

Craig Laing
Ministry of Natural Resources
2284 Nursery Road
Midhurst, Ontario
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May 27, 2011

Re: application by The Highland Companies to mine limestone in Melancthon Township, County of Dufferin

Supplemental to my submitted letter of objection dated April 18, 2011

Dear Mr Laing,

I would ask that additional material be added to a point I made in my letter regarding the use of explosives in the below the water table quarry operation.

In the weeks since writing the April 18th letter, I have been researching the use of ANFO explosives in quarrying, and am increasingly alarmed about the total lack of attention in the applicant's submission to the potential for water contamination from these explosives. What is glaringly absent in the Highland application is any mention, let alone discussion, of the very real *probability* of contamination of the groundwater through the daily handling and detonation of tons of ANFO six days per week. There is no discussion, no plan, no study. On a matter of such major impact on the quality of water, there should be a full-blown study and report to tell us how the applicant will deal with the explosives and the inevitable contamination. Instead, there is nothing. To believe there would be no contamination would be naïve and unformed to the extreme. **Why is this missing from the application?**

“Water quality impacts due to the introduction of nitrates into the system can be a significant problem for a mining operation. The major source for the nitrates are explosives used in the mining process.”
from a paper titled “Explosives and Water Quality” by Bill Forsyth, Alan Cameron, and Scott Miller, Golder Associates.

“The project's design and water management plan will ensure that no one's water is affected beyond its property line. The proposed quarry will not have an adverse effect on the existing or future sources of groundwater drinking water within the Nottawasaga Valley or Grand River Source Water Protection Areas.” from “An Open Letter to the Community”, by The Highland Companies in various publications, April 2011

“The detonation of Ammonium Nitrate Fuel Oil (ANFO) is often incomplete in a wet environment, leaving behind toxic and water-soluble by-products of unreacted AN as nitrate and ammonia into the environment.” *from the technical memorandum “Assessment of ANFO on the environment”,* Defense Research and Development Canada (DRDC), January 2010.

“In simple terms, water that collects in the bottom of the quarry from precipitation and the inward movement of groundwater will be pumped out of the quarry and recharged into the ground around the extraction area.” *from the Highland Companies' “Hydrologic Assessment”,* Volume 1, section 3.1

I would expect that the issue of ammonium nitrate and fuel oil contamination of the groundwater would be high on the list of concerns for your ministry and that you would insist on a complete and thorough study. This omission by the applicant illustrates either incompetence, inexperience, or a serious lack of concern for the environment. I'm not sure which. I expect that the Ministry would look upon this matter with the seriousness it deserves.

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cc. The Highland Companies
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