NORTHMET PROJECT – PUBLIC WATERS WORK PERMIT

FINDINGS OF FACT, CONCLUSIONS AND ORDER OF COMMISSIONER

November 1, 2018

Table of Contents

LIST OF ACRONYMS AND ABBREVIATIONS

BMPs	Best Management Practices
DEIS	Draft Environmental Impact Statement
DNR	Commissioner of the Minnesota Department of Natural Resources
EAW	Scoping Environmental Assessment Worksheet finalized on March 30, 2005
EWR	Division of Ecological and Water Resources
FAW	Division of Fish and Wildlife
FEIS	Final Environmental Impact Statement
FTB	Flotation Tailings Basin
HRF	Hydrometallurgical Residue Facility
MERA	Minnesota Environmental Rights Act
MPARS	Minnesota Permitting and Reporting System
MPCA	Minnesota Pollution Control Agency
NPDES	National Pollutant Discharge Elimination System
ROD	Record of Decision
SDS	State Disposal System
USACE	United States Army Corps of Engineers

MINNESOTA DEPARTMENT OF NATURAL RESOURCES

In the Matter of the Application for Public Waters Work Permit 2017-2077	**FINDINGS OF FACT, CONCLUSIONS, AND ORDER OF COMMISSIONER**

After review and due investigation and consideration, and based on the information and statements contained in the permit application submitted by Poly Met Mining, Inc., the applicant's description of work proposed to be undertaken, and supplemental information in the administrative record contained within the Minnesota Department of Natural Resources Permitting and Reporting System ("MPARS") or otherwise available to the Minnesota Department of Natural Resources, the Commissioner of the Minnesota Department of Natural Resources ("DNR") now makes the following:

FINDINGS OF FACT

I. EXECUTIVE SUMMARY

1. Pursuant to the requirements of Minnesota Statutes § 103G.245, subd. 1, Poly Met Mining, Inc. ("PolyMet") applied for a public waters work permit ("Permit") associated with its proposed NorthMet mining project ("NorthMet Project") located south of the City of Babbitt and north of, but partially within, the City of Hoyt Lakes in St. Louis County, Minnesota. The NorthMet Project seeks to develop a mine and associated processing facilities for the extraction of copper, nickel, and platinum group elements from the NorthMet Deposit within the Duluth Complex in Northeastern Minnesota.

2. The proposed NorthMet Project includes an open -pit mining area ("Mine Site") located approximately six miles south of Babbitt. The processing of ore will not occur at the Mine Site, but, rather, will take place at the former LTV Steel Mining Company's processing plant located near Hoyt Lakes ("Plant Site"), approximately 8 miles from the Mine Site. The Mine Site and the Plant Site are connected by a Transportation and Utility Corridor ("Corridor"). The Dunka Road, an existing private gravel road, is within the Corridor. PolyMet requests the Permit to extend a culvert in conjunction with upgrades to the Dunka Road needed to accommodate vehicle access between the Plant Site and the Mine Site ("culvert extension").

3. The NorthMet Project underwent joint federal-state environmental review, which culminated in the DNR's issuance of a Record of Decision ("ROD") in March 2016 that concluded that the FEIS was adequate under the Minnesota Environmental Policy Act. The environmental review documents associated with the NorthMet Project, including the FEIS and ROD are publicly available at: https://www.dnr.state.mn.us/input/environmentalreview/polymet/index.html and are incorporated herein by reference.

4. The Permit at issue in this proceeding relates solely to the culvert extension. A multitude of other permits and regulatory requirements will also apply to the NorthMet Project. Mining and reclamation of the mining area will occur under a DNR Permit to Mine pursuant to Chapter 6132 of the Minnesota Rules and the Minnesota Mineland Reclamation Act. *See* Minn. Stat. §§ 93.44-.51. The appropriation of water for the Project will be governed by DNR water appropriation permits. Water and air quality issues associated with the NorthMet Project will be regulated by the Minnesota Pollution Control Agency ("MPCA") pursuant to National Pollutant Discharge Elimination System ("NDPES") and State Disposal System ("SDS") permits, and Air Emissions Permits. The Flotation Tailings Basin ("FTB") and Hydrometallurgical Residue Facility ("HRF") at the Plant Site are subject to regulation by the DNR under separate dam safety permits in addition to the Permit to Mine. Monitoring and mitigation for direct and indirect wetland impacts associated with operations at the NorthMet Project will be required under the Permit to Mine in accordance with the Minnesota Wetland Conservation Act and under a Section 404 Permit issued by the United States Army Corps of Engineers ("USACE"). Any take of a state-listed species resulting from the NorthMet Project will require a separate takings permit from the DNR. *See* FEIS Table 1.4-1.

5. As detailed below, the DNR has reviewed the record and concludes that PolyMet has met its burden of proof and is entitled to issuance of the Permit for the culvert extension, subject to the terms and conditions therein.

II. APPLICATION AND COMMENT PROCESS

A. PolyMet Applies for the Permit

6. On May 16, 2017, PolyMet first submitted an application for the Permit for the culvert extension to the DNR through its MNDNR Permitting and Reporting System ("MPARS"). PolyMet revised this application on September 11, 2017 ("Application"). Pursuant to Minnesota Rule 6115.0240, subp. 3(E), PolyMet sent copies of the Application to the mayor of the City of Hoyt Lakes and the secretary of the North St. Louis County Soil and Water Conservation District because the culvert at issue is located within the municipal boundary of the City of Hoyt Lakes and within the jurisdictional boundaries of the North St. Louis County Soil and Water Conservation District.

7. The Application explains that PolyMet planned to upgrade the existing Dunka Road to accommodate vehicle access between the Mine Site and Plant Site, including the widening of the Dunka Road Corridor and construction of safety berms on either side of the road. Because of this proposed construction, the eastern end of a currently existing culvert needs to be extended 26 feet in order to maintain flow of the unnamed tributary to Wyman Creek. The existing culvert is 107 feet in length, 36 inches in diameter, and drains a watershed of 556 acres. Application § 1.0. The Application notes that on-site inspections showed the existing culvert is in good condition and that the existing embankments along the Dunka Road are stable. *Id.*

8. Minnesota Statutes § 103G.245, subd. 1 provides that a person must have a public waters work permit to either construct, reconstruct, remove, or make any change to a water obstruction in a public water or to change or diminish the course, current, or cross section of a public water.

9. The proposed culvert extension is not a culvert restoration or replacement project and, therefore, does not qualify for an exemption to the requirement to obtain a public waters work permit. Minn. Stat. § 103G.245, subds. 1 and 2.

10. Wyman Creek is a state designated trout stream and together with its unnamed tributary are public waters within the meaning of Minnesota Statutes § 103G.245, subd. 1. *See also* Minn. R. 6264.0050, subp. 4.NN.(109)[1], Minn. Stat. § 103G.005, subd. 15 (defining public waters) and Minn. Stat. § 103G.201(2)(e).

11. The Dunka Road culvert extension described in paragraph 7 requires placement of a manufactured culvert and fill in a public water, that will change the course, current, or cross section of the public water and, therefore, requires aa public waters work permit pursuant to Minnesota Statutes § 103G.245, subd. 1.

12. In the Application, PolyMet stated that the culvert extension will not result in any significant changes to the hydrology of the existing culvert and that PolyMet will implement erosion and sediment control best management practices ("BMPs") during construction on the Dunka Road. The Application noted that the culvert extension will result in the filling of 0.04 acres in the stream channel and the filling of an additional 0.03 acres of Wetland No. 1124A. Wetland No. 1124A is a non-public waters wetland located east of, and adjacent to, the Dunka Road. *See* Minn. Stat. § 103G.005, subds. 15a and 17b (distinguishing public waters wetlands from other wetlands.)

13. PolyMet's May 15, 2017, Technical Memorandum attached to the Application discussed alternatives that PolyMet investigated in selecting the preferred design proposed for the culvert extension under the Dunka Road. BARR Engineering, Technical Memorandum: Hydraulic Analysis of Proposed Modifications to Dunka Road Culvert § 2.0 (May 15, 2017) (hereinafter "Technical Memorandum"). One alternative includes complete replacement of the existing culvert in order to optimize placement and hydraulics. This alternative would result in disturbance of approximately 2,750 square feet or 0.07 acres of stream channel and wetlands and would increase erosion potential in the currently stable embankment. *Id.* § 2.1. A second alternative extends both the western and eastern ends of the culvert, which results in disturbance of approximately 0.07 acres of stream channel and wetlands. *Id.* § 2.2. This alternative was dismissed because it increases impacts without providing any additional benefit. *Id.* The chosen alternative is the extension of the eastern end of the existing culvert by approximately 26 feet. *Id.*§ 2.3. This extension is level with the existing culvert in order to match the profile of the downstream channel. *Id.* This will serve to dissipate the energy of stream flows somewhat before the culvert discharges to the earthen stream channel, thereby limiting erosion potential. *Id.* § 4.0. This extension also allows a stable embankment slope of 2 units horizontal: 1 unit

[1] The streams described "and portions of streams and tributaries within the section specified" in Minnesota Rule 6264.0050, subp. 4 "are designated as trout streams." Accordingly, the tributary is a public water. *See* Minn. Stat. § 103G.005, subd. 15(a)(10) (including "natural and altered watercourses designated by the commissioner as trout streams" as falling within the definition of "public waters").

vertical (2H:1V) and disturbs approximately 0.07 acres) of stream channel and wetlands[2]. *Id.* § 2.3. This alternative results in the least disturbance to wetlands and the least amount of fill in the stream channel, while simultaneously meeting PolyMet's need to expand the Dunka Road. *Id.*

14. The Technical Memorandum also includes a hydraulic evaluation of potential impacts to peak flow and velocity through the culvert. *Id.* § 3. This evaluation includes HydroCAD modeling and hydraulic computations. *Id.*; Attachment A. Modeling results show that the maximum water surface elevation and peak velocity in a high rain event through the extended culvert remains unchanged from existing conditions. *Id.* § 3.2. In addition, hydraulic computations show that, although flow velocity is decreased within the extended culvert due to the transition from a sloping profile of the existing culvert to the horizontal profile of the proposed extension, flow returns to critical velocity by the culvert outlet. *Id.* § 3.3, Attachment A5.

15. The Technical Memorandum also includes an engineering drawing showing the plan and profile of the culvert extension. *Id*. at § 4.0, Figure 3.

B. The Application and Attachments Were Circulated to Government Entities for Comment

16. On June 9, 2017, the DNR requested comments on PolyMet's Application together with attachments thereto from (1) the City of Hoyt Lakes, (2) the North St. Louis County Soil and Water Conservation District, (3) the United States Army Corps of Engineers ("USACE"), (4) St. Louis County, (5) the City of Babbitt, (6) the DNR Division of Fish and Wildlife ("FAW"); and (7) the DNR Division of Ecological and Water Resources ("EWR"). *See* Minn. Stat. § 103G.301, subd. 7. In addition, the DNR separately requested comment on the Application from the following tribal nations: Bois Forte Band of Chippewa, Fond du Lac Band of Lake Superior Chippewa, and Grand Portage Band of Lake Superior Chippewa.[3]

17. FAW commented that the culvert extension will have no significant impacts to wildlife, no significant impacts to the hydrology, and, thus, will have no significant impacts to fisheries. The North St. Louis County Soil and Water Conservation District responded that it did not have any comments on the Application. No other government entity submitted any comments to the DNR on the Application during this review process.

C. A Draft Permit Was Circulated for Public Comment

18. On May 16, 2017, the DNR issued a GovDelivery notice informing subscribers that DNR had received a public waters work permit application and posted the application on the permitting website.

19. Although not required by Minnesota Statutes § 103G.245, the DNR, on September 15, 2017, posted a draft public waters work permit on the public NorthMet Project

[2] Of the 0.07 acres impacted, 0.04 acres is attributed to impacts to the stream channel and 0.03 is attributed to wetland impacts.

[3] These tribal nations served as cooperating agencies during the environmental review of the NorthMet Project.

permitting website (https://www.dnr.state.mn.us/polymet/permitting/other.html) and initiated a 30-day public comment period on the draft permit that same day. The public comment period closed on October 16, 2017. Also on September 15, 2017, the DNR issued a GovDelivery notice and news release notifying the public of this open comment period, as well as a concurrent public comment period on two draft dam safety permits for the NorthMet Project.

20. The DNR received 29 public comments that referred to PolyMet's Application for a public waters work permit. Five of these were duplicates. Many of these comments indicated generalized concerns with, or opposition to, the proposed NorthMet Project. Other comments indicated concerns with other permits associated with the proposed NorthMet Project, such as the dam safety permits or the water appropriations permits. Six commenters submitted comments generally in support of issuing permits for the NorthMet Project. No one provided any substantive comment on the culvert extension proposed in the Application.

III. ANALYSIS OF STATUTORY AND REGULATORY REQUIREMENTS

21. The purpose of Minnesota Rules 6115.0150 to 6115.0280 is to provide for the orderly and consistent review of applications for public waters work permits in order to conserve and utilize the water resources of the state in the public interest. Minn. R. 6115.0150, *see also* Minn. Stat. §§ 103G.101, 103G.255. In addition, the proposed activity must be consistent with other applicable federal, state, and local environmental quality programs and policies. *Id.*

A. The Application is Complete and Contains All Required Information

22. A public waters work permit application must include the following information to be deemed complete:

a. Documentation attached to the application demonstrating that the entity applying for the permit is either the riparian owner of the land on which the project for which the permit is requested is located or alternatively that the applicant has "appropriate property rights such as a lease" "countersigned by the owner". Minn. R. 6115.240, subp. 2.

b. "[A]ppropriate photographs, maps, sketches, drawings or other plans that adequately describe the proposed project" for which the permit is being sought. Minn. R. 6115.0240, subp. 3.B.

c. A brief statement of: (1) the anticipated changes in water and related land resources; (2) any unavoidable anticipated detrimental effects on the natural environment; (3) alternatives to the proposed action for which the permit is sought; and (4) a showing that the proposed action for which the permit is sought is reasonable, practical, and will adequately protect public safety and promote the public welfare. Minn. R. 6115.0240, subp. 3.C (1)-(4).

d. A demonstration that the proposed activity for which the permit is sought complies with the following principles in descending order of priority: (1) avoids direct and indirect impacts to public waters that may destroy or diminish the public waters; (2) minimizes impact to the public water by

limiting the magnitude of the public water activity; (3) mitigates or rectifies the impact on the affected public water; (4) reduces or eliminates the impact to the public water over time by preservation and maintenance operations; and (5) for any major changes to the public waters, replaces unavoidable impacts through restoration of equal or greater value or, if restoration opportunities are not reasonably available, by creating and protecting replacement water of greater public value. Minn. R. 6115. 0240, subp. 3.C(5).

e. The payment of any application fees. Minn. R. 6115.0240, subp. 3.D.

f. Proof of service of the application and accompanying documents on the mayor of the city and the secretary of the soil and water conservation district in which the project for which the permit is requested is located. Minn. R. 6115.0240, subp. 3.E.

23. PolyMet holds lease rights to the location of the culvert extension pursuant to a lease with the State of Minnesota dated November 1, 2018 (Lease LMIS010369). *See* Minn. R. 6115.0240, subp. 2.C.

24. Both the May 2017 application and the September 2017 revised application contain an aerial photograph of the Mine Site and the Plant Site that delineates the location of the Dunka Road, and the location of the unnamed tributary to Wyman Creek culvert extension.

25. Large Figure 1: Site Location Proposed Culvert Extension – Unnamed Tributary to Wyman Creek is attached to the Application. The document is a close up aerial photograph depicting the Dunka Road at the location of the current culvert. In the photograph, one can see the Dunka Road, Wetland No. 1124A, the existing culvert, the location of the proposed culvert extension, a depiction of the culvert extension into the unnamed tributary to Wyman Creek, and the discharge of said tributary into Wyman Creek.

26. The Technical Memorandum contains detailed engineering plans for the Dunka Road and culvert extension.

27. Figure 1 of the Technical Memorandum is an aerial photograph with 10-foot contours placing the culvert project in the context of the Wyman Creek subwatershed.

28. As set forth in ¶¶ 24 through 27, the Application and attached Large Figure 1, aerial photographs, plans, and designs set forth in the Technical Memorandum adequately describe the culvert extension project for which the public waters work permit is requested and meet the requirements of Minnesota Rules 6115.0240, subp. 3.B.

29. Section 2 of the Technical Memorandum attached to the Application analyzes three alternatives to using the existing 36-inch culvert to carry water from the unnamed tributary under the Dunka Road extension to Wyman Creek after Dunka Road is widened. The analyzed alternatives include: replacement of the existing culvert; extension of the east and west ends of the culvert; and extension of only the east end of the culvert.

30. Alternative 1, replacement of the existing culvert to accommodate widening of the Dunka Road embankment requires replacement of the existing culvert with a 150-foot culvert with a 1.5H:1V slope on the west side of the embankment riprapped to provide surface stability and a relatively stable 2H:1V slope on the east side. This proposal will disturb approximately 3,500 square feet of stream channel and wetlands. Technical Memorandum § 2.1.

31. Alternative 2 extends the east end of the existing culvert by 26 feet and west ends of the existing culvert by 4 feet with no slope modifications at either end. Technical Memorandum § 2.2. This placement allows construction of an embankment of 1.7H:1V slope armored with surface stabilization at the west extension and an embankment with a slope of 2H:1V at the east embankment. This alternative disturbs approximately 0.07 acres of stream channel and wetlands. *Id.*

32. Alternative 3, or the preferred alternative, involves the extension of only the east end of the existing culvert by 26 feet with no slope alteration to match the existing downstream channel profile. Technical Memorandum § 2.3. This alternative permits the construction of a stable embankment slope of 2H:1V. This alternative disturbs approximately 0.07 acres of stream channel and wetlands, but does not require modifications at the western end. *Id.* The alternative will not alter the existing stream flow of the unnamed tributary to Wyman Creek but does have approximately 0.07 acres of impact of which 0.03 acres iswetland impact and 0.04 acres isinstream channel impact. *Id.*

33. As set forth in ¶¶ 29 through 32 the Application and Attachments analyze three separate alternatives for the culvert extension to transmit waters from the unnamed tributary to Wyman Creek under the newly constructed Dunka Road and meets the requirements of Minnesota Rule 6115.0240, subp. 3.C.(3).

34. Section 1 of the Application states that the extension of the eastern end of the outlet culvert of unnamed tributary of Wyman Creek by 26 feet does not constitute a "significant" change in the hydrology of the existing culvert. According to the Application, the purpose of the culvert extension is to install three mine-to-plant pipelines in the Dunka Road east right of way and to expand the existing road bed. *Id.* PolyMet will also construct safety berms on both sides of the expanded Dunka Road. *Id.* The construction will result in a modification of slope on the east side of Dunka Road. *Id.* The Application also includes measures to maintain stream flow during construction. Erosion and sediment control during construction is controlled using BMPs to minimize water quality impacts. *Id.* Mechanisms to minimize erosion and sediment control will be set forth in the required MPCA construction stormwater permit.

35. As set forth in ¶¶ 32 and 34, the Application contains a description of the anticipated changes in water and related land resources associated with the culvert extension undertaken under the Permit and meets the requirements of Minnesota Rule 6115.0240, subp. 3.C.(1).

36. Safe expansion of the Dunka Road requires an extension of the culvert. The preferred alternative identified in the Application and Technical Memorandum is the alternative with the least impact to both the stream channel and surrounding wetlands. The Application and

Technical Memorandum identify the unavoidable anticipated detrimental impacts on the natural environment as required by Minnesota Rule 6115.0240, subp. 3.C.(2).

37. The selected alternative is the least impactful alternative for carrying the stream flow of the unnamed tributary to Wyman Creek under the reconstructed Dunka Road while maintaining those features essential to road stability as necessary to protect public safety and promote the public welfare and meets the requirements of Minnesota Rule 6115.0240, subp. 3.C.(4) and Minnesota Rule 6115.0240, subp. 3.C.(5)(b).

38. The Application and hydrologic analysis in section 3 of the Technical Memorandum indicate that the 26-foot culvert extension maintain the existing hydrology/hydraulics of the unnamed tributary to Wyman Creek. Flow and velocity of the unnamed tributary are also unchanged. *See,* Technical Memorandum §§ 3.2 through 3.3. As set forth herein, the Application meets the requirements set forth in Minnesota Rule 6115.0240, subp. 3.C.(5)(a), requiring the Application to demonstrate that the culvert extension avoids direct or indirect impacts on public waters that may destroy said waters.

39. The Application and Technical Memorandum provide that, to mitigate any potential impact to the unnamed tributary to Wyman Creek PolyMet, will construct the alternative that maintains the existing hydrology/hydraulics, stream flow, and velocity. Technical Memorandum § 3. Construction of the culvert extension requires placement of fill in 0.04 acres of the stream channel and 0.03 acres of the Wetland No. 1124A. The culvert outlet is at the same elevation as the stream bed to prevent undercutting of the stream channel. Mitigation of the 0.04 acres of stream channel fill and the 0.03 acres of Wetland No. 1124A, a non-public waters wetland, impacted by the culvert extension is set forth in the Approved Wetland Replacement Plan under the Permit to Mine. As set forth herein, the Application meets the requirements set forth in Minnesota Rule 6115.0240, subp. 3.C.(5)(c), requiring that the permit application demonstrate how the applicant will repair, rehabilitate, or restore the affected public water.

40. A review of the Application and Technical Memorandum indicates that there is no alteration to the hydrology/hydraulics of the public water system and, therefore, the requirements of Minnesota Rule 6115.0240, subp. 3.C.(5)(d), requiring that the application demonstrate that the applicant will reduce or eliminate the impact on the public water, is met.

41. A review of the Application and Technical Memorandum indicates that there are no major changes to the public waters as a result of the culvert extension. Impacts to Wetland No. 1124A and the stream channel associated with the culvert extension are addressed through the Approved Wetland Replacement under the Permit to Mine. Therefore, as indicated herein, the Application and Technical Memorandum demonstrate that the requirements of Minnesota Rule 6115. 0240, subp. 3.C.(5)(e) requiring mitigation of unavoidable impacts to public waters is met.

42. PolyMet made the final payment on the $260 application fee on November 21, 2017. PolyMet has paid all permit fees required by Minnesota Rule 6115.0240, subp. 3.D and subp. 4.

43. PolyMet submitted copies of cover letters that transmitted a copy of the Application and enclosed documents to Hoyt Lakes Mayor Mark Skelton and Charles Bainter, Secretary of the North St. Louis Soil and Water Conservation District, to DNR through the MPARS system. PolyMet separately provided proof of such service on October 31, 2018 as required by Minnesota Rule 6115.0240, subp. 3.E.

44. As set forth in ¶¶ 29 through 41 the Application meets the requirements set forth in Minnesota Rule 6115.0240 and is deemed complete.

B. <u>The Permit Satisfies Minnesota Rules 6115.0190 and 6115.0191</u>

45. Minnesota Rule 6115.0190 and Minnesota Rule 6115.0191 regulate the placement of fill in public waters.

46. It is the goal of the DNR to limit the placement of fill in public waters to minimize encroachment, change, or damage to the environment and to regulate the quantity and quality of fill and the purposes for which fill is allowed based upon the capabilities of the waters to assimilate the material. Minn. R. 6115.0190, subp. 1.

47. PolyMet's culvert extension does not involve the prohibited placement of fill under Minnesota Rule 6115.0190, subp. 3 that prohibits the placement of fill for vegetation control, the creation of upland, the stabilization of public waters or springs, and the creation of island access.

48. As evidenced by the alternatives analysis and hydraulic evaluation within the Application, the culvert extension "does not exceed more than a minimum encroachment, change, or damage to the environment" or the ecology of the waters at issue. *See* Minn. R. 6115.0190, subp. 5.A. The extension is 26 feet. Earthen or rock fill will be placed over the culvert extension extending to the rock surface. The total fill area is 0.04 acres of stream channel and 0.03 acres of non-public water wetland. This fill is solely for the culvert placement and stabilization. The selected alternative results in the least amount of fill in the channel of the public water. Technical Memorandum § 2.3.

49. All fill must "consist[] of clean inorganic material that is free of pollutants and nutrients." Minn. R. 6115.0190, subp. 5.B. The Permit is conditioned on the use of clean, inorganic, pollution free fill that meets the requirements of Minnesota Rule 6115.0190, subp. 5.B.

50. There is a stable supporting foundation for the proposed culvert extension, which will be placed at a zero slope and will match the channel profile as required by Minnesota Rule 6115.0190, subp. 5.C. *See* Technical Memorandum § 2.3. No soil boring data is necessary to evaluate the stability of this foundation. The Permit is conditioned on use of the construction plans attached to the Technical Memorandum.

51. The existing culvert has stable embankments. The Permit is conditioned on use of BMPs for erosion control to ensure continued stability of the embankments after the culvert extension construction. Minn. R. 6115.0190, subp. 5.D (requiring erosion protection as deemed necessary by the commissioner).

52. The alternatives analysis within the Application and Technical Memorandum shows that it is the "minimal impact solution to a specific need with respect to all other reasonable alternatives" as required by Minn. R. 6115.0190, subp. 5.E.

53. The character and topography of the stream channel of the tributary are such that any fill required by the culvert extension is stable as required by Minn. R. 6115.0190, subp. 5.F.

54. The hydraulic evaluation within the Application and Technical Memorandum indicates that the physical character of the waters associated with the culvert extension are unchanged and, therefore, there are no significant changes in hydrology. Minn. R. 6115.0190, subp. 5.G; Technical Memorandum § 5.0, Attachment A. Individuals within the DNR's Division of Fish and Wildlife indicate that no significant impacts to habitat are anticipated as a result of the culvert extension.

55. The proposed culvert extension does not affect designated shoreland and, therefore, local shoreland zoning ordinances are inapplicable to the culvert extension. The proposed project is consistent with applicable local floodplain standards and ordinances for the waters involved. Minn. R. 6115.0190, subps. 5.H and 5.I. The North St. Louis County Soil and Water Conservation District noted that it had no comments on the Application. The City of Hoyt Lakes had no comments on the proposed culvert extension.

56. The proposed filling is consistent with water and land management plans and programs of local and regional governments. Minn. R. 6115.0190, sub. 5.I. The segment of the Dunka Road under construction including all culvert work is located within the City of Hoyt Lakes and is zoned by the City of Hoyt Lakes for mining and mining related activities. Permitted uses in the Hoyt Lakes Mineral Mining District include: "Mineral mining including all ancillary activities necessary for management, operation and uses involved in the mineral extraction, process, *transportation* and disposal of waste as regulated by the State of Minnesota." City of Hoyt Lakes Zoning Ordinance § 6.14 b (August 5, 2016) (emphasis added). All mining activities within the Hoyt Lake's Mineral Mining District areconditioned on conformance with the applicable regulations of the State of Minnesota. City of Hoyt Lakes Zoning Ordinance § 6.14 (August 5, 2016). The widening of Dunk Road and associated culvert extension is needed to accommodate transportation between the Mine Site and the Plant Site. As required by Hoyt Lakes Zoning Ordinance § 6.14, the proposed culvert extension is in accordance with the requirements of the state's requirements for a public waters work permit, the Permit to Mine, and associated Approved Wetland Replacement Plan. The Application and associated Technical Memorandum demonstrate that the proposed expansion of the Dunka Road and associated culvert extension is in conformance with applicable local, regional and state plans and programs as required by Minnesota Rule 6115.0190, subp. 5.I.

57. The culvert extension does not require any filling activities regulated by Minnesota Rule 6115.0191, subp. 1 through 7. As outlined in ¶¶ 47 through 56 the proposed fill meets the requirements of 6115.0191, subp. 8 requiring that fill be consistent with Minn. R. 6115.0190, subp, 2 to 5.

58. As outlined in ¶¶ 46 through 57, the DNR considered each of the requirements applicable to activities involving filling public waters identified in Minnesota Rule 6115.0190,

subp. 5 and Minnesota Rule 6115.0191 and finds that the proposed culvert extension meets the requirements contained therein.

C. The Permit Satisfies Minnesota Rules 6115.0230 and 6115.0231

59. Minnesota Rule 6115.0230 governs the placement and replacement of culverts in public waters.

60. The culvert extension extends the existing culvert 26 linear feet and is the same width and hydrologic capacity as the current culvert that carries the unnamed tributary of Wyman Creek under the Dunka Road. Because the hydrologic capacity of the culvert after extension is the same as that, which existed prior to the extension, it will not increase or create a water safety hazard nor will it contribute to increased flood elevations and flood damages. *See* Application Paragraph 1, Project description, Technical Memorandum §§ 3 and 4, and Minn. R. 6115.0230, subp. 3.A-C.

61. The extension of the culvert does not detrimentally impact water quality. Minn. R. 6115.0230, subp. 3.D (prohibiting DNR from issuing a public waters work permit for a culvert that will have a detrimental impact on water quality). An existing culvert already exists under Dunka Road to carry the unnamed tributary to Wyman Creek. The 26-foot culvert extension will not alter water quality. As a condition of this permit, PolyMet is required to assure that all disturbed areas of the Dunka Road at the end of the culvert and roadside slopes are protected against erosion through application of natural riprap, sod or seed and mulch. The Application identifies BMPs to maintain stream flow and to reduce erosion during construction to minimize water quality impacts associated with construction. *Id.* These BMPs are set forth in the MPCA construction stormwater permit and are a condition of the Permit.

62. The DNR Division of Fish and Wildlife reviewed the Application and Technical Memorandum and concluded that the culvert extension has no potential for significant impact to fish and wildlife habitat. *See* Minn. R. 6115.0230, subp. 3.D (prohibiting DNR from issuing a public waters work permit for activities that will be detrimental to significant fish and wildlife habitat).

63. The proposed culvert project, as part of the larger NorthMet Project, has undergone a Natural Heritage (Endangered Species) Review in the NorthMet FEIS. This review was updated during the permit review process. These reviews show no threatened or endangered species are impacted by the culvert extension. Minn. R. 6115.0230, subp. 3.E (prohibiting DNR from issuing a public waters work permit for activities that will take a threatened or endangered species.)

64. Neither the Dunka Road nor the culvert extension provide private access to an island. *See* Minn. R. 6115. 0230 subp. 3F (prohibiting DNR from issuing a public waters work permit to access an island.).

65. As set forth in ¶¶ 59 through 64 PolyMet's proposed culvert extension does not involve a prohibited crossing. *See* Minn. R. 6115.0230, subp. 3 A through F.

66. The project alternative selected by PolyMet is the least intrusive of the three alternatives set forth in ¶¶ 29 through 33 and ¶¶ 36 and 37. *See* Minn. R. 6115.0230, subp. 5.A. The proposal extends the existing culvert by 26 feet on its eastern end. The culvert carries the unnamed tributary to Wyman Creek under Dunka Road. Technical Memorandum § 2.3. The culvert extension is a relatively modest extension and the required elevation of the culvert extension is at the same elevation and slope as the present culvert and discharges at the same elevation as the existing culvert and stream channel, thereby limiting erosion potential when water returns to the stream bed at the end of the culvert. *Id.* § 4.0. Because the design is an extension of the present culvert design, there is no significant change in the hydrology within the tributary. *Id.*

67. The culvert extension will disturb or require filling 2,750 square feet (0.07 acres) of stream channel and wetlands. Technical Memorandum § 2.3. As a result of the culvert extension and side slope stabilization, 0.04 acres of stream channel and 0.03 acres of wetland No. 1124A will be filled or disturbed. Pursuant to the requirements of Minnesota Rule 6115.0230, subp. 5.B, mitigation of the entire .07 acres of channel and wetland impacts are included in the Approved Wetland Replacement Plan under the Permit to Mine.

68. There are no wild and scenic rivers within St. Louis County. The proposed reconstruction project is not within a designated shoreland and, as set forth in ¶ 56, conforms with applicable local floodplain management standards and ordinances in St. Louis County as required by Minnesota Rule 6115.0230, subp.5.C.

69. The segment of the Dunka Road where the proposed culvert extension is located is within the City of Hoyt Lakes and is zoned by the City of Hoyt Lakes for mining and mining related activities. Permitted uses in the Hoyt Lakes Mineral Mining District include: "Mineral mining including all ancillary activities necessary for management, operation and uses involved in the mineral extraction, process, *transportation* and disposal of waste as regulated by the State of Minnesota." City of Hoyt Lakes Zoning Ordinance § 6.14 b (August 5, 2016) (emphasis added). All mining activities within Hoyt Lake's Mineral Mining District are conditioned on conformance with the applicable regulations of the State of Minnesota. City of Hoyt Lakes Zoning Ordinance § 6.14 (August 5, 2016). The proposed culvert extension in conjunction with the widening of the Dunka Road is needed to accommodate transportation between the Mine Site and the Plant Site. The culvert extension project is in accordance with the requirements of the state's requirements for a public waters work permit, the Permit to Mine, and associated Approved Wetland Replacement Plan. The Application and associated Technical Memorandum demonstrate that the proposed expansion of the Dunka Road and associated culvert extension is in conformance with applicable with local, regional, and state plans and programs as required by Hoyt Lakes City Ordinance § 6.14 and Minnesota Rule 6115.0230, subp. 5.D.

70. This project does not involve the crossing of public water basins or public water wetlands and therefore Minnesota Rule 6115.0230, subp. 5.E is inapplicable.

71. As required by Minnesota Rule 6115.0231, subp.2.A, § 3.0 of the Technical Memorandum contains the required hydraulic analysis. This analysis demonstrates that there are no significant changes in hydrology caused by the culvert extension.

72. The proposed culvert extension does not alter the hydrology, and is neither a new culvert nor the replacement of an existing culvert with a swellhead of ½ of one foot or less of the regional flood nor is it on a major transportation route and, therefore, the requirements of Minnesota Rule 6115.0231, subp. 2.B are inapplicable to the culvert extension.

73. The proposed culvert extension has no impact on game and fish movement and meets the requirements of Minnesota Rule 6115.0231, subp. 2.C.

74. The unnamed tributary or Wyman Creek is not used for public navigation because it has insufficient water flow and, therefore, Minnesota Rule 6115.0231, subp. 2.D is inapplicable.

75. There are no state trails near the proposed culvert extension and the project does not involve a bridge or walkway to an island, therefore, Minnesota Rule 6115.0231, subps. 2.E and 2.F are inapplicable.

76. The culvert extension is not a water intake or sewer outfall and, therefore, the requirements of Minnesota Rule 6115.0231, subp. 3 are inapplicable.

D. The Permit Satisfies MERA

77. The Minnesota Environmental Rights Act ("MERA") requires the DNR to consider whether the conduct that is to be permitted will result in "pollution, impairment or destruction of natural resources." Under MERA, no conduct that results in pollution, impairment, or destruction of natural resources shall be authorized unless there is no feasible and prudent alternative. Minn. Stat. § 116B.09, subd. 2. "Pollution, impairment, or destruction" under MERA "is any conduct by any person which violates, or is likely to violate, any environmental quality standard, limitation, rule, order, license, stipulation agreement, or permit of the state or any instrumentality, agency, or political subdivision thereof which was issued prior to the date of the alleged violation occurred or is likely to occur or any conduct which materially adversely affects or is likely to materially adversely affect the environment." *Id.*, § 116B.02, subd. 5.

78. As set forth in ¶¶ 22 through 76, in reviewing the record and the Application, the DNR considered the quality and severity of any adverse effects of the 26-foot extension of the culvert under the Dunka Road on the natural resources that might be affected by the proposed culvert extension, including any potential long-term adverse effects to those resources, the types of resources at issue, the potential significant consequential effects of such extension on other natural resources, and the direct and consequential impacts of this work on the affected resources. *See State ex rel Schaller v. County of Blue Earth*, 563 N.W.2d 260, 267 (Minn. 1997).

79. As detailed herein, extending the culvert in accordance with the conditions of the Permit will comply with all applicable state and federal environmental protection standards, including the requirements of Minnesota Statutes chapter 103G and Minnesota Rules chapter 6115 governing work in public waters. The potential effects on natural resources resulting from the NorthMet Project were comprehensively analyzed within the FEIS. The Permit requires PolyMet to secure all required storm water management authorizations and comply with all other

applicable legal requirements, including with water quality requirements enforced by the MPCA. In light of the foregoing, the DNR concludes that the work in public waters authorized under the Permit, subject to the conditions contained therein, will not result in pollution, impairment, or destruction of natural resources in violation of MERA.

80. As outlined in ¶¶ 77 through 79, the DNR has considered the proposed work in public waters under the Permit in accordance with MERA, and determines the Permit satisfies the applicable statutory requirements.

Based upon the above Findings of Fact, the DNR makes the following:

CONCLUSIONS

1. In order to "conserve and use water resources of the state in the best interests of its people, and to promote the public health, safety, and welfare," it is the regulatory policy of the State to "control the appropriation and use of waters of the state" and "control and supervise activity that changes or will change the course, current and cross section of public waters. . ." Minn. Stat. § 103A.201, subd. 1(1). The Legislature delegated the DNR the authority to develop a water resources conservation program for the state that includes the "conservation, allocation, and development of waters of the state for the best interests of the people." Minn. Stat. § 103G.101, subd. 1. Similarly, the Legislature directed the DNR to adopt rules for work in public waters prescribing standards and criteria for issuing and denying public waters work permits. Minn. Stat. § 103G.315, subd 15.

2. The DNR has the authority to issue public waters work permits in accordance with its general authority to administer "the use, allocation, and control of waters of the state." See Minn. Stat. § 103G.245(1) and Minn. R. Ch. 6115.

3. As outlined in ¶¶ 22 through 75, the culvert extension meets the requirements for the issuance of a public waters work permit under Minnesota Statutes § 103G.245(1).

4. The DNR has the discretion to waive a hearing on a public waters work permit application and order a permit to be issued or denied without a hearing. Minn. Stat. § 103G.311, subd. 4.

5. Minnesota Statutes § 103G.315, subd. 2 requires that the DNR make findings of fact on issues necessary for determination of the applications considered. Orders by the DNR must be based upon findings of fact made on substantial evidence. *Id*.

6. The work authorized by the Permit, subject to the terms and conditions therein, will not result in pollution, impairment, or destruction of natural resources. *See* Minn. Stat. § 116B.02, subd. 5.

7. Any Findings of Fact that might properly be termed Conclusions and any Conclusions that might properly be termed Findings of Fact are hereby adopted as such.

Based upon the foregoing Findings of Fact and Conclusions, the DNR now enters the following:

ORDER

1. The DNR hereby waives any public hearing on the Application pursuant to Minnesota Statutes § 103G.311, subd. 4.

2. Based upon all the files, records, and proceedings in this matter and upon the DNR's Findings of Fact and Conclusions, Public Waters Work Permit 2017-2077, is hereby issued to Poly Met Mining, Inc. subject to the conditions set forth in the Permit.

3. Based upon, the files, records, and proceedings in this matter and the findings of fact contain herein the DNR concludes that PolyMet's plans for the extension of the culvert under the Dunka Road are reasonable, practical, and adequately protect the public safety and promote the public welfare in accordance with Minnesota Statute § 103G.315, subd. 3.

4. PolyMet Mining, Inc., the Board of Supervisors of the North St. Louis County Soil and Water Conservation District, or the governing bodies of the City of Hoyt Lakes may file a demand for a hearing on the Application within 30 days after receiving mailed notice of this Order.

Approved and adopted this __1st_ day of ___November____, 2018

STATE OF MINNESOTA
DEPARTMENT OF NATURAL RESOURCES

/s/__Tom Landwehr_____
TOM LANDWEHR
Commissioner
Minnesota Department of Natural Resources