Water Quantity

The area encompassing the proposed NorthMet Mining Project (mine, transportation and utility corridor, and processing plant) is located in northeastern Minnesota near the Partridge and Embarrass rivers, which flow into the St. Louis River and ultimately Lake Superior. The potential effects of the proposed project on water quantity have been modeled and analyzed to determine their nature and to develop measures to avoid or minimize these effects.

The Boundary Waters Canoe Area Wilderness and Voyageurs National Park are located outside the Lake Superior watershed. The proposed NorthMet project's anticipated surface water and surficial groundwater flows would not affect these areas. Potential groundwater flow northward from the Mine Site to the Northshore Mine, if determined possible through monitoring, would be prevented.

How would PolyMet acquire water for processing, and how much would the proposed NorthMet project use?

The water needed for processing at the Plant Site would primarily be provided by reusing water from the tailings basin pond. As a contingency measure, any shortfall in water requirements would be made up by withdrawing raw water from Colby Lake using an existing pump station and pipeline. Throughout operations, the average annual makeup water drawn from Colby Lake would vary between 260 and 1,760 gallons per minute (gpm), with an average annual demand of 760 gpm. This would be the total potential raw water demand for the processing plant. A permit from the Minnesota Department of Natural Resources would be required for the proposed NorthMet project's water use.

Where would the proposed NorthMet project discharge its wastewater?

The proposed NorthMet project would include construction and operation of wastewater treatment facilities at both the Mine and Plant Sites for active treatment of water captured on-site for as long as needed to meet any permit requirements. The Mine Site facility would discharge to the Partridge River while the Plant Site facility would discharge to the Embarrass River. A permit from the Minnesota Pollution Control Agency would be required for discharge to waters of the state.

How could the proposed NorthMet project affect water quantity?

The proposed NorthMet project would not have any substantial effect on water quantity or stream flow.

How were the effects determined?

The potential effects of the proposed NorthMet project on groundwater and surface water quantity in the area were assessed using accepted computer models. These software programs estimated the most likely effects of the proposed NorthMet project on water flow in the area, taking into account the uncertainty around many of the model input assumptions.

What would be done to avoid or minimize effects?

PolyMet would install and operate a system to capture at least 90 percent of the groundwater seepage at the proposed tailings basin and the permanent waste rock stockpile. PolyMet would discharge treated water to augment the decrease in flows in several tributary streams to the Embarrass River, as well as at Second Creek in the Partridge River watershed.

PolyMet would also monitor during operations for potential effects on water quantity to help refine modeling to better predict how the proposed NorthMet project may affect surface water and groundwater in the future. Any unanticipated impacts would be addressed through adaptive management.

For more information about how water quantity 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**