



Permit Number

Draft Dam Safety Permit

2016-1383

Project Name:

Poly Met Mining, Inc.

County:

St. Louis

Watershed:

St. Louis River

Resource:

Dug Pit/Holding Pond;
Lake: (Null)

Purpose of Permit:

Dam Safety - Construction
Dam Safety - Operation

Draft Authorized Action:

No actions are authorized in this document. No dam construction or operation is authorized by this public comment draft, which has been prepared for purposes of public review and input only. This document identifies proposed conditions that may apply to Poly Met Mining, Inc.'s application for a permit to construct and operate a Hydrometallurgical Residue Facility (HRF).

Potential Authorized Action:

To construct a new Hydrometallurgical Residue Facility on the existing LTV Steel Mining Company (LTVSMC) emergency basin, as described in the most current DNR approved version of the "NorthMet Project Geotechnical Data Package, Volume 2 - Hydrometallurgical Residue Facility", by Barr Engineering and signed by Tom Radue, PE.

Potential Authorized Action:

To operate the Hydrometallurgical Residue Facility as described in the most current DNR approved version of the "NorthMet Project Hydrometallurgical Residue Facility Management Plan", by Barr Engineering and signed by Tom Radue, PE.

Permittee:

POLY MET MINING, INC.
CONTACT: KEARNEY, CHRISTIE, (218) 471-2163
6500 CO RD 666
PO BOX 475
HOYT LAKES, MN 55750
(218) 471-2150

Authorized Agent:

N/A

Property Description (land owned or leased or where work will be conducted):

UTM zone 15N, 563868m east, 5273032m north,
NESW of Section 8, T59N, R14W
Class II (Significant Hazard) Dam

Authorized Issuer:

Pending

Title:

Pending

Issued Date:

Pending

Effective Date:

Pending

Expiration Date:

Pending

PROPOSED CONDITIONS

STANDARD CONDITIONS FOR DAM SAFETY PERMITS

1. **APPLICABLE FEDERAL, STATE, OR LOCAL REGULATIONS:** The Permittee is not released from any rules, regulations, requirements, or standards of any applicable federal, state, or local agencies; including, but not limited to, the U.S. Army Corps of Engineers, Board of Water and Soil Resources, Minnesota Pollution Control Agency, watershed districts, water management organizations, county, city and township zoning.
2. **NOT ASSIGNABLE:** This permit is not assignable by the Permittee except with the written consent of the Commissioner of Natural Resources.
3. **NO CHANGES:** The Permittee shall make no changes, without written permission or amendment previously obtained from the Commissioner of Natural Resources, in the dimensions, capacity or location of any items of work authorized hereunder.
4. **SITE ACCESS:** The Permittee shall grant access to the site at all reasonable times during and after construction to authorized representatives of the Commissioner of Natural Resources for inspection of the work authorized hereunder.
5. **TERMINATION:** This permit may be terminated by the Commissioner of Natural Resources at any time deemed necessary for the conservation of water resources of the state, or in the interest of public health and welfare, or for violation of any of the conditions or applicable laws, unless otherwise provided in the permit.
6. **COMPLETION DATE:** Construction work authorized under this permit shall be completed on or before the expiration date specified above. The Permittee may request an extension of the time to complete the project by submitting a written request, stating the reason thereof, to the Commissioner of Natural Resources.
7. **WRITTEN CONSENT:** In all cases where the Permittee by performing the work authorized by this permit shall involve the taking, using, or damaging of any property rights or interests of any other person or persons, or of any publicly owned lands or improvements thereon or interests therein, the Permittee, before proceeding, shall obtain the written consent of all persons, agencies, or authorities concerned, and shall acquire all property, rights, and interests needed for the work.
8. **PERMISSIVE ONLY / NO LIABILITY:** This permit is permissive only. No liability shall be imposed on the State of Minnesota or any of its officers, agents or employees, officially or personally, on account of the granting hereof or on account of any damage to any person or property resulting from any act or omission of the Permittee or any of its agents, employees, or contractors. This permit shall not be construed as estopping or limiting any legal claims or right of action of any person other than the state against the Permittee, its agents, employees, or contractors, for any damage or injury resulting from any such act or omission, or as estopping or limiting any legal claim or right of action of the state against the Permittee, its agents, employees, or contractors for violation of or failure to comply with the permit or applicable conditions.
9. **WETLAND CONSERVATION ACT:** Where the work authorized by this permit involves the draining or filling of wetlands not subject to DNR regulations, the Permittee shall not initiate any work under this permit until the Permittee has obtained official approval from the responsible local government unit as required by the Minnesota Wetland Conservation Act.
10. **CONTRACTOR RESPONSIBILITY:** The Permittee and the contractor are considered to be jointly and severally liable for compliance with permit requirements. The Permittee shall ensure the contractor has received and thoroughly understands all conditions of this permit. Contractors must obtain a signed statement from the Permittee stating that all permits required for work have been obtained or that a permit is not required.
11. **INVASIVE SPECIES - EQUIPMENT DECONTAMINATION:** All equipment intended for use at a project site must be free of prohibited invasive species and aquatic plants prior to being transported into or within the state and placed into state waters. All equipment used in designated infested waters, shall be inspected by the Permittee or

its authorized agent and adequately decontaminated prior to being transported from the worksite. The DNR is available to train inspectors and/or assist in these inspections. For more information refer to the "Best Practices for Preventing the Spread of Aquatic Invasive Species" at http://files.dnr.state.mn.us/publications/ewr/invasives/ais/best_practices_for_prevention_ais.pdf. Contact the DNR regional Invasive Species Specialist for assistance at www.mndnr.gov/invasives/contacts.html. A list of designated infested waters is available at www.mndnr.gov/invasives/ais/infested.html. A list of prohibited invasive species is available at www.mndnr.gov/eco/invasives/laws.html#prohibited.

12. **LIMITATIONS:** (a) Any violation of the terms and provisions of this permit shall constitute a violation of Minnesota Statute, Chapter 103G. (b) This permit is permissive only. No liability shall be imposed upon or incurred by the State of Minnesota or any of its employees, on account of the granting hereof or on account of any damage to any person or property resulting from any act or omission of the Permittee relating to any matter hereunder. This permit shall not be construed as estopping or limiting any legal claims or right of actions by any person other than the state against the Permittee, for any damage or injury resulting from any such act or omission, or as estopping or limiting any legal claim or right of action of the state against the Permittee, for violation of or failure to comply with the provisions of the permit or applicable provisions of law. The Permittee shall obtain the written consent of all persons, agencies, or authorities concerned, and shall acquire all property, rights, and interests necessary, before proceeding with any activity authorized by this permit involving the taking, using, or damaging of any property, rights or interests of any other person or persons, or of any publicly owned lands or improvements thereon or interests therein. (c) This permit shall not release the Permittee from any other permit requirements or liability or obligation imposed by Minnesota Statutes, Federal Law, or local ordinances relating thereto and shall remain in force subject to all conditions and limitations now or hereafter imposed by law. (d) Unless explicitly specified, this permit does not authorize any alterations of the beds or banks of any public (protected) waters or wetlands. A separate permit must be obtained from the Department of Natural Resources prior to any such alteration. (e) Unless explicitly specified herein, this permit does not authorize the appropriation of the state's water resources for either consumptive use or dewatering. Separate permit(s) must be obtained from the Department of Natural Resources prior to the appropriation of Minnesota waters that may be necessary for the construction, operation and maintenance of the project pursuant to this permit.
13. **ADDITIONAL SITE ACCESS:** The Commissioner may inspect any work authorized by this Permit. The Permittee shall supply such information concerning the design, construction, operation, and maintenance of the work authorized hereunder as the Commissioner may require.
14. **ADDITIONAL WRITTEN CONSENT:** Any permissions or extension of time made and granted by the DNR shall be made in writing.
15. **CONSTRUCTION DEWATERING - GENERAL:** All construction dewatering in excess of 10,000 gallons per day or one million gallons per year must be authorized by a separate water appropriation permit. All worksite discharge water must be treated for sediment reduction prior to return to any surface water. Water from designated infested waters shall not be diverted to other waters, transported on a public road, or transported or appropriated off property riparian to the infested waters without a DNR invasive species permit. All equipment in contact with infested waters must be decontaminated before leaving the site.
16. **EXCAVATED MATERIALS - RUNOFF:** Excavated materials must be deposited or stored in an upland area. The Permittee shall prepare a spoil disposal plan for all spoils created by work authorized under this permit. Departure from any previously approved spoil disposal plans may be allowed only through permit amendment. Additionally the Permittee shall obtain and comply with the terms of any stormwater runoff permit that may be required by either federal or state law including any applicable National Pollutant Discharge Elimination System (NPDES) permit.
17. **EROSION AND SEDIMENT CONTROL:** Erosion control measures shall be adequately designed for the site characteristics. They may include staked hay bales, diversion channels, sediment ponds, or sediment fences. They shall be installed in accordance with the latest version of "The Minnesota Stormwater Manual" by the Minnesota Pollution Control Agency (MPCA), prior to commencement of construction and maintained throughout the project. All exposed soil shall be stabilized as soon as possible. Topsoil should be used to re-dress disturbed soil areas and indigenous plant species should be used to revegetate disturbed areas whenever possible. Additionally, the Permittee shall obtain and comply with the terms of any stormwater runoff permit that may be

required by either federal or state law including any applicable NPDES permit.

18. **FUTURE ORDERS:** The DNR reserves the right to review and revise this permit and the conditions attached hereto as additional hydrologic data becomes available. The DNR also reserves the right to issue any order it may deem necessary to protect the public interest, including but not limited to the public health, safety, and welfare. Should the dam be abandoned at a future date for any reason or fall into a state of disrepair, the Permittee shall be solely responsible for all debris removal and site restoration work and any associated damage to public or private property, including to the waters of the state.
19. **TRANSFER OF OWNERSHIP OF EXISTING DAM STRUCTURES:** This permit and the issuance thereof does not affect any existing state Dam Safety Permit for any existing dam located on the project site. A separable DNR permit action is required to transfer ownership of and decommission any existing dam located at the project site. The existing owner/permit holder remains responsible for any existing dam structure until ownership is legally transferred and the transfer of the existing permit has been authorized by the DNR.
20. **FUTURE TRANSFER OF OWNERSHIP:** Neither this permit, nor the ownership of the dam, may be transferred except with the written consent of the Commissioner as evidenced by the issuance of a dam safety permit to a new owner. A transfer of land ownership does not automatically transfer either the permit or dam ownership. As a prerequisite to the transfer of the dam permit the existing owner/Permittee must inform any buyer of land underlying the dam of the dam's existence. This notice must be in writing and a copy must be sent to the DNR. The DNR will not approve a transfer of this permit unless the new dam owner has demonstrated to the Commissioner's satisfaction that it can meet the financial assurance requirements set forth in special condition #27.
21. **HAZARD CLASSIFICATION:** The Permittee understands the hazard classification of this dam could change as a result of downstream interests exercising their legal rights to develop land. The Permittee may then be subject to changed obligations without remuneration from others.
22. **EMERGENCY REPAIRS:** All repair work on the project authorized by this permit may only be undertaken with the prior written approval of the DNR. Where, however, conditions arise that require immediate action to protect the public health, safety and welfare, repairs may be started immediately provided that the Permittee notifies the Commissioner and the State Duty Officer of the need to make emergency repairs immediately upon discovery of the need for an emergency repair. As soon as practicable thereafter, the Permittee shall apply for a permit amendment for the necessary emergency repairs.

SPECIAL CONDITIONS: NEEDS PRIOR TO PERMIT ISSUANCE

23. **PROOF OF PROPERTY RIGHTS:** The Permittee must submit to the DNR written proof of property ownership in the form of a deed or a valid lease authorizing the construction and use of the property on which the dam will sit.
24. **INSPECTION FEES:** Dam Safety Inspection fees apply to this project, as defined by Minnesota Rules, part 6115.0520. These fees are based on a percentage of the total cost of the project. The Permittee shall submit these fees to the DNR on or before January 31 of each year. Prior to permit issuance, the Permittee shall submit inspection fees related to the remainder of the current year and the entire following year.
25. **FOUNDATION PRELOAD:** The Permittee shall obtain written approval from the DNR Dam Safety Engineer of the foundation preload design.
26. **FOUNDATION ANALYSIS:** Additional analysis of the HRF foundation is needed to confirm that the foundation will provide adequate support for the HRF and not be subject to differential settlement. The Permittee shall seek further guidance from the MPCA to determine what additional analysis is required to ensure differential settlement will not cause excessive liner strain. The DNR Dam Safety Engineer shall be copied on this correspondence and guidance.

SPECIAL CONDITIONS: PRIOR TO START OF DAM CONSTRUCTION

27. **FINANCIAL ASSURANCE:** Prior to dam construction, the Permittee must have an approved Permit to Mine for

the NorthMet Project, including Financial Assurance provisions sufficient to meet ongoing dam and basin operations, maintenance, monitoring, and repair work until such time that the Commissioner releases Poly Met Mining, Inc. or its agent from the Dam Safety Permit. The Permittee shall also obtain and maintain environmental liability insurance sufficient to cover unexpected events that may impact the safety of the dam, such as dam failure.

28. **OTHER PERMITS:** Construction shall not commence until the Permittee has obtained all other federal, state, and local permits, authorizations, and permissions necessary to undertake the work authorized in this permit.
29. **WATER MANAGEMENT PLAN:** Prior to dam construction, the Permittee shall submit to and obtain from the DNR Dam Safety Engineer written approval of a Water Management Plan describing how water in the HRF basin will be managed. Construction may not commence until such approval is obtained. This Water Management Plan must include, at a minimum, discussion of water needs for plant and basin operations, and first filling of the HRF basin.
30. **CONTINGENCY ACTION PLAN:** Prior to dam construction, the Permittee shall obtain written approval from the DNR Dam Safety Engineer of a Contingency Action Plan (CAP). Construction may not commence until such approval is obtained. The CAP shall contain all applicable elements of the Federal Guidelines for Emergency Action Planning for Dams (FEMA Publication No. P-64).
31. **OPERATION AND MAINTENANCE PLAN:** At least 180 days before the start of construction, Permittee shall submit to the DNR a written Operation and Maintenance Plan for review and approval by the DNR Dam Safety Engineer. Construction may not commence until the DNR has issued written approval of the Operation and Maintenance Plan. The Operation and Maintenance Plan shall have content sufficient to instruct the basin engineer on how the HRF basin is to be operated, maintained, inspected, and monitored; and shall include at a minimum a residue spigotting plan (details on pumps and pipelines, when spigot will be moved, emergency shutdown procedures); a water management plan (describing how the water levels will be maintained, actions during both flood and drought conditions); geotechnical monitoring (including all instrumentation, seepage, freeboard and beach length); and the various triggers and warnings that indicate if any of the above parameters are out of expected ranges. The Operation and Maintenance Plan shall include a Contingency Action Plan. Content of this Operation and Maintenance Plan may be integrated or compiled with other plans and information required by this permit and contained in the comprehensive Operation and Maintenance Plan.
32. **OPERATION AND MAINTENANCE RESPONSIBILITY:** The Permittee shall operate the dam authorized by this permit in accordance with all dam safety standards. The Permittee shall maintain the dimensions and elevations of the dam as described herein and in accordance with the Operation and Maintenance Plan. Any changes to the Operation and Maintenance Plan require a permit amendment or prior written permission from DNR Dam Safety. A permit amendment is required for any non-routine maintenance that is not covered by the Operation and Maintenance Plan or for any repair that would change the hydraulic capacity or structural character of the dam, such as conduit replacement or embankment excavation. Routine dam maintenance, such as mowing or debris removal, does not require prior DNR approval.
33. **ANNUAL CONSTRUCTION AND MONITORING REPORT:** The Permittee shall submit an annual report to the DNR Dam Safety Engineer that describes the following: 1) proposed dam construction for the upcoming year including projected dam and residue elevations; 2) any changes or variations in HRF basin design, construction, or operations from previously approved plans; 3) a summary of the past year's construction activities and quality control tests; 4) a summary of the past year's operation, maintenance, inspection, and monitoring activities; 5) a discussion of any construction, operation, maintenance, inspection, or monitoring activities that were unscheduled, or out-of-the ordinary, or deviated from the approved plan; 6) photographs of the HRF basin; 7) graphical presentations of all HRF basin instrumentation data, including but not limited to data from pond level monitors, piezometers, inclinometers, extensimeters, and settlement plates; and 8) a brief discussion of any monitoring results that appear to be irregular or out of tolerance. Tabular instrumentation data shall be submitted with the report in an electronic format and submitted on a CD, DVD, or flash drive. The Annual Report shall be due on or before January 31 of each year.
34. **NO CHANGES ADDITIONAL CONDITION:** The Permittee shall make no changes in the design, construction, operation or maintenance of the facilities authorized by this permit without the prior written consent of the DNR

Dam Safety Engineer. Said consent may, at the sole discretion of the DNR, be evidenced by a written amendment to this permit. This restriction includes but is not limited to any alteration of the dimensions, capacity or location of any items of work authorized by this Permit. At sole discretion of the DNR, this provision may be waived for minor items. The Permittee shall include in the annual report a summary of any design changes made and the reason for those changes.

35. **MANAGEMENT PLAN AND GEOTECHNICAL DATA PACKAGE UPDATES:** Documents reviewed during the permit application phase are expected to evolve as a result of final design refinement, construction, and future HRF basin operations. The Permittee shall submit updated documents to the DNR Dam Safety Engineer for written approval as those documents become available. While minor changes may be addressed through simple letter approval, major changes may require a permit amendment.
36. **SAFETY INSPECTIONS:** The Permittee shall arrange for an annual dam safety inspection and a dam safety inspection report to be prepared by a qualified dam safety engineer registered in Minnesota. The annual dam safety inspection report shall be sent to the DNR Dam Safety Engineer on or before January 31 of each year.

SPECIAL CONDITIONS: PRIOR TO START OF OPERATIONS

37. **IDLING AND EARLY CLOSURE PLAN:** Prior to first filling of the reservoir behind the dam, the Permittee shall obtain written approval from the DNR Dam Safety Engineer of an Early Closure Plan describing the actions to be taken during periods of short-term shutdown or temporary plant idling. First filling may not commence until such approval is obtained. The Early Closure Plan shall detail the needed activities to maintain the HRF basin in a safe manner, including a water balance diagram, water level monitoring, dam safety inspections, and such other items as determined by the DNR or the Permittee to be necessary. The Early Closure Plan shall also describe the necessary actions to be taken if the HRF basin were to go into an unplanned long-term closure. An updated Early Closure Plan shall be submitted to the DNR Dam Safety Engineer annually on or before January 31 of each year.
38. **IMPOUNDMENT APPROVAL:** Written approval to impound plant process water or residue must be obtained from the DNR Dam Safety Engineer prior to first filling of the HRF basin. No impoundment of water or residue is allowed by this permit other than the natural flow of precipitation or snowmelt from the surrounding areas currently tributary to the HRF basin, until written approval is obtained from the DNR Dam Safety Engineer.

SPECIAL CONDITIONS: DURING OPERATIONS

39. **CONSTRUCTION PROGRESS REPORTS:** The Permittee shall submit monthly reports to the DNR Dam Safety Engineer on construction observation and quality control, including but not limited to those items set forth in Minnesota Rules part 6115.0410, subpart 9.
40. **INTERIM CONSTRUCTION REPORTS:** Within 90 days following the completion of each stage of construction, the Permittee shall provide the DNR Dam Safety Engineer an Interim Construction Report together with a statement by the designer or professional engineer in charge of the project that attests that the dam stage has been completed in accordance with the approved designs, plans and specifications and any approved revisions thereof. The Interim Construction Reports shall address the items set forth in Minnesota Rules part 6115.0410, subparts 9 through 11. The Interim Construction Reports shall also include record drawings, materials sampling and testing as performed, photographs of the stages of construction, and any other items that may be of permanent value on the adequacy and permanency of the dam. The Interim Construction Reports shall be signed or co-signed by a qualified engineer.
41. **FINAL CONSTRUCTION REPORT:** Within 90 days following the completion of final construction, the Permittee shall provide the DNR Dam Safety Engineer a Final Construction Report together with a statement by the designer or professional engineer in charge of the project that attests that the dam has been completed in accordance with the approved designs, plans and specifications and any approved revisions thereof. The Final Construction Report shall address the items set forth in Minnesota Rules part 6115.0410, subparts 9 through 11. The Final Construction Report shall also include record drawings, materials sampling and testing as performed, photographs of the stages of construction, and any other items that may be of permanent value on the adequacy and permanency of the dam. The Final Construction Report shall be signed or co-signed by a qualified engineer.

42. **FINAL CLOSURE PLAN:** At least 2 years prior to the planned end of operations, the Permittee shall submit an updated Closure Plan to the DNR Dam Safety Engineer. This Closure Plan shall include documentation of all activities related to the deactivation of the HRF basin including removal of pipelines, revegetation of the basin, restoration and such other items as the Permittee and the DNR deem necessary. The Closure Plan shall also include a discussion of all necessary monitoring and maintenance expected for the HRF after the end of operations. To the extent possible, runoff from the closed HRF basin shall be directed to flow to the original watershed(s).
43. **PERPETUAL MAINTENANCE:** The Permittee shall perpetually maintain the HRF basin and all of its components to ensure the integrity of all structures. Prior to the ultimate termination of the Permittee's operation of the dam the Commissioner may impose such requirements as may be necessary to ensure that the Permittee will remain financially responsible for carrying out the activities required for perpetual maintenance, and that adequate funding for perpetual maintenance continues to exist.
44. **FREEBOARD REQUIREMENT:** The Permittee shall maintain a normal freeboard of at least 6 feet. When abnormal conditions exist such that freeboard requirements are less than the permitted values, the Permittee shall inform the DNR Dam Safety Engineer and corrective actions must be undertaken to restore these parameters as quickly as feasible.
45. **ADDITIONAL APPROVALS:** Because the HRF basin will store both liquid (operations phase) and solid (operations and post-operations phases) waste, the MPCA must review and approve the design of the HRF prior to the construction of the basin. Notwithstanding the foregoing, the Permittee shall obtain all necessary approvals required by law.

DEFINITIONS

46. **END OF OPERATIONS:** The end of the approximately 20-year phase of mining and production, as defined in the glossary of terms in the Permit to Mine application.
47. **FIRST FILLING:** First filling refers to the pumping of water or residue into the HRF basin to provide water for plant or operational needs.
48. **CONTINGENCY ACTION PLAN:** Plan detailing initial response to potential emergency conditions.
49. **OPERATION AND MAINTENANCE PLAN:** Plan detailing how the HRF basin will be operated, maintained, monitored, and inspected during all phases of the project.
50. **RESIDUE SPIGOTTING PLAN:** Plan detailing how the residue will be brought to and distributed in the HRF.
51. **WATER MANAGEMENT PLAN:** Plan detailing how water and residue will be managed at the HRF basin during all phases of the project.
52. **IDLING AND EARLY CLOSURE PLAN:** Plan detailing actions to be taken during temporary idling, short-term closure, and unplanned early long-term closure.
53. **FINAL CLOSURE PLAN:** Plan detailing actions to be taken after the end of plant operations and after the deactivation of the HRF basin.