



# Mercury

Many waters in Minnesota are already classified by the Minnesota Pollution Control Agency (MPCA) as “impaired” by high mercury concentrations in fish tissue. Because of this mercury is a pollutant of concern in the Lake Superior Basin, which is where the proposed NorthMet project would be located. As such the proposed NorthMet project would be subject to the Great Lakes Initiative standard of 1.3 nanograms per liter (ng/L) for the discharge of mercury to streams and rivers. Existing mercury concentrations in nearby waters typically range between 3.5 to 6.0 ng/L.

## **How would the proposed NorthMet project release mercury? And what would be done to avoid or minimize these effects?**

The proposed NorthMet project would release mercury in two ways:

- Ore and waste rock from the NorthMet Deposit contain very small amounts of mercury. Water that comes into contact with ore and waste rock acquires some of that mercury. To address this issue, water that comes into contact with ore and waste rock at the Mine Site, as well as water used at the processing plant and tailings basin, would be captured and treated to reduce or remove the mercury before being discharged. Measures to accomplish this would include a wastewater treatment facility at the mine site, a wastewater treatment plant at the processing plant, and water containment systems at the Category 1 waste rock stockpile and tailings basin.
- Some facilities at the processing plant, most notably the autoclave vent and autoclave flash vent, would emit mercury to the air. Air emissions at the processing plant would be controlled by state-of-the-art technology. PolyMet would also monitor air quality and the water quality of surrounding water bodies to be able to adapt the proposed NorthMet project to further avoid mercury effects.

## **How would the proposed NorthMet project affect the amount of mercury in the water and air?**

The proposed NorthMet project is predicted to increase mercury concentrations in the Embarrass River by 0.2 g/yr, while decreasing mercury concentrations in the Partridge River by 1.2 g/yr. There would be an overall decrease in mercury concentrations in the receiving waters due to water treatment activities that would occur as part of the proposed NorthMet project. All water treatment methods would be designed to meet the 1.3 ng/L Great Lakes Initiative standard.

Total potential mercury emissions to air are estimated to be 4.6 lbs/year from the Plant Site; emissions are estimated at less than 1.0 lb/year from the Mine Site. Mercury emitted to the air would be minimal and would not significantly affect fish in nearby water bodies. All mercury released as a result of the proposed NorthMet project would be in line with the MPCA’s mercury reduction goals.

## **How were the effects determined?**

Mercury releases to water were estimated using laboratory leach test methods and mass balance calculations. Mercury releases to air were predicted using the computer software program AERMOD, and the MPCA's Air Emissions Risk Analysis methods were used to determine the effects of these air emissions on fish in nearby water bodies.

**For more information about mercury that would be released as a result of the NorthMet Mining Project and Land Exchange, see the Executive Summary, Sections 4.2.2 (Affected Environment, Water Resources) and 4.2.7 (Affected Environment, Air Quality), Sections 5.2.2 (Environmental Consequences, Water Resources) and 5.2.7 (Environmental Consequences, Air Quality), 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**