

3)

(*)

its
citizens

See item 8: Parkway Belt West, p. 107 ff.

Map: p 114

& item 3, Buffer land requirements, Bayview Park
(City of Burlington) et al

THE REGIONAL MUNICIPALITY

Also: Proposal (for Min. of Munic'l Affairs) to reserve a "Link Belt"
in lieu of deeming landfill a permitted use of the Parkway Belt West.
(enclosed)

OF HALTON



Solid Waste Management Committee

Agenda

FEBRUARY 17, 1986

THE REGIONAL MUNICIPALITY OF HALTON

MEETING NO. 3-86

NAME OF COMMITTEE:

SOLID WASTE MANAGEMENT

DATE OF MEETING:

Monday, February 17, 1986
2:00 p.m.

PLACE OF MEETING:

Committee Room No. 2
Regional Administration Bldg.
Oakville, Ontario

A G E N D A

ITEM NO.

PAGE NOS.

DISCLOSURES OF CONFLICT OF INTEREST

DAY-TO-DAY

1. C.A.O. Report No. 97/86 re: Grant Request - West Burlington Citizens Group - Landfill Approvals Process - "Intervenor Funding" 1 - 13
(Will take two)
2. C.A.O. Report No. 98/86 re: Internal/ External Printing Costs and Postage Costs - Landfill Environmental Assessment 14 - 15
3. P.W. Report No. 80/86 re: Review of Conceptual Design Report Leachate Collection System and Buffer Land Requirements, Closed Bayview Park Landfill Site, Burlington 16 - 82
→
4. P.W. Report No. 79/86 re: Target List of Compounds - EPA Leachate Treatability and Toxicology Work - Halton Landfill EPA Study 83 - 85
(→)
5. P.W. Report No. 81/86 re: Air Emission Testing - Occidental Energy from Waste Plant, Niagara Falls, N.Y. 86 - 93
6. C.A.O. Report No. 83/86 re: Energy from Waste Project Planning Workshop 94 - 100
7. P.W. Report No. 82/86 re: Master Work Plan 1986 - 1995 Separation at Source Program 101 - 108
(→)

OVER: ITEM 8

SOLID WASTE MANAGEMENT COMMITTEE MEETING NO. 3-86
MONDAY, FEBRUARY 17, 1986

- 2 -

ITEM NO.

PAGE NOS.

8.  D.P.D. Report No. 71/86 re: Landfill
Study Planning Approvals/Parkway Belt
Conformity Issues Site "F" City of
Burlington/Request to Minister for a
Declaration of Non Conflict - Ontario
Planning and Development Act

109 - 119
and
Conf. Attach.
C-1 - C-5

9. OTHER BUSINESS

*See map p. 114
and H.K.'s map: "Link Belt"*

ADJOURNMENT

* * * * *

THE REGIONAL MUNICIPALITY OF HALTON

Report to Chairman and Members of the Solid Waste
Management Committee

From Dennis Y. Perlin, C.A.O.

Date 1986 02 14

Report No C.A.O. 97/86

Re: Grant Request - West Burlington Citizens Group -
Landfill Approvals Process - "Intervenor Funding"

RECOMMENDATION:

1. THAT the Grant Request dated January 31, 1986 from the West Burlington Citizens Group regarding funding to meet expenses, retainer fees, and financial commitments respecting representation at the Preliminary and Final Hearings in connection with Halton Region's proposed landfill site be referred to the Regional Solicitor for a report on "Intervenor Funding" and various options available with respect to same, as well as setting out the advantages and disadvantages of the various options concerning same.
2. THAT the Regional Solicitor be requested to present the report to the March meeting of the Solid Waste Management Committee.
3. THAT the West Burlington Citizens Group, the Tremaine-Britannia Citizens Group and any other citizens from the E.A. mailing list known to be affected by the landfill approvals process regarding proposed Sites "D" and "F" be informed of the pending report of the Regional Solicitor on "Intervenor Funding".

REPORT:

On February 4th last, the Regional Clerk received the attached grant application from the West Burlington Citizens Group requesting a \$15,000 grant "to meet our expenses, retainer fees, and financial commitments which will ensure

the continuance of the professional and legal services required to maintain independent representation throughout the preliminary and final hearings in connection with Halton Region's proposed landfill site."

This particular grant application, while filled out on a "Special Service Grant Application Form" is really the same as a request for "Intervenor Funding" in the landfill approvals process.

Regardless of what one thinks about "Intervenor Funding" on a philosophical basis, reality is that various interest groups involved in environmental matters and indeed in other matters such as Energy Board Hearings, are requesting and receiving "Intervenor Funding" either in advance of any proceedings taking place or in the way of costs awarded at the end of any Hearings taking place.

As far as "Intervenor Funding" in advance, the Region of Peel has recently granted limited funding to various interest groups around seven locations where drilling is being done by the Region's hydrogeology firm as part of Peel's latest waste management planning exercise.

Thus, the awarding of any "grant" or "Intervenor Funding" would not be unique to Halton.

The viewpoints on this issue are many. One viewpoint is that Halton has hired credible, professional experts to do the various studies related to the establishment of a landfill in a suitable location having primary regard for public health and safety, as well as the other "environments" covered by the Environmental Assessment Act.

If these consultants are doing a proper and ethical job, then is it not just funding "cynicism" if one awards a grant as requested by the West Burlington Citizens Group.

Another viewpoint, however, is that put forward by Mrs. Anderson in her letter that "it is our belief that strong citizen involvement and representation at these hearings is vitally important in order to achieve a decision that will be mutually satisfactory to all concerned, in fact, our absence at such a hearing would undoubtedly be questioned, due to our involvement in the Expansion Hearing. It would also have a beneficial effect in helping to regain citizen confidence with respect to Regional activities in the City of Burlington."

Other viewpoints include ones that suggest that if there are going to be costs awarded at the end of a hearing, then it would be advantageous to all concerned to have some funding provided in advance to allow for studies to be carried out in a timely fashion and requests for delays at the start or during any hearings avoided. Some suggest that "Intervenor

Funding" usually results in free exchange of information and less of a "murder trial" atmosphere which is really not the atmosphere that was ever intended for administrative tribunal hearings of the nature of a Joint Board Hearing into planning and environmental matters.

There has been a great deal of thinking in recent times regarding Intervenor Funding, and how it best can be handled.

The Regional Solicitor has been involved in looking at this question in the past and the recent grant request from the West Burlington Citizens Group provides an opportunity, in my opinion, for the Regional Solicitor to bring forward a number of options, and he has indicated to me that he can bring those forward to the March meeting of the Solid Waste Management Committee, at which time the grant application from the West Burlington Citizens Group could be considered on a general policy basis such that Council can then make a determination based on some policy approach and apply that to other requests that no doubt will come forward.

The Ontario Waste Management Corporation has, itself, developed an approach to "Intervenor Funding" which is epitomized by the advertisement which appeared in a number of Ontario newspapers in January, a copy of which is attached, whereby the Corporation arranged for an Independent Funding Adjudicator who has no connection to the Ontario Waste Management Corporation to set criteria and administer the program. That, for example, is one option the Regional Solicitor will identify and that could be considered if the Regional Council is prepared to give "Intervenor Funding" at all.

Obviously one of the options that the Regional Solicitor will also have in his report for Council's consideration would be the option not to get into "Intervenor Funding" and refuse any such request.

Regional Staff believe it is very important that with this request having been received, that Council consider it very carefully before giving any answer and thus my recommendation to have the options set out by the Regional Solicitor and a debate concerning same before dealing with the request from the West Burlington Citizens Group.

As far as the timing of the funding, it will not be until March that the first of the reports that the West Burlington Citizens Group would wish to review arising out of the detailed studies that have been underway since last August, will be available for review and thus from a timing point of view, the consideration by Council of this matter in March should be sufficient time to allow the West Burlington Citizens Group to begin review of any reports with any funding received from the Region, should such funding be received.

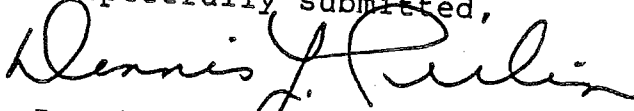
It should be noted that the West Burlington Citizens Group have also requested a grant from the City and I understand that a grant based on receipts received by the City, etc., is being recommended to City Council and may indeed already have been approved by City Council by the time this report is considered by the Solid Waste Management Committee.

Regional Staff will take the opportunity during the next period while this letter is being examined by the Regional Solicitor to determine if the West Burlington Citizens Group still requires the same amount of funding or reduced funding as a result of the City taking a position of providing funding to the Citizens Group concerned.

Finally, we believe it is important that any other groups or individuals who may be interested in this issue, particularly those related to Sites F and D, be informed of the request of the West Burlington Citizens Group and the fact that Regional Council will be examining this issue of "Intervenor Funding" and invited to make any requests and/or representations so that same can be considered by Regional Council at the March meeting.

Thus, Recommendation #3.

Respectfully submitted,



Dennis Y. Perlin
Chief Administrative Officer

DYP/gh

6.4.4

West Burlington Citizens' Group

THE REGIONAL
CITY OF HALTON

1986 FEB -4 9:20

RECEIVED J. M. Anderson
685 Inverness Ave.
Burlington, Ontario
January 31, 1986

Mr. David J. Varley
Regional Clerk
Regional Municipality of Halton
P.O. Box 7000
1151 Bronte Road
OAKVILLE, Ontario
L6J 6E1

To Whom It May Concern:

The enclosed "Grant Application" form is submitted on behalf of the West Burlington Citizens' Group for consideration at your Committee Meeting. In accordance with instructions on the form we have also included our last audited Financial Statement. To date we have been an unfunded, non-profit, volunteer community group, therefore no budgets are required or set.

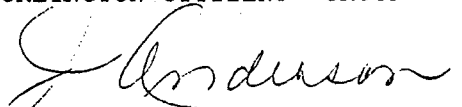
The \$15,000. requested will enable us to meet our expenses, retainer fees and financial commitments which will ensure the continuance of the professional and legal services required to maintain independent representation throughout the preliminary and final hearings in connection with Halton Region's proposed landfill site.

The resources of the West Burlington Citizens' Group are all but depleted partially due to our involvement and expenses related to the past Expansion Hearings, and partially as a result of our activity to date on the new landfill site issue i.e. Public awareness campaign to increase attendance at both city and Regional Public Meetings, partial payment for further legal advice and representation, and retainer fees for consultants' reports.

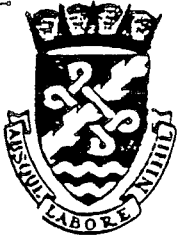
We have not been an organization geared to raise the large sums of money required for representation at the preliminary and final hearings, and while we have had some measure of success in raising money in the past the funds raised are now gone. We are however, starting to move in this direction and are putting together a fund raising appeal that will generate sufficient resources to support our efforts and meet our long term needs.

It is our belief that strong citizen involvement and representation at these hearings is vitally important in order to achieve a decision that will be mutually satisfactory to all concerned, in fact, our absence at such a hearing would undoubtedly be questioned, due to our involvement in the Expansion Hearing. It would also have a beneficial effect in helping to regain citizen confidence with respect to Regional activities in the City of Burlington.

Respectfully submitted
WEST BURLINGTON CITIZENS' GROUP



President: June Anderson



THE REGIONAL MUNICIPALITY OF HALTON

SPECIAL SERVICE
GRANT APPLICATION FORM

1. NAME OF ORGANIZATION: WEST BURLINGTON CITIZENS' GROUP
c/o JUNE ANDERSON Home - 634-0411
685 INVERNESS AVE. BURLINGTON Business - 528-2511 Ext. 4922
(Street Address) (City/Twp.) (Telephone)
2. PRIMARY CONTACT PERSON: JUNE ANDERSON AS SHOWN ABOVE
(Name) (Telephone)
3. LOCAL MANAGEMENT MEMBERS:
(Name) (Position)
SEE ATTACHED LIST

4. PURPOSE OF ORGANIZATION: _____
TO PROVIDE A FORUM FOR THE BETTERMENT AND BEST INTERESTS OF THE CITY OF
BURLINGTON AND WEST BURLINGTON IN PARTICULAR

5. LOCAL MUNICIPALITIES WITHIN WHICH OPERATIONS ARE CONDUCTED:
CITY OF BURLINGTON

6. AMOUNT OF GRANT REQUESTED: \$15,000.
REGION'S CONTRIBUTION AS
% OF ~~BUDGET~~: 15% %
TARGET SET
FOR FUND RAISING

7. PURPOSE OF GRANT: TO OBTAIN INTERIM FUNDING FOR CONTINUANCE OF PROFESSIONAL AND LEGAL SERVICES THEREBY ASSURING CITIZEN INVOLVEMENT AND REPRESENTATION AT HEARINGS WITH RESPECT TO HALTON REGION'S SELECTION OF ALDERSHOT ESCARPMENT SITE F FOR FUTURE LANDFILL REQUIREMENTS (PRELIMINARY HEARING SCHEDULED IN APRIL). BALANCE OF OUR LIMITED FUNDS COMMITTED FOR SERVICES CURRENTLY BEING RENDERED. FURTHER FINANCIAL RETAINERS ARE REQUIRED TO MAINTAIN THESE SERVICES THROUGHOUT THE FINAL HEARINGS.

8. OTHER MUNICIPAL ASSISTANCE WITHIN/OUTSIDE HALTON,
APPROVED/APPLIED FOR IN 1984:

(Municipality)	(Amount)
_____	_____
_____	_____
_____	_____

9. HAVE YOU MADE A REQUEST BEFORE TO REGIONAL COUNCIL FOR A GRANT?

☐ Yes ☒ No (If yes, please give history)

Year Requested	Amount Requested	Amount Received
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

10. HAS YOUR ORGANIZATION REQUESTED/RECEIVED FUNDING ASSISTANCE
IN THE LAST 12 MONTHS FROM ANY OTHER MUNICIPAL, PROVINCIAL OR
FEDERAL DEPARTMENT OR AGENCY?

☐ Yes ☒ No (If yes, please complete)

Amount Requested	Date Requested	From Whom Requested	Refused	Amount Received
_____	_____	_____	☐	_____
_____	_____	_____	☐	_____
_____	_____	_____	☐	_____
_____	_____	_____	☐	_____

11. WHY DO YOU BELIEVE PUBLIC FUNDS SHOULD BE GIVEN TO YOUR ORGANIZATION?
CITIZENS OF WEST BURLINGTON (ALDERSHOT RESIDENTS) HAVE A RIGHT TO BE INVOLVED IN
THE DECISION MAKING PROCESS OF ANY ENVIRONMENTAL ISSUE THAT ULTIMATELY COULD
AFFECT THEIR HEALTH AND ALTER THEIR QUALITY OF LIFE, THEREFORE THEY SHOULD BE
GIVEN THE OPPORTUNITY TO BE INDEPENDENT PARTICIPANTS IN THE HEARINGS RELATED TO
THE HALTON LANDFILL ISSUE, AND HAVE THE ASSURANCE OF SUFFICIENT FUNDING TO
MAINTAIN CONTINUED PROFESSIONAL AND LEGAL REPRESENTATION THROUGHOUT THE HEARINGS
UNTIL A DECISION IS REACHED.

12. IS IT ANTICIPATED THAT THE ACTIVITIES FOR WHICH THIS ASSISTANCE IS BEING REQUESTED WILL BECOME SELF-SUPPORTING THROUGH PRIVATE OR OTHER SOURCES?

☒ Yes

☐ No

(Please specify)

13. PLEASE SUPPLY THE FOLLOWING WITH THIS APPLICATION:

Check List

a) Your most recent annual report/audited financial statement

☒

See attached

b) Interim financial statement for current fiscal year

☒

See attached

c) Budget for year in which grant is requested
(Please complete attached budget form)

☐ N/A

d) Any other information which you believe would support your application

☐

We certify that to the best of our knowledge, the information provided in this Financial Assistance Request is accurate and complete and is endorsed by the organization which we represent.

(signature of 2 principal officers required)

(Name)	(Signature)	(Title)	(Date)
<u>June Anderson</u>	<u>J. Anderson</u>	<u>President</u>	<u>Jan 31/86</u>
<u>Hans Kreplin</u>	<u>Hans Kreplin</u>	<u>Vice-President</u>	<u>Jan 31/86</u>

Application with attached documentation should be forwarded to:
(By January 31, 1986)

David J. Varley, Regional Clerk
Regional Municipality of Halton
P.O. Box 7000
1151 Bronte Road
Oakville, Ontario
L6J 6E1

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NAME OF ORGANIZATION _____

BUDGET FOR YEAR ENDED _____
(Date)

[illegible][illegible]

EXECUTIVE OFFICERS FOR WEST BURLINGTON CITIZENS' GROUP - 1985

PAST PRESIDENT	RON LUXON 111 LYNN COURT	634-8310	
PRESIDENT	JUNE ANDERSON 685 INVERNESS	634-0411 528-2511	4922
VICE-PRESIDENT	HANS KREPLIN 20 NORTH SHORE BLVD. WEST APT. 510	632-8917	
SECRETARY	CHARLENE MEDLAND 162 HENDRIE	632-5319	
TREASURER	ALF COOME 799 KINGSWAY DR.	634-4129	
MEMBERSHIP	JUNE MCCOOEY 471 PLAINS RD. WEST	529-4363	
PUBLICITY	MARY JANE BOELHOUWER 925 PARK AVE. WEST	634-9395	
ASSISTANT PUBLICITY	MARION PARISH 983 GORTON	528-4880	
PUBLIC WORKS			
DEVELOPMENT	DOROTHY POCKOCK 534 ANN ST.	632-5962	
RECREATION SOCIAL SERVICES	TONY O'CONNOR 560 STILLWATER RD.	632-7429	
DIRECTORS AT LARGE	ALEX ADSETT 239 OAKLANDS PARK COURT	632-2624	
	STEVE SAWELL 776 SUNSET RD.	639-3949	

AD HOC

NOTE:

We do not have an audited financial statement prepared for 1985. However the balance in our account at December 31, 1985 was \$3,786.47.

\$2,500. of this is committed for services being performed, leaving a true balance in the account of \$1,286.47, made up as follows:

General Fund	\$ 1,010.03
Dump Fund	<u>276.44</u>
Total true balance	\$ 1,286.47

FINANCIAL STATEMENT
WEST BURLINGTON CITIZEN'S GROUP
ACCOUNT 1232750
AS AT DEC. 31, 1984

Revenue

Received from J. Aitken Jan. 30, 1984	\$ 600.
Received at Annual Meeting Mar. 1984	400.
Received for deposit up to Mar. 26, 1984	1,110.
" " " " " 30	460.
" " " " " Apr. 13	620.
" " " " " Apr. 23	289.
" " " " " May 7	982.
" " " " " May 14	455.
" " " " " July 20	1,547.
" " " " " Sept. 10	<u>620.</u>

TOTAL REVENUE	\$7,083.
---------------	----------

Expenses:

Cela Expense retainer Feb. 1, 1984	500
Triangle Printing (Flyers) Mar. 13, 1984	203.30
Bantams to Finland Flyer Walk	300.00
Returned Cheque	20.00
Service Charge	1.11
Cela retainer Apr. 30th, 1984	1,000.00
per Hydrogeologist expert	
Cela remainder hydrogeologist expenses	<u>1,660.00</u>

TOTAL EXPENSES	\$3,684.41
----------------	------------

BAL. IN ACCOUNT 1232750	<u><u>\$3,398.59</u></u>
-------------------------	--------------------------

Memo: True balance on hand Mar. 15, 1985	\$2,627.32
--	------------

Champion Jan. 29 1986

OWMC TECHNICAL REPORTS REVIEW FUNDING

The Ontario Waste Management Corporation, a provincial crown agency, has established a funding program for the review of technical reports now being distributed by the Corporation.

These reports detail the criteria used by OWMC last year in selecting site LF9C in the Township of West Lincoln, Regional Municipality of Niagara as the proposed location for an industrial waste treatment and disposal facility.

I have been appointed Funding Adjudicator to review applications and award funds. Any group or individual receiving funding will be asked to submit a report to me outlining the results of their review.

Application forms can be obtained by writing to me at the address below:

John W. Beaver
Funding Adjudicator

P.O. Box 122
Toronto-Dominion Centre
Toronto, Ontario
M5K 1H1
(416) 364-4109

THE REGIONAL MUNICIPALITY OF HALTON

Report to Chairman and Members of the Solid Waste
Management Committee

From D. Y. Perlin, Chief Administrative Officer

Date 1986 02 14

Report No CAO 98/86

Re: Internal/External Printing Costs and Postage Costs
- Landfill Environmental Assessment

RECOMMENDATION:

That Report No. CAO 98/86 re:
Internal/External Printing Costs and
Postage Costs - Landfill
Environmental Assessment be received
for information.

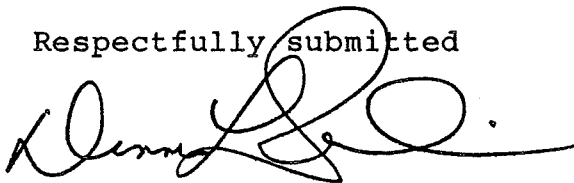
REPORT:

The Planning and Public Works Committee has requested that staff report, through the Solid Waste Management Committee, the internal and external printing costs and postage costs that have been incurred related to the landfill environmental assessment.

Schedule "A" to this report sets out the annual costs, however, during 1982, the cost of printing and posting any related reports was not itemized.

Total printing costs, to December 31, 1985, amount to \$45,789. Total postage for the same period amounts to \$18,800 for a total cost of \$64,589.

Respectfully submitted



D. Y. Perlin
Chief Administrative Officer

DJV/ab

SCHEDULE "A" TO C.A.O. REPORT /86

	<u>Interior Printing</u>	<u>Exterior Printing</u>	<u>Postage</u>
1982	Not recorded	0	Not recorded
1983	3,207	436	1,100
1984	24,959	2,911	10,200
1985	<u>9,276</u>	<u>5,000</u>	<u>7,500</u>
	<u>37,442</u>	<u>8,347</u>	<u>18,800</u>

Total Printing \$45,789

Total Postage 18,800

\$64,589

REGIONAL MUNICIPALITY OF HALTON

Report to The Chairman and Members of the
Solid Waste Management Committee

From The Director of Public Works

Date 1986 02 10

Report No. PW.80/86

Re: Review of Conceptual Design Report Leachate
Collection System and Buffer Land Requirements,
Closed Bayview Park Landfill Site, Burlington.

RECOMMENDATION

1. THAT the City of Burlington and the Ministry of the Environment be advised that Halton will require until 1986 04 14 to carry out a detailed review of the report entitled "Conceptual Design Report Leachate Collection System and Buffer Land Requirements, Closed Bayview Park Landfill Site, City of Burlington" prepared by Conestoga-Rovers & Associates, and to prepare a staff report for submission to the Solid Waste Management Committee. And further that completion of such review and report by 1986 04 14 is subject to the completion of the Bayview Park Leachate Treatability and Toxicology Study currently underway by Pollutech Limited by 1986 04 03 as expected at this time.

REPORT

On 1986 02 03, Halton staff received a copy of a report entitled conceptual Design Report Leachate Collection System and Buffer Land Requirements, Bayview Landfill Site, City of Burlington" prepared by Conestoga-Rovers & Associates (CRA) for the City of Burlington. A copy of this report has been attached to PW.80/86. The CRA report discusses the conceptual design, the design criteria for the proposed remedial works at the closed Bayview Park Landfill Site as well as land requirements the consultants feel are necessary for the proposed remedial works.

Halton staff wishes to carry out a detailed review of the report in consultation with our EPA Consultants. Issues which Halton will address in their review of the report will include:

1. System ownership and operation for pumping stations, sewer mains, forcemains, and Hwy. 403 crossing.
2. Bayview leachate treatability and toxicology impact.
3. Parameters for preparation of Special Discharge Agreement, including sewer use charges for discharge of leachate into Halton's sanitary sewer system.
4. Hydraulic impact on the sanitary sewer system either on King Road and southerly or the North Service Road, westerly and southerly.
5. Impact of proposed remedial measures on the development of proposed Site F for Halton's new landfill.

Timing

Although CRA have indicated that they wish to have Halton's comments by the week of February 17th, Halton staff will require until 1986 04 14 to carry out a detailed review of the report as well as the Bayview Park leachate treatability and toxicity study report currently being prepared by Pollutech Limited. Council will recall that under the terms of the agreement as reported in PW.44/86 between the City of Burlington and the Region of Halton, Pollutech Limited are to complete the study and submit their report within eight weeks of receipt of suitable leachate samples from the closed Bayview Park landfill site. Suitable samples were collected on 1986 02 06 and the final report is expected on 1986 04 03. Halton staff feel that the Pollutech report is a key component of any Regional review of the conceptual design report prepared by CRA since the latter presupposes the ability of Halton's sanitary sewer system and the Skyway Water Pollution Control Plan to handle the leachate flows predicted from Bayview.

Hydrology Consultants are now in the midst of the design for Site F. Their design will have to be completed before the full impact of CRA's proposed works on the design of proposed Site F can be evaluated. The reporting date proposed by Halton staff will allow Hydrology sufficient time to complete their design work and comment on CRA's proposal. Upon completion, staff's report will be submitted to Committee and Council for review.

We understand that the City, through its Chief Administrative Officer, (copy of letter attached), has asked for an extension to the deadlines which the M.O.E. set for the City's response for the long-term handling of the Bayview problem. Hopefully this request from the Region will assist

the City in gaining its requested extension from the M.O.E.
and allow the proper time needed for Regional and then City
consideration of this matter.

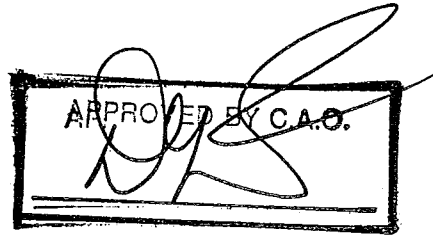
Respectfully submitted,

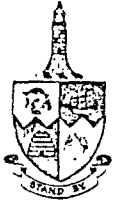
J. Mac Kay

for.

R.W.J. Moore, P.Eng.
Director of Public Works

JRM:sw
Attach.





The Corporation of the
City of Burlington

City Hall:
426 Brant Street, Burlington, Ontario, Canada
Mailing Address:
P.O. Box 5013, Burlington, Ontario, Canada L7R 3Z6

Telephone: 335-7608

File No.:

January 31, 1986

Mr. G. Mierzynski, Director
Central Region, Ministry of the Environment
7 Overlea Boulevard, 4th Floor
Toronto, Ontario
M4H 1A8

Dear Mr. Mierzynski:

Re: Approvals Schedule--Bayview Park Closed
Landfill Leachate Collection and Monitoring System

In our discussions with you in the fall of last year we agreed to work toward obtaining the subject approvals by March 14th. I am writing to advise you that, although we have been working diligently on the design of the collection and monitoring system, it appears now that the March 14th target cannot be met.

The Region of Halton has engaged Pollutech Limited to conduct, on the City's behalf, tests of the treatability of leachate from Bayview Park. The time required both for the recently drilled sampling wells to yield representative samples, and for the laboratory tests to be conducted and interpreted, extends beyond March 14th.

Similarly, the six weeks requested in Mr. Parson's letter of January 15, 1986, for your Ministry's review of the Conceptual Design Report and of final contract drawings and documents, extends beyond March 14th.

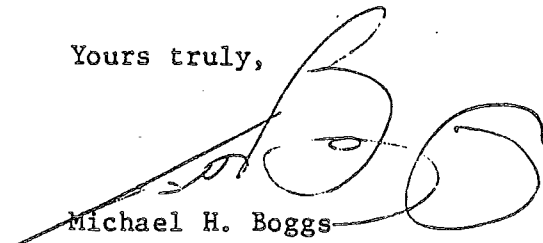
Since these time requirements seem reasonable in the circumstances, and since we are making steady progress on the project as a whole, we see no cause for concern. If you have questions or concerns please call me.

.../2

Mr. G. Mierzynski
January 31, 1986
Page 2

I am also enclosing for your information a copy of
Conestoga-Rovers' Draft "Conceptual Design Report" dated January 1986,
copies of which are also being sent at the same time to your Oakville
District Office.

Yours truly,



Michael H. Boggs
Chief Administrative Officer

MHB/gv
3672u
Encl. 1

cc: Mr. L. Parsons, Oakville District Office,
Ministry of the Environment
Mr. D. Perlin, C.A.O., Region of Halton



The Corporation of the
City of Burlington

**CONCEPTUAL DESIGN REPORT
LEACHATE COLLECTION SYSTEM
AND BUFFER LAND REQUIREMENTS
BAYVIEW LANDFILL SITE
City of Burlington**

January 30, 1986

Reference No. 1354-40

Mr. Michael H. Boggs,
Chief Administrative Officer
Corporation of the City of Burlington
P.O. Box 5013
426 Brant Street
Burlington, Ontario
L7R 3Z6

Dear Mike:

Re: Conceptual Design Report, Leachate Collection System,
and Buffer Land Requirements; Bayview Landfill Site

Enclosed is a report prepared for the City of Burlington by CRA, entitled "Conceptual Design Report, Leachate Collection System, and Buffer Land Requirements; Bayview Landfill Site, City of Burlington."

This report includes the conceptual design, and the design criteria for the proposed remediation works at the Bayview Landfill Site. This report also discusses land requirements for construction and remediation purposes, and delineates the land which should be acquired by the City of Burlington.

As discussed, we will forward this report to the various agencies involved, to solicit their comments. Due to the time constraints, we are proceeding with final design based upon the concepts and recommendations presented in this report. We request comments from the various agencies as soon as possible, to allow sufficient time to incorporate the appropriate comments. It is our intention to have the final design completed by mid March 1986, and as such, request comments on this report by the week of February 17, 1986.

continued....

January 30, 1986

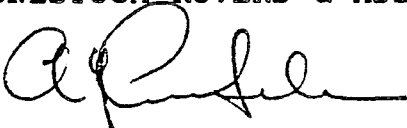
Reference No. 1354-40

- 2 -

If you have any questions on the report please feel free to contact us.

Yours truly,

CONESTOGA-ROVERS & ASSOCIATES LIMITED



Anthony J. Crutcher, P. Eng.

AJC/mm
Encl.

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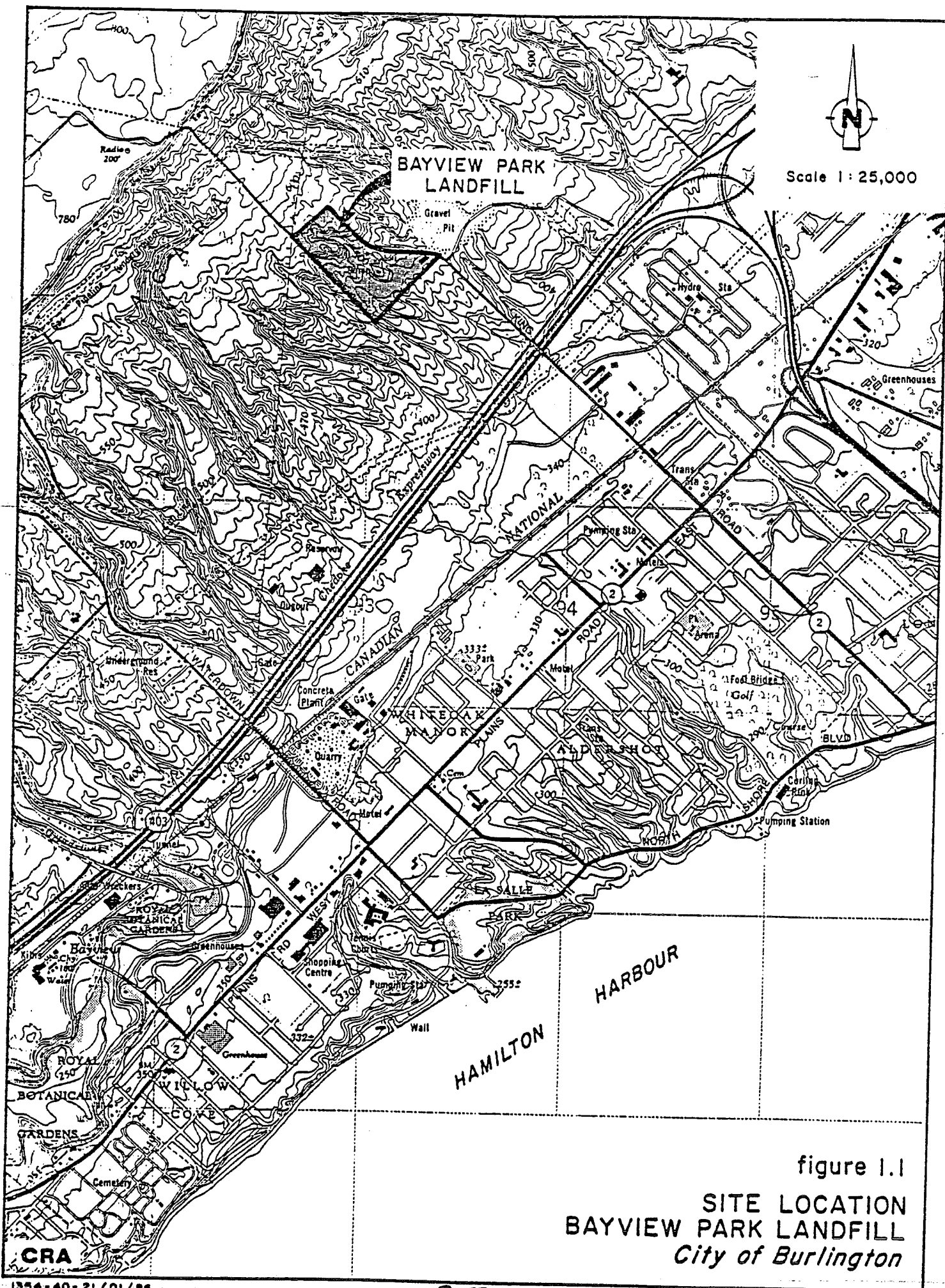
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1.0 INTRODUCTION

Conestoga-Rovers & Associates Limited (CRA) has been commissioned by the City of Burlington (City) to design a leachate control system to prevent surface water contamination of a tributary of Indian Creek, adjacent to the closed Bayview Park Landfill Site, and off-site groundwater contamination. This work is being carried out in response to Ministry of the Environment (MOE) concerns over surface water contamination of the creek adjacent to the site as documented by MOE report No. 126 as received by the City on December 16, 1985. Prior to the preparation of this report, the MOE, the City and CRA have reviewed concepts and possible remediation techniques to resolve this surface water contamination, as outlined in the report entitled, "Remedial Alternatives Bayview Park Landfill Leachate Controls" dated July 1985. This report was prepared by CRA on behalf of the City of Burlington, and considers various measures to control this contamination.

The Bayview Park Landfill is located in the City of Burlington as shown on Figure 1.1. This site was operated as a landfill by the City from 1957 to 1972. The landfill was closed in 1972 under MOE Provisional Certificate Approval No. 210205. Currently, the site is operated by the City as a park facility and an equestrian centre.

In 1982, the MOE noted surface water contamination of the upper reaches of Indian Creek adjacent



to the Bayview Park Landfill. It was suspected that the leachate seepage emanating from the margins of the closed Bayview Landfill Site and shallow groundwater discharge areas in the deep incised ravines at the toe of the closed landfill may be a possible source of this contamination. Figure 1.2 locates the major seep areas.

Chemical analysis of both the seeps and the upper regions of the creek have been carried out by the MOE from 1982 through to 1985. These analyses indicated the presence of high coliform levels, heavy metals and low level chlorinated organics in the leachate seeps, and have demonstrated a surface water quality impact on the upper reaches of the creek system.

At the request of the City of Burlington, CRA undertook a review of the contamination problem in the summer of 1985. The findings of this review and sampling analysis are included in the report entitled, "Bayview Park Landfill Indian Creek Contamination Investigation, City of Burlington", dated July 1985. The investigation confirmed that the present leachate seeps and contaminated groundwater discharge from the Bayview Park Landfill are contaminating the surface water quality of the upper reaches of Indian Creek adjacent to the site. The report recommended "that action be taken to control the discharge of leachate from the Bayview Park Landfill to Indian Creek".

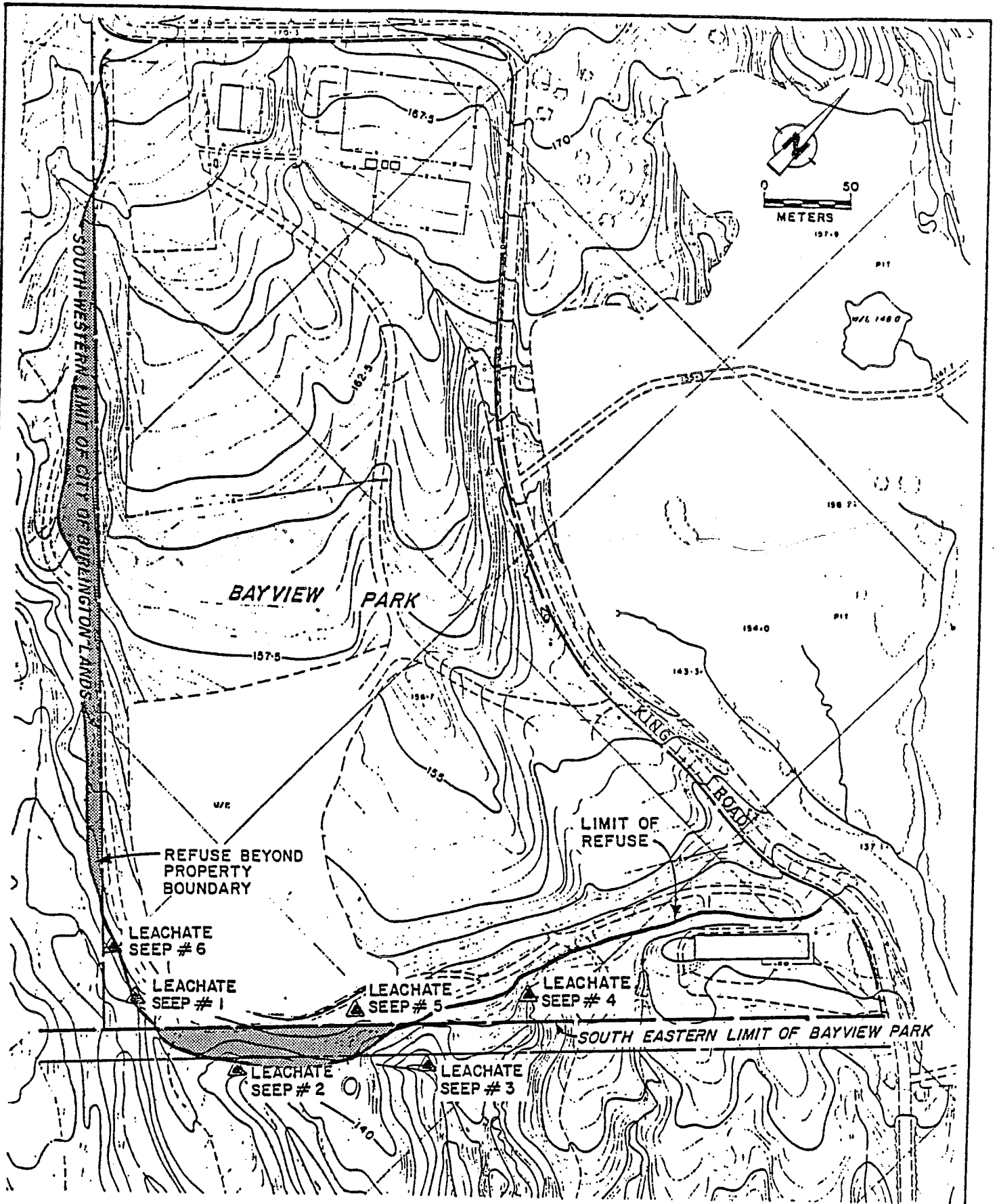


figure 1.2
LEACHATE SEEP LOCATIONS
BAYVIEW PARK LANDFILL
City of Burlington

The City has therefore undertaken to remediate this surface water and groundwater contamination of the upper reaches of Indian Creek resulting from leachate seepage and groundwater seepage from the Bayview Landfill Site. As a first step, the City of Burlington in conjunction with CRA supervision, has attempted to temporarily plug the major seep areas and has succeeded in reducing leachate seepage into the creek system. This work was conducted in late December 1985. The City is planning to install remediation works, as described in this report, in the summer of 1986.

The purpose of this report is to provide the City and MOE with the conceptual design of a recommended system to control surface water contamination of the upper reaches of Indian Creek from the Bayview Site. The objectives of the leachate control system are as follows;

1. To collect and prevent leachate contaminated groundwater seepage from the Bayview Landfill Site from flowing overland and entering the Indian Creek system.
2. To collect shallow contaminated groundwater at the landfill site margins and prevent these contaminated waters from discharging into Indian Creek.

3. Provide long term access to the leachate collection system for maintenance and monitoring.
4. Provide for sufficient buffer zones for installation of the leachate collection systems, access roads, contingency groundwater cutoff wall and downgradient attenuation/treatment zone.

The leachate collection system is designed to control leachate discharge to the surface water from surface seepage and shallow groundwater flow. However, the system does not address the deeper groundwater flow component through the fractured shale. Therefore, increased buffer zones are proposed downgradient of the landfill for attenuation and treatment purposes. If, in the future, it is determined that the deeper groundwater flow component must be addressed it will be necessary to increase the downgradient buffer zone and/or the installation of the contingency cutoff wall.

2.0 DESIGN CRITERIA

2.1 PRELIMINARY INVESTIGATIVE WORK

Preliminary investigative work has been carried out on and around the Bayview Landfill Site to obtain data for more detailed design of the leachate collection system. This work included installation of 32 test pits around the Bayview Site to determine soil conditions and groundwater levels, the installation of six leachate wells and the monitoring of leachate levels on the Bayview Site. These leachate wells served a dual purpose as they were also sampled for leachate analysis for leachate treatability studies being undertaken by the consulting firm of Pollutech Limited. Figure 2.1 illustrates the locations of all test pits, standpipes (installed in the test pits) and leachate wells located on and in the vicinity of the Bayview Site. Figure 2.1 also presents the leachate level contours within the site. Appendix A contains the test pit logs, initial groundwater levels and the leachate well borehole logs. Table 2.1 provides the groundwater and leachate levels as monitored for all standpipes and leachate wells as given on Figure 2.1.

Figure 2.1 shows that leachate levels vary from 137 to 164 m. AMSL over the Bayview Site. Leachate flow is primarily directed to the southeast towards the head waters of the Indian Creek tributary system. Leachate levels

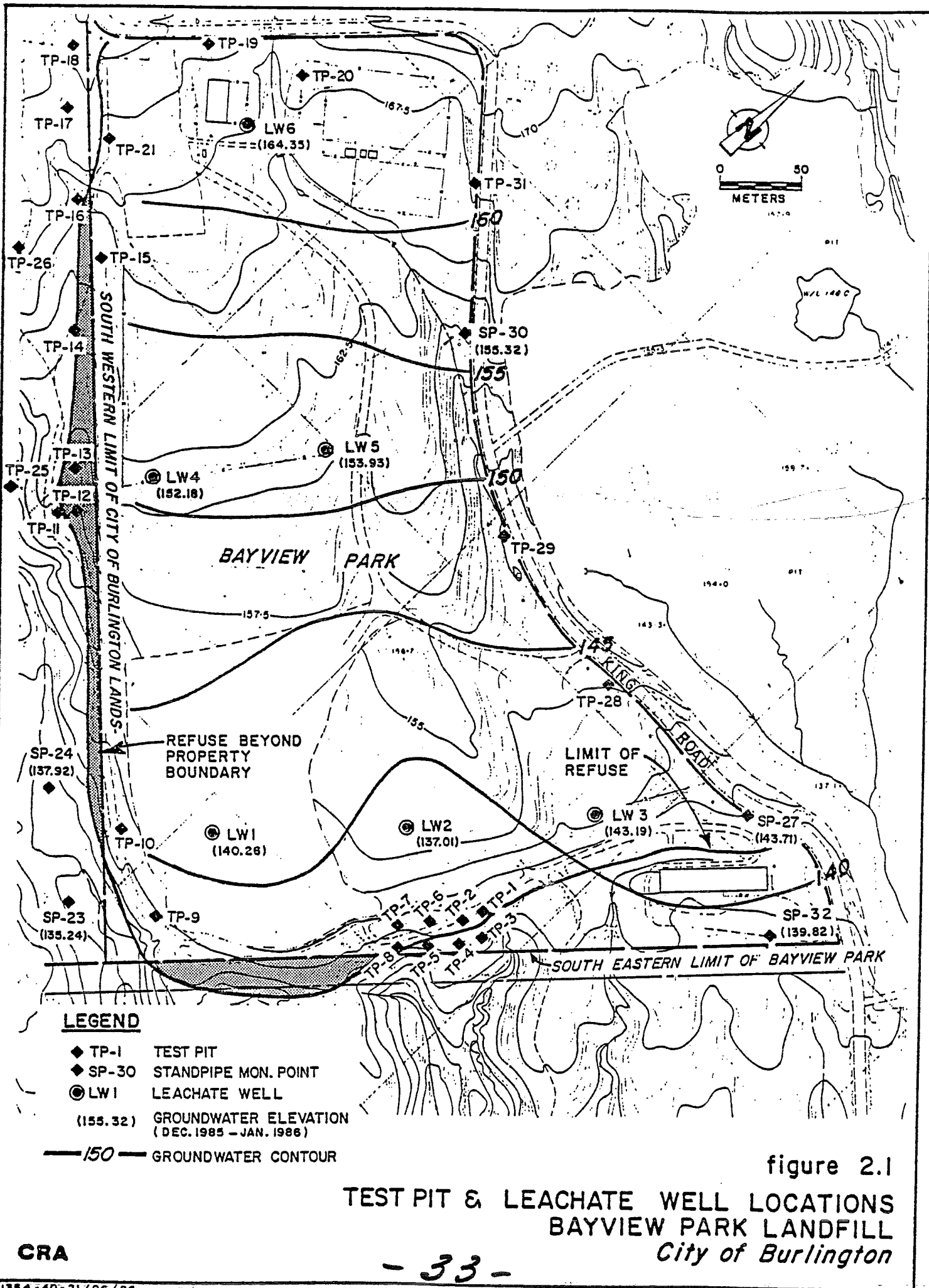


figure 2.1
 TEST PIT & LEACHATE WELL LOCATIONS
 BAYVIEW PARK LANDFILL
 City of Burlington

TABLE 2.1

BAYVIEW LANDFILL SITE
LEACHATE/GROUNDWATER LEVELS

<u>Location</u>	<u>Ground Elevation (m) AMSL</u>	<u>Groundwater/ Leachate Level (m) AMSL</u>	<u>Date Monitored</u>
LW1-86*	150.90	140.263	Jan. 16/86
LW2-86	151.44	137.013	Jan. 16/86
LW3-86	152.44	143.198	Jan. 16/86
LW4-86	161.96	152.185	Jan. 16/86
LW5-86	161.17	153.932	Jan. 16/86
LW6-86	168.44	164.356	Jan. 16/86
SP-23** (groundwater)	137.07	135.24	Dec. 19/85
SP-24 (groundwater)	139.91	137.92	Dec. 19/85
SP-27 (leachate)	146.76	143.71	Dec. 19/85
SP-30 (leachate)	157.45	155.32	Dec. 19/85
SP-32 (leachate)	142.57	139.82	Dec. 19/85

* LW-1 denotes leachate well No. 1

** SP-23 denotes standpipe monitoring point No. 23

measured in the leachate wells and standpipes along the eastern boundary are on the order of 1 to 2 metres below the northeastern boundary swale invert level beside King Road.

On the margins of the southern and western site boundaries, the standpipes indicate groundwater levels are generally within 0.3 metres of ground surface adjacent to the landfill.

For the purposes of this report, the southwestern boundary of the site is synonymous with western boundary and southeastern is synonymous with southern boundary.

2.2 EXTENT OF COLLECTION SYSTEM

The major flowing seeps are located primarily on the southern boundary and, to a lesser extent, the western boundary of the site. CRA does not believe that a collection system is required on the eastern side of the site for the following reasons:

1. No permanent leachate seeps are located on the eastern site boundary on City of Burlington property,

2. Monitored leachate levels within the site are below the invert of the eastern surface water swale and therefore would not affect surface water quality on this side of the site.
3. The leachate levels presently in the Site are considered to represent a steady state (since landfilling activities ceased in 1972) with no further buildup of leachate expected.
4. Leachate flow is southerly as illustrated on Figure 2.1.
5. Leachate collection on the southern and western boundaries should eventually reduce the leachate head within the site.

CRA is aware that intermittent seeps are occasionally reported on the eastern boundary of the site. These seeps are believed to be caused by perching within the landfill and can be easily remedied by the City as they occur.

It is recommended that the west side leachate collection system extend approximately 240 m. north of the current southern property line (as shown on Figure 5.1). A leachate collection system is not required further to the

north along the western boundary or along the northern boundary for the following reasons:

1. The tributary of Indian Creek adjacent to the landfill diverges to the west, further separating the landfill from the creek system which will help protect the creek from overland flow of leachate seepage,
2. The creek invert continues to rise in a northerly direction and is above the monitored leachate levels within the site. This assures that leachate contaminated groundwater does not enter the creek system further north than the leachate collection system along the western boundary.
3. The leachate flow within the site as illustrated on Figure 2.1 is in a southerly direction and is not discharging in a northerly direction.

2.3 DESIGN RATIONAL

The Bayview Landfill Site has been landfilled in a ravine system. Along the southern portion of the site three distinct ravines are evident as shown on Figure 2.1. The leachate seepage has been encountered in each of these ravines. It is not practicable to consider a continuous

leachate collection system along the southern boundary due to the presence of these ravines. As discussed in Section 4 of this report an individual leachate collection and sump system is proposed for installation in each of these ravines.

The western side of the site is located on the edge of a ravine. It is therefore possible to install a toe drain system at the bottom of the ravine parallel to the creek system and to hydraulically connect any leachate seepage above the bottom of the ravine to this toe drain. The toe drain will also act to control the shallow contaminated groundwater from discharging to the adjacent stream.

Section 5 of this report provides the design concepts of these proposed systems.

2.3.1. Leachate Seep Design Flow Rates

Continually flowing seeps have been located on the southern and western boundaries of the Bayview Site. These are seeps 1, 2, 3, 4 and 6 as located on Figure 1.2. The flows from these seeps have been monitored and have been found to range from 5 to 15 litres per minute. These seeps will be connected into the leachate collection system to prevent overland surface flow to the creek systems. An

average design flow of 9 liters per minute per seep has been used to calculate a total anticipated leachate flow from surface seepage of 45 liters/min.

2.3.2 Groundwater Design Flow Rates

An estimate of groundwater flow into the lateral drain systems has been undertaken. These calculations are presented in Appendix B and make use of a formula originally developed for tunnel dewatering as referenced in Appendix B.

It is estimated that for the southern leachate sumps a flow of 0.6 l/min/m will occur and for the western boundary toe drain 0.3 l/min/m will result, as calculated in Appendix B.

These flow rates are considered to be conservative, as they represent a flow rate into the drain based on an assumed constant 3 meter difference between the drain elevation and top of the water table. The drain, as proposed, will be placed approximately 3 meters below grade. The water table was assumed to be at ground surface for purposes of these calculations. With time the water table adjacent to the drain will decline and flows will decrease. Table 2.2 outlines the design flow rates for the different drain systems for the shallow groundwater flow. The total groundwater flow rate for the drain systems will be on the order of 119 liters/min.

TABLE 2.2

SHALLOW GROUNDWATER DESIGN FLOWS

<u>Location</u>	<u>Drain Length</u>	<u>Drain Flow (IGPM)</u>
Western Drain	240 m.	71.4
Seep Drain 2	30 m.	17.7
Seep Drain 3	30 m.	17.7
Seep Drain 4	20 m.	11.8
TOTAL		118.6 l/min.

2.3.3 Total System Flow Rates

The total design flow rate for the collection system is on the order of 164 liters/min and includes both the seep flows and drain flows as outlined in the previous two subsections.

The total design flow rate exceeds the anticipated leachate production rate of 47 l/min, which is based on an expected infiltration rate of 15 cm/year over the 16.2 hectare site.

30 cm / year

With time, it would be expected that often the site has been dewatered, the leachate flows would approach the anticipated leachate production rate.

3.0 LAND REQUIREMENTS FOR REMEDIAL WORKS IMPLEMENTATION

Lands not presently owned by the City of Burlington adjacent to the site are required in order to effectively remediate surface water and groundwater contamination of the Indian Creek system from the Bayview Landfill Site.

Plan 1 (enclosed) shows the property that is required for effective remediation of this surface water contamination. This land is located adjacent to the existing western and southern property boundaries of the Bayview Site and is owned by National Sewer Pipe Limited (NSP). In general, these lands are required to construct remedial works, to provide downgradient attenuation zone and to take advantage of the favourable existing natural features (marshlands located in the southern property) which will greatly assist in mitigating surface water contamination. The total area of NSP lands required as outlined on Plan 1, has 18.4 hectares (45.4 acres).

The required land has been divided into three zones, labeled A, B and C, on Plan 1. Area A contains 0.9 ha. (2.22 acres), Area B contains 1.5 ha. (3.71 acres) and Area C adjacent to the existing southern property boundary contains 16 ha. (39.47 acres). These areas are summarized in tabular form on Plan 1.

The following presents the primary rationale for the acquiring of these areas by the City of Burlington from NSP.

Area A

Area A is located adjacent to the northern half of the existing western property boundary, as located on Plan 1, and contains 0.9 ha. This land comprises a 30-meter wide strip of land extending approximately 300 meters from the northern property boundary, south along the existing western property boundary.

This land is required for the following reasons:

1. Refuse from previous disposal practices of the Bayview Landfill Site is presently located on NSP property. Removing this refuse and recontouring this area has been reviewed by CRA and is believed to be technically difficult and economically impractical. Purchase of Area A would extend the City of Burlington property boundary to include this refuse, and keep all refuse on City property.
2. The acquisition of this property would create a buffer zone for the landfill.

3. The acquisition of this property would ensure unimpeded access for the City for any future remedial works that may be required and would provide space for implementation of these works. The remedial measures could take the form of toe leachate collection systems landfill gas venting systems or surface water drainage works.

Area B

Area B is located adjacent to the southern half of the existing western property line as shown on Plan 1. This strip of land is 50 meters in width and approximately 300 meters in length. The total area of Section 13 is 1.5 ha. (3.71 ac.).

This land is required for the following reasons:

1. Construction of a leachate toe drain collection system to prevent leachate discharge into the adjacent creek system. Adequate room is required for both the drain and a permanent access road (for maintenance purposes). In addition, as a contingency system, a deeper groundwater cutoff wall can be placed in this area (if required) without disrupting the toe drain system.

2. The extension of this property would create a buffer zone for the landfill buffer zones.
3. In the southeast corner of this area the present creek will be diverted to permit installation of the toe drain system. This property, as proposed, will provide enough room for this diversion.
4. As for Area A, this land would provide for unimpeded access on the western boundary for the City of Burlington and would contain contaminant discharge and disposed refuse on City of Burlington property.

Area C

Area C is the largest portion of land required and is located adjacent to the existing southern property boundary as shown on Plan 1. Area C contains a total of 16 ha. (39.47 acres). The new proposed southern property boundary extends 335 meters south of the existing southern property boundary.

This land is required for the following reasons:

1. Natural attenuation of contaminants found in the deeper groundwater, which discharges to the stream systems south

of the present Bayview property boundary and bypasses the proposed shallow groundwater collection system. Marsh systems are known to attenuate/treat many contaminants and would help to reduce contamination of the surface water stream systems. The proposed southern property line as shown has been selected to include the majority of the marshlands south of the present property boundary and to include known actual groundwater discharge points (also located on Plan 1).

2. The extension of this property would create a buffer zone downgradient for the landfill.
3. As for Areas A and B, this land would help ensure that the majority of the contaminants being emitted and entering the creek system from the Bayview Landfill Site are originating on City of Burlington property.
4. A portion of this property closer to the existing southern property boundary is required to facilitate remedial construction and to ensure that all refuse is located on City of Burlington property as discussed for land Areas A and B previously.

4.0 LEACHATE TREATMENT AND POTENTIAL RECEIVING SEWERS

It is proposed that the leachate collected at the Bayview Landfill Site be discharged in an untreated form into existing sanitary sewers. This leachate will subsequently be treated by the Skyway Pollution Control Plant. As discussed in Section 1 a leachate treatability study is being conducted by Pollutech Limited to determine the suitability of the Skyway Plant to treat this leachate.

The existing sanitary sewers which represent potential receiving sewers for the leachate from the Bayview Landfill Site are as follows:

- i) An existing 200 mm sewer located on the North Service Road approximately 1200 m west of King Road.
- ii) An existing 450 mm sewer located approximately 150 m south of Highway No. 403 on King Road.

5.0 LEACHATE COLLECTION SYSTEM

5.1 PHYSICAL DESIGN CONSTRAINTS

In order to intercept the leachate seeping from the west side of the landfill a toe drain must be installed in the ravine below. Any present leachate seepage areas will be hydraulically connected to this toe drain. The slope of the ravine is such that this drainage system can flow to the southern corner of the landfill by gravity.

The relief of the land immediately south of the landfill is characterized by several incised ravines approximately 10 to 12 m. deep. Placing of a continuous gravity drain system along the toe of the south face is impractical. Therefore the leachate collection must be accomplished by individual toe drains and sumps installed across the bottom of each ravine.

A gravity sewer installed in the vicinity of the southern face must be located on the top of the landfill rather than at the toe, due to the topography, as described above. This necessitates that the leachate collection sumps be equipped with pumps to lift the leachate to the top of the landfill.

The details of the required west side toe drain and the south face collection sumps are presented in the following section.

5.2 CONCEPTUAL DESIGN DETAILS

5.2.1 West Side Toe Drain

As discussed in Section 2 the west side toe drain system will be installed at the base of the ravine for distance of approximately 240 m north of the southern property line. Figure 5.1 shows the approximate location of the western toe drain, the existing seepage areas and the present property boundary. As can be noted on Figure 5.1 the refuse has been placed beyond the property boundary.

The leachate collection system is to be installed at the base of the ravine to collect the surface seepage, as noted, as well as the contaminated groundwater discharge to the adjacent stream. The land acquisition, previously described in Section 3.0, will allow sufficient room for the installation of the leachate collection system, access road, contingency cutoff wall and the re-routing of the existing creek, as required.



Scale 1:2000

EXISTING
CREEK

RELOCATED
CREEK

LOCATION OF
TOE DRAIN
(WEST SIDE ONLY)

EXISTING SEEP LOCATION
(HYDRAULIC CONNECTION TO COLLECTOR)

REFUSE BEYOND
PROPERTY BOUNDARY

figure 5.1

PROPOSED WEST SIDE LEACHATE
COLLECTION SYSTEM
BAYVIEW PARK LANDFILL
City of Burlington

CRA

Figure 5.2 illustrates a typical cross-sectional view of the western leachate collection system. As shown on the Figure, the leachate collection system would consist of a perforated PVC pipe, installed at a depth of approximately 3 meters, surrounded by clear stone backfill. The clear stone would extend laterally up the slope of the ravine to provide a positive connection to any existing leachate seepage area. The clear stone would be wrapped with a filter cloth to prevent the migration of fines into the stone. The leachate collection trench and lateral connection to the seepage area would be capped with approximately 0.6 meters of a clay rich soil. A proposed access road would be constructed on top of the leachate collection trench as illustrated on Figure 5.2.

As discussed previously, a groundwater cutoff wall has been schematically illustrated on Figure 5.2. as a contingency item. Sufficient room for the installation of this cutoff wall has been allowed between the leachate collection trench and the realigned creek.

Any future additional leachate seepage encountered along the slope of the western portion of the landfill can easily be intercepted by the installation of a granular connection between the seepage and the leachate collection trench. This granular connection would be constructed in a similar fashion to that illustrated on Figure 5.2.

WEST

EAST

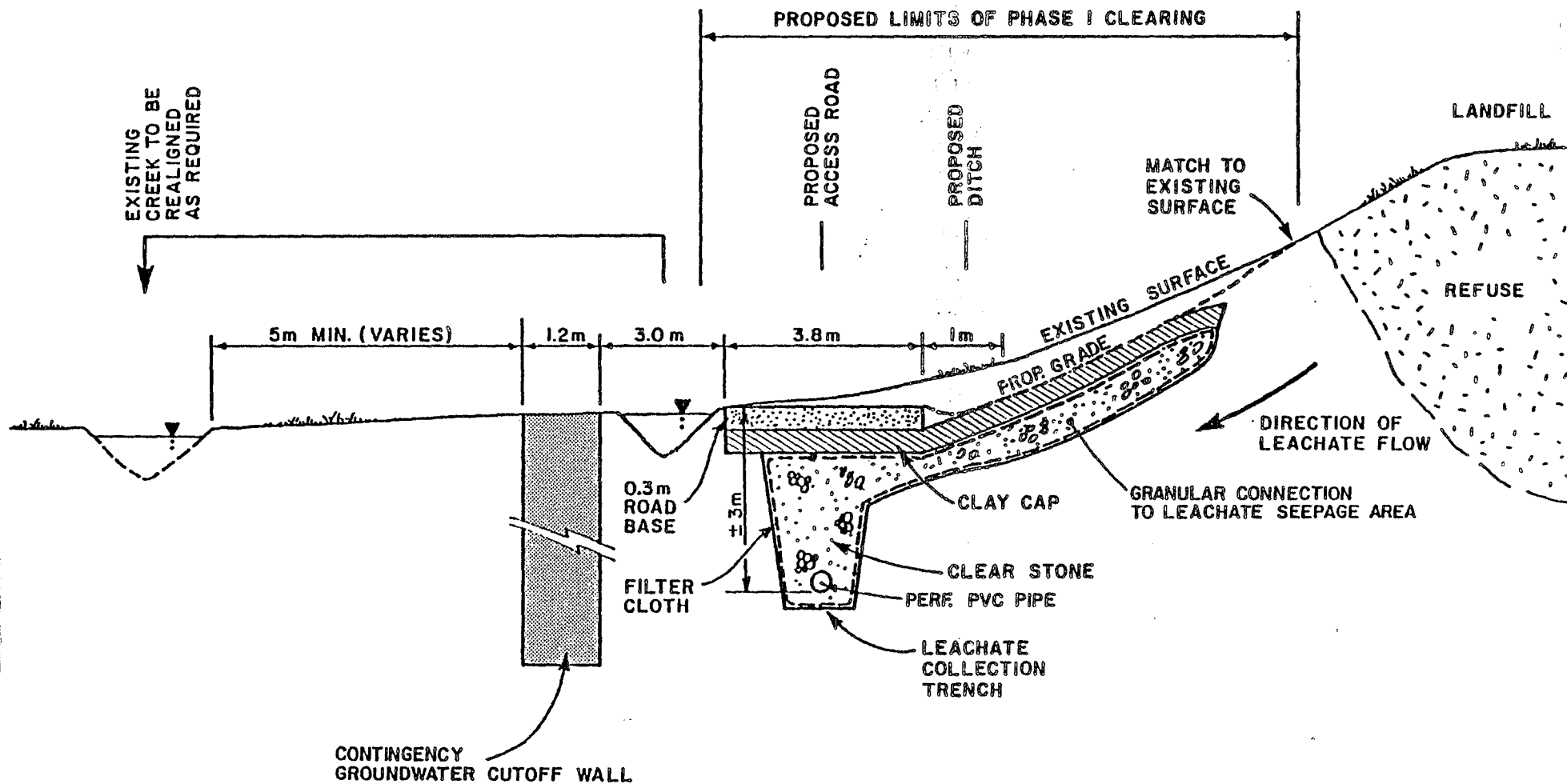


figure 5.2

TYPICAL CROSS-SECTION - WEST SIDE OF LANDFILL
 PROPOSED LEACHATE COLLECTION SYSTEM
 BAYVIEW PARK LANDFILL
 City of Burlington

CRA

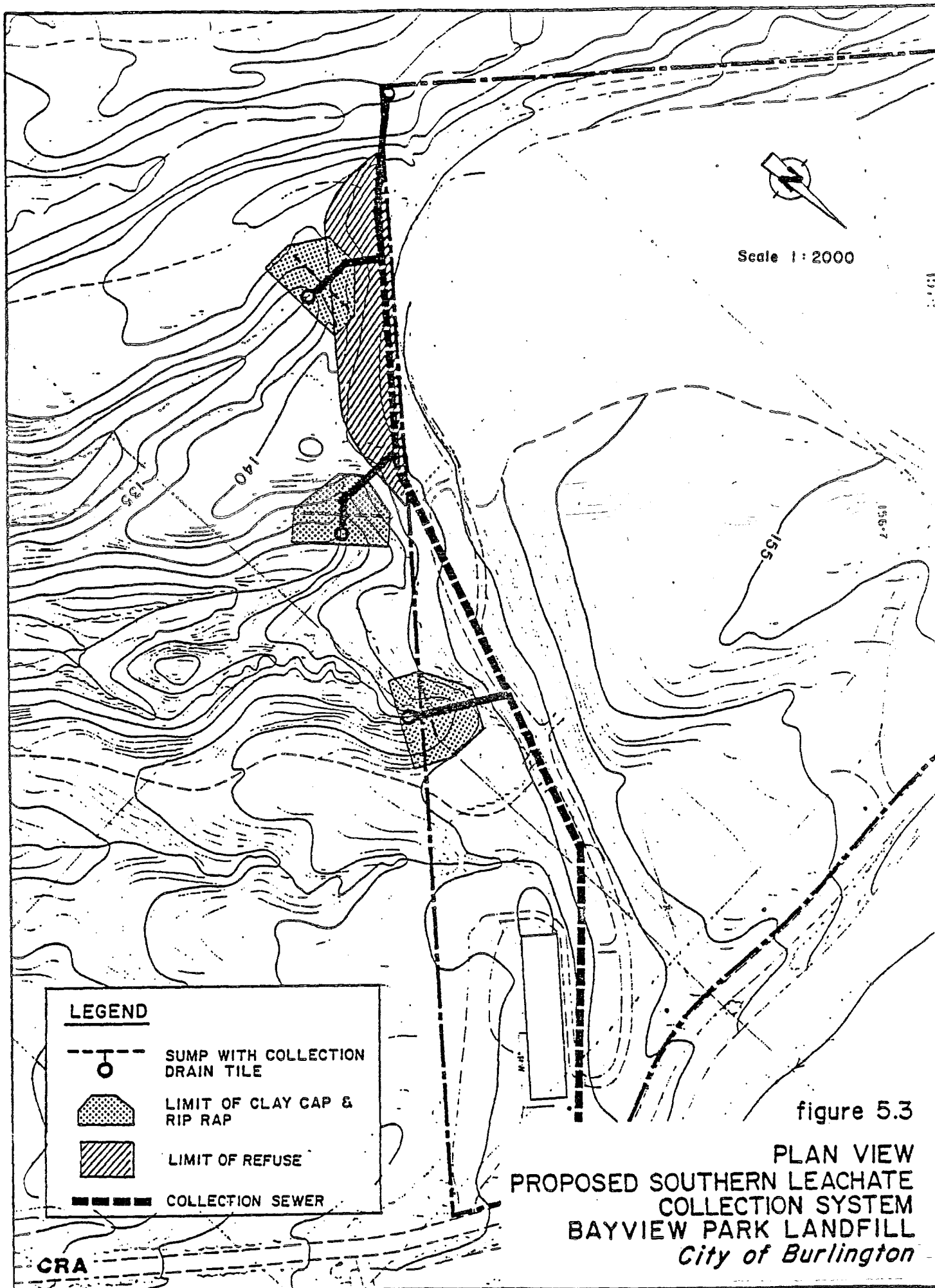
5.2.2 South Side Sumps

As illustrated on Figure 1.2, three major leachate seepage areas have been identified (Seeps No. 2, 3 and 4) each located in individual ravines. As discussed, the most practical means of controlling this leachate seepage is by installing individual leachate collection and sump systems in each ravine. Figure 5.3 presents a plan view locating the proposed southern boundary leachate collection and sump systems.

As shown on the Figure refuse has been disposed beyond the present property boundary. The leachate collection systems in each ravine must therefore be installed south of the Bayview property boundary, on lands presently owned by NSP.

Figure 5.4 illustrates a typical cross-section through the southern leachate collection system. The area of the leachate seeps would be excavated and replaced with clear stone. A perforated PVC collection pipe would be installed (within the clear stone) laterally across the bottom of the ravine to collect leachate and drain it to the collection sump. A duplex pumping station would be used to pump the leachate via a forcemain to a gravity sewer at the top of the south face.

A perforated leachate collection pipe will also be installed within the forcemain trench and will be



SOUTH

NORTH

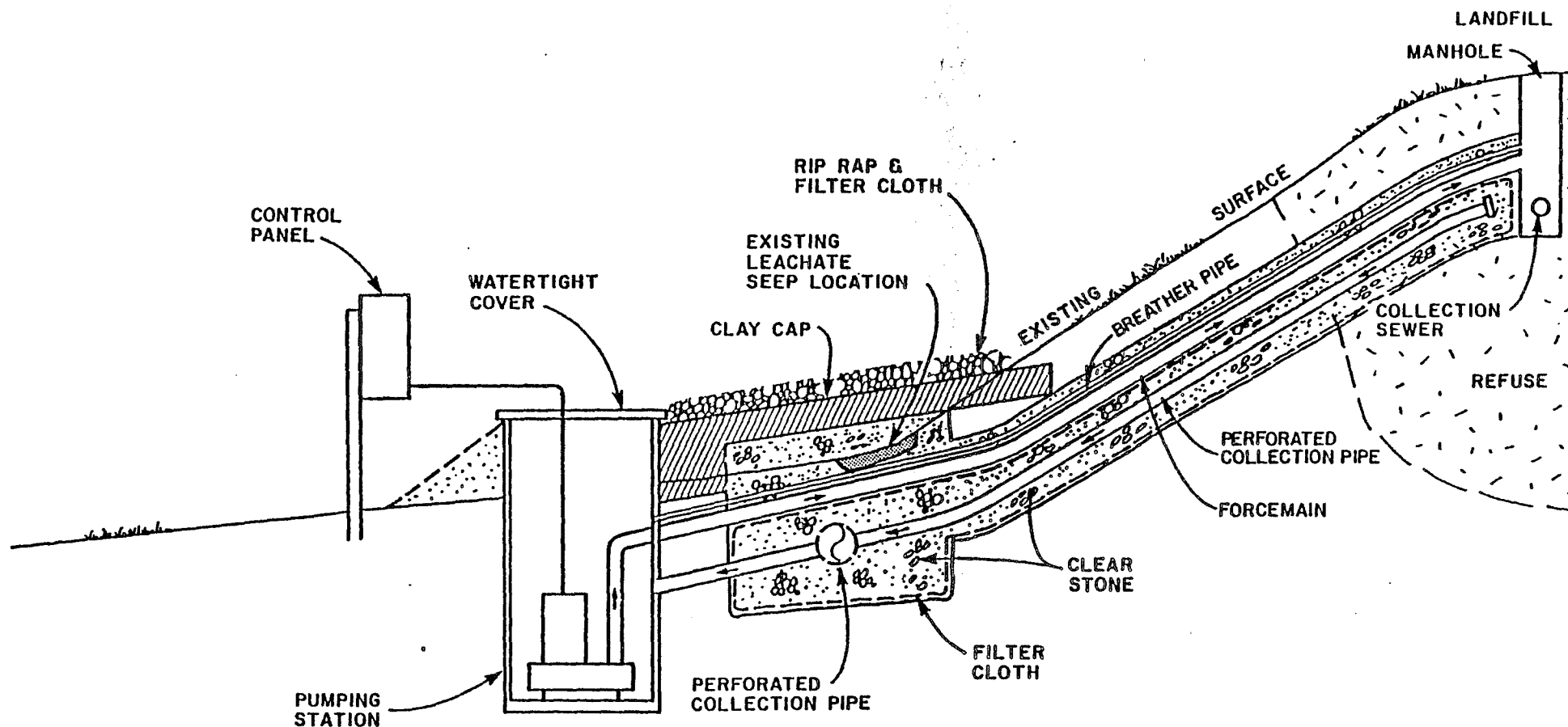


figure 5.4

TYPICAL CROSS-SECTION - SOUTH SIDE OF LANDFILL
 PROPOSED LEACHATE COLLECTION SYSTEM AT SEEPS
 BAYVIEW PARK LANDFILL
City of Burlington

CRA

backfilled with clear stone. This will provide a good hydraulic connection between the landfill and the sumps.

Due to the elevation difference between the leachate within the landfill site and the collection sump a sealed sump with a vent system will be required. The vent pipe will extend approximately 1 metre above the existing leachate level in this area. This will prevent any overflowing of the leachate from the sump in the event of a pumping system failure.

The complete collection system would be covered with approximately 0.6 metres of clay rich soil minimizing surface water infiltration. The clay cap would be covered with rip rap and filter cloth as required to prevent erosion.

5.3 GENERAL DESCRIPTION OF COLLECTION SYSTEM OPTIONS

Four major options were evaluated to provide a permanent leachate collection system for the west and south faces of the landfill. As described in Section 5.1 a gravity toe drain on the west side and collection sumps on the south side are common to all options. However, the configuration of the south face collection system and method of connection to existing sewers varies for each option. A brief description of each option is given in the following paragraphs.

Option 1A, as shown on Figure 5.5 involves pumping leachate from the west side toe drain up into a south face gravity sewer. Leachate collected in the sumps at the toe of the south face would also be pumped up to the gravity sewer. The south face gravity sewer would drain to a King Road sewer, which in turn would drain across the Highway 403 bridge to an existing sewer on King Road.

Option 1B, differs from 1A in that the existing sewer on the North Service Road would be used as an outlet. As shown on Figure 5.6, the King Road sewer would be connected to the outlet via a section of gravity sewer draining to an intermediate pumping station and forcemain.

Option 2 involves pumping leachate into a south face gravity sewer from both the west side toe drain and the sumps on the south side as shown on Figure 5.7. The south face sewer would drain to a pumping station on the North Service Road via a valley through the southern lands.

Option 3 is shown on Figure 5.8. It is similar to Option 2 except that the discharge sewer through NSP lands would be constructed in the valley to the west of Option 2. The toe drain on the west side of the landfill could drain by gravity in this situation.

The pumping station and forcemain required on the North Service Road to allow discharge to the existing North Service Road sewer for Option 1B, 2 and 3 is shown on Figure 5.9.

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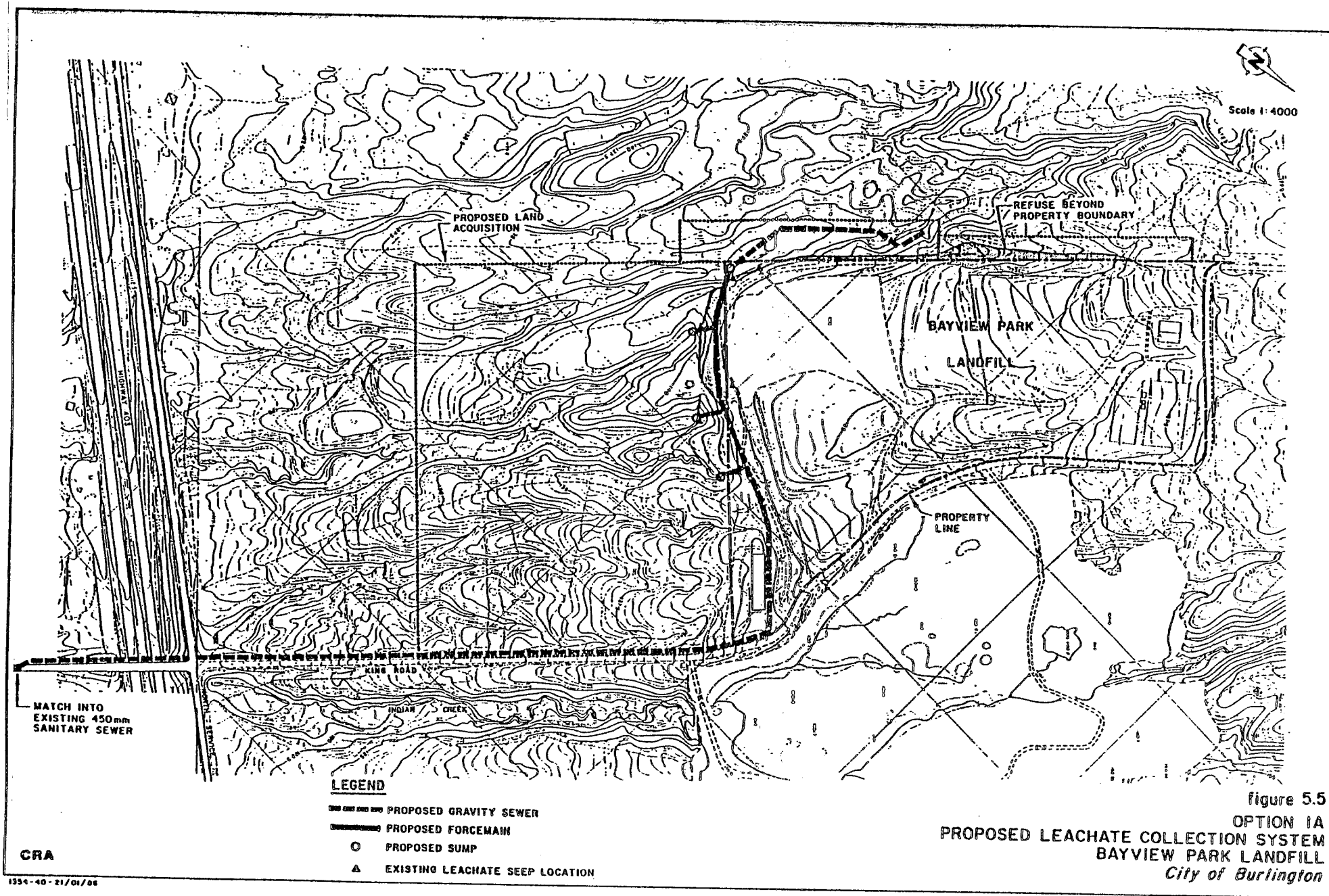
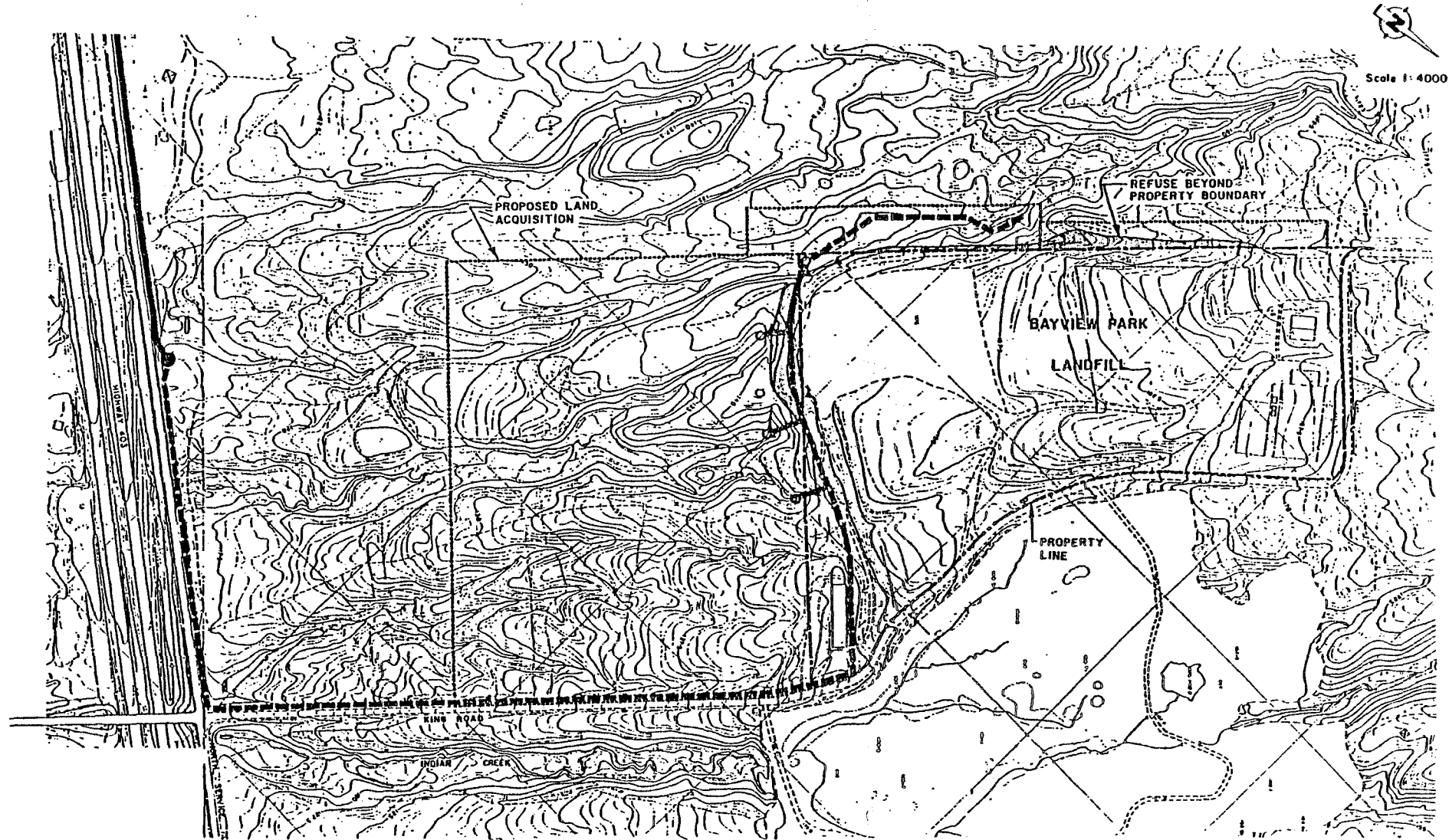


figure 5.5
OPTION 1A
PROPOSED LEACHATE COLLECTION SYSTEM
BAYVIEW PARK LANDFILL
City of Burlington

-59-



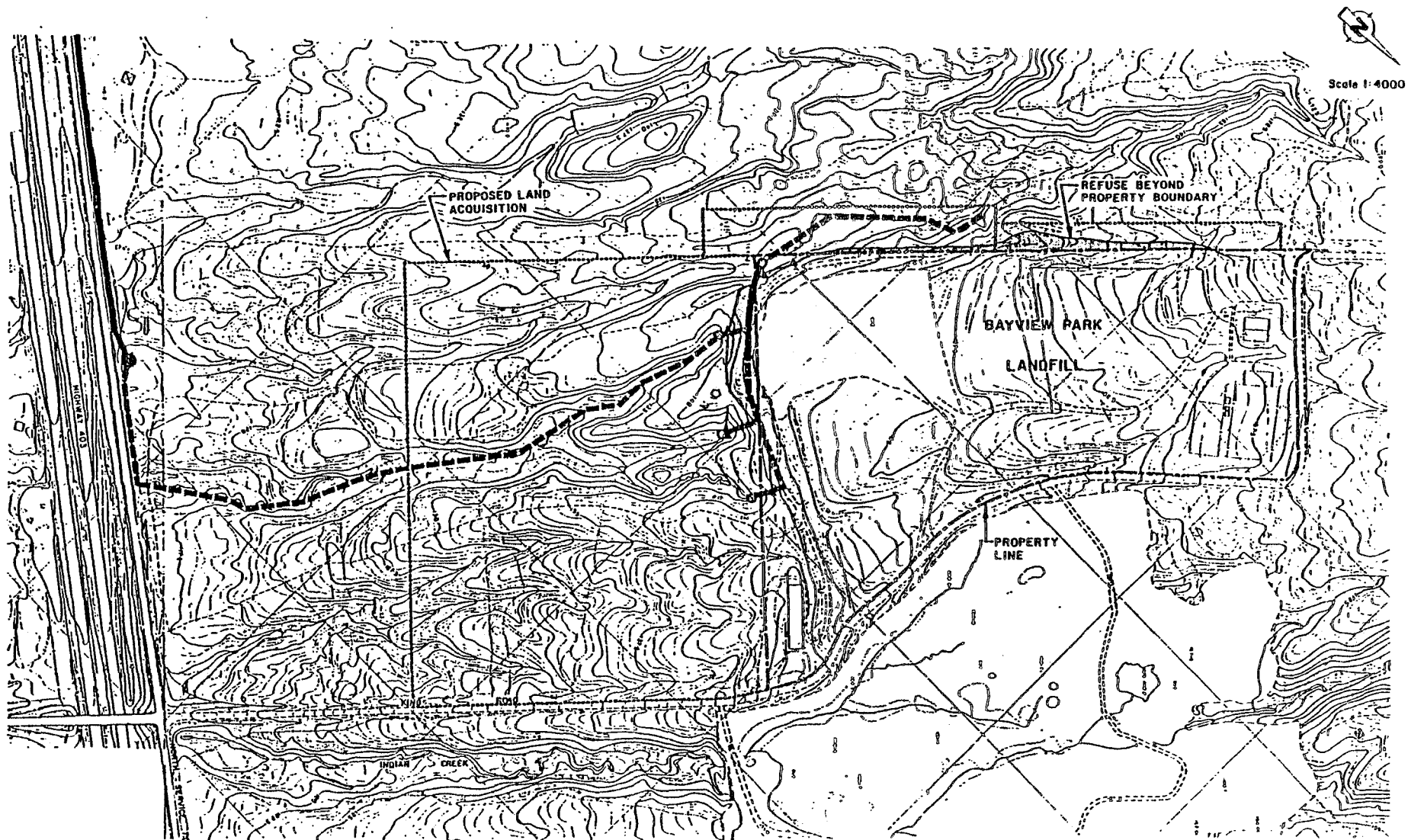
LEGEND

- | | | | |
|---------|------------------------|---|---------------------------------|
| —●—●—●— | PROPOSED GRAVITY SEWER | ⊙ | PROPOSED PUMPING STATION |
| —■—■—■— | PROPOSED FORCEMAIN | ○ | PROPOSED SUMP |
| | | ▲ | EXISTING LEACHATE SEEP LOCATION |

figure 5.6
OPTION 1B
PROPOSED LEACHATE COLLECTION SYSTEM
BAYVIEW PARK LANDFILL
City of Burlington

CRA

-66-



LEGEND

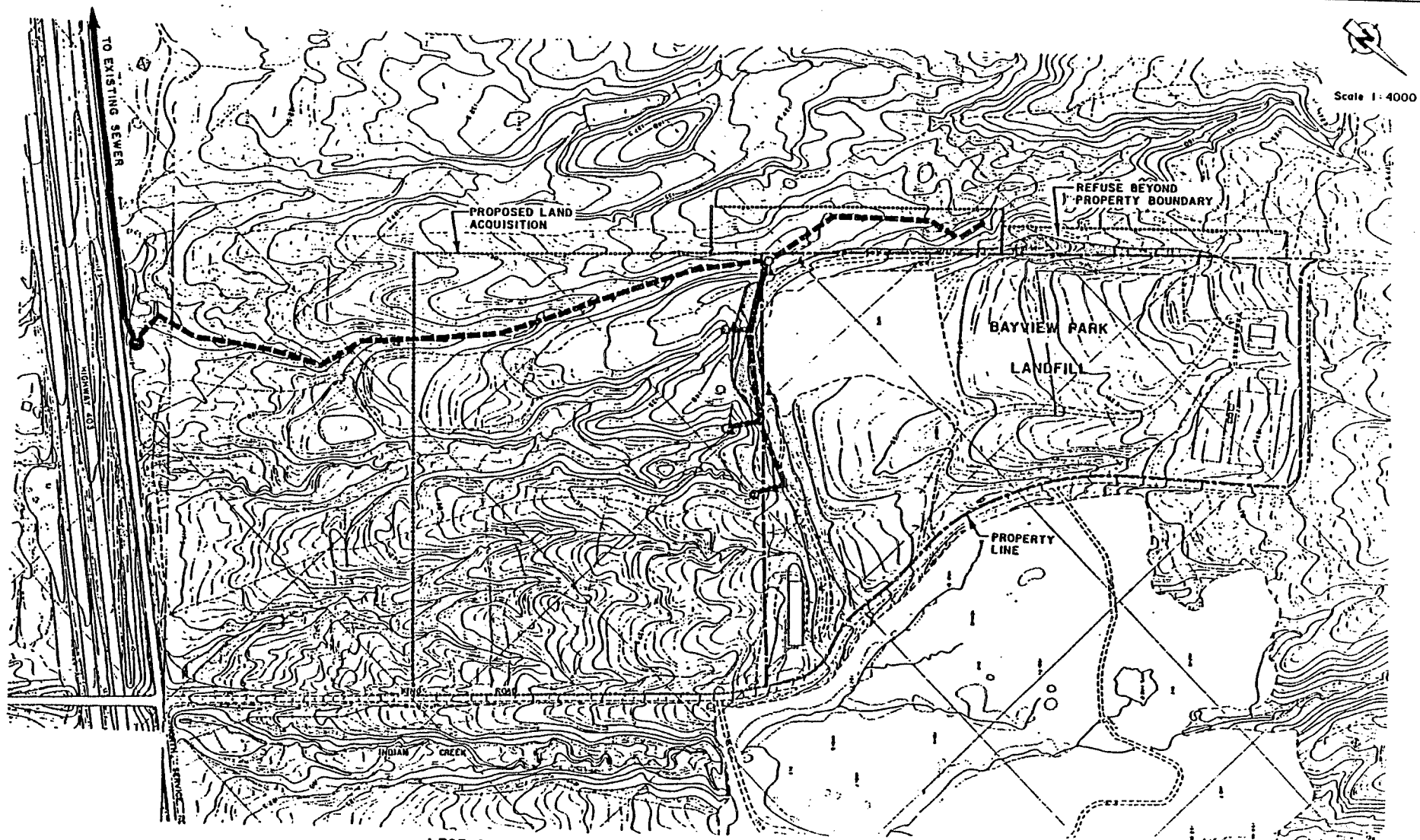
- | | |
|----------------------------|-----------------------------------|
| --- PROPOSED GRAVITY SEWER | ● PROPOSED PUMPING STATION |
| — PROPOSED FORCEMAIN | ○ PROPOSED SUMP |
| | ▲ EXISTING LEACHATE SEEP LOCATION |

CRA

1354-40-21/01/88

figure 5.7
OPTION 2
PROPOSED LEACHATE COLLECTION SYSTEM
BAYVIEW PARK LANDFILL
City of Burlington

-61-



LEGEND

- | | |
|----------------------------|-----------------------------------|
| --- PROPOSED GRAVITY SEWER | ⊙ PROPOSED PUMPING STATION |
| — PROPOSED FORCEMAIN | ○ PROPOSED SUMP |
| | ▲ EXISTING LEACHATE SEEP LOCATION |

figure 5.8
OPTION 3
PROPOSED LEACHATE COLLECTION SYSTEM
BAYVIEW PARK LANDFILL
City of Burlington

CRA

1354-40-21/01/88



Scale 1:4000

EXISTING LEACHATE
COLLECTION LINE
(BURLINGTON LANDFILL)

OPTION 3

OPTION 2

OPTION 1

OPTION 1B

OPTION 1A

CONNECT TO EXISTING
SANITARY SEWER

LEGEND

--- PROPOSED GRAVITY SEWER

===== PROPOSED FORCEMAIN

● PROPOSED PUMPING STATION

EXISTING 450 mm -
SANITARY SEWER

figure 5.9

CONNECTION TO EXISTING SANITARY SEWER
PROPOSED LEACHATE COLLECTION SYSTEM
BAYVIEW PARK LANDFILL
City of Burlington

5.4 EVALUATION OF OPTIONS

A summary of the relative merits of the four options is shown in Table 5.1. A description of the information shown in the table is given below.

5.4.1. Property Acquisition Requirements

All options require acquisition of NSP lands for the west side toe drain, the south side sumps and the southern attenuation and groundwater treatment zone. Options 2 and 3 would require acquisition of additional easements through NSP land to the North Service Road.

5.4.2 Environmental Implications as a Result of Construction

All the options will involve some clearing and disturbance of existing natural areas (e.g. west side toe drain). However, Options 2 and 3 would require additional clearing and disruption of two natural valleys.

5.4.3 Operation and Maintenance Considerations

The requisite number of pumping sumps and larger pumping stations (with their attendant power consumption and maintenance requirements) is summarized

on Table 5.2

TABLE 5.1

SUMMARY OF RELATIVE MERITS
COLLECTION SYSTEM OPTIONS

	<u>Option 1A</u>	<u>Option 1B</u>	<u>Option 2</u>	<u>Option 3</u>
Property Acquisition Requirements	F	F	P	P
Environmental Implications as a Result of Construction	F	F	P	P
Operating and Maintenance Considerations	G	P	P	F
Capital Cost	\$650,000	\$795,000	\$725,000	\$740,000

Relative Ratings: G - Good
 F - Fair
 P - Poor

TABLE 5.2
PUMPING REQUIREMENTS

	<u>Number of Pumping Sumps</u>	<u>Number of Pumping Stations</u>
Option 1A	4	--
1B	4	1
2	3	1
3	3	1

5.4.4 Preliminary Cost Estimates

Preliminary cost estimates were prepared for each of the options and are presented on Table 5.1. The preliminary cost estimates shown in the table are based on the following assumptions:

- operating costs are excluded
- capital costs are based on 1986 dollars
- property acquisition and survey costs are excluded
- a 25 percent capital cost contingency is included in the estimate, reflecting the fact that the costs are preliminary, and are subject to refinement
- the estimate includes a 15 percent allowance for engineering
- excavation costs do not include any allowance for excavation of rock or extremely hard, non-weathered, non-fractured shale.

6.0 APPROVAL REQUIREMENTS

The following agencies will be contacted to obtain the necessary approvals to construct the proposed works.

Ministry of the Environment

- Approval to construct sewage works
- Review and approval of conceptual design report
- Review and approval of contract drawings and documents,

Ministry of Natural Resources

- Lakes and Rivers Improvement Act

Ministry of the Transportation and Communications

- Encroachment permits

Regional Municipality of Halton

- Approval to discharge to the sanitary collection and treatment system

Halton Region Conservation Authority

7.0 CONCLUSIONS AND RECOMMENDATION

The following conclusions and recommendations are formulated based upon the results of this study:

1. It is concluded that the proposed leachate collection system along the western and southern boundaries of the Bayview Park Landfill, will effectively control the surface and upper groundwater contamination of Indian Creek.
2. It is concluded that it is necessary to acquire lands identified in this report for the installation of the leachate collection systems along the western and southern boundaries and to provide an attenuation/treatment zone downgradient of the landfill site.
3. It is recommended that if unacceptable groundwater contamination is encountered beyond the acquired land additional downgradient lands be acquired and/or the contingency cutoff wall be installed to control this contamination.
4. It is recommended that Option 1A be carried to the final design stage as it is the most feasible and economical.

All of which is respectfully submitted,

CONESTOGA ROVERS & ASSOCIATES LIMITED


REGISTERED PROFESSIONAL ENGINEER
A. J. CRUTCHER
PROVINCE OF ONTARIO
Anthony J. Crutcher, P. Eng.


REGISTERED PROFESSIONAL ENGINEER
R. A. DODD
PROVINCE OF ONTARIO
Randy Dods, P. Eng.

Walter Graziani, P. Eng.

APPENDIX A

- TEST PIT LOGS

- LEACHATE WELL STRATIGRAPHIC LOGS

APPENDIX A
TEST PIT LOGS

	<u>Elevation (m)</u>	<u>Remarks</u>
TP1	146.5	Ground elevation (3 m. fill)
	144.4	Water level
	143.5	Fill/Garbage Interface
	142.2	Garbage/Rubble Interface
TP2	146.5	Ground elevation (1.4 m. fill)
	144.1	Clay Fill/Garbage Interface
	142.2	End of garbage
TP3	142.9	Ground elevation (1.2 m. fill)
	141.7	Original red clay
TP4	142.6	Ground elevation (1.5 m. fill)
	141.1	Original red clay
TP5	144.3	Ground elevation (0.3 m. fill)
	144.0	Clay Fill/Garbage Interface
	142.7	Garbage/Rubble Interface
	141.6	Original red clay
TP6	146.0	Ground elevation (1.8 m. fill)
	144.2	Clay Fill/Garbage Interface
	142.9	Water level
	142.0	End of garbage (clay)
TP7	145.4	Ground elevation (0.6 m. fill)
	144.8	Fill (Garbage Interface)
	141.1	Water level
	140.2	End of garbage (clay)
TP8	--	0.6 m. cover
	--	0.3 m. garbage
	--	Water seeps @ 1.5 m.
	--	Original ground @ 2.4 m.
TP9	--	Garbage @ 2.5 to 3.0 m.
TP10	146.7	Ground elevation (2.4 m. fill)
	144.3	Fill/Garbage Interface
	143.7	End of garbage (clay)

continued...

APPENDIX A

TEST PIT LOGS

	<u>Elevation (m)</u>	<u>Remarks</u>
TP11	158.2	Ground Elevation (all clay)
TP12	156.0 155.1	Ground Elevation (0.9 m. fill) Fill/Garbage Interface
TP13	155.4 155.1	Ground Elevation (0.3 m. fill) Garbage (water flowing)
TP14	-- -- --	0.6 m. Cover Water seep @ 1.2 m. Garbage to 3.0 m.
TP15	163.8	Ground elevation (all clay)
TP16	164.5 163.6 162.1	Ground elevation (0.9 m. fill) Fill/Garbage Interface End of Garbage (clay)
TP17	171.1 170.8 170.2 168.0	Ground elevation (0.3 m. topsoil) Topsoil/Red Clay Interface Gray clay seam Hard, red, clay (end of pit)
TP18	171.15 169.3 168.1	Ground elevation (no topsoil) - Red and grey mixed clay Top of red clay layer Shale clay
TP19	171.4 169.6	Ground elevation (1.8 m. Grey Clay) Red original clay
TP20	--	Off parking area - N.W. of carral - Hard, red, clay shale
TP21	168.7 168.1	Ground level (0.6 m. topsoil) Rubble and tree branches - Edge of bush

continued...

APPENDIX A
TEST PIT LOGS

	<u>Elevation (m)</u>	<u>Remarks</u>
TP22	150.0	Ground elevation (0.9 m. cover)
	149.1	Top of rubble
	147.6	Seep
	147.0	Original ground
SP23	137.1	Ground elevation (red clay)
	135.6	Grey clay vein (0.2 m. thick)
	133.4	End of red clay (dry)
SP24 (east of creek)	139.9	Ground elevation (red, clay) (water and surface)
	138.4	Water leaching
	137.5	Red clay/grey clay interface
SP24A	139.9	Ground elevation - red clay
	137.8	0.6 m. Grey clay seam, dry
SP24B	139.9	Ground elevtion - red clay
	137.8	0.6 m. Grey clay seam, dry
SP25	145.1	Ground elevation - red clay
	142.7	0.6 m. hard, grey clay seam - slight water seep
	142.1	shale
SP26	154.8	Ground elevation (red clay)
	153.0	Water seep
	151.8	Red clay/grey clay interface
	151.2	Shale
SP27	146.8	Ground elevation (fill 1.0 m.)
	145.8	To of grey clay layer
	143.7	Grey clay/shale interface
SP28	152.8	Ground elevation (red clay)
	151.8	Red clay/garbage interface (seepage w/strong chemical odour)

continued....

APPENDIX A

TEST PIT LOGS

	<u>Elevation (m)</u>	<u>Remarks</u>
SP29	153.7	Ground elevation (red clay)
	152.2	Red clay/grey shale interface
SP30	157.4	Ground elevation (red clay)
	156.6	Seep layer
	155.1	Grey shale (end of test pit)
SP31	--	1.0 m cover over garbage
	--	
SP32	142.6	Original ground (red clay)
	139.6	Shale layer

STRATIGRAPHY LOG (OVERBURDEN)

SHEET NO. 1 OF 1

PROJECT NAME Bayview Landfill
PROJECT NUMBER 1354
CLIENT City of Burlington
LOCATION Burlington, Ont.

DRILLING CONTRACTOR Atcost Soil Drilling
 DRILLER _____
 SURFACE ELEVATION 150.90 m AMSL
 WEATHER (a.m.) _____
 (p.m.) _____

HOLE DESIGNATION LW1-86
DATE STARTED Jan. 7 / 86
DATE COMPLETED Jan. 7 / 86
DRILLING METHOD HSA
CRA SUPERVISOR Bob Mayberry

[illegible]

2/05/85

CRA

STRATIGRAPHY LOG (OVERBURDEN)

SHEET NO. 1 OF 1

PROJECT NAME Bayview Landfill
PROJECT NUMBER 1354
CLIENT City of Burlington
LOCATION Burlington, Ont.

DRILLING CONTRACTOR Atcost Soil Drilling
 DRILLER _____
 SURFACE ELEVATION 151.44 m AMSL
 WEATHER (a.m.) _____
 (p.m.) _____

HOLE DESIGNATION	LW2-86
DATE STARTED	Jan. 7 / 86
DATE COMPLETED	Jan. 7 / 86
DRILLING METHOD	HSA
CRA SUPERVISOR	Bob Mayberry

[illegible]

2/05/85

CRA

STRATIGRAPHY LOG (OVERBURDEN)

SHEET NO. 1 OF 1

PROJECT NAME Bayview Landfill
PROJECT NUMBER 1354
CLIENT City of Burlington
LOCATION Burlington, Ont.

DRILLING CONTRACTOR Atcost Soil Drilling
 DRILLER _____
 SURFACE ELEVATION 152.44 m AMSL
 WEATHER (a.m.) _____
 (p.m.) _____

HOLE DESIGNATION	LW3-86
DATE STARTED	Jan. 6 / 86
DATE COMPLETED	Jan. 6 / 86
DRILLING METHOD	HSA
CRA SUPERVISOR	Bob Mayberry

[illegible]

STRATIGRAPHY LOG (OVERBURDEN)

SHEET NO. 1 OF 1

PROJECT NAME Bayview Landfill
PROJECT NUMBER 1354
CLIENT City of Burlington
LOCATION Burlington, Ont.

DRILLING CONTRACTOR Atcost Soil Drilling
 DRILLER _____
 SURFACE ELEVATION 161.172 m AMSL
 WEATHER (a.m.) _____
 (p.m.) _____

HOLE DESIGNATION LW5-86
DATE STARTED Jan. 8 / 86
DATE COMPLETED Jan. 8 / 86
DRILLING METHOD HSA
CRA SUPERVISOR Bob Mayberry

[illegible]

STRATIGRAPHY LOG (OVERBURDEN)

SHEET NO. 1 OF 1

PROJECT NAME Bayview, Landfill
PROJECT NUMBER 1354
CLIENT City of Burlington
LOCATION Burlington, Ont.

DRILLING CONTRACTOR Atcost Soil Drilling
 DRILLER _____
 SURFACE ELEVATION 161.962 m AMSL
 WEATHER (a.m.) _____
 (p.m.) _____

HOLE DESIGNATION LW4-86
DATE STARTED Jan. 8 / 86
DATE COMPLETED Jan. 8 / 86
DRILLING METHOD HSA
CRA SUPERVISOR Bob Mayberry

[illegible]

2/05/85

CRA

STRATIGRAPHY LOG (OVERBURDEN)

SHEET NO. 1 OF 1

PROJECT NAME Bayview Landfill
PROJECT NUMBER 1354
CLIENT City of Burlington
LOCATION Burlington, Ont.

DRILLING CONTRACTOR Atcost Soil Drilling
 DRILLER _____
 SURFACE ELEVATION 168.445 m AMSL
 WEATHER (a.m.) _____
 (p.m.) _____

HOLE DESIGNATION LWG-86
DATE STARTED Tan. 9 / 86
DATE COMPLETED Tan 9 / 86
DRILLING METHOD HSA
CRA SUPERVISOR Bob Mayberry

[illegible]

APPENDIX B

DRAIN FLOW CALCULATIONS

APPENDIX B

DRAIN FLOW CALCULATION

$$*Q_o = \frac{2 K H_o}{2.3 \log (2 H_o / r)}$$

where K = hydraulic conductivity = 3.3×10^{-6} ft/sec (10^{-4} cm/sec.)

H_o = depth from water table to drain (10')

r = radius of drain (3')

Q_o = inflow per unit length of tunnel

$$\begin{aligned} Q_o &= \frac{(2)(3.3 \times 10^{-6})(10)}{(2.3) \log (2)(10)/(3)} \\ &= \frac{2.0735 \times 10^{-4}}{1.89} \\ &= 1.097 \times 10^{-4} \text{ ft.}^3/\text{sec. ft.} \\ &= 0.049 = 0.05 \text{ GPM/ft.} \\ &= 0.04 \text{ IGPM/ft.} \\ &= 0.6 \text{ l/min./m.} \end{aligned}$$

Western Drain: Formula assumes

Full flow around drain therefore for western drain creek will substantially reduce flow by approximately 50%

Therefore western drain 0.02 IGPM/ft.
= 0.3 l/min./m.

* Formula (10.17) - Groundwater, Freeze et al 1979, Prentice - Hall

REGIONAL MUNICIPALITY OF HALTON

Report to The Chairman and Members of the
Solid Waste Management Committee

From The Director of Public Works

Date 1986 02 13

Report No. PW.79/86

Re: Target List of Compounds - EPA Leachate
Treatability and Toxicology Work -
Halton Landfill EPA Study

RECOMMENDATION

THAT Report PW.79/86 re Target List
of Compounds - EPA Leachate
Treatability and Toxicology Work -
Halton Landfill EPA Study, be
received for information.

Report

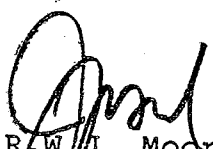
On 1986 02 05 Regional Council approved Report PW.65/86 -
Request for Additional Funds to Complete EPA Leachate
Treatability and Toxicology Study, with the following two
recommendations:

1. THAT the firm of Pollutech Limited be
authorized to carry out the additional
work as set out in Report PW.65/86 at an
upset limit of \$29,823 in order to com-
plete the leachate treatability and
toxicology studies for Halton's new
landfill component, with the additional
funding coming from the EPA project
contingency.
2. THAT Pollutech Limited be requested to
provide Council with a list of the 32
organic and 7 inorganic compounds which
require analytic and toxicology review.

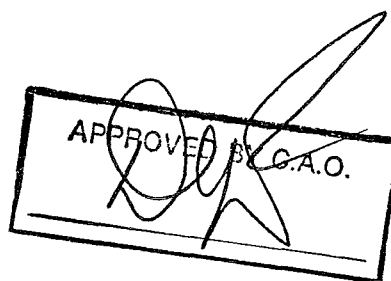
The purpose of this report is to provide Committee and
Council with the list of organic and inorganic compounds
which require detailed analytical and toxicology review as
part of the EPA leachate treatability and toxicology study.
The list of compounds is attached to this report.

It should be noted that the listing consists of 30 organic and 7 inorganic compounds for a total number of 37 compounds. Since the time Council approved report PW.65/86 on 1986 02 05, the consultant has determined that two sets of compounds included in the listing of 39 compounds were identical although they have different chemical names, i.e. diisooctylphthalate is the same as Pthalate Bis (2 Ethyl Hexyl) and Fenchone is the same as 1,3,3,-Trimethyl-2-Norboranone). Therefore, Pollutech Limited will carry out detailed analytical and toxicological work on 37 compounds, and the consultant will advise Halton staff of any cost savings because of the reduced list of compounds to be studied in detail.

Respectfully submitted,


R.W.J. Moore, P.Eng.
Director of Public Works

JRM:sw
Attach.



Organics

Acetic Acid, Phenyl
Acetophenone
Aldehyde, Indoline Carbox
Benzene
Benzene, Ethyl
Benzoic Acid
Butanone-2 (MEK)
Camphor
Cresol-o,m,p
Ethane,1,1,Dichloro
Ethane,1,2,Dichloro
Ether, Diethyl
Ethylene,1,1,2,2,Tetrachloro
Ethylene,1,1,2 Trichloro
Ethylene,1,1,Dichloro
Ethylene cis,1,2,Dichloro
Ethylene Trans 1,2,Dichloro
Ethylene Tris 1,2,Dichloro
1,3,3,-Trimethyl-2-Norboranone
Indole 3,-Methyl
Methylene Chloride
Phenol
Phthalate Bis (2Ethyl Hexyl)
Phthalate Butlbenzyl
Phthalate, Diethyl
Phthalate, Dimethyl
Styrene
Xylene

Inorganics

Arsenic
Barium
Chromium
Cobalt
Magnesium
Manganese
Nickel

Others

Dioxin
Dibenzofurans

REGIONAL MUNICIPALITY OF HALTON

Report to The Chairman and Members of the
Solid Waste Management Committee

From The Director of Public Works

Date 1986 02 13

Report No. PW.81/86

Re: Air Emission Testing - Occidental Energy From Waste
Plant, Niagara Falls, N.Y.

RECOMMENDATION

THAT Report PW.81/86 re Air Emission
Testing - Occidental Energy From
Waste Plant, Niagara Falls, New York,
be received for information.

REPORT

Attached as Appendix A to this report is a copy of a news release dated January 24, 1986 from the New York State Department of Environmental Conservation (DEC) regarding the results of emission sampling at Occidental's EFW facility in Niagara Falls, New York. The stack tests were carried out between May 22 and June 10, 1985. Also attached as Appendix B is a copy of a news release from Occidental Chemical regarding the test results.

Occidental participated in a voluntary DEC test program, along with four other Energy from Waste plants in New York State. This could be said to be New York State's equivalent to Canada's NITEP Project about which we reported to you previously. In the January 24th news release, the DEC reported that the preliminary results indicate Occidental's particulate emissions are three times higher than that allowed under their permit issued by the U.S. EPA. They also advised the results showed dioxin and furon emissions to be higher than those measured at the other facilities tested, and that the health risk was potentially 10 to 20 times higher than that for residents near the other facilities. Further, the Occidental emissions represent a potential health risk two to three times higher than considered acceptable by the U.S. EPA. It should be noted that Occidental's operating permit does not set out specific limits for dioxins and furons.

However, on February 11, 1986 we were advised that the State had made an error in calculating the health risk and that the health risk may be substantially less than first reported. Attached as Appendix C to this report is an article from the Buffalo News dated February 11, 1985, reporting on this latest information.

On becoming aware of the January 24th news release, Halton Public Works staff met with senior Occidental plant staff. We also contacted staff of the Department of Environmental Conservation. Occidental advise that they fully intend to co-operate with the DEC to reduce stack emissions. In fact, they advise that they have already made some operating improvements to their precipitators since the tests were carried out.

Further, the emissions even as originally reported (i.e. notwithstanding any possible errors) are still significantly below Ontario's own standards for dioxins and furons.

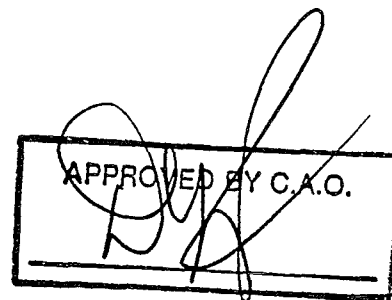
In any case, we understand the final stack test report will be available in the next few weeks. The DEC will be sending a copy of the final report to Halton. Upon receipt of this report, a copy will be placed in the Councillors' Lounge and Council informed accordingly. Occidental's program to reduce emissions will be established following discussions with the DEC. Council will be kept informed as further information becomes available on that as well. There has been no indication from New York State or Occidental officials of any plant closure or reduction in garbage handling and thus Staff believe no action is needed on our part at this time except the continued vigilance mentioned above.

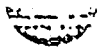
Respectfully submitted,



R.W.J. Moore, P.Eng.
Director of Public Works

JEM:sw
Attach.





APPENDIX A

New York State Department of Environmental Conservation

HENRY G. WILLIAMS, Commissioner

Albany, New York 12233 0001

FOR RELEASE: IMMEDIATE, FRIDAY, JANUARY 24, 1986

Environmental Conservation Commissioner Henry G. Williams and Health Commissioner David Axelrod, M.D., today announced preliminary findings from the stack emissions studies of the Occidental municipal waste combustion facility in Niagara Falls and the Westchester municipal waste combustion facility.

Dr. Axelrod recommended steps be taken immediately to reduce levels of dioxin and furans being emitted in Niagara Falls, because of health concerns and the ability demonstrated in Westchester and elsewhere to produce substantially lower levels. Williams said that a consent order will be sought from the plant's operator, Occidental Chemical Corp., to establish a program to reduce particulates, dioxins and furans.

The Niagara Falls plant is producing dioxin at a higher level than the previously studied plant in Albany, the commissioners noted. On the other hand, the Westchester plant at Peekskill showed dioxin emissions substantially lower than those in Albany.

Last year Commissioner Axelrod determined that the health risks from the Albany plant were within the range of risks deemed acceptable by the U.S. Environmental Protection Agency. The Albany plant is being upgraded to reduce particulate levels found in violation of state standards, and to reduce the risk from dioxins and furans. The Niagara Falls plant is also in violation of particulate standards.

Five plants across the state have been sampled by DEC as part of a statewide study of emissions from municipal refuse incineration facilities. The study will cost about \$500,000 and is aimed at assuring that municipal refuse combustion, which is growing in popularity among municipalities, will not threaten public health through air contamination. Albany is the only plant for which a final report has been completed.

The preliminary findings at Westchester indicate that the maximum annual average concentration of dioxins and furans equivalent to the most toxic form of dioxin (TCDD 2,3,7, 8) was 0.061 picograms per cubic meter of air. For the Occidental facility, the annual average was estimated to be 0.61 picograms per cubic meter of air. (A picogram is one trillionth of a gram.)

Dr. Axelrod and Commissioner Williams pointed out that no federal standards exist for dioxins and furans in emissions from resource recovery combustion facilities, and that New York State is in the process of establishing state operating requirements.

"The numbers appear to be small, but we have a commitment to reduce environmental health risks to the lowest levels achievable," Dr. Axelrod said. "Citizens of Niagara Falls should not be asked to accept a significantly greater risk than citizens who live near other facilities."

He said that the estimated dioxin-equivalent emissions from the Niagara Falls plant, as evaluated by his staff, present a potential increased lifetime cancer risk 10 to 20 times higher than the Westchester plant, and two to three times higher than the U.S. EPA range of acceptable risk.

Commissioners Axelrod and Williams determined that these levels were sufficiently above those achievable with existing technology that they ought to be reduced as promptly as possible.

Recent testing in Niagara Falls recorded the first-ever report of dioxin-like chemicals in outside (ambient) air.

Williams said his staff has already opened negotiations with Occidental Chemical Corp. That company built and operates the plant at its chemical manufacturing complex in Niagara Falls. The plant itself is owned by Niagara County's industrial development agency. The plant burns municipal refuse from numerous communities in the Niagara Frontier, including some Canadian communities.

These are principal requests that DEC is making of Occidental:

- Submit a protocol for a comprehensive evaluation of the refuse-derived fuel, and then carry out the evaluation to determine if there are industry-originated components in the refuse that tend to increase particulates.
- Implement any remediation measures indicated by the study of the fuel.
- Perform any required short-term repairs of the plant, including such items as precipitators, boilers, instrumentation and refuse-charging systems.
- Pay for further testing by DEC of stack emissions and assist DEC in the testing process.
- Submit to DEC after the retesting program an abatement schedule in the event the tests show violation of the state's air standards or, in the event violations are not shown, submit a detailed facility operation and maintenance plan to assure continued compliance.
- Pay a fine in the event the retesting shows noncompliance with a particular standard.

A 1981 U.S. EPA study of five municipal waste recovery facilities estimated a maximum individual excess cancer risk level of 8.4 cases per million population. The study concluded that as long as emission levels of TCDDs and related risks did not greatly exceed the levels at those five plants, there should be no cause for concern.

The 1985 report on testing in Albany found a comparable level of emissions and risk (from 3 to 12 excess cancer cases per million). The recent testing at Peekskill found lower levels (approximately 1 to 2 cases per million). The testing at Occidental resulted in an estimated increased risk of 11 to 20 per million for an individual living at the point of maximum concentration for 70 years.

The cancer risk estimates are extrapolations based on laboratory animal tests, and project the number of excess cancer cases likely to occur among one million people living for 70 years at the point of maximum concentration. The estimates are made under a series of conservative scientific assumptions, including the linear extrapolation of risk.

The measurements of contamination at the Niagara Falls and Peekskill plants are based on testing of a single stack at each facility, although both facilities have multiple stacks.

-30-

FOR FURTHER INFORMATION, CALL:
John F. Moore, DEC. 518-457-5400

Occidental Chemical News Release...

For Further Information Contact:
Michael D. Reichgut
(716) 286-3455

FOR IMMEDIATE RELEASE

NIAGARA FALLS, NEW YORK, JANUARY 23 --- We are pleased that the stack test data developed by the State indicate that Occidental Chemical Corporation's Energy-From-Waste plant does not pose a significant threat to health or to the environment.

The State data resulting from a stack testing program conducted last spring are similar to results obtained by the State at other refuse-fueled incinerator facilities which were described by State officials as not posing a health threat. Since the data are statistically comparable, the OxyChem plant similarly does not pose a threat.

The results of the State study should be viewed in the context of a present national cancer death rate of approximately 280,000 per one million of population. A 1983 E.P.A. study of a municipal incinerator system determined that an excess lifetime cancer death rate of 46 per one million population due to dioxin emissions does not represent a significant health concern. The Department of Health projection for the Niagara Falls situation is based on a number of assumptions, including that at the point of maximum level of concentration there would be a population of one million people who would remain at this impact point twenty-four hours a day for seventy years.

-more-

Energy From Waste

-2-

Since last spring when the State did the stack testing at the OxyChem plant, and well before these test results were known, the company made several operating and process changes as part of an ongoing technology improvement program at this plant. These modifications have further reduced particulate emission levels from those reported by the State. OxyChem will continue to make process changes to further improve the operating efficiency of its EFW facility.

As part of these efforts, the stacks will be tested again when weather conditions permit. This will help verify the data developed by the State and also indicate how the operating changes already made may have affected emissions. Moreover, the results of an ambient air testing program also conducted by the State downwind from the city's Buffalo Avenue industrial sector showed levels described by the state as non-health threatening.

OxyChem cooperated fully with the DEC during the stack testing program at which time the Agency conducted tests for some 25 compounds, including dioxin. The tests were conducted as part of a statewide study to develop parameters for the safe operation of combustion facilities.

Occidental Chemical Corporation's EFW plant processes and burns municipal garbage to make steam that is used to generate electricity and produce chemicals at the company's Niagara Falls plant. The garbage would normally end up in a landfill.

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Metropolitan News

State Concedes Error on Occidental Emissions Risk

By PAUL MacCLENNAN
News Environment Reporter

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NIAGARA FALLS — State officials admitted Monday there may be substantially less risk from airborne dioxin emissions for Niagara Fall residents living downwind of Occidental Chemical Corp.'s energy from waste plant than they originally projected.

State health officials had warned Jan. 24 that those residents faced a cancer risk 10 to 20 times higher than residents near similar facilities elsewhere in the state. The departments of Health and Environmental Conservation said they made a mistake when they calculated the location of the energy plant stack. That threw off the calculations as to where the dioxin fallout occurred; therefore, they said, the purported great cancer risk threat to residents is in error.

The disclosure came as health and environmental officials planned to meet with area residents at 2 p.m. and 7 p.m. today in the 66th St. School to discuss those emissions and the health risks associated with dioxin and furans in the air.

The Necro Park-CECOS Citizens Committee and the Ecumenical Task Force said that Dr. Paul Connett, an assistant professor of chemistry at St. Lawrence University and an expert on dioxin emissions from municipal refuse facilities, will meet with the group this afternoon and then attend the 7 p.m. workshop session

to voice concerns about the Occidental facility.

The admission of error is the second time in a year that state officials have miscalculated the impact of dioxin contamination to area residents involving Occidental and have been forced to recant their original warnings.

After warning Amherst residents about an Occidental barrel dump at the Creekside Golf Course in Amherst, state health officials said laboratory errors projected contamination levels much higher than actually existed.

Now Stanley Gubner, regional air quality engineer for the state Department of Environmental Conservation, said an error in locating the Occidental refuse stack may mean that the fallout occurs in an industrial, rather than residential, area as originally projected.

Gubner said that based on the error, the health department is "recalculating the risk assessment for residents living in the vicinity of 56th Street."

The Buffalo News learned that officials were aware of the mistake last week, but neither department took steps to announce the error. In fact, The News learned of the error only by chance during a discussion of a related matter with a DEC official. Neither department had plans to announce the mistake before the workshop sessions today, and key officials were not available to discuss the problem.

Dr. David Axelrod, state health commissioner, declared Jan. 24 that the dioxin emissions from the Occidental facility presented a potential increased lifetime cancer risk two to three times higher than the U.S. Environmental Protection Agency's range of acceptable risk.

The calculations are based on stack testing conducted by the DEC and analyzed by both the environmental and health departments. The health department accepted responsibility for the laboratory errors in the Creekside incident, but this time the error involved assumptions made by the DEC.

One source told The News that the department used an old map, then proceeded to make the wrong assumptions on fallout pattern because they also used old information on social patterns in the community, adding, "it's good news for the people, it's bad news for the quality control in state agencies."

Gubner said that the state and Occidental are continuing talks on measures the company will take to bring the energy plant into compliance with state laws.

Commissioner Henry G. Williams of the DEC, in making the joint announcement with Axelrod, said the Occidental facility's emission of particulates violated state codes, but the announcement was circumspect on the issue of dioxin and furans because of a lack of state

or federal regulations limiting the discharge of those toxins.

Gubner said the department met with Occidental Friday on terms of a proposed consent order, and while Occidental was ready to carry out a remedial program it refused to sign any document that included mention of toxic emissions "because there is no state regulation that the company is violating."

"Occidental has already hired consultants to examine the situation and has indicated its willingness to proceed," Gubner said.

Under the proposed order the company would attempt to improve the efficiency of its air-pollution control system and to examine its boiler to determine if the combustion could be improved and thereby reduce the emission of partially burned materials.

State officials believe that there may be a link between excessive particulate emissions and high dioxin levels, suggesting that the dioxin particles may adhere to the other material and be released into the atmosphere. By bringing particulate emissions within codes they hope that the dioxin contamination levels may be reduced.

State officials in one of the first findings of its kind in the state disclosed last fall that they had found very low levels of dioxin in filters taken from regular air-monitoring equipment maintained in the 60th Street area.

THE REGIONAL MUNICIPALITY OF HALTON

Report to Chairman and Members of the Solid Waste Management Committee

From Dennis Y. Perlin, C.A.O.

Date 1986 02 11

Report No CAO.83/86

Re: Energy from Waste Project Planning Workshop

RECOMMENDATION:

1. THAT the following Councillors be authorized to attend the Energy from Waste Project Planning Workshop on March 13th and 14th, 1986:
 1. _____
 2. _____
2. THAT the Chief Administrative Officer, Dennis Y. Perlin, and the Manager of Waste Disposal, John MacKay, be authorized to attend the Energy from Waste Planning Workshop on March 13th and 14th, 1986 and that the cost of this Workshop be charged to the Energy from Waste Account.

REPORT:

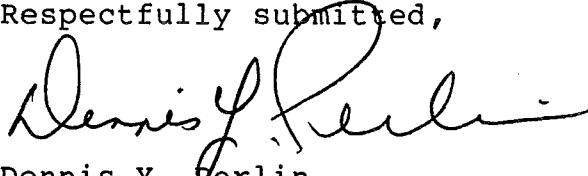
Attached as Appendix "A" to this Report is an outline and tentative agenda for an upcoming conference on Energy from Waste Project Planning. It is being sponsored by Energy Mines and Resources Canada. It is believed that this is part of the educational component of the National Incineration Testing and Evaluation Program (NITEP).

The Workshop will cover a broad range of issues including financing, approvals and site selection. In light of the work being currently undertaken by the Citizens' Solid Waste Advisory Committee and their upcoming report (expected in early April), it is believed that the issues and timing of the Workshop will be particularly relevant to members of Council and Staff.

As SWAC's Final Report is expected to favour Energy from Waste being pursued as a component of Halton's Waste Management System at this time, it is likely that Halton will be faced with a number of project planning issues during the next few months.

As the Chief Administrative Officer and the Manager of Waste Disposal will be responsible for coordinating future work in this area, it is recommended that they be in attendance.

Respectfully submitted,

A handwritten signature in cursive script, appearing to read "Dennis Y. Berlin".

Dennis Y. Berlin
Chief Administrative Officer

DYP/gh

Energy, Mines and
Resources CanadaÉnergie, Mines et
Ressources Canada

Energy Program

Programme d'énergie

Ottawa, Ontario
K1A 0E4Ottawa (Ontario)
K1A 0E4

To: Municipal Government Executives, Planners, Accountants
and Engineers

SUBJECT: ENERGY FROM WASTE PROJECT PLANNING WORKSHOP

The implementation of an energy from waste (EFW) facility is a major undertaking with significant social, financial and environmental implications. Recognizing the need for sound information on which to make informed decisions, Energy, Mines and Resources Canada is pleased to announce that a workshop on project planning for EFW facilities will be held March 13-14, 1986, at the Downtown Holiday Inn, Toronto, Ontario.

The intensive two-day workshop -- the first of its kind held in Canada -- will provide decision makers, planners and engineers alike with a basic understanding of the many factors to be investigated before launching an EFW project.

A block of hotel rooms has been reserved at the preferred rate of \$70 per night (single or double). Reservation should be made directly by calling the Holiday Inn at (416) 997-0707 before February 12, 1986.

We hope your organization will be interested in attending this important event. If you would like to receive a program brochure and registration card, please complete and mail the response form on the attached announcement.

For more information contact:

Ms. Maria DoRego or
Mr. J. Maurice Charron
Renewable Energy Division
Energy, Mines & Resources Canada
580 Booth Street
Ottawa, Ontario
K1A 0E5
(613) 995-9447

Enclosure

Canada

- 96 -

RECEIVED MILTON	
JAN 23 1986	
REF.	
ACTION	

PRELIMINARY
ANNOUNCEMENT

ENERGY FROM MUNICIPAL WASTE:
A Project Planning Workshop

March 13-14, 1986
Downtown Holiday Inn
Toronto, Ontario, Canada

The Renewable Energy Division of Energy, Mines and Resources Canada is sponsoring a two-day workshop on project planning for energy from municipal waste facilities. A hands-on approach will emphasize proven concepts, equipment and planning approaches.

WORKSHOP TOPICS: •needs analysis •appropriate technologies
 •community relations •operational problems
 •financing options •energy and resource marketing
 •environmental issues •case histories
 •site selection

PLUS: •panel discussion on project financing and operating •tour of an EFW plant

CONFIRMED SPEAKERS FROM: •A.H. Case International •The SNC Group Inc.
 •Commerce Leasing Ltd. •Tricil Ltd.
 •Enercan Inc. •Delaware Solid Waste Authority
 •Ontario Ministry of Energy •U.S. Army Research Laboratory

REGISTRATION will be limited to 100 participants on a first come, first served, basis. Fees are \$225 prior to February 28, 1986, and \$275 thereafter. Registration includes all workshop sessions, one field trip and two lunches.

----- ✂ -----
RESPONSE FORM

MAIL TO: Ms. Maria DoRego, Bioenergy Section, Renewable Energy Division, Energy, Mines and Resources Canada, 580 Booth Street, Ottawa, Ontario, CANADA K1A 0E4. Tel.: (613) 995-9447, ext. 368.

[] Yes, I am interested in attending the Energy from Municipal Waste Workshop, March 13-14, 1986, in Toronto, Ontario. Please send me a program brochure and registration form.

[] I want to register for the workshop now. I am enclosing a cheque payable to the Receiver General of Canada for \$ _____. Please send me a workshop program as soon as possible.

Name: _____ Title: _____

Company/Organization: _____

Address: _____ City: _____

Prov.: _____ Postal Code: _____ Tel.: _____



TENTATIVE AGENDA

"ENERGY FROM MUNICIPAL WASTE"
TORONTO, ONTARIO
MARCH 13-14, 1986

Wednesday, March 12, 1985

18:00-20:00 -- Registration

Thursday, March 13, 1985

- 7:00 -- Registration and Continental Breakfast
- 8:30 -- Welcome
D.L.P. Strange, Energy, Mines and Resources Canada
- 8:40 -- Introduction
A. Dolenko, Energy, Mines and Resources Canada
- 9:00 -- Issues in Resource Recovery and Waste Management
N.C. Vasuki, Delaware Solid Waste Authority
- 9:30 -- Waste Management Needs Analysis
W. Mechler, Greater Vancouver Regional District
- 10:00 -- Question Period
- 10:15 -- Coffee
- 10:45 -- Site Selection and Environmental Issues
S. Halpern, Rogers, Golden & Halpern
- 11:15 -- Environmental Permits and Regulatory Issues
J. Allin, Victoria University of Wellington
- 11:45 -- Question Period
- 12:00 -- Lunch
- 13:30 -- Community Relations
A.H. Case, Case International Consulting
- 13:55 -- Marketing of Energy and Materials
G. Racine, The SNC Group
- 14:20 -- Project Financing
S. Sud, Ontario Ministry of Energy

Thursday, March 13, 1985 (Cont'd.)

- 14:45 -- Question Period
- 15:00 -- Coffee
- 15:30 -- Panel Discussion of Project Financing
- | | |
|---------------------|--------------------------|
| J. Lackey | Commerce Leasing Limited |
| E. Storie | Vengrowth Capital Fund |
| C. Hervieux-Payette | The SNC Group |
- 17:00 -- Ajourn

Friday, March 14, 1985

- 8:30 -- Overview of MSW Incineration and RR Technologies
D. Walter, U.S. Department of Energy
- 8:55 -- Systems Utilizing Refuse Derived Fuels
M. Smith, Combustion Engineering Inc.
- 9:20 -- Modular Incineration System for MSW
S. Kennedy, ENERCAN
- 9:45 -- Small Heat Recovery Incinerators
G.Schanche, U.S. Army
- 10:10 -- Question Period
- 10:25 -- Coffee
- 10:55 -- Panel Discussion on Operating Experiences
- | | |
|--------------|---|
| N.C. Vasuki | Deleware Solid Waste Authority |
| C. King, Jr. | Harrisburg Steam Generating
Facility |
| G. Reddom | TRICIL |
- 11:50 -- Workshop Wrapup
S.C. Junéja, Energy, Mines & Resources Canada
- 12:00 -- Lunch
- 13:30 to 17:00 -- Tour of EFW Facility at Ford



REGISTRATION FORM

ENERGY FROM MUNICIPAL WASTE:
A Project Planning Workshop

March 13-14, 1986
Downtown Holiday Inn
Toronto, Ontario Canada

Please register me for the above workshop. I am enclosing a cheque payable to the Receiver General of Canada for \$ 225. Please confirm hotel reservations for me for the nights of _____.

Name: _____ Title: _____

Company/Organization: _____

Address: _____ City: _____

Prov.: _____ Postal Code: _____ Tel.: _____

FORMULE D'INSCRIPTION

ORDURES MÉNAGÈRES: SOURCE D'ÉNERGIE
Atelier de planification de projets

Les 13 et 14 mars 1986
Holiday Inn du centre-ville
Toronto (Ontario) Canada

Veuillez m'inscrire à l'atelier ci-haut mentionné. Je joins un chèque établi à l'ordre du Receveur général du Canada, au montant de _____\$. Veuillez aussi faire les réservations pour moi à l'hôtel pour les journées ci-indiquées: _____.

Nom: _____ Titre: _____

Société/institution: _____

Adresse: _____ Ville: _____

Prov.: _____ Code postal: _____ Tél.: _____

ADDRESSE À:

MAIL TO: Ms. Maria DoRego, Bioenergy Section, Renewable Energy
Division, Energy, Mines, and Resources Canada, 580 Booth Street, Ottawa,
Ontario CANADA K1A 0E4. Tel.: (613) 995-9447, ext. 368.

REGIONAL MUNICIPALITY OF HALTON

Report to The Chairman and Members of the
Solid Waste Management Committee

From The Director of Public Works

Date 1986 02 13

Report No. PW.82/86

Re: Master Work Plan 1986 - 1995
Separation at Source Program

RECOMMENDATION

1. THAT the Master Work Plan 1986-1995 Separation at Source Program, be received.
2. THAT the Master Work Plan be circulated for review and comment and where appropriate, approval, to:
 - (a) Area Municipalities.
 - (b) Ministry of the Environment.
 - (c) Halton's Recycled Resources Ltd.
3. THAT the Ministry of the Environment be requested to provide a commitment to maximum funding for all aspects of the Master Plan including the Recycling Facility.
4. THAT a review of the financing options be made by the Regional Treasurer, together with an implementation schedule, taking into account the impact of a May, 1986 start date, and report back to Committee in late March prior to final budget adoption.
5. THAT, subject to recommendations 2, 3 and 4 above, Council approve in principle the diversion target of 20,000 tonnes for year 1 of the Work Plan.

REPORT

In February 1985 Council approved report CAO.62/85 titled "Proposal for a Separation at Source Program for Halton". The approved report includes the following recommendations:

"6. THAT, subject to approval by the Ministry of the Environment of the funding proposal for the Regional Program for 1985, Regional staff be authorized to hire a Separation at Source Co-ordinator for the Waste Disposal Division of the Public Works Department, with the final job description to be set and interviews and selection to be done in conjunction with the Separation at Source Committee.

"7(a) THAT the Separation at Source Co-ordinator, when hired, develop in conjunction with the Region-Area staff Separation at Source Committee, a Master Work Plan for the next five to ten years for the Halton Source Separation Program. Once developed, this Plan shall be brought to regional Council and the Area Municipalities, as appropriate, for approval."

The Master Work Plan 1986-1995 Separation at Source Program as set out in Recommendation 7(a), is being circulated under separate cover. The plan prepared by our Separation at Source Co-ordinator, has been reviewed and produced in consultation with the Regional-Area Staff Separation at Source Committee. Thus Recommendation #1.

1. Financial Considerations

Appendix A to the plan sets out the additional budget required to implement the plan's recommendations, if these are to be undertaken in 1986. The original 1986 Separation at Source budget was developed in the Summer of 1985. That budget was prepared in July, 1985 in order to meet the schedule set for the preparation of the 1986 Solid Waste Budget. We did not receive confirmation of Ministry of the Environment funding until August, 1985 which delayed the hiring of the Separation at Source Co-ordinator until September 1985. Thus, the 1986 budget was developed in advance of the preparation of this Master Plan.

The currently approved 1986 budget will accommodate a program to separate 10,000 tonnes from the solid waste stream. The original 1986 target represents a 25% increase over the then anticipated 1985 level of 8,000 tonnes. The revised 1986 program, as set out in the Master Plan, is much more aggressive and proposes to achieve a 20,000 tonnes waste diversion target.

Appendix A to the Master Plan sets out the staffing and financial resources required to achieve the higher target. It also sets out a higher operating base for future years' programs.

A. Expanded Program: Budget Requirements

The expanded program, detailed in Appendix A, will add \$149,166 to the 1986 Separation at Source budget. However, by diverting an additional 10,000 tonnes from landfilling, we should save the direct variable cost to landfill: approximately \$7/tonne for a savings of \$70,000. To maximize landfill life we propose to maintain our current level of waste exports to Occidental. Thus the net additional cost to the 1986 Solid Waste Budget is \$79,166.

With regard to increased costs, the major component is the increase in payments to Halton's Recycled Resources Ltd. (HRR). The recently approved contract with HRR requires Halton to pay a diversion credit of \$7.85/tonne (1985 rate) adjusted annually based on changes in the Consumer Price Index. Assuming a 4% adjustment for 1986, we project this year's diversion credit at \$8.10/tonne. The additional 10,000 tonnes will add \$81,000 to HRR payments. Our contract with HRR also requires us to pay a service fee of \$3/tonne. However, any operating profit that HRR may make on their annual operations will be used to reduce the service fee, as explained in Appendix A. Taking a conservative approach that at a level of 20,000 tonnes annually, HRR will break even (i.e. no profit, no deficit), the additional 10,000 tonnes will add a further \$30,000 to Halton's payments to HRR.

Also, Halton is required to cover any operating deficit that may occur after taking into account the diversion credit. At 10,000 tonnes per year, we project HRR will incur an annual operating deficit (over and above the waste diversion credit and service fee) in the range of \$20,000 to \$25,000. At 20,000 tonnes, operating and commodity efficiencies should be achieved so that a deficit will not occur.

B. Higher Diversion - Lower Tipping Fee Revenue

Solid waste disposal costs are to be entirely funded by revenues generated by tipping fees charged for waste disposed of at Halton's landfill site in Burlington. Thus, the expanded separation at source program will result in lower revenues. As Committee is probably aware, over 50% of our solid waste costs are fixed. These costs, related to maintenance of closed landfill, site rehabilitation, monitoring programs, debt charges incurred for past projects and the ongoing costs for approval of Halton's new landfill will continue regardless of waste volumes received. If Council maintains its policy of fully covering costs through landfill

tipping fees, those that continue to generate waste for disposal will see their costs for disposal escalate on a unit basis, to maintain revenue with a reduced billable tonnage.

For 1986 we originally projected billable tonnage at 184,700 tonnes, which anticipated 10,000 tonnes being diverted through separation at source. All things being equal, the additional 10,000 tonnes proposed in the Master Plan will reduce billable tonnage to 174,700 tonnes, resulting in a \$265,000 reduction in revenues (10,000 tonnes @ \$26.50/tonne).

C. Ministry of the Environment Subsidies

The currently approved 1986 Separation at Source budget anticipates MOE subsidies of \$100,800. MOE subsidies are geared to correspond to the Province's fiscal year, April 1 to March 31. We have apportioned 1/4 of the currently approved subsidy of \$119,000, or \$29,800, to apply to the period of January 1, 1986 to March 31, 1986. Based on the funding formula in place last year, and with the Oakville portion of the curbside collection program ineligible for subsidy beyond March 31, 1986, we had anticipated subsidies for the period April 1, 1986 to March 31, 1987 at \$95,000. Three quarters of this, or \$71,000, will be applied to 1986 expenditures.

As set out in Appendix A to the Master Plan, the Province in October 1985 announced increased funding to support municipal recycling programs. However, no criteria has been announced with respect to how the additional funds will be applied. We expect the additional funds will be applied towards both capital costs - new equipment and facilities, as well as to operating costs. In any event, we do not expect the 1986-87 subsidy to exceed \$150,000 or at the most, an increase of \$55,000. For the 1986 budget year April 1986 to Dec. 31, 1986, the increase in subsidy optimistically will provide an additional \$40,000.

As summarized in Appendix B attached, the net financial impact, taking into account increased cost and reduced revenues is \$343,766. With increased subsidies this could be reduced to \$303,766. This is equivalent to an increase of \$1.75/tonne for billable waste on an annual basis.

D. More Diversion - Extended Landfill Life

Halton's operating landfill in Burlington is currently scheduled to be filled to capacity by the Summer of 1988. In fact, recent preliminary data indicates an

earlier closure date. Changes in the type of municipal waste being landfilled - the denser and more easily compacted residential component is being exported to Occidental - and the fact that the last two parts of the site to be landfilled - Phases B and D - will not have been in operation long enough to take advantage of natural decomposition and compaction of lower refuse layers are resulting in lower waste densities being achieved. The expanded separation at source program, if approved, should result in an additional 30,000 tonnes of waste being diverted from landfill disposal in the next 2-1/2 years. This should result in extending the life of the landfill by a further 3 to 4 months.

As staff have previously reported, we are not optimistic that Halton's new landfill site will be approved and ready to receive waste by mid 1988. One option to extend the life of the landfill would be to increase waste exports to Occidental during the Summer months IF OCCIDENTAL CAN EVEN ACCOMMODATE HALTON WHICH IS NOT EXPECTED AT THIS TIME. However, the Occidental option will have an incremental cost of \$25 to \$30/tonne versus the estimated incremental cost of \$15/tonne (\$149,166/10,000 T) for waste diverted through the proposed expanded separation at source program. Increased exports to Occidental or elsewhere (at an even greater cost) may be required in any event, however, it would be more cost effective to maximize waste diversion that can be achieved through the separation at source program.

Dollar savings to be realized for stretching landfill life can be viewed in two ways. The first - assuming that at a minimum, life expectancy can be stretched for three months, the additional waste diverted (say 30,000 tonnes) through source separation, could result in a 1988 savings of \$300,000. The second - assuming an increase diversion of 10,000 tonnes for 1986, could result in an extra 1986 landfill capacity - realizing a savings of \$100,000, through future cost avoidance.

E. Funding Options

Assuming increased MOE subsidies, the expanded program is projected to result in a net financial impact of slightly over \$300,000, (not taking into account the potential savings in landfill life). There are a number of options available for consideration to cover this deficit, for example:

(i) Increase Landfill Tipping Fee

Landfill tipping fees could be increased to cover the deficit incurred by the expanded program. As previously stated, the increased cost is equivalent to \$1.75/tonne for billable waste volumes on an annual basis. If

established part-way through 1986, say April 1, an increase of \$2/tonne would be required.

The net impact on local Municipalities would be approximately \$150,000 in 1986. It should be remembered, however, that the savings to local Municipalities through forgoing tipping fees for waste separated at curbsides is projected at \$265,000 based on 10,000 tonnes in 1986. An increase in the tipping fee will encourage the commercial/industrial sector, utilizing private haulers, to participate in recycling programs.

However, the tipping fees have been set for 1986. Preliminary Local Municipal budgets have been finalized and many private haulers have established their 1986 contracts based on Halton's previously announced fee schedule of \$26.50/tonne. Thus it may be difficult to further increase the tipping fee in 1986.

- (ii) Place a tipping fee on waste diverted to Halton's Recycled Resources Limited equivalent to the diversion fee of \$8.10 per tonne. For Local Municipalities, this would have a net impact of approximately \$81,000 based on approximately 10,000 tonnes we anticipate in total being diverted through curbside programs. It is noted, however, that Halton has stressed previously that it does not intend charging a diversion fee to municipalities at the outset of the Regional program.
- (iii) Defer other waste programs planned for 1986, such as the Special Waste Days with a \$43,000 budget. Here again this is not desirable in light of deferral for the last two years for various reasons.
- iv) Utilize the Resource Utilization Investigation Fund (the fund into which new subdivision lots have been paying \$100 toward resource recovery investigation over the last few years) to cover any deficit in 1986 and then adjust the tipping fees as needed in 1987.
- (v) Impose a special Regional mill rate charge in 1986 for the Source Separation Program as was done for the Energy from Waste Program.
- (vi) Implement the expanded program in 1987, when it may be more reasonable to adjust tipping fees, or establish special mill rate charges or seek other financial sources.

The above financing options should be fully explored by the Regional Treasurer, along with any other alternative options that can be identified. As we have pointed out, the area municipalities, the Ministry of the Environment and Halton's Recycled Resources (as their approved 10-year contract is based on the Master Plan) are all initially involved with this proposed new program. Thus Recommendations 2, 3 and 4.

2 Other Considerations

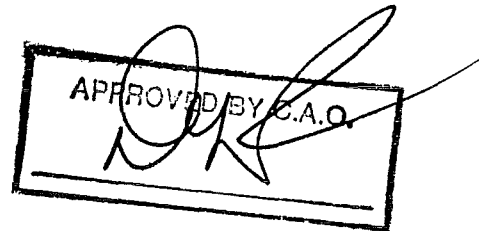
It is important to stress that the intangible benefits to Halton of an aggressive source separation program have not been identified under Section 1 of this report. These are hard to quantify in financial terms, i.e. environment, resource conservation, job creation; social impact; decreased pollution; shared responsibility by citizens in waste management issues; positive impact on our waste management approach; education; and others. Halton has committed to maximizing waste diversion through source separation since the drafting of its Official Plan in 1977.

Detailed discussions on these issues is not presented here as the intangible benefits are clearly understood by Committee and Council.

Respectfully submitted,



R.W.J. Moore, P.Eng.
Director of Public Works



APPENDIX B TO REPORT PW. /86

1986 SEPARATION AT SOURCE BUDGET

NET IMPACT ON REVISED PROGRAM

	Approved 1986 Budget (10,000 tonnes)	Proposed Revised 1986 Budget (20,000 tonnes)
Payments to HRR	\$ 134,900	\$ 222,000
Payments to Halton Hills	37,800	37,800
Personnel Costs	30,000	65,166
Other	<u>28,500</u>	<u>55,000</u>
Gross Costs	231,200	379,966
Less MOE Subsidy budget	(100,800)	(140,800)
Net Program After Subsidy	130,400	239,166
Savings		
Landfill - Direct Costs	<u> </u>	<u>(70,000)</u>
Net Solid Waste Budget	130,400	169,166
Decrease in Landfill Revenue	<u>-</u>	<u>265,000</u>
Net Financial Impact	130,400	434,166
Net Program Increase		\$303,766

NOTE: This does not take into account the potential value of savings in landfill life.

REGIONAL MUNICIPALITY OF HALTON

Report to Chairman and Members of the Solid Waste Management
Committee

From R. Mohammed, Director of Planning and Development

Date 86 02 11

Report No DPD 71/86

Re: Landfill Study Planning Approvals/Parkway Belt
Conformity Issues Site "F" City of Burlington/
Request To Minister for a Declaration of Non Con-
flict - Ontario Planning and Development Act.

RECOMMENDATION

1. THAT in order to clarify the issue of conformity of a Regional Landfill at Site "F" in the City of Burlington with the Parkway Belt West Plan, 1978, the Regional Chairman on behalf of Regional Council, request that the Minister of Municipal Affairs issue a Declaration under Section 9(2) of the Ontario Planning and Development Act indicating that any landfill undertaking by or on behalf of the Regional Municipality of Halton at Site "F" (as indicated on Schedule A to DPD 71/86) shall be deemed not to conflict with the Parkway Belt West Plan, 1978 on the basis that such an undertaking would conform with the general intent and purpose of the Parkway Belt West Plan, 1978.
2. THAT the reasons as set out in DPD 71/86 be the basis for the request for a Declaration of Non-Conflict in accordance with Recommendation 1.
3. THAT the City of Burlington, West Burlington Ratepayers Group, National Sewer Pipe Ltd., the Town

of Milton, the Tremaine Britannia Citizens Group and any other citizens or groups that may be interested, as far as staff can determine from the E.A. Mailing List, be informed of this request.

REPORT

Background

Site "F", which is one of the two remaining Candidate Sites for Halton's new waste disposal landfill is located in the Parkway Belt and the senior land use planning document relating to those lands is the Parkway Belt West Plan 1978.

Halton's planning consultants, planning staff and legal counsel as well as Ministry of Municipal Affairs staff have been of the opinion that no amendment to the Parkway Belt West Plan 1978 is needed for the establishment and operation of a Regional landfill at Site "F". (Refer to the Environmental Assessment documents and the Proposed Regional Official Plan Amendment 12a. Letters from the Ministry of Municipal Affairs staff and a confidential letter from Osler, Hoskin and Harcourt, our legal counsel, are attached as Schedules D and E respectively).

On the other hand, the City of Burlington, the West Burlington Ratepayers Group and a number of citizens in the Burlington area feel otherwise. A letter has been received from the City Solicitor for the City of Burlington dated July 8, 1985 indicating that it was Burlington staff's position that a Regional landfill at Site "F" would not be in conformity with the Parkway Belt West Plan 1978 and that an amendment to the Plan would be required in order to establish and operate a landfill at Site "F". The City, in that letter, suggests that judicial review might be sought if an application for a Parkway Belt Amendment is not made by Halton. Such litigation could delay the Approvals process and/or the establishment of Halton's new landfill should Site "F" be the final approved site. Halton staff are recommending, in this report, a method of resolving this issue now in order to solve the matter at an early date and not hold up the approval process and/or the construction process should Site "F" be the final approved site and Burlington resort to some form of delay such as requesting court action.

Halton staff are recommending that the matter be put to the Minister responsible for the Parkway Belt West Plan 1978, namely the Minister of Municipal Affairs.

Section 9 of the Ontario Planning and Development Act states:

"(1) Notwithstanding any other general or special Act, where there is a development plan,

- (a) no municipality or local board having jurisdiction in the area covered by the plan, or in any part thereof, and no ministry, shall undertake any improvement of a structural nature or any other undertaking within the area covered by the development plan; and
- (b) no municipality having jurisdiction in such area shall pass a by-law for any purpose,

that is in conflict with the development plan.

- (2) The Minister, upon the application of the council of a municipality having jurisdiction in the area covered by a development plan, or in any part thereof, may in writing, declare that a by-law, improvement or other undertaking of such municipality shall be deemed not to conflict with the development plan, if the Minister is of the opinion that the by-law, improvement or other undertaking conforms with the general intent and purpose of the development plan."

The Parkway Belt West Plan, 1978 is a development plan covered by Section 9(2) of the Ontario Planning and Development Act. Thus, section 9(2) provides a mechanism to deal with issues such as that raised by Burlington staff and others.

Thus Halton staff's recommendation is to request the Minister of Municipal Affairs to declare that a landfill, if proposed by Halton for Site "F", would not conflict with the Parkway Belt West Plan 1978 and that the undertaking conforms with the general intent and purpose of the Plan, and thus does not require an amendment.

By making the request for a declaration now, hopefully this matter can be clarified in a timely and reasonable fashion.

Despite Burlington staff's current position, it should be noted that in May 1984 the former Minister of Municipal Affairs and Housing declared the continuation of the existing Burlington landfill site to conform with the Parkway Belt West Plan (Order attached - Schedule C). At the time when this particular proposal was declared to conform with the Parkway Belt West Plan, July 1978, the continuation was supported by Council of the City of Burlington. As stated, staff believe that if a new landfill is established at Site "F" in Burlington, it will conform to the Parkway Belt West Plan.

Halton's Position

Halton's planning consultants, planning staff and legal counsel have reconsidered their positions and restudied the issue and remain convinced that a landfill is not only a permitted use under the Parkway Belt West Plan 1978, but is the type of urban support service that could be located in the Parkway Belt if otherwise environmentally suitable. Halton Regional Staff believe there are several reasons why a proposed landfill at Site "F" if otherwise environmentally suitable would conform with the Parkway Belt West Plan. The following reasons would be the basis for the Region's submission to the Minister of Municipal Affairs:

1. Ministry staff, in a letter from the Plans Administration Branch of the former Ministry of Municipal Affairs and Housing, explained that they agreed with Halton Staff's and Walker Wright Young Associates Ltd's interpretation of the Parkway Belt West Plan "that the proposed landfill facility on Site "F" conforms to the Parkway Belt West Plan, July 1978" (Schedule D).
2. The Plan acknowledges that the concept of the Parkway Belt is, in part, to provide land for public activities and undertakings. The Plan makes no reference whatsoever to the effect that a public landfill operation is not an acceptable use within the Parkway Belt.
3. One of the major reasons for the Parkway Belt was to provide a utility corridor for uses needed to support the urban area but not well-received within the urban area itself. A public landfill is a utility needed to support the urban area and there can be little doubt that it is a use not well received within the urban area itself.
4. Section 9 of Ontario Land Use Regulation Number 482/73 Pursuant to the Parkway Belt Act permits Halton to "use land or erect any building or structure for the purpose of providing a service to the public" anywhere within the Parkway Belt lands.
5. Part of Site F is designated General Complementary Use Area in the Parkway Belt West Plan. As permitted in section 5.5.1(e) Public Uses "other uses of low density, low intensity character" are permitted uses. The operation of a landfill site is low density as only a very small part of the site would have a building. It is also low intensity as the use has an average low level of activity with a small number of employees, few visitors per acre and relatively low traffic per acre particularly considering mitigation measures. The landfill site can be designed and regulated to meet the development criteria set out in 5.5.1(b) of the Plan

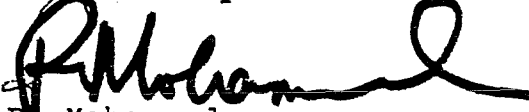
for both the landfill operation and the after use activities. In particular, the following general design parameters were considered for each site during Halton's Environmental Assessment:

- ° a 100 metre buffer area surrounding the fill area was established for visual and sound separation.
 - ° landscaping of buffer area to minimize visual impacts (to enhance the open space character).
 - ° possibility of concurrent rehabilitation of landfill area to minimize visual impacts.
 - ° possibility of agricultural after-uses.
6. Part of the Site "F" is designated Special Complementary Use Area in the Parkway Belt West Plan and permits public uses as in the General Complementary Use Area.
7. Any landfill site established at Site "F" would be for an interim period in terms of the life of a community. Thus, as it is completed and rehabilitated, it can assist in achieving another major goal of the Parkway Belt; namely, the "Linked Open Space Framework".

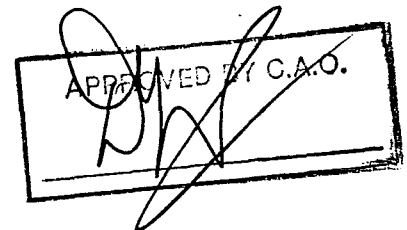
Conclusion

Regional Staff hope that Regional and Area Councils and the public will find this approach to resolving the difference of opinion as to whether a Parkway Belt Amendment is needed, a positive and timely method of resolving the difference of opinion. Regional Staff, Regional planning consultants and legal counsel believe that the use proposed is clearly in accordance with the Parkway Belt West Plan 1978. Thus, we see no need to spend extra dollars to process an unnecessary Amendment let alone all the Staff and Consultant processing time to carry out the procedure that a Parkway Belt Amendment application necessitates. Environmental issues in the broadest sense have been canvassed with the public at length and the Regional Official Plan Amendment and site plan application will provide further opportunity for municipal and public involvement in the general planning issues and the detailed site specific planning issues. Thus the above recommendations.

Respectfully submitted,



R. Mohammed
Director of Planning and Development



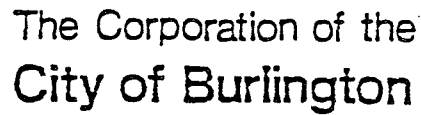
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Map 2

Base Information

Ministry of Treasury, Economics, and Intergovernmental Affairs, 1978



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*****      DPD 71/86
*****      SCHEDULE B
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File No.:

~~Date:~~ 8th July, 1985.

Attention: Mr. R. Mohammed,
Director of Planning and Development

Dear Sirs:

Subject: Halton Landfill Environment Assessment:
Escarpment Site F: Planning Analysis
Your File: 3708.434
Our File: 90-31.00-200B

CLERK'S OFFICE	
COPY TO	FOR
Chairman	COUNCIL
C.A.O.	COMMITTEE
Dir. Soc Dev	REPORT
M.O.M.	INFO
Solicitor	ACTION
Dir. Plan	REPLY
Dir. PW	
Dir. Pers.	
Dir. Soc Ser	
Treasurer	

By a copy of a letter from you to Walker, Wright, Young, and Associates, dated September 21, 1984, the staff of the area municipalities were asked if there were any inaccuracies in the planning analysis in a report that was forwarded with the letter. Burlington's response was contained in a letter from the writer to you dated November 13, 1984. In our November 13, 1984, letter, we identified certain issues which Burlington's staff viewed as pertinent to the question of whether a landfill at Escarpment Site "F" would be in a conformity with the Parkway Belt Plan.

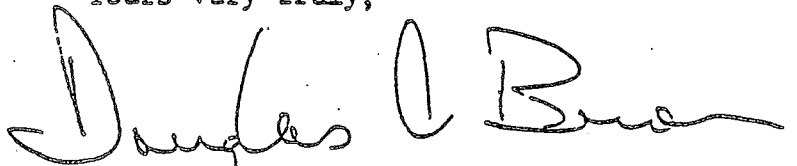
You replied to my letter in a letter dated November 22, 1984, wherein you advised that our comments would be taken into account in the Planning Analysis to be forwarded to Walker, Wright, Young, and Associates Limited for incorporation into their draft Stage 2C report. The Parkway Belt issue was dealt with by Walker, Wright, Young, and Associates in draft report #12. They concluded that the landfill operation, if established as a public use at Escarpment Site "F" would not require an amendment to the Parkway Belt West Plan.

Although to date Burlington Council has not taken a position on the Parkway Belt West Plan conformity issue, it is the position of staff that a Public Landfill at Escarpment Site "F" does not conform with the Parkway Belt West Plan, and that an amendment to the Plan would be required in order to accommodate a Public Landfill at Escarpment Site "F". Staff will have to advise Council on the appropriate course of action with respect to the Parkway Belt Plan issue should the environmental

assessment process result in Regional Council identifying a Landfill at Escarpment Site "F" either as the undertaking or as a method of carrying out a more broadly defined undertaking without application being made to amend the Parkway Belt West Plan. Clearly, in the absence of conformity with the Plan, one of the alternatives available to the City of Burlington would be to bring an application in the Divisional Court for judicial review of the action of Regional Council.

Thank you for your consideration.

Yours very truly,



Douglas G. Brown, Q.C.,
City Solicitor and
Corporation Counsel.

DCB/mmnr
25071

cc: Mr. M. Boggs,
Chief Administrative Officer, City of Burlington
Mr. G. Goodman, Director of Planning, City of Burlington
Messrs. Weir & Foulds,
Attention: Mr. S. Stein
Mr. Dennis Perlin, Chief Administrative Officer,
Regional Municipality of Halton
Mr. D. Varley, Clerk,
Regional Municipality of Halton



DPD 71/86
SCHEDULE C

Office of the
Minister

Ministry of
Municipal Affairs
and Housing

777 Bay Street
Toronto, Ontario
M5G 2E5
416/585-7000

May 7, 1984

Mr. P. Pomeroy
Chairman
Regional Municipality of Halton
Box 7000
1151 Bronte Road
Oakville, Ontario
L6J 6E1

Dear *Mr. Chairman*:

Re: Expansion of Burlington Landfill Site
and Parkway Belt

As recently requested by your Council, I hereby deem the expansion of the existing Burlington Landfill Site, described in the application under the Environmental Protection Act and shown as Phases A, B, C and D in the February 1984 report by Dillon, Consulting Engineers and Planners, not to conflict with the Parkway Belt West Plan, July 1978, under section 9(2) of the Ontario Planning and Development Act.

I understand that the expansion is supported by the Council of the City of Burlington, subject to certain conditions. Thus, by copy of this letter, I am informing Mr. R. Bird, Mayor of the City of Burlington, of my action.

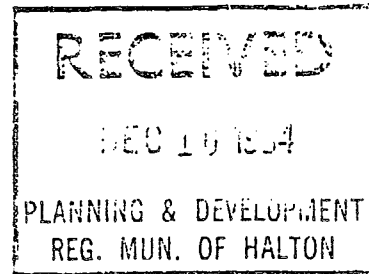
Yours sincerely,

Claude F. Bennett
Claude F. Bennett
Minister.
M.P.P. Ottawa South



December 5, 1984

Mr. R. Mohammed
Director of Planning
Region of Halton
P.O. Box 7000
Oakville, Ontario
L6J 6E1



Re: Region of Halton Landfill in Parkway Belt

Dear Mr. Mohammed:

I have received a copy of your November 22 letter to Mr. P. Walker, of Walker, Wright, Young Associates, in which you ask for my comments on the Parkway Belt West Plan interpretation contained in the November 13 letter from Mr. D. Brown, Burlington's solicitor to your region.

While I do not intend to comment on every statement made by Mr. Brown in his letter, I would, though, like to provide you with the following general comments.

As you know, the Parkway Belt West Plan has a triple status; it is a provincial development plan under the Parkway Belt Planning and Development Act and the Ontario Planning and Development Act; it is an integral part of the Region of Halton Official Plan, and it is also an integral part of the City of Burlington Official Plan. Thus, it is not unusual that staff of the three agencies would have different interpretations of this single document. It is my opinion that one can read the Parkway Belt West Plan with a degree of flexibility, or selectively emphasize one section rather than another one, and thus possibly reach a different conclusion.

The regional staff asked me for my interpretation of the Plan in its letter of July 13, to which a lengthy staff report was attached. In that report, the regional staff stated that the proposed landfill facility on site "F" conforms to the Parkway Belt West Plan, July 1978. In my September 10 reply, I provided numerous comment on the content of the regional staff report and in essence agreed with their interpretation.

If you have any questions, please call me at 585-6057.

Yours truly,

Z. Weing
Z. Weing
Senior Planner

c.c. Mr. D. Brown -
Mr. G. Goodman
Mr. D. Perlin
Mr. D. Hodgson
Mr. P. Walker



Ontario

Ministry of
Municipal Affairs
and Housing

Local Planning Policy Branch
777 Bay Street, 13th Floor
Toronto, Ontario. M5G 2E5
585-6228

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March 20, 1985

Mr. R. Mohammed
Director
Planning and Development
Regional Municipality of Halton
P. O. Box 7000
1151 Bronte Road
Oakville, Ontario
L6J 6E1

Dear Mr. Mohammed:

Re: Halton Landfill Environmental Assessment -
Draft Stage 2C Reports

This ministry has reviewed the material attached to your February 6th letter, and concludes that our areas of interest have been discussed satisfactorily. Consequently, we have no comments to offer.

Yours truly,

Ron Kennedy, MCIP
Acting Manager,
Operations Section

RK:ib

RECEIVED

MAR 26 1985

PLANNING & DEVELOPMENT
REG. MUN. OF HALTON

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