Exhibit 34

Gartner Lee Associates Limited

Consulting Engineering Geologists and Hydrogeologists

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WITNESS STATEMENT

OF

R.E.J. LEECH, B.Sc.,M.Eng.Sc.
HYDROGEOLOGIST
GARTNER LEE ASSOCIATES LIMITED

IN THE MATTER OF THE PROPOSED
BURLINGTON LANDFILL SITE
HYDROGEOLOGICAL ASPECTS

MAY 8, 1984.

1.0 STATEMENT BY:

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Toronto-Buttonville Airport,
Markham, Ontario,
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2.0 STATEMENT FOR:

This statement and other related studies were prepared at the request of M.M. Dillon Limited on behalf of the Region of Halton.

3.0 QUALIFICATIONS AND EXPERTISE:

I was born and raised in the Midland area of England. In 1966, I attended the University of Aston in Birmingham where I received a combined honours degree in geology and chemistry in 1969. In 1974, I attended the University of New South Wales, Australia, and in 1978, received a masters degree in hydrogeology.

From 1970 to 1979, I was employed as a hydrogeologist by the Geological Survey of Western Australia. From 1979 to the present, I have been employed by Gartner Lee Associates Limited. In 1982, I was appointed a partner in Gartner Lee Associates Limited. Throughout my career, I have kept abreast of technical advances in hydrogeology by attending courses, symposia and conferences in Australia, North America and Europe.

Our company has been involved in area studies delineating lands that are suitable for waste disposal for over 15 regional municipalities and counties. We have also been involved in hydrogeologic design studies of numerous proposed landfill sites and active facilities. In addition, we have consulted to all levels of government, both Provincial and Federal on both practical and research assignments related to contaminant migration in ground water flow systems.

In summary, I feel my experience in waste management as it relates to hydrogeology qualifies me as an expert in this field. My curriculum vita follows:

3.1 CURRICULUM VITA: R.E.J. Leech

POSITION:

Hydrogeologist and partner in Gartner Lee Associates Limited, a firm of consulting Hydrogeologists, Engineering Geologists and Biologists.

EDUCATION:

1966-1970: B.Sc.(Hons.), University of Aston, U.K., in geology and chemistry.

1974: Certificate of Engineering Hydrology and Ground Water Hydrology, University of New South Wales, Australia.

1978: M.Eng.Sc., University of New South Wales, Australia, Thesis "The Geology and groundwater hydrology of part of the Canning Basin, Western Australia".

EXPERIENCE:

1971-1979: Hydrogeologist - Geological Survey of Western Australia.

For eight years Mr. Leech was a hydrogeologist for the Geological Survey of Western Australia. During that time he worked on numerous ground water related projects. Some of the more interesting projects worked and reported on are as follows:

Evaluation of an unconfined aquifer system on the Swan Coastal Plain. Evaluation was based on physical and hydraulic data obtained from test boreholes. Graphs of drawdown or recovery against distance^2/time were plotted for all responding bores, and were matched to Boulton delayed yield or Hantush leaky artesian modifications of the non-equilibrium type curves. Step-drawdown analyses were also carried out on test pump bores in order to estimate bore efficiencies, using the Sheahan approach. On Mr. Leech's recommendations further exploratory bores were drilled and this aquifer is now an important contributor to Perth's water supply.

Supervision of down-hole hammer drilling through basic tuffs and lavas in a semi-arid area of Western Australia. This area was most unfavourable for a water supply, but 1000 m^3/d of potable water was found to supplement a small town supply.

A study of a confined aquifer system in the Canning Basin of northwestern Australia. An initial reconnaissance was done collecting water samples from existing artesian bores

and springs. A hydrochemical study showed probable recharge areas and flow directions in the basin. These were subsequently proven by exploratory drilling. This project was part of a feasibility study for a new development centre in the Pilbara Region iron ore province and North-West shelf off-shore gas deposits of Western Australia. The total cost of the Phibara development project has been estimated to be $A 6,000 million. This project provided the basic data for Mr. Leech's Master Degree Thesis.

Mr. Leech was a member of a team of three for reconnaissance mapping of 18,000 km² at 1:250,000 scale of Proterozoic sedimentary basin deposits, and of Archaen granatoid and banded iron formation rocks. This mapping was done in parts of the Great Sandy and Gibson Deserts of Western Australia. The six months field work included the use of helicopter traverses as well as conventional four-wheel drive vehicles. Six months office work was required to compile the geological maps and write explanatory notes.

Mr. Leech conducted a study of the hydrology of a small popular holiday island off the west coast of Australia. Prior to this study the island had relied upon runoff from two small bitumen catchments and water shipped in barges from the mainland. The study involved a drilling program which delineated a fresh water lens.

Production bores were constructed and are now an integral part of the island's water supply together with the bitumen catchments. Since completion of this investigation no water has been shipped from the mainland -- a saving of some $A 60,000 per year.

Mr. Leech was co-author of two papers on the hydrogeology and environmental geology of extension areas, to two existing, expanding townships in the northwest of Western Australia. These reports outlined potential problems caused by household irrigation of gardens on clayey soils, due to a rising water table and soil salt build-up. Environmental implications of the various areas were also commented upon.

1979-1981: Senior Hydrogeologist - Gartner Lee Associates Limited.

Since joining Gartner Lee Associates in 1979, Mr. Leech has provided consulting advice to a variety of clients on many aspects of ground water related problems. In particular, he has been actively involved in many contaminant hydrogeology problems across Canada. Studies in which he was involved as principal investigator as well as project manager include: a complex organic chemical spill in Manitoba and Saskatchewan. Mr. Leech participated in the evaluation of abandoned industrial waste disposal sites for the Ontario Ministry of the Environment's Central Region. He has also supervised many ground water resources evaluation studies. In addition, Mr. Leech has been involved in a number of area waste management studies and site specific landfill hydrogeological assessments; both for existing and proposed sites.

Mr. Leech, since joining Gartner Lee Associates Limited, has been involved in consulting in the area of deep well, low permeability testing, for Atomic Energy of Canada Limited's nuclear fuel waste management program. Mr. Leech has been project manager for these studies for research

areas in both Ontario and Manitoba. Mr. Leech's involvement is at a technical level as well as supervising the management aspects. As well, he is the author or co-author of several research papers describing this work.

1981-1982: Associate of Gartner Lee Associates Limited.

Mr. Leech was appointed an Associate of the firm in 1981, and continued to provide hydrogeological consulting advice to the firm's clients. During this period, Mr. Leech appeared as an expert witness for a number of clients at environmental and other public hearing forums.

1982-Present: Principal - Gartner Lee Associates Limited

Mr. Leech was elected a shareholder and Principal of the firm in 1982. Since then he has continued to provide advice to the firm's clients both in Canada and internationally. He is responsible for providing advice on the formulation of company policy, particularly as it relates to hydrogeology and international operations.

AFFILIATIONS:

Mr. Leech is a fellow or member of the following professional societies:

- Geological Association of Canada
- Geological Society of London
- National Water Well Association

PUBLICATIONS:

1. Derby Town Water Supply: West. Australia Geol. Survey, Rec. 1972/15, Leech, R.E.J., 1972.

2. The Geology and Ground Water Hydrology of Part of the Canning Basin, Western Australia: Master of Engineering Science Thesis, University of New South Wales, Australia. Leech, R.E.J., 1978.

3. Geology and Ground Water Resources of the South-western Canning Basin, Western Australia: West. Australia Geol. Survey Rec. 1979/9. Leech, R.E.J., 1979.

4. Deep borehole testing techniques developed for Canada's nuclear fuel waste management program: Quality of Ground Water. Proceedings of an International Symposium, Noordwijkerhout, The Netherlands, 23-27 March, 1981, W. van Duijvenbooden, P. Glasbergen and H. Van Lelyveld (Eds.), Studies in Environmental Science, Volume 17, Elsevier Scientific Publishing Company, The Netherlands. Leech, R.E.J., 1981.

5. Deep borehole testing techniques developed for Canada's nuclear fuel waste management program. The Science of the Total Environment, 21 (1981), 137-148. Leech, R.E.J., 1981.

6. Explanatory notes on the Bullen 1:250,000 geological sheet, Western Australia: West. Australia Geol. Survey geological map series (SG51-1). Leech, R.E.J., and Brakel, A.T., 1980.

7. Preliminary terrain assessment of three potential research areas in Northern Ontario: Atomic Energy of Canada Limited Technical Record, TR-196, April, 1982. Leech, R.E.J. and Cooper, A.J., 1982.

8. A preliminary terrain evaluation of the Eye-Dashwa Lakes pluton, Atikokan Northwestern Ontario: Atomic Energy of Canada Limited Technical Record, TR-202, September 1982. Leech, R.E.J. and Cooper, A.J. 1982.

9. Some geochemical results from Forsberg Lake (Atikokan) borehole sampling: Presented to the Atomic Energy of Canada Limited Hydrogeology Research Program Symposium, April, 1981. Leech, R.E.J. and Dickin, R.C., 1981.

10. Stirling Range Area; Notes on bore sites suggested as district watering points: West. Australia Geol. Survey, Rec. 1976/18. Leech, R.E.J. and Moncrieff, J.S., 1976.

11. The Forsberg Lake (Atikokan) hydrogeology testing program; philosophy and preliminary results: Presented to the Atomic Energy of Canada Limited Hydrogeology Research Program Symposium, April, 1981. Leech, R.E.J. and Pearson, R., 1981.

12. Hydrogeological Research in Support of the Canadian Nuclear Fuel Waste Management Program; The Atikokan, North-West Ontario, Research Area: Presented to the Annual Geological Association of Canada Meeting, Calgary, May, 1981. Leech, R.E.J. and Pearson, R. 1981.

13. Karratha Townsite and Light Industrial Area Expansion Geological Report: West. Australia Geol. Survey Hydrology Report No. 1660. Barnett, J.C. and Leech, R.E.J., 1977.

14. Wickham Townsite Expansion Study: West. Australia Geol. Survey Hydrology Report No. 1716. Barnett, J.C., and Leech, R.E.J., 1977.

15. Geology, Mineral Resources and Hydrogeology of the Darling System, Western Australia: in Atlas of Natural Resources, Darling System, Western Australia, published by the Department of Conservation and Environment, Western Australia. Biggs, E.R., Leech, R.E.J., and Wilde, S.A., 1980.

16. Explanatory notes on the Trainor 1:250,000 geological sheet, Western Australia: West. Australia Geol. Survey geological map series (sheet SG.51-2). Brakel, A.T. and Leech,

17. Geology and Hydrology of Rottnest Island: West. Australia Geol. Survey Report Series No. 6. Playford, P.E. and Leech, R.E.J., 1977.

4.0 CONTENT OF STATEMENT:

This witness statement will address the hydrogeological setting of the Halton Region Burlington landfill site. Hydrogeological conclusions and recommendations, pertinent

to design of the future operations of the site are summarized. The evidence is summarized as follows:

SECTION 5.0 - Introduction of evidence.

SECTION 5.1 - General hydrogeological concerns at all landfills.

SECTION 5.2 - Hydrogeological aspects of the Burlington landfill site.

5.0 INTRODUCTION OF EVIDENCE:

Gartner Lee Associates Limited was retained by M.M. Dillon Limited in 1983 to provide hydrogeological expertise to assist in the development of the continued use proposal for the Burlington landfill site. Our work consisted of both desk top and detailed field investigations. This work resulted in the issuance of the report entitled "Hydrogeological study - Burlington landfill site - continued use" dated March 30, 1984. Details of the evidence summarized here are contained in the above referenced report.

Prior to the above noted study Gartner Lee Associates Limited had worked previously on the Burlington landfill site for both the Region of Halton and M.M. Dillon. Hydrogeological work for the Region included a ground water monitoring program for years 1980, 1981 and 1982. The 1983 monitoring report is currently in preparation and the 1984 monitoring program has been initiated. Previous hydrogeological work for Dillon was associated with the preparation

of the report entitled "Hydrogeological study, final report, proposed Burlington Landfill site expansion". This report formed part of a previous application for approval before the Environmental Protection Act board. Results from these previous reports have been included in the current submission to the board to provide complete documentation and a comprehensive data base.

5.1 General Hydrogeological Concerns at all Landfills:

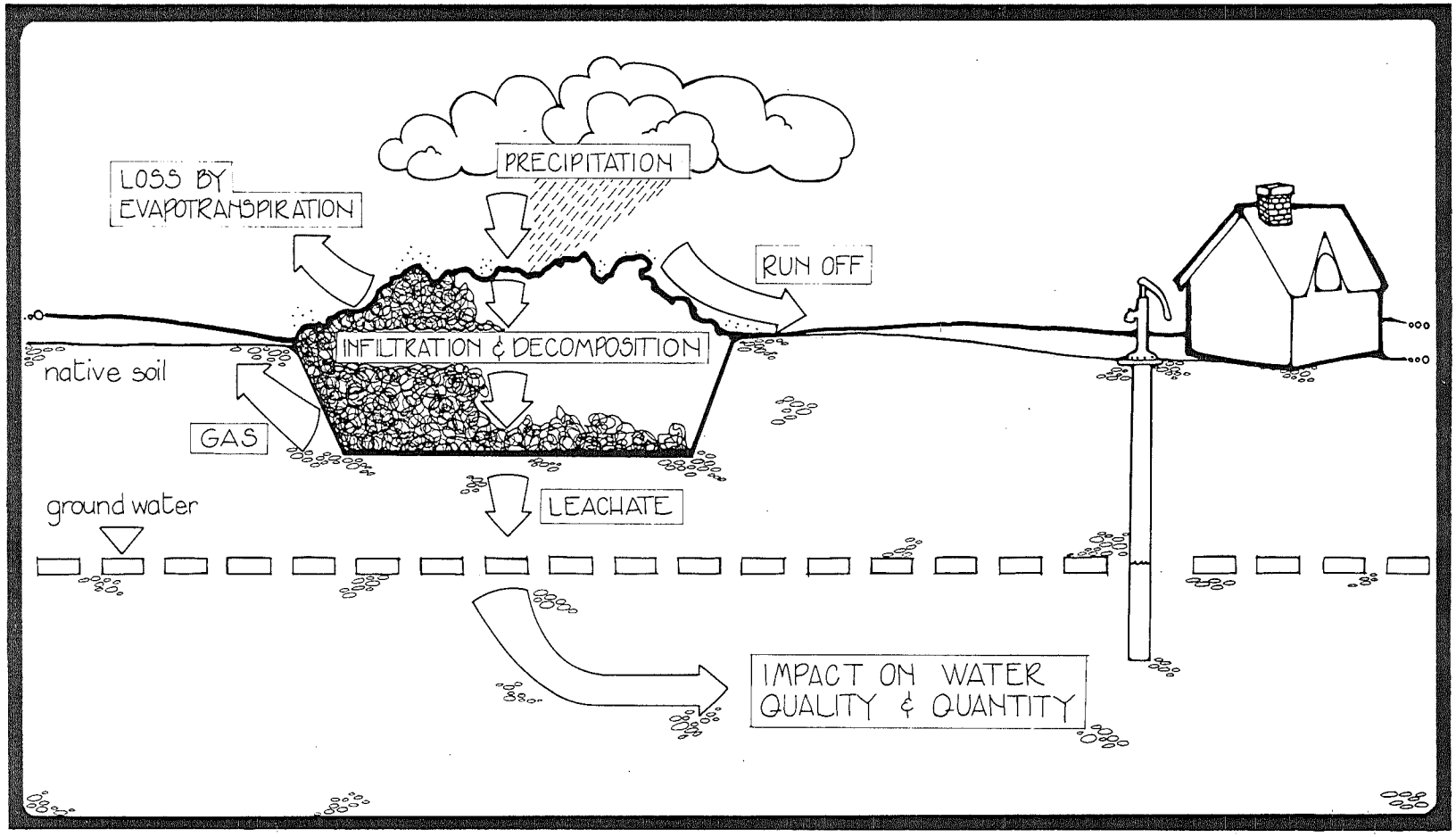
When considering the siting, design and operation of a landfill, one must assess the potential effects on the natural environment.

The following diagram called Landfill Hydrogeologic Concerns depicts refuse placed below the ground in an uncontrolled manner. As noted on the diagram, the two primary concerns of hydrogeologists are:

(i) the movement of leachate and its potential impact on the ground water and surface water resources adjacent to the site, and

(ii) the movement of gas and its potential impact on developments adjacent to the site.

Water from precipitation infiltrates the refuse and migrates vertically downwards towards the water table. Some of this precipitation will run off overland and some will evapo-transpire back into the atmosphere. That fraction that



LANDFILL HYDROGEOLOGIC CONCERNS

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infiltrates the refuse, during its migration, will suspend and/or dissolve contaminants creating what is commonly referred to as leachate. These physio-chemical reactions also create gases, methane and carbon dioxide being of major concern. Methane is lighter than air and potentially explosive. Carbon dioxide is heavier than air and mixes with the ground water increasing its hardness.

The contaminated water infiltrates to the water table where it enters the ground water and migrates with the flow system. Simply stated, a site can be considered hydrogeologically suitable for landfilling if it can be shown that leachate and gas will not migrate to impact adjacent properties. Thus it is important to know the hydrogeological setting in the vicinity of any proposed disposal area.

For example, if a landfill was placed within an environment which consisted of sand and gravel, many adverse potential problems would have to be overcome. Leachate generally moves very quickly through these soils (30 to 100 m/a) and contamination a long way from the site can result. Similarly, methane would also probably migrate long distances creating potential hazards to adjacent development. These are poor areas to place solid waste.

On the other hand, if a landfill was placed in a clayey environment, hydrogeological problems would be minimal. Gases would naturally vent through the garbage, and not the adjacent soils (garbage being more permeable than clayey soils). Thus, no impact would occur on adjacent development. Also leachate would move less than 0.3 m/a compared with the 30 to 100 m/a for sand and gravel. Thus no impact on ground water quality would likely occur either.

The above concepts are general, but will be discussed specifically in my evidence on the Burlington landfill.

5.2 HYDROGEOLOGICAL ASPECTS OF THE BURLINGTON LANDFILL SITE:

The investigations carried out at this site consisted of the following main components:

(i) based on existing available data, a drilling program was designed to assess the continued use lands for waste disposal. The monitors thus constructed were supplemented by soil sampling from backhoe test pits.

(ii) the ground water installations were monitored for water levels over a period of five months. In addition, monitors were tested to provide hydraulic parameters and water samples were also collected for chemical analysis,

(iii) preparation of a detailed report defining the hydrogeology and making recommendations for design of future operations in the continued use area. The report also includes data from previous hydrogeological studies conducted at the Burlington landfill site.

The results of this study are described in detail in the report entitled "Hydrogeological study - Burlington landfill site - continued use" dated March 30th, 1984. The report is divided into a descriptive report forming the main body with supportive data appended.

The Burlington landfill site is located on the lower slopes of the Niagara Escarpment. The upper portion of the slope is underlain by low permeability till soils while to the south the till thins and bedrock exposures predominate. At the landfill site, there are two distinct geological settings, to the north in the proposed continued use area clayey silt tills up to 15 m thick predominate, and to the south where the existing landfill is located the till thins and in the extreme south landfilling has taken place directly onto bedrock. The bedrock in this area comprises the Queenston Formation, commonly referred to as the Queenston shale.

Assessment of the Ministry of the Environment water well records indicate that there are no extensive aquifers down-gradient from the site. Ground water in the Queenston shale is of extremely poor quality in the vicinity of this site.

The clayey silt till is dense to very dense and uniform throughout its thickness. No extensive sand lenses occur. The till varies in thickness up to 15 m. The till has a cation exchange capacity greater than 10me/100g which would assist in leachate attenuation. The till has an average permeability of $1x10^{-9}$ m/s based on both field and laboratory tests.

The Queenston shale is reddish, brown with thin beds of greenish, grey limestone. The shale is fractured and jointed. The shale has a similar cation exchange capacity to that of the till, and has an average permeability of $5x10^{-8}$ m/s.

Ground water movement at the landfill site is mainly to the south with minor components to the east and west. A ground water divide occurs to the north of the site where a small component of flow is toward Falcon Creek. Flow directions in both the overburden and bedrock are similar. Ground water flow velocities in the unfractured till are about 0.02 m/a and in the fractured till about 6 m/a. In the shale a wide range of flow velocities occur up to a maximum of about 15 m/a.

The current monitoring program has shown that a leachate plume exists to the south of the existing landfill. This plume emanates from the filled area which has no underdrain leachate collection system, and where the till cover is thin or non-existent.

The monitoring program indicates that the plume has migrated about 100 m through the shale bedrock. The monitoring program also indicates that considerable attenuation takes place downgradient from the landfill.

The glacial tills underlying the continued use area provide for good contaminant attenuation. The shale formation contains ground water of very poor quality and as such a leachate collection system may not be necessary in certain situations. However, a leachate collection system has been recommended for this site for the continued use areas, to provide for additional protection of the surface water resources. A leachate collection system has been in operation under part of the site for several years and has been operating effectively. In addition, a buffer zone has been recommended around the proposed fill areas.

A monitoring program at the existing facility has been carried out since 1980. It is recommended that this program be extended to include the continued use area.

The detailed studies indicate that the continued use proposal can be operated safely without detrimental effect on local ground and surface water. The continued use proposal stands on its own merit, it does not interfere with the existing plume, nor does the existing plume have much bearing on the proposal. Even if the continued use proposal were not initiated, the situation with the existing site would continue.

6.0 OTHER EXPERTS:

Gartner Lee Associates Limited has not relied on the opinions of any other experts. Our conclusions and recommendations are based on our own studies.

7.0 WITNESS AVAILABILITY:

I will be available for examination and cross examination if required.

8.0 VALIDATION AND SIGNATURE:

I declare that this statement was prepared by the undersigned, and is a true summary of the facts contained in the hydrogeological study.

GARTNER LEE ASSOCIATES LIMITED

R.E.J. Leech
Hydrogeologist.