



ENVIRONMENTAL ASSESSMENT BOARD

IN THE MATTER of an application by the
Regional Municipality of Halton for a Certificate
of Approval for an extension to the area allowed
for landfilling and a revision to the maximum
height of their presently operating landfill site
located on parts of Lots 3 and 4, Concession
and II and more particularly designated as
Parts 1 to 9 inclusive, on Registered Plan
Survey 20R4648, City of Burlington.

Before: R.B. Eisen, Q.C.
M.I. Jeffery, Q.C.

Report of the Board Dated July 26, 1984.

The Conservation Authority is agreeable to the Region's application for the proposed extension. It had certain concerns or conditions which it addressed to the Region's consultants, Gartner Lee. These conditions or concerns included the erosion problem, the siltation program, the revegetation of the Falcon Creek valley, the contingency plan, soil sampling, the hedgerow in the north-east section of the site, concern regarding Phase D, a revision of the 10 metre buffer zone, reporting on water balances, a review of the visual impact, the end-use of the landfill site and the appointment of an environmental inspector.

The Authority is satisfied with the response of M.M. Dillon to these concerns as set out in a letter dated May 24, 1984.

L. OTHER PRESENTATIONS

The Board received both oral and written evidence and submissions on the evenings of May 29, and on May 30, 1984. These were given by private individuals and members of the West Burlington Citizen's Group.

1. Walter Mulkewich

Mr. Mulkewich is an alderman representing the Aldershot area and has been a resident of the area for 22 years. Among the points that he made in his presentation were the following:

- (a) The costliness of the landfill search to the Region.
- (b) The Region showed interest in the 1970s in resource recovery but has never followed through with this matter.

- (c) The Region looked for funding for more than 1 year for the environmental assessment process and should have been looking for alternative means of disposal during that time.
- (d) The Region could have started sending garbage for incineration to New York in 1983.
- (e) The Region has no alternative plan in the event that the application before the Environmental Assessment Board is turned down.

Mr. Mulkewich testified that Aldershot is the oldest and most identifiable community in the City of Burlington and that the two most prominent natural features of the area are the Niagara Escarpment and the system of creeks.

There will be visual intrusion experienced by the people of Aldershot and by the people sailing in Burlington Bay as a result of the extended use of the site. Moreover, residents are aware that the garbage sits on fractured shale and that leachate is moving south towards them. Gartner Lee has not dealt adequately with the problem of the plume nor determined how it should be detected and Mr. Mulkewich questions whether some of the chemicals found do not produce cancer.

If the extension is granted, leachate will travel over a longer period of time and will ultimately reach the residents and then Lake Ontario.

Mr. Mulkewich stated that if the extension is to be granted then

- (a) there should be limits to the amount and type of garbage going into the site;
- (b) the height of the final disposal area should be reduced;
- (c) no garbage should be put on the unengineered portion of the site;
- (d) there should be no landfilling north of the water divide;
- (e) there should be improved leachate testing; and
- (f) the monitoring program should be extended south of Highway 403.

2. James A. Aitkin

Mr. Aitkin is a residential neighbour. It is his contention that the after-use is poorly defined and he wishes to take an active part in the after-use planning. Adequate funds should be allocated, and more detailed plans should be worked out dealing with types and sizes of trees, topsoil needs, perimeter fencing, trails, long-term planting program and methods of controlling the public. The site should not be open to the public for 10 years after closure.

He is concerned about the noise, especially the worst case, that will occur at his residence where the noise could reach 62 dBA. The commitment was that there would be no further expansion but if there is to be an extension, it should be for one year only.

3. Robert Elstone

He is a residential neighbour.

- (a) He feels cheated that the Hearing is not under the Environmental Assessment Act.
- (b) The experts made only a few trips to the site and based their evidence on the writings of other experts.
- (c) The Region went back on its word that it would not seek a further extension.
- (d) The Region is not sufficiently concerned about erosion, noise, dogs running around the site, and litter.
- (e) Landfilling is obsolete and the incineration option has not been looked at closely enough.
- (f) There is no contingency plan in the event that the application before the Environmental Assessment Board is turned down.
- (g) It is his belief that non-permitted wastes are coming on to the site because of lack of proper supervision.
- (h) He has seen waste consisting of brush coming from outside of the Region.
- (i) If the application is successful, then the after-use should be for the benefit of the residential neighbours. The site should be put back to agriculture and should not be open to the public.

4. Walter Johnson

Mr. Johnson is a residential neighbour and he made the following submissions.

- (a) Both the site and his property are in the Parkway Belt and the site should never have been allowed in the first place.
- (b) The litter is not controlled.

- (c) There is noise from the landfilling.
- (d) The erosion has not been controlled.
- (e) There is a leachate problem.
- (f) The site constitutes a visual intrusion.
- (g) There should be a fence around the perimeter of the property.
- (h) There should be better landscaping of the present site.

5. Robert Edward Luxon

Ward 1 Citizens' Group was formed in 1975 and in 1981 changed its name to the West Burlington Citizen's Group. This organization, of which Mr. Luxon is the president, had as its aim to provide a forum to pursue the betterment and best interests of the citizens of the City of Burlington and, more particularly, the citizens of West Burlington. It consists of people in Ward 1 and Ward 2 and anyone who is a resident or contributor to the tax base can become a member. At present, the Group has 40-50 members but in terms of contributions, it can count on 200 active supporters.

The West Burlington Citizen's Group is on record as being opposed to any more solid waste landfill sites in Ward 1 and is opposed to the present application of the Region to expand its site. It believes that alternative methods of solid waste disposal should be developed.

6. Dorothy Pocock

Dorothy Pocock is a member of the West Burlington Citizen's Group and she stated that the site should not have been chosen in

the first place because of its location just below the brow of the Niagara Escarpment, and in the Parkway Belt. The site consists, in part, of fractured shale and is traversed by streams.

The Citizen's Group is fighting the expansion alone after the City had withdrawn its opposition to it.

She is critical of the fact that the application was exempted from the requirements of the Environmental Assessment Act which would have dealt with wider aspects, e.g. social ramifications.

7. Sid Chumley

Mr. Chumley has been a resident of the area for 40 years.

Prior to 1953, when water was piped into the area, the people used wells for domestic purposes and for irrigation. There is still a large number of wells being used in the area for watering lawns and for domestic purposes.

Mr. Chumley pointed out that the Bayview site has serious troubles and so does the Burlington site and, that therefore, the latter should be closed.

8. Hans F. Kreplin

Mr. Kreplin is a professional engineer and is a metallurgist by profession.

Mr. Kreplin attacked one of the central theses of the Gartner Lee report which stated that the poor groundwater quality was masking the presence of a plume and that therefore the downgradient readings in the shale cannot be relied upon. These readings, which show a higher concentration of chemicals than in the leachate itself are, according to Mr. Kreplin, correct, and the reason for the higher concentration in the shales is because the chemicals have been trapped by the soils. These high concentrations, such as in Bore Hole 17, indicate the presence of a plume.

The chemicals found are of the same family contained in the original leachate. The trapping by the shale takes place through the process of adsorption - the catching and holding of chemicals in a relatively loose bond, allowing them to re-enter into solution. This allows an accumulation of the chemicals and the resultant higher levels.

In Mr. Kreplin's opinion, the rate of migration is 45 metres per year and this would mean that the plume has advanced 135 metres south of the North Service Road. He has also concluded that the peripheral drains are not working and that the leachate plume is larger and more concentrated than the public has been led to believe.

In Mr. Kreplin's opinion, the application should be turned down, the plume should be removed and monitoring should take place in order to prevent the leachate from entering the streams. If, however, the landfilling is allowed, then certain precautionary steps should be taken including the establishment of a safe set-back, a

better monitoring system, a limitation on the height of landfilling, the use of deposit cells separated from one another in the process of landfilling, and the closer visual inspection of loads being brought to the site.

Mr. Kreplin stated that landfilling could take place on the engineered portions of the site so long as cell structures and other safeguards were utilized.

9. Dr. Brian Bunting

Dr. Bunting is a professor of physical geography at McMaster University and his specialty is microstructures of soil. He stated that he did not wish to give any expert opinion but only to express his own feelings which result from his reading the literature.

His comments included a description of an ideal landfill site, a statement of agreement with Mr. Kreplin's thesis and a statement of disagreement with the permeability data contained in the applicant's submissions and a criticism of the methods of analysis used by the applicant.

In his opinion, the matter of cation exchange has not been adequately dealt with and it is his submission that the conclusions of the applicant are not based on actual data.

10. Dr. Chris Walker

Dr. Walker is a medical doctor and lives close to the site. He stated that he did not object to the 1980 application because it was supposed to have been an interim application.

He did approve of Phases A and B on condition that 75 per cent of the waste would be exported to Niagara Falls, N.Y. but since the Region wishes to landfill all of its waste at the site, he is totally opposed to the expansion.

It is his opinion that a cancer-forming chemical - phenanthrene - is present in the leachate and he fears that toxic waste will be introduced into the site in the coming years.

11. Dale Sutherland

Dale Sutherland has a Bachelor of Science degree and she is concerned about air quality because of the fact that contaminants may be airborne. She is also concerned about the possibility of contaminated groundwater surfacing in the area. She stated that even if the chemicals are within government guidelines, then she has fear of the interaction of the chemicals producing harmful effects.

She stated that she wished to see the site closed down but, failing that, there should be no dumping of the EPA priority pollutants at the site. In addition, leachate and the air quality should be tested at different times of the year.

12. June Anderson

June Anderson is concerned with the leachate problem, the poor quality of the stream, the possibility of the plume being south of Highway 403, unpleasant odours, dust and the reduction of property values as a result of the landfilling.

13. Alfred Coome

Alfred Coome is a member of the West Burlington Citizen's Group and stated that the citizens have borne their share of waste disposal in the Region. According to Mr. Coome, there has been no waste recycling. The monitoring on the site is inadequate in that garbage bags are not cut open so that there can be a check for pesticides and toxic chemicals. He wishes to see the site closed down.

14. Jerry Urban

According to Mr. Urban, there should not have been a dump in the first place. There are problems with this site and the Bayview Park site.

M. WRITTEN SUBMISSIONS

1. The Honourable Claude F. Bennett

By letter dated May 7, 1984, the Honourable Claude F. Bennett, Minister of Municipal Affairs and Housing deemed the application of the proponent not to conflict with the Parkway Belt

West Plan, July 1978, under section 9(2) of the Ontario Planning and Development Act.

2. Mr. & Mrs. Viksne, Violet M. Chornook & John Deming

Written submissions were received by these residents in which they set out reasons for opposing the application. The reasons mentioned are: fear of contamination of the Creeks, noise, garbage being placed in fractured shale, traffic, odour and decrease in property values.

N. REPLY EVIDENCE

1. Robert Edward John Leech

Mr. Leech stated that there is some dilution in the toe drain sample; however, he is of the opinion that the dilution estimated by Mr. Ridley is too high. Mr. Leech did a calculation to determine the quantity of water that would migrate into the toe drain system from the non-refuse side and also a calculation of the leachate that would hypothetically be collected in the toe drain and the retrofitted toe drain. In addition, he calculated the amount of water infiltrating into the toe drain using a trough effect for the whole perimeter. Adding all of these together, Mr. Leach obtained a concentration that is not very different than found in other landfills that he has worked on.

Mr. Leech does not accept Mr. Ridley's contention that there is a deficiency of the groundwater analysis. There are a number of background wells and readings from water in the tills. There is

literature regarding the background groundwater for the area and Mr. Leech questioned Mr. Ridley's use of Funk's report on groundwater in shale found some 25 kms from the site when there is literature that deals with groundwater found in shale situated closer to the site. With regard to the shale, it is Mr. Leech's recommendation that a deep monitor be placed there.

Mr. Ridley looked to electro-neutrality in the groundwater as a means of analysis and found that the readings were deficient. Mr. Leech stated that the electro-neutrality tests were conducted by the Ministry of the Environment but if it became necessary, he could make his own calculations and check on those figures.

Mr. Ridley had calculated velocities of the leachate through the shale of 75.7 or 757 metres per annum depending on whether he took a porosity figure of 1 per cent or 0.1 per cent. Mr. Leech reported that he looked at a number of studies for velocity done for shales in the area and these calculated an average velocity of 6 metres per annum to 12 metres per annum. He preferred to take a conservative figure of 15 metres per annum.

Mr. Leech agrees with Mr. Ridley that the plume has not been located and that there is difficulty in finding it. However, he has recommended an ongoing monitoring program to assist in the delineation of the plume and has also recommended the use of diagnostic organic chemicals and new monitors to assist in this search.

With regard to Mr. Ridley's criticism that the dispersion method rather than the advection method should have been used to calculate

the breakthrough time of the leachate through 1.5 metres of till, Mr. Leech responded that in fact he did a diffusion analysis and came to roughly the same conclusions as Mr. Ridley. However, in the diffusion method, the contaminant arrives faster but at a lower concentration, whereas in the advection method, the leachate comes through at a slower rate but at higher concentrations. He wished to have the higher concentrations in order to examine the impact of those higher concentrations on Falcon Creek.

Mr. Leech agrees with Mr. Ridley that the effectiveness of the retrofitted toe drain is not known. He has, however, recommended that the monitoring program incorporate continuous flows so that a water budget approach can be used to assess the efficiency of the system. There are fewer leachate outbreaks now than there were before the installation of the retrofitted toe drain. Even though the shale might be accepting large volumes of leachate, there is some deflection of the leachate at the shale and this is picked up by the toe drain.

With regard to the compatibility of the leachate and till, Mr. Leech stated that the reservations that Mr. Ridley has are based on literature dealing with leachate that is unlike that at the Burlington site. Mr. Leech referred to studies that show that where leachate was exfiltrating or infiltrating through clays, it reduced the permeability of the clays. The Ontario experience indicates that landfill leachate does not impact significantly on clay. Mr. Leech's conclusion is that the impact of the leachate on the tills in areas B and D will be negligible.