

The Honourable Jim Bradley  
Minister of the Environment  
77 Wellesley Street West  
11th Floor, Ferguson Block  
Toronto ON M7A 2T5

August 29, 2012

SUBJECT: The Need for Requiring Regional and Site Geological Investigations for  
Landfills

Dear Mr. Bradley:

MOE is not fulfilling its mandate. Despite the claim that the regulatory position is stringent MOE does not require thorough, objective geological investigations, which is a major shortcoming. If wastes are to be disposed of in landfills, which is still the antiquated practice in Ontario, a thorough knowledge of geological conditions is required in order to assess the probability of: a) groundwater contamination and b) transport of the contaminants to drinking water for people, plants and animals. It makes no difference, whatsoever, if the necessary drinking water comes from a municipal system or from private wells. The time span to be addressed is not merely a few hundred years, but is many, many tens of thousands of years.

MOE staff, including you, cannot claim to be ignorant of the need for geological investigations because letters stating that, with illustrative examples, were written to you (see my letter dated December 20, 2011, paragraph 3) and your ministerial predecessor, John Wilkinson. Replies to those letters from MOE, specifically from Mr. Wilkinson and from the Director of the Environmental Assessment and Approvals Branch, Agatha Garcia-Wright on behalf of both Mr. Wilkinson and you, make it clear that the proponent, not MOE, is in the driver's seat. In the letter dated January 31, 2011, Ms. Garcia-Wright wrote: "*Since nothing has been submitted to the ministry at this time, it is difficult to determine what the proponent may propose to examine in the EA.*" As the regulator it is **MOE's** duty to tell the proponents, by virtue of regulatory requirements, what needs to be studied. Your task is not to wait and see what they choose.

Either by implication or explicit statement the official position of MOE is that improvements to its regulatory approach are not warranted. Again extracting from the letter dated January 31, 2011, Garcia-Wright wrote: "*Should an EA application be submitted to the ministry, it will be assessed against the **high standards** of environmental protection set out in legislation and regulations administered by the ministry before a decision is made.*" (The emphasis is mine.) Ignoring the need for geological investigations contradicts Garcia-Wright's claim about **high standards** and makes it clear that MOE does not take waste disposal in landfills seriously. If it did there would not be repeated applications for landfills that had already been rejected by MOE. Examples that come to mind are the BREC site in the Napanee area and expansion of the Carp site. A natural question to be asked is if a site were

previously rejected by MOE for a new or expanded landfill, why would MOE even allow that site to be considered again?

As a very poignant example of the need for geological investigations, consider the assessment of the risk of a major earthquake to people and the environment. Knowledge of the locations and magnitudes of past earthquakes is the basis of assessing the probability that a future, large-magnitude earthquake, at least as large as the largest known to have occurred in an area, will recur in that area. Unfortunately, seismological records in eastern Canada do not go back in time far enough to provide a representative picture of the distribution of previous major seismicity. For example, the earliest known earthquake documented in the seismological records occurred in 1534. However, evidence of two significant earthquakes having shaken the eastern Ottawa Valley, east of Ottawa, well before 1534 was detected by **geological work** undertaken by two geologists from the Geological Survey of Canada (GSC). (A copy of one of their papers is included.) According to them each of those earthquakes was estimated to have been at least a magnitude 6.5. The first of those two rumbled through the area about 7060 years ago and the second happened about 4550 years ago.

Information about those earthquakes is important in assessing the risk to people and the environment and would not have been uncovered **without the geological investigations**. It must also be noted that, according to the seismological record, no earthquakes in that area since 1534 were that large, which means that the assessment of seismic risk would be lower than it really should be if reliance were to be placed exclusively on the earthquake catalogue (from 1534 AD-present).

Independently of the aforementioned work undertaken by the GSC geologists, an unpublished assessment of the shapes and characteristics of ridges and valleys that bound and occur within Mer Bleue, a well-known bog in the Ottawa area, was undertaken. It is inferred that significant fault movements had occurred sometime after the last ice age and created the escarpments that separate the topographically depressed area that had been occupied by the Ottawa River from the higher ground. An example is shown in Figures 1 & 2. The north- and south-facing escarpments (Figures 1 & 2, respectively) are inclined towards each other and separated by the same area of low ground between them. Because movements along faults produce earthquakes, it is highly likely that significant earthquakes were generated by those geologically young fault movements, in an area with a high water table, liquefiable soil and proximity to proposed landfill sites. **Information from the Ministry of the Environment's (MOE) own water supply well records added considerable, and possibly irrefutable, support to that geologically based deduction.**



Figure 1 North-facing straight-lined escarpment separating topographically lower area (on the right) from higher ground (on the left).



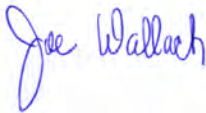
Figure 2 South-facing straight-lined escarpment separating the same topographically lower area seen in Figure 1 from the higher ground.

The earthquakes of the eastern Ottawa Valley, and those inferred from the geologically young faults bounding and within Mer Bleue, would definitely add to the risk of a new landfill placed at either of the two sites being considered by Taggart-Miller. It may even make the development of landfills at either site untenable. Therefore applications for a landfill by Taggart-Miller should be put on hold until you require a detailed, objective geological investigation and have the resulting reports, with their tables, maps and figures, reviewed by competent geoscientists.

A major near-field earthquake, such as one occurring within Mer Bleue, could be expected to compromise the containment of waste in a landfill and facilitate groundwater transport of contaminants. The objective of the work that you should require would be to demonstrate that the likelihood of negative impacts on a community and its people are **extremely low-probability events**. That restriction should be placed on landfill applications anywhere in Ontario.

A personal reply from you indicating either: 1) why MOE refuses to require proponents of landfills to conduct detailed, objective site and regional geological investigations in the province, or 2) that you will order such studies of proponents would be welcome. If you opt for the first choice, please do not simply state that your requirements are rigorous, but explain thoroughly why you believe that to be the case. We would like to hear from you before any future Terms of Reference (ToR) for any proposed landfill sites anywhere in Ontario are approved by MOE.

Sincerely,



Joe Wallach

Cc: Agatha Garcia-Wright, MOE  
Jeffrey Dea, MOE  
Grant Crack, Liberal MPP,  
Tim Hudak, Leader of the Conservative Party,  
Andrea Horwath, Leader of the Provincial NDP Party