

**Nova Scotia
Environment & Labour**

Hydrogeology Presentation

**to the Whites Point Quarry
Joint Review Panel**

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NOVA SCOTIA Environment and Labour

Presenter:

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Overview:

- Comments on the Environmental Impact Statement
- Potential effects on groundwater
- Management options

Hydrogeological comments:

- The proposed depth of the quarry relative to groundwater levels must be known in order to evaluate impacts on groundwater.
- The EIS states that there is no intention to quarry below the water table at any time.
- Cross-sections in the EIS show the final quarry floor primarily at 13 m, asl and the water table to be located primarily at about 13 m, asl.



Hydrogeological comments:

- Data presented in the EIS show that groundwater levels are greater than 35m, asl in 8 of the 9 monitoring wells and boreholes at the site.
- Clarification is needed on why the EIS assumes the water table is located primarily at 13 m, asl and how quarrying will be restricted to above the water table.



Hydrogeological comments:

- An assessment should be carried out to predict how the quarry will affect groundwater levels at off-site water wells.
- This can be done by predicting the extent of groundwater drawdown associated with the quarry, and is best evaluated with a groundwater model.



Hydrogeological comments:

- Additional hydrogeological data should be collected to support the evaluation of groundwater impacts.
- This includes: additional monitoring wells to assess groundwater levels and aquifer properties in the horizontal and vertical direction.
- The additional monitoring locations could also be used for future monitoring.



Potential impacts on groundwater:

- The main potential impacts on groundwater include:
 - reduced groundwater levels, which may effect nearby water wells;
 - blasting may cause yield changes and temporary siltation at nearby water wells.

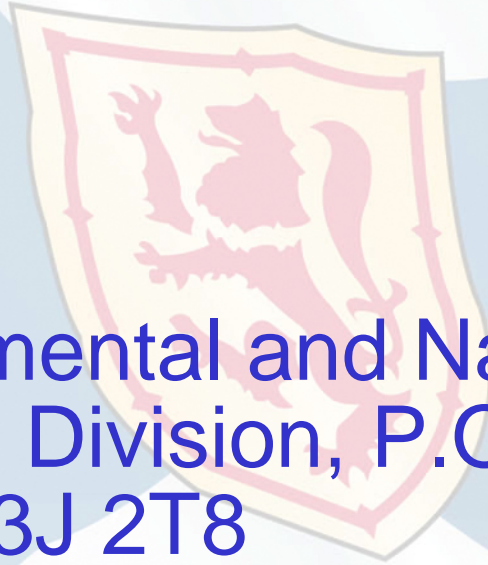


Management options

- Approaches to manage potential effects on groundwater include:
 - quarry above the water table;
 - design blasting procedures to minimize off-site effects;
 - groundwater monitoring plans;
 - contingency plans to address impacts to water wells.



Thank You



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