may also be dominant in some areas. These soils are nearly level to gently sloping where they are found on outwash terraces, and are rolling to steep in Kettle and Kame areas. The bedrock underlying the Howard Gravelly Loam soils is generally found at depths greater than 6 feet. A perched water table may rise to a depth of 3.5 feet below the ground surface during the wet seasons of the year. The permeability of these soils is generally greater than 0.63 in./hr. and the ph is usually found to be greater than or equal to 5.1.

Palmyra Gravelly Loams are in general deep, well drained, medium textured, gravelly soils that were formed in outwash deposits of sand and gravel. These soils are usually found on nearly level to gently sloping areas. The underlying bedrock may be found at depths greater than 6 feet, and a seasonally high perched water table may rise to within 3.5 feet of the ground surface. The Palmyra Gravelly Loam soils generally have a permeability of greater than .63 in./hr. with a ph of 6.0 or greater.

Darien Silt Loam soils are deep, somewhat poorly drained soils, that have a moderately fine textured subsoil. These soils were formed in glacial till derived primarily from soft shales. They are nearly level to moderately sloping soils and are found on uplands. The bedrock underlying the Darien Silt Loam soil may be found at depths of 3.5 feet or greater. A seasonally high perched water table may rise to 0.5-1.5 feet of ground surface. The permeability of these soils is approximately 0.63 in./hr. with a ph of 5.5 or greater.

*Information obtained from the U.S.D.A.

The Hornell Silt Loam soils are moderately deep, somewhat poorly drained to moderately well drained, medium textured soils that have a moderately fine textured subsoil. They were formed in acidic glacial till derived mainly from soft clayey shales. These soils are nearly level to steep and have a permeability equal to or less than .63 in./hr. and a ph of 4.5 to 5.5. The depth to bedrock is generally found to be 1.5 to 3.5 feet and a seasonally high perched groundwater table may rise to within 0.5-1.5 feet of the ground surface.

Manlius Shaly Silt Loam is a moderately deep, well drained, medium textured soil that was formed in acidic glacial till, derived mainly from black brittle shale. These soils are nearly level to steep and have a permeability of 0.63 in./hr. to 2.0 in./hr. with a ph of 4.5 to 5.5. The bedrock underlying the Manlius Shaly Silt Loam soil may be found at depths of 1.5 feet to 3.5 feet. A seasonally high perched water table may rise to 2 feet below the ground surface.

3.2.4 Site Description --

The Town of Marilla Sanitary Landfill lies on approximately 40 acres of primarily open fields owned by the Town. The actual landfill site consists of approximately 10 acres, of which, only about 7 have been used to date. The existing topography and layout of the site are displayed in Exhibit 4. As can be seen from this exhibit, access to the actual landfill area is from Eastwood Road via a small gravel access road.

The climate of the Town of Marilla, along with that of the entire western portion of New York State, is varied and changeable, characteristic of the latitude. Large seasonal changes in temperature are moderated by the close proximity of Lakes Erie and Ontario. Lake Erie lies to the southwest, the direction of the prevailing winds, while Lake Ontario lies to the north. Wind flow is often very high due to the closeness of these lakes. The interaction of warm and cold air masses during the winter and spring may cause one or more severe storms. Precipitation is moderate and fairly evenly distributed throughout the year. The summers are pleasantly warm, lake breezes temper the extreme heat of the summer season. Maximum daytime temperatures rarely exceed 90 degrees. Due to the stabilizing effect of the lakes, thunderstorms are infrequent, and most are caused by frontal action. Winters in western New York usually arrive in late November or early December. Throughout the winter months, arctic air masses move across the lakes producing locally heavy snowfalls. However, rarely do these polar air masses cross the lakes without considerable warming. Temperatures of well below zero over Canada and the midwest are raised 10° to 30° in crossing the Great Lakes.

The forms of wildlife found near the landfill site, and in the Town of Marilla in general, are those that can adopt to the combination of woodland and agricutural land in the proximity of human habitation. Because of this rural setting, the Town of Marilla may attract such large species as deer, fox, etc., however, the wildlife predominantly found

(3)

on and around the landfill site are various small animal species such as rabbits, squirrels, field mice, wood rats, woodchucks, frogs, toads, snakes, and various bird species including grouse and pheasant. Vegetation around the landfill consists primarily of various hard and soft wood trees, and field grasses and shrubs.

The land uses surrounding the actual site are as follows: to the east is a large open field predominantly owned by the Town, to the immediate east is a row of relatively large trees which acts as a natural wind row, to the south is a privately owned farm field which is separated from the landfill by a fiarly large surface and groundwater diversion ditch, immediately west of the landfill site is a dense patch of trees beyond of which the grassed area of the Marilla Town Park is located, to the north of the site lies a relatively dense grove of trees and beyond a small stream.

The major surface water feature near the landfill is the small westerly flowing stream, mentioned above, which is tributary to Little Buffalo Creek, and is located approximately 600 feet from the existing site. The drainage channels cut immediately east and west of the existing site, and throughout the adjacent areas, flow northward into this stream. The seasonally high perched groundwater table found in the soils on and adjacent to the landfill site may, during very wet periods of the year, come to within 0.5 feet of the ground surface, as described in Section 3.2.3. From actual groundwater monitoring, described in detail in a later section, it appears as though the perched groundwater table flows in a northwesterly direction and contributes to the surface water flow at a drainage channel located immediately north of the existing landfill site.

There are no utilities on the landfill site except for electricity and there are no F.I.A. designated flood prone areas in the landfill area.

3.3 Operation

3.3.1 Personnel --

The Town of Marilla Sanitary Landfill is operated by the Town Highway Department. During the hours of operation, two Highway Department employees are present at the landfill. One operator is responsible for the working face and completed areas. This includes the spreading and compacting of refuse and daily cover material on the work face, the excavating and hauling of daily cover to the work face, and the excavating, hauling and compacting of final cover over previously filled areas. The other operator is responsible for inspecting and directing incoming vehicles.

The Highway Department is responsible for general maintenance of the landfill area. This includes access road care, drainage ditch maintenance, etc.

3.3.2 Facilities —

The existing operational facilities found on the landfill site consist of an aluminum 50 foot x 25 foot maintenance and storage building, used for housing and performing maintenance on the landfill's heavy equipment. This building is also a shelter for the operators, as a heated office room is provided. As shown on Exhibit 4, the control benchmark, which consists of a railroad spike whose top surface elevation is set at 1135.95, is set in a door post of the storage building .

There is no potable water or sanitary facilities serving the landfill site, however, the operators do have access to the facilities at the adjacent Town Park.

The heavy equipment presently used for operating the landfill consists of a Caterpillar D6 tracked dozer, used for spreading and compacting refuse and cover material, and an A66 Ford rubber-tired front end loader, which is used for excavating and transporting cover material, and for general site maintenance such as repairs to the access road, drainage ditch cleaning, snow removal, etc.

Although no telephone communications exist on the landfill site, the operators are equipped with a portable two way radio which is used as regular equipment with the Highway Department's radio system. The system is continuously monitored during the landfill's operating hours so as to provide immediate communication between the operators and any emergency help if the situation arises.

At the present time, there are two resource recovery stations at the landfill site. Paper wastes are deposited in an enclosed trailer by Town residents as they enter the site. The monies derived from salvaging the paper wastes are donated to a local charity. Besides being a great benefit to the charities, this system has greatly lessened the problem of blowing papers, since the collection station is an enclosed trailer. The other resource that is recovered is metallic waste (i.e. washers, dryers, etc.) These are deposited by the operators or town residents in a separate scrap pile, and as soon as enough metal scrap is present to fill a dump truck, it is transported to a local scrap dealer. Monies raised from this operation serve to help offset the cost of operating the landfill.

3.3.3 Facility Control --

The landfill is operated on Saturdays between the hours of 8:00 A.M. and 4:00 P.M. Access to the disposal site may be gained only by those Town of Marilla residents who have purchased a disposal permit from the Town Clerk. An operator at the landfill checks each vehicle for a permit as it enters the site.

4.2 Site Analysis

4.2.1 Ground and Surface Water Monitoring --

For the purposes of collecting groundwater samples to analyze the required groundwater parameters and to monitor the groundwater elevations, five monitoring wells were constructed at the locations shown on Exhibit 4. A typical cross section of the monitoring wells is displayed on Exhibit 5. The placement of four of the groundwater wells (wells 2-5) was decided on the basis of being able to monitor the perched water table upstream and downstream of the landfill. These wells were installed to the top of the bedrock. The fifth well (well number 1) was installed as a deep well into the bedrock. The basis used for the placement of this well was to monitor the deep groundwater after it has passed under the existing landfill.

The water level in the wells was measured on 8/28/81, 8/31/81, and 11/16/81. The results are displayed in Table 2.

Table 2

Groundwater Elevations

Date	Well No.	Ground Elevation	Water Depth Below Ground Surface	Water Elevation
8/28/81	1	1062.6	18.4 ft.	1044.2
8/28/81	2	1099.0	8.5 ft.	1090.5
8/28/81	3	1109.0	3.3 ft.	1106.6
8/28/81	4	1132.7	7.3 ft.	1125.4
8/28/81	5	1119.0	5.3 ft.	1113.7
8/31/81	1	1062.6	18.3 ft.	1044.3
8/31/81	2	1099.0	7.8 ft.	1091.2
8/31/81	3	1109.0	4.4 ft.	1105.5
8/31/81	4	1132.7	7.2 ft.	1125.5
8/31/81	5	1119.0	5.7 ft.	1113.7
11/16/81	1	1062.6	17.3 ft.	1045.3
11/16/81	2	1099.0	6.8 ft.	1092.2
11/16/81	3	1109.0	4.0 ft.	1105.9
11/16/81	4	1132.7	5.7 ft.	1127.0
11/16/81	5	1119.0	3.3 ft.	1115.7

TABLE I

Parameter / Log Number	Well #1 502	Well #2 503	Well #3 504	Well #4 505	Well #5 506	Stream 507	NYS Limits Class GA
Total Alkalinity as $CaCO_3$, mg/l	127.6	61.2	229.2	169.4	148.3	994.	NL
Biochemical Oxygen Demand, mg/l	62.	220.	5.4	28.8	6.1	652.	NL
Chemical Oxygen Demand, mg/l	138.	437.	10.2	61.2	8.2	1285.	NL
Chloride, mg/l	207.4	514.	13.5	27.9	184.	1477.	250 mg/l
Specific Conductance, umhos/cm	1055.	1858.	506.3	470.0	1496.	6922.	NL
Cyanide, mg/l	0.004	0.002	LT 0.001	LT 0.001	LT 0.001	0.657	0.2 mg/l
Ammonia Nitrogen, mg/l	0.46	0.009	0.014	0.007	0.037	3.83	NL
Total Kjeldahl Nitrogen, mg/l	1.21	0.247	0.450	1.52	14.4	10.9	NL
Nitrate-Nitrite, as N, mg/l	0.76	1.23	0.186	0.32	1.46	8.02	10.0 mg/l*
Phenols, mg/l	0.007	0.016	0.011	0.003	0.004	0.003	0.001 mg/
pH Units	7.71	6.69	7.78	7.69	7.53	7.38	6.5 - 8.5
Total Dissolved Solids, mg/l	720.	1654.	240.	258.	1072.	4684.	NL
Total Solids, mg/l	1700.	2795.	700.	1712.	1498.	5036.	NL
Total Organic Carbons, mg/l	63.	178.	4.0	35.	13.	500.	NL

* Nitrate only

LT = Less Than

NL = Not Listed (NYS Ground Water Classifications - Quality Standards and Effluent Standards and/or Limitations (Title 6, Official Compilation of Codes, Rules and Regulations, Part 703)

TABLE I

(Continued)

Parameter / Log Number	Well #1 502	Well #2 503	Well #3 504	Well #4 505	Well #5 506	Stream 507	NYS Limits Class GA
Aluminum, mg/l	1.73	4.13	6.61	8.91	1.20	2.45	NL
Arsenic, mg/l	0.002	0.007	0.004	0.020	0.012	LT 0.001	0.025 mg/
Barium, mg/l	0.134	1.73 1.0	1.086 1.0	1.70	0.471	0.105	1.0 mg/l
Cadmium, mg/l	0.002	0.006	0.002	0.005	0.002	0.006	0.01 mg/l
Chromium, mg/l	0.002	0.007	0.002	0.015	LT 0.001	LT 0.001	0.05 mg/l
Copper, mg/l	0.016	0.044	0.006	0.028	0.005	LT 0.001	1.0 mg/l
Iron, mg/l	2.37	5.71	2.01	6.85	2.75	55.5	0.3 mg/l
Lead, mg/l	0.006	0.007	0.008	0.008	0.002	0.001	0.025 mg/
Magnesium, mg/l	9.46	11.98	10.78	11.98	10.77	12.35	NL
Mercury, mg/l	LT 0.0002	LT 0.0002	LT 0.0002	LT 0.0002	LT 0.0002	LT 0.0002	0.002 mg/
Selenium, mg/l	LT 0.001	LT 0.001	LT 0.001	LT 0.001	LT 0.001	LT 0.001	0.02 mg/
Silver, mg/l	LT 0.001	LT 0.001	LT 0.001	LT 0.001	LT 0.001	LT 0.001	0.05 mg/
Zinc, mg/l	LT 0.001	1.87 .05	0.300	LT 0.001	LT 0.001	LT 0.001	5 mg/
Polychlorinated Biphenyls, ug/l	LT 0.1	LT 0.1	LT 0.1	LT 0.1	LT 0.1	LT 0.1	0.1 ug/

** Standard for Hexavalent Chromium

LT = Less Than

NL = Not Listed (NYS Ground Water Classifications - Quality Standards and Effluent Standards and/or Limitations (Title 6, Official Compilation of Codes, Rules and Regulations, Part 703)

Terrain Associates

GROUND WATER MONITORING STUDY
TALLAMY, VAN KUREN, GERTIS & ASSOCIATES

TABLE I

Parameter / Log Number	Well #1 683	Well #2 684	Well #3 685	Well #4 686	Well #5 687	Stream 688	NYS Limits Class GA
Total Alkalinity as $CaCO_3$, mg/l	147.	42.	197.	203.	159.	1092.	NL
Biochemical Oxygen Demand, mg/l	76.	241.	3.2	38.	4.1	810.	NL
Chemical Oxygen Demand, mg/l	150.	447.	12.1	82.	6.7	1468.	NL
Chlorides, mg/l	241.	715.	22.	45.	139.	1603.	250 mg/l
Specific Conductance, umhos/cm	1229.	2039.	611.	520.	1222.	7070.	NL
Cyanides, mg/l	0.002	0.004	LT 0.001	LT 0.001	LT 0.001	0.44	0.2 mg/l
Nitrates, mg/l	0.59	0.81	0.27	0.18	1.79	6.87	10.0 mg/l
Nitrites, mg/l	LT 0.01	LT 0.01	LT 0.01	LT 0.01	LT 0.01	LT 0.01	NL
Phenols, mg/l	0.003	0.009	0.019	0.020	0.006	0.005	0.001 mg/l
pH Units	7.39	7.01	7.41	7.81	7.77	7.20	6.5 - 8.5
Total Dissolved Solids, mg/l	811.	1897.	257.	274.	1113.	5729.	NL
Total Organic Carbon, mg/l	62.	168.	18.	29.	14.	537.	NL

LT = Less Than

NL = Not Listed

(NYS Ground Water Classification - Quality Standards and Effluent Standards and/or Limitations (Title 6, Official Compilation of Codes, Rules and Regulations, Part 703)

GROUND WATER MONITORING STUDY
TALLAMY, VAN KUREN, GERTIS & ASSOCIATES

TABLE I

(Continued)

Parameter / Log Number	Well #1 683	Well #2 684	Well #3 685	Well #4 686	Well #5 687	Stream 688	NYS Limits Class GA
Aluminum, mg/l	1.01	3.97	5.41	6.27	1.47	1.98	NL
Arsenic, mg/l	LT 0.001	0.005	0.002	0.012	0.009	LT 0.001	0.025 mg/l
Barium, mg/l	0.247	1.99	1.17	1.39	0.592	0.211	1.0 mg/l
Cadmium, mg/l	0.003	0.007	0.004	0.006	0.003	0.008	0.01 mg/l
Chromium, mg/l	0.001	0.003	0.001	0.027	LT 0.001	0.002	0.05 mg/l
Copper, mg/l	0.031	0.051	0.009	0.013	0.009	0.005	1.0 mg/l
Iron, mg/l	3.01	4.31	1.51	4.77	3.16	37.9	0.3 mg/l
Lead, mg/l	0.003	0.002	0.003	0.005	0.003	LT 0.001	0.025 mg/l
Manganese, mg/l	0.92	0.88	0.97	1.11	0.51	4.09	0.3 mg/l

LT = Less Than
NL = Not Listed

(NYS Ground Water Classification - Quality Standards and Effluent Standards and/or Limitations (Title 6, Official Compilation of Codes, Rules and Regulations, Part 703)

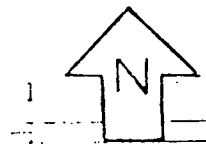
REF. 9

US CENSUS DATA, 1980

US Census Data used in the HRS scoring was obtained from various County Planning Offices. This data was not obtained from a report. The raw census data combined with County Planning Maps was used to estimate the population within 1, 2, 3, and 4 miles of the Phase I site being investigated. Because of the voluminous amount of data used, the data is not provided in this Appendix.

REF. 9

ERIE COUNTY



4 MILES

50,000 ... on New York coordinate System

ERIE COUNTY PLANNING DEPARTMENT

1980 CENSUS TRACTS

Tract Boundaries

Tract Boundaries Extending to the International Boundary

Tract Portion

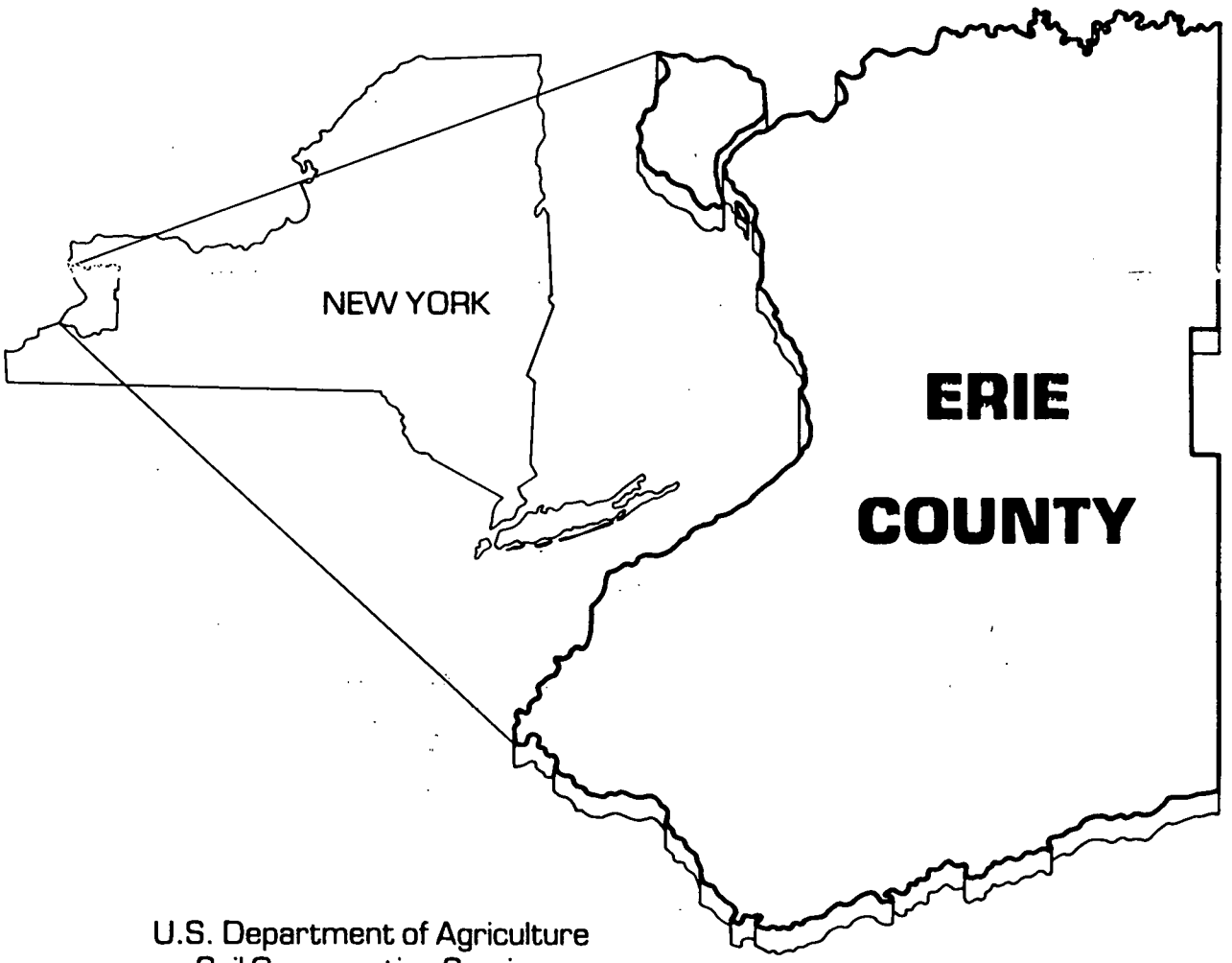
ONTARIO

Source: U S Bureau of the Census, 1980.

Prepared: Erie County Department of Environment and Planning, Division of Planning. October 1980

REF. 10

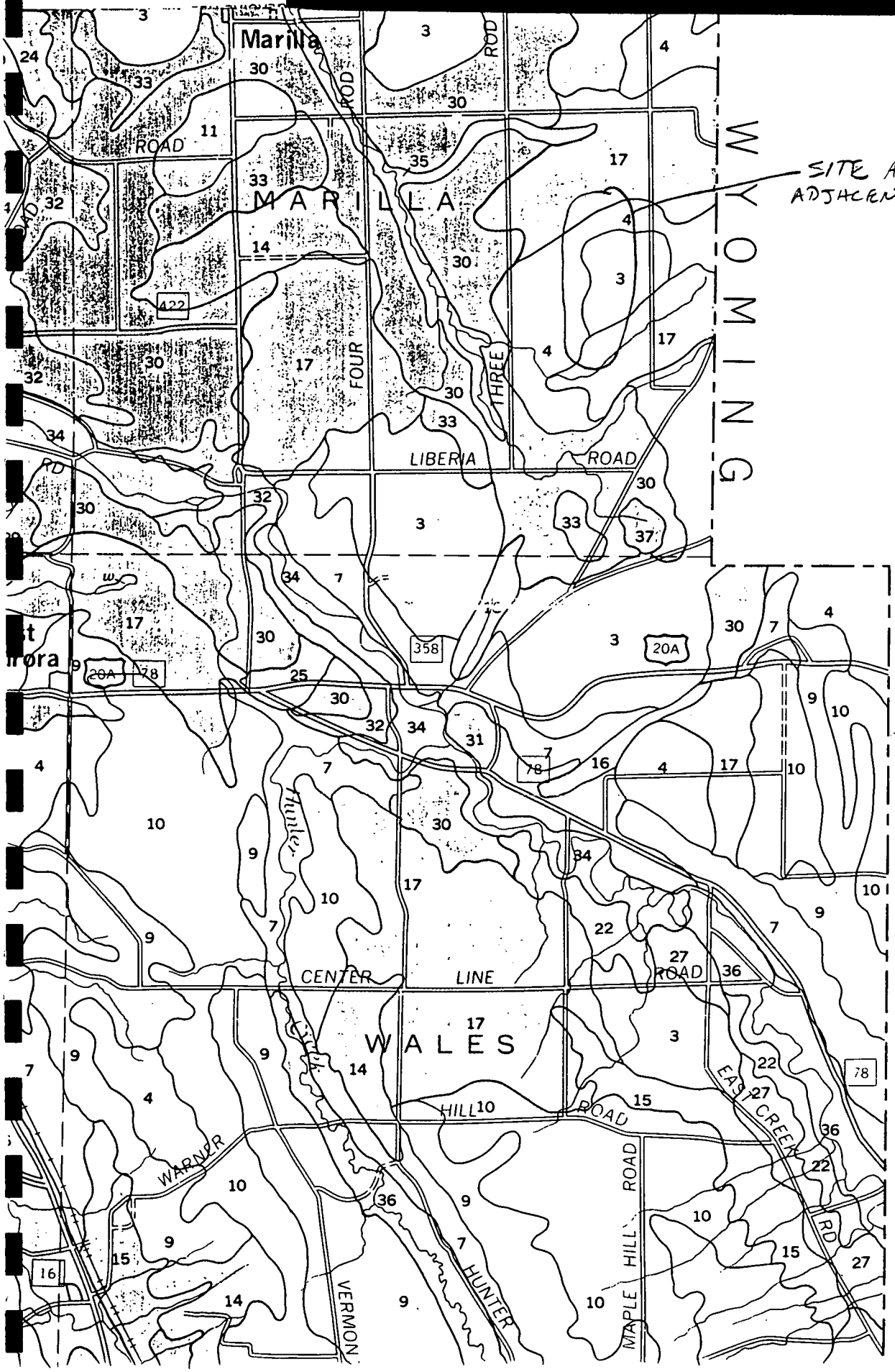
GENERAL SOIL MAP and INTERPRETATIONS



U.S. Department of Agriculture
Soil Conservation Service

in cooperation with

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



50'

10

45'

1,000,000 FEET

3. DARIEN, NEARLY LEVEL

Deep, somewhat poorly drained, loamy soils, on lowland plains and upland fringe areas

This unit consists of nearly level to sloping soils on upland plateau fringe areas and on adjacent lowland plains in the central to southwestern part of the county. Slope ranges from 0 to 15 percent but is dominantly 0 to 3 percent.

This unit covers about 29,500 acres or 4.4 percent of the county. Darien soils make up 55 percent of the unit, and soils of minor extent make up the remaining 45 percent.

Darien soils formed in loamy, olive colored glacial till having a moderate to low amount of amount of shale fragments. The subsoil of these soils has a moderately high clay content. Darien soils are somewhat poorly drained and have a seasonal high water table perched in the upper part of the subsoil during the spring and other wet periods. Surface runoff is slow in lesser sloping areas. The rate of water movement (permeability) through the subsoil is moderately slow and in the substratum it is slow. In some areas these soils have a silty substratum that lacks shale fragments.

The important soils of minor extent are about equally divided between those of the Angola, Danley, Derby, Ilion, and Remsen series. Somewhat poorly drained Angola soils are in areas where shale bedrock is within 40 inches of the soil surface. Moderately well drained Danley soils are on higher knolls, and poorly drained Ilion soils are in depressions. Some areas include Derby soils that are similar to Darien soils but more acid, and a few areas of Remsen soils that have a higher clay content than Darien soils.

Most areas of this unit were originally cleared and used in farming. Some areas are still used for dairy farm operations; however, many fields are now idle. Seasonal wetness and erosion hazard on longer slopes are soil limitations for farm and many nonfarm uses.

4. DERBY, GENTLY SLOPING

Deep, somewhat poorly drained, silty soils, on uplands

This unit consists of nearly level to sloping soils on plateau crests in upland areas in the south central and southwestern portions of the county. Slope ranges from 0 to 15 percent, but is dominantly 3 to 8 percent.

This unit covers about 21,500 acres or 3.2 percent of the county. Derby soils make up 80 percent of the unit, and soils of minor extent the remaining 20 percent.

Derby soils formed in olive colored glacial till that is high in silt content and quite acid in reaction. These soils are somewhat poorly drained and have a seasonal high water table perched in the upper part of the subsoil in early spring. Rate of water movement (permeability) through the subsoil is moderately slow or slow, and in the substratum it is slow.

The important soils of minor extent are about equally divided between those of the Canadice, Darien, Fremont, Hornell, Orpark, and Volusia series. Poorly drained Canadice are in depressions or along drainageways. Darien and Fremont soils are similar to Derby soils but in areas where the soil is more loamy and has a higher content of shale fragments. Hornell and Orpark soils are usually on narrow benches where the bedrock is within 40 inches of the soil surface. Somewhat poorly drained Volusia soils are in areas where a dense, compact layer has formed in the subsoil.

Considerable portions of this general soil unit was cleared for farming. Many of these areas are now idle because of seasonal wetness. The sloping portions of this unit is quite erosive. Most areas tend to have fairly long slopes.

(10)

17. ORPARK, GENTLY SLOPING

Moderately deep, somewhat poorly drained, silty soils, on uplands

This unit consists of nearly level to sloping soils on plateau crests in the southern half of the county. Some areas have a shelf-like appearance. Slope ranges from 0 to 15 percent but is dominantly 3 to 8 percent.

This general soil unit covers about 35,300 acres or 5.2 percent of the county. Orpark soils make up 65 percent of the unit and soils of minor extent make up the remaining 35 percent.

Orpark soils formed in glacial till deposits. Shale bedrock underlies the soil at depths of 20 to 40 inches. These soils are somewhat poorly drained, silty, and contains a small amount of shale fragments. A seasonal high water table is perched in the upper part of the subsoil during excessively wet periods. Rate of water movement through the soil is moderately slow or slow. Orpark soils are quite acid.

Soils of minor extent are those of the Hornell, Angola, Manlius, and Derby series. Hornell soils are in areas that have a high clay content; Angola soils occur where the soil materials is less acid than in the Orpark soils; and Manlius soils are on higher, better drained knolls and ridges. Derby soils are in areas where bedrock is deeper than 40 inches. Some drainageways and low spots include soils similar to Orpark but poorly drained.

Some areas of this unit are used for farming but many areas are now idle and in brush cover. A few urban areas are encroaching into some areas. Seasonal wetness, relatively slow water movement through the soil, and close proximity of shale bedrock to the soil surface are important soil features to consider for most farm or nonfarm uses.

(10)

30. BLASDELL-FARNHAM, GENTLY SLOPING

Deep, well drained and moderately well drained, shaly soils, on terraces and ridges

This unit consist of nearly level to sloping soils on remnant beach ridges, outwash terraces, and remnant deltas. Slope ranges from 0 to 15 percent but is dominantly 3 to 8 percent.

This unit covers about 18,900 acres or 2.8 percent of the county. Blasdell soils make up 55 percent of the unit, Farnham soils about 35 percent, and soils of minor extent comprise the remaining 10 percent.

Blasdell and Farnham soils formed in loamy glacial outwash deposits dominated by black, brittle shale fragments. Blasdell soils are well drained, but have a seasonal high water table that rises into the substratum for very brief periods in early spring. Farnham soils are moderately well drained and have a seasonal high water table that rises into the subsoil during early spring. Rate of water movement (permeability) through both of the soils is moderately rapid. Blasdell soils occupy the higher part of the landscape while Farnham soils are in moderately low areas.

Soils of minor extent are those of the Phelps, Red Hook, Varysburg, and Manlius series. Moderately well drained Phelps soils and somewhat poorly drained Red Hook soils are in areas where the rock fragments are dominated by hard gravel rather than brittle shale fragments. Varysburg soils occur in a few areas where clayey sediments underlie the gravelly or shaly deposits at depths of 20 to 40 inches. Manlius soil are in areas where shale bedrock is within 20 to 40 inches of the soil surface.

Many areas of this general soils unit are used in farming. The Blasdell soils are particularly suited to early season vegetable crops because they dry out readily in early spring and are easy to cultivate. Many areas provide good homesites, although in areas of Farnham soils temporary seasonal wetness can be a problem. This unit can be a source of gravel, although the gravel is often of poor quality because of the high content of brittle shale fragments.

REF. 11

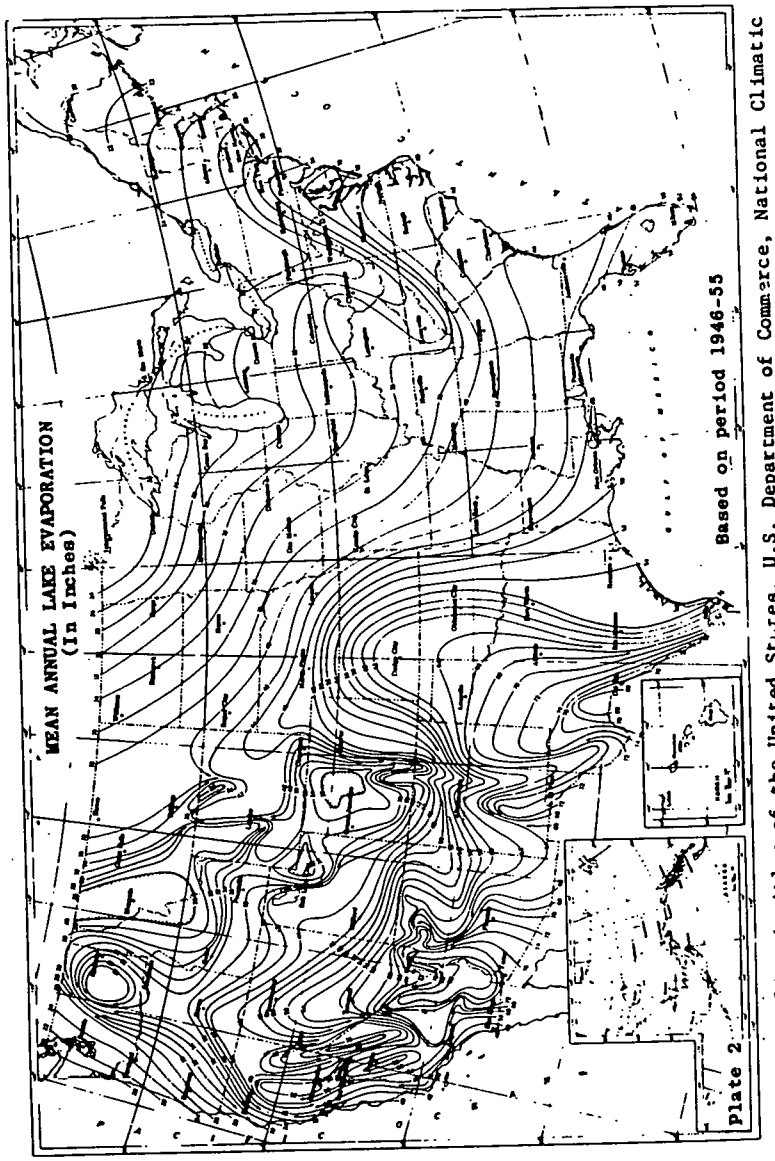
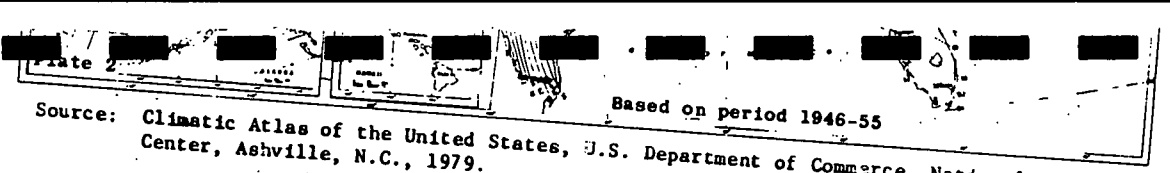


Figure 4

Mean Annual Lake Evaporation (In Inches)

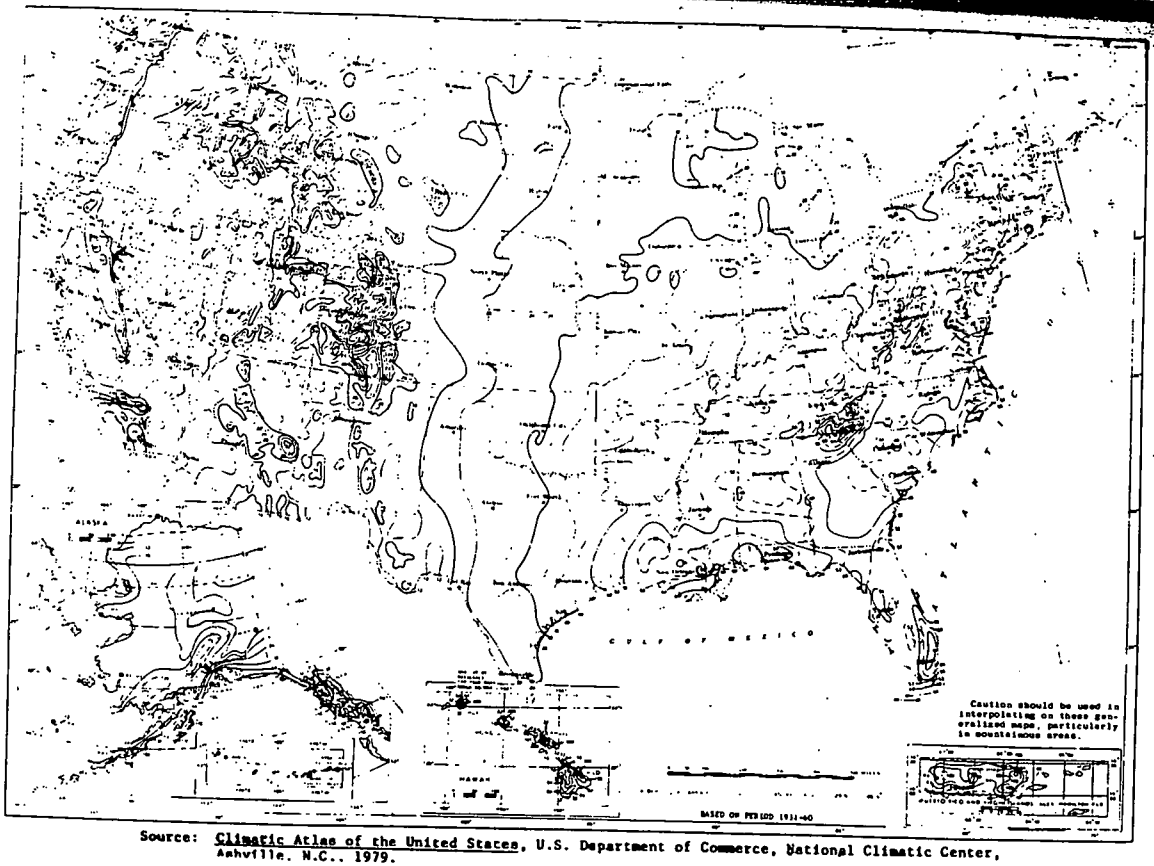
Source: Climatic Atlas of the United States, U.S. Department of Commerce, National Climatic Center, Ashville, N.C., 1979.



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

Figure 4

Mean Annual Lake Evaporation (In Inches)

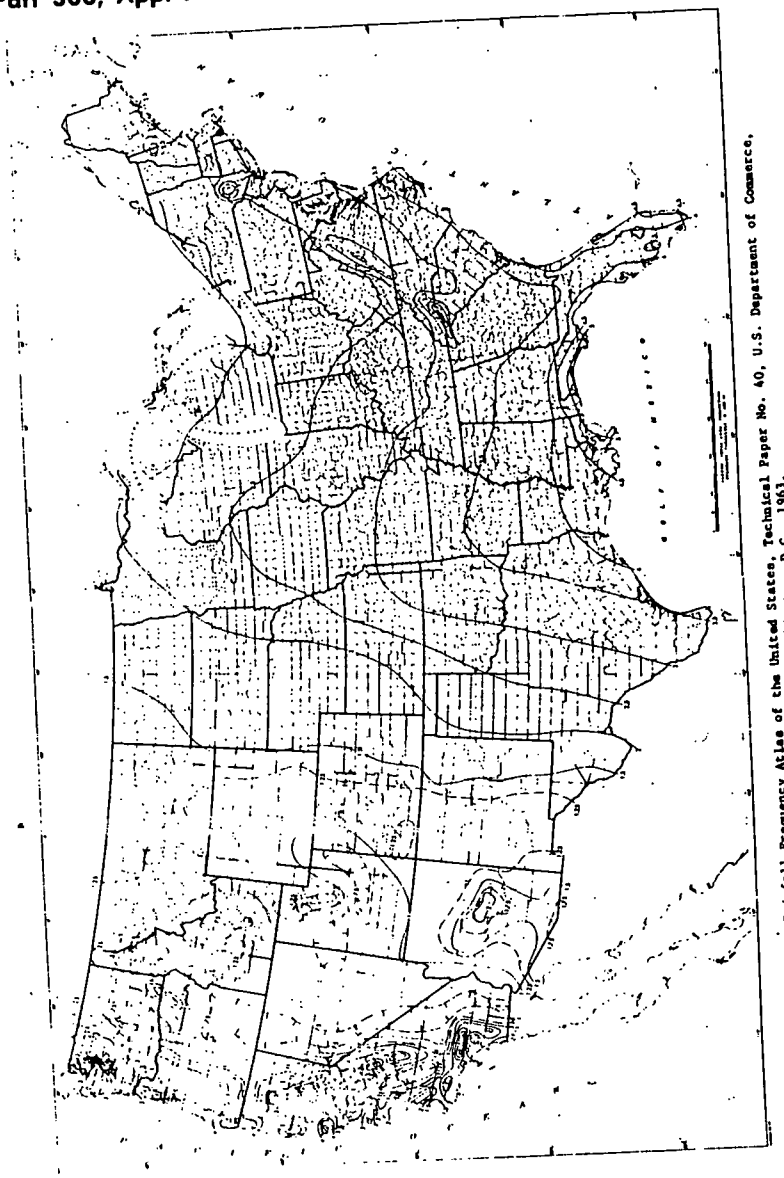


Source: Climatic Atlas of the United States, U.S. Department of Commerce, National Climatic Center, Ashville, N.C., 1979.

Figure 5

Normal Annual Total Precipitation (inches)

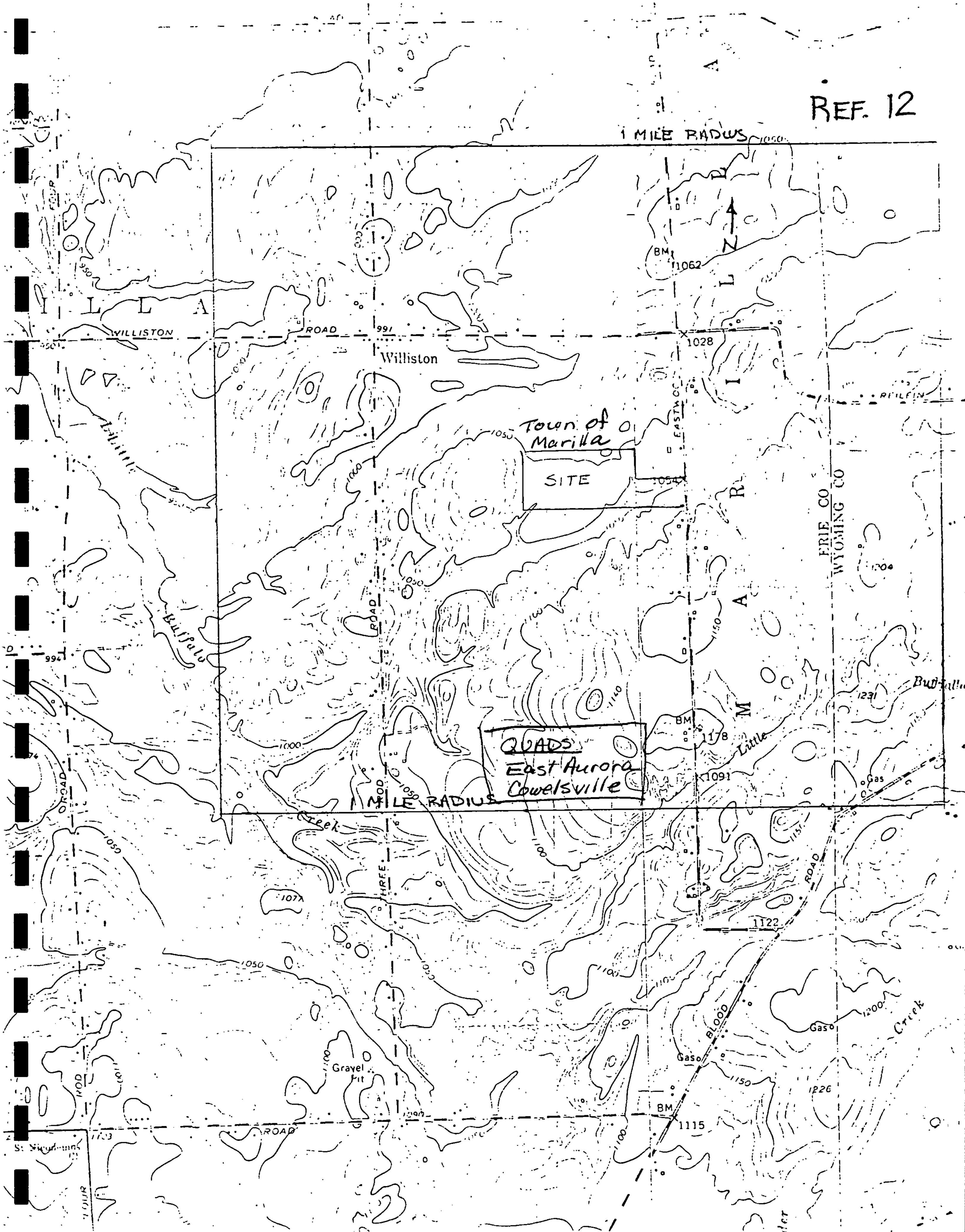
REF. 11



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

Figure 8

REF. 12



1 MILE RADIUS
1 MILE RADIUS
Town of Marilla
SITE
QUADS
East Aurora
Cowelsville
Williston
WILLISTON ROAD
ERIE CO
WYOMING CO
Buffalo Creek
Little Buffalo Creek
BLOOD ROAD
Gravel Pit
Gas
BM 1062
1028
1054
BM 1178
1091
1122
BM 1115
1231
1204
1077
1226
994
991
St. Nicodemus

REF. 13

INTERVIEW FORM

INTERVIEWEE/CODE Russell Webster / Paul Sharpe /

TITLE - POSITION Superintendent Councilman

ADDRESS Town Hall Address

CITY Marilla STATE NY ZIP

PHONE ( ) RESIDENCE PERIOD TO

LOCATION Eastwood Rd. INTERVIEWER Cathy J Bosma

DATE/TIME 12/10/85 / 8:10 am

SUBJECT: Town of Marilla Phase I Site Investigations

REMARKS: Household refuse & trash were disposed in landfill from 1965 to present. Site is only open on Saturdays. Waste disposal average 80 - 120yd^3 /Sat. No drums or chemicals are accepted. Waste motor oil is placed in tank. Oil is pumped out by waste oil companys. Tank is 550 gal. Engineers Report is filled out monthly. 5 monitoring wells exist on site (shown in drawing, 1982). There are no soil samples, leachate collection piping or gas collection systems. Wells are monitored every 3 months. Houses surrounding landfill have their own drilled drinking wells. Trash is not picked up... Residence drop it off.

I AGREE WITH THE ABOVE SUMMARY OF THE INTERVIEW:

SIGNATURE:

COMMENTS: Paul would like follow up report!

REF. 13

INTERVIEW FORM

INTERVIEWEE/CODE Russell Webster / Paul Sharpe / 1

TITLE - POSITION Superintendent Councilman

ADDRESS Town Hall Address

CITY Marilla STATE KY ZIP

PHONE ( ) RESIDENCE PERIOD TO

LOCATION Eastland Rd INTERVIEWER Cathy J. Bojna

DATE/TIME 12-10-85 / 8:10 am

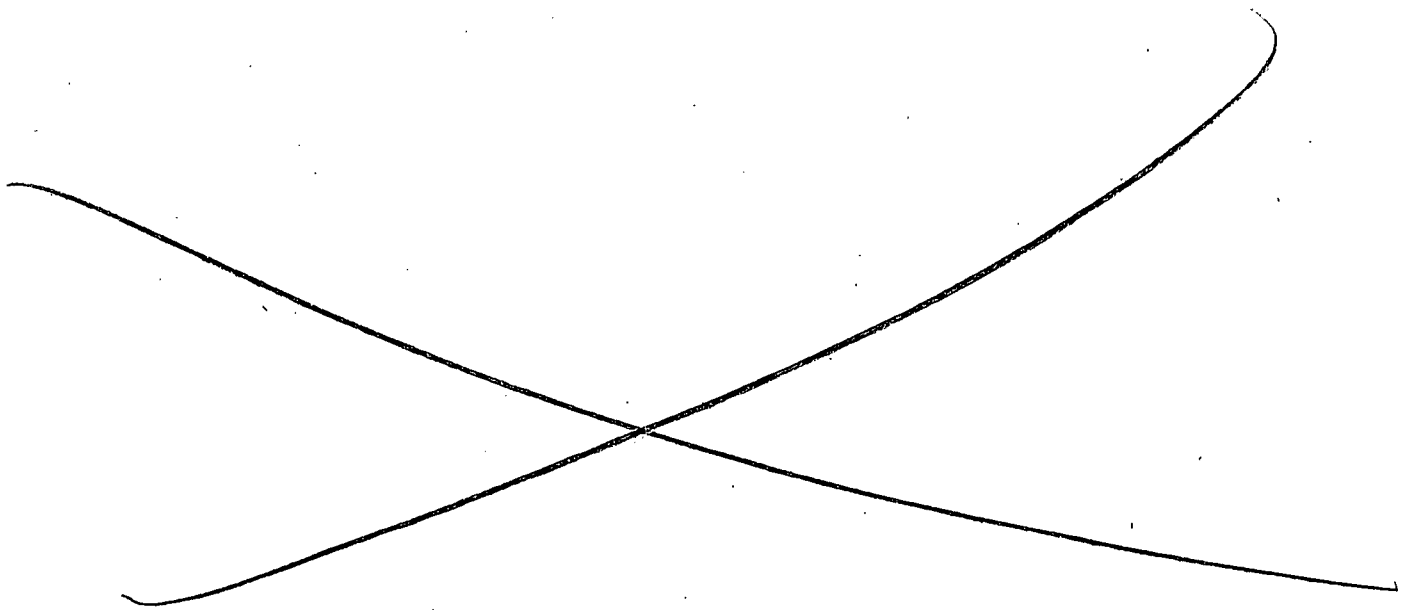
SUBJECT: Town of Marilla Phase I Site Investigations

REMARKS: Household refuse & trash were disposed in landfill from 1965 to present. Site is only open on Saturdays. Waste disposal average 8 - 12 yd³/sat. No drums or chemicals are accepted, waste oil (incr) is placed in tank. Oil is pumped out by Waste Oil Company's. Tank is 550 gal. Engineers Report is filled out monthly. 5 monitering wells exist on site (shown in drawings, 1982). There are no soil samples, leachate collection piping or gas collection systems. Wells are monitored every 3 months. Houses surrounding landfill have their own drilled drinking wells. Trash is not picked up but residence drop it off.

I AGREE WITH THE ABOVE SUMMARY OF THE INTERVIEW:

SIGNATURE: Paul A Sharpe Councilman
Russell Webster Supt

COMMENTS: Paul would like follow up report!



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

EPA

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

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site)	02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER
Town of Marilla Landfill	S. Eastwood Rd betw. 2432 & 2548 S. Eastwood

03 CITY	04 STATE	05 ZIP CODE	06 COUNTY	07 COUNTY CODE	08 CONG DIST
Town of Marilla	NY	14102	Erie	029	

09 COORDINATES	LATITUDE	LONGITUDE
	42 44 00.0	078 30 00.0

10 DIRECTIONS TO SITE (Starting from nearest public road)
From the Town of Marilla go south on Two Rod Rd, east on Williston Rd and then south on Eastwood Rd. Site is located between 2432 and 2548 S. Eastwood Rd.

III. RESPONSIBLE PARTIES

01 OWNER (If known)	02 STREET (Business, mailing, residential)
Town of Marilla (Russell Webster)	1740 Two Rod Rd

03 CITY	04 STATE	05 ZIP CODE	06 TELEPHONE NUMBER
same	NY	14102	(716) 652-7311

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

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

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

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

IV. CHARACTERIZATION OF POTENTIAL HAZARD

01 ON SITE INSPECTION
☑ YES DATE several / / (MONTH DAY YEAR)
☐ NO

BY (Check all that apply)
☐ A. EPA ☐ B. EPA CONTRACTOR ☑ C. STATE DEC ☑ D. OTHER CONTRACTOR
☑ E. ~~LOCAL~~ COUNTY HEALTH OFFICIAL ☐ F. OTHER: _____ (Specify)
CONTRACTOR NAME(S): Cathy J. Bosma (ES) & Larry Keefe (D&M) 12-7-85

02 SITE STATUS (Check one)	03 YEARS OF OPERATION
☑ A. ACTIVE ☐ B. INACTIVE ☐ C. UNKNOWN	1965 (BEGINNING YEAR) / Present (ENDING YEAR) ☐ UNKNOWN

04 DESCRIPTION OF SUBSTANCES POSSIBLY PRESENT, KNOWN, OR ALLEGED
Municipal wastes, no hazardous wastes have been known to be dumped at site. Contaminants detected are PCB's, phenols, and heavy metals. There has been an observed release of manganese to the groundwater.

05 DESCRIPTION OF POTENTIAL HAZARD TO ENVIRONMENT AND/OR POPULATION
Leachate has occured in the southeast and northeast corners of the site. The leachate would flow to a tributery of Little Buffalo Creek. The area is sparsely populated however those homes in the area have their own wells. Additionally, the site is not fenced.

V. PRIORITY ASSESSMENT

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

VI. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency/Organization)	03 TELEPHONE NUMBER
Cathy J. Bosma	Engineering-Science (ES)	(703) 591-7575

04 PERSON RESPONSIBLE FOR ASSESSMENT	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NUMBER	08 DATE
Cathy J. Bosma		ES	( ) same	12 / 27 / 85 (MONTH DAY YEAR)

EPA FORM 2070-12 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)

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

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

- TONS: ____
- CUBIC YARDS: 95,000
- NO. OF DRUMS: ____

03 WASTE CHARACTERISTICS (Check all that apply)

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

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE	Unknown		Municipal waste disposed of on site. No hazardous wastes are known to be disposed on site.
OLW	OILY WASTE			
SOL	SOLVENTS			
PSD	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS			
IOC	INORGANIC CHEMICALS			
ACD	ACIDS			
BAS	BASES			
MES	HEAVY METALS			

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

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
	Phenols		LF - GW sample	0.003-0.034	ppm
MES	Barium	—	LF - GW Sample	0.2-5.73	ppm
MES	Cadmium	7440-43-9	LF - GW Sample	0.002-0.058	ppm
MES	Iron	—	LF - GW Sample	0.08-176	ppm
MES	Lead	—	LF - GW Sample	0.002-0.23	ppm
MES	Manganese	—	LF - GW Sample	0.05-18.2	ppm
	*Only manganese was an observed release				

V. FEEDSTOCKS (See Appendix for CAS Numbers)

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

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

1. Engineers Report & Plan of Operation, Feb. 1982, Town of Marilla, NY, Tallamy, Van Kuren, Gertis, & Assoc.
2. Ecology & Environmental, Inc., groundwater analysis, 1983 and 1984

EPA

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

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

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 [X] A. GROUNDWATER CONTAMINATION | 02 [X] OBSERVED (DATE: 1985) | [ ] POTENTIAL | [X] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 5000-7500 | 04 NARRATIVE DESCRIPTION

POPULATION WATER SUPPLY IS BY PRIVATE GROUND WATER WELLS
MONITOR WELLS installed BY ECOLOGY AND ENVIRONMENT, INC

01 [X] B. SURFACE WATER CONTAMINATION | 02 [ ] OBSERVED (DATE: 1985) | [ ] POTENTIAL | [X] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: | 04 NARRATIVE DESCRIPTION

TRIBUTARY TO LITTLE BUFFALO CREEK TESTED BY ECOLOGY AND ENVIRONMENT, INC

01 [ ] C. CONTAMINATION OF AIR | 02 [ ] OBSERVED (DATE:) | [ ] POTENTIAL | [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: | 04 NARRATIVE DESCRIPTION

NO DATA AVAILABLE

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

COULD NO INCIDENT RECORDED

01 [X] E. DIRECT CONTACT | 02 [ ] OBSERVED (DATE:) | [X] POTENTIAL | [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: | 04 NARRATIVE DESCRIPTION

NO KNOWN INCIDENT - POTENTIAL EXIST SINCE LAND IS USED BY HUNTERS AND CROSS-COUNTRY SKIERS; however, HAZARDOUS WASTES are not known to be disposed ON-SITE

01 [X] F. CONTAMINATION OF SOIL | 02 [ ] OBSERVED (DATE:) | [X] POTENTIAL | [ ] ALLEGED
03 AREA POTENTIALLY AFFECTED: 10 (Acres) | 04 NARRATIVE DESCRIPTION

AREA OF LANDFILL ~10 ACRES - NO DATA AVAILABLE FOR OFF-SITE SOILS

01 [X] G. DRINKING WATER CONTAMINATION | 02 [ ] OBSERVED (DATE:) | [X] POTENTIAL | [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 5000-7500 | 04 NARRATIVE DESCRIPTION

RESIDENTS IN AREA ARE ON PRIVATE GROUNDWATER WELLS

01 [ ] H. WORKER EXPOSURE/INJURY | 02 [ ] OBSERVED (DATE:) | [ ] POTENTIAL | [ ] ALLEGED
03 WORKERS POTENTIALLY AFFECTED: | 04 NARRATIVE DESCRIPTION

NO KNOWN INCIDENT

01 [ ] I. POPULATION EXPOSURE/INJURY | 02 [ ] OBSERVED (DATE:) | [ ] POTENTIAL | [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: | 04 NARRATIVE DESCRIPTION

NO KNOWN INCIDENT

EPA

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

I. IDENTIFICATION

01 STATE: NH | 02 SITE NUMBER:

II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

01 ☒ J. DAMAGE TO FLORA — 02 ☐ OBSERVED (DATE: 12/85) — ☐ POTENTIAL — ☒ ALLEGED
04 NARRATIVE DESCRIPTION
SLIGHT DAMAGE TO VEGETATION ON NORTH DITCH OF LANDFILL

01 ☐ K. DAMAGE TO FAUNA — 02 ☐ OBSERVED (DATE: _____) — ☐ POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION (Include name(s) of species)
NONE NOTICED

01 ☐ L. CONTAMINATION OF FOOD CHAIN — 02 ☐ OBSERVED (DATE: _____) — ☐ POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION
NOT LIKELY

01 ☐ M. UNSTABLE CONTAINMENT OF WASTES (Spills/runoff/standing liquids/leaking drums) — 02 ☐ OBSERVED (DATE: _____) — ☐ POTENTIAL — ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ — 04 NARRATIVE DESCRIPTION
NOT APPLICABLE

01 ☐ N. DAMAGE TO OFFSITE PROPERTY — 02 ☐ OBSERVED (DATE: _____) — ☐ POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION
NONE NOTICED

01 ☐ O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs — 02 ☐ OBSERVED (DATE: _____) — ☐ POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION
NONE NOTICED

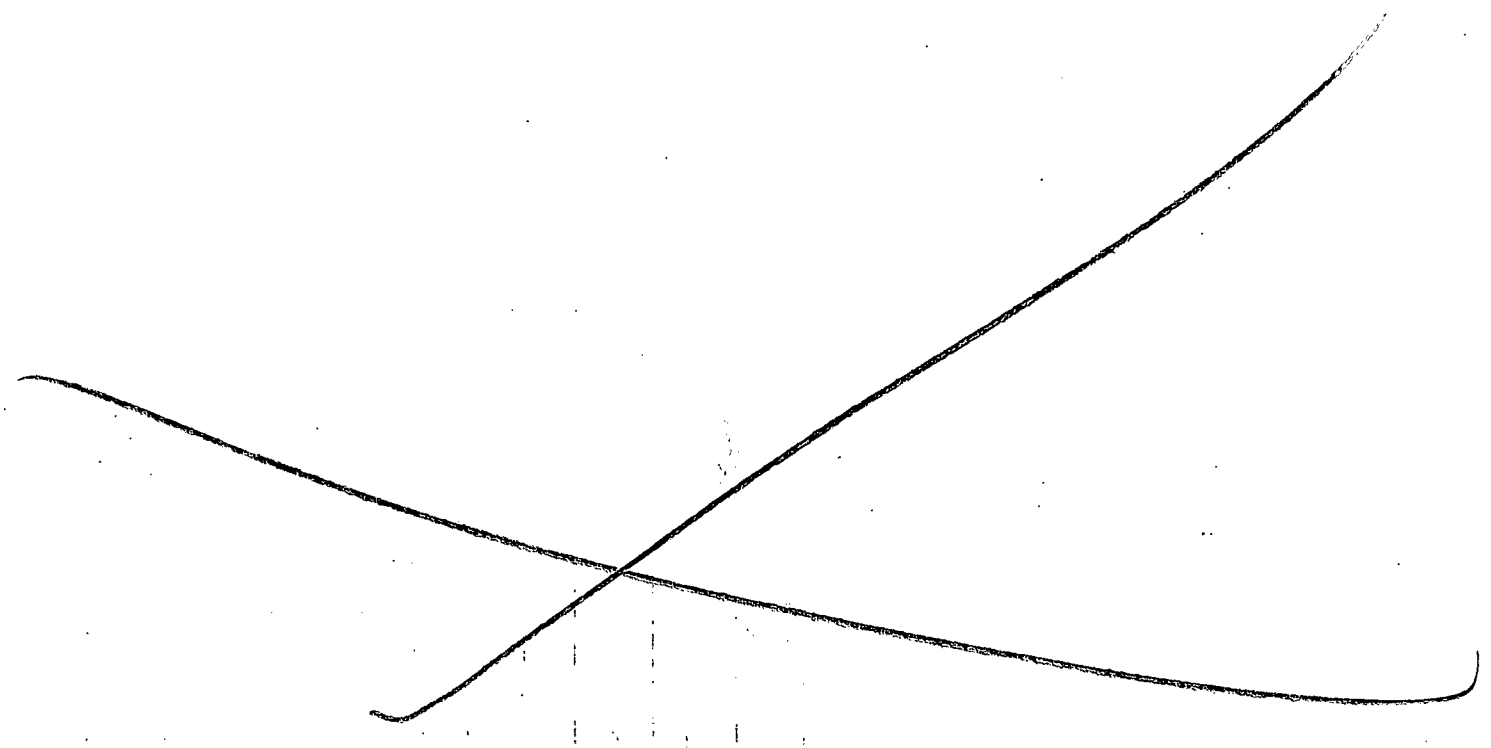
01 ☐ P. ILLEGAL/UNAUTHORIZED DUMPING — 02 ☐ OBSERVED (DATE: _____) — ☐ POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION
NONE NOTICED

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS
NONE

III. TOTAL POPULATION POTENTIALLY AFFECTED: _____

IV. COMMENTS

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)
DPM & ES SITE VISIT 1985
ENGINEERS REPORT AND PLAN OF OPERATION FOR TOWN OF MARLOW LANDFILL, 1982



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

EPA

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	—

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site)	02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER
Town of Marilla Landfill	S. Eastwood Rd betw. 2432 & 2548 S. Eastwood

03 CITY	04 STATE	05 ZIP CODE	06 COUNTY	07 COUNTY CODE	08 CONG DIST
Town of Marilla	NY	14102	Erie	029	

09 COORDINATES LATITUDE	LONGITUDE	10 TYPE OF OWNERSHIP (Check one)
42 44 00.0	078 30 00.0	☐ A. PRIVATE ☐ B. FEDERAL _____ ☐ C. STATE ☐ D. COUNTY ☑ E. MUNICIPAL ☐ F. OTHER _____ ☐ G. UNKNOWN

III. INSPECTION INFORMATION

01 DATE OF INSPECTION	02 SITE STATUS	03 YEARS OF OPERATION
12, 10, 85 (MONTH DAY YEAR)	☑ ACTIVE ☐ INACTIVE	1965 (BEGINNING YEAR) | Present (ENDING YEAR) ___ UNKNOWN

04 AGENCY PERFORMING INSPECTION (Check all that apply)

☐ A. EPA ☐ B. EPA CONTRACTOR _____ (Name of firm) ☐ C. MUNICIPAL ☐ D. MUNICIPAL CONTRACTOR _____ (Name of firm)
☐ E. STATE ☐ F. STATE CONTRACTOR _____ (Name of firm) ☑ G. OTHER Engineering-Science / Dames & Moore (Specify)

05 CHIEF INSPECTOR	06 TITLE	07 ORGANIZATION	08 TELEPHONE NO.
Cathy J. Bosma	Civil ~~Project~~ Engineer	Engineering-Science	(703) 591-7575

09 OTHER INSPECTORS	10 TITLE	11 ORGANIZATION	12 TELEPHONE NO.
Larry Keefe	Geologist	Dames & Moore	(315) 638-2572
			( )
			( )
			( )
			( )

13 SITE REPRESENTATIVES INTERVIEWED	14 TITLE	15 ADDRESS	16 TELEPHONE NO
Russell Webster	Superintendent	1740 Two Rod Road	(716) 652-7311
Paul Sharpe	Councilman		( )
Paul Offhaus	Landfill Operator		( )
H. George ~~Be~~ Beats	Landfill Operator		( )
			( )
			( )

17 ACCESS GAINED BY (Check one)	18 TIME OF INSPECTION	19 WEATHER CONDITIONS
☑ PERMISSION ☐ WARRANT	8:10 am	Cold, overcast, wet from snow melt

IV. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency/Organization)	03 TELEPHONE NO.
Cathy J. Bosma	Engineering-Science	(703) 591-7575

04 PERSON RESPONSIBLE FOR SITE INSPECTION FORM	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NO.	08 DATE
Cathy J. Bosma		ES	same	12, 26, 85 (MONTH DAY YEAR)

EPA FORM 2070-13 (7-81)

EPA

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

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	—

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)

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

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

- TONS: —
- CUBIC YARDS: 95,000
- NO. OF DRUMS: —

03 WASTE CHARACTERISTICS (Check all that apply)

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

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE	Unknown		Municipal wastes disposed of on-site. No hazardous wastes are known to be disposed of on-site
OLW	OILY WASTE			
SOL	SOLVENTS			
PSD	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS			
IOC	INORGANIC CHEMICALS			
ACD	ACIDS			
BAS	BASES			
MES	HEAVY METALS			

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

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
	Phenols	—	LF-GW sample	0.003-0.034	ppm
MES	Barium	—	" "	0.2 - 5.73	ppm
MES	Cadmium	7440-43-9	" "	0.002 - 0.058	ppm
MES	Iron	—	" "	0.08 - 176	ppm
MES	Lead	—	" "	0.002 - 0.23	ppm
MES	Manganese	—	" "	0.05 - 18.2	ppm
	*Only manganese was observed release.	an			

V. FEEDSTOCKS (See Appendix for CAS Numbers)

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

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

1. Engineers Report & Plan of Operation, Feb. 1982, Town of Marilla, NY; Tallamy, Van Kuren, Gertis & Assoc.
2. Ecology & Environmental Inc., groundwater analysis, 1983 and 1984

EPA

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

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 [X] A. GROUNDWATER CONTAMINATION
03 POPULATION POTENTIALLY AFFECTED: 5000 - 7500
02 [X] OBSERVED (DATE: 7/85) ☐ POTENTIAL [X] ALLEGED
04 NARRATIVE DESCRIPTION

GROUNDWATER SAMPLES FROM MONITORING WELLS - ANALYZED quarterly BY ECOLOGY AND ENVIRONMENT, INC.

01 [X] B. SURFACE WATER CONTAMINATION
03 POPULATION POTENTIALLY AFFECTED: 0
02 ☐ OBSERVED (DATE: 7/85) ☐ POTENTIAL [X] ALLEGED
04 NARRATIVE DESCRIPTION

SURFACE WATER FOR RECREATIONAL USE ONLY

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

NO DATA AVAILABLE.

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

NO INCIDENT

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

NO KNOWN INCIDENT - POTENTIAL EXISTS SINCE LAND IS USED BY HUNTERS AND SKIERS. However, NO HAZARDOUS WASTES are known to exist ON-SITE

01 [X] F. CONTAMINATION OF SOIL
03 AREA POTENTIALLY AFFECTED: 10 (Acres)
02 ☐ OBSERVED (DATE: _____) [X] POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

AREA OF LANDFILL ~10 ACRES - NO DATA AVAILABLE FOR OFF-SITE SOILS

01 [X] G. DRINKING WATER CONTAMINATION
03 POPULATION POTENTIALLY AFFECTED: 5000-7500
02 ☐ OBSERVED (DATE: _____) [X] POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

RESIDENTS IN AREA ARE ON WELL WATER (PRIVATE)

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

NO KNOWN INCIDENT

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

NO KNOWN INCIDENT

EPA

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

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

HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

01 ☒ J. DAMAGE TO FLORA — 02 ☒ OBSERVED (DATE: 12/85) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

SLIGHT DAMAGE TO VEGETATION ON NORTH DITCH OF LAND FILL

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

NONE NOTICED - NO DATA AVAILABLE

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

NOT LIKELY

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

NOT APPLICABLE

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

NONE NOTICED

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

NONE NOTICED

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

NONE NOTICED

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

NONE

III. TOTAL POPULATION POTENTIALLY AFFECTED: _____

IV. COMMENTS

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

ES & D&M SITE VISIT 12/85
ECOLOGY AND ENVIRONMENT, INC ANALYTICAL RESULTS

EPA

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

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	

II. PERMIT INFORMATION

01 TYPE OF PERMIT ISSUED (Check all that apply)	02 PERMIT NUMBER	03 DATE ISSUED	04 EXPIRATION DATE	05 COMMENTS
☐ A. NPDES				
☐ B. UIC				
☐ C. AIR				
☐ D. RCRA				
☐ E. RCRA INTERIM STATUS				
☐ F. SPCC PLAN				
☑ G. STATE (Specify) DEC	15522	3-6-84	11-31-86	
☐ 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	550 gal (For Oil)	removed by waste contractor
☐ E. TANK, BELOW GROUND		
☑ F. LANDFILL	95,000	CY
☐ G. LANDFARM		
☐ H. OPEN DUMP		
☐ I. OTHER (Specify)		

04 TREATMENT (Check all that apply)

- ☐ A. INCENERATION
- ☐ B. UNDERGROUND INJECTION
- ☐ C. CHEMICAL/PHYSICAL
- ☐ D. BIOLOGICAL
- ☐ E. WASTE OIL PROCESSING
- ☐ F. SOLVENT RECOVERY
- ☐ G. OTHER RECYCLING/RECOVERY
- ☑ H. OTHER (Specify) Oil is recovered by waste contractor

05 OTHER

☑ A. BUILDINGS ON SITE
Storage Shed

06 AREA OF SITE

10 (Acres)

07 COMMENTS

The landfill began in 1965 and is currently used for municipal refuse. The landfill is open every Saturday and accepts only municipal wastes (no drums). Leachate was not observed during the site visit but has been detected ~~in~~ along the north side (DEC site visit - 8-27-85). Groundwater is continuously monitored in 5 wells.

IV. CONTAINMENT

01 CONTAINMENT OF WASTES (Check one)

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

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

The landfill has no liner material except for a clay cover. The temporary oil storage drum is not diked. The site is not enclosed by fence, however, a gate and warning sign are provided at the entrance.

V. ACCESSIBILITY

01 WASTE EASILY ACCESSIBLE: ☑ YES ☐ NO

02 COMMENTS No fence, but gate and waring sign is provided at entrance. Municipal waste is covered with 2 feet of clay.

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

Site Inspection by ES & D&M 12-10-85.
Letter dated Sept. 4, 1985 to Honorable John Foss from Kevin Hintz (DEC).

EPA

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

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

II. DRINKING WATER SUPPLY

01 TYPE OF DRINKING SUPPLY (Check as applicable)

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

02 STATUS

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

03 DISTANCE TO SITE
A. _____ (mi)
B. 0.25 (mi)

III. GROUNDWATER

01 GROUNDWATER USE IN VICINITY (Check one)

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

02 POPULATION SERVED BY GROUND WATER 5,000 - 7500

03 DISTANCE TO NEAREST DRINKING WATER WELL 0.25 (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
720 (ft)	NW	20 (ft)	300-400 (gpd)	☐ YES ☐ NO

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

PRIVATE WELLS - DEPTH VARIES FROM 430' TO 775'
AQUIFER IS SHALE BEDROCK
TOWN OF MARILLA RESIDENTS ON PRIVATE WELLS

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

IV. SURFACE WATER

01 SURFACE WATER USE (Check one)

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

02 AFFECTED/POTENTIALLY AFFECTED BODIES OF WATER

NAME:	AFFECTED	DISTANCE TO SITE
LITTLE BUFFALO CREEK	☐	0.5 (mi)
	☐	(mi)
	☐	(mi)

V. DEMOGRAPHIC AND PROPERTY INFORMATION

01 TOTAL POPULATION WITHIN

ONE (1) MILE OF SITE	TWO (2) MILES OF SITE	THREE (3) MILES OF SITE
A. 382 NO. OF PERSONS	B. _____ NO. OF PERSONS	C. _____ NO. OF PERSONS

02 DISTANCE TO NEAREST POPULATION
_____ (mi)

03 NUMBER OF BUILDINGS WITHIN TWO (2) MILES OF SITE
_____

04 DISTANCE TO NEAREST OFF-SITE BUILDING
0.25 (mi)

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

RURAL POPULATION PRIMARILY AGRICULTURE / RESIDENTIAL
VERY LOW DENSITY - SCATTERED HOUSE.

EPA

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

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	

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	
6-18 (ft)	1(2') - 10 (ft)	6.0	

06 NET PRECIPITATION	07 ONE YEAR 24 HOUR RAINFALL	08 SLOPE: SITE SLOPE	DIRECTION OF SITE SLOPE	TERRAIN AVERAGE SLOPE
5 (in)	2.3 (in)	0-3 %	N-NW	0-3 %

09 FLOOD POTENTIAL

SITE IS IN 500 YEAR FLOODPLAIN

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

11 DISTANCE TO WETLANDS (5 acre minimum)

ESTUARINE	OTHER
A. _____ (mi)	B. 1.0 (mi)

12 DISTANCE TO CRITICAL HABITAT (of endangered species)

_____ (mi)

ENDANGERED SPECIES: _____

13 LAND USE IN VICINITY

DISTANCE TO:

COMMERCIAL/INDUSTRIAL	RESIDENTIAL AREAS; NATIONAL/STATE PARKS, FORESTS, OR WILDLIFE RESERVES	PRIME AG LAND	AGRICULTURAL LANDS AG LAND
A. _____ (mi)	B. 1/4 (mi)	C. _____ (mi)	D. 1/4 (mi)

14 DESCRIPTION OF SITE IN RELATION TO SURROUNDING TOPOGRAPHY

SITE IS LOCATED IN A RURAL AREA IN THE TOWN OF MARILLA. LAND IS RELATIVELY FLAT WITH SOME SMALL HILLS. SITE IS BORDERED BY FARM LANDS, UNDEVELOPED WOODS, AND THE TOWN PARK.

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

SITE VISIT (1985)
USGS TOPOGRAPHIC MAP, EAST AURORA & CONKLESVILLE QUADRANGLE
SOILS MAP OF ERIE COUNTY, USDA, 1979
BORING LOGS, EARTH DIMENSIONS
US CLIMATIC ATLAS, USDOC
NYSDEC REGION 9 FILES (FISH & WILDLIFE DIV, REGULATORY AFFAIRS)

EPA

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

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	

II. SAMPLES TAKEN

SAMPLE TYPE	01 NUMBER OF SAMPLES TAKEN	02 SAMPLES SENT TO	03 ESTIMATED DATE RESULTS AVAILABLE
GROUNDWATER	quarterly	Ecology & Environmental, Inc. &	1981-1985
SURFACE WATER	quarterly	Tallamy, Van Kuren & Assoc.	1981-1985
WASTE		None	
AIR		HNu meter: ES and D&M	
RUNOFF		None	
SPILL		None	
SOIL		None	
VEGETATION		None	
OTHER		None	

III. FIELD MEASUREMENTS TAKEN

01 TYPE	02 COMMENTS
HNu - Air	Air readings were taken in April 1986, no observed releases were detected. Readings were taken upwind and downwind of the site.

IV. PHOTOGRAPHS AND MAPS

01 TYPE ☒ GROUND ☐ AERIAL

02 IN CUSTODY OF Engineering-Science (Name of organization or individual)

03 MAPS ☒ YES ☐ NO

04 LOCATION OF MAPS Site map of site was updated during site investigation.

V. OTHER FIELD DATA COLLECTED (Provide narrative description)

Sanitary Landfill drawings (Feb. 1982) - Tallamy, Van Kuren, Gertis, & Assoc.
Requested in field and received later, an Engineers Report & Plan of Operation (Feb. 82) containing groundwater monitoring data.
No leachate outbreaks or drums were visable during site investigation, but leachate outbreaks are known to have occured some debris and trash not covered, this was piled (~2' high) along north side of landfill.

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

Site inspection by ES & D&M on 12-10-85.
Ecology & Environmental, Inc.
Tallamy, Van Kuren and Assoc. - Engineers Report, 1982

EPA FORM 2070-13 (7-81)

EPA

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

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	

II. CURRENT OWNER(S) | **PARENT COMPANY** *(If applicable)*

01 NAME	02 D+B NUMBER	08 NAME	09 D+B NUMBER
Town of Marilla			

03 STREET ADDRESS *(P.O. Box, RFD #, etc.)*	04 SIC CODE	10 STREET ADDRESS *(P.O. Box, RFD #, etc.)*	11 SIC CODE
1740 Two Road			

05 CITY	06 STATE	07 ZIP CODE	12 CITY	13 STATE	14 ZIP CODE
Marilla	NY	14102			

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

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

05 CITY	06 STATE	07 ZIP CODE	12 CITY	13 STATE	14 ZIP CODE

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

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

05 CITY	06 STATE	07 ZIP CODE	12 CITY	13 STATE	14 ZIP CODE

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

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

05 CITY	06 STATE	07 ZIP CODE	12 CITY	13 STATE	14 ZIP CODE

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

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
Oscar Tankusky (And Hubert)			

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

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)*

Interview with Paul Sharpe and Russell Webster during site visit 12-10-85

EPA

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

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	

II. CURRENT OPERATOR *(Provide if different from owner)*

01 NAME	02 D+B NUMBER
Town of Marilla	

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
1740 Two Rod Rd	

05 CITY	06 STATE	07 ZIP CODE
Marilla	NY	14102

08 YEARS OF OPERATION	09 NAME OF OWNER
1965-Present	

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
Oscar Tankusley	

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

05 CITY	06 STATE	07 ZIP CODE
	NY	

08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD
4-5 yrs ~~1965-1970~~	Oscar Tankusley

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

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

10 NAME	11 D+B NUMBER

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

14 CITY	15 STATE	16 ZIP CODE

01 NAME	02 D+B NUMBER

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

05 CITY	06 STATE	07 ZIP CODE

08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD

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)*

Interview with Paul Sharpe & Russell Webster during site visit. 12-10-85.

EPA

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

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	

II. ON-SITE GENERATOR

01 NAME	02 D+B NUMBER
None	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE

III. OFF-SITE GENERATOR(S)

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
Residents of Marilla			
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
Marilla	NY		
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
Residents of Marilla			
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
Marilla	NY		
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)

Interview with Paul Sharpe and Russell Webster during site visit. 12-10-85

EPA

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

II. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	

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 _____ — 03 AGENCY _____
04 DESCRIPTION
NONE

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
LANDFILL OPERATION - CURRENT

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: NY | 02 SITE NUMBER:

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 CURRENT OPERATIONS INCLUDE DAILY CAPPING/COVERING ~~BULK~~ OF REFUSE

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

01 ☐ U. GROUT CURTAIN CONSTRUCTED — 02 DATE ~~3/82~~ — 03 AGENCY _____
04 DESCRIPTION
NONE

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

01 ☒ W. GAS CONTROL — 02 DATE 3/82 — 03 AGENCY NYSDEC - REG 9
04 DESCRIPTION GAS VENTING STRUCTURES
~~EDGE~~

01 ☒ X. FIRE CONTROL — 02 DATE 3/82 — 03 AGENCY NYS DEC - REG 9
04 DESCRIPTION
CONTINGENCY PLANS

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 3/82 — 03 AGENCY NYS DEC - REG 9
04 DESCRIPTION
OPERATING PROCEDURES - LIMITED ACCESS/USE OF LANDFILL

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

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

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

ENGINEER'S REPORT AND PLAN OF OPERATION FOR TOWN OF MARILLA LANDFILL
COMMENTS FROM NYS DEC REGION 9

EPA

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

I. IDENTIFICATION	
01 STATE: NY	02 SITE NUMBER: —

II. ENFORCEMENT INFORMATION

01 PAST REGULATORY/ENFORCEMENT ACTION ☑ YES ☐ NO

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

In order to operate the landfill, the Town of Marilla must apply for a state permit as designated by the Department of Environmental Conservation (DEC). The DEC prepares facility inspection reports to monitor the landfill. The renewal of the DEC permit is based on the facility inspection reports and compliance with any inadequate areas noted in this report.

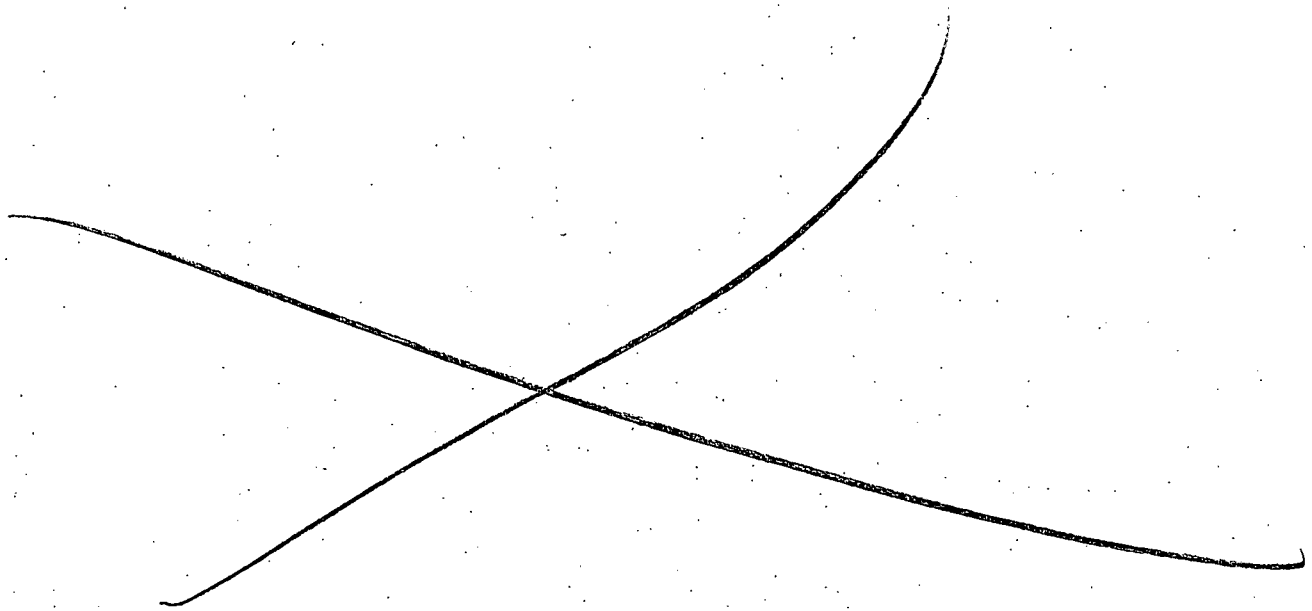
Past Facility Inspection Reports have indicated leachate problems in the southeast and northeast corners of the site, with the heavier flow coming from the northeast corner; poor covering of the landfill in the northwest corner (visible refuse in some locations); inadequate grading to drain the land; poor vegetative cover; and windblown litter. The compliance reports inspect these areas:

Leachate
Burning
Cover
Grading
Separation Distances
Nuisance Conditions
Operation Control
Safety and Health
Access Control
Other: leachate, inadequate soil cover

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

Facility Inspection Reports - DEC

EPA FORM 2070-13 (7-81)



SECTION VI

ASSESSMENT OF DATA ADEQUACY AND RECOMMENDATIONS

ASSESSMENT OF DATA ADEQUACY

A summary assessment of the adequacy of existing data for completion of the HRS score is presented in Table VI-1. The surface water data were rated as inadequate for an observed release because there were inadequate data to make an upgradient/downgradient comparison. The downgradient samples were taken from the north, east, and south drainage ditches which surround the landfill. Based on this information it is recommended that an upgradient surface water sample be collected, and analyzed as part of the Phase II site investigation. Samples should be analyzed for organic and inorganic constituents.

Adequate data are available to score an observed release for the groundwater route as many metal constituents were identified which exceeded NYS Standard and were present above background concentrations. However, samples were not analyzed for organic compounds; therefore, it is recommended that samples be collected, as part of the Phase II site investigation, from all groundwater wells. These samples should be analyzed for organic constituents.

PHASE II WORK PLAN

Objectives

The objectives of the Phase II activities are:

- To collect additional field data necessary to identify the occurrence and extent of contamination and to determine if any imminent health hazard exists.

- To perform a conceptual evaluation of remedial alternatives and estimate budgetary costs for the most likely alternative.

- To prepare a site investigation report including final HRS score.

The additional field data required to complete this investigation are described as follows:

Groundwater - A groundwater sample will be taken from each of the five existing wells. The groundwater samples will be analyzed for HSL organics and metals.

Surface Water - One surface water sample will be taken upgradient of the site and one surface water sample will be taken downgradient of the site. The upgradient sample will be taken from the south side of the Access Road before the road reaches the inactive landfill area. The downgradient sample will be taken from the drainage ditch immediately after the two downgradient drainage ditches converge. The surface water samples will be analyzed for HSL organics and metals.

Air - An air monitoring survey with an HNu meter is recommended to test the air quality above the site.

TASK DESCRIPTION

The proposed Phase II tasks are described in Table VI-2.

COST ESTIMATE

The estimated manhours required for the Phase II project are presented in Table VI-3 and the estimated project costs are presented by task in Table VI-4.

QUALITY ASSURANCE PLAN

The Quality Assurance Plan will be submitted as a separate document.

TABLE VI-1

ASSESSMENT OF DATA ADEQUACY

HRS Data Requirement	Comments on Data
Observed Release	
Groundwater	Adequate to score an observed release
Surface Water	Inadequate to score an observed release
Air	Adequate for HRS score
Route Characteristics	
Groundwater	Adequate for HRS score
Surface Water	Adequate for HRS score
Air	Adequate for HRS score
Containment	Adequate for HRS score
Waste Characteristics	Adequate for HRS score
Targets	Adequate for HRS score
Observed Incident	Adequate for HRS score
Accessibility	Adequate for HRS score

TABLE VI-2
PHASE II WORK PLAN - TASK DESCRIPTION
TOWN OF MARILLA LANDFILL SANITATION

Task		Description of Task
II-A	Update Work Plan	Review the information in the Phase I report, conduct a site visit, and revise the Phase II work plan.
II-B	Conduct Geophysical Studies	No further studies necessary.
II-C	Conduct Boring/Install Monitoring Wells	No well installation required.
II-D	Construct Test Pits/Auger Holes	No further construction of test pits/auger holes necessary.
II-E	Perform Sampling & Analysis	
	Soil samples from borings	No soil sampling required.
	Soil samples from surface soils	No further studies necessary.
	Soil samples from auger holes/test pits	No further studies necessary.
	Sediment samples from surface water	No further studies necessary.
	Groundwater samples	Five groundwater samples are to be collected and analyzed for HSL organics and HSL metals.
	Surface water samples	Two surface water samples are to be collected and analyzed for HSL organics and HSL metals.
	Air samples	Using the HNU, determine the presence of organics.
	Waste samples	No further studies necessary.

TABLE VI-2 (Continued)
PHASE II WORK PLAN - TASK DESCRIPTION

	Task	Description of Task
II-F	Calculate Final HRS	Based on the field data collected in Tasks II-B - II-E, complete the HRS form.
II-G	Conduct Site Assessment	Prepare final report containing Phase I report, additional field data, final HRS and HRS documentation records, and site assessments. The site assessment will consist of a conceptual evaluation of alternatives and a preliminary cost estimate of the most probable alternative.
II-H	Project Management	Project coordination, administration and reporting.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
PHASE II INVESTIGATION
COST ESTIMATE

SITE ID #: 915093
SITE NAME: TOWN OF MARILLA LANDFILL
CONSULTANT: ENGINEERING SCIENCE

TABLE VI-3

TASK DESCRIPTION	ESTIMATED HOURS OF DIRECT TECHNICAL LABOR (DTL) L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	TOTAL HOURS	TOTAL COST
II-A UPDATE WORKPLAN	4	24	4	12	4	60	32	40	32	52	264	3696.80
II-B CONDUCT GEOPHYSICAL STUDIES	0	0				0		0	0	0	0	0.00
II-C CONDUCT BORING/INSTALL MONITORING WELLS		0				0		0	0	0	0	0.00
II-D CONSTRUCT TEST PITS/ AUGER HOLES											0	0.00
II-E SAMPLING AND ANALYSIS											0	0.00
Soil samples from borings						0		0			0	0.00
Soil samples from surface soils											0	0.00
Soil samples from auger holes/test pits											0	0.00
Sediment samples from surface water		0				0		0			0	0.00
Groundwater samples		2				40		40			82	1134.40
Surface water samples		2				8		8			18	267.20
Air samples											0	0.00
Waste samples											0	0.00
II-F CALCULATE FINAL HRS SCORE	8	16	4	2	8	48	40	16	8	8	158	2528.20
II-G CONDUCT SITE ASSESSMENT	2	40	4		8	72	40	8	60	100	334	4450.00
II-H PROJECT MANAGEMENT	4	30	4		16					48	102	1662.40
TOTAL HOURS	18	114	16	14	36	228	112	112	100	208		
HOURLY RATE $	33.40	25.20	22.00	19.70	17.00	15.10	13.30	12.00	9.60	8.60		
DIRECT LABOR COSTS $	601.20	2872.80	352.00	275.80	612.00	3442.80	1489.60	1344.00	960.00	1788.80		

TOTAL DTL COSTS	13739.00
INDIRECT LABOR COSTS	16212.02
TOTAL LABOR COSTS	29951.02
PROFIT (15%)	4492.65
TOTAL PRICE	34443.67

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
PHASE II INVESTIGATION
COST ESTIMATE

SITE ID #: 915093
SITE NAME: TOWN OF MARILLA LANDFILL
CONSULTANT: ENGINEERING SCIENCE

TABLE VI-4

TASK DESCRIPTION	DIRECT LABOR HOURS	DIRECT LABOR COST($)	SUBCONTR. COSTS $	SUPP.& EQUIP. $	MISC. $	TRAVEL & PER DIEM $	TOTALS $
II-A UPDATE WORKPLAN	268	3697		360	200	350	4607.00
II-B CONDUCT GEOPHYSICAL STUDIES	0	0		0	0	0	0.00
II-C CONDUCT BORING/INSTALL MONITORING WELLS	0	0	0	0	0	0	0.00
II-D CONSTRUCT TEST PITS/ AUGER HOLES							0.00
II-E SAMPLING AND ANALYSIS			0	0	0	0	0.00
Soil samples from borings	0	0					0.00
Soil samples from surface soils							0.00
Soil samples from test pits/ auger holes							0.00
Sediment samples from surface water	0	0					0.00
Groundwater samples	82	1134					1134.00
Surface water samples	18	267					267.00
Air samples							0.00
Waste samples							0.00
II-F CALCULATE FINAL HRS SCORE	158	2528		50	75		2653.00
II-G CONDUCT SITE ASSESSMENT	334	4450		500	300	165	5415.00
II-H PROJECT MANAGEMENT	102	1662		200	150		2012.00
SUBTOTAL	962	13738.00	0.00	1110.00	725.00	515.00	
INDIRECT LABOR (118% DTL)		16210.84					
PROFIT (%)		15	5	5	5	0	
PROFIT ($)		4492.33	0.00	55.50	36.25		
TOTAL COSTS ($)		34441.17	0.00	1165.50	761.25	515.00	36882.92

APPENDIX A

REFERENCES

Sources Contacted

Documentation

SOURCES CONTACTED SUMMARY SHEET
TOWN OF MARILLA LANDFILL

Person Contacted/ Location	Telephone #	Date	Information Collected
Glenn Hardcastle USEPA Headquarters, Superfund Office 401 M Street, SW Washington, DC	202-382-5617	12/19/85	Reviewed list of sites to determine if additional information was available.
John Anderson USEPA-Region II EPA Information 345 3rd St., Suite 530 Niagara Falls, NY 14305	716-285-8842	1/6/86	General information from site files.
Charley Hudson NYSDOH Empire State Plaza Corning Tower Albany, NY 12237	518-474-2121	12/30/85	Draft Reports.
Kevin Walters NYSDEC-Div. of Environmental Enforcement 50 Wolf Road Albany, NY 12233	518-457-4346	11/20/85	Reviewed list of sites to determine legal actions taken.
Walt Demick NYSDEC-Div. of Solid & Haz. Waste 50 Wolf Road Albany, NY 12233	518-457-0639	11/19/85	General information from site files.
Bob Hannaford NYSDEC-Div. of Water SPDES Files 50 Wolf Road Albany, NY 12233	518-457-6716	11/20/85	Reviewed SPDES files for permit numbers and conditions.
Val Washington NYS - Dept. of Law, Attorney General's Office Empire State Plaza Albany, NY 12233	518-473-3105	12/16/85	Reviewed list of sites to determine if legal action has occurred in the past, is in progress, and/or is scheduled in the near future.

SOURCES CONTACTED SUMMARY SHEET
ED BALL SANITATION

Person Contacted/ Location	Telephone #	Date	Information Collected
Jeff T. Lacey Peter Burke Glenn Bailey NYS - Div. of Environmental Enforcement 600 Delaware Ave. Buffalo, NY 14202	716-847-4582	12/27/85 1/7/86	Reviewed list of sites to determine legal actions taken.
Peter Buechi Ahmad Tayyebi Bob Mitrey Larry Clare NYSDEC - Region 9 Div. of Solid & Haz. Waste 600 Delaware Ave. Buffalo, NY 14202	716-847-4585	11/14/85	Collected information from site files.
Lou Violanti NYS - Regional Dept. of Health 585 Delaware Ave. Buffalo, NY 14202	716-847-4500	11/15/85	Sent site information to Peter Buechi.
Henry Sondonato Robert Armbrust Dick Dybowski Larry Stiller Jackie DiPronio NYSDEC - Region 9 Division of Air 600 Delaware Ave. Buffalo, NY 14202	716-847-4565	11/15/85	Air emissions permits for sites.
Mike Wilkenson Jim Sneider NYSDEC - Region 9 Div. of Fish & Wildlife 600 Delaware Ave. Buffalo, NY 14202	716-847-4600	11/14/85	Endangered species information.
Mike McMurray NYSDEC - Region 9 600 Delaware Ave. Buffalo, NY 14202	716-847-4551	1/8/86	Wetlands and flood zone information.

SOURCES CONTACTED SUMMARY SHEET
ED BALL SANITATION

Person Contacted/ Location	Telephone #	Date	Information Collected
Marion Pfohl Spencer Schofield Erie and Niagara County Regional Planning Board 3103 Sheraton Dr. Amherst, NY 14226	716-837-2035	12/20/85	Census data, general site information.
Tony Voell Don Campbell Erie County - Division of Environmental Control 95 Franklin St. Buffalo, NY	716-846-6271	11/14/85	Collected information from Erie County site files.
Ron Koczaja Erie County Health Department 95 Franklin St. Buffalo, NY	716-846-7677	11/25/85	General information.
Russell Webster Paul Sharpe Town of Marilla 11740 Two Rod Rd. Marilla, NY 14101	716-652-7311	12/10/85	Site interview - ownership, disposal practices, etc.

GENERAL REFERENCES*

14. LaSala, Groundwater Resources of the Erie-Niagara Basin, New York, 1968

15. NYS Department of Environmental Consideration, Ambient Water Quality Standards and Guidance Values, July 24, 1985

16. NYSDEC Site Inspection Reports, 1980-85 (Samples)

17. NYS Museum and Science Service Bedrock Map and Quaternary Map, 1970

*Does not include "HRS References" which are provided directly after the HRS Documentation Records in Section V.

REF. 14

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

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

by

A. M. La Sala, Jr.

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

in cooperation with

THE NEW YORK STATE CONSERVATION DEPARTMENT
DIVISION OF WATER RESOURCES

STATE OF NEW YORK
CONSERVATION DEPARTMENT
WATER RESOURCES COMMISSION

Basin Planning Report ENB-3

1968

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

Well number	County	Owner	Year completed	Type of well	Depth of well (feet)	Diameter (inches)	Depth to bedrock (feet)	Water-bearing material	Altitude above sea level (feet)	Water level: Below land surface (feet)	Water level: Date	Method of lift	Estimated pumpage or flow (gallons per day)	Use	Remarks
246-836-4	Erie	Village of East Aurora	1961	Drl	r122	12	--	Sand and gravel	895	r7	5-16-61	Tur	250,000	PS	Iron; screen, 12-inch diameter, 6-gage slot, 107-122 ft; gravel packed; pumping rate 490 gpm.
246-843-1	do.	L. Godfrey	1950	Drl	45.3	6	a40	do.	830	17.9	7-26-63	Jet	100	D	H_2S; gas; clay overlies water-bearing gravel (r).
246-848-1	do.	C. Stocking	1953	Drl	27.8	6	a7	Shale	715	5.3	7-27-63	Jet	--	Ir	H_2S; used for lawn sprinkling only.
246-849-1	do.	G. Bapst	1955	Drl	39.1	7	a5	do.	685	9.2	7-27-63	Jet	250	D	Anal.
247-823-1	Wyoming	P. Heeter	1957	Drl	36.6	6	--	Sand and gravel	1,160	15.6	8- 9-63	Jet	300	D	Do.
247-833-1	Erie	T. Siclari	1958	Drl	28.0	6	a16	Shale	945	6.5	8- 1-63	Sw	--	U	Iron; H_2S; unused because water quality is poor.
247-836-1	do.	A. Schuster	1961	Drl	46.1	6	a30	do.	860	15.8	7-30-63	Sw	250	D	Iron; H_2S; yield 10 gpm (r).
247-838-1	do.	D. Engel	1956	Drl	33.4	6	a12	do.	960	6.6	7-30-63	Sw	150	D	Anal; H_2S.
247-840-1	do.	A. Malovich	1959	Drl	40.4	8	a30	do.	890	21.1	7-26-63	Sw	200	D	Anal; iron; blasting charge fired in well to improve yield.
247-842-1	do.	J. Smith	1959	Drl	51.5	7	--	Sand	830	9.4	7-26-63	Jet	250	D	Anal; iron; H_2S.
248-818-1	Wyoming	O. Block	a1940	Drl	r140	6	--	Shale	1,045	Flow	--	Sw	1,400	D	Anal; gas; iron; temp 51.2, 8-12-63; flows about 1 gpm, 2.6 ft below LS; occasionally water level has fallen below end of drop pipe, 25 ft below surface while pumping.
248-825-1	do.	N. Fox	1963	Drl	r112	8	12	do.	1,115	28.8	8- 2-63	Sub	150	D	Anal; yield 1 gpm (r); water-bearing zone at 34 ft; no lower water-bearing zones.
248-828-1	do.	W. Deazley	1957	Drl	r112	8	8	do.	1,210	20.3	8- 2-63	Jet	300	D	Anal; yield 1 gpm (r); water-bearing zone at 30 ft; attempted to increase yield by blasting at three different depths; occasionally is pumped dry.
248-829-1	Erie	O. Whitman	1958	Drl	36.4	6	a28	do.	1,150	12.5	8- 2-63	Jet	50	D	Anal; H_2S; yield 2.5 gpm (r).
248-833-1	do.	R. Gilbert	1957	Drl	35.9	6	33	Sand and gravel; shale	970	11.4	8- 1-63	Sw	400	D	Anal; iron; H_2S.
248-838-1	do.	H. Gaczewski	1954	Drl	58.9	6	2	Shale	925	21.5	7-30-63	Jet	500	D	Anal; gas.
248-839-1	do.	Moog Servocontrols, Inc.	1957	Drl	85.7	8	--	do.	905	p40.4	9-23-63	Sub	--	I	Anal; H_2S.
-2	do.	do.	1957	Drl	24.7	12	--	do.	905	p14.4	9-23-63	Sub	--	I	Do.
-3	do.	do.	1958	Drl	76.8	10	--	do.	910	p26.9	9-23-63	Sub	--	I	H_2S.
-4	do.	do.	1962	Drl	r225	18	a10	do.	910	--	--	--	--	T	Yield 10 gpm (r).
248-841-1	do.	R. Struck	1960	Drl	43.8	6	a40	do.	770	17.9	7-26-63	Sw	200	D	Anal; iron; H_2S; gas; yield 3 gpm (r).
248-844-1	do.	O. Eaton	1959	Drl	19.7	6	a15	do.	740	8.5	7-26-63	Sw	250	D	Anal; H_2S; yield 5 gpm (r); blasting charge was fired in well to increase yield.
248-850-1	do.	Spring Perch Co., Inc.	1936	Drl	r40	5	--	do.	580	p21.0	3-20-63	Jet	10,000	I	Anal; H_2S; yield 29 gpm; another similar well is also in use.
249-809-1	Wyoming	H. Meeder	--	Dug	13.8	24	--	Sand and gravel	1,205	9.1	6- 9-64	Sw	150	D	
249-810-1	do.	C. Bailey	1963	Drl	54.4	6	--	do.	1,190	21.6	6-10-64	Jet	100	D	
-2	do.	W. Dersam	--	Dug	10.5	36	--	Till	1,180	4.6	6-10-64	Sw	--	A	
249-818-1	do.	G. Knobloch	--	Drl	58.6	4	a10	Shale	1,075	23.5	8-12-63	Jet	100	D	Anal; yield 3 gpm (est).
249-823-1	do.	L. Green	1963	Drl	81.5	8	19	do.	1,260	13.3	8- 9-63	Jet	400	D	Anal; yield 1.5 gpm (r).

REF. 15

New York State Department of Environmental Conservation
50 Wolf Road, Albany, New York 12233-0001

Henry G. Williams
Commissioner

July 24, 1985

MEMORANDUM

TO: Bureau Directors, Regional Water Engineers, Section Chiefs

SUBJECT: Division of Water Technical and Operational Guidance Series (85-W-38)

Ambient Water Quality Standards and Guidance Values
(Originator: John Zambrano)

I. Purpose

The purpose of this document is to provide a compilation of water quality standards and guidance values for toxic and non-conventional pollutants to be used in the Department's regulatory programs, including the SPDES permit program.

II. Discussion

This substantial revision of TOGS 85-W-38 is the result of the promulgation of amendments to 6 NYCRR Part 701-702, effective on August 2, 1985, governing the development and use of surface water quality standards and guidance values. This revision uses a new format in the tabulation and does not include the methodologies for the development of standards and guidance values. The user is referred to the regulations for a description of the methodologies.

III. Guidance

The Quality Evaluation Section will use the attached list in developing SPDES permit water quality-based effluent limits. The Criteria and Standards Section will maintain and revise the list on a regular basis.

for Daniel M. Barolo, P.E.
Director
Division of Water

Attachments
cc: Dr. Banks
Mr. Pagano
Mr. Mt. Pleasant
Regional Engineers for Environmental Quality
Ms. Chrimes

TOWN OF MARILLA
OFFICE OF THE TOWN CLERK
MARILLA, NEW YORK 14102

REF. 16 .662-9366

File: 15522

November 30, 1982

Mr. Robert J. Mitrey, Assoc. Sanitary Engineer
New York State Department of Environmental Conservation
600 Delaware Avenue
Buffalo, New York 14202

Dear Sir:

Enclosed please find a list of items completed or partially completed at the Marilla Sanitary Landfill, Job No. 15522, as compiled by our Highway Superintendent, Russell Webster.

1. Installation of a 10" drainage pipe on the south side of Landfill as per drawings.

2. Seeding of east slope and moving ditch as per drawings.

3. Covering of 75% of west side with 18" of clay cap.

4. Installation of a new roadway across top of hill to dump site being used.

Very truly yours,

Katherine R. Hodges

Katherine R. Hodges
Town Clerk
Town of Marilla, New York

cc: Russell Webster

PERMIT

Under the Environmental Conservation Law, Article 27, Title 7, Part 360

	16
EXPIRATION DATE	11/31/86
PERMIT NO	3420

☐ CONSTRUCTION ☒ OPERATION ☐ INITIAL ISSUE ☒ RENEWAL ☐ REISSUANCE ☐ MODIFICATION

PERMIT ISSUED TO	ADDRESS OF PERMITTEE	TELEPHONE NO.
Town of Marilla	Two Rod Road, Marilla, NY 14102	716/652-5350

LOCATION OF PROJECT Town	County	Environmental Conservation Regional Office
Marilla	Erie	Region 9 - Buffalo

DESCRIPTION OF PROJECT	ON-SITE SUPERVISOR
Marilla Sanitary Landfill	Russ Webster - Highway Supt.

GENERAL CONDITIONS

1. The permittee shall file in the office of the Environmental Conservation Region specified above, a notice on intention to commence work at least 48 hours in advance of the time of commencement and shall also notify said office promptly in writing of the completion of the work.
2. The permitted work shall be subject to inspection by an authorized representative of the Department of Environmental Conservation who may order the work suspended if the public interest so requires.
3. As a condition of the issuance of this permit, the applicant has accepted expressly, by the execution of the application, the full legal responsibility for all damages, direct or indirect, of whatever nature, and by whomever suffered, arising out of the project described herein and has agreed to indemnify and save harmless the State from suits, actions, damages and costs of every name and description resulting from the said project.
4. All work carried out under this permit shall conform to the approved plans and specifications. Any amendments must be approved by the Department of Environmental Conservation prior to their implementation.
5. The permittee is responsible for obtaining any other permits, approvals, easements and rights-of-way which may be required for this project.
6. By acceptance of this permit, the permittee agrees that the permit is contingent upon strict compliance with Part 360 and the special conditions. Any variances granted by the Department of Environmental Conservation to Part 360 must be in writing and attached hereto.

SPECIAL CONDITIONS

1. *Only municipal refuse and non-industrial construction and demolition debris is acceptable for disposal at your facility. No industrial waste, hazardous waste, septage, or sludge may be accepted.*

2. *The landfill shall be operated in accordance with the engineering plans and report as submitted by Tallamy, Van Kuren, Gertis and Associates on February 25, 1982, and as amended on May 3, 1982.*

3. *The monitoring wells and northern surface water drainage way shall be sampled on a quarterly basis for the following parameters: pH, specific conductivity, chlorides, TOC, total Dissolved solids, phenol, iron, manganese, barium. In addition, the water elevation (USGS) in the wells is to be measured before bailing occurs. The wells shall be sampled during the months of March, June, September, and December and the results shall be submitted the first day of January, April, July & October to:*

NYSDEC
600 Delaware Avenue
Buffalo, New York 14202

NYSDEC
Bureau of Municipal Waste
50 Wolf Road
Albany, New York 12233

ECDEP
95 Franklin Street
Buffalo, New York 1420

Attn: Regional SW Engineer

Annually, the March sampling shall include these additional parameters: cadmium, mercury, l copper, zinc, and total chromium.

ISSUE DATE	ISSUING OFFICER	SIGNATURE
March 6, 1984	Act Reg Permit Administrator	X Rudolf P Sweeney

REGIONAL OFFICE COPY

16

600 Delaware Avenue, Buffalo, New York 14202

November 6, 1981

Mr. Nicholas J. Pinto
Tallamy, Van Kuren, Certis
and Thielman
70 Linwood Avenue
P.O. Box 151
Orchard Park, New York 14127

Re: Marilla Landfill
Facility #15522

Dear Mr. Pinto:

In reiteration of our meeting of November 4, 1981, on discussion of the preliminary engineering report as submitted for the Town of Marilla, the following items need clarification:

1. The boring logs do not indicate that a well screen was placed on MW#1.

2. MW#1 was placed into bedrock. The bentonite seal was placed at 7.5 feet and up. Bedrock coring was initiated at 10.0 feet. This leaves a gap of 2.5 feet of soil between the plug and bedrock through which perched water can enter the bedrock layer.

3. According to the plan, MW#2 was placed inside the fill area. However, the boring log indicated no refuse. If located on the edge of the fill area, horizontal separation distance should be obtained.

4. The topographic map for the site must be updated. The limits of the fill area should be shown as well.

5. A revised final topographic map should be submitted.

6. The hydraulic conductivity was estimated. It was not determined by testing.

7. The location at which the stream sample was taken was not stated.

8. This Department concurs with the recommendations sited in the report. A final decision relative to the need for a leachate collection system will be made upon submission of the next monitoring well results. The sampling to be conducted will include the following parameters: pH, alkalinity, BOD, COD, chlorides, conductivity, cyanide, nitrate, nitrite, phenols, dissolved solids,

File

16

600 Delaware Avenue, Buffalo, New York 14202-1073

April 15, 1983

Mr. Joseph Foss, Supervisor
And Town Board
Town of Marilla
S-1740 Two Rod Road
Marilla, New York 14102

Gentlemen: Re: Marilla Landfill - #15S22

On April 12, 1983 Mr. Hintz, of this Department, inspected your landfill to determine compliance with Part 360. The site was found to be in poor shape as a result of the following violations:

1) LEACHATE - Leachate is breaking out in minor amounts in the southeast and northeast corner. However, a major volume of leachate is breaking out in the northwest corner, flowing northward and entering a tributary of Little Buffalo Creek.

2) COVER - The cover on the active fill area in the northwest corner of the site is poor. Refuse protrudes the cover throughout the area and, in some spots, the refuse remains uncovered.

3) GRADING - The covered fill area in the northwest corner is rough and uneven. In addition, the fill area east of the access road to the sand pile is rough and uneven and water is ponding in spots.

4) VEGETATION - The east slope of the site needs to be revegetated. In addition, the capped area on the west side of the site should be vegetated to minimize erosion. Some minor erosion of this area has already occurred.

5) WINDBLOWN REFUSE - Windblown papers litter the drainage ditch on the south and east edges of the site. The woods in the northeast corner are heavily littered. The woods in the northwest corner are also littered with refuse.

16

TOC, manganese, aluminum, arsenic, barium, cadmium, chromium, copper, iron and lead. Please advise this office as to when the sampling can be accomplished.

The complete application must be submitted to this office on or before January 18, 1982.

If you have any questions, please contact this office at 716/847-4585.

Very truly yours,

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

RJM:KRH:las

cc: Mr. D. Campbell, Erie County Department of Environment and Planning

16

600 Delaware Avenue, Buffalo, New York 14202-1073

July 28, 1983

File:

Mr. John R. Foss, Supervisor
Town of Marilla
Marilla, New York 14102

Re: Marilla Landfill #15S22

Dear Supervisor Foss:

On July 26, 1983 Mr. Hintz of this office reinspected the town landfill to determine the progress in clean-up of the site. The inspection indicated an improvement, but the following problems still remain:

1. LEACHATE - Leachate is breaking out at the toe of the slope in the northwest corner of the slope. The flow from this breakout is substantial.

2. PROTRUDING WASTE - Waste is protruding the cover in the entire active fill area. In spots, the waste is nearly uncovered.

3. VEGETATION - The east half of the site needs to be seeded and mulch applied once the final grading is completed.

4. WINDBLOWN WASTE - Windblown papers and refuse litter the woods in the northwest and northeast corners of the site. It is also littered on the east slope and near the access road in the southeast corner.

5. SALVAGE PILE - The metal salvage site is excessive in size. The volume of salvage material should be removed.

Daily operations still need to be improved. Furthermore, it appears that the clay cap will not alleviate the leachate problem. At this time, I feel it would be appropriate to discuss the above items in detail. It is our intent to permit your site as soon as possible, providing the above problems are addressed.

Should you have any questions, please contact this office at (716)847-4585.

Very truly yours,

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

RJM:vs
Enclosure
cc: Mr. Kenneth Hall/Jensen, Hall, Ricketts & Marky
Mr. Donald Campbell/Erie County DEP

6) WASTE OIL - The waste oil in the barrels next to the shed are leaking. The waste oil should be picked up by a reclaimer and the contaminated soil should be removed and deposited in the landfill.

This Department is concerned about the daily operations. The leachate problems appear to be directly the result of poor operations, inadequate cover, etc. This cannot be tolerated. Therefore, I feel it would be appropriate to meet to discuss solution of these problems.

Please contact me at 716-847-4505 to arrange a meeting.

Very truly yours,

RJM by KH

Robert J. Mitrey
Associate Sanitary Engineer

Attachment

KH:jar

cc: ECDEP

600 Delaware Avenue, Buffalo, New York 14202-1073

August 17, 1983

Mr. John Foss
Town of Marilla S-1740 Two Rod Raid
Marilla, New York 14102

Re: Marilla Landfill #15S22

Dear Mr. Foss:

On August 17, 1983, Mr. Hintz of this office met with yourself, your Town Highway Superintendent, and your consultant to discuss the problems at the landfill. Of utmost concern is the leachate problem. Last year we met and agreed to monitor the leachate problem at the landfill. If the problem remained, abatement action would be initiated. In light of the fact that the clay cap was not completed last fall, one additional year will be granted to monitor the leachate. If leachate continues to be a problem next May or June, abatement action will be required. No further extensions will be granted.

In the meantime, a permit to operate will be issued. It will be mailed out shortly.

If you have any questions, please contact this office at 874-4585.

Very truly yours,

John S. Tygert, P.E.
Senior Sanitary Engineer

KRH:vs

cc: Mr. Paul Eismann/NYSDEC DRA
Mr. Don Campbell/Erie County DEP

47-15-1 (11/79)

REGION 9

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF SOLID WASTE MANAGEMENT

FACILITY INSPECTION REPORT

FACILITY NAME	LOCATION
[illegible]	[illegible]

PERSONS INTERVIEWED & TITLES
SITE LOCKED UP - WALKED TO SITE FR. EASTWOOD ROAD - NO PERSONNEL ON [illegible]

LEACHATE
1. Leachate is entering surface water.
2. Leachate is known to be contravening groundwater standards.
3. Refuse is being placed into water.

BURNING
4. Refuse is burning without permit or not under permit conditions.
5. There is evidence of unapproved previous burning.

COVER
6. Previous days refuse is not covered.
7. Refuse is protruding through daily, intermediate or final cover.
8. Intermediate or final cover is not in place or improperly applied.

GRADING
9. Depressions, ponding, cracked cover, or slopes steeper than 3 to 1 exist.
10. Vegetative cover is missing or inadequate on completed areas.
11. Soil erosion or other drainage problems exist.

SEPARATION DISTANCES
12. Refuse is closer than 50 feet to site boundaries.
13. Refuse is being placed less than 5 feet above groundwater or bedrock.
14. Refuse is being placed too close to surface water.

NUISANCE CONDITIONS
15. Odors are detectable off site.
16. Blowing dust or dirt is a nuisance.
17. Papers are uncontrolled or are blowing off-site.
18. Methane gas is known to be leaving the site.
19. Noise is a nuisance off-site.

OPERATION CONTROL
20. Operation Permit conditions are being violated. (List violations)
21. Refuse is not sufficiently confined or controlled.
22. Refuse is spread in layers thicker than 2 feet.
23. Refuse is not compacted or compacted insufficiently.
24. The working face height is greater than 10 feet.
25. Equipment on the site is not adequate for proper operation.

SAFETY AND HEALTH
26. Salvaging is uncontrolled or is creating a nuisance.
27. Rodents, insects, birds, or other vectors are not controlled.
28. Unsafe conditions or equipment exist. (List items)

ACCESS CONTROL
29. Access to the site is improper, unsafe, or inadequately controlled.
30. The site is open without an attendant.
31. Information about the site is not posted. (e.g., hours of operation)
32. Access to the operating area is poor or unsafe.

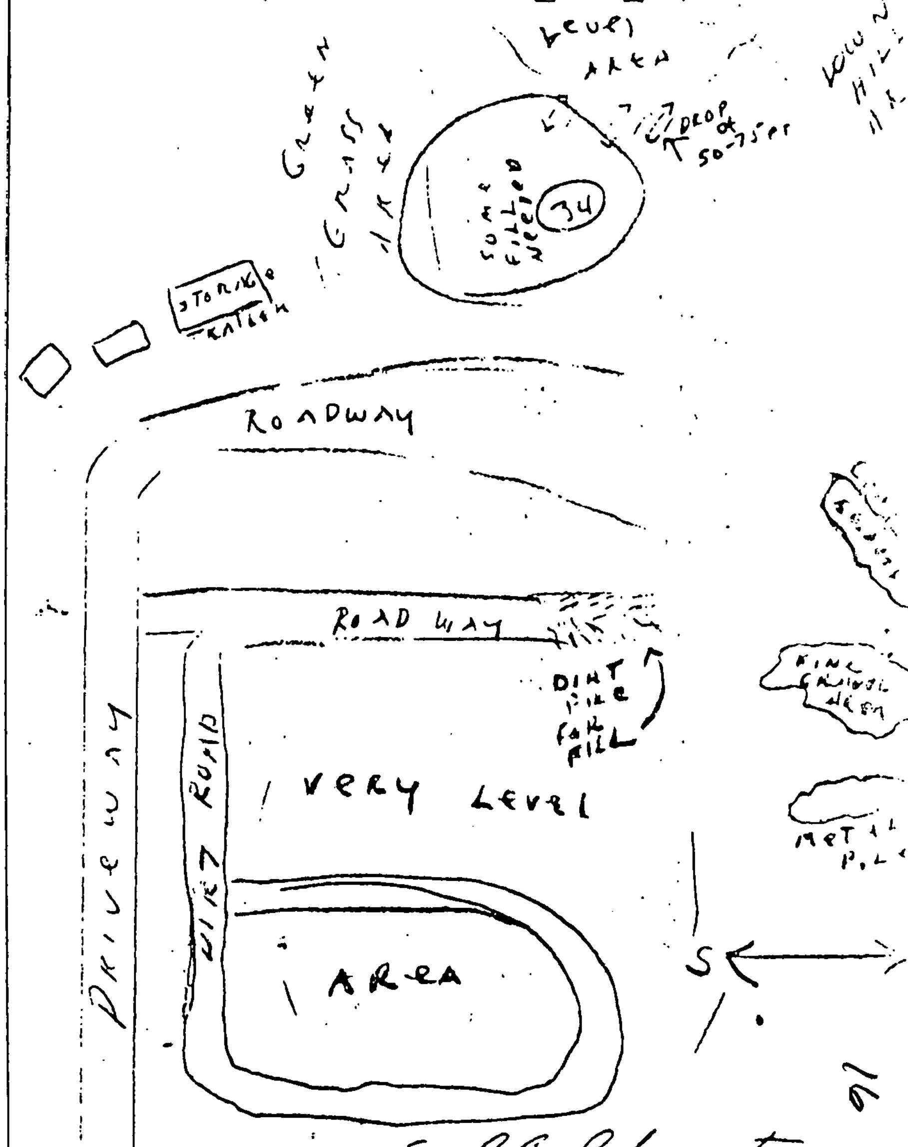
OTHER
33. Uncontrolled leachate is visible on, or near the site.
34. The quality of cover material is inadequate. [X]
35. The working face is steeper than a 3 to 1 slope.
36. Monitoring wells are not operative.
37. Unapproved wastes have been deposited since last inspection.
38. Operator is unfamiliar with site boundaries, operation plan or permit conditions.

MARK BOXES WITH "X" ONLY IF ANSWER IS YES

REGIONAL OFFICE COPY

1 TRANS. TYPE: 1 Delete / 2 Add / 3 Change
2 FACILITY NO. 7: 15522
8 DATE 13: 10/19/83
14 TIME 17: 1413
INSPECTOR'S NAME: EARL SCHWARTZ
REMARKS: SATISFACTORY ON WHOLE
20 CARD TYPE 21: 1 1
20 CARD TYPE 21: 1 2

SITE SKETCH/COMMENTS (additional sheets attached ☐ YES ☒ NO)



Earl R. Schwartz
INSPECTOR'S SIGNATURE

K. Mitry
(Hon)
File: 15522
(16)

County of Erie

EDWARD J. RUTKOWSKI
COUNTY EXECUTIVE

DEPARTMENT OF ENVIRONMENT AND PLANNING

JOAN E. LORING
COMMISSIONER

ANTHONY T. VOELL
DEPUTY COMMISSIONER
ENVIRONMENTAL CONTROL

May 7, 1985

Hon. John R. Foss
Supervisor, Town of Marilla
1740 Two Rod Road
Marilla, New York 14102

Dear Sir:

On May 2, 1985, Mr. Melvin Szymanski of the Erie County Department of Environment and Planning inspected the Town of Marilla Landfill. Mr. Szymanski was accompanied by Mr. Russ Webster, Highway Superintendent.

Overall condition and operation of the site was generally considered satisfactory. However, the following problems require attention under Title 6, Chapter III of the New York State Compilation of Rules and Regulations:

(1) The completed area at the northwest corner or the site has been graded, but lacks vegetation. (Part 360.8(b)(1)(ix)).

(2) The salvage pile at the east end of the site is much too large (Part 360.8(a)(4)).

Mr. Webster advised me that the material will be removed by May 15, 1985.

(3) Leachate is breaking out at the northwest toe of the slope beyond the weir. (Part 360.8(a)(19)).

Mr. Nelson Schnabel of the New York State Department of Environmental Conservation has informed me that the leachate problem is being addressed in a Consent Order dated January 7, 1985.

(F)

16

600 Delaware Avenue, Buffalo, New York 14202-1073

September 4, 1985

The Honorable John Foss
Supervisor, Town of Marilla
Two Rod Road
Marilla, New York 14102

Dear Mr. Foss:

Marilla Landfill #15S22

On August 22, 1985, Mr. James Goehrig and this writer of this Department inspected your landfill to determine compliance with Part 360 and the conditions of your Permit to Operate. Our inspection found the landfill to be in good shape overall. However, the following items are called to your attention:

1. Leachate - Leachate continues to break out at the toe of the long slope on the north side of the site. The leachate appears to be weak and the volume small.

   A red-brown stain is found at the discharge points of the pipe in the northwest corner of the site and at the southeast corner of the site next to the access road.

2. Protruding Waste - Waste is protruding through the daily cover in the active working area. Waste is also protruding the cover in the old metal salvage area on the northeast edge of the site.

3. Vegetation - The completed (west and north) slopes in the northwest corner of the site need to be revegetated.

It is hoped that site conditions will continue to improved. Keep up the good work. If you have any questions, please contact this office.

Very truly yours,

Kevin R. Hintz, P.E.
Senior Sanitary Engineer

KRH:vas
cc: Erie County DEP

Should you have any questions you may contact Mr. Szymanski at 846-6272.

Very truly yours,

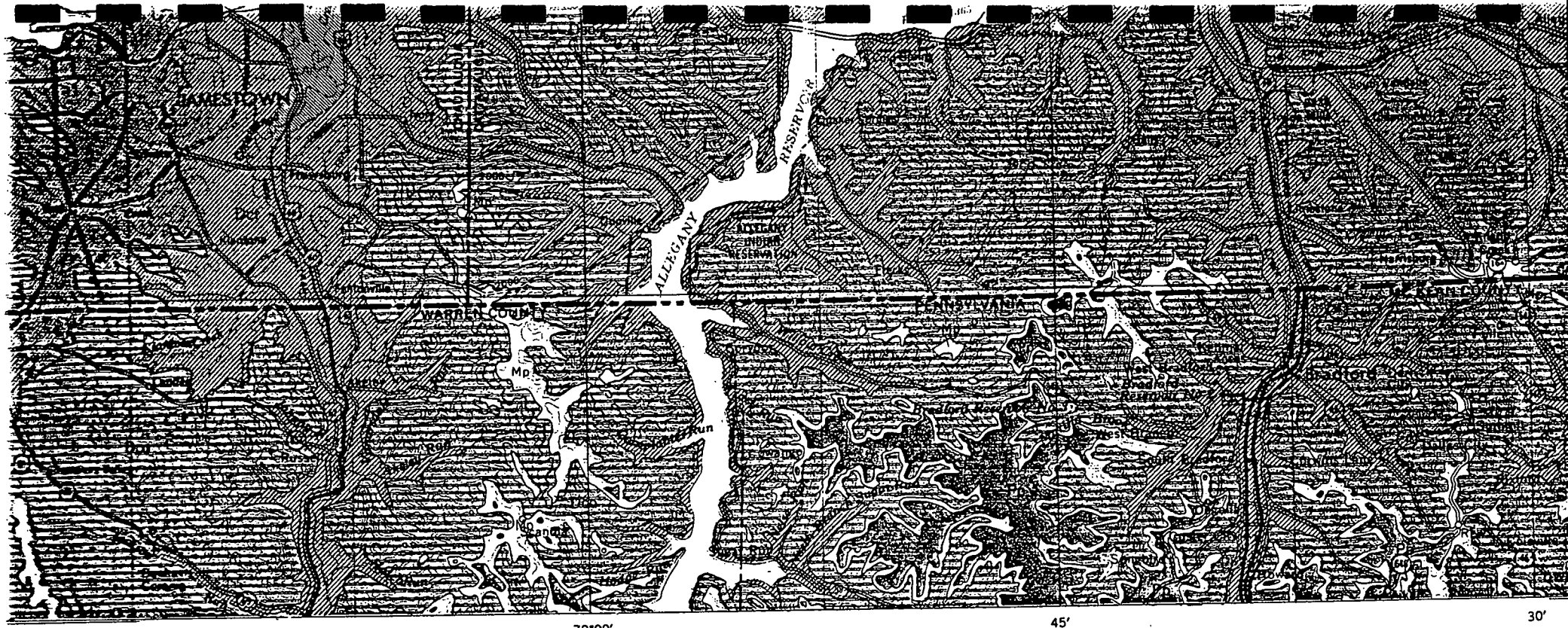
Joseph Sciascia

E. JOSEPH SCIASCIA, P.E.
Sr. Env. Quality Engineer
Division of Environmental Control

EJS:MHS:jk

cc: R. Mitrey, NYSDEC
D. Campbell/M. Szymanski

Enc: Inspection Report



NYS Museum and Science Service Bedrock Map and Quaternary Map

GEOLOGIC MAP OF NEW YORK

1970

Niagara Sheet

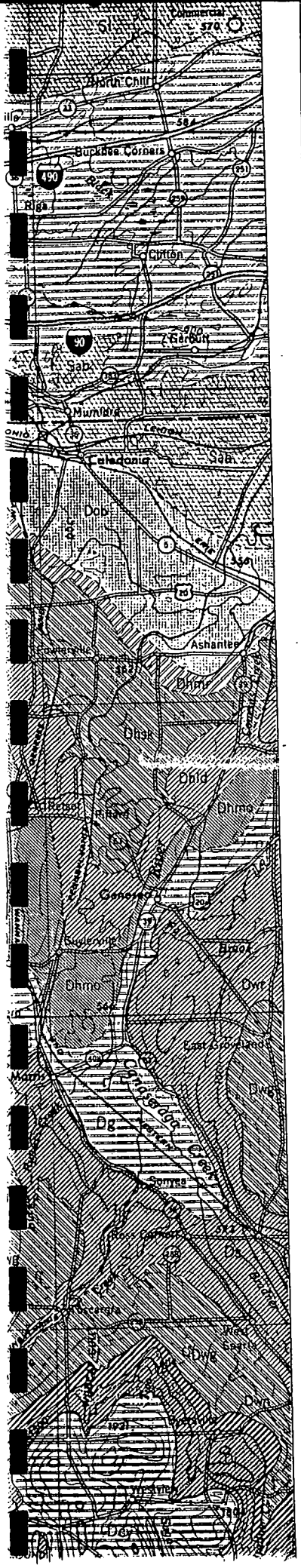
Scale 1:250,000

5 0 5 10 15 Statute Miles 20

5 0 5 10 15 20 25 Kilometers 30

CONTOUR INTERVAL 100 FEET

REF. 17.



PALEOZOIC

Upper Devonian

Dct — In west: Ellicott and Dexterville Formations—shale, siltstone.
In east: Germania Formation—shale, sandstone; Whitesville Formation—shale, sandstone; Hinsdale Sandstone; Wellsville Formation—shale, sandstone; Cuba Sandstone.

CANADAWAY GROUP
700-1200 ft. (210-370 m.)

Dcys — Northeast Shale; Shumla Siltstone.
Dcyl — Westfield Shale; Laona Siltstone.
Dcyd — Gowanda, South Wales, and Dunkirk Shales.
Dcy — Machias Formation—shale, siltstone; Rushford Sandstone; Caneadea, Canisteo, and Hume Shales; Canaseraga Sandstone; South Wales and Dunkirk Shales.

JAVA GROUP
100-200 ft. (30-60 m.)

Dj — Hanover Shale; Wiscoy Formation—sandstone, shale; Pipe Creek Shale.

WEST FALLS GROUP
400-950 ft. (120-290 m.)

Dwf — Angola and Rhinestreet Shales.
Dwn — Nunda Formation—sandstone, shale.
Dwg — West Hill and Gardeau Formations—shale, siltstone; Roricks Glen Shale; upper Beers Hill Shale; Grimes Siltstone.
Dwr — lower Beers Hill Shale; Dunn Hill, Millport, and Moreland Shales.

SONYEA GROUP
50-200 ft. (15-60 m.)

Ds — Cashaqua and Middlesex Shales.

GENESEE GROUP
10-150 ft. (3-45 m.)

Dg — West River Shale; Genundewa Limestone; Penn Yan and Geneseo Shales; North Evans Limestone.

Middle Devonian

HAMILTON GROUP
200-500 ft. (60-150 m.)

Dhmo — Moscow Formation—Windom and Kashong Shales, Menteth Limestone Members.
Dhld — Ludlowville Formation—Deep Run Shale, Tichenor Limestone, Wanakah and Ledyard Shales, Centerfield Limestone Members.
Dhsk — Skaneateles Formation—Levanna Shale, Stafford Limestone Members.
Dhmr — Marcellus Formation—Oatka Creek Shale Member.

Lower Devonian

ONONDAGA AND BOIS BLANC LIMESTONES
150 ft. (45 m.)

Dob — In New York: Onondaga Limestone—Seneca, Morehouse (cherty), and Clarence Limestone Members, Edgecliff cherty Limestone Member, local coral bioherms; Bois Blanc Limestone—sandy, thin, discontinuous.
In Ontario: Dundee Limestone; Lucas Formation—dolostone, limestone (Anderdon); Amherstburg Formation—limestone, dolostone, sandstone (Sylvania); Bois Blanc Formation—dolostone, limestone, sandstone (Springvale).
Do — Oriskany Sandstone.

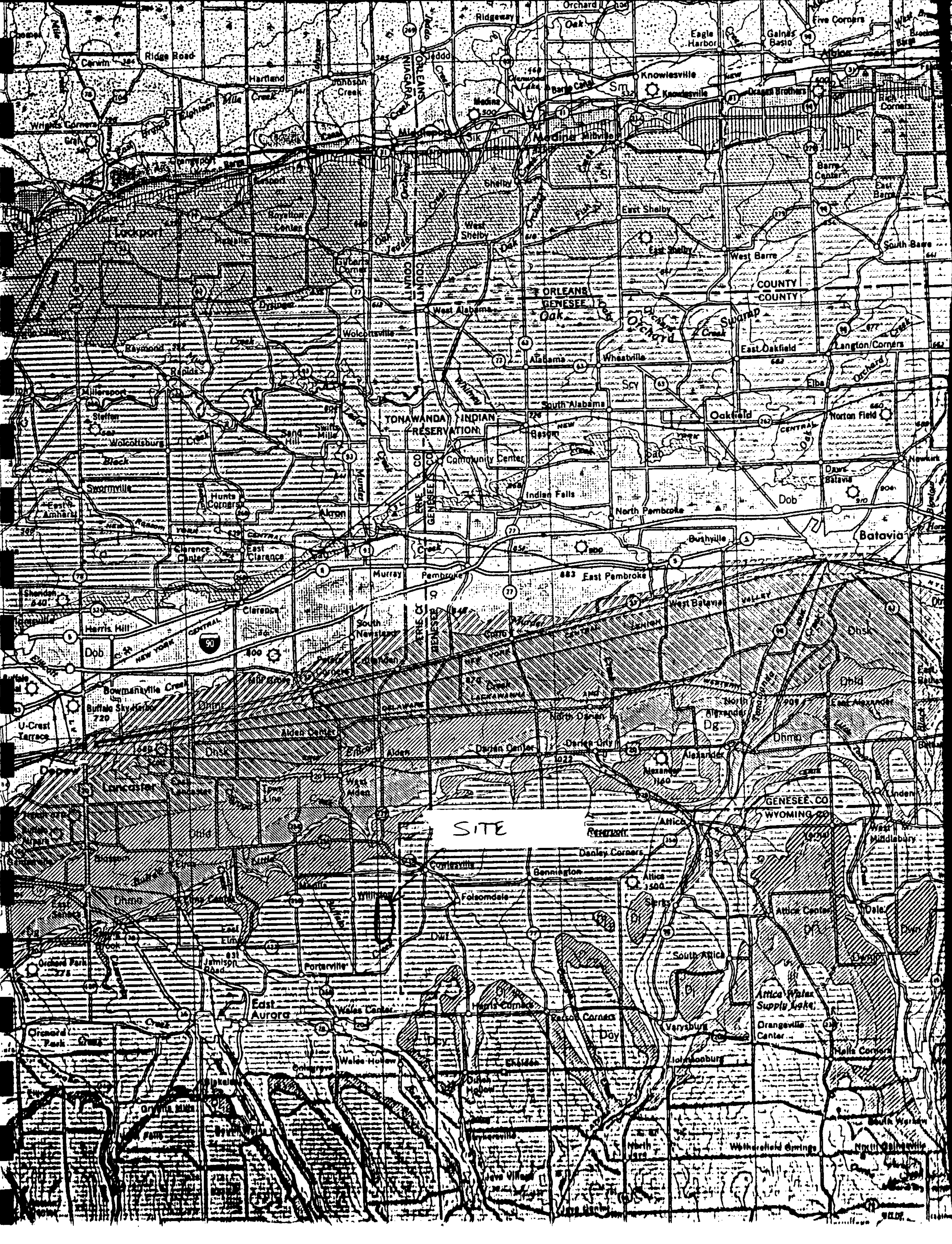
per Silurian

AKRON DOLOSTONE AND SALINA GROUP
400-700 ft. (120-210 m.)

Sab — Akron Dolostone; Bertie Formation—dolostone, shale.
Scv — Camillus, Syracuse, and Vernon Formations—shale, dolostone, salt, and gypsum.

LOCKPORT GROUP
150-200 ft. (45-60 m.)

Sl — Guelph, Oak Orchard, Eramosa, and Goat Island



SITE
Lockport
Medina
Batavia
Lancaster
East Aurora
Akron
Alden
Attica
Alexander
Darien Center
Pembroke
East Pembroke
Clarence
Corfu
Cowlesville
Bennington
Varysburg
Wales Center
Orchard Park
TONAWANDA INDIAN RESERVATION
Community Center
Indian Falls
Basom
Oakfield
Elba
Alabama
South Alabama
West Alabama
Wheatville
East Shelby
West Shelby
Shelby
Knowlesville
Albion
West Batavia
North Pembroke
Bushville
Murray
Swormville
Millersport
Wolcottsburg
Wolcottsville
Harris Hill
East Amherst
Raymond
Darien City
North Darien
Alden Center
West Alden
Town Line
Marilla
Porterville
Folsomdale
Dunley Corners
South Attica
Attica Center
Orangeville Center
Attica Water Supply Lake
Wales Hollow
Hartland
Ridge Road
Ridgeway
Johnson Creek
Eagle Harbor
Gaines Basin
Five Corners
Barre Center
West Barre
South Barre
East Oakfield
Langton Corners
Norton Field
Daws Batavia
Dob
Dshk
Dhld
Dhmo
Dg
Dwl
Doy
Sm
Sl
Scy
Sab
ORLEANS
GENESEE
COUNTY
NIAGARA
ORLEANS CO
GENESEE CO
WYOMING CO
ERIE CO
Buffalo Sky Harbor
U-Crest Terrace
Bowmansville
Clarence Center
East Clarence
Hunts Corners
Sand Hill
Swifts Mills
Gulf Creek
Royalton Center
Gasport
Orchard Swamp
Oak Orchard
Tonawanda Creek
Murder Creek
Whitney Creek
Ellicott Creek
Little Buffalo Creek
Cayuga Creek
Reservoir
Alexander 1160
Attica 1500
Dysinger
Cybers Corners
Middleport
Sheridan
North Alexander
East Alexander
West Middlebury
Halls Corners
South Warsaw
North Java
Java Village
Java Center
Wethersfield Springs
Strykersville
Curriers
Sheldon
Orchard Park
Jamison Road
East Elma
Elma Center
East Seneca
Blossom
Depew
NEW YORK CENTRAL
LEHIGH VALLEY
DELAWARE LACKAWANNA AND WESTERN

APPENDIX B

PROPOSED UPDATED NYS REGISTRY SHEET

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF SOLID AND HAZARDOUS WASTE
INACTIVE HAZARDOUS WASTE DISPOSAL SITE REPORT

CLASSIFICATION CODE: 2a **REGION: 9** **SITE CODE: 915093**

NAME OF SITE : Town of Marilla
STREET ADDRESS: Eastwood Road
TOWN/CITY: **COUNTY:** **ZIP:**
Marilla (Town) Erie

SITE TYPE: Open Dump- Structure- Lagoon- Landfill-X Treatment Pond-
ESTIMATED SIZE: 10 Acres

SITE OWNER/OPERATOR INFORMATION:
CURRENT OWNER NAME....: Town of Marilla
CURRENT OWNER ADDRESS.: 1740 Two Road, Marilla, NY
OWNER(S) DURING USE...: Town of Marilla
OPERATOR DURING USE...: Town of Marilla
OPERATOR ADDRESS.....: 1740 Two Rod Road, Marilla, NY
PERIOD ASSOCIATED WITH HAZARDOUS WASTE: From 1965 To Date

SITE DESCRIPTION:
Site accepts municipal wastes from town residents.

The landfill was operated from 1965 until 1970 by Oscar Tankusley and his brother Hubert. From 1970 until the present the Town of Marilla Highway Department operated the site using the area and trench method. The landfill operates only on Saturdays and is estimated to received 95,000 cu. yds. of municipal wastes. No hazardous wastes are known to be disposed of on-site. Leachate outbreaks remain a problem at the northwest portion of the site. Residents within a half mile of the site use private groundwater wells which are installed in the aquifer of concern.

HAZARDOUS WASTE DISPOSED: Confirmed- Suspected -X

TYPE	QUANTITY (units)
None Known	

SITE CODE: 915093

ANALYTICAL DATA AVAILABLE:

Air- Surface Water-X Groundwater-X Soil- Sediment- None-

CONTRAVENTION OF STANDARDS:

Groundwater- Drinking Water- Surface Water-X Air-

LEGAL ACTION:

TYPE..: State- Federal-
STATUS: In Progress- Completed-

REMEDIAL ACTION:

Proposed- Under Design- In Progress-X Completed-
NATURE OF ACTION: Covering and capping of disposal areas, groundwater and surface water monitoring.
GEOTECHNICAL INFORMATION:
SOIL TYPE: Silty, clay loams
GROUNDWATER DEPTH: <10 feet

ASSESSMENT OF ENVIRONMENTAL PROBLEMS:

Of the groundwater samples taken, the only observed release was manganese. No upgradient /downgradient relationship was available for surface water.

ASSESSMENT OF HEALTH PROBLEMS:

Insufficient information

PERSON(S) COMPLETING THIS FORM:

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION	NEW YORK STATE DEPARTMENT OF HEALTH
NAME.: John S. Tygert, P.E.	NAME.: Ronald Tramontano
TITLE: Sr. Sanitary Eng.	TITLE: Bur. Tox. Stust. Assess.
NAME.: Roberto Olazagasti	NAME.:
TITLE: Solid Waste Managemen t Spec.	TITLE:
DATE.: 01/24/85	DATE.: 01/24/85