Fisheries and Oceans Canada | Pêches et Océans Canada

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Your file *Votre référence*

April 22, 2007

Our file *Notre référence*
07-EIA-022

Ms. Vanessa Margueratt
Environmental Assessment Officer
Nova Scotia Department of Environment and Labour
5151 Terminal Road
PO Box 697
Halifax, NS
B3J 2T8

Dear Ms. Margueratt:

Subject: **"DRAFT REPORT, Environmental Assessment Registration, Elmsdale Quarry Expansion Project, Gallant Aggregates Limited, Project No. 1013296".**

Fisheries and Oceans Canada (DFO) – Habitat Protection and Sustainable Development (HPSD) Division has completed the review of the aforementioned document (the Report). DFO's review has focused on potential impacts to fish and fish habitat. It is our understanding that the proposed expansion will result in a quarry of an additional 60ha with an anticipated production rate of 400,000-500,000 tonnes/yr.

The following comments are related to information, planning or contingency planning deficiencies that should be addressed by the proponent:

Fish Habitat

- At full development, the proposed quarry will impact various tributaries to Beaver Brook which supports fish habitat as defined by the federal *Fisheries Act*. The fish habitat found in tributaries A, B, C and D respectively, and Beaver Brook form part of the Shubenacadie watershed which supports populations of various fish species including the Atlantic salmon, a species listed as endangered under the federal *Species at Risk Act*. Furthermore, DFO considers the wetland complexes within the boundaries of the proposed expansion to provide a critical ecological function in supporting base flows to fish habitat.

- Anticipated impacts to fish habitat include:
  - The physical destruction of surface water resources identified in watercourses A, B, C and D as the mine progresses to full development.
  - Disruptions and/or harmful alteration(s) of groundwater inputs to Beaver Brook

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and watercourses A, B, C and D, thereby reducing water quality (temperature, turbidity, volume and velocity).

- Any impacts to fish habitat in watercourses A, B, C and D or Beaver Brook would require a *Fisheries Act* Authorization for the harmful alteration, disruption or destruction of fish habitat. A key requirement for Authorization is the development of a suitable fish habitat compensation plan for the loss of fish habitat, **prior to** the issuance of the Authorization. It must be noted since these watercourses support the habitat of endangered species (Atlantic salmon and to a lesser extent, Striped bass), issuance of the federal *Fisheries Act* Authorization is contingent upon the suitable mitigation of impacts to endangered species.

Water Budget, Groundwater and Surface Water Management

- The final proximity of the proposal to Beaver Brook is a concern, as are impacts to watercourses A, B, C and D. The groundwater monitoring well system (to be finalized) should take into account potential groundwater impacts to Beaver Brook, and watercourses A, B, C and D which may in turn affect surface flows in Beaver Brook (velocity, temperature, turbidity and volume).

- The monitoring well system should be designed to ensure that changes in groundwater flow patterns and water quality are detected proactively such that mitigation measures can be employed, prior to any adverse impacts to fish habitat occur. This would not only include monitoring of groundwater flows to the respective water bodies but also monitoring stations within the watercourses themselves to assess flow, up welling, wetted perimeter of watercourse (base flow), turbidity and temperature. A baseline assessment of these attributes should be undertaken for Beaver Brook and watercourses A, B, C and D and assessed by DFO prior to any expansion of the quarry.

- The intent of the groundwater monitoring program should reflect fish and fish habitat and species at risk management objectives.

- What is the contingency plan for water requirements during the summer and fall months when groundwater seepage into the pit may be minimal or non-existent? Are water withdrawal permits being considered for nearby watercourses?

Sediment Erosion and Control

- Contingency plans for discharging excess quarry water (overflow) require further development. The location of proposed discharges needs to be defined and outlet structures designed and submitted to DFO for review.

- DFO appreciates efforts to ensure that appropriate erosion control measures are in place. The primary mitigation measure to avoid impacts of this nature (sedimentation of fish habitat) is to ensure that dirty water is not allowed to mix with clean. Ensuring suitable measures to contain water on site is critical and DFO awaits

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final designs for site sediment and erosion control.

- An acid rock management plan needs to be developed for this proposal given the likelihood of encountering sulphide bearing.

Adaptive Management- Phased Development

- A phased approach to project development would allow for an adaptive approach to monitoring and management of potential effects to surface water and groundwater resources which in turn may impact fish habitat. Linking site expansion to environmental effects management performance criteria is an effective mitigation strategy to deal with uncertainties and ensure sustainable development. DFO looks forward to further dialogue with the proponents and the NS Department of Environment in this regard.

Blasting

- The design of the blasting plan should incorporate an assessment of potential effects to fish in adjacent watercourse as well as potential effects to groundwater flows to fish habitat. Consideration should be given to recommendations provided in the DFO document "Guidelines for the Use of Explosives In or Near Canadian Fisheries Waters, D.G. Wright and G.E. Hopky, Canadian Technical Report of Fisheries and Aquatic Sciences 2107". The results of this analysis should e reviewed by DFO prior to implementation.

Should you have any questions or comments, please contact myself directly by telephone at (902) 426-1269, by fax at (902) 426-1489, or by e-mail at crockerj@dfo-mpo.gc.ca.

Yours sincerely,

Original Signed by
Joe Crocker
Habitat Assessment Biologist

c.c.: C. Hominick– AHC ENS

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