Nova Scotia

Department of
the Environment
& Labour

Central Region
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MEMORANDUM

TO: **Helen Mac Phail**
Environmental Assessment Officer

FROM: **Bernard J. Matlock, P. Eng.**
Regional Engineer

DATE: **March 6, 2008**

SUBJECT: **EA Registration - Fundy Gypsum**
Millers Creek Mine Extension

I have reviewed the Environmental Assessment Registration document prepared by Conestoga Rovers & Associates on behalf of Fundy Gypsum Company for the proposed expansion of the Millers Creek Gypsum Mine.

I have had limited time to review this final document registration document, however, I provide the following comments on the submission:

In general, I thought the report seemed to outline much of the issues related to potential environmental impacts due to the proposed mine expansion. I was pleased to know extensive baseline monitoring has been completed, as well as extensive efforts on effective public consultation in and around the study area. It was also good to see the company commit to a conservation area within which there appears to be gypsum resources.

I believe the expansion to the new area will benefit the reclamation of the existing disturbed site. Much of the infrastructure and equipment will remain in place to assist in completing this job.

If the environmental assessment registration is recommended with terms and conditions the following additional requirements should be added:

1. Prior to the expansion the company will be required to obtain an amendment to the existing Industrial Approval pursuant to Part V of the Environment Act. Information supplied with this application should include full details of environmental controls required to mitigate potential adverse environmental impacts. An amendment to the existing industrial approval for the expansion of the mine will be required prior to commencement of construction or operation in the identified area. The status of existing operations should be included with the application. An Environmental Management Plan should be supplied with the application as described in the registration document.

2. It is strongly recommended that a Conservation Area be established as outlined in the registration document.

3. The area identified for expansion should be clearly presented on plans prepared by a professional consultant or surveyor.

4. The company should provide confirmation in writing from the municipality that land use bylaws and appropriate permits have been or need to be obtain ed for the development.

5. Future applications should be clear on the anticipated impacts or changes in impacts which will occur beyond the area of mine expansion. (Example: Gypsum which is transported to the crusher on the existing site is expected to generate waste fines which will need to be disposed. How will this effect both sites particularly during the reclamation phase?

6. I believe the proposal would benefit from an ongoing program to assess the impacts of noise such as that associated with backup beepers and truck activity on elevated waste dump areas. Mitigation measures might be recommended based on possible impacts from nighttime noise?

7. Detailed and recent aerial photographs of the existing site should be supplied.

8. The detailed Mine Development Plans should be supplied. These would include but not be limited the sequence of mine development and progressive reclamation plans . Plans should identify the location of mine effluent release points, surface drainage collection and diversion and environmental control systems. Reclamation plans shall include a detailed estimate of costs for reclamation. Plans should be stamped by a professional engineer licensed to practise in the Province of Nova Scotia.

9. The company should provide soil erosion and sedimentation plans. Plans should be stamped by a professional engineer licensed to practise in the Province of Nova Scotia.

10. The company commitment not to use crushing equipment at the mine site should be upheld.

11. The company should be required to complete a Pre-Blast Survey of structures situated within 800 metres of the expansion area.

12. The company should prepare monitoring plans to address:

    Blast monitoring for air concussion and ground vibration
    Ambient noise and dust emissions
    Mine effluent discharges
    Surface water quality and quantity
    Groundwater quality and quantity
    Fish habitat and environmental effects monitoring

13. The company should supply updated contingency plans to address mishaps such as spills of dangerous goods, fire or other emergency situations. The contingency plan should be developed and updated in accordance with the Department Contingency Plans Guidelines dated May 2004 and subsequent updates of the document.

14. Appropriate approvals will be required to alter or destroy wetlands in accordance with Part V of the Environment Act.

15. Appropriate approvals will be required to alter or destroy watercourses in accordance with Part V of the Environment Act.

16. The company should submit a blast design which demonstrates compliance with air concussion and ground vibration limits.

17. The company should submit a monitoring program which evaluates rock and aggregates for potential acid generating conditions and include any required mitigative strategies.

18. The company should be required to implement a complaint resolution program whereby public concerns are tracked and addressed/resolved in a satisfactory manner.

19. A Stormwater Management plan should be submitted for approval which identifies drainage patterns and outfall locations.

20. It is suggested that a community liaison committee be established to function as liaison between the company and community.

21. The control structures should be designed to achieve compliance with the following anticipated limits for total suspended solids and pH:

    i) **Total Suspended Solids**

    Clear Flows (Normal Background Conditions):

1) Maximum increase of 25 mg/l from background levels for any short term exposure (24 hour or less)
2) Maximum average increase of 5 mg/l from background levels for longer term exposure (inputs lasting between 24 hours and 30 days)

High Flow (Spring Freshets and Storm Events)

1) Maximum increase of 25 mg/l from background levels at any time when background levels are between 25 mg/l and 250 mg/l
2) Shall not increase more than 10% over background levels when background is >250 mg/l

22. The proposed location of settling ponds and liquid effluent discharges should be identified as this will effect the overall footprint of operations.

23. The report mentions the application of a controlled release of mine water to receiving streams to assist in mitigation of downstream surface water and groundwater impacts during operation and following reclamation. Where will controlled release points be? How will the company determine the location and volume of the controlled release? An ongoing stream flow evaluation program will be necessary to fulfill this commitment.

cc. D. Feldman
S. Westhaver
S. Dockerty