

CONSOLIDATED HEARINGS BOARD

IN THE MATTER OF Sections 2 and 3 and 6 (3) of the Consolidated Hearings Act, 1981, S.O. 1981, c.20;

— and —

IN THE MATTER OF Section 12(2) of the Environmental Assessment Act, R.S.O. 1980, c.140;

— and —

IN THE MATTER OF Sections 30, 35 and 38 of the Environmental Protection Act, R.S.O. 1980, c.141, as amended;

— and —

IN THE MATTER OF Sections 24 and 61 (2) of the Ontario Water Resources Act, R.S.O. 1980, c.361, as amended;

— and —

IN THE MATTER OF Section 28 (3) of, and Regulation 164 under, the Conservation Authorities Act, R.S.O. 1980, c.85, as amended;

— and —

IN THE MATTER OF Section 40(12) of the Planning Act, S.O. 1983, c.1, as amended; in connection with site plan control of the sanitary landfill site;

— and —

IN THE MATTER OF Section 22(1) of the Planning Act, 1983 in connection with a referral to this Board by the Honourable Bernard Grandmaître, Minister of Municipal Affairs, on a request by the Regional Municipality of Halton to amend the Official Plan for the Town of Milton to redesignate a parcel of land comprising Part Lots 3 and 4, Concession 2 N.S. in the Town of Milton from "Agriculture" and "Conservation and Hazard Lands" to permit the construction, operation and maintenance of a landfill site, Minister's File No. 24-OP-0208-A01;

— and —

IN THE MATTER OF Section 34(11) of the Planning Act, 1983 in connection with an appeal to this Board by the Regional Municipality of Halton for an order directing an amendment to By-law 61-85 of the Town of Milton to rezone the lands situated at Lot 3 and part of Lot 4, Concession 2 N.S., in the Town of Milton from "Agriculture" to permit a regional sanitary landfill site and ancillary uses;

— and —

IN THE MATTER OF Section 15(1) of the Planning Act, R.S.O. 1980 ch.379 in connection with a referral by the Honourable Claude F. Bennett, Minister of Housing on a request by Tremaine Britannia Citizen's Group for consideration of part of the Official Plan for the Halton Planning Area with respect to Sections 1 to 5 inclusive, 7, 9 and 10 of Part III D3 Solid Waste Management, Minister's File No. OPC-0026;

— and —

IN THE MATTER OF Section 64 of the Ontario Municipal Board Act, R.S.O. 1980, c.347 as amended in connection with an application by the Regional Municipality of Halton for an order approving:

- a) the acquisition of land for the construction, operation and maintenance of a sanitary landfill site to contain 7.96 million cubic metres of waste in the Regional Municipality of Halton and to do so by one of two alternative methods as follows:

- (i) landfilling at the site referred to in Halton's Environmental Assessment as Site F in the City of Burlington;
- (ii) landfilling at the site commonly referred to in Halton's Environmental Assessment as Site D in the Town of Milton

at an estimated cost of \$12,775,000.00, and the borrowing of money by way of temporary advances not exceeding in the aggregate such estimated cost pending the sale of debentures, and

- (b) the issuance of necessary debentures to a maximum of \$12,775,000.00 for a term not to exceed fifteen years;

— and —

IN THE MATTER OF Section 193(5) and Paragraph 84 of Section 210 of the Municipal Act, R.S.O. 1980, c.302, as amended;

— and —

IN THE MATTER OF Sections 6, 7 and 8 of the Expropriations Act, R.S.O. 1980, c.148;

— and —

IN THE MATTER OF an undertaking of the Regional Municipality of Halton to provide facilities for the purpose of receiving, dumping and disposing of waste as required by section 137 of the REGIONAL MUNICIPALITY OF HALTON ACT, R.S.O. 1980, c.436, as amended, by acquiring the land for, constructing, operating and maintaining a landfill to contain 7.96 million cubic metres of waste in the Regional Municipality of Halton.

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OFFICIAL REPORTERS

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(ii) landfilling at the site commonly referred to in Halton's Environmental Assessment as Site D in the Town of Milton.

at an estimated cost of \$12,775,000.00 and the borrowing of money by way of temporary advances not exceeding in the aggregate such estimated cost pending the sale of debentures, and

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BEFORE: H. H. Lancaster, Q.C. - Chairman
Dr. D.J. Kingham - Member



Hearing conducted at The Oakville
Granary Commercial Centre, 105 Robinson
Street, Oakville, Ontario, on
November 4, 1988.

VOLUME 192

APPEARANCES:

T.R. Lederer and H.D. Hodgson	for the Regional Municipality of Halton (Proponent)
J.R. Tidball	for the Ministry of the Environment
T. Vigod J.F. Castrilli	for the West Burlington Citizens Group
D. Estrin, F.E. Leitch and H. Dahme	for the Corporation of the Town of Milton
S.R. Garrod and A. Nurvo	for the Milton Area Citizens Coalition and several affected Milton area landowners
R.B. Tuer, Q.C. E.A. Cronk, F. Perrier and L. J. Griffiths	for National Sewer Pipe Limited
L.F. Longo	for Azova Investments Limited
M.J. McQuaid, Q.C. and C.J. Tzekas	for the City of Burlington
C. Mansfield	for the Ministry of Natural Resources
P. Renaud	for Cumis Limited



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APPEARANCES (Cont'd):

1

C. Stevenson

for Framgard Holdings,

2

P. Hancock

Fosseri Investments

3

Limited, Seriphos

4

Investments Limited and

Topic Investments

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J.H. Olah

for the Halton Region

Conservation Authority

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Per: P. D. McQueen

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1 --- Upon commencing at 9:30 a.m.

2 MR. LANCASTER: Good morning, please be
3 seated.

4 MS VIGOD: Mr. Chairman, I understand
5 Mr. Tzekas is on his way and he suggested I begin and I
6 think he could probably come in at some other point
7 along the way.

8 MR. HODGSON: Or alternatively, he could
9 be ruled as having lost his opportunity!

10 MR. LANCASTER: After you got through
11 they closed up the Gardiner again!

12 ARGUMENT BY MS VIGOD:

13 Mr. Chairman, Dr. Kingham, usually
14 counsel like to go last so they can hear all the
15 arguments before them and respond. I think after 15
16 days of argument that position may not be all that
17 advantageous. I will try and be concise in my argument
18 and state where I concur or disagree with other
19 counsel's submissions.

20 First, let me outline the areas I will
21 be focusing on. I will first start with some
22 introductory remarks and then enter into a brief
23 discussion on the legal context in which the Board's
24 decision must be made. Then I will proceed to deal
25 with the process and site selection issue. The



1 majority of my submissions will be on the
2 hydrogeological evidence and then I will comment
3 briefly on some of the other factors the Region
4 examined and finally look at the issue of social
5 impacts and what has been termed at this hearing the
6 social equity or locational equity issue.

7 At the outset, it is the position of the
8 West Burlington Citizens Group that Site F should not
9 be approved as the Region's next site for landfill for
10 the next 20 years, but rather that Site D is the most
11 suitable site for the location of a landfill in Halton.

12 Towards the end of his argument, Mr.
13 Garrod referred to the testimony of one of his clients
14 to the effect that having a landfill near him for the
15 next 20 years was, I believe I have this:

16 "Substantially, the better part of a
17 lifetime and that is too long a time to
18 suffer adverse effects."

19 Mr. Chairman, my clients have had to
20 live with landfills in their community for
21 approximately 40 years and have suffered various
22 adverse impacts during this time.

23 As the various members of the West
24 Burlington Citizens Group testified before you, another
25 20 years really would constitute an entire lifetime. I



1 would just refer you to the testimony Mr. Charles
2 Eastman who has lived on King Road for the past 36
3 years. He is retired now and spends most of his time
4 at home.

5 He testified that at the time they
6 promised, we knew we had a dump in the area, the
7 Bayview Site, they told us when the dump was filled be
8 it 15 or 20 years, it would be the end of the dump over
9 there and the street would be virtually empty of
10 traffic. He then goes on on page 39555 to state:

11 "If they turn around and say 'This is
12 going for another 20 years,' then I
13 shan't see the end of it, the dump,
14 because I will be dead long before that
15 but I would like to see it finished now
16 for my own sense of satisfaction. There
17 are other sites, other means of
18 disposal. Why don't they take them
19 instead of pushing it all onto the same
20 people as you have done for the last 40
21 years."

22 A lot has been made of the fact that
23 landfill is an interim use. Mr. Walker testified to
24 this effect at page 13864 of Volume 60. He said he
25 believes that landfill is an interim use and that there



1 is an end to the landfilling period because there is
2 capacity limitation to it and the after-use is being
3 put forward as something which this site will be used
4 for. That is again at Volume 60 page 13912.

5 The implication is that at some point a
6 landfill can be rehabilitated and put to another use;
7 agricultural, recreational or passive. However, it is
8 submitted that for the community of Aldershot, if
9 landfilling of Site F is approved, it may turn into a
10 permanent use. I would submit it makes a mockery of
11 the interim use argument advocated by the Region and
12 others.

13 Now, it is not our submission that the
14 locational equity factor should not be the driving
15 factor in making a landfill siting decision but it is
16 our submission that it is a factor that can and should
17 be evaluated by both the proponent and this Board under
18 the provisions of the Environmental Assessment Act.

19 We wish to state that we disagree
20 completely with the submissions made by Mr. Leitch and
21 his characterization of the locational equity issue
22 before this Board. I will be dealing with this in
23 greater detail towards the end of my argument.

24 The other overview submission I wish to
25 make is in relation to a submission made by Ms Cronk.



1 She stated that when her client, NSP entered into the
2 process, she knew the case she had to meet by reading
3 the Trow Reports and the documentation that was
4 distributed to the parties prior to the hearing. She
5 claims, as do the other Milton interests, that the
6 Board should not approve Site D as enough data is not
7 before you to make a decision.

8 Mr. Chairman, we do not agree with this
9 submission and believe that there is enough data before
10 you to:

- 11 1. To assess and evaluate the
12 hydrogeology of both sites; and
13 2. To reach a decision that the
14 hydrogeology of Site D is more suitable than Site F for
15 a landfill in the Region of Halton.

16 It is our submission that should the
17 Board consider entertaining the submissions made by the
18 Milton interests, then the same logic must apply in
19 spades to Site F.

20 In the case of Site F, the case that we
21 have had to meet when the hearing began has altered in
22 very real and fundamental ways. Mr. Tidball has called
23 it a voyage of discovery. in fact, instead of the
24 starship "Enterprise" we had the Region of Halton
25 seeking out new galaxies and going where no goer has



1 ever gone before it, and I think in the case of Site F,
2 in reality, the Trow sandwich theory as I have been
3 calling it, and all its implications, has been
4 discarded by the Region, the very proponent of the
5 theory in the first place. As well, Mr. Hiraishi's
6 original design, as modified by Exhibit H-42A is also
7 obsolete. There are uncertainties in matters arising
8 from the new interpretation of the hydrogeology of Site
9 F which have not been explored. I again will be
10 dealing with these in some detail in my submissions on
11 the hydrogeological evidence. However, it is our
12 submission that there is enough evidence to make a
13 decision on which site is the best alternative but we
14 wanted to outline what we felt was a flaw in the logic
15 of the Milton interests.

16 If the Board follows their logic through
17 to its necessary conclusion, it would be our submission
18 that both sites would have to be rejected as premature
19 before this Board. We are not suggesting that the
20 Board should take this position but we wanted to bring
21 to your attention early in our argument, the fact that
22 Milton's argument is a two-edged sword.

23 I would now like to turn briefly to a
24 discussion of the legal framework in which you make
25 your decision. As we are all aware, the Joint Board



1 obtains its jurisdiction under the Consolidated
2 Hearings Act which of course applies in respect of an
3 undertaking in relation to which there is more than one
4 hearing required. That, of course, is Section 2.

5 As well, under Section 4, the Joint
6 Board has a duty to hold a hearing and consider the
7 matters that could have been considered at the hearings
8 which would have been required to be held in respect to
9 the undertaking before the Board.

10 Again, Section 5, as we know, sets out
11 the fact that the Board makes a decision rather than a
12 recommendation and that it may issue permits and impose
13 terms and conditions.

14 Section 5(7) provides that the standards
15 and criteria under any of the scheduled Acts apply with
16 necessary modifications. I would stress that, in
17 respect to the decision being made by the Joint Board,
18 so in other words, the Board has flexibility in looking
19 at the criteria and standards under the various pieces
20 of legislation and if you like, fitting them together.

21 In this case I would submit, and here I
22 am in agreement with comments made by Mr. Lederer in
23 his opening remarks before the Board, that the
24 foundation hearing is the Environmental Assessment
25 Hearing. That is the hearing that really considers



1 both sites.

2 The purpose of the Environmental
3 Assessment Act as we have heard many times, is the
4 betterment of the people of Ontario by providing
5 protection, conservation and wise management in Ontario
6 of the environment. The environment, of course, is
7 widely defined to encompass both natural environment
8 and social, economic and cultural conditions. The key
9 feature of the Act is a provision of an Environmental
10 Assessment by the proponent in regard to the
11 undertaking. The context, of course, is set out in
12 Section 5(3) which provides a description and rationale
13 for investigating alternatives, methods and
14 alternatives to the undertaking. This is really the
15 documentation of the site selection process and
16 methodology that leads the proponent to the undertaking
17 it seeks to have approved before the Board.

18 In this case, of course, the Region is
19 asking for approval of a landfill site with a capacity
20 of 7.96 million cubic metres at either Site D or Site
21 F. So, the question squarely before the Board is,
22 which site is the most appropriate. The Board, of
23 course, can determine that neither should be approved.

24 As we mentioned, the Act contains a
25 broad definition of the environment and it directs the



1 proponent to take various factors into consideration in
2 its Environmental Assessment. However, it does not
3 place weight on the factors per se. We would submit
4 that in determining which factors should be given more
5 weight, regard must be had to the nature of the
6 undertaking. For example, I would submit that if we
7 were dealing with an incinerator, then air emissions
8 would be a key factor. If a dam were to be sited then
9 a key factor might be the aquatic impacts of the
10 proposal. Here we are dealing with the siting of a
11 municipal landfill and it is submitted that the key
12 consideration must be the hydrogeology, hydrology of
13 the site. In other words, where does the leachate go,
14 what will be the impact on the environment, both ground
15 and surface water and can it be contained. In other
16 words, will there be off-site migration.

17 It is key that the bulk of the
18 testimony, as pointed out by Mr. Hodgson has been on
19 hydrogeology and in our opinion it is the key issue at
20 the hearing. As well, the Ministry of the Environment
21 very early in the process stated that hydrogeological
22 factors must not be overwhelmed by other factors in the
23 site selection process.

24 Finally, our clients as well as other
25 residents living in the vicinity of the other site



1 considered in the site selection process have in
2 various submissions stated that hydrogeology should be
3 the number one consideration.

4 Support for the argument that
5 hydrogeology and the fate of leachate must be the
6 driving issue of this hearing is the fact that the
7 undertaking cannot go ahead until an approval is given
8 under the Environmental Protection Act and a
9 Certificate of Approval issued.

10 Regulation 309 under that Act is also
11 relevant as it sets out various standards for the
12 siting of waste disposal sites.

13 Section 2 of the Environmental
14 Protection Act states the purpose of the Act is to
15 provide for the protection and conservation of the
16 natural environment. It is also under this Act that
17 the technical reports were filed by the Region in order
18 for the Board to assess the suitability of the sites
19 proposed.

20 Finally, I would just like to refer
21 briefly to the 1979 decision of the Ontario Municipal
22 Board. It is Exhibit 353 before this Board. This was
23 the decision in relation to old Site F.

24 At page 15 of that decision, the Board
25 says:



1 "In the event that one sets out to make
2 a list of the points in their order of
3 importance concerning the establishment
4 of a sanitary landfill site, there is no
5 doubt that ranking number one would be
6 hydrogeology. The Board having heard
7 this important evidence is convinced
8 that although many sites may be found in
9 the municipality which could meet all
10 the criteria essential to the
11 establishing of a landfill site if the
12 hydrogeological conditions were
13 unfavourable this site in all
14 probability would not be approved."

15 It has been said often enough that the
16 Environmental Assessment Act is a broad planning
17 statute. We agree but it is different than the
18 Planning Act and the Environmental Protection Act in
19 that it includes the broad definition of the
20 environment as we have discussed, the requirement that
21 alternatives be carefully examined.

22 In the May, 1983 final work plan which
23 is Exhibit H-52, Walker, Wright, Young notes the key
24 difference between the Environmental Assessment,
25 Environmental Protection Act, is that the EPA is site-



1 specific at the outset, whereas the former, the
2 Environmental Assessment Act can reach that position
3 only after possible alternatives to an undertaking have
4 been investigated.

5 I would like here to refer the Board to
6 an excerpt of a decision, the 1984 decision of the
7 Joint Board in the County of Northumberland, better
8 known as the Seymour Landfill Hearing.

9 I have just excerpted pages 53 and 54.
10 This is a hearing that had to deal with various
11 applications under the Planning Act and as well, an
12 application under Part 5 of the Environmental
13 Protection Act.

14 There the Board concluded that:

15 "... in the absence of a statutory
16 requirement to investigate and assess
17 alternatives, as is the case under the
18 Environmental Assessment Act, and
19 notwithstanding that the proponent may
20 have considered alternatives during the
21 site selection process, the proponent
22 should not be placed in the position of
23 having to respond to evidence concerning
24 alternatives to the site chosen by him
25 and which is the subject matter of the



1 application before the Board."

2 Basically, it is my submission that the
3 Environmental Assessment Act is the broadest statute
4 that the Board has to consider. What the Board is
5 saying in the Seymour case is that neither the Planning
6 Act nor the Environmental Protection Act require the
7 examination of alternatives, only the Environmental
8 Assessment Act does this. This is relevant, I think,
9 to the Board's consideration of Mr. Griffith's argument
10 that somehow the Planning Act takes precedence over the
11 Environmental Assessment Act.

12 First of all, I have a problem with the
13 fact that Mr. Griffiths stated as a bald proposition
14 that somehow Section 70 provides that the Planning Act
15 must take precedence. I would point out that the
16 section is only triggered where there is a conflict.

17 As well, Mr. Griffiths has failed to
18 mention the fact that there is a similar clause that
19 can be found in Section 139 of the Environmental
20 Protection Act which provides that the Environmental
21 Protection Act prevails in the case of a conflict in a
22 manner related to the natural environment, or matters
23 specifically dealt with in this Act or regulation.

24 In this case, the matter is whether a
25 Certificate of Approval should issue for the licensing



1 of the landfill. It is my submission that first of all
2 there is no conflict between the provisions of these
3 statutes. Indeed, Mr. Griffiths did not, to my
4 knowledge, actually refer to any conflict in the
5 legislation. The Environmental Assessment Act is the
6 broadest statute in that it provides for consideration
7 of alternatives. Neither the EPA nor the Planning Act
8 have a statutory requirement that alternatives be
9 examined. As we can see from the Seymour case, the
10 Joint Board considering matters under those two
11 statutes in the absence of the Environmental Assessment
12 Act found that alternatives did not have to be
13 examined.

14 There may be overlap, but the EAA is
15 much broader than the Planning Act in regard to the
16 issue of alternatives. I would agree here and concur
17 with the submissions made by Mr. Tidball on the
18 relationship of the EAA and the Planning Act.

19 In anticipation of Mr. Leitch's argument
20 regarding a possible resort to Section 70, Mr. Tidball
21 said that the two acts are complimentary and no
22 conflict arises. He notes that Section 6 of the
23 Environmental Assessment Act does not allow any other
24 approvals to be granted until approval has been given
25 to proceed with the undertaking. In my submission,



1 this would include Planning Act approvals, EPA
2 approvals and Expropriation Act approvals.

3 As Mr. Tidball says, the EAA casts a
4 broader note and if an undertaking is approved, then
5 planning approvals including rezoning or Official Plan
6 Amendments should flow as a matter of course.

7 Now, the Milton interests have also made
8 the argument that somehow the Food Land Guidelines
9 direct that Site F be chosen. I disagree with this
10 proposition and endorse and support Mr. Tzekas'
11 submissions on this point. I agree that the comments
12 filed by OMAF during the government review stage,
13 clearly indicate that in their opinion the process has
14 been satisfactory. The two letters are found, I
15 believe, both in Exhibit 109 and 110, as well as
16 forming part of a series of letters filed before the
17 Board.

18 The references I have are to the two
19 review documents. In a letter of November 1st, 1985,
20 and this is found on page 88 of Exhibit 109, OMAF
21 officials clearly state they have reviewed the
22 Environmental Assessment in view of the Food Land
23 Guidelines. That is in the very first sentence of that
24 letter. They also say that agriculture was given high
25 priority in the EA process. Then they made the further



1 comment that the EA should definitely indicate that
2 Site D will be rehabilitated to agriculture should it
3 be chosen as the landfill site. It is my submission
4 that OMAF did not put forward the position advocated by
5 the Milton interests, that the Food Land Guidelines
6 directed the Region to choose Site F. In fact, they
7 were dealing with a possibility that Site D could be
8 chosen. It is also important to note that OMAF did not
9 send anyone to this hearing as they have in other cases
10 where they feel it is appropriate.

11 In a subsequent letter of December 26th,
12 1986, this is found in Exhibit E-110 at page 40. OMAF
13 again states that the material reviewed in view of the
14 Food Land Guidelines and they note that the matter of
15 agriculture rehabilitation appears to have been
16 addressed satisfactorily by the Region.

17 Finally, I would note that the letter
18 states that staff are therefore satisfied with the data
19 and analysis provided in the Environmental Assessment
20 and it would appear therefore that the requirements of
21 the Act had been met. It is my submission that OMAF
22 here recognized that the Environmental Assessment Act,
23 if you like, was the lead statute and that agriculture
24 was just one factor that had to be considered and that
25 it had been considered properly by the Region.



1 Again, if I may refer briefly to the
2 earlier OMB decision, in Exhibit B-353 and at page 37
3 and 38 there is a discussion of the Food Land
4 Guidelines in that decision. The Board discusses the
5 site and of course we are talking about the old Site F
6 there, will be rehabilitated and they refer to, in
7 fact, the evidence of Dr. Mackintosh in this regard.

8 At page 38 of the decision, the Board
9 states:

10 "We do not think a sanitary landfill is
11 an incompatible use in an agricultural
12 community. If it is a safe site, and it
13 is, it will not interfere with the
14 growing of crops or the maintenance of
15 cattle. Estate residential development
16 with all the resulting conflicts between
17 city folks and farmers within increasing
18 land costs which make farming
19 uneconomical eventually is a greater
20 deterrent to the farming community than
21 a sanitary landfill, in our view."

22 DR. KINGHAM: What document is that?

23 MS VIGOD: This is Exhibit B-353, the
24 decision of the Ontario Municipal Board in relation to
25 the old Site F. That was page 38 of that decision.



1 I would commend this reasoning to the
2 Board and I would also note that we have heard evidence
3 on the encroachment of estate residential in this area.
4 I just refer to my cross-examination of Mr. Wright
5 where I asked him about a reference in one of the
6 documents to a statement that the land surrounding Site
7 D is a mixture of agricultural land and abandoned
8 farms.

9 Mr. Wright said on page 2021, this is
10 Volume 9:

11 "As the Board is probably aware, many of
12 the farms, I guess, are in holdings and
13 are not being cultivated. This is a
14 landscape architect's description, not
15 an agriculturalist. There are some of
16 the farms particularly that we noticed
17 in this area where some of the lands are
18 being converted for what I would call
19 estate residential housing. It has been
20 abandoned and are in a state of what I
21 would call old fields to hawthornes and
22 shrubs."

23 Again, in respect to Mr. Garrod's
24 argument that there is a presumption in the
25 Expropriations Act that would lead this Board to choose



1 Site F, again, I disagree and would urge you to reject
2 Mr. Garrod's submissions on this point. I endorse and
3 support Mr. Tzekas' submissions on this point and
4 believe that expropriation was a factor that was taken
5 into account during the consideration of the social
6 impacts.

7 Before turning to a discussion of the
8 site selection process, I would just like to comment
9 briefly on the history of the siting of landfill in
10 Halton.

11 We know on June 15th, 1979, the Ontario
12 Municipal Board approved old Site F in a decision filed
13 as B-353. After a series of court cases the Minister
14 of the Environment on February 9th, 1981, decided that
15 Halton would have to go through the Environmental
16 Assessment process rather than just an Environmental
17 Protection Act hearing. it was after this decision was
18 made that Walker, Wright, Young was retained and the
19 process got underway.

20 The key event, as far as my clients were
21 concerned, involves the hearing to expand the existing
22 Burlington Landfill in June, 1984 and the subsequent
23 report to that Board which was issued on July 26th,
24 1984. It should be remembered that the Walker, Wright,
25 Young process was continuing during this period and it



1 was, in fact it was in April, 1984 that the final 2B
2 Report was issued. That is Exhibit H-11 before this
3 Board.

4 Turning to a discussion on the site
5 selection process, it is our submission that the
6 process by which these sites were selected by the
7 proponent including the preference for Site F over Site
8 D is a matter that the Board should consider and rule
9 on in its decision.

10 Again, as this is a precedent-setting
11 case, it is important that other proponents and
12 communities facing site selection processes be able to
13 follow the logic of the process. It is our client's
14 submission, as it has been for many years, that the
15 site selection process was flawed and that Site F
16 should not have emerged as one of the sites given
17 further consideration at the 2B or 2C stage. This
18 position was taken as early as 1984 and set out in
19 Exhibit WB-358. The submissions made during the course
20 of the Walker, Wright, Young process and the
21 submissions to the Minister which were found in Exhibit
22 WB-935.

23 As many counsel have noted the past few
24 weeks, this is the first Environmental Act hearing into
25 a municipal landfill and many more will be following in



1 the years to come. It is important that the process
2 followed by proponents be understandable, logical and
3 capable of being replicated or traced by others
4 including the Board. These were propositions set out
5 by the Ministry in their comments throughout the
6 process and repeated in their submissions on the
7 Environmental Assessment which are reproduced in the
8 Ministry review, Exhibit 109.

9 At page 100 of that exhibit, the
10 Ministry green hats, if you like, stated that they
11 found some difficulty in following the decision logic
12 used by the consultant in the analysis and evaluation
13 of the data. They refer there to their earlier memo of
14 April 19th, 1985. Continuing, the Ministry said that
15 they had stated to Halton that the logic should be
16 understandable, rigorous, reproducible and easy to
17 follow. They stated that these comments had not been
18 met in the response by Halton that followed the release
19 of the Ministry review. This comment is found on page
20 48 of Exhibit E-110 where the Ministry notes that
21 Halton makes no response to our general comments and
22 the reviewers have difficulty following the logic used
23 to arrive at some of the decisions.

24 DR. KINGHAM: What was that exhibit?

25 MS VIGOD: That was page 48 of



1 Exhibit E-110. Again, the final comment in that first
2 paragraph is:

3 "Our concerns remain as stated in our
4 January 10th, 1986 comments ..."
5 and the reference there is to their earlier comments in
6 the first review.

7 Now, Mr. Clarke who appeared on behalf
8 of the Ministry, testified as to the conclusions of the
9 review in a supplementary review. He stated that the
10 review evaluates the Environmental Assessment from the
11 standpoint of two criteria. Are the components of an
12 Environmental Assessment present? And is the technical
13 quality and level of detail of those components
14 satisfactory and is there an appropriate range of
15 alternatives?

16 At this point in the first review, the
17 Environmental Assessment Branch concluded that the
18 second criterion had not been met and the reference in
19 the transcript is to Volume 168 at 41899. The Ministry
20 of the Environment Review was published in February,
21 1986. The Halton response document, Exhibit H-77 was
22 filed in November, '86, also distributed to the agencies,
23 although not, apparently, to Roger Clarke, was what we
24 referred to as the technical reports.

25 The Environmental Assessment Branch



1 concluded that both their criteria used in evaluating
2 the Environmental Assessment were now met. However, it
3 is our submission that the logic behind this is far
4 from clear. The Ministry posed questions to the
5 reviewers on the second criterion. That is the
6 technical quality and completeness of the review.

7 The first question under this heading
8 dealt with whether the data analysis and conclusions
9 in the Environmental Assessment were satisfactory,
10 including, was the logic analysis logical and easy to
11 follow. Mr. Clarke said that this applies, in fact, to
12 the second test, and the reference there is Volume 168,
13 page 41936. The Minister responded that its concerns
14 in this regard had not been met. Under cross-
15 examination by Mr. Tzekas, Mr. Clarke confirmed that in
16 the documentation put before him as part of the
17 Environmental Assessment, he was not aware of a direct
18 response to address either the Ministry's concerns that
19 they had in regard to following the decision logic
20 using the analysis and evaluation of the data and the
21 differing decision logic applying to the selection and
22 analysis of the pits and quarries sites versus all
23 other sites. Again, the reference is page 41938, again,
24 Volume 168.

25 As well, it should be noted that on page



1 18 of the supplementary review, and this is Exhibit
2 E-110, the Branch notes comments from the Halton Region
3 Conservation Authority which reiterated their concern
4 with the Halton evaluation method. if I can quote:

5 "In selecting Sites D and F, the Region
6 relied upon a paired comparison method.
7 The true significance of the natural
8 environment at Site F was disqualified
9 by this comparison system when it was
10 evaluated against the significance of
11 agricultural land."

12 Now, Dr. Kingham also asked Mr. Clarke
13 some questions as to whether various concerns raised in
14 the initial review had been met by the supplementary
15 review.

16 For example, Mr. Clarke acknowledged
17 that the comments that the consultant did not provide a
18 clear explanation to describe the separate evaluation
19 method used for pits and quarries but seemingly allowed
20 inconsistent treatment of the sites in comparison to
21 the clay till plain candidate areas was an
22 inconsistency that was not removed in moving to the
23 supplementary review.

24 Again, that is Volume 168, page 42025.

25 It is very hard to see then how the



1 Branch could have concluded that Section 5(3) was met.
2 Mr. Clarke, in his examination-in-chief, raised the
3 famous soup analogy and this is found at page 41908,
4 Volume 168, and if I may paraphrase here, as long as
5 the soup had the necessary ingredients, it didn't
6 matter whether the soup was tasty or not.

7 It is my submission that this Board
8 cannot take very much from the conclusions of the
9 Ministry of the Environment. However, as Mr. Clarke
10 acknowledged during my cross-examination, firstly, the
11 process is quite an important component of the
12 Environmental Assessment Act and secondly, the
13 components and traceability and consistency are
14 important to the ultimate decision-maker coming to a
15 decision and as well, the public in following the
16 process through.

17 This is found at Volume 168, page 41948.

18 I would submit that this is a matter for
19 the Board to consider.

20 Finally, Mr. Clarke, in re-examination,
21 stated that the role of the review is not a basis for a
22 right or wrong decision. It is a critical evaluation
23 and it is really up to the decision-maker, whoever that
24 decision-maker may be. In this case, it is the Board,
25 to identify and decide that there is a logic that is



1 available to them to make a proper decision and whether
2 the undertaking should be undertaken and approved and
3 proceed. That again, is Volume 168, page 42029 to 30.

4 I would like to just step back and look
5 at the legislation in this regard. As we know, there
6 has been some debate over what constitutes the
7 Environmental Assessment that the Board must either
8 accept or reject under Section 12 of the Environmental
9 Assessment Act.

10 Mr. Tidball submitted that the
11 Environmental Assessment is the document tendered to
12 the Minister and reviewed by the Ministry of the
13 Environment pursuant to the provisions of Section 7.
14 Other boards have, in deciding whether the
15 Environmental Assessment is to be accepted, have said
16 that the Environmental Assessment includes both the
17 document and the evidence adduced at the hearing.

18 Here, I would refer the Board to a
19 number of Joint Board decisions, the Southwestern Hydro
20 case, February 20, 1987, at page 74, which sets out
21 this proposition. In that decision, the Board also
22 refers to the Victoria Hospital and Redhill Creek
23 Expressway cases. Other counsel have submitted that
24 the Environmental Assessment is all the material before
25 the Board. I concur that this is a correct



1 interpretation. Otherwise, the Board would be limited
2 to only a consideration of the document that was filed
3 with the Minister before the review and the hearing
4 process would not be very meaningful if new information
5 or requirements arose in the course of the hearing.

6 The real issue before this Board is
7 whether the undertaking should be approved. I would
8 just like to refer briefly to the recent SNC EFW case.
9 Again, on page -- the reference is to page 31 of that
10 decision. I think, first of all, this case points out
11 the fact that the Environmental Assessment, as
12 submitted to the Minister, may be inadequate but can be
13 brought up to statutory requirements in the course of
14 the hearing.

15 At page 31, the Board states:

16 "In order to find the Environmental
17 Assessment acceptable, the Board must be
18 satisfied that it fulfills the purpose
19 of the Environmental Assessment Act and
20 it provides sufficient information upon
21 which to make a decision on the merits
22 of the undertaking."

23 The Board went on to find that:

24 "The Environmental Assessment document
25 submitted to the Minister is inadequate



1 for the reasons stated but it finds that
2 the Environmental Assessment comprising
3 all the documentary and oral evidence
4 admitted by the Board during the
5 hearing, provides sufficient evidence
6 upon which to make a decision."

7 In our submission, the Board can accept
8 the Environmental Assessment in this case on the same
9 basis in that all the documentary and oral evidence
10 before you is sufficient to make an approval. However,
11 it is our submission that the site selection process is
12 an important factor to weigh in determining which site,
13 at the end of the day, is preferable.

14 Now, Mr. Walker testified both as a land
15 use planner and as the person who was responsible for
16 co-ordination of the project. That is at 13652. It is
17 clear that Mr. Walker had a number of tasks and wore a
18 number of hats throughout the process. He provided
19 land use data for other consultants, did the 2C Land
20 Use Planning Analysis and then after the 2C Stage, was
21 asked to look at planning approvals. He was also
22 responsible for the comparative approach found in H-14.

23 I would now like to turn to general
24 analysis of the document detailing the process as well
25 as a discussion of Mr. Walker and other witnesses'



1 comments on this process where appropriate.

2 As we all heard for the past year-and-a-
3 half, the process included Stage 1 dealing with waste
4 needs and systems. Stage 2, including the various 2A,
5 2B and 2C phases. There can be no doubt that during
6 its site selection process, the Region accepted that
7 glacial tills were the accepted medium for landfill.

8 In Exhibit H-9, the May, 1983 Waste
9 Needs and Systems Analysis, typical siting requirements
10 are set out on pages 54 and 55 of that report. The
11 report states:

12 "The degree of attenuation is closely
13 related to the grain size of the soil
14 medium and the length of the flow path.
15 The attenuation potential of various
16 materials, clay which is the best,
17 through topsoil, silts, sand and gravel
18 and finally to fractured rock which is
19 potentially the worst. The glacial
20 tills in Ontario are generally
21 considered to be one of the better
22 disposal mediums for landfill. They
23 display moderately low permeability,
24 good workability characteristics and are
25 generally of sufficient large areal



1 distribution to give a good choice of
2 site locations. However, these often
3 form some of the better agricultural
4 lands."

5 I note here that the general proposition
6 that landfilling and good agricultural land often go
7 hand-in-hand has never really been challenged in the
8 course of this hearing. This is important when it
9 comes to a consideration of the Food Land Guidelines
10 and the fact that these Guidelines do anticipate the
11 use of agricultural land when in the public interest.

12 The Ministry in their comments on the 2C
13 Report, noted in the Ministry review that Site D is
14 located in an area where the till thickness and slope
15 are in accord with normally accepted criteria for
16 landfill site development. This is page 105 of Exhibit
17 E-109. I would note that we have seen the word
18 "traditional" or "normal" site cropping up both in the
19 documentation file and a number of the witnesses'
20 testimony before this Board.

21 Now, it is at this time that the
22 possibility of landfilling in quarries is first raised.
23 Walker, Wright, Young note that disposal in quarries is
24 technically feasible and in keeping with the MNR
25 Resources Policy, is a suitable use and rehabilitation



1 for an abandoned quarry provided that environmental
2 concerns are met with.

3 Here is the beginning of the rationale
4 for examining pits and quarries sites in Halton.
5 First, Walker, Wright, Young have stated that they are
6 firstly alternative to using agricultural land and
7 second, that rehabilitation of pits and quarries will
8 take place. Another reference can be found in the
9 transcripts, Volume 60, page 13975, where Mr. Walker
10 testified that in addition, this is in addition to clay
11 till sites:

12 "We were looking at pits and quarries to
13 assess the potential for avoiding
14 agricultural land and the potential for
15 rehabilitating damaged lands."

16 It is my submission that this is where
17 the doublespeak begins as far as Site F is concerned.
18 I realize a lot of documentation was written in 1984,
19 but that is no excuse for the overwhelming approach to
20 the emergence of Site F as one of the top six sites.

21 It is my submission in the case of Site
22 F, in which approximately 50 hectares out of an
23 original 96-hectare site plan are to be filled, only 30
24 hectares constitute the licensed quarry. I believe the
25 licensed quarry is shown in a number of exhibits



1 including Mr. Walker's Land Use Planning Report and Mr.
2 Bacon's appendices to his report.

3 It is my submission that the so-called
4 argument about rehabilitation advanced in part by both
5 the Region and carried to an extreme by NSP is firstly,
6 absurd and illogical when it comes to discussion about
7 the remaining part of the site to be landfilled and the
8 surrounding area of the site plan. This area, and I
9 will be discussing this further, is a biophysical
10 resource that has been recognized by all parties to the
11 hearing. The oak/hickory forest complex containing rare
12 plants constitutes this acreage. This Board cannot
13 accept that rehabilitation consists of eliminating and
14 cutting down forests and rare plants and putting in a
15 landfill. It is patently absurd.

16 Further to this point, I would add that
17 we heard Mr. Lederer say a few weeks ago in answer to a
18 question by Dr. Kingham of why biophysical and
19 agricultural were in the same category that the
20 decision related to the predominant natural condition
21 of the two sites. In other words, agricultural for
22 Site D and biophysical for Site F.

23 Now, even when it comes to discussion of
24 the rehabilitation of this pit and quarry, it becomes
25 questionable as to whether on the facts this is a



1 realistic proposition when it came to the NSP site.
2 The evidence does seem clear that the licensed quarry
3 has not been extracted to the full extent of its
4 licence or anywhere near this amount. This is clear.
5 Whether it is a viable operation is less clear.
6 Mr. Walker referred to it as an inactive shale pit,
7 Volume 59, page 13699.

8 At the 2C Stage, Mr. Walker testified
9 there was a licence for shale extraction, but at that
10 time, no shale extraction was taking place. Cross-
11 examination and argument by Ms Cronk and Mr. Griffiths
12 has focused on the fact that it is not viable
13 economically to extract shale with the implication
14 being that a disposal site is the only appropriate use
15 of the land. Yet, on the other hand, we have heard the
16 references during the course of the hearing that
17 quarrying has resumed. Ironically, in the submission
18 report, H-65 of October '83, the Tremaine Britannia
19 group which is one of the Milton groups asked why not
20 create quarries for the disposal of waste. Walker,
21 Wright, Young responded that it would be highly
22 impractical to extract a quarry to make a waste
23 disposal site. The logistics of obtaining approvals
24 and selling the product to make a significant hole in a
25 short period of time would make the process impossible.



1 Why would one then consider an undertaking when there
2 are numerous extractive quarries available in Halton.
3 Again, I would stress the reference to "numerous
4 extractive quarries". Similar statements have also
5 been made in a number of exhibits before the Board.

6 On page 11 of Exhibit H-10, Walker,
7 Wright, Young stated:

8 "Operating quarries were judged
9 undesirable for sanitary landfill."

10 Mr. Chairman, in our submission Site F,
11 the licensed part is not an extraction quarry. As we
12 have said, the majority of the rest of the site is
13 forested and covered with vegetation. The quarries are
14 licensed but not extracted. This can be contrasted
15 with the other quarries examined by Walker, Wright,
16 Young. In our submission, the very reasons why Walker,
17 Wright looked at the pits and quarries as an
18 alternative to agricultural land just don't apply in
19 relation to Site F.

20 I will be very blunt here and say it is
21 no wonder that Ron Fast, a member of the West
22 Burlington Citizen Group, who testified here said that
23 the impression left with the public was that the fix
24 was in and that is Volume 161, page 39142.

25 As early as the May 1983 submissions



1 report, Exhibit H-61, Mr. Chumley, who testified here,
2 commented on the fact that specific sites such as NSP
3 are named. He said we believe this cannot help but
4 create suspicion regarding objectivity in the next
5 stage. That was May 4th, 1983. The response by
6 Walker, Wright, Young was that the report would be
7 revised to delete specific references to NSP and would
8 instead use a hypothetical site. This is not really an
9 answer and here I would harken back to the comment made
10 in the Walker, Wright, Young Addendum 2. This is in H-
11 52, that NSP will likely be considered as one of the
12 potential landfill options. This was at the May, 1983,
13 final work plan stage. It must be remembered that at
14 this time, evaluation factors had not even been
15 established, yet the proponent was reassuring people
16 that NSP would likely be considered.

17 A final point on this rehabilitation
18 issue. Mr. Griffiths in his argument relating to the
19 mineral resources issue, submitted that a landfill at
20 Site F would be of benefit and rehabilitation would be
21 more certain in terms of time and the financial
22 commitment to rehabilitation.

23 First of all, as Dr. Kingham pointed
24 out, if there is no quarrying then there is no need for
25 rehabilitation. I would say also that it is clear, it



1 doesn't meet the Region's avowed purpose of looking at
2 pits and quarries. In other words, the rehabilitation
3 factor. We must keep in mind that the rest of the site
4 is a biophysical resource.

5 If the pit and quarries in fact are
6 operating, then perhaps after all it is a viable
7 operation and then under the Pits and Quarries Act
8 there is a requirement both for the licensee to place
9 security with the Treasurer of Ontario in accordance
10 with the regulations and also to rehabilitate the
11 quarry.

12 The Board should, in our submission,
13 reject this so-called rehabilitation advantage for Site
14 F and that, as I said, is being patently absurd. The
15 biophysical resource does not need to be destroyed to
16 be rehabilitated. Neither does a non-extractive pit.
17 in fact, if the pit is extracted, it will be
18 rehabilitated under the Pit and Quarries Act. It does
19 not need to be filled with landfill which generates
20 leachate, something a quarry does not, in order to be
21 rehabilitated.

22 I would like to now continue with the
23 site selection chronology. Exhibit H-10, the October,
24 1983 Final Report Stage 2A sets out the evaluation
25 factors and states on page 4 that evaluation factors



1 were primarily intended to screen out areas of the
2 region that would not be suitable for further
3 consideration for landfilling.

4 Mr. Walker described, in his
5 examination-in-chief, the outline of the process and he
6 noted at page 13974 that at Stage 2A, the technique
7 involved in the screening of the entire region at the
8 outset to identify areas that were potentially
9 acceptable for purposes of landfilling.

10 Page 6 of that exhibit, H-10, sets out
11 the evaluation factors and at this time there were, if
12 you like, the A factors including physical factors,
13 including hydrogeology, biophysical, land-use,
14 including agriculture, recreation and other resource
15 lands, transportation.

16 Page 10 sets out how the priorities
17 under this factor were set out. Under Group A the
18 first priority was to avoid disturbance and degradation
19 of the natural environment. The second priority was to
20 maintain natural resource areas such as agricultural
21 land, recreational, aggregate resource areas.

22 So, we have the first category being
23 disruption of the natural environment. The second
24 priority the natural resource areas. This was
25 followed, and I would note at this time, by social



1 factors and at this time the criterion was to avoid
2 community services of great significance.

3 The fourth priority was economic and
4 cultural. This is important. I noted that when Mr.
5 Garrod argued here last week, one of the submissions he
6 spent some time on was the fact that he thought the
7 social factors should have been placed higher and he
8 faulted the study team for not having evaluated
9 responses to questionnaires in a proper fashion at the
10 2B Stage. I will be saying more on this when I discuss
11 the social impacts. However, I do think it is worth
12 noting that Mr. Garrod only commences his comments with
13 the Stage 2B after the initial screening took place.

14 At the 2A Stage, it was very clear that
15 hydrogeology, biophysical factors were given priority
16 over agriculture and aggregates as well as the social
17 factor. It should be noted that the physical concerns
18 were number one. Whether people would be expropriated
19 did not enter into the initial screening process.

20 Page 11 of that exhibit, H-10, expands
21 on the rationale of looking at pits and quarries.
22 Walker, Wright, Young admit that it will involve a
23 significantly different approach and again state that
24 their approach considers the use of damaged lands, low
25 agricultural capability lands and the engineerability



1 of potential landfill areas. I would note that the
2 engineerability factor was only applied at this time to
3 pits and quarries and not to clay till sites.

4 Physical factors at this time including
5 topics such as attenuation capability, topography,
6 surface water, and this is set out at page 11 and
7 following of Exhibit H-10 and page 17 is a reference to
8 the fact that engineerability was not considered
9 directly in the identification of candidate areas.

10 DR. KINGHAM: Is this page 17 of H-10?

11 MS VIGOD: Yes. The section of
12 "Landfill and Quarries" also starting on page 17 starts
13 by saying that exposed rock may be considered
14 unsuitable for solid waste disposal. Again, there is a
15 reference that they wouldn't create new quarries for
16 landfill. The key rationale for this approach stated
17 over and over by Halton were the advantages of being
18 able to rehabilitate damaged lands and avoid a
19 potential conflict with the use of agricultural land.

20 Again, on page 17 of H-11, I would note
21 that Walker, Wright, Young there, in fact, underlined
22 these two advantages to using quarries for landfill. I
23 have already made my submissions on why Site F does not
24 fit the rehabilitation factor at all.

25 Walker, Wright, Young noted the



1 disadvantages of quarrying in that such areas may
2 require extensive engineering to control leachate and
3 that if sufficient overburden cover material is lacking
4 locally, a landfill operation may not be feasible. He
5 also goes on to say that operating quarries are judged
6 undesirable for sanitary landfill. The jury on Site F
7 as an operating quarry is still out, although we have
8 heard some evidence there has been some quarrying going
9 on throughout the hearing.

10 The overlay process is described on page
11 30. Again, areas of low impact are identified by the
12 mapping of hydrogeological factors. The remaining
13 evaluation factors were applied as an overlay to
14 determine the most suitable areas so, in other words,
15 biophysical and agriculture were then overlaid. The
16 hydrogeological factors were selected because they
17 relate to the environmental security offered to water
18 resources. I think it is key that protection of the
19 natural environment is the driving force at this time.

20 At this point, impacts were described as
21 "unacceptable, high, moderate and low". Unacceptable
22 impacts were used to screen out areas that would be
23 considered unfavourable for landfill. Again, the
24 report sets out the Walker, Wright, Young system of
25 prioritizing which, as they say, applied additional



1 weight on physical factors in the initial stage of site
2 selection. In regard to attenuation capability, it was
3 noted that glacial till and clay planes with relatively
4 high percentages of fine grain materials possess high
5 soil attenuation capabilities and the environmental
6 impact of landfilling in these areas is low. That is
7 at page 31.

8 Mr. Walker testified that one thrust was
9 to eliminate sites where natural attenuation was not
10 possible, that this did not apply to pits and quarries
11 which were not inherently relying on natural
12 attenuation. It was a clear attempt, Mr. Walker said,
13 to try and pick on the desire to rehabilitate otherwise
14 disturbed landscape. That is from the transcripts,
15 Volume 60, page 13985.

16 Mr. Walker testified that there were a
17 series of screening maps produced but there was largely
18 a physical aspect that was driving the screening and
19 the idea was not to harm the natural environment. That
20 is Volume 16, page 13978.

21 He said in the screening process the
22 hydrogeological maps, biophysical maps, were really the
23 ones that were used to define the areas. Again, that
24 is 13985.

25 As well, we have heard the comments by



1 the Ministry that other factors should not be allowed
2 to overwhelm hydrogeology. It is important to note at
3 this stage that Site F would have been eliminated on
4 the hydrogeological factors map by the Region. Mr.
5 Walker, at page 15513, Volume 66 states that he agreed
6 that at this level of screening he would have screened
7 out Site F. Further, at page 15518 he agreed that Site
8 F would not have re-entered the screening process
9 except for the determination to look at pits and
10 quarries as alternatives for the natural attenuation
11 type of facility.

12 Under my cross-examination of Mr.
13 Sobanski, Volume 38, page 8319, he said:

14 "We are looking at two things here. One
15 is the potential that rock quarries may
16 be less suitable for disposal because of
17 some inherent hydrogeological problems.
18 The other is rehabilitating them as
19 damaged lands that are involved or
20 avoiding good agricultural lands."

21 Again, on page 8325, Mr. Sobanski agreed
22 with me that Site F would not have been chosen unless
23 pits and quarries had been considered. I then referred
24 Mr. Sobanski to page 52 of Exhibit H-10 where the
25 report had stated that it should be understood that



1 identification of quarries should not be misconstrued
2 as evidence. These are necessarily favourable sites
3 for landfill. The site specific character of pits and
4 quarries will be examined closely during the site-
5 specific stage of the study. They were not evaluated
6 on these factors at this time. So, here Mr. Sobanski is
7 agreeing that pits and quarries were not evaluated on
8 the screening factors. In other words, they basically
9 passed through the evaluation process without a
10 hydrogeological evaluation.

11 I would just like to turn here to the
12 testimony of Mr. Bowen on the site selection issue. He
13 testified that in terms of site selection in the case
14 of pits and quarries it would seem a secondary factor,
15 that of natural environment under which one of the
16 evaluation criteria is agricultural resources and was
17 used to override the most important factor, public
18 health and safety. in other words, groundwater and
19 surface water impact. That is reference is WB-906,
20 page 2 and also, I believe, the transcripts. He notes
21 that the exception was made for hydrogeological factors
22 used to rank pits and quarries and that a great deal of
23 emphasis was placed on the fact that a site in the pit
24 and quarry would have to be an engineered site.

25 I put it to Mr. Sobanski, since pits and



1 quarries were in areas eliminated by hydrogeological
2 screening, doesn't it follow that the sites would rank
3 poorly in the category of health and safety. Here I
4 think looking at the transcript, Mr. Sobanski hemmed
5 and hawed, but did admit that pits and quarries were
6 not evaluated on the same characteristics as the other
7 sites. The factors for pits were the compatibility for
8 landfilling and quarries, the potential for hydraulic
9 containment. I note that reference Volume 38, page
10 8340. This, according to Mr. Sobanski, was supposed to
11 happen at the Stage 2B Stage. I stress there that in
12 quarries they were looking at, they were looking at the
13 potential for hydraulic containment.

14 At the Stage 2A Stage, 55 quarries were
15 examined and seven selected. The others were rejected
16 largely on factors such as the size of the site,
17 location of built-up areas and the location of
18 municipal supply aquifers. In a description of the
19 seven sites found at pages 53 to 58 in Exhibit H-10, a
20 number of interesting points emerge. I would submit
21 that all the other quarries clearly state the area of
22 the licensed quarry and what the depth is. Not so for
23 NSP, which, of course, was not extracted, nor of course
24 is the full area even a quarry. We can see that by
25 looking at any of the other quarry descriptions.



1 Canada Brick, 12 to 16 hectares, is 15 metres deep.
2 Nelson covers 100 hectares and is 10 to 20 metres
3 thick.

4 As well, on page 54 of Exhibit 110 we
5 find the astonishing statement that there are no known
6 biophysical constraints in the area proposed for
7 landfilling. I will be looking at that in a little
8 more detail.

9 In the Stage 2B Stage at page 29, that
10 is in H-11, Walker, Wright, Young state that the
11 boundaries of the pit and quarry candidate areas were
12 determined on the following basis. The ownership
13 boundaries of pits and quarries, the licensed areas and
14 the potential area for landfilling determined in
15 conjunction with extraction plans and in consultation
16 with the quarry owners.

17 DR. KINGHAM: Excuse me, where do you
18 find that?

19 MS VIGOD: That is in Exhibit H-11, the
20 2B Stage. That is at page 29. Those set out the
21 criteria in the middle of that page for determining
22 boundaries of pits and quarries.

23 Now, again on that page there is the
24 statement that the candidate areas were not considered
25 to have any immediate constraints until more detailed



1 evaluation was undertaken.

2 On page 32, it sets out that quarries
3 were investigated to see if the flow can be maintained
4 toward a quarry. Again, in order to get Walker,
5 Wright's evaluation of these various quarries, we must
6 then turn to Exhibit H-68, which were the appendices
7 and those were the documents that dealt with the actual
8 evaluation. Again, a number of interesting points
9 emerge from an examination of the chart found in
10 Exhibit H-68. First of all, again, all the sites but
11 Site F state how much is licensed and how deep the
12 quarry is except Site F which was not really an
13 extractive quarry. Reference is made to the Morrison,
14 Beatty Reports, again a reference to page 2. Again
15 references to discussions with NSP and Proctor &
16 Redfern and again a strange, again there is a reference
17 there to no known proposal to mine shale except in
18 conjunction with a landfill operation.

19 Perhaps the strangest reference is the
20 reference that hydraulic containment could be achieved.
21 At this time with the reference to the Morrison, Beatty
22 Reports we know that -- I guess the one thing that all
23 investigators agree on this site is that there are
24 strong downward gradients and that in fact a hydraulic
25 trap could not be achieved at Site F.



1 As Mr. Bowen testified and stated in his
2 report, at the 2B level, the leachate collection and
3 generation criteria seem to be based mainly on the
4 concept of drawing the water table down around the
5 quarry to provide a trap. I would submit that while
6 mining plans at other quarries could give information
7 on whether a trap could be achieved. At Site F because
8 there is next to no quarrying taking place, this
9 information would not have been available. However,
10 the Morrison, Beatty data was referred to and would
11 have included the reference to the strong downward
12 gradients. The evidence is unclear as to whether this
13 information was taken account of. It appears the only
14 comment there was that hydraulic containment could be
15 achieved.

16 In summary, it is submitted at this
17 point that at the end of 2A, Site F could well have
18 been eliminated by hydrogeological mapping as well as
19 the biophysical knock-out which I will be discussing in
20 a moment.

21 In the case of the hydrogeological
22 factor, it was clear that pits and quarries were being
23 treated separately and in fact, none of the sites were
24 really evaluated at the 2A Stage. Specific caution was
25 issued by the consultants that they map the whole



1 region for hydrogeological factors and then looked at
2 pits and quarries. Again, it should be noted at this
3 point that agricultural capability did not have the
4 possibility of an unacceptable ranking largely because
5 of the attenuation potential for groundwater
6 contamination is lowest for silt and clay sites. That
7 is at page 33 of H-10.

8 I would like to turn now to a discussion
9 of the biophysical factor. This factor was applied in
10 a very strange way to Site F. If we start at Exhibit
11 H-10 at page 19, Walker, Wright, Young set out that
12 they are going to use the criteria and guidelines used
13 for the identification of environmentally sensitive
14 and/or significant areas. Unacceptable areas were to
15 be those areas that meet either Criterion 2 or
16 Criterion 6. I would submit it is clear that the
17 levels of impact are based on the regional criteria.
18 It is clear that the Region didn't slavishly say "We
19 are only looking at 37 environmentally sensitive
20 areas". It is clear they were using a criterion as a
21 screen. Again, on page 54 in relation to Site F at the
22 2A Stage, we have the bizarre statement that there are
23 no known biophysical constraints in the area proposed
24 by landfilling.

25 At this point I tried to question both



1 Ms Hellas and Mr. Walker on this matter. Ms Hellas
2 said that she did not prepare the table and didn't know
3 who prepared it. That is at page 980 of the
4 transcripts.

5 She said she looked at no pits and
6 quarries at the Stage 2A. This is interesting because
7 H-10 we have already noted has stated that the
8 evaluation factors other than hydrogeology were to be
9 applied to the pit and quarry sites. It is our
10 submission there seems to be some buck-passing as to
11 who did the charts and who provided the information. I
12 think it came out at one point later that Mr. Sobanski
13 might have had a hand in this.

14 Again, it is interesting to note that in
15 H-10, page 55, there is a reference to the Halton
16 Region Conservation Authority's concern regarding the
17 proximity of another quarry, the Warren Paving Sand and
18 Gravel Pit to the conservation area. Reference there
19 is made to a letter dated October, 1983. Yet, on
20 December 1st, 1982, Halton Region Conservation
21 Authority had passed the resolution recommending that
22 the Region designate the oak/hickory forest on NSP
23 property as an ESA in the Region of Halton's Official
24 Plan. That resolution was found, as we have discussed,
25 is found in Exhibit B-106. I would note that that



1 letter, while addressed to Proctor & Redfern, was
2 copied to the Region as well as the City of Burlington
3 and in fact the copy we have is the one the City
4 received and is stamped "December 21, 1982."

5 So, this document was clearly copied to
6 the Region at that time. Somehow, Ms Hellas was never
7 informed about the letter until much later in the
8 process. While Ms Cronk alluded to the fact that the
9 Halton Region Conservation said it was okay to
10 landfill, it is very clear in these letters that they
11 are speaking about the 20-hectare site which would not
12 include the oak/hickory forest. I would also note that
13 the letter states that all the rare and significant
14 plant species were found within the oak/hickory forest.
15 Thus again emphasizing its importance.

16 It states that during design
17 construction operation and rehabilitation
18 recommendations in the Proctor & Redfern Report should
19 be implemented. One of the most important
20 considerations is protection of significant habitats on
21 the NSP property. That again is from B-106.

22 It is our submission that even if at the
23 time the Stage 2A criteria were first applied
24 information was not yet assembled about the
25 significance of the biophysical resource. The



1 decision-making role set out by Mr. Walker should have
2 eliminated the site at Stage 2B. Again, I refer here
3 to page 11 of the 2B Report. That is H-11 which states
4 that the candidate areas that are being considered in
5 this stage are not known to have characteristics of an
6 environmentally sensitive area, which would have been
7 considered an unacceptable impact at the Stage 2A. I
8 stress the words "characteristics of an ESA".

9 However, if the characteristics of an
10 environmentally sensitive area are identified as a
11 result of the more detailed investigation of the
12 candidate areas at 2B, these areas will be rated
13 according to the criteria used in the Stage 2A.

14 It is our submission that logically,
15 Site F should have been designated unacceptable at this
16 time. Again, this reiterative approach was stressed in
17 responses to various submissions made by the public
18 during this time. For example, in H-59, I believe, at
19 page 5, the Region again expressed the view that they
20 would be looking at data and re-evaluating it on the
21 earlier criteria.

22 I would like to look at what was known
23 by April, '84, when this report -- this is the 2B
24 Report -- was issued. First of all, Proctor & Redfern
25 Environmental Appraisal Report filed here as WB-107,



1 had clearly identified the biophysical resource on a
2 good part of NSP lands. That report stated that in the
3 opinion of the consultants the site met Criteria 1, 3,
4 4, 5, and 6 that were used to designate environmentally
5 sensitive areas. We also had applications filed by NSP
6 with the Ministry of the Environment and with the
7 Ministry of Municipal Affairs in which they reduced
8 their potential area of landfilling from 30 to 20
9 hectares. Again, these documents are filed in the
10 appendices to Mr. Bacon's Report. I would note that
11 these applications were sent again to the Region and I
12 believe Mr. Bacon had made the point stressing all
13 along the way NSP kept everyone informed as to what
14 they were doing. So, the Region again had copies of
15 this material and the appraisal report.

16 Again, we have the resolution of the
17 Halton Region Conservation Authority in which they
18 indicated that Site F should be, or that portion of
19 Site F, the oak/hickory forest, should be designated as
20 an ESA. Again, that date is December 1, 1982. Yet,
21 none of this found its way into Ms Hellas' evaluation
22 of Site F at the 2B Stage. Even though she said she
23 was aware of the Proctor & Redfern Report, but not the
24 Halton Region Conservation resolution. That is page
25 954.



1 Even though the Region, as we have said,
2 clearly received a copy of that resolution. Instead we
3 find that at this stage Site F is ranked moderate with
4 the following comments for landfill potential.

5 "The potential of the area for
6 landfilling may be reduced by the
7 location of the significant plants."

8 However, in my cross-examination of Ms
9 Hellas, I referred her to the portion of H-11 which
10 outlined the reiterative approach that the Region said
11 it would follow. She agreed that logically this would
12 apply throughout the stages of this process. I asked
13 her if new information became available if that would
14 cause you to re-evaluate and she said generally, yes.
15 However, it is my submission that this was never done.

16 At the 2C Stage and in the comparative
17 report, Site F received the highest ratings in the
18 biophysical factor. It was the least preferred site.
19 Ms Hellas also confirmed and conceded the following
20 points in cross-examination. First of all, that most
21 of the area of significant biological resource is
22 excluded from the licensed shale area.

23 Second of all, that Option 3 which is
24 the present option before the Board would destroy the
25 portion of Site F with the more diverse terrain and



1 value-rich formations. The number of our plants are
2 restricted to the valley crests which were the more
3 pronounced in Option 3, which again is the option
4 proposed for landfill. The effect is there will be a
5 loss of a wide range of vegetation habitat not well
6 represented elsewhere and indicative of Carolinian
7 conditions and including oak/hickory. She also agreed
8 the forest type is an unusual or uncommon forest type
9 and it was reaching its northern limits in Halton and
10 is significant in that respect.

11 She also agreed a large number of the
12 portion of all rare plants in Ontario occur in the
13 Carolinian Zone and that three provincially rare
14 species would be totally destroyed in Option 3 and that
15 is page 1007.

16 Ms Hellas' further technical report,
17 Exhibit H-18, identified specific site locations for
18 only 27 of 116 significant native species identified at
19 Site F. We have heard that Option 3 would result in a
20 loss of all known representatives of 14 and these are
21 over half of the ones that she did map. That is at
22 page 1006.

23 Ms Hellas, of course, said she didn't
24 know whether the other plants would be destroyed or
25 not. We established that if 100 per cent of these



1 mapped species that are both provincially rare and
2 regionally rare would be virtually eliminated by Option
3 3 and 100 per cent of mapped species that are
4 provincially uncommon would also be eliminated. To
5 accommodate a landfill the biological resources would
6 be eliminated. Ms Hellas also testified that the
7 forest/shrub complex is more diverse in the Sassafras
8 Woods. That is a complex on Site F and that is page
9 1025.

10 Then perhaps more importantly, she
11 agreed that more than 50 per cent of the significant
12 Carolinian Forest in the F1 category would be
13 eliminated. It is my submission that Site F according
14 to the Region's own site selection process would have
15 been eliminated as early as the 2A or 2B Stage on the
16 basis of the application of the Region's decision-
17 making role in the area of biophysical impact.
18 The fact that the Region violated its own decision-
19 making process should be a consideration for this
20 Board. As well, the biophysical would have been
21 subject to a knock-out blow, to use Mr. MacNaughton's
22 words, is important in weighing the significance of
23 this factor. This is especially important when
24 comparing it to an evaluation of the agricultural
25 impact at 2B. If we look at H-11, Table 4, page 73, we



1 see that Site D(4)(g) is ranked low impact in the
2 agricultural
3 consideration. Forty-three other sites had more severe
4 impacts than Site D. One had the same low rating and
5 two were lower. Only when D is ranked against F is it
6 high in the agricultural factor, whereas it is
7 submitted that F ranked unacceptable throughout the
8 process on the biophysical evaluation factors applied
9 by the Region. The Board must look at the regional
10 significance of this resource. As well, it seems clear
11 there were some inconsistencies in evaluating Site F's
12 capability of meeting even the minimum evaluation
13 criteria for pits and quarries.

14 Morrison and Beatty had agreed there
15 were strong vertical gradients and it is difficult to
16 see how Mr. Sobanski could have reached the conclusion
17 that F could have had a trap at the 2B Stage. As well,
18 it is our submission that it is inconsistent that Mr.
19 Sobanski referred to the Morrison and Beatty Report in
20 his chart at the 2B Stage while Ms Hellas was not
21 allowed to look at the Proctor & Redfern Report.

22 Mr. Chairman, I am going to be turning
23 to the area of hydrogeology. I was wondering whether
24 we might break?

25 MR. LANCASTER: Yes, we might.



1 --- Recess

2 MR. LANCASTER: Thank you, be seated,
3 please.

4 MS VIGOD: Thank you.

5 Mr. Chairman, I am now going to turn to
6 a discussion of the hydrogeological evidence. Before I
7 turn to some of the specific findings, we will be
8 asking the Board to make, I again would like to make
9 some introductory remarks in this area.

10 In cross-examination of Mr. Hiraishi, I
11 put some questions to him regarding the historical
12 context in which landfills have been located. Mr.
13 Hiraishi agreed with me, and I quote:

14 "We have moved from dumping in the back
15 40, if you like, and sand and gravel
16 pits and quarries to till sites. In the
17 case of till sites we have moved from
18 the original concepts of natural
19 attenuation to a situation where now,
20 even on till sites, we have proposed
21 under-drain systems to ensure complete
22 containment."

23 That is Volume 51, page 11671.

24 He also agreed with me that as a
25 landfill engineer that a landfill design is preferable



1 that has no offsite migration versus a design that
2 prevents offsite migration. That is at the next page,
3 11672. I refer to this as a box that has a bottom,
4 Site D, versus a box with a leaking bottom, Site F.

5 Mr. Chairman, it is my submission that
6 this is still the bottom line of both sites before you.
7 Mr. Feenstra's bottom line about the two sites at his
8 first appearance before the Board, is found at pages
9 10332 and 33.

10 He said at Site F when everything is
11 operating, there is no leachate movement into the
12 underlying granular units and:

13 "... and as a result of this, I
14 categorically state that there should be
15 no impact at Site D."

16 That is page 10,333.

17 "At Site F (he went on) the under-drain
18 system is going to collect a significant
19 proportion of the leachate, but some of
20 the leachate is going to by-pass the
21 under-drain and movement will occur into
22 shale bedrock although it should not
23 exceed drinking water standards."

24 This is, if you like, the first appearance of Mr.
25 Feenstra.



1 Mr. Hiraishi agreed that no matter how
2 closely you space the drains at the proposed Site F,
3 that there would also be an escape of leachate because
4 of the downward gradients and in fact you cannot create
5 a hydraulic trap at Site F. That is Volume 51, page
6 11659.

7 At this time in my cross-examination of
8 Mr. Hiraishi, we had a discussion about Site D. I
9 asked him if his evidence was that the leachate under-
10 drains would operate 20 to 30 years and hopefully
11 longer. He replied that he would hope that the system
12 lasts as long as we need it to last and that they have
13 allowed opportunities for remedial work.

14 He went on to agree that in the event of
15 a partial or total failure of the under-drains, and
16 this is at Site D, he expected a contingency perimeter
17 drain and/or purge wells to contain the leachate until
18 it is sufficiently renovated that he would turn the
19 system off. He also agreed that he would expect the
20 trend would be that the leachate would be at a lower
21 strength after the initial 20 to 30-year period of the
22 hydraulic trap. In the case of Site F Mr. Hiraishi
23 agreed that it would be proper, the proper
24 interpretation that even as designed there would be an
25 escape of leachate from the bottom of the landfill from



1 Day One at a time when the leachate strength is
2 greater. That is page 11674 of Volume 51.

3 Now, we are asking the Board to make a
4 number of findings in regard to the hydrogeology of the
5 two sites.

6 Firstly, in regard to Site F, we would
7 ask the Board to make a finding that the Trow
8 definition of the hydrogeology and hydrostratigraphy of
9 Site F is erroneous and that the conclusions of Trow
10 and earlier, Mr. Feenstra, as to flow-paths, discharge
11 zones, that resulted from that conceptualization of the
12 site in that way, also be rejected as being erroneous.

13 In other words, the Board should reject
14 what I have been calling the sandwich theory where one
15 has neatly defined discrete zones of moderately
16 fractured, weakly fractured, highly fractured shales
17 and a discharge zone as was indicated at the back of
18 Exhibit 185. These were the answers to our
19 interrogatories. If you remember this initial
20 discharge zone coincided nicely with NSP property.

21 Now, Mr. Hodgson noted in his argument
22 that we have heard 87 days of hydrogeology evidence.
23 it should be remembered that Mr. Sobanski and Mr.
24 Beechinor were on the stand for approximately 20 days;
25 Mr. Feenstra for five days initially; and Mr. Hiraishi



1 for five days. During this entire period, Trow
2 adamantly maintained in the face of their own data,
3 that the sandwich theory was correct.

4 Now, we spent many days in cross-
5 examination attempting to show that the delineated
6 zones, the sandwich theory, did not hold up when you
7 looked at the real data. We took Mr. Sobanski and Mr.
8 Beechinor to the core logs and showed that if you added
9 close and very close fracturing, one would see 87 per
10 cent in Unit 2, the moderately fractured shale, and 71
11 per cent in the highly fractured shale.

12 I suggested that there was more
13 fracturing in the moderately fractured unit than in the
14 highly fractured unit or at best they were similar.
15 Mr. Beechinor said that he wouldn't dispute that the
16 fracture frequencies in the two units were very much
17 the same. This is found at Volume 39, page 8559.

18 I also took him to the RQD numbers and
19 we discussed the fact that RQD is the sum of the pieces
20 of rock that are longer than four inches divided by the
21 total length of the rock. The higher number, the
22 better rock it is, as it is less broken. We first had
23 a discussion about the crudeness of the RQD measure
24 generally, and Mr. Beechinor agreed that RQD might not,
25 by itself, be a good method of evaluating the degree of



1 fracture.

2 Again, we pointed out that the RQD's
3 were higher in the highly fractured unit than in the
4 moderate unit, the opposite of what one would expect.
5 Mr. Beechinor then answered by saying there is nothing
6 black and white in this bedrock environment. Mr.
7 Chairman, that is an understatement if ever I heard
8 one. He admitted that even in the highly fractured
9 shale unit there are elements of weakly fractured rock
10 where one gets competent rock. We spent much time
11 going through the permeability data.

12 I suggested to him that there was no
13 basis for the two order of magnitude difference between
14 their 10^{-5} permeability in the moderately fractured
15 unit and at 10^{-3} for his highly fractured unit.

16 Mr. Beechinor did agree that in
17 hydrostratigraphic Unit 2, we did define the unit with
18 1.2×10^{-3} permeability which they interpreted to be an
19 isolated zone of fractures.

20 Mr. Sobanski and Mr. Beechinor, under
21 cross-examination, did agree that there is a
22 possibility of vertical fractures and some connection
23 in the units. They testified that they said that these
24 units could be connected from place to place by
25 vertical fractures. That is at page 8623.



1 I also cross-examined Mr. Sobanski on
2 why the fact there was only an eight-metre thick weakly
3 fractured unit at HC-5, did he use a 20-metre thickness
4 for his unit if he was trying to be conservative. Mr.
5 Sobanski's answer was he used an average condition.

6 As far as the discharge zone, after some
7 lengthy discussion about the fact that we were seeing
8 downward gradients where the discharge zone was
9 predicted and upward gradients further downgradient, I
10 asked him if the discharge zone might extend further
11 south. Mr. Sobanski finally responded by saying
12 possibly there is some discharge indicated as
13 potentially occurring in these areas. Page 8667,
14 Volume 39.

15 Mr. Feenstra was a little more
16 forthcoming during his first appearance on the stand.
17 He acknowledged he did not see or evaluate the raw data
18 in determining the units, when he did his contaminant
19 migration model, but he now felt, as he said on the
20 stand, reasonably familiar with the data after hearing
21 the evidence. Page 10191. When I cross-examined him
22 about the fact that there were downward gradients in
23 the so-called discharge zone he answered obviously at
24 these specific locations, the groundwater discharge
25 gradients are not upward and so at that location, it



1 would suggest that groundwater discharge is not taking
2 place at those specific zones. Mr. Feenstra agreed
3 that we didn't have any wells in the discharge zone and
4 in fact we see some upward gradients further south of
5 the area. Again, that is page 10,237. I suggested
6 there is no basis for the Board to conclude that a
7 discharge zone exists as shown in the response to the
8 interrogatories. Mr. Feenstra agreed that it would be
9 a reasonable assumption that the discharge zone would
10 start perhaps further south.

11 The second part, the general
12 characterization of the hydrostratigraphic is developed
13 throughout. In other words, there is a fractured
14 mantle of shale underlying more weakly fractured shale
15 but the Board recognizes that this site is a variable
16 site and that in terms of contaminant migration from
17 the site it is the local zones of higher permeability
18 which will govern the rate location and volume of off-
19 site migration of contaminants. Now, I was looking for
20 the exhibit with the blue line that divided the two
21 zones. I couldn't find it. If we could visualize it,
22 I think it was referred to -- it is our submission that
23 the Board should also find, if you like, the thin blue
24 line between those zones has so far been defined by
25 indirect evidence correlating chlorides and tritium



1 data and the exact demarcation of where those zones are
2 in the south, southeast and southwest of the site has
3 not been defined. In fact, there is actually a movie
4 playing right now called "The Thin Blue Line" in
5 Toronto and that refers to the line, it is an excellent
6 documentary, between anarchy and normal civilization
7 and this thin blue line may be equally evasive, I
8 suggest.

9 MR. LANCASTER: I knew that hydrogeology
10 was all-encompassing, but that is going a little bit
11 far!

12 MS VIGOD: In fact, we would submit the
13 actual data at Site F shows this variability and that
14 the site probably in fact looks a lot like the actual
15 data on H-220 which just, conveniently, fell over -- as
16 I was saying, Mr. Chairman, the actual data at Site F
17 shows this variability and that the site probably looks
18 a lot like the actual base data on Exhibit H-220
19 without the delineations between the so-called zones
20 being marked in.

21 The third finding we would ask the Board
22 to find that the site, as originally designed by Trow,
23 and also as commented on in that first instance by
24 Mr. Feenstra, would not have protected surface water
25 from contamination by discharge from the active zone.



1 We would submit that this potential was first raised by
2 Mr. Bowen in his testimony. Remember Exhibit WB-907
3 which set out conceptually what happens if the
4 perimeter drain is constructed above the base of the
5 active zone. This concept was agreed to by
6 Mr. Feenstra in reply and it should be noted that the
7 details did not appear in his witness statement but he
8 readily agreed in cross-examination that a perimeter
9 drain with perhaps purge wells if the drain had to go
10 too deep would be necessary to cut off flow in the
11 shallow zone.

12 We would also ask the Board to find that
13 there are numerous streams exiting this site and
14 travelling through the Aldershot community and that
15 while people do not use the water for drinking
16 purposes, it is used by children for recreation
17 purposes and that there are impacts, the potential for
18 impacts to health and safety to occur if streams are
19 contaminated.

20 I would also like to just refer, at this
21 point, to my cross-examination of Mr. Feenstra in
22 Volume 175 and it is at page 43612. I asked him
23 whether the modelling, the modelling of where the
24 discharge would be from what Trow called the moderate
25 zone is different from what we are talking about now



1 and that that resulted in a change in design or a
2 proposed change.

3 I asked him:

4 "You are proposing a different design at
5 this point before the Board?"

6 And Mr. Feenstra replied:

7 "For the perimeter drain for the
8 southern portion of Site F, that is
9 correct."

10 The fourth point I would ask the Board
11 to find that there will be off-site migration from Site
12 F. I think everyone has testified that there are
13 strong vertical gradients at the site and that a
14 hydraulic trap cannot be created. I think this seems
15 to be the one thing that everyone does agree to in
16 relation to the hydrogeology at Site F. There will be
17 migration into the deep shale in the order of perhaps
18 10 per cent of the total volume of leachate
19 exfiltrating the site.

20 While all witnesses have agreed that the
21 likelihood of these contaminants affecting the fresh
22 water rind in Aldershot are remote, we would still
23 submit that there will be a loading of contaminants to
24 the environment off-site at Site F. In this regard, we
25 would ask the Board to make a finding that the use of



1 the shale environment underneath Site F as a leachate
2 attenuation zone is not a reasonable use of
3 groundwater. This, in fact, runs contrary to the
4 policy of the provincial government set out in the MISA
5 white paper that contaminants should be reduced at
6 source.

7 Further, in relation to the reasonable
8 use policy, no leachate attenuation zone has actually
9 been defined. I believe Mr. Tidball just alluded to
10 that in his argument. There will also be migration
11 into the active zone. At this point in time the exact
12 quantities are unknown and the most probable zones have
13 still not been identified at this site. We would ask
14 that the Board find that the 10 to 20 millimetres of
15 exfiltration is a reasonable number to be applied to
16 the site, but that this number may, in certain
17 locations, be somewhat higher.

18 The fifth finding, we would ask the
19 Board to reject the conclusions of Dr. Charlesworth as
20 to the block of rock theory, the 4.5×10^{-6} as being an
21 oversimplification and not being reflective of the
22 actual data found on the site.

23 In my cross-examination, I explored with
24 Dr. Charlesworth the assumptions that went into his
25 scenarios for Site F. They are what I call the four



1 ignores, which I put to him on page 21993. This was a
2 follow-up to a rather lengthy cross-examination by Mr.
3 Hodgson.

4 The four ignores were that Dr.
5 Charlesworth ignored the geology of the site. He
6 ignored the variability in the permeability of the
7 site, which showed a range of at least five orders of
8 magnitude. He ignored the strong vertical gradients
9 and ignored the basic flow system.

10 We had some discussion on Exhibit H-220
11 and the fact that the thickness of Zone 4 was
12 represented to be 25 metres. Putting aside again, the
13 dotted lines, Dr. Charlesworth agreed that there is
14 quite a variability within that zone. That is at
15 Volume 92, page 21994.

16 I then took him to the pumping test and
17 suggested to him that they generally covered off the
18 central and southern portion of the landfill.
19 Dr. Charlesworth was willing to say they produce, an
20 effect, up to in excess of 200 metres in at least two
21 different directions from the pumping well but with
22 varying effects depending on the depth of the
23 piezometer. Specifically PW-2 had effects down to 29.7
24 metres, although Dr. Charlesworth stated there is a
25 small effect. There were larger effects at 15 metres



1 and 11 metres. Dr. Charlesworth confirmed that even
2 with an adjustment for permeability and here we were
3 talking at this time about using 10^{-4} for pumping
4 tests, we have a permeability of at least two orders of
5 magnitude greater than the number he assumed as his
6 average number. That is at page 21999.

7 He did agree with me that there is
8 certainly evidence that there are highly fractured
9 zones capable of transmitting water and that the
10 pumping tests showed connection in the rock, 200 metres
11 to the north of PW-1. That is at 22006.

12 I then asked Dr. Charlesworth that when
13 we are talking about contaminant migration, shouldn't
14 we be concerned about the zones of higher permeability
15 because they will be the ones that govern the first
16 arrival of contaminants. He agreed that you have to
17 define how large the zones are in terms of how much
18 contaminant they will transport. That is at 22008.

19 It is my submission that this is exactly
20 what Dr. Charlesworth did not do and if you like, it is
21 the Oakville Library all over again or another way of
22 putting it is taking everyone's shoe size in this room
23 here, averaging it out, and providing everyone with a
24 pair of the average shoe size. I don't think Mr.
25 Hodgson would fit those shoes and I think that is what



1 Dr. Charlesworth is doing with his average block.

2 Six, we would ask that the Board find
3 that the modelling done at this site has been of
4 limited value due to the fact that it can only be as
5 good as its inputs are and we know that the inputs did
6 not always reflect the hydrogeology of the site as it
7 has evolved.

8 Dr. Rowe agreed with me that models are
9 a guide only and only as good as the parameters that go
10 into them. He also said to some extent it is true to
11 say that if the model does not accurately reflect the
12 actual field conditions then the results of the
13 modelling cannot be considered valid. For the purposes
14 of his modelling at Site F, he relied on Dr.
15 Charlesworth's interpretation of the site hydrogeology.
16 However, at page 22015, Dr. Rowe indicated that one
17 could model a multi-layer system such as shown on
18 Exhibit 220. He said if you try to model the full
19 three-dimensional situation, you would need a more
20 complex model. That is again at page 22016. He also
21 said he could have modelled what is reflected in the
22 coloured units in the same way as it was done at Site
23 D. This was not done however.

24 As far as the better fit model, I
25 believe Mr. Sobanski and Mr. Feenstra thought that the



1 initial numbers were better as far as the permeability
2 numbers, especially with respect to infiltration rates.
3 Also, the model is now, of course, based on the now
4 defunct sandwich theory in my submission.

5 Point seven, it is also submitted that
6 while the evidence on the adjoining two sites have not
7 shown massive contamination, there is still evidence of
8 leachate plume moving in a southerly direction. There
9 has also, I think it is important to note, been
10 problems over the years with sampling techniques. We
11 may be only just getting the best available data to
12 help us make predictions. The Board should remember
13 that the reports the parties had going into this
14 hearing indicated that at Bayview there was a leachate
15 plume moving 800 to 900 metres off-site. That is the
16 Hewetson thesis and other follow-up reports. This has
17 now been seriously questioned. However, at the
18 Burlington site which has operated for only 15 years,
19 there has been evidence put forward during the course
20 of the hearing that trace amounts of leachate may be
21 found at GL-16, which is 100 metres from the site.
22 That is Exhibit H-625.

23 Gartner, Lee, the authors of the report,
24 believe that more testing was warranted. I would also
25 submit they noted that previous results of the



1 Ministry, chemistry results were suspect in that they
2 were stored too long and the volatiles might have had
3 time to disperse.

4 It should also be noted that the
5 distance to the site boundary of the proposed Site F is
6 only 50 metres as compared to 100 metres at Site D and
7 at the existing Burlington site.

8 Mr. Feenstra, in answer to a question I
9 posed about the adjoining sites on Site F made a
10 comment generally about the chemistry data. He said
11 that this is actually one of the real difficulties in
12 the analysis or sampling analysis of groundwater for
13 organics. There are many different contributors along
14 the way. Individuals who prepared the glassware
15 and individuals who prepared the sampling and installed
16 the wells, who take the samples. That is at 10232.

17 As well, questions arose during the
18 course of the hearing about whether the Gartner, Lee
19 wells were located in the fracture zones. A number of
20 people cross-examined Mr. Feenstra on this point.
21 Under cross-examination by Mr. Tidball about the
22 placement of piezometers at GL-24, Mr. Feenstra admits
23 that at this stage it would be hard to conclude one way
24 or another whether they represent the weakly fractured
25 shale zone or the more fractured weathered shale. That



1 is at 10402.

2 Mr. Feenstra agreed that because the
3 Gartner, Lee monitors weren't instrumented for
4 fractures, we don't know which zones these piezometers
5 are installed in. As well, another problem with, for
6 example, the modelling done by Dr. Rowe is that we have
7 no way of knowing how reliable the data is for leachate
8 concentrations. As well, we still don't know whether
9 we are intersecting the more significant or fastest
10 groundwater flow paths from the site. I would submit
11 we only have information from a few wells downgradient
12 from the Burlington Site and we do not have continuous
13 core sampling done at these wells to help us further
14 delineate the fracturing.

15 Point seven, we would also ask the Board
16 to find that the leachate collection systems at Site F
17 must function for the contaminating lifespan of the
18 site. Here I mean both the under-drains and any
19 perimeter drain that might be installed. Further, in
20 the event of failure, this would lead to surface water
21 contamination, both the result of mounding in the case
22 of the failure of the under-drains and groundwater and
23 ultimately surface water contamination if the perimeter
24 system fails. Any assumption of failure of the
25 leachate collection system at D must be applied equally



1 to Site F and I agree with Mr. Hodgson on this point.

2 Here, Mr. Chairman, I must take issue
3 with a portion of Ms Cronk's argument in which she
4 tried to establish that Site F really didn't need an
5 under-drain. To that end, she quoted Dr. Rowe who, I
6 believe, testified it was desirable but not necessary.
7 In my submission, I believe the statement totally
8 misunderstands the hydrogeology of the site. This
9 issue of the proper, if you like, efficiency or
10 usefulness of the drain was first raised in cross-
11 examination of Mr. Sobanski. I was discussing with him
12 his terminology in his report that the drains were 93
13 to 96 per cent efficient.

14 At page 8669, Mr. Sobanski agreed that
15 under natural conditions the recharge rate is the same
16 which occurs when the leachate drains are installed and
17 here we are talking about under-drains. He said the
18 drains don't alter the recharge rate beneath the
19 landfill and agreed that the capture efficiency is
20 close to zero. That is where he says that is why we
21 can't overcome those vertical gradients at the site.
22 However, and this is important, Mr. Sobanski agreed it
23 does not stop the groundwater component, but the under-
24 drains would pick up all the components that would have
25 run off on discharge. I think this point is directly



1 related to the need for these under-drains to be in
2 place for the contaminating lifespan of the site.

3 I also questioned Mr. Feenstra on the
4 drains issue and it is important at this point that he
5 was -- when he first testified, that he was relying on
6 Trow's evaluation of the significant pathways. At page
7 8691 he agreed that lateral migration through the
8 weathered shale was not considered to be a significant
9 pathway due to the combination of the effect of
10 of near-surface discharge in the weathered zone close
11 to the site and the collection of a portion of that
12 migration from a perimeter drain. At this point, we
13 must remember that Mr. Feenstra is talking about a
14 three-metre deep perimeter drain proposed by Trow and
15 he was, at that time, relying on the hydrostratigraphy
16 proposed by Trow.

17 He went on to say that he only
18 considered the deep pathways through the weathered
19 weakly shale and laterally through the highly fractured
20 shale zone. Mr. Chairman, how times change, or more
21 specifically, how cases change!

22 To continue, in answer to a question
23 from Dr. Kingham on how to compare Site D and F, Mr.
24 Feenstra says that even when the drain system at Site F
25 is functioning, as designed, there is, and it is



1 interpreted that there would be some amount of leakage
2 which by-passes the collection system. That is page
3 9684. Dr. Kingham went on to ask him why he didn't
4 consider failure of the drains. He said where the
5 drain is not functioning there will be a higher level
6 of mounding and an increase in volume and velocity in
7 terms of what penetrates the subsurface and that the
8 largest proportion would divert laterally through the
9 weathered shale rather than downward. I think what we
10 have learned now is that that is going to be the case,
11 that we are going to have this lateral migration
12 through the active zone.

13 However, at that point in time they were
14 talking about the five per cent leachate leakage
15 factor. Mr. Hiraishi was also questioned about the
16 under-drains. I raised the possibility with him that
17 if the under-drains failed, the solid perimeter pipe
18 wouldn't, in fact, collect leachate and the leachate
19 would travel laterally through the weathered shale into
20 surface water. He said that should that happen, the
21 leachate would travel along the trenches and at that
22 design stage he would be specifying seepage collars.
23 However, Mr. Hiraishi agreed that right now the design
24 did not specifically cut out lateral flow in the upper
25 shale.



1 I then referred him to his contingency
2 which at that time was a perimeter drain to the depth
3 of three metres. I suggested to him that there was a
4 range in Mr. Sobanski's interpretation of the geology
5 and thickness of the weathered shale. Prophetically, I
6 guess, I suggested to him that from an engineering
7 point of view, a three-metre drain would not be
8 effective in cutting off flow through a zone which
9 might be 10 to 11 metres thick. Mr. Hiraishi agreed
10 and said that in that case, some leachate would be
11 expected to go down underneath the perimeter drain.
12 That is 11662.

13 We had some more discussion on this
14 point. Mr. Hiraishi agreed that if the tiles were at
15 the interface between the weathered and massive shale,
16 this is where we are back at the old Trow theory here,
17 that we would expect to collect more leachate. He said
18 he relied on Mr. Sobanski to provide him with the input
19 on where to put the drains and "he is the one that has
20 given me these three metres". That is at 11663.

21 Then, I put it to him that from an
22 engineering standpoint, it might be more effective to
23 put the drains at the bottom of the weathered shale and
24 Mr. Hiraishi's answer was interesting in light of a new
25 theory of the active and shallow zones. He said there



1 is no question that if you can identify such a horizon
2 to begin with, indeed we will be able to collect more.
3 The question and uncertainty here is where in fact is
4 the thin blue line.

5 In regard to the liner issue, it is our
6 submission that if Site F were approved that there
7 should be a condition that a liner is necessary. We
8 have heard evidence about the need for a liner from CRA
9 and Mr. Bowen. The major reason for a liner is the
10 fact that with one, one can predict the amount of
11 leachate escaping from the shale. Presently, I think
12 it is fair to say we don't know exactly what the
13 permeability of the fractured zones are at Site F. It
14 will be this permeability that controls the leakage
15 into the shale. This is an uncertainty. The liner
16 gives us some certainty. As well, as the testimony of
17 CRA and Mr. Bowen, there are some comments of
18 Mr. Sobanski that may be relevant.

19 On page 8672, I questioned Mr. Sobanski
20 about the liner and at that time he stated that 10,000
21 cubic metres a year would be escaping into the shale
22 and that a liner might cut off the leakage
23 approximately by half to 4400 cubic metres. At that
24 time the calculations were based on the fact that the
25 liner was going to be 10^{-8} permeability and the weakly



1 fractured shale was estimated to be 10^{-7} .

2 The first point I would like to make
3 here is that Mr. Sobanski agrees that at the 10^{-7}
4 permeability which is the key, I think that is the
5 whole trick. It is the permeability of the shale that
6 is the key as to how much goes into it. If you have,
7 obviously, the same permeability as your expected
8 liner, 10^{-8} , then you don't need a liner. If the
9 permeability is greater, then the argument for a liner
10 becomes stronger and if -- of course, the higher the
11 permeability away from the 10^{-8} liner, the more -- the
12 same amount will seep through but you will be
13 collecting more on top of that liner.

14 Now, Sobanski agrees that it was
15 estimated that his 10^{-7} was estimated and agreed that
16 if permeability were higher, in other words, 10^{-6} , that
17 the leakage rate without a liner would be 100,000 cubic
18 metres a year. I think my point here is similar to the
19 point I think Mr. McQuaid was making yesterday, that
20 with a liner there is a certainty about what will be
21 leaking out beneath it. The key is that we will be
22 able to know what the permeability of the liner is. We
23 don't know, to this day, what the permeability of the
24 transmissive fractures will be. That is the point of
25 my example with Mr. Sobanski was to show that 4,400 out



1 of 10,000 may not seem that much, although I would
2 still submit that is significant. Forty-four hundred
3 instead of 100,000 cubic metres a year is a lot more
4 impressive.

5 In my cross-examination of Mr. Feenstra,
6 I had a discussion with him about how the number of
7 10^{-7} was derived. First of all, as we had heard, it
8 was an assumed number and Mr. Feenstra confirmed it
9 wasn't derived from field measurements. I then took
10 him to the Trow permeability data and first of all,
11 Mr. Feenstra did agree that, if you like, the HC series
12 of wells were the only wells where we had the detailed
13 logging done and where we can tell where the highly
14 fractured unit is. That is at page 10,233.

15 Going through the permeability data for
16 the so-called weakly fractured zone, Mr. Feenstra
17 agreed that out of 13 results, four had a permeability
18 of less than 10^{-7} . Nine were greater than 10^{-7} and six
19 out of 13 were an order of magnitude or more more
20 pervious.

21 I suggested to him wouldn't it have been
22 more conservative to assume a permeability of 10^{-6} .
23 Mr. Feenstra said assuming the intervals drawn on H-220
24 are the definitive infiltration that on that basis it
25 appears that 10^{-6} might not be an inappropriate number



1 to use as a horizontal hydraulic conductivity number.
2 That is found on page 10208.

3 We also had a discussion about the
4 thickness of the unit where I was suggesting that the
5 unit in reality was much thinner than modelled. Mr.
6 Feenstra agreed that the actual values that were used
7 for hydraulic conductivity and thickness were not the
8 most conservative values which could have been applied.
9 That is 10226.

10 Of course, now we know the evidence is
11 that the permeable zones and the active zone may be in
12 the order of 10^{-4} . The fact is that a liner will
13 provide certainty about the leakage into the shale.
14 This is a point that Mr. Bowen makes in his report in
15 testimony. As well, he pointed to the need for
16 perimeter drains and purge wells to cut off the active
17 zone. It must be remembered that Mr. Hodgson, who did
18 not cross-examine Mr. Bowen, tried instead in argument
19 to try and torture the transcripts to get a contrary
20 view. With respect, Mr. Chairman, there is no basis on
21 which to come to any other conclusion than that Mr.
22 Bowen was recommending a liner for Site F on the basis
23 of added certainty.

24 We have heard already that there is no
25 certainty the active zone will actually be cut off



1 completely. We must remember that Mr. Feenstra
2 initially was only talking about drains to a depth of
3 five to six metres even though the zone may range from
4 zero to 20 metres. If the active zone is not cut off,
5 then there will be a percentage of leachate which will
6 be able to travel laterally and discharge to the
7 surface waters that run through the Aldershot
8 community. As well, the drains may fail. If they do,
9 travel time through the active zone will be very fast
10 and surface water may again be affected. A liner would
11 provide some certainty.

12 In my submission, the Board, if they
13 approve Site F, should do so with a liner and a
14 perimeter drain purge well set up as proposed by Mr.
15 Bowen. It is my submission that it is not a redundancy
16 given that we have no guarantee of whether the drains
17 will be able to cut off flow in the active shallow
18 zone.

19 Now, on the issue of contingencies, the
20 Milton interests have argued that with the Feenstra
21 fracture theory and any installation of purge wells at
22 Site D, that there is no contingency plan before the
23 Board. I disagree.

24 First of all, I will be saying more
25 about this later, it is my submission the Board should



1 reject the fracture theory and the site should proceed
2 as originally proposed, that is a hydraulic trap with
3 contingency purge wells. With either a trap or purge
4 wells in place, complete containment can be maintained
5 on site. As an aside, I could not understand why purge
6 wells are not preventative. In my submission, they
7 certainly prevent the migration of contaminants off-
8 site. It should be noted that in the case of Site F,
9 what is now being proposed is either a lined or unlined
10 site depending on people's submissions here but one
11 definitely with a perimeter drain and purge wells as
12 part of the site design. You see that even in Milton's
13 proposed conditions as well as NSP's.

14 I can pose the same question here as the
15 Milton interests. Where are the contingencies if the
16 purge wells are put in as part of the primary design on
17 Site F? The answer in both cases is common sense. You
18 put in new purge wells. Again, I submit it is a two-
19 edged sword being argued by the Milton interests.

20 I would like to deal with a point Ms
21 Cronk raised about past investigators. She has, both
22 in her argument and during various cross-examinations,
23 raised the fact that many investigators have studied
24 Site F over the years. In fact, in one of the NSP
25 newsletters it states that this is one of the most



1 studied landfills in Ontario. In a rather broad-brush
2 approach, she says "Well, they were really saying the
3 same thing about the site." I would urge the Board to
4 reject this type of approach. I suggest a better view
5 is that a good number of these consultants had a wide
6 variety of views on such key issues as the permeability
7 of the fractured shale at various depths, possible
8 areas of discharge, exfiltration rates, et cetera. You
9 must remember that going into this hearing, we had
10 Ms Hewetson's thesis and the resulting papers which
11 have been published in peer review journals detailing
12 the conclusion that a plume had migrated some 800 to
13 900 metres downgradient from the Bayview Site.

14 What I suggest is that all these studies
15 point out is this site is highly complex. The one fact
16 they all agree on is that there are strong vertical
17 gradients on the site and that the site cannot be
18 designed as a hydraulic trap.

19 Ms Cronk would like you to find for Site
20 F on a literal weight of evidence approach. In other
21 words, pile all the reports in of Site F in a pile and
22 compare them to those on Site D. With all due respect,
23 the Board must look at the context in which these
24 reports were done and what the hydrogeologic
25 interpretations were.



1 I would like to stress that first, a
2 number of the early investigators were retained by NSP
3 to examine the site potential for landfill, and were
4 not asked to do a comparative examination with Site D,
5 a clay till site. Mr. Brian Beatty, who attended the
6 hearing from time to time, was not called as a witness
7 and of course was not cross-examined as to his opinions
8 at this time. In fact, Mr. Beatty was called on behalf
9 of the old Site F residents at the OMB hearing and
10 there is a reference to his testimony in B-353. He was
11 called as a witness during this hearing.

12 MR. LEITCH: He was called as a witness
13 on behalf of the Town of Milton.

14 MS VIGOD: At the Milton interests at
15 that hearing.

16 Dr. Cartwright was also not called to
17 see which site he might have preferred given the
18 choice. The same applies to Dr. Cherry. Finally,
19 Gartner, Lee, who did testify at the 1984 hearing in
20 regard to the expansion of the Burlington Site, had
21 stressed the fact that the till in the northern
22 barriers would serve as a natural attenuation feature.
23 Again, they were not called in regard to the
24 suitability of this site.

25 It is submitted that while some of the



1 data generated by these investigators, the water
2 levels, permeability factors should be taken into
3 account, the interpretation should not be given very
4 much weight by this Board. It must be noted that none
5 of the earlier investigators had the benefit of Trow's
6 detailed site work, including the pumping tests, which
7 generally, I believe all witnesses have testified, are
8 more reliable permeability tests because they deal with
9 a larger area of the rock, nor do they have the
10 continuous core sampling work that Trow conducted.

11 In summary, we have seen that as far as
12 the hydrogeology of Site F is concerned, we have been
13 dealing with a moving target that in my submission has
14 moved a fair deal. The bottom line is that Site F is
15 not a containment site and a fair amount of work still
16 needs to be done to delineate the active zone and, if
17 you like, find out where that thin blue line ends.

18 There are uncertainties as to whether a
19 drain will be sufficient to attempt to cut off the flow
20 in the zone or whether purge wells will also be needed.
21 The exact location and cost of these measures is not
22 known. The Ministry has recognized the need for
23 further work, the conditions filed by Mr. Tidball.
24 Even Milton has asked the Board to accept the site
25 with perimeter drains and/or wells as attested to by



1 Mr. Feenstra. Again, it is only coming in reply to Mr.
2 Bowen's evidence and a change in the theory of the
3 site. Again, it is for this reason of uncertainty that
4 we would submit that -- and here again, we don't think
5 Site F should be approved, but if the Board approves
6 Site F, we believe a liner should be ordered and a
7 condition written in.

8 In other words, by installing a liner of
9 10^{-8} we would know what the permeability of the barrier
10 would be and can calculate the amount of leachate
11 getting by. Without a liner, there will always be
12 uncertainty as to whether there are fractures below the
13 active massive interface which are still elusive.

14 I would like to turn to a discussion
15 briefly on Site D. In regard to Site D, we are asking
16 the Board to make a number of findings.

17 Firstly, we would ask the Board to find
18 that Site D can operate as a hydraulic trap and that
19 leachate can be contained on this site. In the event
20 of any failure 20 to 30 years down the road, it is our
21 submission there will be ample time for purge wells to
22 be installed and it has been estimated that the
23 contaminants will take approximately 60 years to reach
24 the site boundary. This is, of course, without the
25 fracture theory. We would also ask the Board to find



1 that purge wells are a feasible technology which can be
2 installed quickly and effectively at Site D.

3 Last week, Dr. Kingham, I guess it is
4 probably two weeks ago, in questioning Mr. Estrin,
5 asked about in the face of uncertainty whether
6 conservative assumptions weren't the way to go. He
7 gave the analogy of not being sure whether you had
8 three oranges or four, but having a bushel large enough
9 to contain them in either event.

10 It is my submission that in regard to
11 the issue of the continuity of the upper granular unit
12 that is exactly the case here. No hydrogeologist has
13 testified that the unit is continuous. There is
14 clearly some doubt as to whether it is. However, all
15 hydrogeologists have accepted the assumption that the
16 unit is continuous for the purposes of calculating off-
17 site migration of leachate. This is truly a worst case
18 scenario and one used for the critical pathway at
19 Site D.

20 It is submitted that while everyone
21 agrees it would be worthwhile to answer the question of
22 the continuity of the unit, it is not contrary to Mr.
23 Estrin's submissions that the effective design of this
24 site is a containment site. It will basically only
25 assist in determining how conservative the contaminant



1 migration models are. If the unit is not continuous,
2 then the off-site wells located in the upper granular
3 unit will be even more protected. This also has
4 important implications for what has become known as the
5 shadow effect as stated by Mr. Feenstra.

6 If the unit is continuous, it will be my
7 submission that any cutting off of recharge under the
8 landfill site, would be offset by water flowing into
9 the unit from off site and what would be created would,
10 in fact, be a regional hydraulic trap. If the unit is
11 not continuous, then again there would be no danger of
12 off-site migration.

13 We will be asking the Board to reject
14 the fracture theory as set forth by Mr. Feenstra in
15 reply. At that time, Mr. Feenstra brought forward
16 three new theories. In my submission really, three
17 trial balloons. The first and most important is the
18 fracture theory. The second is the shadow theory and
19 the third is the excavation or heave theory.

20 Under cross-examination and even in
21 examination-in-chief, I think it is fair to say that
22 Mr. Feenstra played down the significance of the latter
23 two hypotheses. In regard to the excavation or heave
24 theory, he agreed he was not a geotechnical engineer
25 and that that was beyond his expertise. The Region



1 chose not to put any questions about whether such a
2 theory might apply at Site D to Mr. Bowen who is a
3 geotechnical engineer. We questioned Mr. Feenstra
4 about the fact that the removal of the glacier from
5 Site D would have been the removal of a far greater
6 weight than the excavation of four metres of till from
7 the site. Again, I refer the Board to pages 43665,
8 Volume 175, where in response to a question by Dr.
9 Kingham about this excavation theory, in light of the
10 evidence of unlikelihood of liner fracturing under a
11 considerable height of refuse and water Mr. Feenstra
12 said:

13 "I don't believe and I certainly didn't
14 intend to pass judgment on the
15 hypothesis of how possible heaving and
16 stress relieving at the base of the
17 landfill at Site D."

18 Mr. Chairman, this trial balloon has
19 fallen rather flat in my submission.

20 In regard to the shadow theory, I adopt
21 Mr. McQuaid's submissions made yesterday. As well, the
22 submissions I earlier made on the relationship of
23 whether the UGU was continuous or not, that leaves the
24 fracture theory. In our opinion the Board should
25 reject the fracture theory.



1 First, as Mr. Feenstra said clearly on
2 numerous occasions, there is no direct data on Site D
3 that would lead one to a conclusion that the till was
4 fractured. Data gathered did include tritium tests,
5 permeability tests, pumping tests, et cetera, and no
6 conclusion that the till is fractured.

7 Secondly, we must look at the context in
8 which Mr. Feenstra developed his theory and where it
9 came from. First of all, all hydrogeologists until
10 Mr. Feenstra in reply, took it for granted that the
11 unweathered upper till was not fractured. Trow set it
12 out in their report and on the basis of the evidence
13 before the Board, I believe generally stated, it has
14 been the opinion of hydrogeologists in Ontario that
15 unweathered tills do not have fractures of concern.
16 The only debate at this hearing had been on the
17 hydraulic conductivity to be assigned for this unit.

18 If we recall this debate over whether
19 Mr. Sobanski's 8×10^{-8} was a reasonable number ranged for
20 days. However, in my submission, it was a debate about
21 a half order of magnitude, it was exactly that, half an
22 order of magnitude question. In my submission, the
23 Board doesn't even have to necessarily come up with a
24 number, but can state a range and within that range we
25 are sure that any off-site impacts in the case of the



1 failure of the landfill will be minimal.

2 This kind of debate was also raised by
3 Milton in regard to the permeability of garbage.
4 Again, from the total weight of evidence, I would
5 submit that Mr. Sobanski's 10^{-4} is a conservative
6 enough number and again, we also have the evidence that
7 this quibble is just a quibble. I would contrast these
8 kinds of so-called uncertainties to the dramatic shift
9 in evidence we have had at Site F where a highly
10 fractured drain discharging into a neatly defined
11 discharge area has long ago bit the dust.

12 Turning back to the fracture theory,
13 where did this come from? Mr. Feenstra testified he
14 was relying almost entirely on Mr. Ruland's Master's
15 project. The first key point is that Mr. Ruland's work
16 and conclusions were in relation to the Sarnia tills.
17 Mr. Feenstra was the one who took these conclusions and
18 extrapolated them to the Halton till at Site D many
19 kilometres away. We must remember the debate that took
20 place in relation to CRA's sampling of the till on the
21 highway outside Site D. That was attacked as not being
22 representative of the actual site. Here we have Mr.
23 Feenstra extrapolating circumstances at the Sarnia till
24 many kilometres away. As well, in cross-examination,
25 it became clear that Mr. Feenstra had not seen any of



1 the raw data used by Mr. Ruland and that in some
2 circumstances there might not even be any as students
3 have different practices than consulting
4 hydrogeologists in doing borehole logs.

5 As well, it was clear in Mr. Ruland's
6 project, that he had relied on the Rodvang thesis which
7 Mr. Feenstra admitted he had not read until the City of
8 Burlington provided him with a copy during these
9 proceedings. In turn the Rodvang thesis refers to
10 other earlier testing that was done by other
11 investigators. Mr. Feenstra agreed that Mr. Ruland,
12 because of the nature of his work, did not go into many
13 details about the physical characteristics of the
14 Sarnia till. It is our submission that the evidence
15 shows that there are important physical differences
16 between these two tills and Mr. Feenstra did not look
17 into these differences before transferring the Ruland
18 thesis to Site D. Again, I took him through a
19 comparison of some of the grain size analysis done at
20 Site D in relation to the Sarnia tills which are
21 considerably more clayey.

22 Again, and I put this strongly before
23 the Board, Mr. Hodgson had the opportunity to raise
24 those matters with Mr. Bowen but chose not to. In that
25 regard, the transcript, there may be an inference from,



1 I guess, some of the material that has come out in this
2 hearing as to the timing of various events. It appears
3 the Region may have still been seeking instructions as
4 to what to do with the Feenstra thesis when Mr. Bowen
5 was on the stand. There is an examination of some of
6 these dates in the transcript, but in any event, there
7 was an opportunity to raise these matters and the
8 Region chose not to.

9 Again, I refer the Board to a general
10 discussion I had with Mr. Feenstra in Volume 175 about
11 the issue of scientific uncertainty. That is found at
12 page 43627. Again, there I went through a discussion
13 with Mr. Feenstra, it starts at 43622, about the issue
14 of scientific truth and uncertainty in the context of a
15 Board with a decision to make.

16 Mr. Feenstra first agreed that there
17 certainly were uncertainties involving the siting of a
18 landfill when we don't know exactly what is going on
19 below the earth and that we also had degrees of
20 confidence in various hypotheses or conclusions that
21 are made about a particular site. We discussed a
22 continuum of, I guess, the remotely possible at one end
23 to the, if you like, 95 per cent confidence level.
24 Mr. Feenstra readily agreed that hydrogeology 95 per
25 cent confidence would certainly be a high level. I



1 guess -- we went on to discuss that between these
2 extremes would be the probable hypothesis and various
3 remotely possible or less probable hypotheses. it
4 would be my submission that these hypotheses or trial
5 balloons that have been brought to this hearing by Mr.
6 Feenstra are at that one end of the continuum, near the
7 remotely possible and for that reason, this Board
8 should reject these hypotheses of being again in the
9 realm of research and academia.

10 I would like to now turn to a discussion
11 in part of Mr. Bowen's evidence. I wonder,
12 Mr. Chairman, I think I am running out of breath,
13 whether we might break now.

14 MR. LANCASTER: I was going to suggest
15 we do. We will return at 1:45.

16 DR. KINGHAM: I would remind everyone
17 that we did get some comments on this locational map.
18 if there are any other comments, please let us know
19 before the end of the day, so that we can return
20 them to Ms Henderson.

21 --- Luncheon recess at 12:10 p.m.

22 --- Upon resuming at 1:48 p.m.

23 MR. LANCASTER: Please be seated.

24 MS VIGOD: Mr. Chairman, I would like to
25 turn to a discussion of Mr. Bowen's evidence.



1 Mr. Bowen was qualified both as a hydrogeologist and
2 geotechnical engineer with considerable experience.
3 His qualifications, of course, were not challenged by
4 any of the parties. Mr. Bowen worked at Golder
5 Associates before forming his own firm, Terraprobe, in
6 1984, of which he is principal and vice-president. He
7 has had considerable experience dealing with a number
8 of the issues that the Board has heard evidence on at
9 this hearing.

10 These would include groundwater flow in
11 fractured rock, including detailed drilling, permeable
12 testing and rock core logging. He has also had
13 experience with site assessments for municipal
14 landfills. As we have heard, he was first retained by
15 the West Burlington Citizens Group in 1985 to do an
16 independent review of the hydrogeologic aspects of the
17 site selection process and later the detailed
18 investigations of Site D and F.

19 Mr. Bowen reviewed the key documents and
20 was either present for or read the transcripts of many
21 hydrogeologists who have testified before the Board.

22 Now, Mr. Bowen had both the advantage
23 and disadvantage in being the last of the
24 hydrogeologists to testify before reply evidence was
25 called. In fact, much can be said in the same as to



1 the position I am in here as counsel at the end of a
2 long list of other counsel.

3 Mr. Bowen had the advantage, I would
4 submit, of having heard all the other testimony and to
5 sift through the documentation and come to various
6 conclusions as to what evidence he agreed with and that
7 which he did not. This is what he did in his report
8 and he referenced clearly the documentation he was
9 relying on in coming to his conclusions. It is fair to
10 say that Mr. Bowen did not want to duplicate,
11 unnecessarily, material that was already filed in
12 evidence by others.

13 In my submission, Mr. Bowen was the
14 first hydrogeologist to realize the design implications
15 of the change from the Trow sandwich theory to the
16 active, inactive zone understanding of the site. Mr.
17 Bowen traced his opinion chronologically as new data
18 became available. His opinion on Site D remained
19 little changed. It was an overburden site which had
20 several advantages including the ability to provide
21 containment by means of a trap. Good natural buffer
22 and a low permeable till and relatively well understood
23 geology ... There was also the ability to implement
24 contingencies in the event that the trap did fail.
25 That is all in the transcript at 38660. The bottom



1 line of his position is that D is a containment site
2 which is predictable in a hydrogeological sense and
3 better suited than F for landfilling.

4 F, on the other hand, a site which by
5 design would create an off-site impact. He said there
6 definitely would be an escape of leachate from this
7 site and this would leave the site boundaries. It is
8 not a containment site. I don't think there has been
9 anyone who has denied this. The geology was less
10 understood, which may be, in fact, difficult to
11 predict. After receiving Trow's report, Mr. Bowen
12 tried to plot the data onto the Trow delineation of
13 zones as found in H-40. He referred to the CRA overlay
14 and noted there were inconsistencies in the
15 distribution of fractures. For example, in the weakly
16 fractured massive shale, and there were other
17 variabilities and inconsistencies. I guess I have gone
18 through some of this already in my cross-examination of
19 Mr. Sobanski and others.

20 As Mr. Bowen stated, why are these
21 inconsistencies important? The reason he stated on
22 page 38867 is that in Trow's modelling of the off-site
23 impact, the weakly fractured shale was deemed to have a
24 low hydraulic conductivity and to exhibit some control
25 on the amount of leakage. Yet, there were some zones



1 with a high degree of fracturing, sometimes greater
2 than the shale below it.

3 On the other hand, the highly fractured
4 unit was supposed to be a drain used to influence the
5 location and nature of groundwater from the site. It
6 was to perform this function because of its high
7 hydraulic conductivity compared to the other units. If
8 we look at the real data, Mr. Bowen said we see that it
9 did not exhibit this high hydraulic conductivity.

10 Now, Mr. Bowen has testified that the
11 difficulty in making an interpretation at Site F was
12 because of the site lithology. That is the nature of
13 the character of the material beneath the site.
14 Mr. Chairman, I would stress that this is an important
15 fundamental difference between Sites D and F in terms
16 of our ability to understand and predict groundwater
17 behaviour beneath the two sites.

18 Mr. Bowen noted that on the basis of
19 visually examining the core samples at Site F, it is
20 very difficult to assess what the hydraulic properties
21 of the shale are and how much groundwater flow and
22 groundwater transmission may occur. It is difficult to
23 look at a fracture and see what its aperture was within
24 the ground. On the other hand, if we look at Site D,
25 it is easier to categorize these strata based on visual



1 examination. In other words, one can easily tell the
2 difference between a clay till and sand and gravel.
3 Now, in Volume 40, Dr. Kingham asked Mr. Sobanski
4 whether in regard to Site D he was confident that he
5 would not have missed a major geological feature of the
6 site.

7 "As confident as you are you say you
8 would not have missed a major feature."

9 And Mr. Sobanski's reply is:

10 "We believe that we have given a
11 reasonable, plausible description for
12 the mechanism by which groundwater moves
13 at this site. The fracturing obviously
14 is a complexity that has a greater
15 degree of complexity at Site F than it
16 does at Site D. I don't believe that we
17 have missed anything major."

18 I stress again, the fracturing obviously
19 is a complexity greater at Site F than D.

20 In my cross-examination of Mr. Feenstra,
21 the first time he appeared before the Board, I
22 questioned him as to whether it was more difficult to
23 delineate the boundaries in a unit in a material that
24 is the same lithology, that is shale, rather than
25 distinguishing between till and shale.



1 At page 10199, Mr. Feenstra agreed

2 saying:

3 "Yes, there is a considerable difference
4 between the hydrostratigraphic units
5 developed for F and D. At D the
6 difference in units is largely expressed
7 by the actual difference in the texture
8 of the soils going from sands to silty
9 clays. At this point, the lithology,
10 nature of the shale bedrock is
11 reasonably similar. What distinguishes
12 one zone from the other is the hydraulic
13 properties being influenced by secondary
14 features such as fracture zones or other
15 discontinuities. So, there is a
16 fundamental difference between the two
17 sites."

18 That is, again, Volume 45.

19 Mr. Beechinor noted that particularly in
20 the bedrock where there isn't, and this is the bedrock
21 at Site F, where there isn't a distinct difference in
22 lithology, it becomes interpretive. That is where you
23 precisely draw the lines between those units. He says
24 it is not a Site D situation where you can go from the
25 till into the sand and say "Well, there is the line.



1 Here we have to make some judgments."

2 Unfortunately, I would submit that
3 Mr. Beechinor and Mr. Sobanski's judgment was wrong in
4 this case as the sandwich theory did not reflect the
5 actual data. Again, the lithology is recognized by all
6 hydrogeologists as key to the difference between the
7 two sites.

8 Again, I would just cite
9 Dr. Charlesworth on this point. He agreed with me that
10 those clearly defined zones at Site D are clearly
11 definable because they are visually definable and we
12 can tell a granular unit from a till unit. At F, he
13 agreed it is more difficult to identify those various
14 fracture zones on a visual basis. That is page 22014.
15 Here the delineation is important as it was fed into
16 the contaminant transport model. That again, we come
17 back to the thin blue line.

18 Mr. Bowen's second point was that it is
19 difficult to understand groundwater flow through a
20 fractured bedrock material except on a very large
21 scale. As he said, within several hundreds of metres,
22 it is difficult to understand the flow system. He also
23 said it was difficult to interpret the properties of
24 the fractured rock, and that is page 38807.

25 He made the further point that most of



1 the testing developed to understand permeability or
2 hydraulic properties are based on an analysis of porous
3 media and not fractured media. At this point he
4 referred to the Blackport, Sudicki and Cherry exhibit,
5 WB-226, which concluded that the velocity of
6 groundwater flow in fractured rock is difficult to
7 assess on a local scale.

8 At page 10221, Mr. Feenstra agreed that
9 the groundwater velocity, taking into account the
10 permeability thickness and dispersivity are all perhaps
11 more easily measured at Site D. He also agreed that
12 there was a greater experience with contaminant
13 transport modelling through a porous medium such as
14 till than in a fractured medium such as shale. Again,
15 after some discussion, Mr. Feenstra agreed that on a
16 scale of 50 metres to the site boundary, it probably is
17 not representative to consider a fractured media as an
18 equivalent porous media. Again, this view accords with
19 Mr. Bowen's.

20 Mr. Bowen looked at H-220 and said there
21 is no clear distribution of fractures or hydraulic
22 conductivity that came to his eye. He said it consists
23 perhaps of a layered system of many complex layers in a
24 fractured and less fractured rock. Again, Mr.
25 Chairman, it would be my submission that Exhibit 220



1 without the nice delineation of zones perhaps best
2 reflects the real situation. That is a sandwich after
3 a few bites have been taken. A variable complex system
4 of fractures. This is important because it is the most
5 important fractured zones that are going to transmit
6 water off-site.

7 The lithology issue is also important in
8 regard to the ability to monitor. Under cross-
9 examination, Mr. Feenstra acknowledged that to some
10 degree it is easier to monitor Site D because the
11 hydrostratigraphic units that transmit the majority of
12 the water, the contaminants, are defined by their
13 texture which you can observe through core samples on
14 the site while you are doing the drilling.

15 At F, important hydrostratigraphic zones
16 are not that obvious visually. One must perform a
17 close examination of the rock core and do some
18 hydraulic testing and probably do some pumping test to
19 determine the inter-connectivity of the zones one is
20 interested in. From that point of view, monitoring at
21 Site D would be more straightforward. That is page
22 10337.

23 Mr. Chairman, we submit that Mr. Bowen's
24 evidence provided you an up-to-date summary under
25 lengthy evidence which he testified on. We believe



1 that the Board should find that Site F will have an
2 off-site impact on both groundwater and surface water
3 depending on whether a liner and deep collection drain
4 and purge wells are properly installed. Whereas, Site
5 D is a more predictable environment and can be made a
6 complete containment site. Again, we have the design
7 we started with at Site D, a trap with purge wells,
8 contingency, whereas at Site F we have a new
9 hydrostratigraphic interpretation.

10 Now, Mr. Feenstra first testified last
11 October and he was qualified as a hydrogeologist and a
12 hydrogeochemist. He is not an engineer. His role, as
13 we have seen, kept expanding through the hearing. At
14 the same time that Mr. Sobanski and Trow disappeared
15 from the scene, originally he was first approached by
16 Trow in the spring of '86 to provide advice to them on
17 the hydrogeochemical and geochemical aspects of
18 contaminant migration. That is page 9420. His results
19 were compiled in his July, '86 report. His next task
20 was to assist the Region's counsel in the spring of '87
21 during the cross-examination of Mr. Sobanski and Mr.
22 Beechinor. During the summer of '87, with the receipt
23 of additional chemistry data, Mr. Feenstra was engaged
24 to assess it. He then prepared his witness statement.

25 A number of points emerged from his



1 testimony the first time around. First of all, in
2 regard to Site D, he testified that with the trap
3 working, he stated there would be no off-site
4 migration. His conclusion was that where the hydraulic
5 trap is in operation and there is a net groundwater
6 flow into the landfill, there is no significant
7 potential for the egress of contaminants from the
8 landfill through the unweathered upper till reaching
9 the granular units. In my submission, this is the
10 position today with the hydraulic trap in operation.
11 There has been no one at this hearing that disagrees
12 with this. He then outlines the pathways for
13 contamination in the event of failure of the hydraulic
14 trap which again have not changed to this day.

15 The final, it should be noted that the
16 higher value of hydraulic conductivity for the lower
17 and upper granular units was used in all Mr. Feenstra's
18 impact calculations. In-chief, Mr. Feenstra was asked
19 to comment on the issue of the Gartner, Lee figure for
20 porosity. He stated that he thought the numbers came
21 from numbers in Manitoba. He stated quite adamantly
22 that the tills in Manitoba and Western Canada are very
23 different mineralogically and in their structure to the
24 tills of Southern Ontario. We have little reason to
25 believe that the parameters determined for western



1 tills can be related to Southwestern Ontario tills. It
2 is my submission that Mr. Feenstra did not take this
3 approach when attempting to compare the tills of Halton
4 and Sarnia.

5 I would like to deal with, if I might,
6 with an issue that Mr. Garrod raised in argument. He
7 referred to the Board to Exhibit H-312, which was the
8 memo from Mr. Hiraishi concerning liner costs for
9 Site D.

10 If we remember, this exhibit was
11 introduced through Mr. Watson and Mr. Hiraishi was not
12 cross-examined on it at that time. My first submission
13 is, first of all we do not think, it is our position
14 that a liner is not necessary at Site D. We want to
15 deal with what we think is a misunderstanding that
16 Mr. Garrod has as to the import of this exhibit.
17 Mr. Garrod cited the memo in which Mr. Hiraishi is
18 saying that the liner, in effect, would contravene the
19 basic underlying philosophy used to develop the design
20 and operations concept. His submission was that the
21 liner was in fact changing the concept of the hydraulic
22 trap.

23 First of all, it is clear from this
24 memo, in my submission, that Mr. Hiraishi was not
25 considering the installation of both the liner and a



1 trap, but rather a liner only without a trap and from
2 that practical engineering and design view, it would be
3 a change. However, Mr. Feenstra, in his witness
4 statement, in my submission, is talking about a liner
5 and a trap working together. The purpose of his liner
6 is to slow down contaminant migration in the event of
7 trap failure. It is not related to a change in the
8 design philosophy proposed for Site D. It is not
9 related, in fact, to what the liner would do, which is
10 just reduce the flow of water into the trap and in the
11 event of failure, reduce the outflow of leachate.

12 In my submission, it is not a drastic
13 change in design. Mr. Garrod's argument, I believe, is
14 not related to Mr. Feenstra's position on the liner.

15 DR. KINGHAM: When you say reduce the
16 flow of water into the trap, are you making an
17 assumption about the positions of the liner and the
18 trap as to which would be the bottom?

19 MS VIGOD: My position is the liner
20 would be below the trap and it would be used as
21 basically another layer of security.

22 DR. KINGHAM: That is where I thought
23 you started from but then I thought you said the liner
24 would reduce the volume of leachate going into the trap
25 and that is not clear.



1 MS VIGOD: When the trap is operating it
2 would because you have this fresh water coming in.

3 DR. KINGHAM: I think I understand now.
4 You are referring to the groundwater that would be
5 drawn into the trap.

6 MS VIGOD: That would be the change.
7 You would be collecting, in fact, less combination of
8 water and leachate with the trap operating and with the
9 trap failing, you would have less egress out, so, in
10 other words, the concepts work together. Whereas I
11 believe in my submission that Mr. Hiraishi was looking
12 at what if you went to a new concept and put in a liner
13 without a trap. That would be my submission that it is
14 not a drastic change in design although we certainly
15 would not advocate a liner at Site D.

16 Turning now to Dr. Hughes' testimony.
17 it is my position, and I agree with Mr. McQuaid here
18 that Mr. Hughes' evidence is of little assistance to
19 the Board. The comment that Mr. Hughes had
20 environmental blinkers on, I think is an apt
21 description.

22 Dr. Hughes was called to explain the
23 reasonable use and guidelines for engineering, the
24 reasonable use policy and guidelines for engineering.
25 First of all, I submit these are both guidelines. They



1 are not found in any regulations or legislation.

2 We will deal first with the reasonable
3 use guidelines. It is my submission that the Board
4 should reject the suggestion first raised by
5 Dr. Charlesworth that the reasonable use of shale under
6 Site F is leachate attenuation.

7 Dr. Hughes further testified that that
8 principle could be sustained by an interpretation of
9 the reasonable use guidelines. Again, I would ask this
10 Board to reject this contention.

11 First, let us look at what Dr. Hughes
12 knew or didn't know. I asked him first whether he
13 would agree that we must look at the governing
14 legislation and common law for any determination where
15 off-site degradation may be actionable. The fact was
16 he couldn't answer this, but in my submission, this is
17 exactly where one must look for an answer. I will be
18 referring to one case in a moment.

19 Dr. Hughes admitted he hadn't read the
20 Environmental Protection Act and the Ontario Water
21 Resources Act for ten years. He didn't know that this
22 was even an Environmental Assessment hearing where an
23 EPA approval was also being sought. He didn't know
24 that the purpose of the Environmental Protection Act
25 was the protection and conservation of the natural



1 environment. He said he was not in a position to
2 answer questions about the Ontario Water Resources Act.

3 I referred him to page 10 of the
4 Guidelines where there is the recognition that the
5 question of whether an effect is negligible and if
6 challenged could be established by the courts. He
7 agreed that we don't want to go to the courts to sort
8 these things out.

9 Mr. Chairman, here I would only note
10 that matters pertaining to the leaky Bayview Site are
11 already before the courts in a lawsuit launched by NSP.
12 They are exactly the kind of legislation this policy
13 would like to avoid. Dr. Hughes did not know whether
14 the policy of the Ministry in recent years is that
15 contaminants should be controlled at source and the
16 goal should be the virtual elimination of toxic
17 chemicals from Ontario's environment.

18 He admitted he didn't know what happens
19 "beyond my little corner of the world". He knew
20 nothing about the MISA policy apart from the fact that
21 it dealt with surface water and this is even though the
22 White Paper is a Government of Ontario policy. He knew
23 nothing about the air pollution program. He knew that
24 the Great Lakes Water Quality Agreement existed but he
25 had never read it. He didn't know anything about the



1 agreement referring to pollution from contaminated
2 groundwater even though he said his field was
3 groundwater.

4 What is important is that while Dr.
5 Hughes agrees the reasonable use policy does not deal
6 with surface water, there is a link between groundwater
7 and surface water in that groundwater often discharges
8 to surface water and he acknowledge that at page 41828.
9 I also took him to Exhibit WB-931, the advice to
10 applicants and consultants in preparing hydrogeological
11 reports which had a section on surface water.

12 Dr. Hughes did agree that you can't divorce the two,
13 groundwater and surface water, in terms of looking at
14 potential impact. He also agreed it is important to
15 have an understanding of the streams and their
16 locations in the vicinity of any proposed landfill.
17 However, this work was done by the Water Resources
18 Branch. He did agree it is important to know where any
19 contaminants were discharging to the surface. He
20 finally agreed that even where groundwater may be
21 naturally poor, it does not contain many of the
22 organics found in leachate.

23 I would just like to refer the Board to
24 the MISA White Paper, Exhibit B-930, the very last page
25 of that exhibit. if you have that ...



1 DR. KINGHAM: I am sorry, can you give
2 me the number again?

3 MS VIGOD: Exhibit 930, B-930. it is
4 the full White Paper, I believe.

5 DR. KINGHAM: That one seems to have
6 eluded us for the moment.

7 MS VIGOD: I can read it. It is the
8 very last page of that exhibit and the heading is
9 "Integrated Ecosystem Approach". The White Paper
10 says:

11 "The toxic contaminants problem is not
12 unique to water. Toxic contaminants
13 also pose a threat to air quality and
14 form toxic rain. Leachates from
15 landfill sites can potentially
16 contaminate..."

17 DR. KINGHAM: We have found our copy.

18 MR. HODGSON: Could we have a re-reading
19 of the second line?

20 DR. KINGHAM: Give us the page again.

21 MS VIGOD: It is the very last page, I
22 guess it is 53. Mine is cut off. I will start over:

23 "The toxic contaminants problem is not
24 unique to water. Toxic contaminants
25 also pose a threat to air quality and



1 form toxic rain. Leachates from
2 landfill sites can potentially
3 contaminate groundwater and surface
4 water supplies. All of these
5 circumstances are interrelated aspects
6 of an overall problem of environmental
7 degradation since toxic contaminants can
8 be transferred from one medium to
9 another. To provide an effective
10 solution to the management of toxic
11 contaminants, Ontario has introduced an
12 integrated and comprehensive strategy
13 for attacking all sources of these
14 contaminants in the ecosystem as a
15 whole. In this respect all the air,
16 water and land regulatory components
17 will be made compatible and
18 complementary."

19 In my submission, Mr. Chairman,
20 Mr. Hughes can't simply put his head in the sand and
21 ignore the relationship between surface groundwater or
22 ignore the philosophy found in the White Paper of
23 reducing contaminants at source.

24 Finally on this point, as to the issue
25 of whether the shale, the reasonable use of the shale



1 is leachate attenuation, I would refer the Board to the
2 case of R. vs. Falconbridge Nickel Mines. This case
3 involved a prosecution under the Ontario Water
4 Resources Act. At the time it was Section 32. It is
5 now, the relevant section is Section 16 of that Act.
6 There, the defendant was charged under the Act for
7 discharging contaminated waste water into an already
8 polluted lake. In fact the lake was found by the trial
9 judge to be more contaminated than the wastewater.
10 Nevertheless, the court upheld the conviction of the
11 accused holding that the applicable section of the
12 Ontario Water Resources Act covers any impairment,
13 whether that be to a body that is in pristine
14 condition, or has already suffered from the effects of
15 any discharge impairing its quality.

16 The court was concerned that the loading
17 of additional contaminants would produce increased
18 stress and prolong any recovery by the lake. There is
19 a reference to this concept of loading on page 145 of
20 the decision. The court says, the full paragraph about
21 two-thirds of the way down the page:

22 "The plain fact is that the water of the
23 lake before the mine water was
24 introduced was impaired."

25 Then, further on:



1 "Notwithstanding the fact that the mine
2 water was less impaired in its quality
3 than that already in the lake [this]
4 does not affect the ultimate result when
5 the less impaired mine waters were
6 introduced ... While the additional
7 waters may even have marginally reduced
8 the concentration in the lake, the mine
9 waters that were impaired were added to
10 waters in the lake that were impaired
11 and this has added to the load of these
12 minerals in the lake."

13 I think the concept -- the court is
14 saying that in fact, even if you are discharging a
15 cleaner effluent, you can't impair the water quality of
16 the lake. The definition, there is a discussion of
17 what "may impair" means in the statute and that is
18 found at page 142 of the decision and it refers to
19 earlier decisions R. vs. Sheridan and R. vs. Matspeck.

20 The court describes:

21 "Another definition was 'diminish in
22 quantity, value or excellence', 'cause to
23 become less or worse', 'deteriorate'.
24 The combination, therefore, of the two
25 words 'may impair' would appear to mean,



1 in the context in which they are used,
2 that as a result of the entry into the
3 water of a certain material there was
4 the possibility that the water might
5 become diminished in quality. In other
6 words it would appear from a
7 consideration of this phrase that it was
8 not incumbent upon the prosecution to
9 satisfy the court beyond a reasonable
10 doubt that the material did in fact
11 impair, but rather that it had the
12 ability to do so and might have done so
13 ..."

14 In my submission, in relation to the
15 issue of reasonable use being attenuation, first of
16 all, as we know, the shale material under Site F is
17 not, it is not a contained area. What is discharged
18 into the groundwater may very well, as we have heard,
19 exit into the surface water. It is certainly not
20 contained in that area. This may impair further water
21 quality, both groundwater and surface water. It is our
22 submission that the Board should not adopt a principle
23 that the reasonable use of shale, the contamination is
24 a reasonable use.

25 Before summarizing this part, I have a



1 few comments on, I guess the material Ms Cronk filed in
2 her argument, the advantages of Site F over Site D for
3 regional landfilling. I don't know if you have that.
4 it is a long paper under Ms Cronk's name.

5 I would like to just make some comments
6 on the first two points under hydrogeology and design.
7 I would start by saying that I believe Ms Cronk is
8 again comparing apples and oranges in her first point
9 to you. As we see on Site D, she starts with the
10 phrase "in the event of trap failure". So, what we
11 have, in fact, left out of this chart is the fact that
12 with the trap working, there will be no off-site
13 contamination. Further, she says:

14 "There will be rapid adverse impact on
15 existing groundwater resource that would
16 be exacerbated if it is fractured."

17 In my submission, there is no evidence
18 that in the absence of fractures that this will be
19 rapid. The evidence of Mr. Feenstra who did
20 contaminant modelling was that it would be somewhere in
21 the neighbourhood of 60 years before off-site migration
22 took place and that that would provide certainly enough
23 time for any contingencies to be employed if there was
24 a failure of the trap. As well, in this
25 characterization under Point 1, Ms Cronk does not say



1 that contingencies can prevent the impact if the site
2 fails at D.

3 In contrast, her point on Site F --first
4 of all she does not mention what would happen in the
5 event of drains failing at Site F. So, at least if we
6 are discussing trap failure, let us discuss drain
7 failure at Site F and there they would be, I think the
8 evidence is clear, contamination, potential
9 contamination of both surface and groundwater. Again,
10 also the fact that even if the designs are operating
11 there would be some discharge into the shale.

12 Again, while there is a mention of
13 groundwater users, there is not a mention of the fact
14 that there have been past impacts on surface water. I
15 will be saying more about this in a minute -- that we
16 might wish to avoid -- there are streams that certainly
17 find their way through the Aldershot area.

18 In summary, we would urge the Board to
19 find that Site D is the preferred site on the basis of
20 complete containment, either by the hydraulic trap or
21 in the event of failure by purge well systems.

22 Secondly, that it is a more predictable
23 geological environment. We would urge the Board to
24 reject Mr. Feenstra's three hypotheses.

25 In the alternative, if the Board finds



1 that Site F is preferable, it is our submission that
2 the site should be approved only if a liner and
3 perimeter drains and purge wells are installed to
4 achieve the highest degree possible of containment.

5 I am now going to go into the area of
6 social impacts. Now, Mr. Lederer made a very
7 interesting argument before you regarding social impact
8 assessment, an argument that I would urge you to
9 reject. He has stated that the use of social impact
10 analysis in a context of a public hearing should be
11 limited. He then went on to say, and I think the Board
12 should take some cognizance of these remarks and I
13 think I have got them fairly verbatim that he was not
14 sure of the value of Dr. Schiff's work before this
15 Board and that it was really up to the Board to make
16 these determinations and that he would look to the
17 Board to measure what is reasonable.

18 Mr. Lederer would also like the Board,
19 in its decision, to save proponents from future expense
20 and tell them they need not do a social impact study.
21 I have a number of submissions to make in this regard.

22 First of all, it is my submission that
23 what Mr. Lederer is asking you to do is amend the
24 Environmental Assessment Act and take "social" out of
25 the definition of "environment". The reason I say this



1 is that presently the statute provides that the
2 proponent of an undertaking has to submit an
3 Environmental Assessment which examines the impact of
4 various alternatives to the undertaking on the
5 environment which includes the social environment. By
6 saying that social impacts should just be left to the
7 Board, you can make the judgment by hearing the nearby
8 residents.

9 It is, in my respectful submission, an
10 abdication of the proponent's responsibilities under
11 the legislation. Under the Act a proponent is
12 initially responsible for evaluating the environmental
13 impacts of the proposed undertaking and weighing the
14 disadvantages and advantages of the alternatives by
15 looking at all the factors he must evaluate. The
16 hearing process may provide more information on all
17 these areas and then, of course, it is up to the Board
18 to weigh all the evidence before it in reaching its
19 final decision.

20 However, in my submission, a proponent
21 cannot just throw up his hands and say "Well, I won't
22 bother evaluating social impacts. I will leave it to
23 the potential intervenors and citizens to come before
24 the Board and make their submissions." It is just not
25 adequate. However, here we are dealing with a situation



1 where the proponent did consider the area of social
2 impact to be an area that required his attention. He
3 retained a consultant. in fact, two firms in this
4 case. The firm prior to Dr. Schiff and then Dr. Schiff.
5 As well, he used social impact as a screening criterion
6 which led to choosing of preferred sites. As well, we
7 heard that Dr. Schiff had another role as co-ordinator
8 of the public participation program and was one of the
9 people who the residents in the vicinity of the site
10 had to make their concerns known to at public meetings
11 and workshops. What I submit we have here is
12 repudiation of the work done by Dr. Schiff on social
13 impacts by the Region.

14 They are saying "Well, she didn't do a
15 good job, but that doesn't really matter because now
16 you have the evidence of the residents living around
17 both sites before you." Then they will say, "Well, we
18 will devalue her work and go to the Board to devalue
19 Mr. Lang's evidence as well." In this regard, I would
20 state the obvious. Had Dr. Schiff not issued her
21 report in which she denied the existence of a segment
22 of the members of my client's organization, they would
23 not have gone out and retained someone to meet the
24 assertions and contents of Dr. Schiff's Report.

25 It is my submission that by not doing a



1 consistent study, the Region excluded the community
2 from evaluation. There was no attempt to listen to the
3 concerns raised at the public meetings and no attempt
4 by Dr. Schiff to evaluate.

5 It is my submission that this exclusion
6 of the communities around Site F did cause stress to my
7 clients as was evidenced in their testimony before you.
8 They have suffered real effects from the existing
9 landfills and expect many of the same effects to occur
10 from the proposed Site F. Their own experience was
11 being denied by the Region. I would contrast this to
12 Site D where we are looking only at future concerns.

13 Mr. Lederer may be saying "Well, it is
14 not of any value now, but the social impact report
15 certainly formed part of the comparative analysis that
16 went on between the two sites." My clients wanted to
17 get an independent opinion as to whether the Region's
18 social impact assessment was adequate and to this end,
19 they retained Mr. Lang. It is my submission his
20 critique is of value to the Board in making their
21 determination of the social impacts of a proposed
22 landfill at Site F. I would point out that my clients
23 have met with, as Dorothy Pocock put it, a wall of
24 indifference from the Region and Dr. Schiff when it
25 came to evaluating their real concerns they have



1 experienced from the existing landfills in their
2 community and their concerns with the proposed Site F.

3 It is also my submission, the Board
4 should not accede to Mr. Lederer's pleas to let the
5 proponents off the hook here. While the field of
6 social impact may be new and while they may be
7 difficult to deal with, it does not mean that the field
8 is not developing and there is a growing experience and
9 knowledge at an international level of assessing social
10 impacts.

11 It is also my submission there is a role
12 for a social impact assessor. An assessor's role is to
13 analyze and investigate the citizens and communities
14 that might be affected by a proposed undertaking. This
15 can be of value to the Board in that otherwise you
16 would have, perhaps, an incomplete database of those
17 witnesses have come forward to testify. As well, an
18 assessor can research historical factors and do some of
19 the tasks that Mr. Lang undertook. In other words,
20 investigate other claims and do other research.

21 Further, in regard to Mr. Lang's
22 critique of the Region's social impact assessment, I do
23 not believe that lay witnesses are in a position to
24 analyze her work and offer a professional critique of
25 her report. I would submit that, first of all, the



1 Board should find that Dr. Schiff's social impact
2 assessment was flawed and she did leave out of her
3 analysis of Site F, the communities of Aldershot and
4 Forestvale. Coming to this position, I will be
5 referring to the testimony of Mr. Lang, my cross-
6 examination of Dr. Schiff and the testimony of my
7 clients.

8 Mr. Lang, who was qualified to give
9 evidence in the area of social impact assessment
10 testified that before agreeing to take on a retainer
11 with my clients, he did investigations to assure
12 himself there were grounds. He stated that he did not
13 want to be involved in a situation ... He did a
14 certain amount of research in coming to the conclusions
15 which were that 1) the residents' concerns were valid;
16 and 2) the Region's social impact assessment was
17 fundamentally flawed.

18 Mr. Lang outlined the methodological
19 framework for social impact which he was using. He
20 testified there is a fair amount of agreement on the
21 broad methodological framework. The five steps he
22 outlined at page 39820 include 1) scoping, trying to
23 reduce the scale of the assessment so that it is
24 manageable; 2) profiling where existing social
25 conditions are examined, determining who is going to be



1 affected and what changes occur with or without the
2 project. This point engendered a fair bit of
3 discussion with Mr. Lederer. 3) Evaluation, putting
4 values on them; and 4) recommendations and preferred
5 options.

6 Mr. Lang then testified it is the
7 conceptual approach that is subject to debate in the
8 field of social impact. He outlined the interactive
9 and technical approaches. Mr. Lang believed that both
10 approaches should be complementary and as he stated in
11 his testimony, it is not an either/or approach. He
12 does say that a shortcoming of the technical approach
13 is that it fails to capture the reality of the
14 community as it is experienced by its residents.

15 Mr. Lang testified that if an assessor
16 doesn't go into the community, he falls into the trap
17 of substituting for the residents' view of reality the
18 assessor's own subjective opinion of what is relevant.
19 It is our submission that that is what Dr. Schiff did
20 in fact in the first study.

21 I would like now to turn to a critique
22 of Dr. Schiff's Report. Mr. Lang set out five
23 deficiencies that were found at page 39829 of the
24 transcript:

25 1) The design study was inappropriate.



- 1 2) it was not comprehensive.
- 2 3) it was internally inconsistent.
- 3 4) it neglected to take sufficient
- 4 account of the community residents' concerns and
- 5 5) it failed to provide an integrated
- 6 picture of the landfill's potential social impact.

7 In regard to this first point, Mr. Lang
8 notes that the study boundaries were not tailored to
9 the unique social context of Site F as it was the only
10 site located within an urban community. The study did
11 not probe public concerns outside the area to discover
12 community concerns of impact or to test the
13 consultant's own perceptions of the significance of
14 these impacts.

15 It was not comprehensive and it didn't
16 have a large enough study area and overlooked workers
17 and industries and hear some of those people even
18 within the limited study area used by Dr. Schiff.

19 Here I think Mr. Lang goes to the heart
20 of the limitations of Dr. Schiff's approach. He says
21 that in an impact assessment, one would normally define
22 a tentative study area as a kind of hypothesis and then
23 go out and test it. If it was found that there was an
24 impact beyond the study area, one should adjust. Here
25 only marginal adjustments were done during the



1 assessment.

2 In the course of my cross-examination of
3 Dr. Schiff, she agreed with me that the rationale for
4 social impact assessment is to make effective, people's
5 concerns clearly understood. In my submission, she did
6 not do so in the case of the communities surrounding
7 Site F.

8 Mr. Lang's third point was that the
9 study was internally inconsistent in the setting of
10 boundary areas, study areas, staying with other site
11 plans even though the landfill sites to be filled were
12 smaller and, for example, if he applied the boundaries
13 around Site A or B it would have taken the area down to
14 the lake around Site F. Dr. Schiff did not follow the
15 same decision rules when adjustments were made to her
16 study areas. She stated she was concerned the
17 boundaries did not separate neighbours but she didn't
18 apply those to Site F. She left out the impact of the
19 community. That was Mr. Lang's fourth point. Here he
20 discussed the fact that Dr. Schiff dismissed the
21 Aldershot community as psychologically buffered and
22 therefore not affected.

23 His final point was that the study
24 should be integrated. Here we get into, what I submit,
25 is the Catch 22 Study. On the one hand, Dr. Schiff was



1 saying she separated out impacts like noise and visual
2 and left them to the other consultants. Then later on,
3 she said that noise and visual impact were said to be
4 part of the basis for assessing disruption, yet the
5 boundaries of the study area where Dr. Schiff's
6 assessed disruption did not take noise and visual
7 impacts into account.

8 I would like to refer to part of my
9 cross-examination of Dr. Schiff to illustrate this
10 point. At page 4279 to 80, Dr. Schiff indicates she was
11 not responsible for all aspects of the social impact
12 assessment. She said visual noise, airborne
13 contaminants, were undertaken by people with more
14 expertise. Yet, when I referred her specifically to
15 her report, Exhibit H-37, she agreed that as part of
16 her methodology, disruption was to take into account
17 noise, visual, et cetera. The nuisance factors felt by
18 the community.

19 Further on, at page 4280, she indicated
20 that while the citizens' concerns about noise, dust and
21 visual impact do not figure in her disruption category
22 as specific, explicit factors they were used throughout
23 as implicit in the measures used for disruption. This,
24 with respect, is a circular argument. She must have
25 used these factors in determining her impacts or there



1 would not have been much else to be considered.

2 Later on in my cross-examination at page
3 4298, Dr. Schiff again confirmed that under the
4 disruption factors she dealt with noise, dust, odour
5 and litter and generally used a 0.8 kilometre
6 boundary. So, what we have is, I think, first of all a
7 discrepancy between the various parts of her testimony
8 and her report, but the bottom line is that she said
9 that under the disruption factor, she did deal with
10 these impacts.

11 By way of another example, I referred
12 her to the fact that Mr. Coulter had testified that a
13 certain percentage of the people in Aldershot would be
14 able to hear the landfill. Dr. Schiff agreed that a
15 fair definition of noise would be unwanted sound. That
16 is at 4293. She then did agree with me that she was
17 aware of my client's concerns that they could hear the
18 existing site within an area that it would be a social
19 impact and evidence of disruption.

20 However, she then goes on to say if they
21 have heard outside the study boundary then they would
22 be included in the technical expert's report.
23 Mr. Chairman, this becomes an absurdly circular
24 situation. It holds up the inadequacy of Dr. Schiff's
25 Report. Again, the fundamental issue though, as



1 Mr. Lang has put it, is the inconsistent study boundary
2 used at Site F.

3 Let us look at the real life situation.
4 My clients have suffered a number of adverse effects
5 through having landfills in their community for the
6 last 40 years. This is evidenced through, first of
7 all, their submissions made during the site selection
8 process. We note that if one looks at the submissions
9 we can see that the people were talking about both real
10 and perceived impacts. This would include such factors
11 as dust, noise, traffic, as well as knowledge of some
12 of the problems with the Bayview Site which included
13 off-site discharge of leachate into streams that run
14 through their communities. Even Dr. Schiff did
15 acknowledge that she had heard from the residents that
16 the Bayview Site was leaking and a leaky landfill would
17 be a relevant concern to these residents. In fact, all
18 she had needed to do was ask the Ministry of the
19 Environment about this fact.

20 I would just like to digress here for a
21 moment and refer to Exhibit 787 which was the letter
22 form the Regional Director of the Ministry of the
23 Environment to the City of Burlington. Do you have
24 that? N-787. If you refer, attached to that letter as
25 part of this exhibit is a Notice of intention to issue



1 a Control Order. That is at, I guess it is the third
2 page in.

3 First of all, in that notice mention is
4 made to a report by a provincial officer. That is in
5 the second paragraph, filed with the Ministry and
6 served on the City on December 16th, 1985. It refers
7 to the findings of the officer, the contaminants being
8 discharged from the Bayview Park Landfill Site
9 contravenes Section 13 and that would be of the
10 Environmental Protection Act.

11 If we look at page 3 of that Notice of
12 Intention, further on two pages, we see the rationale
13 set out there. I would just like to read under point
14 one:

15 "Contaminated leachate originating at
16 the base of the Bayview Park Landfill on
17 property owned by both the City of
18 Burlington and National Sewer Pipe
19 Limited is being discharged to Indian
20 Creek which flows through part of the
21 City of Burlington, the former Town of
22 Aldershot, finally discharging to
23 Burlington Bay.

24 2. The creek flows through residential
25 areas and the park facility within the



1 site of Burlington. This problem of
2 leachate discharge to Indian Creek was
3 first identified in a survey carried out
4 by Ministry staff in 1979 and '80. The
5 problem was drawn to the attention of
6 the City of Burlington on numerous
7 occasions and action was promised but
8 never taken. New surveys undertaken in
9 1983 and '84 and again in 1985 confirmed
10 the earlier findings.

11 3. Several of the contaminants
12 identified in the leachate exceed
13 provincial water quality objectives and
14 may cause damage to plant and animal
15 life as well as posing a potential
16 hazard to human health."

17 Mr. Chairman, it is first of all my
18 submission that, as this exhibit points out, Ministry
19 officials and others were well aware of the problems
20 emanating from Bayview Park as early as 1979. The
21 residents of the area were also aware of these problems
22 and we have heard some testimony that the citizens
23 helped bring the attention of officials to this problem
24 of the surface water contamination.

25 Dr.Schiff agreed, yes, a leaky landfill



1 would be a relevant concern for residents yet she
2 consistently and persistently denied there were any
3 social impacts to the downstream community. All these
4 concerns based on the existing sites were ignored by
5 the consultant in the setting of her study boundary at
6 Site F.

7 As well, there were other perceived
8 concerns about impacts that could occur. Rather than
9 canvass residents as to the concerns and in a way
10 evaluate them, Dr. Schiff ignored them. Mr. Lederer
11 said that perceptions are something that a proponent
12 need not deal with. The first point I would like to
13 cite is that in the case of Site F residents were
14 talking about real experiences and not just
15 perceptions. The real experiences were being left out
16 while perceptions at other sites were taken into
17 account. For example, Dr. Schiff, in her counting of
18 children in a category, in her social study, indicated
19 she included all the children around Site D, not just
20 on Highway 25 because of concerns they would be
21 vulnerable to health effects. This is in relation to
22 traffic safety. She did this even though it was her
23 understanding that Highway 25 was going to be used as
24 the haulage route.

25 At page 4213, Dr. Schiff, under cross-



1 examination by Mr. McQuaid, notes that these were not
2 actual health effects but those perceived by parents.
3 that is her quote. Again, a double standard. The so-
4 called objective report of Dr. Schiff, I submit, did
5 include perception but from an inconsistent study
6 boundary. Dr. Schiff even ignored impacts within her
7 limited study boundary at Site F.

8 At page 4306 she agreed that the Tridon
9 and Cumis properties would have fallen within her study
10 boundaries yet she did not count the 600 people at
11 Cumis and the workers at Tridon in her calculation of
12 disruption even though these people would be at their
13 workplace for eight hours a day. She expressed doubts
14 that the submissions of Cumis and others were even
15 forwarded to her. This was the case even though Dr.
16 Schiff was the person responsible for public
17 participation in the process. Further avenues of
18 discussion, we had Dr. Schiff trying to say that the
19 Cumis plant would be further away from the new landfill
20 and then in fact after a question from Dr. Kingham, she
21 admitted that it would be closer.

22 Again, in my cross-examination, Dr.
23 Schiff stated she had not received a copy of the
24 Pollards whose business was on King Road. Again, these
25 people were in her limited study area, but not included



1 in the disruption category. Mr. Lederer has made a big
2 point of the fact that June Anderson who testified
3 here, could not hear the truck traffic 24 hours a day
4 because the dump didn't operate that many hours. I
5 would suggest that Mr. Lang did and he admitted in all
6 likelihood she was probably exaggerating. I don't
7 think we can say she did not hear garbage trucks but
8 relevant is the fact that Dr. Schiff, by ignoring Mrs.
9 Anderson and the Aldershot community, never went and
10 tested whether or not her truncated study boundary at
11 Site F was a real one. It is my submission that both
12 the written submissions, interviews conducted by Mr.
13 Lang and oral evidence you have heard from my clients
14 and others in the community do establish that there
15 have been and will continue to be social impacts on
16 these people living in the vicinity of Site F.

17 Much has been said about the so-called
18 psychological boundary. This was the rationale for
19 excluding the communities of Aldershot and Forestvale
20 from the study area used for social impact assessment.
21 We would ask the Board to find that in regard to the
22 proposed landfill at Site F, the railroad and CNR
23 tracks do not act as a psychological boundary. There
24 have been, and will be, real impacts of any continuing
25 plan for Site F. A number of my client's testimony is



1 relevant in this regard.

2 Mr. Connor lived at 389 Dorchester
3 Crescent for 28 years. He said "We already get a lot
4 of noise and dust from trucks that are going in and out
5 of there. A lot of people think that because there is
6 a highway and a railroad track between us, that's going
7 to stop it. it is not." That's page 42591.

8 Mr. Smaltz, who has lived on Plains Road
9 East for 25 years had some statements in regard to
10 dust. He says "We can see the whole Escarpment,
11 observe over the dump, a big plume of dust. We know
12 how the wind is going. The city is downwind. We heard
13 that dust is not going to be a problem. We had a good
14 laugh." Page 42659.

15 Mrs. Pocock, who is the vice-president
16 of the West Burlington Citizens Group said, at page
17 39072, that she makes the point strongly that the
18 consultant's point that there is a psychological
19 barrier at 403 is utter nonsense. There is definite
20 linkage with the Escarpment. She further said that
21 public meetings were a farce. Time after time people
22 walked out of these meetings in disgust at the absolute
23 wall of indifference on behalf or on the part of the
24 consultants. We went to meetings where there would be
25 400 people who would be there and they were expressing



1 their specific concerns and at the same time looking at
2 the prospect of another site even closer. Existing
3 concerns were ignored. Finally, at page 39098, Mrs.
4 Pocock testified that Dr. Schiff's approach was because
5 the 403 crossed here, there was a psychological
6 barrier. This is in great dispute because people
7 thought that was incorrect. In answer to a question
8 from Dr. Kingham about whether their concerns had been
9 taken into account, Mrs. Pocock said that Dr. Schiff
10 recognized their concerns in a fashion, but she was
11 only doing it as a sort of accommodation. She did
12 that, continued to discount them in many ways. It is
13 my submission that this is exactly what happened. The
14 boundary was only continued south because of the so-
15 called emotional factor which was not given the same
16 weight as the disruption factor.

17 In my submission, this did not address
18 the fundamental inconsistency in the application of the
19 study boundary for disruption at the six sites. As
20 Mrs. Anderson testified on page 39220, the primary
21 concern is the impact on the community concerns, not
22 merely based on fears but on actual problems and
23 impacts experienced today with current and past garbage
24 sites. Concerns that have been voiced over and over
25 again at public meetings.



1 Mr. Chairman, you heard from
2 approximately 60 citizens from the communities in the
3 vicinity of Site F. As well, you have additional
4 written submissions filed by some of the same people as
5 well as others before you. Finally, you have the
6 results of some of the interviews done by Mr. Lang.

7 Just in relation to the latter, Mr. Lang
8 clearly outlined fairly the limitations of his study at
9 39898. There were resource limitations and limitations
10 on methodology. As he said, he did not do an in-depth
11 social impact assessment at Site F. As well, he agreed
12 his key informant approach was not a representative
13 sample, but it was a way of getting the views of the
14 individuals who appeared to have the pulse of the
15 community and whose views would appear to be widely
16 held by the others. Here it should be pointed out that
17 Mr. Lang relied on more than just the interviews in
18 reaching his conclusions. He looked at the submissions
19 filed before the Board and also limited complaint
20 information. The third limitation was that it was not
21 a comparative study. However, I would urge the Board
22 to put Mr. Lang's study in context.

23 Rather than taking you through all the
24 testimony of my clients, I wish to submit that a number
25 of themes emerged from the evidence of these people.



1 Firstly, there is a strong sense of
2 community in both the Aldershot and Forestvale area.
3 Ms Marnie Gerrie testified as to having lived in
4 Aldershot for 25 years and she is still a newcomer to
5 the community. It is not a community of transients,
6 people come here to stay. Aldershot has always had a
7 strong sense of identify, a stable and long-established
8 community, not a collection of neighbourhoods. Any
9 effects of an expanded landfill site will be cumulative
10 and long-lasting.

11 Two, there is evidence of impact from
12 existing sites. In other words, these people actually
13 experience impacts, noise, dust and traffic. As I
14 mentioned, a few people have already testified to their
15 effects. Mr. Chumley and Mr. Aitken and others as
16 well. I would refer the Board to the earlier 1984
17 Environmental Assessment Board assessment where Mr.
18 Aitken cited in regard to the impact experience from
19 the residents from the existing sites.

20 The third theme that is apparent is the
21 group has had a long involvement with the siting of
22 landfill. The West Burlington Citizens Group is not a
23 Johnny-come-lately citizens group formed in opposition
24 to landfilling. Members have been involved in
25 community activities and recycling projects and we



1 heard evidence from a number of residents in this
2 regard.

3 If I can put in my two minutes of
4 evidence, in the last few weeks, the citizens have been
5 delivering blue boxes for approximately 6000 people in
6 Burlington.

7 MR. LANCASTER: You haven't been sworn
8 yet.

9 MS VIGOD: I had to get mine in too.

10 Residents who were at the workshops read
11 the Walker, Wright, Young reports and became involved
12 in the citizens groups.

13 Four, there has been continuing
14 frustration with the public participation process.
15 Time and time again the residents said their concerns
16 were not being listened to. More shocking is the fact
17 that the community was not really taken into account by
18 Dr. Schiff. Only lip service was paid to the community
19 by putting them in the emotional impact rating.

20 Five, many had concerns about streams
21 going through their properties. Even the map presented
22 by the group was not complete as more of the witnesses
23 testified they had streams in their backyards or near
24 them. I believe Mr. Brecht showed the Board pictures
25 of Falcon Creek backing up on his property. We also



1 heard about the impact on community facilities that it
2 was real. We heard from the president of the riding
3 club and from members of the model airplane club.

4 The seventh point -- the thread of
5 social equity -- "we have had our share" comes out in
6 the evidence. We have had evidence of Kerns Road
7 Landfill, Bayview existing landfill, concerns about
8 prospects for another 20 years.

9 Finally, the psychological barrier.
10 There is evidence from a number of people who
11 testified, that this was nonsense. Again, I would ask
12 the Board to find that this so-called barrier is
13 modified to the siting of the proposed landfill at
14 Site F.

15 I would like to turn briefly to a number
16 of issues that Mr. Garrod raised in his argument. Mr.
17 Garrod has made a lot of the fact that at the 2B Stage,
18 based on the public participation program and the
19 results of the questionnaires that social impacts
20 should not have been demoted although he does concede
21 there is judgment involved. I don't really want to
22 dwell too long on this point because it is a small one,
23 but I have some comments.

24 First of all, Mr. Garrod would like to
25 freeze this issue of public comment to the 2B Phase in



1 March of 1984, where out of 700 submissions, the
2 majority came from Milton. A key factor that he did
3 not mention but Mr. Walker does in his testimony was
4 the fact that the evening before this meeting, the OWMC
5 had its meeting in regard to the possibility of
6 locating a hazardous waste facility in Milton.
7 Obviously, a large crowd was out at the meeting. His
8 references to Mr. Walker's testimony at page 14379,
9 where he was being cross-examined by Mr. Garrod about
10 the meeting of March, '84 where 4500 people were there
11 from Milton:

12 "Q. You were there and you gave
13 formal representation and then took
14 questions and comments?

15 A. Yes.

16 Q. There was a reason for the
17 numbers at that Milton meeting.

18 A. That, unfortunately for us, Mr.
19 Chairman, was within 24 hours of the
20 Ontario Waste Management Corporation
21 announcing its candidate sites and one
22 of them happened to be very close to our
23 Site E, so we were facing a lynch mob
24 that night."

25 That is Mr. Walker, page 14379.



1 It would be my submission that that
2 would obviously weigh the results and I think it would
3 be inappropriate for a consultant to just head count at
4 one point in time when choosing evaluation criteria for
5 all the sites. At some other point in the process, it
6 might well have been Burlington or Oakville that would
7 have overwhelmed the counting. One cannot ignore the
8 context in which these public meetings were held. It
9 is not enough for Mr. Garrod to say "Well, everyone in
10 the Region had an equal opportunity to respond." One
11 must also note that at the public meetings held at the
12 2C Stage, the numbers from Burlington far exceeded
13 those attending from Milton. What does emerge is that
14 the overwhelming priority factor and these are Mr.
15 Garrod's words, that emerge, the public input at all
16 sites was that public health and safety was number 1.
17 No matter which way you stack it, that confirms the
18 priority that must be given that issue.

19 This in fact points out an inconsistency
20 with Mr. Garrod's argument that somehow there is a
21 statutory presumption in the Expropriations Act in
22 favour of Site F. The better view is that it must be
23 hydrogeological concerns that drive the decision.

24 I would also note that in the
25 submissions report, H-54, which Mr. Garrod referred to,



1 is a submission, response to a submission filed by
2 myself on behalf of the West Burlington Citizens Group,
3 one wonders whether he would count that as one
4 submission or give some recognition that it is filed on
5 behalf of a group with a large membership. Site
6 selection by a straight show of hands is not
7 appropriate especially when the one day Mr. Garrod
8 would like to have the Board have as his election day
9 was the day after the OWMC announcement.

10 Mr. Garrod also makes an argument that
11 only when one looks at the sites can anyone say one
12 factor is more important, although he does say at the
13 first stage it is reasonable to construct priorities
14 that the Region did a reasonable job except for a de-
15 emphasis from social impact.

16 While it sounds a bit circular, I submit
17 the selection process must apply because here the
18 Region did not follow its own decision-making rules
19 with respect to Site F.

20 In regard to the issue, Mr. Garrod's
21 argument that there is a statutory presumption in the
22 Expropriation Act favouring Site F, with all due
23 respect, this submission makes no sense. It is our
24 submission that the expropriation factor is one that
25 properly fits in the social impact category as it deals



1 with the location, dislocation of people from their
2 property.

3 Under the Environmental Assessment Act
4 the undertaking must be shown to be the best
5 alternative of those examined. Because this is a waste
6 disposal site, and as we have already discussed the
7 site must meet the conditions of the Environmental
8 Protection Act.

9 Mr. Garrod himself, in his submission,
10 spent some time arguing that social impact should be
11 given the highest priority after public health and
12 safety, a position which is in conflict with the
13 Expropriations Act assumption.

14 I would like to touch briefly on a
15 situation with regard to the people that will be
16 dislocated at Site D. As we are aware, there have been
17 a number of changes in the ownership of properties on
18 the site since the Walker, Wright exercise began. We
19 heard from Mr. Garrod that he no longer represents the
20 Berris Estate as that property has changed hands in the
21 past few months.

22 I would submit that it is relevant for
23 this Board to consider the length of time and issue of
24 knowledge of the landfill site selection process in
25 weighing the impact of dislocation. First of all,



1 there is no doubt that Mr. Wat Martin and his family
2 have lived on the property for a number of years and
3 they will be affected by any expropriation. The Reid,
4 Martins, however, have just moved in during the last
5 few years and as we have heard, this is the other
6 Martin family, they started building their home during
7 the course of the hearing.

8 In cross-examination by Mr. McQuaid, Dr.
9 Schiff agreed that a factor which should be taken into
10 account is the general knowledge that people had or
11 could have had with respect to the location of
12 facilities. Unfortunately, Dr. Schiff did not do this
13 when she updated her study in the technical report.
14 All she did was count heads and then stated that the
15 impact was greater.

16 For example, in the social impact chart
17 on page 51 of H-14, the dislocation factor at Site D
18 was changed from low impact to low moderate impact. In
19 Appendix E of that report she notes that the people on-
20 site had increased from 10 to 14 and the number of
21 households on-site from three to four, resulting in a
22 subfactor for dislocation increasing from low to low
23 moderate. It is my submission there is no logical
24 basis for reaching this conclusion. We would submit
25 the length of residency and the fact that these new



1 families moved in during the site selection process and
2 the landfill hearing, is a factor the Board should take
3 into account and in fact, find the opposite of
4 Dr. Schiff that the dislocation factor decreases. This
5 is not to deny that this factor is, of course, higher
6 than at Site F but even as Mr. Garrod pointed out, it
7 was a gamble that the Martins took by building their
8 home during the hearing.

9 The final issue I would like to address
10 is the issue of social equity. It is our submission
11 that social equity, locational equity is an issue that
12 the Board should consider and take into account in its
13 decision as to which site is more suitable.

14 MR. LANCASTER: I wonder, Ms Vigod, you
15 seem to be trailing off a bit. Are you getting tired
16 or are you standing back farther?

17 MS VIGOD: Probably a bit of both.

18 MR. LANCASTER: Do you want to take a
19 short break?

20 MS VIGOD: I would appreciate that, sir.

21 --- Recess

22 DR. KINGHAM: A small point while we are
23 waiting that maybe Mr. Lederer can clear up for us.
24 One question we had with regard to the map was whether
25 the presentation of A,B,C and E was fairly represented



1 as other sites evaluated in Stage 2C. I am just
2 looking at the 2c Report and it shows two kinds of
3 hatching. One for a site plan area and the other for a
4 candidate site. The stipple seems to correspond to
5 what we have on the map. That could then be taken as a
6 site, I guess.

7 MR. LEDERER: I think that is fair, sir,
8 yes. You are asking whether these are the sites or
9 these are the candidate areas.

10 DR. KINGHAM: The comment was made to us
11 that perhaps they didn't reflect 2C. As I look at it,
12 you could take that either way. If you took it in
13 terms of the shaded area on the map, from H-13, then
14 you would think that it doesn't correspond.

15 If you took it as the stipple area, it
16 does correspond.

17 MR. LEDERER: I will have to check that
18 for you, sir. As you can appreciate, I am now going by
19 memory, but at the beginning of 2C, within the
20 parameters of the 2C Study, the determination was made
21 to reduce the candidate areas down into the sites. I
22 don't think we have the sites here for A,B,C, or E,
23 which is the area. You have the sites. in other
24 words, you have the sites for F and D. In other words,
25 they are not the same. I think that is very clear.



1 DR. KINGHAM: Then it was shown in the
2 legend as a different kind of hatching for final site
3 comparison which is different from other sites
4 evaluated.

5 MR. LEDERER: Hence the reason for the
6 different hatching.

7 DR. KINGHAM: We will leave that for
8 Mr. Tidball to discuss with Mr. Parsons, the nature of
9 the discussion we had. I am content to leave it as is.

10 MS VIGOD: Mr. Chairman, I was just
11 about to begin my discussion of the social equity
12 factor. It is our submission that social equity, or
13 locational equity is an issue that the Board should
14 consider and take into account in its decision as to
15 which site is more suitable for landfill.

16 First of all, I would like to deal
17 briefly with Mr. Leitch's argument on this point. His
18 submissions, as I understood them, to you were that
19 equity was something that the courts apply and without
20 some specific wording in your governing statute, you
21 were somehow precluded.

22 He said, I believe this is a quote:

23 "You shouldn't spread effects all over
24 the people in Halton. You shouldn't
25 reach out and adjust the balance.



1 Adjudicatively, that is done between
2 individuals in a lawsuit. Here there is
3 no place for it, nor is it designed in
4 the process. I would like the concept
5 of equity somehow limited to the
6 question of whether there has generally
7 been a fair hearing."

8 I disagree with his position. With all
9 due respect, I think Mr. Leitch is mixing up his
10 concepts. Mr. Leitch is talking about equity in the
11 context of private lawsuits between private parties
12 where the courts would step in and apply equitable
13 principles where the law was too harsh. Traditionally,
14 and carrying on to the present time, the court often
15 applies equitable principles in contract cases where,
16 for example, even though the black letter of the
17 contract might commit the parties to a certain course
18 of action, the court might find that one of the parties
19 did not have clean hands in entering into that
20 arrangement and might decide not to uphold the
21 contract. Mr. Chairman, the equitable principles that
22 the court might apply addresses the balance between
23 private parties to a lawsuit. Here we are not dealing
24 with the *lis inter parties*. We are dealing with public
25 law statutes.



1 I would note, first of all, that the
2 public interest component is manifested in the purpose
3 section of both the Environmental Assessment and
4 Environmental Protection Act. We have also had some
5 discussion about Section 38 of the EPA which provides
6 that the Director and here the Board, may refuse to
7 issue a Certificate of Approval if he considers upon
8 probable grounds that it is not in the public interest.
9 More importantly, and here I would note that Mr. Leitch
10 did not address this section of the legislation, the
11 definition of "environment" under the Environmental
12 Assessment Act includes the social, economic and
13 cultural conditions that influence the life and manner
14 of the community.

15 As I said before, the proponent must, in
16 meeting the terms of Section 5(3) submit an
17 Environmental Assessment with a description of the
18 environment that will be affected and an evaluation of
19 the advantages and disadvantages to the environment of
20 the undertaking. That includes consideration of the
21 social environment.

22 We then look to the experts and their
23 disciplines and to guidance from the Ministry as to
24 define what issues should be evaluated under each
25 component of the environment. We submit that here on



1 the record, both the Ministry and Region have
2 identified social equity as a matter that falls within
3 the ambit of social environment and an assessment of
4 social impacts. Here, I would refer the Board to
5 Exhibit H-70, page A-7-4, where the Region's
6 consultants say, yes, we agree that the concept of
7 social equity does fall within the Act's definition of
8 the environment.

9 Again, in the analysis of submissions on
10 the 2B Report, social equity is listed as a category
11 used by the Region in analyzing the comments received
12 by the public. This is found at page 27 in Exhibit
13 H-54.

14 Ms Schiff in her report, Exhibit H-37,
15 in fact did look at the question of social equity. She
16 defines that concept as relating to the question of how
17 fair it is to locate a landfill at each of the six
18 sites. At page 3-1 of that exhibit, she stated that a
19 careful review of the social equity factor indicated
20 that each of the six sites had a strong claim with
21 respect to the factor. That it was not possible to
22 rank the sites on this basis. However, it is submitted
23 that Miss Schiff did not analyze the claims for equity
24 but just decided to get around the issue by claiming
25 that each site had a strong claim.



1 As Mr. Lang stated, if consultants apply
2 to other factors the same principle they dismissed in
3 equity, then all sites have a claim to a factor then it
4 could be excluded from further assessment. There would
5 be little need for an Environmental Assessment in this
6 type of situation. The claims are not the same. It is
7 precisely this analysis of sorting out the different
8 degrees of impact that an impact assessment is about.
9 This is found at page 39872.

10 It is our submission that the Board
11 should find that social equity is indeed part of the
12 social component of the Environmental Assessment and
13 that the Board should find that it is a factor that
14 should be weighed by it in making its determination on
15 approval of the site.

16 I would note that the Ministry in their
17 comments on the Draft 2C Stage also discuss the social
18 factor. That is found in H-73, page 6-23. Under
19 "social" they say, this was when comments were being
20 put in on the Draft 2C Stage:

21 "The Act defines the term 'environment'
22 to mean in part the social conditions
23 that influence the life of men or
24 community. Chapter 3 of Report No. 5
25 indicates that the consultant does not



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consider that social equity is a factor that can be dealt with in the context of the Environmental Assessment Act."

This would have been in her draft

report:

"The Environmental Assessment Branch interprets 'social equity' as falling within the Act's definition of the term 'environment'. It is a matter of judgment on the part of the proponent which can be challenged by an interested party as to whether the proponent chose to examine this aspect of the environment. However, it is suggested that the Region may wish to examine the matter of social equity in greater detail and in anticipation that the factor will be raised by the public as having a significant bearing on the decision to be made on the acceptability of the proponent's Environmental Assessment documentation."

Now, Mr. Chairman, I would note that Mr. Leitch, in his submissions, asked the Board to send a message to other boards in the future regarding



1 recycling targets and also regarding a possible
2 limitation of any further consideration of Site D for
3 Halton's waste. From our client's point of view, a
4 message has been sent to this Board from the 1984 Board
5 on the issue of social equity. I would refer to the
6 July 16th, 1984 decision of the Environmental
7 Assessment in this regard. I would note that when
8 questioned, Dr. Schiff said she had never seen a copy
9 of this decision before. That is Volume 17 at page
10 4226. I refer specifically to pages 3 and 4 of that
11 decision.

12 First of all on those pages, there is an
13 excellent history of the landfilling saga in Halton.
14 However, starting at page 2, the Board states:

15 "It is with regret on the part of the
16 Region and to the deep disappointment
17 and frustration of the residents in the
18 area that another interim application is
19 being brought with respect to the same
20 site. The concern of the residential
21 neighbours and ratepayers does not
22 centre solely on the site and on the
23 environmental impacts that flow from the
24 landfilling on it. To the east of the
25 site and separated by lands owned by two



1 private companies, is Bayview Park which
2 is now a closed down landfill site that
3 is owned and was operated in the past by
4 the City of Burlington. Some evidence
5 was heard of the migration of leachate
6 from this site towards the Aldershot
7 area, the neighbourhood that is the home
8 of the West Burlington Citizens Group.
9 Compounding this concern is the serious
10 consideration of using the lands of the
11 two private companies situated between
12 Bayview Park and the Burlington Site to
13 meet the future landfill needs of the
14 Region."

15 I am reading now at the top of page 4. I
16 would then like to turn to page 9. The last paragraph
17 deals there with the opposition of the ratepayers. The
18 Board goes on to say:

19 "One can sympathize with their
20 opposition to this application,
21 especially when it is considered in
22 conjunction with the problems of
23 leachate migration from the Bayview Park
24 Site. In addition, a cloud hangs over
25 their heads in the form of the future



1 development of the adjoining lands to
2 the east of the landfill site. They
3 argue, and not unreasonably, that they
4 have borne a disproportionate share of
5 the Region's landfilling in the past and
6 therefore future operations in the area
7 should not be tolerated."

8 It is our submission that this Board,
9 along with the finding that Site D is preferable to
10 Site F on hydrogeological grounds can find that the
11 community around Site F have a substantial claim in
12 regard to social equity and should not have to bear the
13 brunt of another 20 years of landfill.

14 To sum up, as Mr. Lang testified, by
15 adopting and rigidly applying the technical approach
16 and combining this with the psychological barrier, it
17 has led to the study area, the selection of a study
18 area that was too small and disregarded the affected
19 communities. Finally, the removal of social equity
20 deprived the Aldershot and Forestvale areas of a claim
21 to unfair treatment.

22 I would finally like to turn to the
23 testimony of Mr. Elstone who, you will recall is the
24 nearest neighbour to the site, he is the laird of
25 Woodhill Farm. Mr. Elstone farms approximately 450



acres in the areas around Site F. He maintains an important heritage building with a long history. More than 4,000 people visit the farm a year. He testified about the abuses to the property and talked about the litter and noise. He said we have borne our cross in the expectation it will soon be over. That is page 39426.

He testified in answer, on page 39430, I asked Mr. Elstone what impact would this further 20 years have on you. He said:

"Well, it will be a continuation of the present problems we are having. I might mention that around 1979 I went to the Region, to the Engineering Department I believe it was, and asked them what the future plan was. I was told there would be no further landfilling at this site which was down in here. Those people told me that and I am positive it was in good faith. In no way would I suggest they were misleading me or lying to me. Again, at subsequent hearings, the Region was forced into an expansion program. They said 'This will be the last time we will be asking for an



1 extension'. I am sure they told us in
2 all honesty and sincere belief. Then the
3 following extension, this one, we were
4 told there would be no further expansion
5 and the Certificate was granted. The
6 first meeting of your hearing here, sir,
7 I brought up why were we discussing this
8 when it was further agreed upon and told
9 to us there would be no further
10 expansion. This hearing, no matter how
11 you look at it is nothing more than an
12 extension of the present landfill site.
13 The road, the entrance going into the
14 small scale house, everything is nothing
15 more than an extension of the present
16 landfill site. No one in any type of
17 integrity, any type of honesty, or
18 whatever other types of ethics you have
19 would consider it as anything other than
20 an extension. We were promised
21 sincerely. We were told the Region
22 would not be back. I am not suggesting
23 we were misled, but that was their
24 belief."

25 Just continuing on page 39433:



1 "I firmly believe Burlington/Aldershot
2 have been good citizens. It is now time
3 for someone else to share the
4 responsibility of looking after
5 garbage."

6 And further on:

7 "Burlington/Aldershot has done their
8 share, done it and gone along with it
9 because there is responsibility of all
10 of us to be community-minded."

11 Finally, on page 39435:

12 "The same applies to other communities.
13 This is a terrible thing we are going
14 through here and to have to do this time
15 and time again, I am sure many of you
16 would agree with me."

17 I gather these sentiments were echoed by
18 various testimony of Mr. Aitken, who talked about his
19 experience with the landfill and the Region's goals to
20 close by '84 and the continuing expansions.

21 As well, Miss Baker testified that the
22 Region promised time and time again that expansion
23 would be the last but every time they went back on
24 their word. Surely, we have done our share. Testimony
25 has shown that yes, social impacts will be occasioned



1 by any continuation of landfill in this area. This
2 must be a factor the Board takes into account.

3 My final submission would be that first
4 of all hydrogeology, number one factor, favours Site D.

5 Secondly, the flaws in the site
6 selection process must be a factor in the Board's
7 deliberation and in this case, social equity should be
8 carefully considered.

9 Those are my submissions. Thank you
10 very much, Mr. Chairman, Dr. Kingham, for your
11 patience. I would like to thank all my friends for the
12 rides they have been so kind to give me.

13 MR. LANCASTER: Thank you, Ms Vigod.

14 MS VIGOD: Now, Mr. Tzekas, you have a
15 few more submissions.

16 FURTHER ARGUMENT BY TZEKAS:

17 I am told by my friends I am under very
18 strict time guidelines, so I will try to do this
19 quickly.

20 Mr. Chairman, Dr. Kingham, may I just
21 give you a brief outline of the final submissions and
22 describe for you, before we get into the details, the
23 structure of this.

24 You will see on the first page that the
25 City of Burlington, as I have indicated before, is



1 suggesting that the Board accept the Environmental
2 Assessment as amended, give approval to the undertaking
3 and satisfy the undertaking by the selection of Site D.

4 In outlining terms and conditions we
5 have used the proposals put to you by the Ministry of
6 the Environment as a base and those begin, sir, at page
7 2, should the Board select Site D. and at page 3, are
8 the terms and conditions that we would recommend should
9 the Board select Site F.

10 These are broken down into three
11 categories generally. The first category deals with
12 some minor modifications that we have suggested to the
13 wording. If I might just give the Board an example
14 that I shared with my friends at the MOE in a good
15 humoured way.

16 Their condition 11.1.6 states that the
17 Board shall order natural vegetation in areas adjacent
18 to the landfill site shall be encouraged to move onto
19 the landfill area. We thought that wording could be
20 improved and we have made suggestions like that.

21 DR. KINGHAM: I must admit the Board had
22 visions.

23 MR. TZEKAS: I am not sure our wording
24 is going to be better in all cases, so I am going to be
25 the brunt of jokes myself, I am certain.



1 The second group of changes relates to
2 the fact that we are suggesting the adoption of the
3 Conestoga, Rovers designs for both sites. Site F with
4 a liner; Site D without. And as a result of that,
5 there are a whole series of amendments to be made to
6 the various terms and conditions. I will take you
7 through each of these and tell you what category it
8 falls into.

9 Finally, we have some additional
10 suggestions to make. They are very few. They deal
11 with matters such as parking and the expansion of
12 parking areas and so on. I can take the Board through
13 each of those.

14 Those are the three categories and if I
15 may begin at the top of page 2 dealing with Site D
16 under the Environmental Assessment Act our paragraph
17 (a) is simply a clarification paragraph. Our paragraph
18 (b) is a matter that relates to design. We are
19 suggesting immediate movement by the Region towards the
20 construction of a -- I want to be certain I am getting
21 it correct, the forcemain.

22 With respect to paragraph (c) we have
23 made this recommendation both with respect to Sites D
24 and F. It is a suggestion that the Regional Official
25 Plan be approved. It simply, in our view, clarifies



1 the matter and I hope that it will not cause anyone
2 problems.

3 Under the Environmental Protection Act

4 ...

5 DR. KINGHAM: Before we get into that,
6 can we back right up to (a)? I am having a little
7 difficulty understanding. You want to add the phrase:

8 "With the objective of providing
9 alternative disposal capacity during the
10 twenty year planning period."

11 You want that added at the end of
12 paragraph 3 where the end of that paragraph now talks
13 about waste reduction, reuse, recycling, recovery and
14 disposal programs.

15 MR. TZEKAS: We read "disposal programs"
16 to encompass the entire spectrum of the waste
17 management program. Our suggestion was simply that it
18 should be focused on providing additional capacity
19 during this 20-year timeframe. It shouldn't be a study
20 that simply looks to the next 30 years.

21 DR. KINGHAM: It is still not clear to
22 me. If 50 per cent of the waste generated within the
23 Regional Municipality is not diverted from the landfill
24 site, then the Region shall commence appropriate
25 studies and you would add:



1 "... with the objective of providing
2 alternative disposal capacity."

3 MR. TZEKAS: Yes.

4 DR. KINGHAM: So, you are pre-judging
5 the objective of those studies which might focus on
6 waste reduction, reuse, recovery or recycling.

7 MR. TZEKAS: No, Dr. Kingham, it wasn't
8 intended that way. If it is read that way, then the
9 drafting is bad. By "disposal" we meant disposal in
10 any form.

11 DR. KINGHAM: So, you want the
12 qualifying phrase to apply only to the last few words
13 of that sentence as opposed to the sentence as a whole,
14 you mean it to apply to "and disposal programs and
15 facilities" with the objective of providing alternative
16 capacity, rather than the parts of that that relate to
17 waste reduction, re-use and recycling.

18 MR. TZEKAS: I think that is correct,
19 sir.

20 DR. KINGHAM: Thank you.

21 MR. TZEKAS: With respect to language
22 that has been suggested to me which might amend this is
23 the language "such disposal programs".

24 With respect to the Environmental
25 Protection Act paragraphs (d), (e), and (f) relate to



1 the design and operations changes as suggested by
2 Conestoga, Rovers.

3 Our paragraph (g) relates to the bird
4 issue and we have suggested that over-wiring not be
5 instituted at the commencement of the landfill site.
6 it was our view that there would be a monitoring
7 program. If a problem emerged the mitigation measure
8 could be instituted at that time. That is the reason
9 for our paragraph (g).

10 Paragraphs (h) and (i) again relate to
11 the Conestoga Rovers design. Paragraph (j) relates to
12 the parking. The Ministry of the Environment condition
13 relates to the pavement of roads. We suggested that
14 includes parking areas and with respect to Site F, some
15 additional roads that deal or cross between the two
16 cells.

17 Paragraphs (k) and (l) relate to the
18 birds and again we are simply suggesting that the over-
19 wiring program not be instituted at the initial stage.
20 Paragraphs (m), (n), and (o) are what I put in as just
21 clarification paragraphs.

22 For example, with respect to paragraph
23 12.1.1, the onus on the Region in that case was to
24 install facilities wherever possible. Mr. Petrie
25 actually suggested to us and we incorporate it here



1 that the word "possible" might be better read if it was
2 appropriate.

3 Then turning to Site F, the same
4 situation under the Environmental Assessment Act in
5 paragraphs (a) and (c). With respect to paragraph (b)
6 -- I hope this is a matter of clarification, but we
7 have suggested that the Region of Halton assume the
8 expense for the mitigation that is required if, in
9 fact, there is to be any at Bayview Park, or if, in
10 fact, there has to be a provision for the replacement
11 of those facilities. That is, I think a fairly simple
12 matter.

13 With respect to the rest of that page,
14 these are all matters that flow from the suggestions
15 made by Conestoga, Rovers with the exception of
16 paragraph (g), in which we suggest that the word
17 "vermin", that the word "vector" be added.

18 At Site F, there may still be large
19 numbers of birds. If they are a nuisance factor, they
20 should be dealt with and we are simply recommending at
21 this point that the problem be monitored from both the
22 vermin and the vector perspective.

23 On page 4, paragraphs (l), (m) and (s)
24 relate to design changes flowing from the Conestoga,
25 Rovers recommendations.



1 Paragraph (n) and paragraph (o) deal
2 with roads and are a suggestion for additional paving.
3 With respect to the bulk bin area, the parking areas
4 and certain roads to be constructed in this case
5 between Cells 1 and 2 and any road intended to be used
6 for a period of in excess of four years, those are
7 recommendations made by Conestoga, Rovers. With
8 respect to paragraph (o), that flows from a discussion
9 I had with Mr. Hiraishi where he confirmed that as
10 presently designed, the access road into Site F is the
11 same road that is to be used by the public for access
12 into the rehabilitated landfill area and we thought
13 that there should be a separation of that traffic. Mr.
14 Hiraishi agreed with that.

15 With respect to paragraph (p) I would
16 refer the Board to Exhibit H-104, at page 5, paragraph
17 2.1 and 2.2. Ms Hellas had some strong recommendations
18 with respect to limiting the impacts of the landfilling
19 activity so that they would not affect the biophysical
20 features on the rest of the site. We simply suggest
21 that those be incorporated to strengthen the conditions
22 that the Ministry has suggested to you.

23 With respect to Condition (q) this deals
24 with the suggestion made by the Ministry. We agree
25 with the suggestion in the sense that we believe that



1 the Region should undertake to clean litter along these
2 key pieces of roadway. We have suggested, however,
3 that the roadway extend to the top of the Escarpment.
4 My understanding is it is an additional couple of
5 hundred feet. If the Region is going to assume the
6 responsibility, they should do it to the top of the
7 road and down to Plains Road where we understand that
8 there is a substantial amount of Halton traffic.
9 Mr. Aitken is one who gave reference to that in his
10 testimony.

11 With respect to paragraph (r) it is our
12 attempt to clarification with respect to the movement
13 of natural vegetation. However, we have also added
14 there, the recommendation made by Dr. Kitchen that some
15 kind of ecologist/planner be retained to assist the
16 Region with the institution of its after-use at Site F.
17 You will recall the thrust of Dr. Kitchen's evidence
18 was that this was not a hands-off program. Someone
19 would need to be involved in monitoring it and ensuring
20 its success. That is where that recommendation comes
21 in.

22 With respect to paragraph (t), the
23 conditions suggested by the Ministry, as we read it,
24 seems to impose an obligation on the Region to submit
25 after-use plans but not until the site is ready for



1 closure. We had understood that the rehabilitation
2 would come in stages and the suggestions there simply
3 allowed the Region or simply require the Region to
4 submit those after-use plans two years before the
5 rehabilitation of any portion of the site. That is how
6 we have done it rather than leave it to the end. I
7 don't think that was the intention of the Minister, so
8 I think this is probably one of those paragraphs that I
9 would put in as a clarification paragraph.

10 The final few paragraphs are new. They
11 deal with the site plan process and with a suggestion
12 made by Mr. Feenstra with respect to monitoring. First
13 of all, with respect to the site plan process, Mr.
14 Chairman, Dr. Kingham, the existing landfill site is
15 currently under this process. In my submission, it is
16 something that is necessary. The process, the
17 submission of site plans to the City of Burlington, it
18 deals with a number of issues that do not find their
19 way into these conditions. Issues such as exterior
20 lighting, the design of the entranceways, the
21 submission of fire protection plans, the submission of
22 any architectural plans for buildings and so on,
23 matters that are of interest to the city and I think
24 that it is not onerous to suggest that that condition
25 be imposed. As I say, it is the state of affairs or



1 was the state of affairs on the existing site.

2 Finally, paragraph (w) deals with a
3 suggestion made by Mr. Feenstra at Volume 175 at page
4 43675 to the effect that the monitoring activities of
5 Site F and the Bayview Park be integrated in some way
6 if F is approved.

7 Those are the suggestions that we had
8 with respect to terms and conditions.

9 MR. LANCASTER: Thank you, Mr. Tzekas.
10 Mr. Tidball, would the Ministry have any response to
11 those, or any other conditions?

12 MR. TiDBALL: Yes, Mr. Chairman, I
13 volunteered with my friends I would go first.

14 I have spoken to my friends and I
15 understand that there will be some reply forthcoming
16 from the Milton interests. I have no problem going
17 first on the assumption that we can get through this
18 stuff by Monday morning and I don't think that will be
19 a problem.

20 MR. LANCASTER: You are suggesting we
21 wait until Monday morning, I hope.

22 MR. TiDBALL: I hadn't seen these until
23 ten minutes ago, so I am in no position to respond.

24 MR. LANCASTER: On Monday morning at
25 9:30 we will hear from the Ministry. Then of course,



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Tzekas, arg.

1 the Milton interests will be able to reply to the
2 submissions of the City of Burlington and the West
3 Burlington Citizens. Then, the Region, of course, will
4 reply to all of the submissions to the extent they wish
5 to as long as it is appropriate reply.

6 We will adjourn until 9:30.

7 --- Adjournment at 3:52 p.m.

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9 CERTIFIED CORRECT:

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P.D. McQueen

14 (Page 47850 Follows)
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