



# Potential North Flow Path at Mine Site

## **Would the proposed NorthMet project result in northward flow of groundwater through bedrock?**

The issue of northward groundwater flow in bedrock between the NorthMet Mine Site and the Peter Mitchell pit was raised during Final Environmental Impact Statement (Final EIS) development. Although the Co-lead Agencies believe it is unlikely this would happen, the possibility of such a flow cannot be completely discounted with current information. If such flow were to occur unabated, it could contribute water to the Peter Mitchell Pit located north of the NorthMet Mine Site.

## **What is the strategy to address this possibility?**

PolyMet has proposed monitoring bedrock groundwater flow and implementing contingency measures for actions that can be taken to prevent a northward groundwater flow in bedrock if detected.

## **How can northward flow be detected and prevented?**

The Co-lead Agencies would require robust monitoring and assessment to detect any northward flow as well as to better understand the complex hydrology of this area. If necessary, mitigation would be employed to eliminate the possibility of northward flow.

Monitoring would be situated in bedrock north of the proposed NorthMet pits to measure groundwater levels during and after NorthMet operations. The Co-lead Agencies are confident that monitoring and analysis of bedrock groundwater levels would detect and provide advance notice that a northward flowpath could occur.

Mitigation measures could be done, either individually or in combination, to prevent any northward flowpath from occurring. The exact type, location, scale, and timing of these measures, if needed, are not known at this time. Examples include filling water-bearing cracks in the NorthMet pits with grout, holding pit lake elevations down, withdrawing groundwater with extraction wells, or adding water to recharge groundwater and thus block northward flow. The performance of the measure(s) would be verified through monitoring, with the understanding that the needed mitigation may change over the life of the project.

## **What is the time frame for monitoring and mitigation?**

Monitoring would start the first year of mining and continue until the possibility of a northward flowpath no longer exists. If mitigation is required, it too would be present as long as needed. Monitoring and potential mitigation would be required by permits and the costs would be included in the financial assurance.

### **How would these be enforced?**

The State of Minnesota through the Minnesota Department of Natural Resources and Minnesota Pollution Control Agency permits would evaluate the data and, if needed, would determine mitigation measures.

### **Would the proposed NorthMet project contribute water through bedrock to the Rainy River Watershed?**

No. Preventing flow if it occurs between the proposed NorthMet project and the Northshore mine eliminates the possibility of NorthMet groundwater from entering the Rainy River Watershed.

**For more information about how water quality in the area would be affected by the NorthMet Mining Project and Land Exchange, see the Executive Summary, Sections 4.2.2 and 4.3.2 (Affected Environment, Water Resources), Sections 5.2.2 and 5.3.2 (Environmental Consequences, Water Resources), and Chapter 6 (Cumulative Effects) of the Final EIS. Also, refer to additional Fact Sheets about the NorthMet Mining Project and Land Exchange Final EIS:**

- 1. Project and Land Exchange Overview**
- 2. What is the Environmental Review Process?**
- 3. What's Changed since the Draft EIS?**
- 4. What's Changed since the Supplemental Draft EIS?**
- 5. Supplemental Draft EIS Comment Response Process**
- 6. Effective Commenting on the Final EIS**
- 7. A Guide to the Final EIS Document**
- 8. Air Quality**
- 9. Water Quantity**
- 10. Wetlands**
- 11. Water Quality**
- 12. Wild Rice**
- 13. Mercury**
- 14. Threatened & Endangered Species**
- 15. Cultural Resources**
- 16. Land Exchange**
- 17. Reclamation & Financial Assurance**
- 18. Cumulative Effects**
- 19. Tailings Basin Stability**
- 20. Water Modeling**
- 21. Northward Flowpath**
- 22. Duration of Treatment & Financial Assurance**
- 23. Human Health**