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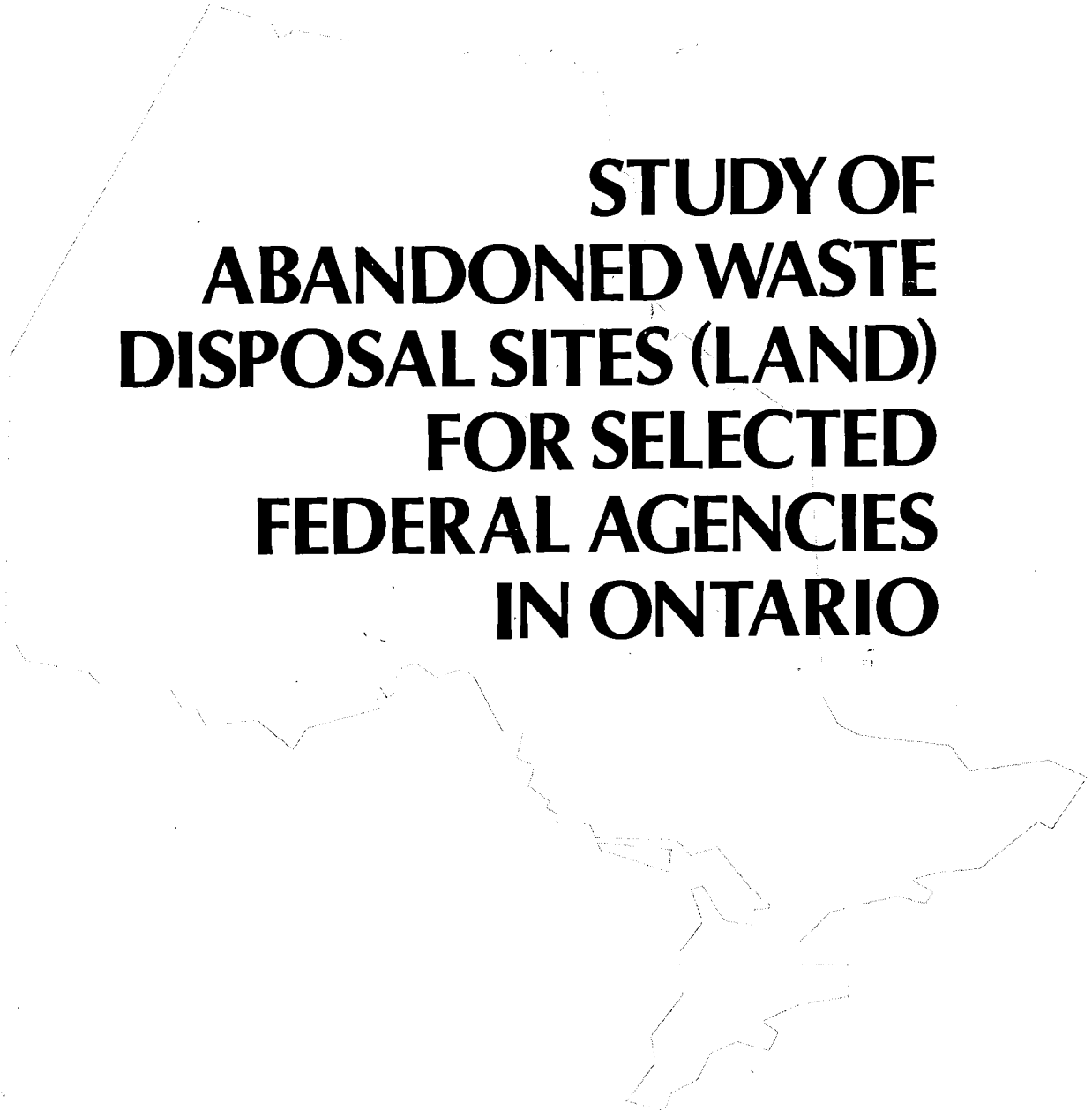
STUDY OF ABANDONED WASTE DISPOSAL SITES (LAND) FOR SELECTED FEDERAL AGENCIES IN ONTARIO



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Consulting Engineers & Planners

OUR FILE: 9150-02
YOUR FILE: KE403-3-0302

27 September 1984

Environment Canada
Environmental Protection Service
25 St. Clair Avenue East
7th Floor
TORONTO, Ontario
M4T 1M2

Attention: Mr. J.E. Smith

Study of Abandoned Waste Disposal Sites (Land) for Selected Federal Agencies in Ontario - Phase 1 Extension

Dear Sirs:

We are pleased to submit the final report for the extension of the Phase 1 Study of Abandoned Waste Disposal Sites. The original Phase 1 report was submitted by Dillon in June 1983. This report presents the results of additional investigations to identify abandoned waste disposal sites in Ontario.

Yours truly,

M.M. DILLON LIMITED

W.F. Wells

JRM:lly
Encl:

W.F. Wells, P.Eng.
Project Manager

STUDY OF ABANDONED WASTE DISPOSAL SITES (LAND) FOR SELECTED FEDERAL AGENCIES IN ONTARIO PHASE 1 EXTENSION

PREPARED FOR

ENVIRONMENT CANADA

BY

M.M. DILLON LIMITED

This project was carried out under contract to Environment Canada. (EPS - Ontario Region). The statements, conclusions and recommendations expressed are those of the Consultant and do not necessarily reflect the views and policies of Environment Canada.

9150-02

SEPTEMBER 1984

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EXECUTIVE SUMMARY

STUDY OF ABANDONED WASTE DISPOAL SITES (LAND) FOR SELECTED FEDERAL AGENCIES IN ONTARIO PHASE 1 EXTENSION

1. BACKGROUND, PURPOSE AND SCOPE

M.M. Dillon Limited, Consulting Engineers and Planners were retained by the Ontario Region of Environment Canada's Environmental Protection Service to locate, identify and investigate abandoned waste disposal sites at five selected federal agencies in Ontario. A list of agencies and a summary of the number of sites is attached.

The study is an extension to the Phase 1 study completed by Dillon in mid-June 1983. It is part of Environment Canada's multi-phase national program dealing with abandoned waste sites and was funded through EPS's Waste Management Branch. Field activities were completed during the winter of 1984 and the report was finalized in September 1984.

2. FINDINGS

2.1 Priority I Sites

There were no Priority I sites, defined as sites which could present a high risk potential to health or the environment.

2.2 Priority II Sites

Priority II sites are defined as sites which could present a medium risk potential to health or the environment, and should be assessed at a future date. The three sites identified were at the following locations; the former McGee Farm along the Ottawa River Parkway in Ottawa, the Ridge Road Landfill in the City of Gloucester, and the former Coniagas Reduction Company site in Thorold.

2.3 Priority III Sites

A total of 11 Priority III sites were identified. These sites are considered to present no danger to human health or the environment but may require occasional future monitoring.

3. RECOMMENDATIONS

The consultant recommends that the three sites identified as Priority II be considered for further assessment by the owner agencies.

STUDY OF ABANDONED WASTE DISPOSAL SITES (LAND)
FOR SELECTED FEDERAL AGENCIES IN ONTARIO
PHASE 1 EXTENSION

Agency	Priority I Sites	Priority II Sites	Priority III Sites	Total
St. Lawrence Seaway Authority	0	1	1	2
National Capital Commission	0	2	7	9
National Research Council	0	0	0	0
Department of Public Works	0	0	1	1
Department of National Defence	0	0	2	2
TOTALS	**0**	**3**	**11**	**14**

1. INTRODUCTION

1.1 Background

In June 1983, M.M. Dillon submitted to Environment Canada the Phase 1 report of the Study of Abandoned Waste Disposal Sites (Land) for Selected Federal Agencies in Ontario. The study was divided into three phases, defined by the Terms of Reference as:

Phase 1 Identification and verification of closed or abandoned land disposal site locations together with available data on the nature and quantity of the materials deposited therein.

Phase 2 Preliminary assessment of the manifested or potential impact of each site on the environment.

Phase 3 Examination of candidate sites to verify the preliminary assessment. Recommendations should be made regarding mitigation of potential problems and the undertaking of corrective works if necessary.

The federal agencies included in the 1983 Phase 1 study were:

Department of Indian and Northern Affairs
Department of National Defence
Department of Transport
Department of the Environment (Parks Canada)
Department of Agriculture
Department of the Solicitor General
Canadian National Railways
Atomic Energy of Canada Limited
Transferred Property

A total of 111 sites were identified and, following field inspection, were assigned a priority rating concerning their need and urgency for further investigation. The Executive Summary of the Phase 1 report is provided in Appendix C. The study was carried out by M.M. Dillon with Golder Associates providing expertise in hydrogeology and terrain analysis.

1.2 Scope

This study is an extension to the aforementioned study. The agencies considered are:

St. Lawrence Seaway Authority (a Crown corporation under the Department of Transport)
National Capital Commission
National Research Council
Department of Public Works
Department of National Defence

These agencies were included because of known or suspected sites. All but National Defence are additions to the earlier list of agencies. The new National Defence sites were brought to light after release of the initial Study of Abandoned Waste Disposal Sites. The St. Lawrence Seaway Authority was not included as part of the Department of Transport in the initial study which focused on airports and harbours.

1.3 Study Team

The study team of M.M. Dillon and Golder Associates was retained for this study. The emphasis placed by Environment

Canada on the study team was to ensure that identical methods of inventory, assessment and reporting were used in the extended study as were used in the initial Phase 1 study. This will permit direct co-relation of the results of this study with the initial study.

2. STUDY PROCEDURES

2.1 Data Collection

Each of the agencies were first contacted by Ontario Region, Environmental Protection Service (EPS) by phone and informed of the study. This was followed by phone calls and, in some instances, visits by the consultant to gather available information on known or suspected sites.

Sources of information were often found outside the agency, such as municipal governments, provincial ministries, other federal agencies, other consultants, private firms and individuals.

Several sites were well documented, having been the subjects of various investigations and studies. Relevant reports were assembled and reviewed for these sites. Six sites were identified by the 1979 Ontario Ministry of the Environment (MOE) inventory. This information was used as input for subsequent investigations. The remaining sites, often the older ones, tended to have few if any written records of their existence. In such instances, the only sources of information were the recollections of various individuals and the historical air photo records at the National Air Photo Library.

2.2 Reporting

Close contact was kept with the EPS throughout the study. When the sites had been identified and confirmed, a meeting was held with EPS to review the findings and authorize

follow-up investigations. A letter report summarizing the site list was submitted following this meeting. Another meeting was held after review of the draft report, prior to preparation of the final report.

2.3 Field Inspections

The Site Inspection Form from the original Phase 1 study was retained. A sample form is attached (see Figure 1) with sources of information for certain items (identified by circled numbers) listed on a following page.

Field inspection programs were developed for two geographical areas in the province. These were the Ottawa area and the Thorold-Welland Canal area. Arrangements, where necessary, were made by phone with the appropriate agency for field visits. On-site investigation was usually limited to visual inspection and questioning local sources.

FIGURE 1

IDENTIFICATION AND VERIFICATION
OF CLOSED OR ABANDONED LAND DISPOSAL SITES

SITE INSPECTION FORM

1. SITE IDENTIFICATION

Site No: _____ Site Name: _____

2. SITE LOCATION

☐ City
☐ Borough
☐ Town Name: _____
☐ Village
☐ Township
☐ Other (specify)

☐ County
☐ District
☐ Reg. Munic. Name: _____
☐ Other (specify)

DESCRIPTIVE LOCATION:

Concession _____ or U.T.M. Coordinates (1)
Lot No. _____ E_____ N_____ Zone_____
Part of Lot _____ See attached Map to scale ☐ Yes, or
Municipality _____ Tie in to nearest permanent structure
Street Address _____ _____

Reference Plan No. _____ (Please attach if available)
Sketch map on back ☐ Yes ☐ No

3. PROPERTY OWNERSHIP

Present Owner: Name: _____
Address: _____

Past Owner: Name: _____
Address: _____

4. SITE CHARACTERISTICS

Current use of Site: _____

Description of Landform and Surrounding Topography:

Dimensions of Disposal Area: Length_____ft. Width_____ft.
or Size of Area: _____acres

Approximate thickness of Waste: _____ft.

Present Condition:
☐ Open
☐ Covered (specify)_____
☐ Other (specify)_____

Vermin or Vectors: (rats, birds, etc) ☐ Yes ☐ No

Evidence of Leachate: ☐ Yes ☐ No

Leachate Control: ☐ Yes ☐ No
(Description, if Yes)_____

Evidence of Methane Gas or Odours: ☐ Yes ☐ No

Gas Control: ☐ Yes ☐ No
(Description, if Yes)_____

Signs of problems associated with leachate or gas: ☐ Yes ☐ No
(Description, if Yes)_____

Vegetation: _____

Local Geology: (2)

(On-site Observations)

Approximate elevation: _____ft. Geodetic A.S.C (1)

Site Drainage:
(describe and evaluate)

Water Table: Depth below Surface _____ft.
Contact with Waste ☐ Yes ☐ No ☐ Unknown

Local Water Wells:

Distance to nearest Well down gradient: _____ft. or _____mi. (3)

No. of People served by Well: _____

Distance to nearest Surface Water: Identify _____
Distance _____ft. or _____mi.

Surface Water Description: _____
(quality, flow, uses)

Distance to Sensitive Environments or Critical Habitat (endangered species): Specify _____ (4)
Distance _____ft. or _____mi.

Distance to nearest House: _____ft. or _____mi. _____Direction

Land Use of Adjoining Properties:

	0-1/4 mi.	1/4-1 mi.	> 1 mi.
N			
E			
S			
W			

RESidential
RECreational
RURal (bush or uncultivated)
COMmercial
INDustrial
INSTitutional
PARK
AGricultural
Other (Specify)

Climate:
Mean Annual Precipitation _____in. (5)
Mean Annual Water Surplus _____in.
Prevailing Wind Direction _____ (6)

5. SITE OPERATION

Period of Operation: 19__ to 19__

Method of Operation:

- ☐ Open dump
- ☐ Open dump with burning
- ☐ Dump with occasional cover
- ☐ Sanitary landfill
- ☐ Other (specify)_____

List of known users of site:

_____

_____

_____

_____

Waste Characteristics:

		% of Total
☐ Low concern wastes (specify)	_____	_____
☐ Medium concern wastes (specify)	_____	_____
☐ High concern wastes (specify)	_____	_____

Quantity of Waste: _____tons or _____yd^3

Known problems at site:_____

_____

Reasons for closing or abandoning site:_____

_____

Closing procedures:_____

_____

6. PERSONS CONTACTED

Name:_____	Name:_____	Name:_____
Address:_____	Address:_____	Address:_____
_____	_____	_____
Phone:_____	Phone:_____	Phone:_____
Position:_____	Position:_____	Position:_____

Researcher's Name: _____

Date:_____

ADDITIONAL INFORMATION SOURCES

	Information Type	Source
①	UTM Coordinates & Approximate elevation	1:50,000 topographic mapping Department of Energy, Mines and Resources
②	Local Geology	Various maps of Bedrock and Quaternary geology, 1:50,000 or smaller scales (typically)
③	Well Data	Ontario Ministry of the Environment water well records
④	Sensitive Environments	Ecologically Sensitive Areas Inventory for the Lower Great Lakes Watershed, Upper Great Lakes Watershed, St. Lawrence and Ottawa River's Watershed Environmental Protection Service March 1977 Areas of Importance of Migratory Bird Protection in Ontario Ministry of Natural Resources 1978 Maps of Sensitive Areas of Migratory Birds in Ontario Canadian Wildlife Service Environment Canada 1976
⑤	Climate Data	The Climate of Southern Ontario and the Climate of Northern Ontario (Climatological Series Nos. 5 & 6) Department of Transport, Meteorological Branch 1968
⑥	Wind Data	Hydrological Atlas of Canada Fisheries and Environment Canada

2.4 Site Evaluation

The numerical scoring system developed for the 1983 Study of Abandoned Waste Disposal Sites was used for this extension to the work. The Site Evaluation Form is illustrated in Figure 2.

Items for evaluation extracted from the Site Inspection Form were assigned to one of the three sections on the Site Evaluation Form:

A Potential for Hazard
B Potential for Off-Site Migration
C Potential for Impact

The sites were evaluated by accumulating the points scored for each item. The total score and the subtotal scores are means of comparing sites. The total score is an attempt to measure both the probability and the potential seriousness of a harmful impact resulting from the site.

On the basis of the total score, a priority rating was assigned to each site. The priority groups were defined in the following manner in the General Criteria accompanying the original Terms of Reference:

Priority I - Sites which could present a high risk potential to health and the environment which should be immediately assessed.

Priority II - Sites which could present a medium risk potential which should be assessed at a future date.

Priority III - Sites which should not present a danger to human health or the environment but which may require occasional monitoring in the future.

The appropriate scoring ranges for the priority groups were established using these definitions. As noted on the Site Evaluation Form, the scoring ranges are:

Priority I	Total score $\geq$ 140 points
Priority II	Total score 115 to 139 points
Priority III	Total score $\leq$ 114 points

Because numerical scoring systems may be unable to account for special circumstances which reduce the degree of hazard, the Site Evaluation Form incorporated a Hazard Reduction Factor to permit score modification. The value for such factors was subjective but limited to 20 points maximum or the value of the item which it would modify. A commonly applied factor was for dilution. It was applied to reflect the reduced potential for contaminant impact on water supplies where the waterbody could have a significant dilution effect.

A shortcoming of the scoring system recognized from the previous work was that factors concerning water contamination were weighted more than those concerning methane gas. As a result, possible hazards due to methane gas tend to be de-emphasized. The evaluation form and process was retained without modification, though, to provide an evaluation consistent with the 111 sites in the 1983 study.

FIGURE 2 SITE EVALUATION FORM

SITE NAME: _____ SITE NO. _____ PRIORITY _____

A - POTENTIAL FOR HAZARD

	Pts.
1. Degree of concern of Waste Type (see definition)	
High	50
Medium	30
Low	10
2. Estimate of Waste Quantity (choose larger score)	
Volume (m^3) or Area (m^2)	
> 25,000 or > 7,000	20
5,000 - 25,000 or 1,500 - 7,000	15
200 - 5,000 or 70 - 1,500	10
0 - 200 or 0 - 70	5
3. Water Surplus	
> 40 cm	5
25 cm - 40 cm	4
10 cm - 25 cm	2
0 cm - 10 cm	1
4. Site Cover	
Uncovered	5
Unvegetated	5

Covered: Soil Type	Depth 0-1 m	Depth > 1 m
Clay	0	0
Silt	1	0
Granular	2	1

	Pts.
5. Surface Water Drainage From Site	
Steep slope	1
Moderate slope	2
Flat	5
Depression	10
6. Method of Operation (when active)	
Open dump	5
Open dump with burning	3
Dump with occasional cover	3
Sanitary Landfill	1
7. Water Contact with Waste	
Yes	15
Unknown, likely	10
, unlikely	5
No	0
8. Evidence of Leachate of Gas	
Leachate	10
Gas	10

9. Hazard Reduction Factor, maximum -20 pts. or value of item (e.g. very old, marginal quantity, prior remedial measures)

Specify _____ -

___

Sub-Total A
(max. 135 pts.)

B - POTENTIAL FOR OFF-SITE MIGRATION

	Pts.
10. Soil Type	
Clay	5
Silt	10
Granular Soil	20
Bedrock	20
11. Estimated Depth to Water Table	
0 m - 1.5 m	5
1.5 m - 5.0 m	3
> 5.0 m	1
12. Proximity to Surface Water (transport mechanism) (score only if downgradient or unknown)	
0 m - 90 m	10
90 m - 300 m	5
300 m - 1.5 km	3
> 1.5 km	1
13. Flood Potential	
Flooded annually or other	10
Flooded occasionally	5
Never flooded	0
14. Vectors	
Yes	5
No	0

Sub-Total B
(max. 50 pts.)

C - POTENTIAL FOR IMPACT

15a. Proximity to Potable Water Supply (worst case only) (score only if downstream, downgradient or unknown)

	Community	Domestic
0 m - 90 m	40	20
90 m - 300 m	30	15
300 m - 1.5 km	20	5
1.5 km - 5 km	10	1
> 5 km	2	0

15b. Population affected by worst case

	Pts.
>5,000	15
1,000 - 5,000	10
101 - 1,000	7
1 - 100	3

16. Surface Water Use of Item 12. (other than potable water supply)

	Pts.
Recreational	5
Irrigation	3
Commercial or Industrial	2

17. Surrounding Land Use (select worst case in each column and total)

	0 m-400 m	400 m-1.5 km	>1.5 km
Residential or Proposed Housing	12	9	4
Inst., Park or Recreational	12	7	3
Commercial or Industrial	9	4	2
Agricultural	7	4	1
Rural	4	2	0

18. Distance to Sensitive Environments

	Pts.
0 m - 300 m	10
300 m - 1.5 km	5
>1.5 km	2

Sub-Total C
(max. 95 pts.)

Classification: Priority I ≥140, Priority II 115-139, Priority III ≤114

Total A + B + C
(max. 280 pts.)

2.5 Presentation of Data

Appendix A contains a Site Evaluation Form and Synopsis for each site. The Synopsis, which is accompanied by a map, gives an overview of each site and lends understanding to the Site Evaluation Form.

Subsequent investigations should be preceded by review of Appendix B which includes, in addition to Appendix A, the Site Inspection Forms and other base data. Appendix B has not been reproduced to accompany each report copy. Instead a single original copy of Appendix B has been deposited with the Environmental Protection Service, Ontario Region.

3. RESULTS

3.1 General

A total of 14 sites were identified and investigated. The consecutive numbering system established from the previous report has been continued. Each site number incorporates a prefix letter which indicates the agency to which it belongs:

- D National Defence
- N National Capital Commission
- C National Research Council
- W Public Works
- T St. Lawrence Seaway Authority (Transport Canada)

The sites are listed by agency with their assigned number and priority rating in Table 1 below.

TABLE 1
LIST OF SITES

SITE NO.	SITE NAME	SCORE	PRIORITY
D-119	R.C.E. Armoury - Lees Avenue	102	III
D-120	L.E.T.E. Burn Quarry	104	III
N-121	Driscoll Pit - Cedarview Road	98	III
N-122	McGee Farm	125	II
N-123	Nepean Bay	110	III
N-124	Riverside Drive	108	III
N-125	Ridge Road Landfill	135	II
N-126	Commissioner Park	Unscored	III
N-127	Central Park	Unscored	III
N-128	Maple Island and East Bank of Rideau River	Unscored	III
N-129	Stoney Swamp	Unscored	III
W-130	Kent Street	105	III
T-131	Coniagas Reduction (Ontario Paper)	136	II
T-132	Walker Bros. Quarry	113	III

There were no sites identified on National Research Council lands.

Six sites were previously identified in the 1979 MOE inventory. The corresponding site numbers are listed below:

EPS #	MOE #
D-119	1017
N-121	9002
N-122	1007
N-123	1011
N-124	1015
N-129	9009

There were three sites where information was insufficient for completion of Site Inspection Forms. These were among five which came to light as a result of some City of Ottawa Council minutes from 3 December 1984 (a copy of which is found in Appendix B). These minutes discussed waste disposal practices in Ottawa from 1906 to 1945 and listed parcels of low-lying land where filling with refuse had taken place. A fourth site N-129, identified by the 1979 MOE inventory as #9009, was very small. These four sites were not evaluated by the numerical scoring system and instead were given brief descriptive evaluations.

There were no sites scored as Priority I. Three sites received scores in the Priority II range. The potential for hazard is considered sufficient to warrant further investigation at these sites. The remaining 11 sites were scored as Priority III and should not present a danger to human health or the environment.

The Priority II sites are discussed in Section 3.2.

3.2 Priority II Sites

N-122 McGee Farm

The high score for this site arises from its potential for impact. It is located very close to one of the Region of Ottawa-Carleton's two water intakes, the Britannia Bay Filtration Plant. Considerable dilution by the Ottawa River of any leachate emanating from the site would occur. Despite the application of a hazard reduction factor to account for dilution, the site retained a Priority II status. Water contamination is not expected to be a concern here, however, because of dilution.

The other contributing component to the high potential for impact is the proximity of residential dwellings. Although the east and west boundaries of the fill are not known with certainty, there is potential for methane gas migration over the relatively short distances between the site and adjacent buildings. It is this potential hazard that warrants further investigation.

N-125 Ridge Road Landfill

The Ridge Road Landfill received a high score because of evidence of both leachate and gas present at the time of the site inspection. Because of the site's remote location, the gas does not represent a hazard to local residences. However, contamination of Black Creek has been a concern of

neighbouring farmers since shortly after the landfill began operation in the mid-1960's. The 1975 closing out study by the City of Ottawa reported moderate pollution of Black Creek as did a later study in 1979. There has been no study of surface water quality since the site was closed and capped. The Ontario Ministry of the Environment intends to investigate surface water quality in the summer of 1984 to see if the capping and grassing of the site has improved conditions.

T-131 Coniagas Reduction (Ontario Paper)

The site receives a Priority II rating mostly because of the high concern nature of the waste (tailings from the refining of silver ores that contain elevated levels of lead, zinc, arsenic, nickel and silver). The potential for impact of these wastes on the ground water system is considered to be low since most ground water flow would likely be directed into the Welland Canal. Water testing has shown that the impact on the Welland Canal is measurable but it is noted that concentrations of heavy metals and arsenic meet MOE drinking water quality objectives. There is no evidence of methane gas so, despite the proximity of buildings to the site, there is little potential for gas impact.

Although the potential for impact is relatively low, further study is warranted to establish the full extent of the disposal area to avoid problems with any future development of the property.

3.3 Recommendation

On the basis of the priority rankings and an understanding of conditions specific to each site, it is recommended that the three sites identified as Priority II, namely

N-122	McGee Farm
N-125	Ridge Road Landfill
T-131	Coniagas Reduction (Ontario Paper)

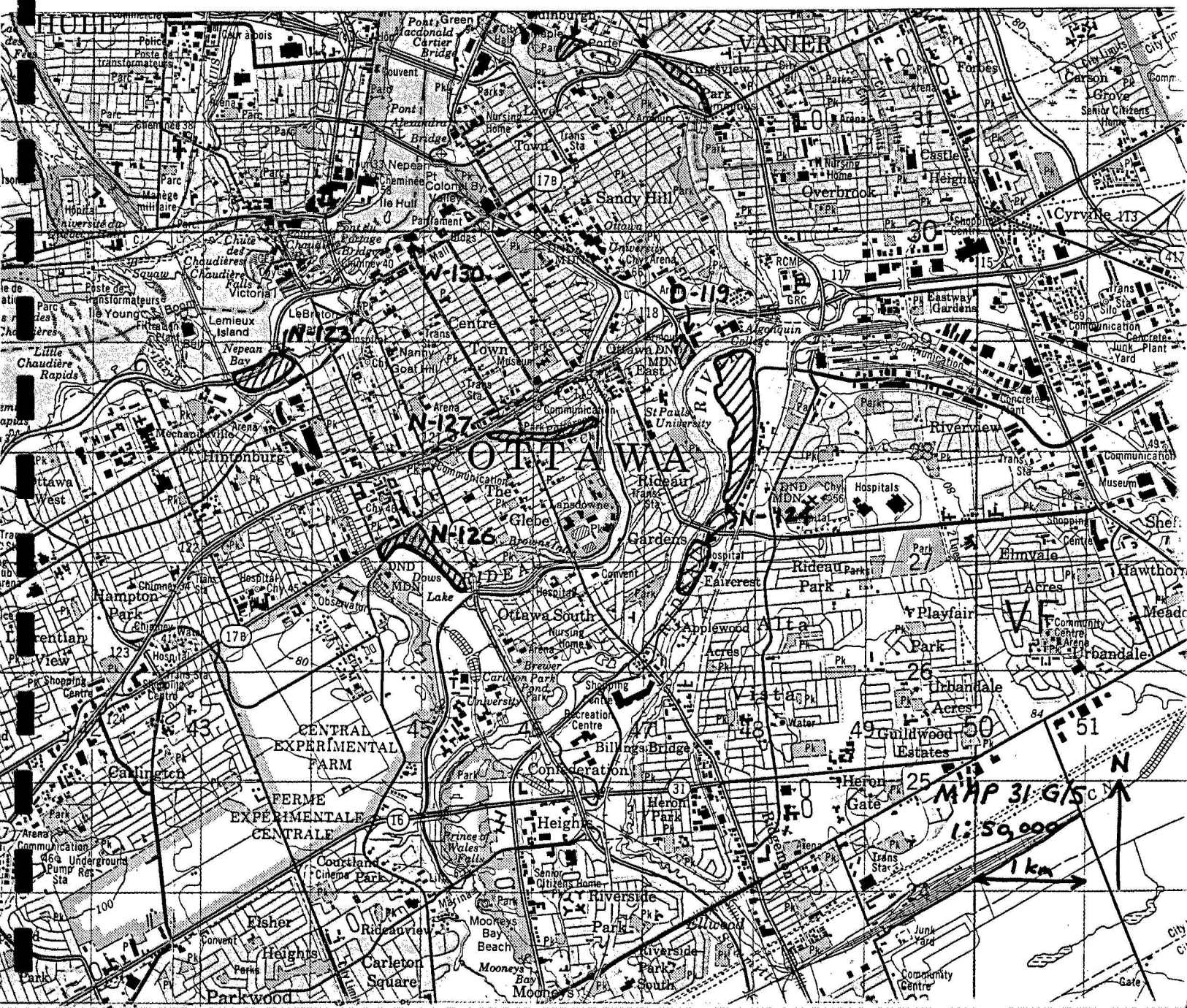
be considered for further assessment by owner agencies.

APPENDIX A
SITE SYNOPSES & EVALUATION

SYNOPSIS

SITE NAME: RCE Armoury - Lees Avenue SITE NO: D-119

From the late 1920's to the late 1940's, the City of Ottawa disposed of its wastes on low-lying lands along the Rideau River south of Lees Avenue. Also cinders from the Ottawa Gas plant on the north side of Lees Avenue were used as fill. In 1940, about 3.7 hectares of these lands were transferred from the Dept. of Mines and Resources to the Dept. of National Defence. The armoury was established on the filled area in 1946. No problems have been encountered on the site although the property shows distinct settlement relative to Lees Avenue.



SITE NAME: R.C.E. ARMOURY - LEES AVENUE SITE NO. 0-119

PRIORITY III

SITE EVALUATION FORM

A - POTENTIAL FOR HAZARD

	Pts.
1. Degree of concern of Waste Type (see definition)	
High	50
Medium	30
Low	(10)
2. Estimate of Waste Quantity (choose larger score)	
Volume (m^3) or Area (m^2)	
> 25,000 / > 7,000	(20)
5,000 - 25,000 / 1,500 - 7,000	15
200 - 5,000 / 70 - 1,500	10
0 - 200 / 0 - 70	5
3. Water Surplus	
> 40 cm	5
25 cm - 40 cm	4
10 cm - 25 cm	(2)
0 cm - 10 cm	1
4. Site Cover	
Uncovered	5
Unvegetated	5

Covered: Soil Type	Depth 0-1 m	Depth > 1 m
Clay	0	0
Silt	1	0
Granular	(2)	1

	Pts.
5. Surface Water Drainage From Site	
Steep slope	1
Moderate slope	2
Flat	(5)
Depression	10
6. Method of Operation (when active)	
Open dump	(5)
Open dump with burning	3
Dump with occasional cover	3
Sanitary Landfill	1
7. Water Contact with Waste	
Yes	15
Unknown, likely	10
, unlikely	(5)
No	0
8. Evidence of Leachate of Gas	
Leachate	10
Gas	10
9. Hazard Reduction Factor, maximum -20 pts. or value of item (e.g. very old, marginal quantity, prior remedial measures)	
Specify OLD, DILUTION	-12
Sub-Total A (max. 135 pts.)	37

B - POTENTIAL FOR OFF-SITE MIGRATION

	Pts.
10. Soil Type	
Clay	5
Silt	10
Granular Soil	(20)
Bedrock	20
11. Estimated Depth to Water Table	
0 m - 1.5 m	(5)
1.5 m - 5.0 m	3
> 5.0 m	1
12. Proximity to Surface Water (transport mechanism) (score only if downgradient or unknown)	
0 m - 90 m	(10)
90 m - 300 m	5
300 m - 1.5 km	3
> 1.5 km	1
13. Flood Potential	
Flooded annually or other	10
Flooded occasionally	5
Never flooded	(0)
14. Vectors	
Yes	5
No	(0)
Sub-Total B (max. 50 pts.)	35

C - POTENTIAL FOR IMPACT

15a. Proximity to Potable Water Supply (worst case only) (score only if downstream, downgradient or unknown)

	Community	Domestic
0 m - 90 m	40	20
90 m - 300 m	30	15
300 m - 1.5 km	20	5
1.5 km - 5 km	10	1
> 5 km	(2)	0

15b. Population affected by worst case

	Pts.
>5,000	15
1,000 - 5,000	10
101 - 1,000	7
1 - 100	(3)

16. Surface Water Use of Item 12. (other than potable water supply)

	Pts.
Recreational	5
Irrigation	3
Commercial or Industrial	2

17. Surrounding Land Use (select worst case in each column and total)

	0 m-400 m	400 m-1.5 km	>1.5 km
Residential or Proposed Housing	(12)	(9)	(4)
Inst., Park or Recreational	12	7	3
Commercial or Industrial	9	4	2
Agricultural	7	4	1
Rural	4	2	0

18. Distance to Sensitive Environments

	Pts.
0 m - 300 m	10
300 m - 1.5 km	5
>1.5 km	2
Sub-Total C (max. 95 pts.)	30

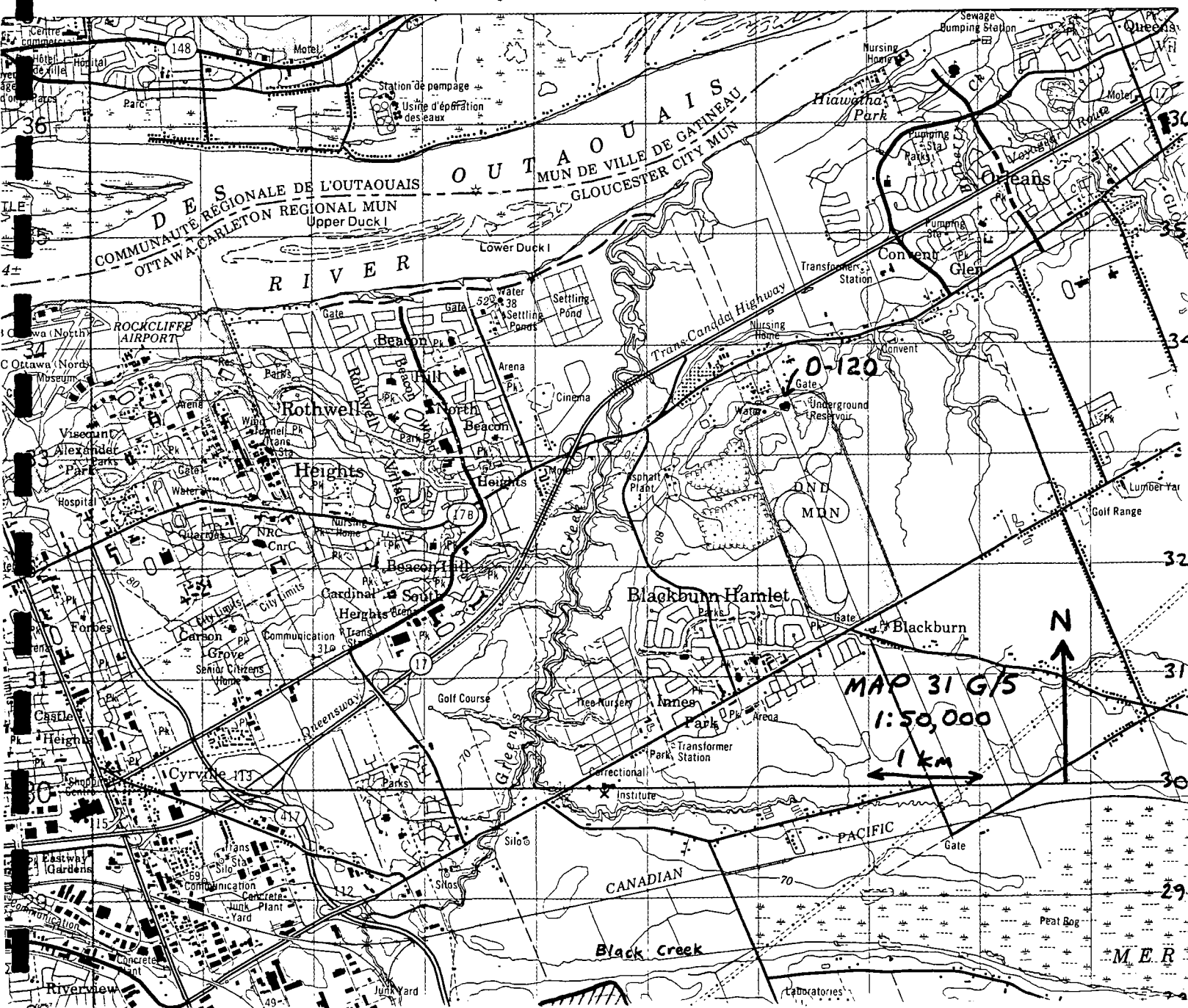
Classification: Priority I ≥140, Priority II 115-139, Priority (III) ≤114

Total A + B + C (max. 280 pts.) 102

SYNOPSIS

SITE NAME: L.E.T.E. Burn Quarry SITE NO: D-120

Up to about 1966 or 1967, the National Research Council burned waste oil, gas and chemical wastes from its labs in a limestone quarry at the Land Engineering Test Establishment (L.E.T.E) near Orleans. Waste oil and gas were poured onto shallow water on the quarry floor, ignited, and bottles of waste chemicals were thrown into the blaze. As the fire died down, cardboard and waste wood were often added to be burned. Only glass would remain after the fire, often melted by the intense heat. Because of complaints about the smoke, the practice was halted and all residues were cleared from the quarry floor. The quarry remains unused today.



SITE NAME: L.E.T.E. BURN QUARRY

SITE EVALUATION FORM

SITE NO. D-120

PRIORITY III

A - POTENTIAL FOR HAZARD

		Pts.
1. Degree of concern of Waste Type (see definition)		
	High	50
	Medium	(30)
	Low	10
2. Estimate of Waste Quantity (choose larger score)		
Volume (m^3)	or Area (m^2)	
> 25,000	> 7,000	20
5,000 - 25,000	1,500 - 7,000	15
200 - 5,000	70 - 1,500	10
0 - 200	0 - 70	(5)
3. Water Surplus		
> 40 cm		5
25 cm - 40 cm		4
10 cm - 25 cm		(2)
0 cm - 10 cm		1
4. Site Cover		
Uncovered	N/A	5
Unvegetated	N/A	5

Covered: Soil Type	Depth 0-1 m	Depth > 1 m
Clay	0	0
Silt	1	0
Granular	2	1

		Pts.
5. Surface Water Drainage From Site		
	Steep slope	1
	Moderate slope	2
	Flat	(5)
	Depression	10
6. Method of Operation (when active)		
	Open dump	5
	Open dump with burning	(3)
	Dump with occasional cover	3
	Sanitary Landfill	1
7. Water Contact with Waste		
	Yes	(15)
	Unknown, likely	10
	, unlikely	5
	No	0
8. Evidence of Leachate of Gas		
	Leachate	10
	Gas	10
9. Hazard Reduction Factor, maximum -20 pts. or value of item (e.g. very old, marginal quantity, prior remedial measures)		
	Specify BURNED	-10
	Sub-Total A (max. 135 pts.)	50

B - POTENTIAL FOR OFF-SITE MIGRATION

	Pts.
10. Soil Type	
Clay	5
Silt	10
Granular Soil	20
Bedrock	(20)
11. Estimated Depth to Water Table	
0 m - 1.5 m	5
1.5 m - 5.0 m	3
> 5.0 m	(1)
12. Proximity to Surface Water (transport mechanism) (score only if downgradient or unknown)	
0 m - 90 m	10
90 m - 300 m	5
300 m - 1.5 km	(3)
> 1.5 km	1
13. Flood Potential	
Flooded annually or other	10
Flooded occasionally	5
Never flooded	(0)
14. Vectors	
Yes	5
No	(0)
Sub-Total B (max. 50 pts.)	24

C - POTENTIAL FOR IMPACT

15a. Proximity to Potable Water Supply (worst case only) (score only if downstream, downgradient or unknown)

	Community	Domestic
0 m - 90 m	40	20
90 m - 300 m	30	15
300 m - 1.5 km	20	5
1.5 km - 5 km	10	1
> 5 km	(2)	0

15b. Population affected by worst case

	Pts.
>5,000	15
1,000 - 5,000	10
101 - 1,000	7
1 - 100	(3)

16. Surface Water Use of Item 12. (other than potable water supply)

	Pts.
Recreational	5
Irrigation	3
Commercial or Industrial	2

17. Surrounding Land Use (select worst case in each column and total)

	0 m-400 m	400 m-1.5 km	>1.5 km
Residential or Proposed Housing	(12)	(9)	(4)
Inst., Park or Recreational	12	7	3
Commercial or Industrial	9	4	2
Agricultural	7	4	1
Rural	4	2	0

18. Distance to Sensitive Environments

	Pts.
0 m - 300 m	10
300 m - 1.5 km	5
>1.5 km	2
Sub-Total C (max. 95 pts.)	30

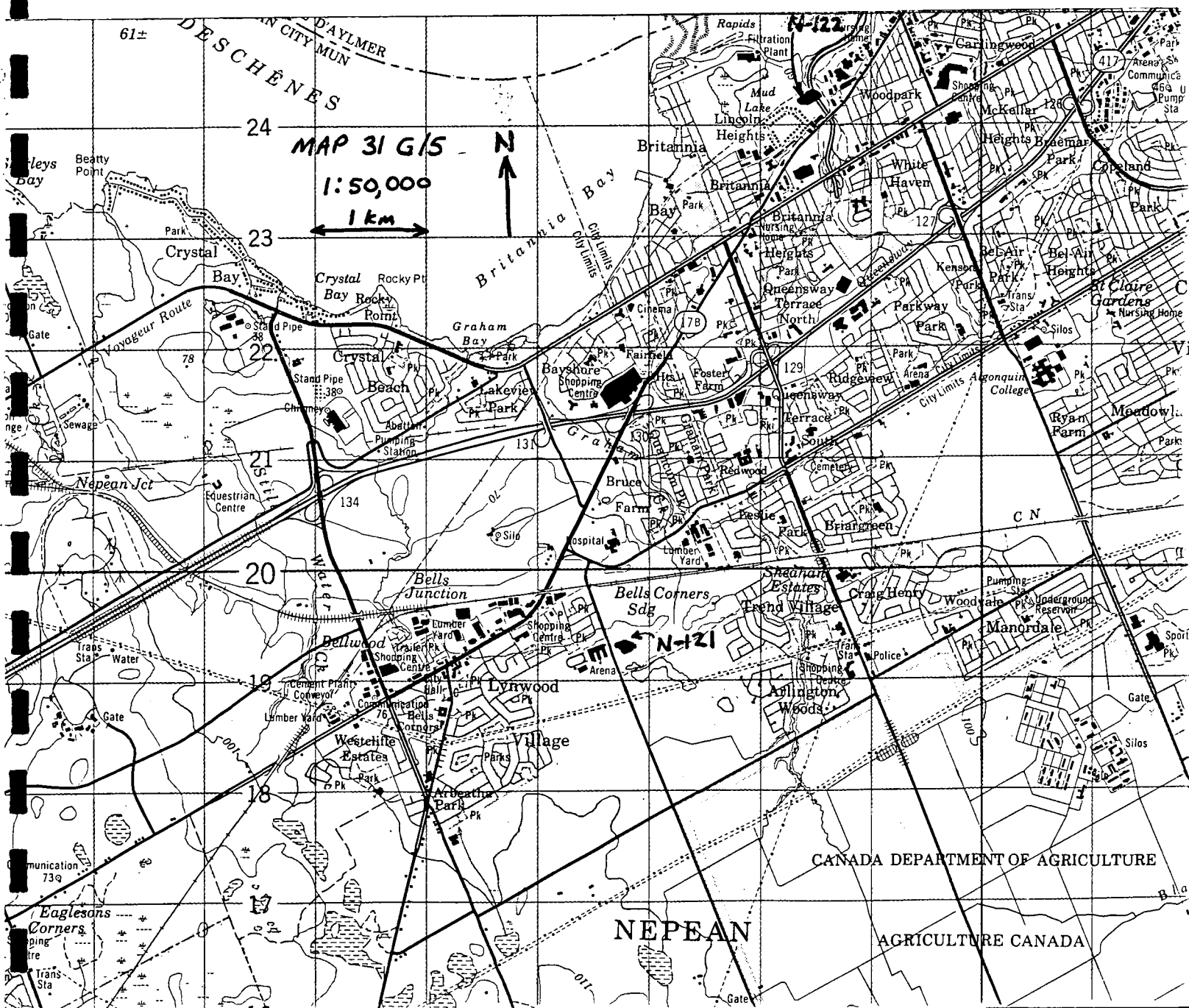
Classification: Priority I ≥140, Priority II 115-139, Priority III ≤114

Total A + B + C (max. 280 pts.) 104

SYNOPSIS

SITE NAME: Driscoll Pit - Cedarview Road SITE NO: N-121

In 1958 the Township of Nepean leased a 2 acre sand pit for waste disposal. The property was acquired by the National Capital Commission in 1960 prior to landfilling. Waste disposal appears to have taken place from 1960 to 1965 from aerial photographs. Waste depths are presumed to be almost as deep as the original pit depth, about 10 m. Burning was conducted at the site which is reported to have raised concerns. The site was covered with sandy soil when full. The site is well vegetated with grass and young trees and is used as a recreation area.



SITE NAME: DRISCOLL PIT - CEDARVIEW RD. SITE NO. N-121

PRIORITY III

SITE EVALUATION FORM

A - POTENTIAL FOR HAZARD

		Pts.
1.	Degree of concern of Waste Type (see definition)	
	High	50
	Medium	30
	Low	(10)
2.	Estimate of Waste Quantity (choose larger score)	
	Volume (m^3) or Area (m^2)	
	> 25,000 or > 7,000	(20)
	5,000 - 25,000 or 1,500 - 7,000	15
	200 - 5,000 or 70 - 1,500	10
	0 - 200 or 0 - 70	5
3.	Water Surplus	
	> 40 cm	5
	25 cm - 40 cm	4
	10 cm - 25 cm	(2)
	0 cm - 10 cm	1
4.	Site Cover	
	Uncovered	5
	Unvegetated	5

Covered: Soil Type	Depth 0-1 m	Depth > 1 m
Clay	0	0
Silt	1	0
Granular	(2)	1

		Pts.
5.	Surface Water Drainage From Site	
	Steep slope	1
	Moderate slope	(2)
	Flat	5
	Depression	10
6.	Method of Operation (when active)	
	Open dump	5
	Open dump with burning	(3)
	Dump with occasional cover	3
	Sanitary Landfill	1
7.	Water Contact with Waste	
	Yes	15
	Unknown, likely	10
	, unlikely	(5)
	No	0
8.	Evidence of Leachate of Gas	
	Leachate	10
	Gas	10
9.	Hazard Reduction Factor, maximum -20 pts. or value of item (e.g. very old, marginal quantity, prior remedial measures)	
	Specify _____	-
	Sub-Total A (max. 135 pts.)	44

B - POTENTIAL FOR OFF-SITE MIGRATION

	Pts.
10. Soil Type	
Clay	5
Silt	10
Granular Soil	(20)
Bedrock	20
11. Estimated Depth to Water Table	
0 m - 1.5 m	5
1.5 m - 5.0 m	3
> 5.0 m	(1)
12. Proximity to Surface Water (transport mechanism) (score only if downgradient or unknown)	
0 m - 90 m	10
90 m - 300 m	5
300 m - 1.5 km	(3)
> 1.5 km	1
13. Flood Potential	
Flooded annually or other	10
Flooded occasionally	5
Never flooded	(0)
14. Vectors	
Yes	5
No	(0)
Sub-Total B (max. 50 pts.)	24

C - POTENTIAL FOR IMPACT

15a. Proximity to Potable Water Supply (worst case only) (score only if downstream, downgradient or unknown)

	Community	Domestic
0 m - 90 m	40	20
90 m - 300 m	30	15
300 m - 1.5 km	20	5
1.5 km - 5 km	10	1
> 5 km	(2)	0

15b. Population affected by worst case

	Pts.
>5,000	15
1,000 - 5,000	10
101 - 1,000	7
1 - 100	(3)

16. Surface Water Use of Item 12. (other than potable water supply)

	Pts.
Recreational	5
Irrigation	3
Commercial or Industrial	2

17. Surrounding Land Use (select worst case in each column and total)

	0 m-400 m	400 m-1.5 km	>1.5 km
Residential or Proposed Housing	(12)	(9)	(4)
Inst., Park or Recreational	12	7	3
Commercial or Industrial	9	4	2
Agricultural	7	4	1
Rural	4	2	0

18. Distance to Sensitive Environments

	Pts.
0 m - 300 m	10
300 m - 1.5 km	5
>1.5 km	2
Sub-Total C (max. 95 pts.)	30

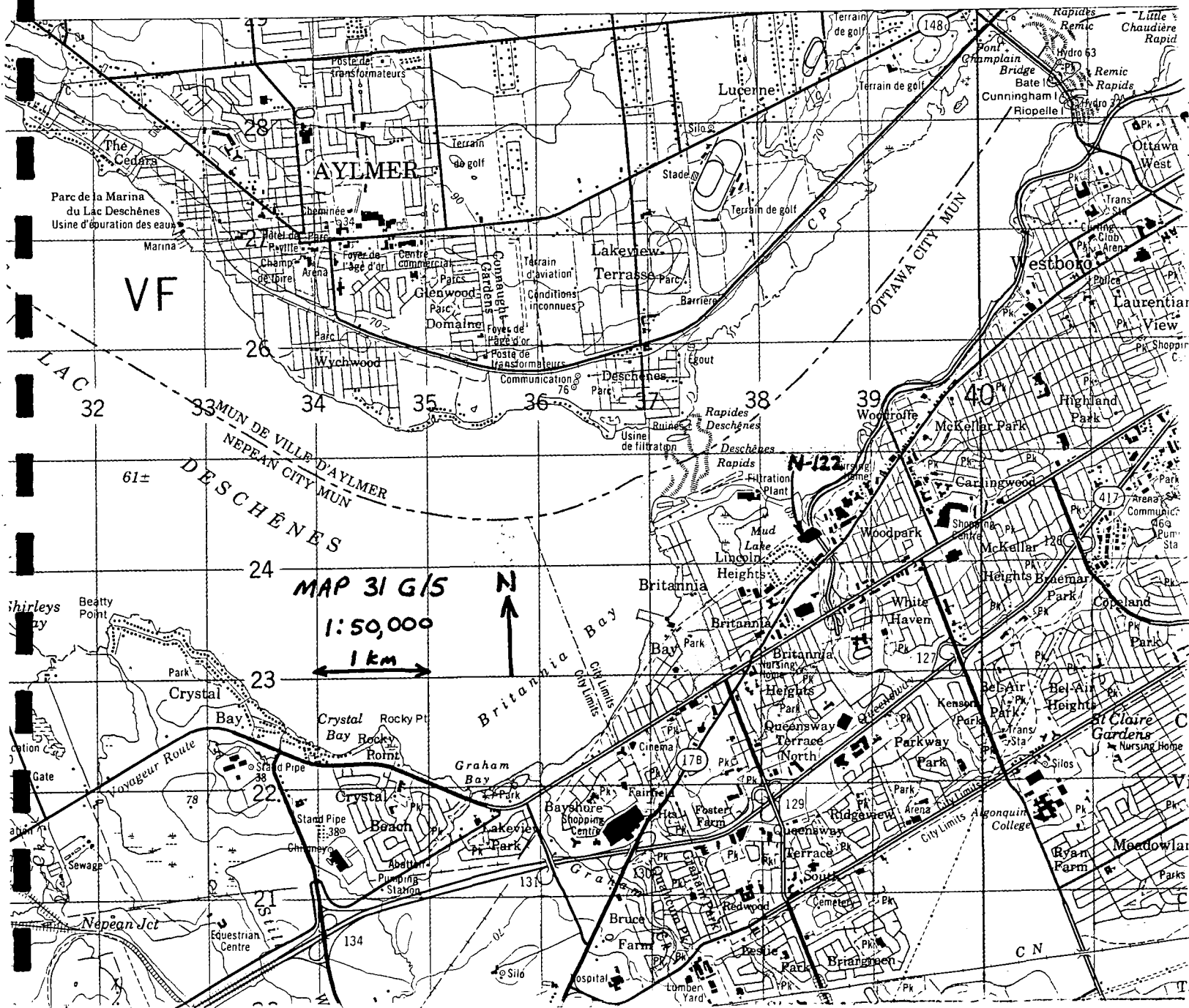
Classification: Priority I ≥140, Priority II 115-139, Priority (III) ≤114

Total A + B + C (max. 280 pts.) 98

SYNOPSIS

SITE NAME: McGee Farm SITE NO: N-122

The City of Ottawa operated the site from April 1957 to January 1959, according to records, for disposal of domestic garbage and construction materials. The site is about 2 hectares in area and the depth of waste is estimated to range between 1.5 m and 3.0 m. The Ottawa River Parkway was constructed through the site in 1966. The width of the road bed was excavated and back-filled with sand. The excavated garbage was reburied in roadway fill closer to the Ottawa River. The lands on either side of the Parkway are developed as park.



SITE NAME: McGEE FARM SITE NO. N-122

PRIORITY II

SITE EVALUATION FORM

A - POTENTIAL FOR HAZARD

	Pts.
1. Degree of concern of Waste Type (see definition)	
High	50
Medium	30
Low	(10)
2. Estimate of Waste Quantity (choose larger score)	
Volume (m^3) or Area (m^2)	
> 25,000 / > 7,000	(20)
5,000 - 25,000 / 1,500 - 7,000	15
200 - 5,000 / 70 - 1,500	10
0 - 200 / 0 - 70	5
3. Water Surplus	
> 40 cm	5
25 cm - 40 cm	4
10 cm - 25 cm	(2)
0 cm - 10 cm	1
4. Site Cover	
Uncovered	5
Unvegetated	5

Covered: Soil Type	Depth 0-1 m	Depth > 1 m
Clay	0	0
Silt	1	0
Granular	(2)	1

	Pts.
5. Surface Water Drainage From Site	
Steep slope	1
Moderate slope	(2)
Flat	5
Depression	10
6. Method of Operation (when active)	
Open dump	5
Open dump with burning	3
Dump with occasional cover	(3)
Sanitary Landfill	1
7. Water Contact with Waste	
Yes	15
Unknown, likely	(10)
, unlikely	5
No	0
8. Evidence of Leachate of Gas	
Leachate	10
Gas	10
9. Hazard Reduction Factor, maximum -20 pts. or value of item (e.g. very old, marginal quantity, prior remedial measures)	
Specify DILUTION	-17
Sub-Total A (max. 135 pts.)	32

B - POTENTIAL FOR OFF-SITE MIGRATION

Pts.

10. Soil Type

Clay	5
Silt	10
Granular Soil	(20)
Bedrock	20

11. Estimated Depth to Water Table

0 m - 1.5 m	5
1.5 m - 5.0 m	(3)
> 5.0 m	1

12. Proximity to Surface Water (transport mechanism) (score only if downgradient or unknown)

0 m - 90 m	(10)
90 m - 300 m	5
300 m - 1.5 km	3
> 1.5 km	1

13. Flood Potential

Flooded annually or other	10
Flooded occasionally	5
Never flooded	(0)

14. Vectors

Yes	5
No	0

Sub-Total B (max. 50 pts.) 33

C - POTENTIAL FOR IMPACT

Pts.

15a. Proximity to Potable Water Supply (worst case only) (score only if downstream, downgradient or unknown)

	Community	Domestic
0 m - 90 m	40	20
90 m - 300 m	30	15
300 m - 1.5 km	(20)	5
1.5 km - 5 km	10	1
> 5 km	2	0

15b. Population affected by worst case

>5,000	(15)
1,000 - 5,000	10
101 - 1,000	7
1 - 100	3

16. Surface Water Use of Item 12. (other than potable water supply)

Recreational	5
Irrigation	3
Commercial or Industrial	2

17. Surrounding Land Use (select worst case in each column and total)

	0 m-400 m	400 m-1.5 km	>1.5 km
Residential or Proposed Housing	(12)	(9)	(4)
Inst., Park or Recreational	12	7	3
Commercial or Industrial	9	4	2
Agricultural	7	4	1
Rural	4	2	0

18. Distance to Sensitive Environments

0 m - 300 m	10
300 m - 1.5 km	5
>1.5 km	2

Sub-Total C (max. 95 pts.) 60

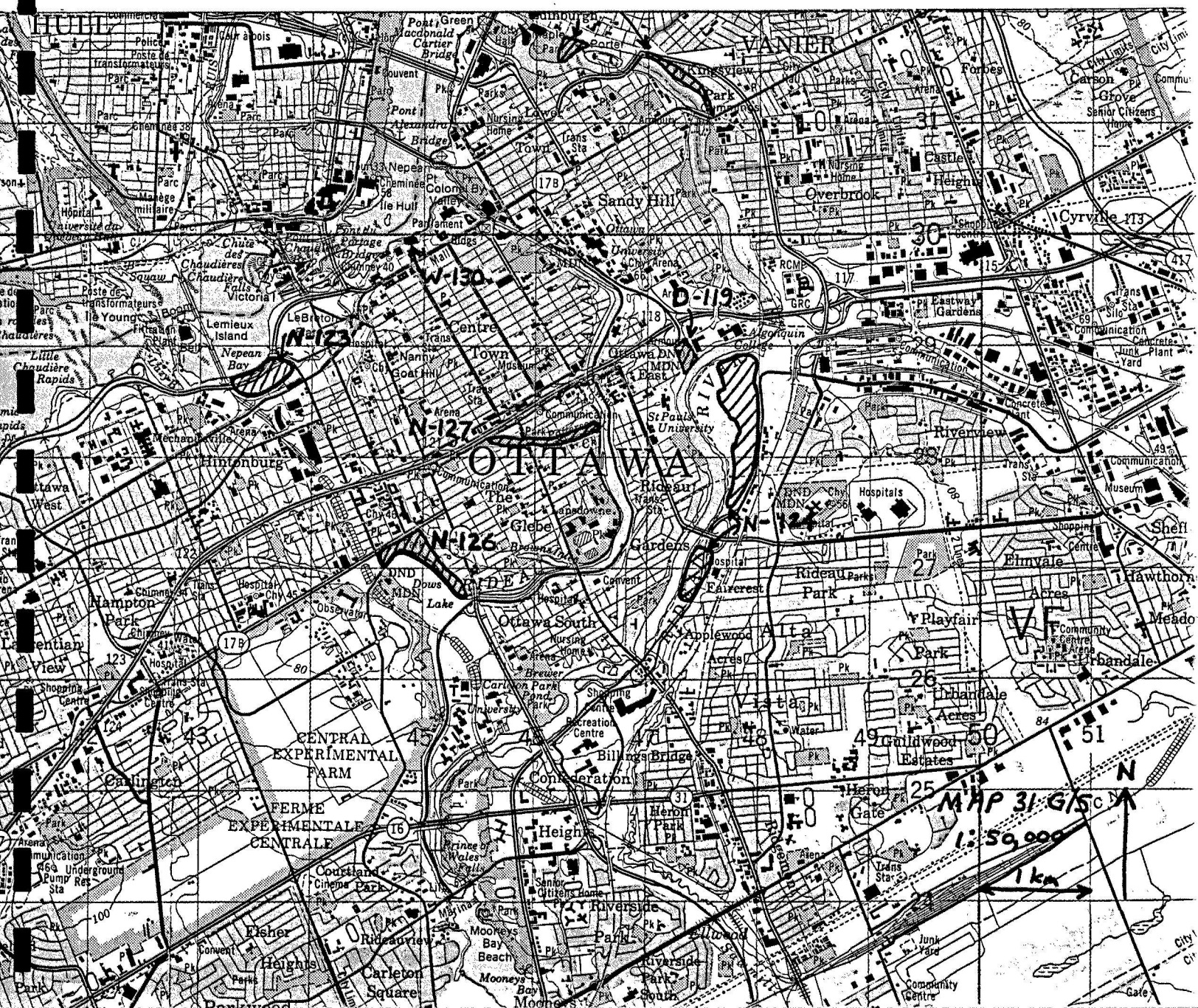
Classification: Priority I ≥140, Priority (II) 115-139, Priority III ≤114

Total A + B + C (max. 280 pts.) 125

SYNOPSIS

SITE NAME: Nepean Bay SITE NO: N-123

A portion of Nepean Bay was filled between March 1963 and February 1964 with wastes from the City of Ottawa. A dyke was built across the bay and wastes filled in behind. The filled area represents about 7.7 hectares. Waste depths are estimated to be between 3 and 6 m. Much construction rubble and earth fill was placed over the waste for construction of the Ottawa River Parkway between 1965 and 1967. The area is landscaped, with grass and plantings of trees.



SITE NAME: NEPEAN BAY SITE NO. N-123

PRIORITY III

SITE EVALUATION FORM

A - POTENTIAL FOR HAZARD

	Pts.
1. Degree of concern of Waste Type (see definition)	
High	50
Medium	30
Low	(10)
2. Estimate of Waste Quantity (choose larger score)	
Volume (m^3) or Area (m^2)	
> 25,000 / > 7,000	(20)
5,000 - 25,000 / 1,500 - 7,000	15
200 - 5,000 / 70 - 1,500	10
0 - 200 / 0 - 70	5
3. Water Surplus	
> 40 cm	5
25 cm - 40 cm	4
10 cm - 25 cm	(2)
0 cm - 10 cm	1
4. Site Cover	
Uncovered	5
Unvegetated	5

Covered: Soil Type	Depth 0-1 m	Depth > 1 m
Clay	0	0
Silt	1	(0)
Granular	2	1

	Pts.
5. Surface Water Drainage From Site	
Steep slope	1
Moderate slope	(2)
Flat	5
Depression	10
6. Method of Operation (when active)	
Open dump	5
Open dump with burning	3
Dump with occasional cover	3
Sanitary Landfill	(1)
7. Water Contact with Waste	
Yes	15
Unknown, likely	(10)
, unlikely	5
No	0
8. Evidence of Leachate of Gas	
Leachate	10
Gas	10
9. Hazard Reduction Factor, maximum -20 pts. or value of item (e.g. very old, marginal quantity, prior remedial measures)	
Specify DILUTION	-2
Sub-Total A (max. 135 pts.)	43

B - POTENTIAL FOR OFF-SITE MIGRATION

Pts.

10. Soil Type

Clay	5
Silt	10
Granular Soil	(20)
Bedrock	20

11. Estimated Depth to Water Table

0 m - 1.5 m	5
1.5 m - 5.0 m	(3)
> 5.0 m	1

12. Proximity to Surface Water (transport mechanism) (score only if downgradient or unknown)

0 m - 90 m	(10)
90 m - 300 m	5
300 m - 1.5 km	3
> 1.5 km	1

13. Flood Potential

Flooded annually or other	10
Flooded occasionally	5
Never flooded	(0)

14. Vectors

Yes	5
No	(0)

Sub-Total B (max. 50 pts.) **33**

C - POTENTIAL FOR IMPACT

Pts.

15a. Proximity to Potable Water Supply (worst case only) (score only if downstream, downgradient or unknown)

	Community	Domestic
0 m - 90 m	40	20
90 m - 300 m	30	15
300 m - 1.5 km	20	5
1.5 km - 5 km	10	1
> 5 km	(2)	0

15b. Population affected by worst case

>5,000	15
1,000 - 5,000	10
101 - 1,000	7
1 - 100	(3)

16. Surface Water Use of Item 12. (other than potable water supply)

Recreational	5
Irrigation	3
Commercial or Industrial	(2)

17. Surrounding Land Use (select worst case in each column and total)

	0 m-400 m	400 m-1.5 km	>1.5 km
Residential or Proposed Housing	(12)	(9)	(4)
Inst., Park or Recreational	12	7	3
Commercial or Industrial	9	4	2
Agricultural	7	4	1
Rural	4	2	0

18. Distance to Sensitive Environments

0 m - 300 m	10
300 m - 1.5 km	5
>1.5 km	(2)

Sub-Total C (max. 95 pts.) **34**

Classification: Priority I ≥140, Priority II 115-139, Priority (III) ≤114

Total A + B + C (max. 280 pts.) **110**

SYNOPSIS

SITE NAME: Riverside Drive SITE NO: N-124

The City of Ottawa leased flood plain land along the east bank of the Rideau River from the Federal District Commission (now National Capital Commission) for disposal of refuse. Landfilling commenced about 1948 in the flood plain at the end of Smyth Road between Riverside Drive and the river bank and initially progressed southward to Billings Avenue. Filling was later continued northward almost to Hurdman Bridge in 1963. Waste depths are estimated to be 1 m to 4 m. The site has been subject to much investigation in connection with construction of the South East Transitway.

SITE EVALUATION FORM

SITE NAME: RIVERSIDE DRIVE SITE NO. N-124

PRIORITY III

A - POTENTIAL FOR HAZARD

	Pts.
1. Degree of concern of Waste Type (see definition)	
High	50
Medium	30
Low	(10)
2. Estimate of Waste Quantity (choose larger score)	
Volume (m^3) or Area (m^2)	
> 25,000 or > 7,000	(20)
5,000 - 25,000 or 1,500 - 7,000	15
200 - 5,000 or 70 - 1,500	10
0 - 200 or 0 - 70	5
3. Water Surplus	
> 40 cm	5
25 cm - 40 cm	4
10 cm - 25 cm	(2)
0 cm - 10 cm	1
4. Site Cover	
Uncovered	5
Unvegetated	5

Covered:

Soil Type	Depth 0-1 m	Depth > 1 m
Clay	0	0
Silt	1	0
Granular	(2)	1

	Pts.
5. Surface Water Drainage From Site	
Steep slope	1
Moderate slope	2
Flat	(5)
Depression	10
6. Method of Operation (when active)	
Open dump	5
Open dump with burning	3
Dump with occasional cover	3
Sanitary Landfill	(1)
7. Water Contact with Waste	
Yes	(15)
Unknown, likely	10
, unlikely	5
No	0
8. Evidence of Leachate of Gas	
Leachate	10
Gas	(10)
9. Hazard Reduction Factor, maximum -20 pts. or value of item (e.g. very old, marginal quantity, prior remedial measures)	
Specify WELL STUDIED	-20
Sub-Total A (max. 135 pts.)	45

B - POTENTIAL FOR OFF-SITE MIGRATION

	Pts.
10. Soil Type	
Clay	5
Silt	10
Granular Soil	(20)
Bedrock	20
11. Estimated Depth to Water Table	
0 m - 1.5 m	5
1.5 m - 5.0 m	(3)
> 5.0 m	1
12. Proximity to Surface Water (transport mechanism) (score only if downgradient or unknown)	
0 m - 90 m	(10)
90 m - 300 m	5
300 m - 1.5 km	3
> 1.5 km	1
13. Flood Potential	
Flooded annually or other	10
Flooded occasionally	5
Never flooded	(0)
14. Vectors	
Yes	5
No	(0)
Sub-Total B (max. 50 pts.)	33

C - POTENTIAL FOR IMPACT

15a. Proximity to Potable Water Supply (worst case only) (score only if downstream, downgradient or unknown)

	Community	Domestic
0 m - 90 m	40	20
90 m - 300 m	30	15
300 m - 1.5 km	20	5
1.5 km - 5 km	10	1
> 5 km	(2)	0

15b. Population affected by worst case

	Pts.
>5,000	15
1,000 - 5,000	10
101 - 1,000	7
1 - 100	(3)

16. Surface Water Use of Item 12. (other than potable water supply)

	Pts.
Recreational	5
Irrigation	3
Commercial or Industrial	2

17. Surrounding Land Use (select worst case in each column and total)

	0 m-400 m	400 m-1.5 km	>1.5 km
Residential or Proposed Housing	(12)	(9)	(4)
Inst., Park or Recreational	12	7	3
Commercial or Industrial	9	4	2
Agricultural	7	4	1
Rural	4	2	0

18. Distance to Sensitive Environments

	Pts.
0 m - 300 m	10
300 m - 1.5 km	5
>1.5 km	2
Sub-Total C (max. 95 pts.)	30

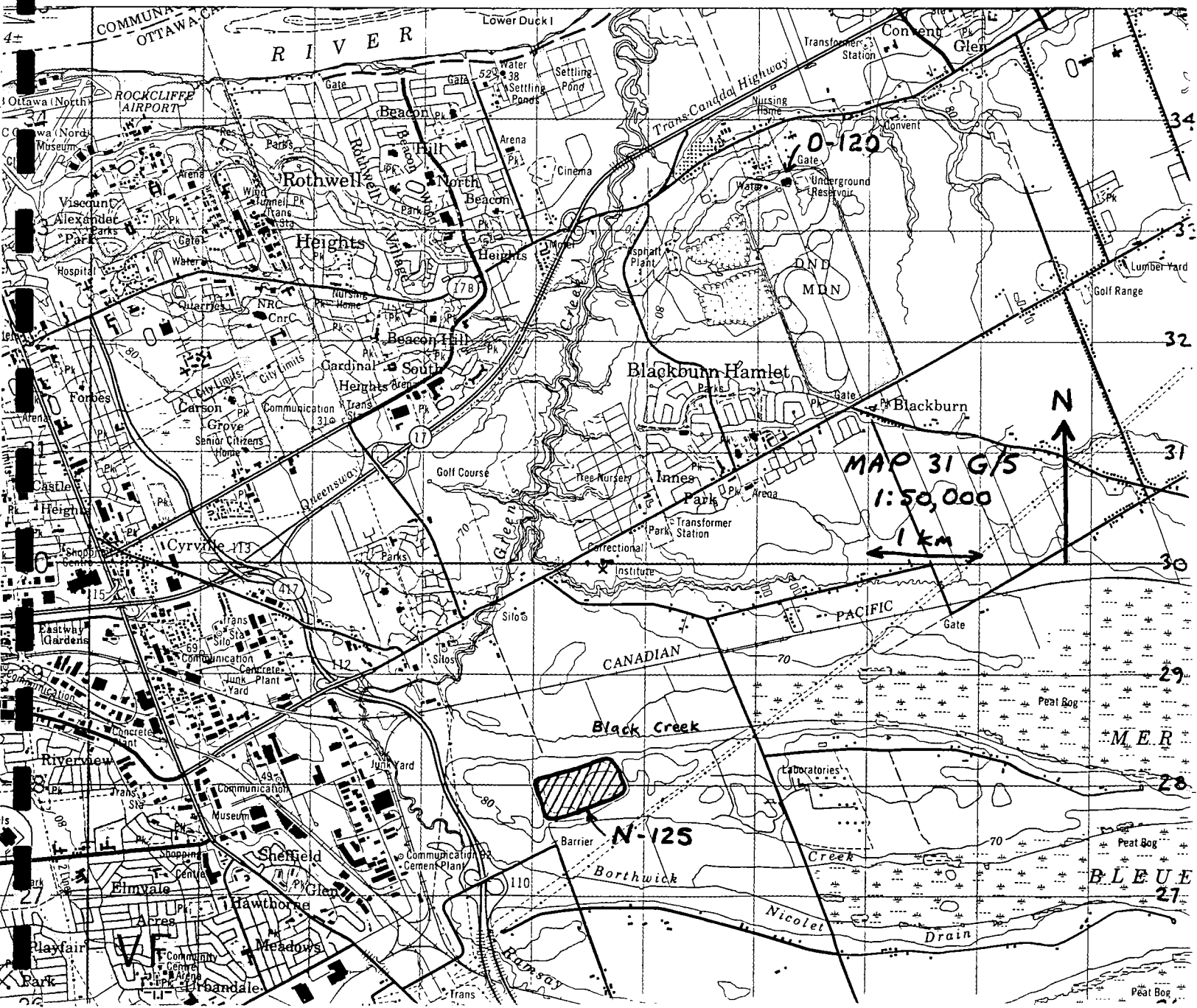
Classification: Priority I ≥140, Priority II 115-139, Priority (III) ≤114

Total A + B + C (max. 280 pts.) 108

SYNOPSIS

SITE NAME: Ridge Road Landfill SITE NO: N-125

This site was leased from the National Capital Commission by the City of Ottawa for use as a landfill from 1964 to 1978. Domestic garbage and refuse were accepted at the site. As the site neared capacity in 1975, a closing out study was conducted which reported moderate leachate pollution of the nearby Black Creek. In 1979, the Environmental Protection Service carried out a surface water study which again reported that leachate was a problem. The site has since been covered and seeded. A follow-up study on surface water quality is expected to be carried out by the Ontario Ministry of the Environment in summer 1984.



SITE NAME: RIDGE ROAD LANDFILL SITE NO. N-125

PRIORITY II

SITE EVALUATION FORM

A - POTENTIAL FOR HAZARD

	Pts.
1. Degree of concern of Waste Type (see definition)	
High	50
Medium	30
Low	(10)
2. Estimate of Waste Quantity (choose larger score)	
Volume (m^3) / Area (m^2)	
> 25,000 / > 7,000	(20)
5,000 - 25,000 / 1,500 - 7,000	15
200 - 5,000 / 70 - 1,500	10
0 - 200 / 0 - 70	5
3. Water Surplus	
> 40 cm	5
25 cm - 40 cm	4
10 cm - 25 cm	(2)
0 cm - 10 cm	1
4. Site Cover	
Uncovered	5
Unvegetated	5

Covered: Soil Type	Depth 0-1 m	Depth > 1 m
Clay	(0)	0
Silt	1	0
Granular	2	1

	Pts.
5. Surface Water Drainage From Site	
Steep slope	1
Moderate slope (SIDES)	2
Flat	(5)
Depression (TOP)	10
6. Method of Operation (when active)	
Open dump	5
Open dump with burning	3
Dump with occasional cover	3
Sanitary Landfill	(1)
7. Water Contact with Waste	
Yes	(15)
Unknown, likely	10
, unlikely	5
No	0
8. Evidence of Leachate of Gas	
Leachate	(10)
Gas	(10)

9. Hazard Reduction Factor, maximum -20 pts. or value of item (e.g. very old, marginal quantity, prior remedial measures)

Specify _____ -

Sub-Total A (max. 135 pts.) 73

B - POTENTIAL FOR OFF-SITE MIGRATION

	Pts.
10. Soil Type	
Clay	5
Silt	10
Granular Soil	(20)
Bedrock	20
11. Estimated Depth to Water Table	
0 m - 1.5 m	5
1.5 m - 5.0 m	(3)
> 5.0 m	1
12. Proximity to Surface Water (transport mechanism) (score only if downgradient or unknown)	
0 m - 90 m	(10)
90 m - 300 m	5
300 m - 1.5 km	3
> 1.5 km	1
13. Flood Potential	
Flooded annually or other	10
Flooded occasionally	5
Never flooded	(0)
14. Vectors	
Yes	5
No	(0)
Sub-Total B (max. 50 pts.)	33

C - POTENTIAL FOR IMPACT

15a. Proximity to Potable Water Supply (worst case only) (score only if downstream, downgradient or unknown)

	Community	Domestic
0 m - 90 m	40	20
90 m - 300 m	30	15
300 m - 1.5 km	20	(5)
1.5 km - 5 km	10	1
> 5 km	2	0

15b. Population affected by worst case

	Pts.
>5,000	15
1,000 - 5,000	10
101 - 1,000	7
1 - 100	(3)

16. Surface Water Use of Item 12. (other than potable water supply)

	Pts.
Recreational	5
Irrigation	(3)
Commercial or Industrial	2

17. Surrounding Land Use (select worst case in each column and total)

	0 m-400 m	400 m-1.5 km	>1.5 km
Residential or Proposed Housing	12	9	4
Inst., Park or Recreational	12	7	3
Commercial or Industrial	9	4	(2)
Agricultural	(7)	(4)	1
Rural	4	2	0

18. Distance to Sensitive Environments

	Pts.
0 m - 300 m	10
300 m - 1.5 km	(5)
>1.5 km	2
Sub-Total C (max. 95 pts.)	29

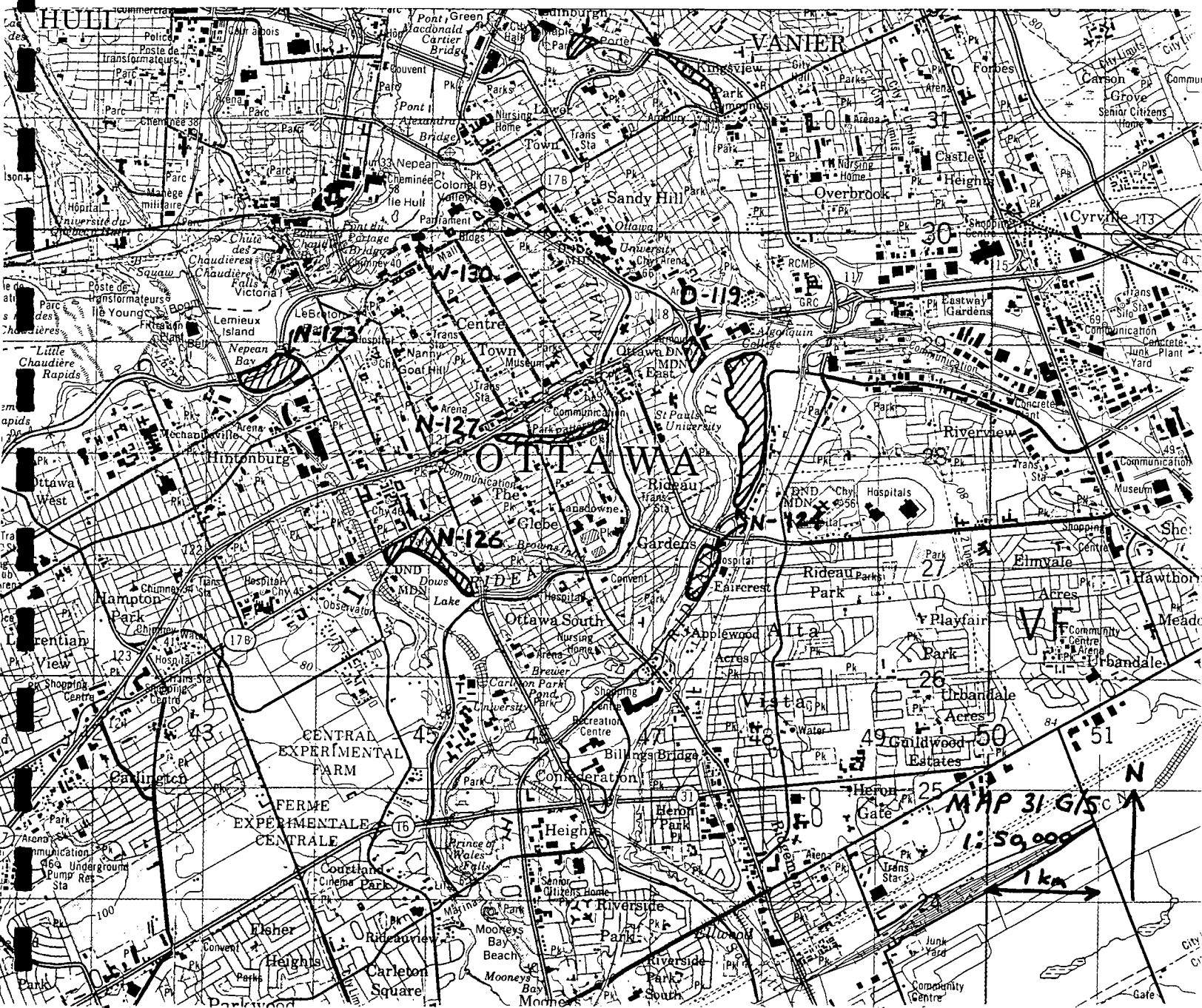
Classification: Priority I ≥140, Priority (II) 115-139, Priority III ≤114

Total A + B + C (max. 280 pts.) 135

SYNOPSIS AND EVALUATION

SITE NAME: Commissioner Park SITE NO: N-126

This site was identified by the 1945 City Council minutes. Part of the property was a lumberyard until converted to a park between 1928 and 1931. Air photos from the time period do not record evidence of filling. If filling did take place and if refuse was used, the site should be old enough to have stabilized. It now supports mature trees and grass. Because of its age and present condition, the site is classed as Priority III.



SYNOPSIS AND EVALUATION

SITE NAME: Central Park SITE NO: N-127

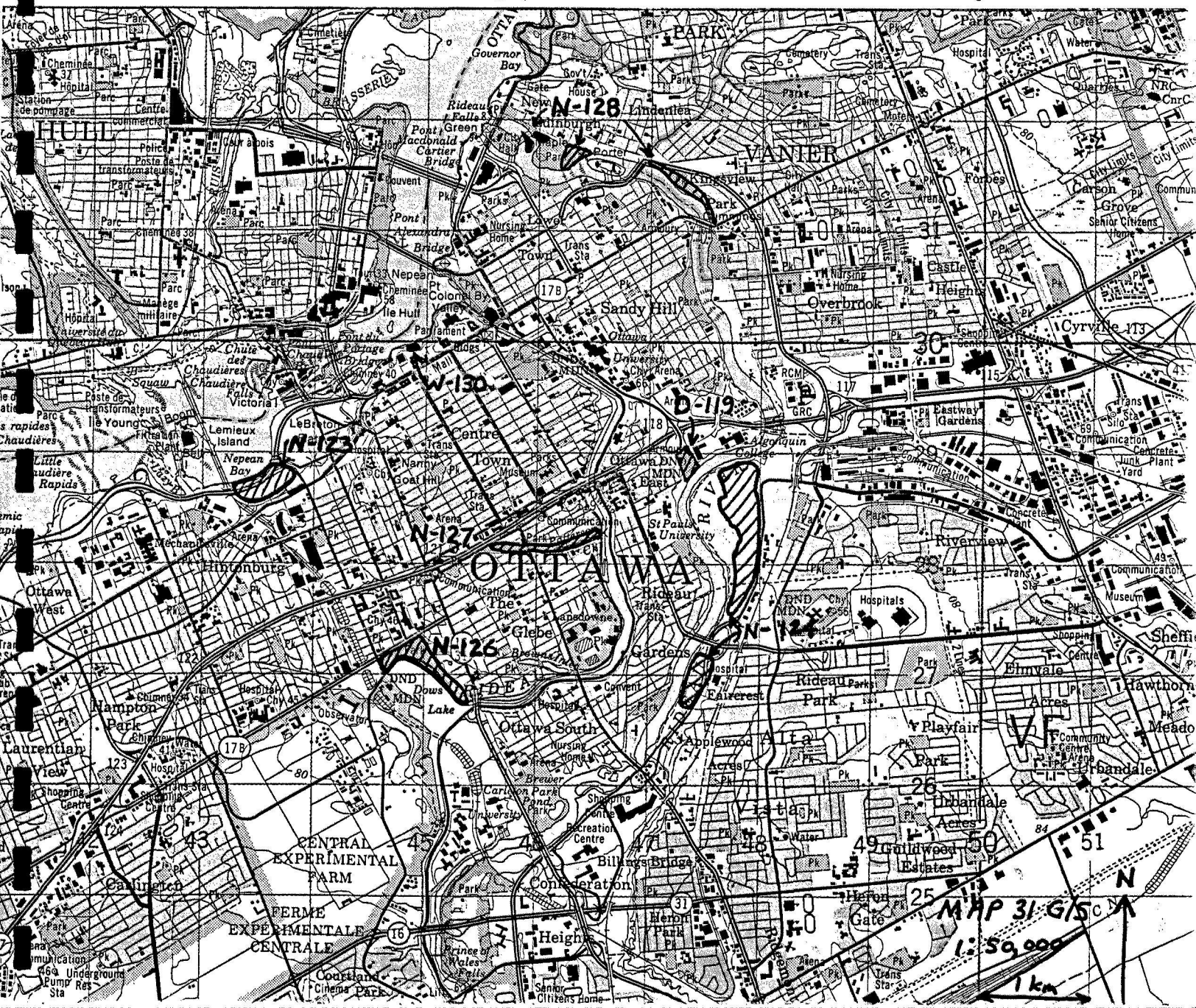
Central Park is owned in part by the National Capital Commission. It is located at the end of Patterson Creek which flows into the Rideau Canal. This part of the city was developed early in this century. Central Park was created around 1915. Any filling referred to in the City Council minutes would have to have taken place between 1906 and 1915. Waste of this age would have stabilized by now. The site is therefore classed as Priority III.

SYNOPSIS AND EVALUATION

SITE NAME: Maple Island and East Bank of the Rideau River

SITE NO: N-128

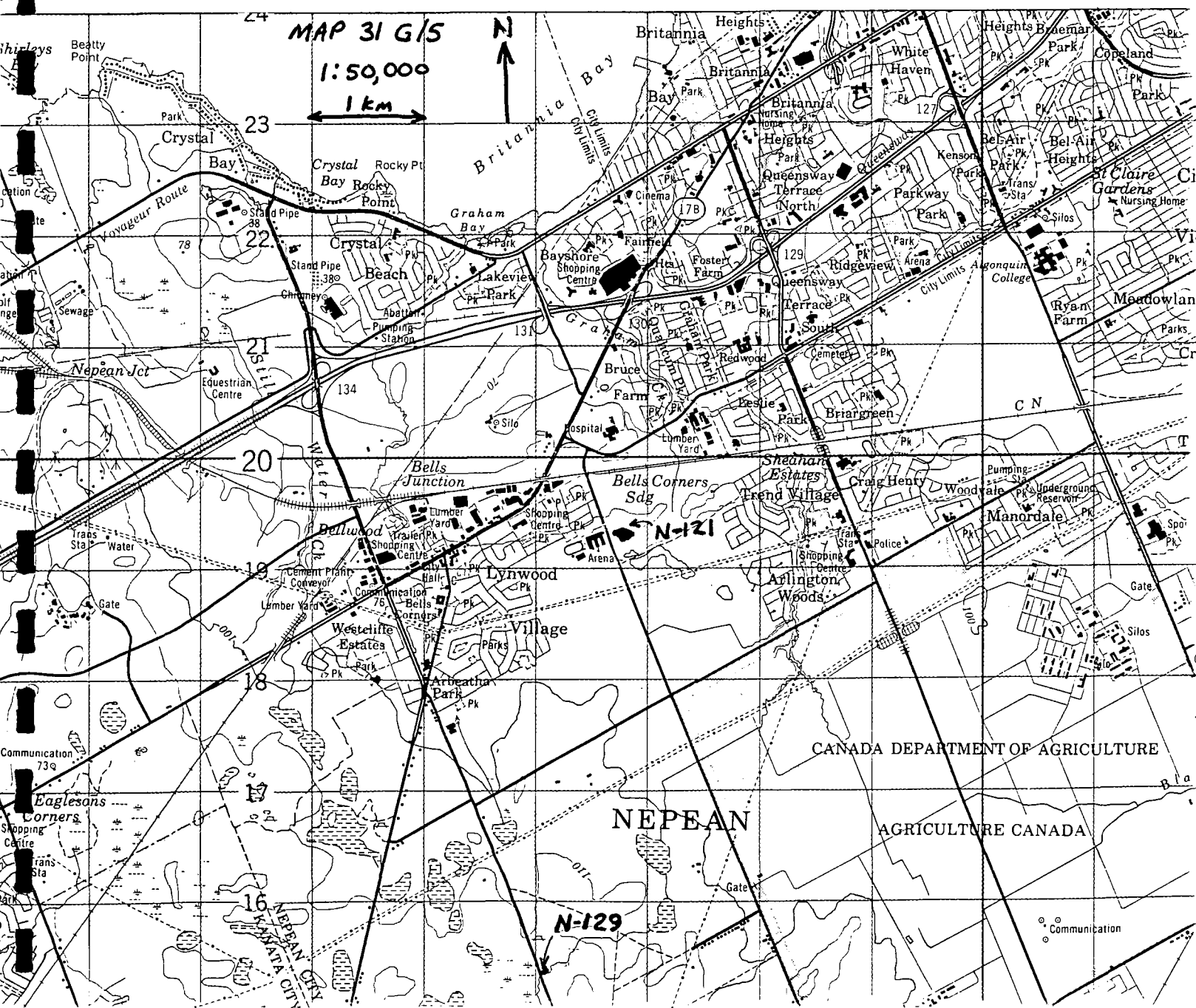
These lands were identified by the 1945 City Council minutes as having been filled. However, there is no evidence in the air photo record from 1925 to 1945 to support that filling took place in this time period. The air photos show two small low spots subject to flooding on the island upstream of Maple Island where the CPR bridge was. They no longer exist. The island was joined to the east shore by infilling of a channel with sewer excavation debris in the 1960's. It it now known as Maple Park. Any filling with waste that may have taken place is probably so old as to have stabilized. Accordingly the site is classed as Priority III.



SYNOPSIS AND EVALUATION

SITE NAME: Stoney Swamp Site No: N-129

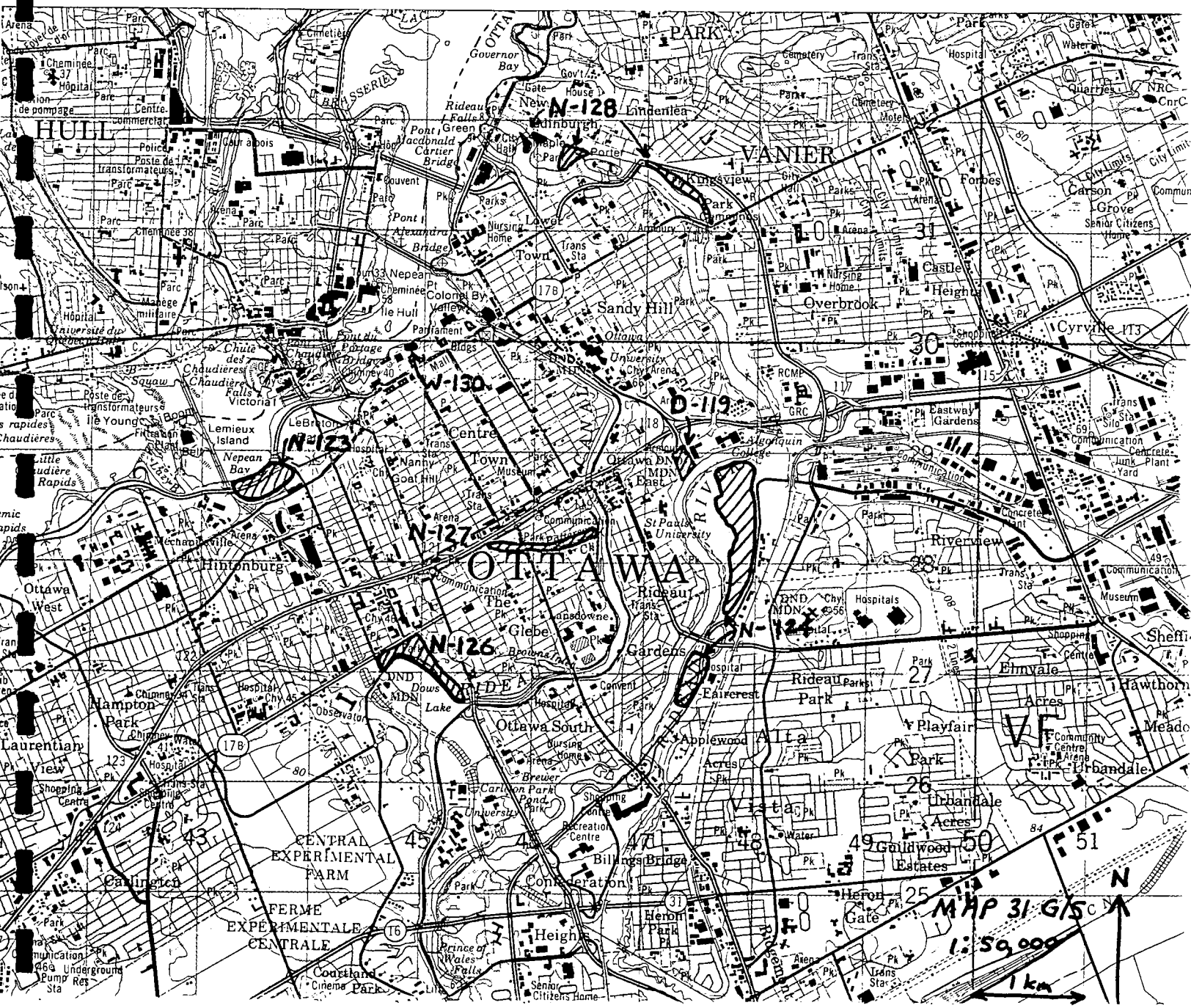
This is a small site apparently used by a few families for about half a year around 1958. It is located on Moodie Drive in the City of Nepean on lands formerly part of Rae's farm, now part of the greenbelt. The Ontario Ministry of the Environment inventory identified this site as #9009. Because of its limited use and anticipated low volumes, the site is concluded to be a Priority III site.



SYNOPSIS

SITE NAME: Kent Street SITE NO: W-130

In the late 1920's and early 1930's, filling took place in the bay at the foot of Kent Street and Bank Street in the City of Ottawa. This work is evident in air photos from that time period. City Council records of 1945 refer to waste disposal in this area. Further filling with rock fill from construction in the mid sixties is believed to have brought the filled area up to its present elevation, about 5-6 metres above river level. The site is presently used as a parking lot.



SITE NAME: KENT STREET SITE NO. W-130

PRIORITY III

SITE EVALUATION FORM

A - POTENTIAL FOR HAZARD

	Pts.
1. Degree of concern of Waste Type (see definition)	
High	50
Medium	30
Low	(10)
2. Estimate of Waste Quantity (choose larger score)	
Volume (m^3) or Area (m^2)	
> 25,000 / > 7,000	(20)
5,000 - 25,000 / 1,500 - 7,000	15
200 - 5,000 / 70 - 1,500	10
0 - 200 / 0 - 70	5
3. Water Surplus	
> 40 cm	5
25 cm - 40 cm	4
10 cm - 25 cm	(2)
0 cm - 10 cm	1
4. Site Cover	
Uncovered	5
Unvegetated	5

Covered: Soil Type	Depth 0-1 m	Depth > 1 m
~~Clay~~ ASPHALT	(0)	0
Silt	1	0
Granular	2	1

	Pts.
5. Surface Water Drainage From Site	
~~Steep slope~~ PAVED	(1)
Moderate slope	2
Flat	5
Depression	10
6. Method of Operation (when active)	
Open dump	5
Open dump with burning	3
Dump with occasional cover	(3)
Sanitary Landfill	1
7. Water Contact with Waste	
Yes	15
Unknown, likely	(10)
, unlikely	5
No	0
8. Evidence of Leachate of Gas	
Leachate	10
Gas	10

9. Hazard Reduction Factor, maximum -20 pts. or value of item (e.g. very old, marginal quantity, prior remedial measures)

Specify OLD, DILUTION - 7

Sub-Total A (max. 135 pts.) 39

B - POTENTIAL FOR OFF-SITE MIGRATION

	Pts.
10. Soil Type	
Clay	5
Silt	10
Granular Soil	(20)
Bedrock	20
11. Estimated Depth to Water Table	
0 m - 1.5 m	5
1.5 m - 5.0 m	(3)
> 5.0 m	1
12. Proximity to Surface Water (transport mechanism) (score only if downgradient or unknown)	
0 m - 90 m	(10)
90 m - 300 m	5
300 m - 1.5 km	3
> 1.5 km	1
13. Flood Potential	
Flooded annually or other	10
Flooded occasionally	5
Never flooded	(0)
14. Vectors	
Yes	5
No	(0)
Sub-Total B (max. 50 pts.)	33

C - POTENTIAL FOR IMPACT

15a. Proximity to Potable Water Supply (worst case only) (score only if downstream, downgradient or unknown)

	Community	Domestic
0 m - 90 m	40	20
90 m - 300 m	30	15
300 m - 1.5 km	20	5
1.5 km - 5 km	10	1
> 5 km	(2)	0

15b. Population affected by worst case

	Pts.
>5,000	15
1,000 - 5,000	10
101 - 1,000	7
1 - 100	(3)

16. Surface Water Use of Item 12. (other than potable water supply)

	Pts.
Recreational	5
Irrigation	3
Commercial or Industrial	2

17. Surrounding Land Use (select worst case in each column and total)

	0 m-400 m	400 m-1.5 km	>1.5 km
Residential or Proposed Housing	12	9	4
Inst., Park or Recreational	(12)	7	3
Commercial or Industrial	9	(4)	(2)
Agricultural	7	4	1
Rural	4	2	0

18. Distance to Sensitive Environments

	Pts.
0 m - 300 m	(10)
300 m - 1.5 km	5
>1.5 km	2
Sub-Total C (max. 95 pts.)	33

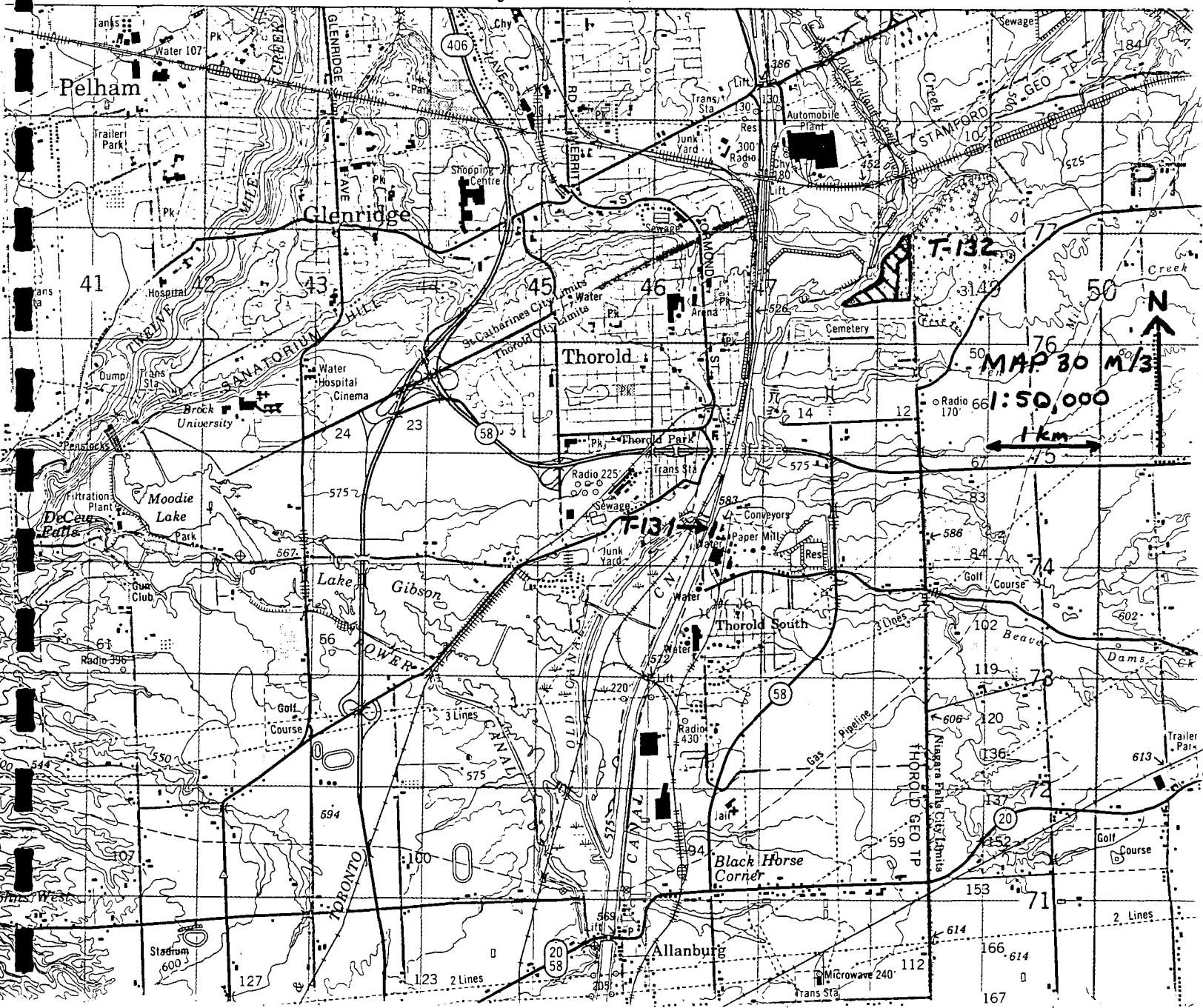
Classification: Priority I ≥140, Priority II 115-139, Priority (III) ≤114

Total A + B + C (max. 280 pts.) 105

SYNOPSIS

SITE NAME: Coniagas Reduction (Ontario Paper) SITE NO: T-131

This site is located just east of the Welland Canal, and extends onto the adjacent Ontario Paper property. Relatively high concern wastes from the refining of silver ores were buried at the site during operations of the now defunct Coniagas Reduction Company in the early 1900's. The waste was encountered during excavations at the Ontario Paper site and during recent widening of the Welland Canal. The extent of the waste is not known, but could include much of the Ontario Paper site. The area has been investigated by Monenco for MOE and by the Seaway Authority in conjunction with local construction work. Studies indicate that the waste has elevated levels of heavy metals and arsenic.



SITE EVALUATION FORM

SITE NAME: CONIAGAS REDUCTION (ONTARIO PAPER) SITE NO. T-131

PRIORITY II

A - POTENTIAL FOR HAZARD

	Pts.
1. Degree of concern of Waste Type (see definition)	
High	(50)
Medium	30
Low	10
2. Estimate of Waste Quantity (choose larger score)	
Volume (m^3) / Area (m^2)	
> 25,000 / > 7,000	(20)
5,000 - 25,000 / 1,500 - 7,000	15
200 - 5,000 / 70 - 1,500	10
0 - 200 / 0 - 70	5
3. Water Surplus	
> 40 cm	5
25 cm - 40 cm	4
10 cm - 25 cm	(2)
0 cm - 10 cm	1
4. Site Cover	
Uncovered	5
Unvegetated	5

Covered:

Soil Type	Depth 0-1 m	Depth > 1 m
Clay	0	(0)
Silt	1	0
Granular	2	1

	Pts.
5. Surface Water Drainage From Site	
Steep slope	1
Moderate slope	2
Flat	(5)
Depression	10
6. Method of Operation (when active)	
Open dump	(5)
Open dump with burning	3
Dump with occasional cover	3
Sanitary Landfill	1
7. Water Contact with Waste	
Yes	15
Unknown, likely	(10)
, unlikely	5
No	0
8. Evidence of Leachate of Gas	
Leachate	10
Gas	10
9. Hazard Reduction Factor, maximum -20 pts. or value of item (e.g. very old, marginal quantity, prior remedial measures)	
Specify DILUTION	-3
Sub-Total A (max. 135 pts.)	89

B - POTENTIAL FOR OFF-SITE MIGRATION

	Pts.
10. Soil Type	
Clay	(5)
Silt	10
Granular Soil	20
Bedrock	20
11. Estimated Depth to Water Table	
0 m - 1.5 m	5
1.5 m - 5.0 m	(3)
> 5.0 m	1
12. Proximity to Surface Water (transport mechanism) (score only if downgradient or unknown)	
0 m - 90 m	(10)
90 m - 300 m	5
300 m - 1.5 km	3
> 1.5 km	1
13. Flood Potential	
Flooded annually or other	10
Flooded occasionally	5
Never flooded	(0)
14. Vectors	
Yes	5
No	(0)
Sub-Total B (max. 50 pts.)	18

C - POTENTIAL FOR IMPACT

15a. Proximity to Potable Water Supply (worst case only) (score only if downstream, downgradient or unknown)

	Community	Domestic
0 m - 90 m	40	20
90 m - 300 m	30	15
300 m - 1.5 km	20	5
1.5 km - 5 km	10	1
> 5 km	(2)	0

15b. Population affected by worst case

	Pts.
>5,000	15
1,000 - 5,000	10
101 - 1,000	7
1 - 100	(3)

16. Surface Water Use of Item 12. (other than potable water supply)

Recreational	5
Irrigation	3
Commercial or Industrial *NAVIGATION*	(2)

17. Surrounding Land Use (select worst case in each column and total)

	0 m-400 m	400 m-1.5 km	>1.5 km
Residential or Proposed Housing	12	(9)	(4)
Inst., Park or Recreational	12	7	3
Commercial or Industrial	(9)	4	2
Agricultural	7	4	1
Rural	4	2	0

18. Distance to Sensitive Environments

0 m - 300 m	10
300 m - 1.5 km	5
>1.5 km	2
Sub-Total C (max. 95 pts.)	29

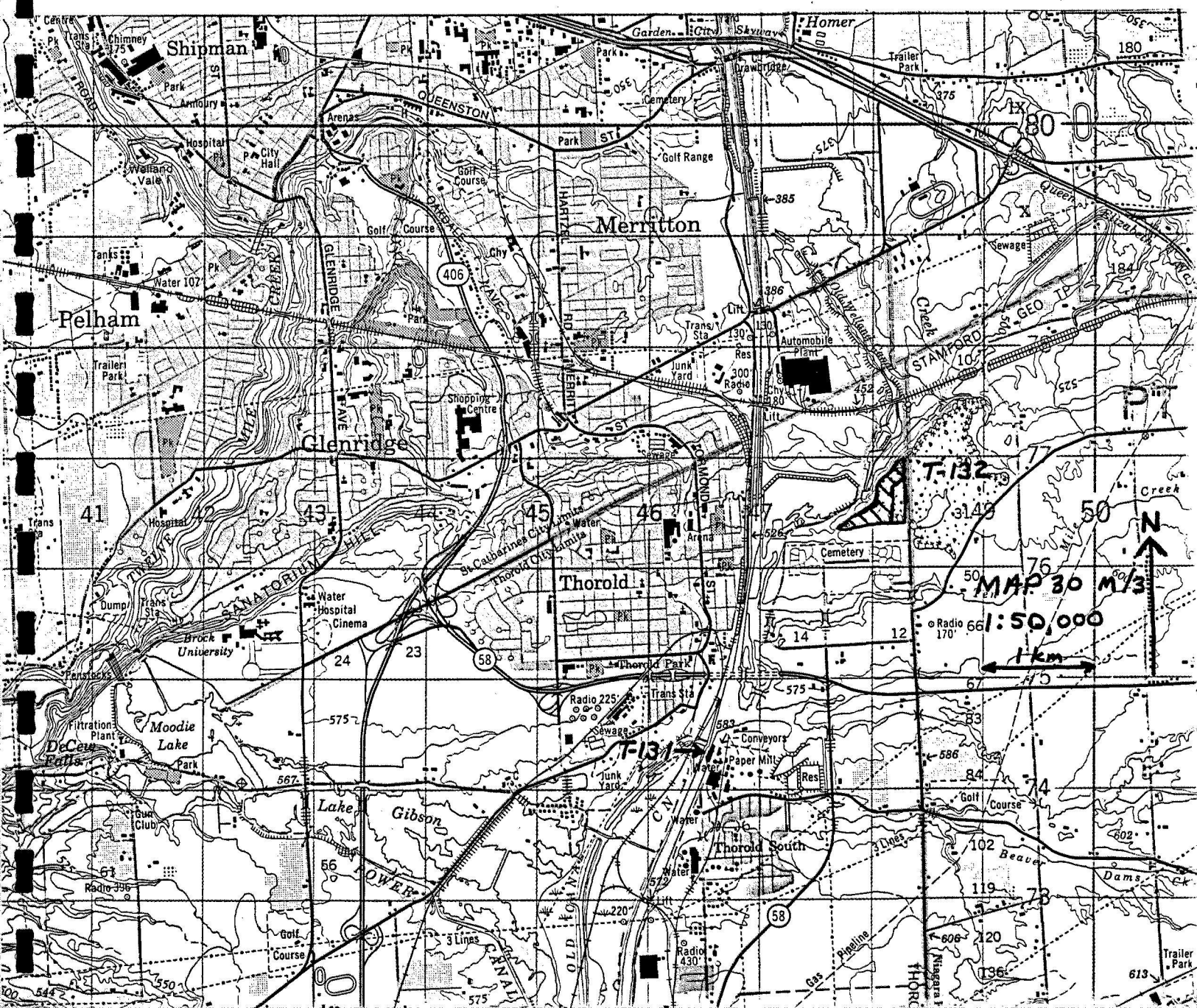
Classification: Priority I ≥140, Priority (II) 115-139, Priority III ≤114

Total A + B + C (max. 280 pts.) 136

SYNOPSIS

SITE NAME: Walker Bros. Quarry SITE NO: T-132

This site is located on the top edge of the Niagara escarpment in a former limestone quarry. A portion of the quarry was leased to Walker Bros. Ltd. by the St. Lawrence Seaway Authority for the purpose of filling the site to original elevation. Walker Bros. operated the site as a licensed facility for disposal of solid industrial waste such as foundry sand and paper waste. The site has been covered with clay and a series of monitoring wells were installed. They are monitored on a regular basis by Gartner Lee Associates for Walker Bros.



SITE EVALUATION FORM

SITE NAME: WALKER BROS. QUARRY SITE NO. T-132

PRIORITY III

A - POTENTIAL FOR HAZARD

		Pts.
1.	Degree of concern of Waste Type (see definition)	
	High	50
	Medium	(30)
	Low	10
2.	Estimate of Waste Quantity (choose larger score)	
	Volume (m^3) or Area (m^2)	
	> 25,000 / > 7,000	(20)
	5,000 - 25,000 / 1,500 - 7,000	15
	200 - 5,000 / 70 - 1,500	10
	0 - 200 / 0 - 70	5
3.	Water Surplus	
	> 40 cm	5
	25 cm - 40 cm	4
	10 cm - 25 cm	(2)
	0 cm - 10 cm	1
4.	Site Cover	
	Uncovered	5
	Unvegetated	5

Covered: Soil Type	Depth 0-1 m	Depth > 1 m
Clay	(0)	0
Silt	1	0
Granular	2	1

		Pts.
5.	Surface Water Drainage From Site	
	Steep slope	1
	Moderate slope	2
	Flat	(5)
	Depression	10
6.	Method of Operation (when active)	
	Open dump	5
	Open dump with burning	3
	Dump with occasional cover	(3)
	Sanitary Landfill	1
7.	Water Contact with Waste	
	Yes	15
	Unknown, likely	(10)
	, unlikely	5
	No	0
8.	Evidence of Leachate of Gas	
	Leachate	10
	Gas	10
9.	Hazard Reduction Factor, maximum -20 pts. or value of item (e.g. very old, marginal quantity, prior remedial measures)	
	Specify SMALL QUANT. MED. CONCERN WASTE, MONITORED	-20
	Sub-Total A (max. 135 pts.)	50

B - POTENTIAL FOR OFF-SITE MIGRATION

	Pts.
10. Soil Type	
Clay	5
Silt	10
Granular Soil	20
Bedrock	(20)
11. Estimated Depth to Water Table	
0 m - 1.5 m	5
1.5 m - 5.0 m	3
> 5.0 m	(1)
12. Proximity to Surface Water (transport mechanism) (score only if downgradient or unknown)	
0 m - 90 m	(10)
90 m - 300 m	5
300 m - 1.5 km	3
> 1.5 km	1
13. Flood Potential	
Flooded annually or other	10
Flooded occasionally	5
Never flooded	(0)
14. Vectors	
Yes	5
No	(0)
Sub-Total B (max. 50 pts.)	31

C - POTENTIAL FOR IMPACT

15a. Proximity to Potable Water Supply (worst case only) (score only if downstream, downgradient or unknown)

	Community	Domestic
0 m - 90 m	40	20
90 m - 300 m	30	15
300 m - 1.5 km	20	(5)
1.5 km - 5 km	10	1
> 5 km	2	0

15b. Population affected by worst case

	Pts.
>5,000	15
1,000 - 5,000	10
101 - 1,000	7
1 - 100	(3)

16. Surface Water Use of Item 12. (other than potable water supply)

	Pts.
Recreational	5
Irrigation	3
Commercial or Industrial	(2)

17. Surrounding Land Use (select worst case in each column and total)

	0 m-400 m	400 m-1.5 km	>1.5 km
Residential or Proposed Housing	12	(9)	(4)
Inst., Park or Recreational	12	7	3
Commercial or Industrial	(9)	4	2
Agricultural	7	4	1
Rural	4	2	0

18. Distance to Sensitive Environments

	Pts.
0 m - 300 m	10
300 m - 1.5 km	5
>1.5 km	2
Sub-Total C (max. 95 pts.)	32

Classification: Priority I ≥140, Priority II 115-139, Priority (III) ≤114

Total A + B + C (max. 280 pts.) 113

APPENDIX C
EXECUTIVE SUMMARY
1983 STUDY OF ABANDONED WASTE DISPOSAL SITES

EXECUTIVE SUMMARY

STUDY OF ABANDONED WASTE DISPOSAL SITES (LAND) FOR SELECTED FEDERAL AGENCIES IN ONTARIO

1. BACKGROUND, PURPOSE AND SCOPE

M.M. Dillon Limited, Consulting Engineers and Planners were retained by the Ontario Region of Environment Canada's Environmental Protection Service to locate, identify and investigate abandoned waste disposal sites at eight selected federal agencies in Ontario. A list of the agencies and summary of the number of priority sites is attached.

The study is in support of Environment Canada's multi-phase national program dealing with abandoned waste disposal sites and was funded through EPS's Waste Management Branch. Field activities were completed during the summer and fall of 1982, and the report was finalized in mid-June 1983.

2. FINDINGS

2.1 Priority I Sites

Priority I sites are defined as sites which could present a high risk potential to health or the environment which should be immediately assessed. Six sites were so designated and a synopsis of each follows:

St. Regis Indian Reserve

The site is close to residential land and consists of a former domestic garbage dump which reportedly received

mercury contaminated dredge spoil from the St. Lawrence River. Odour problems, uncovered garbage and stressed vegetation are referenced in the report.

Serpent River Indian Reserve (Cutler Acid Plant)

The site of the demolished sulphuric acid plant contains acidic contaminated soils and extensive calcine, pyrite and sulphur wastes.

Canadian Forces Station - Lowther

Waste oils containing PCB contamination were reportedly disposed at the site. A secondary water supply well for the station is located some 90 m away, warranting further site and soils investigations.

Canadian Forces Base - Kingston

The site received laboratory wastes from RMC labs for several years and reportedly received the incinerated carcasses of animals involved in biological warfare testing in the late 1950's. Several domestic wells are recorded in the limestone aquifer, the closest being about 300 m away.

Township of Gloucester Landfill

Chemical wastes, banned pesticides and herbicides from federal facilities were disposed of by the Federal government in a small portion of the Township's site. A contaminant plume has been established and local wells may be affected in the future.

Point Pelee National Park

The site received domestic garbage, demolition debris and incinerator residue. It is located in a wetland area with good potential for leachate migration and is close to a nearby well, a swimming area and a sensitive environment for fish species.

2.2 Priority II Sites

Priority II sites are defined as sites which could present a medium risk to health or the environment, and should be assessed at a future date. The eleven sites identified were at the following locations; the former CNR facility at Niagara Falls, the Oshawa Harbour Lands, Smiths Falls on the Rideau Canal, a former DND Base near Cape Henrietta Maria, and at the seven Indian Reserves of Walpole Island, Kettle Point, Alderville, Garden River, Kashechewan, Pikangikum and Sachigo Lake.

2.3 Priority III Sites

A total of 94 Priority III sites were identified and noted as not presenting a danger to human health of the environment but requiring occasional future monitoring.

3. RECOMMENDATIONS

The consultant recommends that the 6 identified Priority I sites be given precedence for further investigation; and that the 11 Priority II sites plus 4 Priority III sites be considered for further investigation.

STUDY OF ABANDONED WASTE DISPOSAL SITES (LAND) FOR SELECTED FEDERAL AGENCIES IN ONTARIO

Agency	Priority I Sites	Priority II Sites	Priority III Sites	Total
Department of Indian and Northern Affairs	2	7	64	73
Department of National Defence	2	0	14	16
Department of Transport	1	1	7	9
Department of Agriculture	0	0	0	0
Department of the Solicitor General			1	1
Department of the Environment	1	1	2	4
Canadian National Railways		1	2	3
Atomic Energy of Canada Limited	0	0	0	0
Transferred Property	0	1	4	5
TOTALS	**6**	**11**	**94**	**111**