As requested, the following are my comments on the recently proposed modifications to the Adaptive Management Plan (AMP) for the proposed Rockfort Quarry:

1) It is important to note that the fundamental flaw in the original AMP identified in my previous report (Feb. 2001 letter report) and in the report by Blackport Hydrogeology Incorporated (BHI) commissioned by DFO remains unaddressed by the proposed revisions. The flaw results from the use of a numerical model inappropriately simulates groundwater flow and the effects of the re-injection well gallery in the vicinity of proposed quarry. The inaccuracy of the model stems from the simplistic approach used to simulate the fractured rock of the Eramosa and Amabel formations (discussed in detail on pg. 12 and 13 of my previous report). Thus, it is my contention that the design and potential success of the re-injection well gallery (which constitutes the primary mitigation measure) is completely uncertain. The proposed "recharge demonstration testing" will do nothing to alleviate this fundamental problem. Rather, the "testing" program will simply identify interconne between boreholes, and will tell us nothing about whether the recharge well will sustain the necessary hydrauli head during quarry operations.

2) As I have previously suggested, with corroboration from BHI, the numerical modelling must be conducted using the hydraulic conductivity values for the layers of rock characterised during the hydraulic testing progr carried out by CRA. By choosing to represent the domain using an equivalent porous media approach, the effect of the higher permeability discrete layers representing fracture features are not considered. Thus, the amount o water and the number of wells required to sustain hydraulic head in these features is likely underestimated. Because these fracture features are clearly linked to the cold water fisheries, an adverse effect is likely with present design. Again, the "recharge demonstration program" will do nothing to alleviate this concern.

3) As I have stated in my previous report, "The present mitigation plan depends primarily on the use of re-injection wells. According to JDCL predictions, well over 100 re-injection wells will be required towards the end of the construction phase. No other re-injection gallery of this magnitude is known to exist in a quarry setting". Note that this conclusion was not contested or addressed in the revised AMP. In my opinion, based on the potential for underestimating the required number of wells, the need for a proper demonstration as suggested in my previous report, is paramount. Should a mining program be undertaken using the present re-injection design, even with a detailed monitoring program, once the failure of groundwater discharge into the cold w fisheries is detected, the damage will have been done.

4) In my previous report, I suggested (as did BHI) that a new modelling approach be adopted which more correctly simulates the off-site fracture features. Because of the uncertainty associated with the viability re-injection well gallery, I also suggested that a recharge demonstration be conducted at an existing quarry under the actual field conditions anticipated (pg. 14, 2nd paragraph). This would not be an onerous task, and considering the potential cost to the proponent of the re-injection gallery, would provide corroboration (or not) of the modelling results. Neither of these suggestions were considered in the revisions to the AMP.

5) An additional concern identified in my report regarding the long-term behaviour of the re-injection wells related to the short-circuit that would be established between the injection well and the collection trench (pg. 16 This short-circuit would result in enlargement of the fractures due to carbonate dissolution, resulting in a significant decline in the ability to sustain hydraulic head over the duration of the mining period. There are revisions to the AMP that address this issue.

6) The use of grouting was suggested as a mitigative measure in the original AMP, should the re-injection wells fail in sustaining the necessary hydraulic head. Despite the indication from their own consultant that there experience with large-scale grouting in carbonate rock having large-aperture fractures (Conestoga Rovers &Assoc., Preliminary Design Report, Oct., 2000, Appendix B, pg. 1), which was identified in my previous repo (pg. 16), no further experiments or demonstrations are proposed in the revised AMP.

7) Finally, the last concern identified in my previous report was focussed on the lack of attention given in the AMP to the post operation-phase of the project. Although a brief reference to this phase is provided in the rev

AMP, little detail is provided on the requirements for sustaining the hydraulic head during this time. Most certainly, with the operation of the re-injection system discontinued at a time when the water level in the qu remains below the pre-quarrying level, the impact in the down gradient features will be significant. Again, indicated in my previous report, because an analysis of off-site impact in the absence of mitigation was r conducted, we can only assume, based on the simple calculations that I conducted, that the impact will be profound.

Sincerely,

Kent S. Novakowski, PhD