PolyMet permit highlights

Wastewater treatment system performance and sulfate

Sulfate Operating Limit of 10 mg/L (based on 12-month average)

- Internal monitoring location: Guarantees that WWTS/membrane treatment achieves required level of sulfate removal
- Enforceable permit limit
- Monitored weekly
- Consistent with existing Wild Rice Sulfate Water Quality Standard of 10 mg/L, which is protective of downstream wild rice

Sulfate Operating Target of 9 mg/L (based on monthly average)

- Trigger value – If exceeded, requires implementation of pre-approved Sulfate Reduction Plan to ensure that the 10 mg/L Operating Limit is not exceeded

Wastewater treatment system performance and metals removal

Copper Operating Limit of 9.3 ug/L (based on monthly average)

- Internal monitoring location: Guarantees that WWTS/membrane treatment achieves required level of metals removal
- Enforceable permit limit
- Monitored weekly
- Consistent with existing Chronic Water Quality Standard for copper

With membrane treatment, if the WWTS can achieve the operating targets for sulfate and copper, it will achieve the Water Quality Standard for other metals as well.

Permit monitoring requirements

Monitoring requirements are extensive – 167 total monitoring points

- Mine site – 99 monitoring points
  - 13 internal monitoring points
  - 78 groundwater monitoring points
  - 8 surface water monitoring points
- Plant site – 51 monitoring points
  - 6 internal monitoring points
  - 39 groundwater monitoring points
  - 6 surface water monitoring points
- Wastewater treatment system – 17 monitoring points
  - 5 influent and internal monitoring points
  - 1 internal enforceable WWTS performance monitoring point

- 1 centralized effluent water quality monitoring point
- 10 effluent flow monitoring points

Provides assurance that all engineering controls are functioning properly, no unauthorized discharge is occurring, and water resources are protected.

Required reports and submittals

Monthly Discharge Monitoring Reports (DMRs)

- All sample results collected for the previous month reported to the MPCA
- Publicly available on MPCA website

Annual Groundwater Evaluation Report

- Annual assessment of groundwater monitoring data
- Early assessment of potential impact to groundwater
- Assess need for adaptive management to avoid impacts
- Assess potential for a north flow path at the mine site

Annual Comprehensive Performance Evaluation Report

- Uses all data to assess performance of individual engineering controls
  - Seepage capture systems and stockpile liners
  - Mine pit dewatering
  - Wastewater storage ponds and conveyance systems
- Assess need for adaptive management to avoid impacts

Model Verification Reports

- Annual and comprehensive 5-year assessments
- Assess performance of the GoldSim models by comparing predicted water quality and water quantity values against actual observed values

Additional permit requirements

- No discharge of process wastewater allowed from mine site: All mine drainage must be collected and pumped to the WWTS for treatment
- Includes all federally required effluent limits and requirements for copper mines
- Requirements for taking samples and conducting analyses
- Maintenance and inspection of wastewater storage ponds and pipelines: Includes the mine to plant pipeline/utility corridor
- Requirements related to the design and construction of the Hydrometallurgical Residue Facility
  - Subsurface investigation to identify current conditions
  - Review and approval of preload design to address expected subsurface issues
  - Monitoring plan to assess success of the preload design
- Chronic toxicity (WET) testing of WWTS effluent