

**NORTHMET PROJECT -  
WETLAND REPLACEMENT PLAN**

**FINDINGS OF FACT, CONCLUSIONS,  
AND ORDER OF COMMISSIONER**

**November 1, 2018**

## LIST OF ACRONYMS AND ABBREVIATIONS

<b>BSA</b>	Bank Service Area
<b>CDSM</b>	Cement Deep Soil Mixing
<b>DNR</b>	Commissioner of the Minnesota Department of Natural Resources
<b>FEIS</b>	Final Environmental Impact Statement
<b>FTB</b>	Flotation Tailings Basin
<b>GLIFWC</b>	Great Lakes Indian Fish and Wildlife Commission
<b>HRF</b>	Hydrometallurgical Residue Facility
<b>MERA</b>	Minnesota Environmental Rights Act
<b>MPCA</b>	Minnesota Pollution Control Agency
<b>NPDES</b>	National Pollutant Discharge Elimination System
<b>PTM</b>	Permit to Mine
<b>ROD</b>	Record of Decision
<b>SDS</b>	State Disposal System
<b>SEIS</b>	Supplemental Environmental Impact Statement
<b>SWPPP</b>	Stormwater Pollution Prevention Plan
<b>USACE</b>	United States Army Corps of Engineers
<b>WCA</b>	Minnesota Wetland Conservation Act
<b>WWTF</b>	Waste Water Treatment Facility
<b>WWTS</b>	Waste Water Treatment System
<b>WRP</b>	Wetland Replacement Plan

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## MINNESOTA DEPARTMENT OF NATURAL RESOURCES

### **In the Matter of the NorthMet Project Wetland Replacement Plan (Appendix 18.1 of Version 3.1 of the Permit to Mine Application – NorthMet Project)**

### **Finding of Fact, Conclusions, and Order of Commissioner**

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After review and due investigation and consideration, and based on the information and statements contained in the Wetland Replacement Plan Application submitted by Poly Met Mining, Inc. and PolyMet Mining Corp. (“PolyMet”)<sup>1</sup> as Appendix 18.1 of Version 3.1 of the Permit to Mine Application – NorthMet Project, the description of work proposed to be undertaken, and supplemental information and comments in the administrative record 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. PolyMet submitted a proposed wetland replacement plan (“WRP”) in conjunction with its application for a non-ferrous metallic mineral Permit to Mine (“PTM”) for its proposed NorthMet mining project (“Project” or “NorthMet Project”). 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. The Project underwent joint federal-state environmental review, which culminated in the DNR issuing an unchallenged Record of Decision (“ROD”) deeming the Final Environmental Impact Statement (“FEIS”) adequate in March 2016.

2. The 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 near Hoyt Lakes (“Plant Site”), approximately 8 miles from the Mine Site. The Mine Site and the Plant Site are connected by Transportation and Utility Corridors (“Corridor”), which includes a pipeline transporting water between the Plant and Mine Site. In addition, make-up water for processing at the Plant Site will be appropriated from Colby Lake through an existing pipeline.

3. In general terms, the WRP details PolyMet’s proposed plans to avoid and minimize wetland impacts associated with the NorthMet Project, plans to mitigate for unavoidable wetland impacts, and plans for ongoing monitoring for compliance with wetland

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<sup>1</sup> The Wetland Replacement Plan Application only identifies Poly Met Mining, Inc. as the applicant. The wetlands at issue will be impacted as a result of mining activities occurring under a Permit to Mine non-ferrous metallic minerals under the DNR’s authority. Both Poly Met Mining, Inc. and its parent, PolyMet Mining Corp., are named as permittees under the Permit to Mine. As such, both entities are bound to adhere to the requirements of the wetland replacement plan, which is an essential element of the mining and reclamation plan under the Permit to Mine. See Minn. R. 6132.5300, subp. 2.

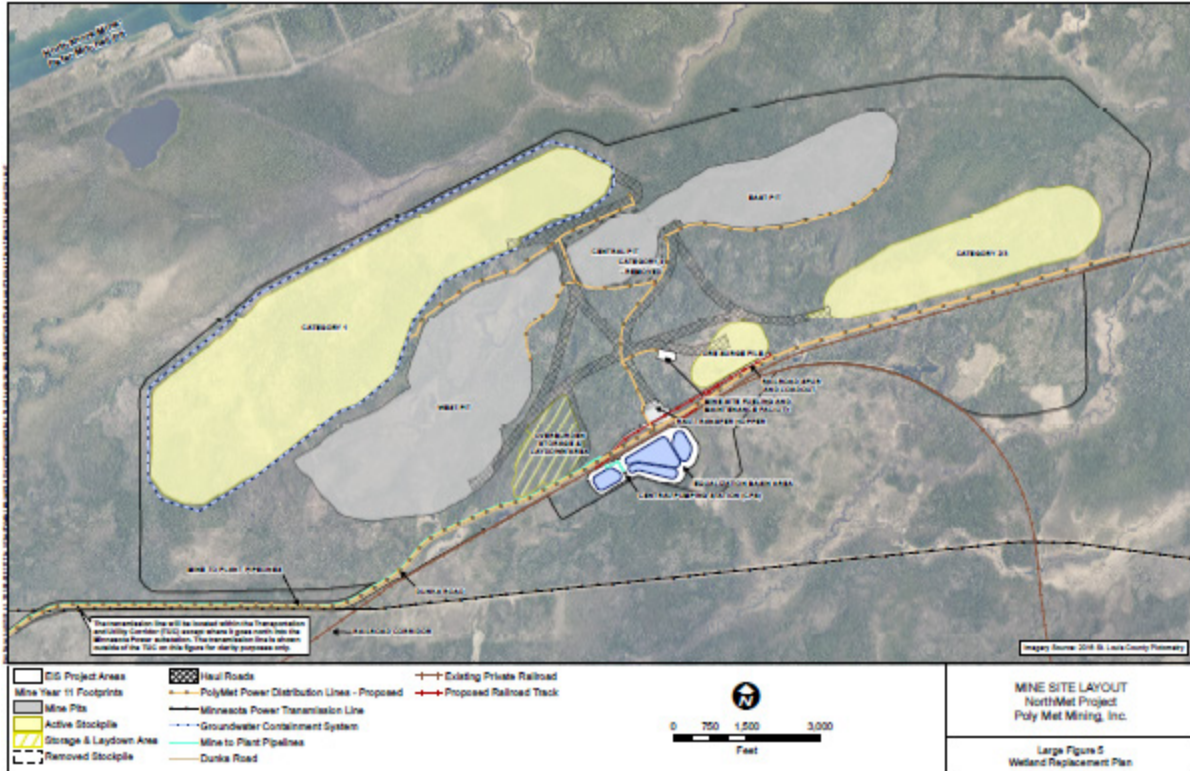
mitigation requirements. The WRP details baseline monitoring data collected during the course of environmental review. Ongoing monitoring within the WRP includes hydrologic monitoring, wetland vegetation monitoring, and wetland boundary monitoring. Data from such monitoring will be used to assess potential indirect wetland impacts associated with Project activities. Appropriate adaptive management and avoidance strategies will be implemented to address potential indirect wetland impacts indicated by monitoring data. Mitigation for direct wetland impacts and indirect wetland impacts is required under the WRP as approved by the DNR.

4. The present decision relates solely to the approval of PolyMet’s WRP under the PTM. A multitude of other permits and regulatory requirements will also apply to the Project. Mining and reclamation of the mining area will occur under the PTM issued by DNR under Chapter 6132 of the Minnesota Rules and the Minnesota Mineland Reclamation Act. *See* Minn. Stat. §§ 93.44-.51. 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. The appropriation of water for the Project is subject to six separate water appropriation permits, which each include a required monitoring plan. The take of state-listed species resulting from the NorthMet Project will occur under a takings permit issued by the DNR. Wetland replacement for Project-related impacts will also be separately required by the United States Army Corps of Engineers (“Corps”) pursuant to a Section 404 Permit issued under the Clean Water Act. The instant decision relates solely to wetland mitigation requirements under state law. The Corps must issue a separate record of decision related to the Section 404 permit. As required by the Clean Water Act, if a Section 404 permit is required, the state through the MPCA in its delegated capacity must also issue a Section 401 water quality certification.

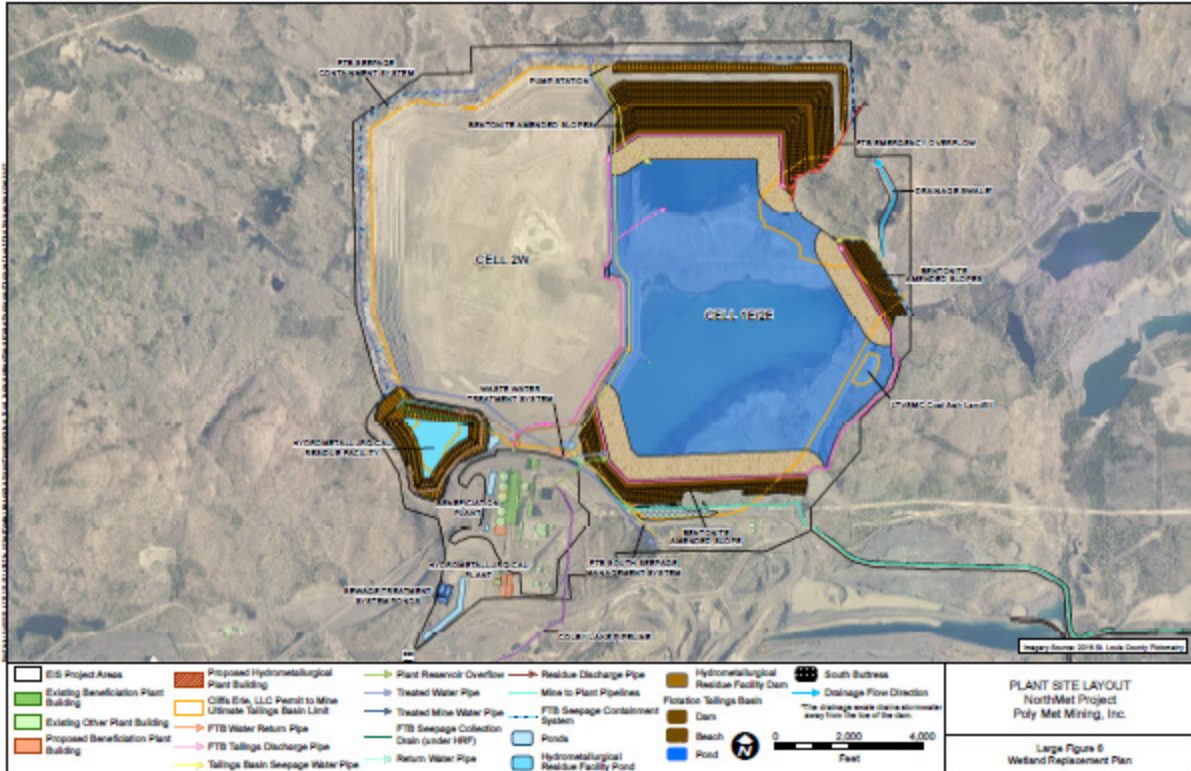
5. As detailed below, the DNR has reviewed the record and concludes that the WRP meets applicable legal requirements and is approved subject to the conditions set forth in the DNR’s Notice of Decision dated November 1, 2018.

## **II. ENVIRONMENTAL SETTING**

6. The Mine Site will occupy approximately 3,015 acres. Environmental controls will include liners and containment systems to collect seepage from stockpiles, a geomembrane stockpile cover to limit water infiltration of the Category 1 waste rock stockpile, and equalization basin areas to collect water that comes into contact with mining features. The location of Mine Site features, including the open mine pits (up to 528 acres), stockpiles (up to 740 acres), and supporting infrastructure (up to 451 acres) at the Mines Site are shown in Large Figure 5 of the WRP reproduced below:



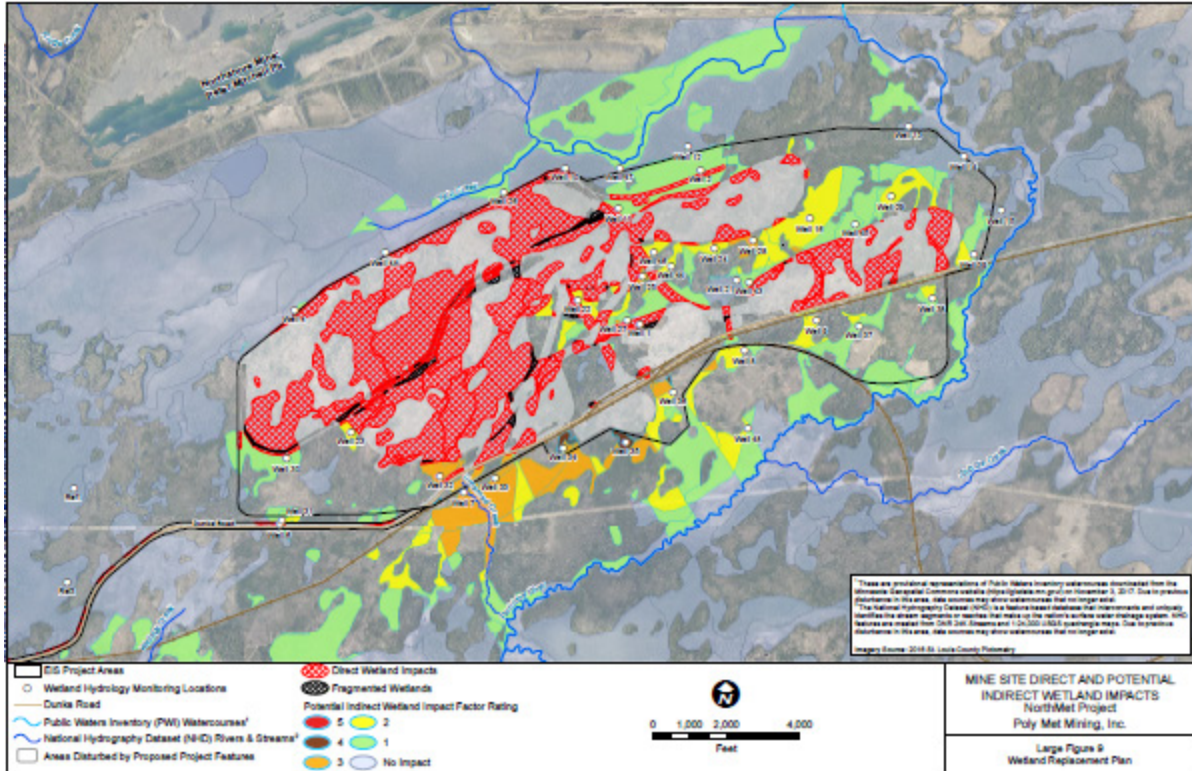
7. The Plant Site is an existing taconite process facility that will be refurbished for the NorthMet Project, including upgrades to the existing beneficiation plant and expansion of the FTB. Environmental controls at the Plant Site include a seepage capture system to collect seepage from the tailings basin and water treatment at a waste water treatment system (“WWTS”). The WWTS will be used to treat process water used at the Plant Site and water from the Mine Site piped to the Plant Site through the Corridor. Plant Site features are shown in Large Figure 6 of the WRP reproduced below:



8. Tailings basin seepage currently provides water to certain wetlands and tributaries of the Embarrass River north of the FTB. In order to avoid ecologic and hydrologic impacts to the Embarrass River watershed resulting from seepage capture from the FTB associated with the Project, PolyMet has agreed to augment flows in to Trimble Creek, Unnamed Creek, Second Creek, and Unnamed (Mud Lake) Creek (“Embarrass River Tributaries”) under the terms of a water appropriation permit for the Plant Site. *See* Water Appropriation Permit 2016-1369. PolyMet will augment streamflow in the Embarrass River Tributaries through discharge of treated effluent from the WWTS and diverting runoff that currently flows into the tailings basin via a drainage swale. These discharges will occur under the terms of an NPDES/SDS permit issued by the MPCA.

9. Given the scale of disturbance associated with mining activities at the Mine Site, there are significant direct wetland impacts associated with the Project. The geology of the ore body dictates the location and dimension of the mine pits, which will be developed for the purpose of mining the mineral resource. Alternative mine pit locations and designs were reviewed by PolyMet. WRP § 6.4. The underground mining alternative was eliminated during the course of environmental review as not practicable. *See* FEIS Appendix B. Alternative mine pit layouts were examined during the course of environmental review and in the course of permitting under the PTM. WRP § 6.4.2; Large Figure 7. Wetland impacts at the Mine Site are illustrated in Large Figure 9 of the WRP reproduced below:





10. Project-related wetland impacts (direct and fragmented) will be greatest at the Mine Site (~778 acres) with additional impacts at the Plant Site (~145 acres) and in the Corridor (~7 acres). WRP p. 5. At the Plant Site, installation of the FTB seepage capture system will result in approximately 88 acres of wetland impacts, while the other impacts result from excavation and fill activities. Delineation of the wetlands in and around the Project Site is set forth in Large Figure 4 of the WRP reproduced below.<sup>2</sup>

<sup>2</sup> This delineation may be updated as a result of additional fieldwork recently undertaken by the USACE in accordance with condition 3 of the Notice of Decision. To the extent that additional impacts are identified as a result of any delineation changes, additional mitigation under the Approved WRP will be required.





engineering controls, the NorthMet Project would not cause any significant water quality impacts.

13. The FEIS comprehensively analyzed the existing groundwater and surface water hydrology and water quality within the Partridge River and Embarrass River watersheds that could be affected by the NorthMet Project. *See* FEIS §§ 4.2.2.2.1, 4.2.2.2.2, 4.2.2.4.1, 4.2.2.4.2. Analysis to date has not identified preferential groundwater conduits within the surficial deposits at the Mine Site, but, rather, has shown that groundwater flow paths are short because of the thin and discontinuous nature of the surficial aquifer. Monitoring well data shows that groundwater elevations fluctuate across the Mine Site and fluctuate seasonally, rising in the spring with the snowmelt and falling through the late summer to lows in the winter. *See* FEIS § 4.2.2.2.1.

14. Because the Final Scoping Decision in the course of environmental review of the proposed NorthMet Project identified potential wetland impacts as a significant impact, the FEIS dedicated substantial analysis to the issue of wetland impacts. The FEIS thoroughly assessed the Project's potential environmental effects, including effects on wetland resources. Existing wetland resources at the Mine and Plant Sites were addressed in the FEIS. *See* § 4.2.3, Figure 4.2.3-1, Table 4.2.3-2, and Table 4.2.3-5. Project-related impacts to wetlands at the Mine and Plant Sites were similarly discussed. *Id.* § 5.3.3, Table 5.2.3-1, Figure 5.2.3-1, Figure 5.2.3-2, Figure 5.2.3-4, Figure 5.2.3-5, Table 5.2.3-4, Table 5.2.3-8, and Figure 5.2.3-18. Field surveys have shown that a majority of wetlands at the Mine Site are largely perched wetlands, fed by direct precipitation, with minimal hydraulic connection to the underlying groundwater. *See id.* § 4.2.3.1.2. Potential cumulative effects to wetlands were addressed in § 6.3.3 and quantified in Table 6.3.3-1 of the FEIS. Possible wetland mitigation and monitoring requirements were also addressed in the FEIS. *Id.* § 5.2.3.3. The wetland mitigation proposal analyzed in the FEIS involved PolyMet's development of three separate project-specific wetland replacement sites. Two of these sites were out of watershed from the site of the Project.

15. The FEIS analyzed the potential environmental consequences of the proposed NorthMet Project on the affected environment, including direct and indirect effects on water resources, wetlands, vegetation, wildlife, and aquatic species. *Id.* §§ 5.2.2-5.2.6. In addition, the FEIS assessed the potential cumulative impacts of the proposed NorthMet Project at the resource level. *Id.* §§ 6.2.2-6.2.6.

16. The ROD concluded that the FEIS adequately analyzed significant environmental impacts associated with the NorthMet Project, appropriately presented alternatives and analyzed their impacts, and presented methods by which adverse environmental impacts associated with the Project could be mitigated.

17. On December 30, 2016, PolyMet notified the DNR that it proposed to eliminate the cement deep soil mixing ("CDSM") zone from the Cell 2E North Dam of the Flotation Tailings Basin ("FTB") previously analyzed during environmental review and replace it with increased buttressing to achieve the required stability for the FTB. On March 21, 2017, the DNR determined that the elimination of the CDSM zone and increased buttressing proposed by PolyMet did not result in substantial changes that affect the potential significant adverse environmental effects of tailings management at the Plant Site. The DNR further determined that such changes did not appear to generate significant environmental effects that were not

considered in the FEIS or affect the availability of prudent and feasible alternatives with lesser environmental effects. The DNR concluded that preparation of a supplemental EIS (“SEIS”) was not warranted as a result of this change. This change from the CDSM to increased rock buttressing would result in an increase of 2.97 acres of additional direct wetland impacts at the Plant Site beyond those identified in the FEIS.

18. On March 27, 2017, PolyMet notified the DNR that it proposed to combine the location of the waste water treatment systems for both the Mine Site and Plant Site into a single building at the Plant Site to be called the Wastewater Treatment System (“WWTS”). This proposed change would relocate the WWTF originally proposed for water treatment at the Mine Site to the Plant Site that had been analyzed in the FEIS. Mine water transfers were proposed to occur through a three-pipeline system along the Corridor rather than a two-pipeline system as originally proposed. PolyMet did not propose any changes to the actual wastewater treatment processes or to the volume of wastewater. The DNR reviewed the proposed change to the WWTS and concluded, on April 11, 2017, that this modification did not result in substantial changes that affect the potential significant adverse environmental effects of project-related wastewater management through operations, closure, and reclamation. The DNR further determined that such changes did not appear to generate significant environmental effects that were not considered in the FEIS or affect the availability of prudent and feasible alternatives with lesser environmental effects. These proposed changes resulted in a net decrease of 7.9 acres of direct wetland impacts at the Mine Site from those identified in the FEIS.

#### **IV. DNR IS THE APPROVING AUTHORITY UNDER WCA**

19. Under the Minnesota Wetland Conservation Act (“WCA”), if a permit to mine is required under Minnesota Statutes § 93.481, “wetlands must not be drained or filled, wholly or partially, unless replaced by actions that provide at least equal public value . . . under a mining reclamation plan approved by the commissioner under the permit to mine.” Minn. Stat. § 103G.222, subd. 1(a); *see also* Minn. R. 6132.5300, subp. 1.

20. WCA is implemented under Chapter 8420 of the Minnesota Rules. Under Minnesota Rule 8420.0930, subp. 1, “wetlands must not be impacted as part of a project for which a permit to mine is required by Minnesota Statutes, section 93.481, except as approved by” the DNR.

21. For non-ferrous mining operations such as the Project, the permittee’s mining and reclamation plan “must include an approved wetland replacement plan that meets the same principles and standards for replacing wetlands under parts 8420.0500 to 8420.0528 and provides for construction certification and monitoring according to parts 8420.0800 and 8420.0810.” Minn. R. 8420.0930, subp. 2.B. This Rule specifically identifies the portions of Chapter 8420 that are applicable to the DNR’s review of a WRP submitted in conjunction with an application for a PTM.

22. The DNR is the “approving authority for activities associated with projects requiring permits to mine under Minnesota Statutes section 93.481.” Minn. R. 8420.0200, subp. 2.D. In reviewing wetland mitigation projects associated with a PTM, the DNR is not a

“local government unit” as that term is defined in Minnesota Rule 8420.0111, subp. 38.<sup>3</sup> Because the DNR is not a “local government unit” under Chapter 8420, it is not required to adhere to the Technical Evaluation Panel (“TEP”) review procedures set forth in Minnesota Rule 8420.0240. The DNR nonetheless chose to notify and seek comment from those individuals who would otherwise be on a TEP (“WCA Reviewers”), despite the fact that PolyMet’s proposed WRP involves a mining-related project subject to the DNR’s sole jurisdiction.

## V. APPLICATION AND COMMENT PROCESS

23. In November 2016, PolyMet submitted an application for a non-ferrous PTM to the DNR. This PTM application included an incomplete, proposed WRP. PolyMet revised its PTM application and proposed WRP throughout the course of 2017. Through an iterative process, the DNR reviewed and provided comments to PolyMet on this revised PTM application, including PolyMet’s proposed WRP.

24. On December 13, 2017, PolyMet submitted a revised WRP as part of Version 3.1 of its PTM application. *See* PTM Application Appendix 18.1. This WRP proposed wetland impacts of 930.2 acres of direct and fragmented wetlands associated with the Project. In addition, the WRP included a monitoring plan in order to determine if indirect wetland impacts might occur as a result of Project activities. In lieu of developing project-specific wetland mitigation sites as analyzed in the FEIS, PolyMet’s revised WRP application proposed to mitigate wetland impacts associated with the Project through the purchase of wetland credits at a 1:1 ratio from the Lake Superior Wetland Bank (account number 1609 within the state wetland bank). This bank is located within the same watershed (St. Louis River watershed #3) and the same wetland bank service area (BSA #1) as the impacts of the Project.

25. On January 5, 2018, the DNR deemed PolyMet’s December 2017 WRP application to be complete. That same day, a notice of application was sent to the WCA reviewers.<sup>4</sup> *See* Minn. Stat. § 103G.2242, subd. 6(a). Also, that same day, the WRP, as an Appendix of the PTM Application, was posted for public review and comment on the DNR’s permitting web site for the Project, which initiated the comment period. *Cf.* Minn. Stat. § 103G.2242, subd. 8 (providing the public a minimum 15-day comment period for wetland replacement plans under review by a “local government unit”).

26. The comment period for WCA Reviewers and the public comment period occurred simultaneously with a public review and comment period on the draft PTM (consisting of the PTM Application and draft Special Conditions) for the Project. The draft PTM included Special Conditions relating to PolyMet’s proposed WRP. These draft Special Conditions included a requirement that PolyMet provide mitigation prior to any impacts to FPN62 –

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3 Similarly, because PolyMet’s proposed WRP does not involve a proposal to establish a wetland banking project solely for replacing wetland impacts under a Permit to Mine, the DNR is not a “local government unit” under Minnesota Statutes § 103G.005, subd. 10i. PolyMet’s WRP proposes mitigation through withdrawals of wetland bank credits from an existing state wetland banking site.

4 This notification included notice to representatives of St. Louis County. *See* Minn. Stat. § 103G.222, subd. 1. (“The commissioner must provide notice of an application for wetland replacement under a permit to mine to the county in which the impact is proposed and the county in which a mitigation site is proposed.”)

Northern Rich Spruce Swamp, a rare natural community, found at the Mine Site. *See* PTM Special Conditions § 11, Attachment 2. The draft special conditions noted that this mitigation would be in addition to the wetland mitigation required under the proposed WRP. *Id.*

27. The public comment period closed on March 6, 2018. The DNR received more than 14,000 public comments on the draft PTM, including the WRP. Given the large number of submissions and individual comments received during this public comment process, the DNR grouped similar comments into themes and considered those themes separately in lieu of responding to each individual comment. These comments, along with comments from the WCA Reviewers, were organized in a spreadsheet according to the themes and issues raised therein. Within the theme of “wetlands”, comments on PolyMet’s proposed WRP were sorted according to issues raised as follows: (1) delineation, (2) direct wetland impacts, (3) general wetland comments, (4) indirect wetland impacts, and (5) mitigation.

28. DNR technical staff reviewed and considered each of the themes and issues raised by these comments. As part of this review, the DNR considered information in the FEIS addressing the themes or issues, along with information within the WRP application and special conditions contained within the draft PTM. DNR’s review also considered whether the concerns at issue related to permits other than the WRP or PTM, such as water appropriation permits or the NPDES/SDS permit. The DNR developed documents detailing this review on an issue-by-issue basis, which are contained within the administrative record and incorporated herein by reference. In addition, the comments from the WCA Reviewers were segregated and considered within a separate spreadsheet. A high-level summary of the DNR’s consideration of the wetlands-related issues raised by commenters and the WCA Reviewers is attached to these findings as Exhibit 1. Insofar as comments raised issues related to the legal sufficiency of the WRP under applicable law, such legal requirements are specifically addressed herein.

29. After review, the DNR developed these findings and a Notice of Decision approving PolyMet’s proposed wetland mitigation and monitoring. The Notice of Decision imposes conditions upon the WRP as proposed by PolyMet in December 2017. The decision and conditions, along with the December 2017 proposed WRP, constitute the DNR-approved WRP (“Approved WRP”). PolyMet must adhere to these requirements in order to be in compliance with the Approved WRP and the PTM.

## **VI. ANALYSIS OF STATUTORY AND REGULATORY REQUIREMENTS**

30. As detailed below, the Approved WRP, incorporated within PolyMet’s mining and reclamation plan under the PTM, “meets the same principles and standards for replacing wetlands under parts 8420.0500 to 8420.528.” *See* Minn. R. 8420.0930, subp. 2.B.<sup>5</sup> The Rules set forth in parts 8420.0500 to 8420.0528 “specify the procedures and criteria for avoiding and minimizing impacts and for ensuring adequate replacement of lost public value from unavoidable impacts.” Minn. R. 8420.0500, subp. 1. The DNR’s review and analysis of the Approved WRP

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<sup>5</sup> This Rule also references parts 8420.0800 and 8420.0810. These Rules are inapplicable to the Approved WRP because PolyMet does not propose to establish a project-specific wetland mitigation site, but, rather, will withdraw credits from an existing and previously approved state wetland bank.

against the applicable Rules shows that the Approved WRP satisfies these procedures and criteria.

A. Minnesota Rule 8420.0500 – Purpose and Requirement

31. The Approved WRP satisfies the requirements of Minnesota Rule 8420.0500, subp.2. PolyMet has established that it has exhausted all possibilities to avoid and minimize wetland impacts according to the sequencing requirements of Minnesota Rule 8420.0520. See WRP § 6; see also FEIS § 3.2.3; Appendix B.

B. Minnesota Rule 8420.0515 – Special Considerations

32. The special considerations set forth in Minnesota Rule 8420.0515 identify factors that must be considered by the applicant and considered by the DNR in its review of a proposed WRP, when such factors are “identified as being applicable to an impact site or a replacement site.” Minn. R. 8420.0515, subp. 1. The DNR’s consideration of the special considerations applicable to the Approved WRP is detailed below.

33. **Endangered and Threatened Species.** The Approved WRP satisfies the special consideration for endangered and threatened species set forth in Minnesota Rule 8420.0515, subp. 2. PolyMet has received a takings permit to take state-endangered *Caltha natans* (floating marsh marigold), state-endangered *Botrychium spathulatum* (spatulate moonwort), and state-endangered *Botrychium ascendens* (upswept moonwort). See Minn. Stat. § 84.0895, subd. 7; Minn. R. 6212.1800; see also WRP § 12.1. The takings permit was issued by the DNR prior to making its decision on the proposed WRP. Condition 7 of the Notice of Decision provides that compensatory mitigation under the takings permit must be provided prior to disturbance of any wetlands.

34. **Rare Natural Communities.** The Approved WRP satisfies the special consideration for rare natural communities set forth in Minnesota Rule 8420.0515, subp. 3, as modified by Minnesota Statutes § 103G.2242, subd. 1(d).

35. Section 103G.2242, subd. 1(d) provides in relevant part that “[w]hen making a determination under [Minnesota Rules Chapter 8420] on whether a rare natural community will be permanently adversely affected, consideration of measures to mitigate any adverse effect on the community must be considered.”

36. The NorthMet Project will impact a rare natural community, FPn62 – Northern Rich Spruce Swamp, at the Mine Site. In order to mitigate any adverse effect on the FPn62 community at the Mine Site and ensure that PolyMet’s mining operations do not permanently adversely affect this community, the Approved WRP requires PolyMet to mitigate impacts through one or a combination of the following required mitigation activities: (1) restoration of previously disturbed or protection of currently imperiled FPn62 –Northern Rich Spruce Swamp (at a 1:1 ratio) or (2) provide permanent protection to FPn62 – Northern Rich Spruce Swamp through placement of a conservation easement or deed restriction on presently unprotected lands with this community type (at a 2:1 ratio). The Approved WRP requires mitigation in advance for direct impacts to the FPn62 – Northern Rich Spruce Swamp. In addition, conditions within the Approved WRP also require mitigation for any indirect impacts to this rare natural community.



37. This required mitigation for FPN62 – Northern Rich Spruce Swamp under the Approved WRP is in addition to the other wetland mitigation and replacement activities detailed in PolyMet’s WRP application.

38. In light of the conditions requiring mitigation for FPN62- Northern Rich Spruce Swamp in the Approved WRP, the DNR concludes that this community will not be permanently adversely affected by PolyMet’s mining operations under Minnesota Rule 8420.0515, subp. 3.

39. **Special fish and wildlife resources.** The Approved WRP satisfies the special consideration for special fish and wildlife resources set forth in Minnesota Rule 8420.0515, subp. 4. As detailed in the WRP, PolyMet’s mining operations are not anticipated to have a significant adverse effect on special or locally significant fish and wildlife resources that cannot be functionally replaced. *See* WRP § 12.4. The FEIS analyzed the Project’s potential effects on such resources. *See* FEIS §§ 4.2.5, 4.2.6, 5.2.5, 5.2.6.

40. **Archaeological, historic, or cultural resource sites.** The Approved WRP satisfies the special consideration for archaeological, historic, or cultural resource sites set forth in Minnesota Rule 8420.0515, subp. 5. The FEIS analyzed the Project’s potential effects on such resources. *See* FEIS §§ 4.2.9, 5.2.9. Measures to resolve the adverse effects of the NorthMet Project on archaeological, historic, or cultural resource site were adopted through a Memorandum of Agreement executed on December 27, 2016 through the National Historic Preservation Act (“NHPA”) process. *See* WRP Reference (45).

41. **Groundwater sensitivity.** The Approved WRP satisfies the special consideration for groundwater sensitivity set forth in Minnesota Rule 8420.0515, subp. 6. As detailed in the FEIS, groundwater models used to predict the NorthMet Project’s potential effects on water quality indicated that, with the proposed engineering controls, the Project would not cause any significant adverse effects on groundwater quality. *See* FEIS §§ 5.2.2.3.2, 5.2.2.3.3.

42. PolyMet’s operations at the NorthMet Project will be subject to the requirements of an NPDES/SDS permit issued and enforced by the MPCA and a Section 401 water quality certification issued by the MPCA in conjunction with the Section 404 Permit issued by the USACE. As part of its review of the NorthMet Project, the MPCA conducted a groundwater nondegradation evaluation of the potential effects of the Project on groundwater quality. *See* Draft NPDES/SDS Permit Attachment 4 – Groundwater Nondegradation Evaluation, <https://www.pca.state.mn.us/sites/default/files/wq-wwprm1-51p.pdf>. The MPCA concluded in that evaluation that “due to a combination of controls and mitigation measures (such as engineering controls, wastewater treatment, and water monitoring activities) that are part of the Project design, the proposed Project satisfies the requirements under Minnesota Rules 7060 for protection of groundwater resources.”

43. **Sensitive surface waters.** The Approved WRP satisfies the special consideration for sensitive surface waters set forth in Minnesota Rule 8420.0515, subp. 7, which bars approval of replacement plans that involve activities that “will have a significant adverse effect on the water quality” of outstanding resource value waters or designated trout streams. *See also* Minn. R. 8420.0111, subp. 5 (defining activity to mean “any work or action conducted in or near a wetland that could potentially affect a wetland”).

44. No outstanding resource value waters listed under Minnesota Rules 7050.0355 are present in the Project area. WRP § 12.6. Wyman Creek, a Minnesota-listed trout stream, intersects the Corridor that runs between the Mine Site and Plant Site. Wyman Creek receives warm water from mine pit lakes and has a culvert across it. *See* FEIS §§ 4.2.2, 4.2.6.

45. The Project involves expansion of infrastructure (e.g. widening of the Dunka Road and placement of the mine to plant site pipeline) within the Corridor in the vicinity of Wyman Creek. WRP § 5.4.1. These infrastructure expansion activities will not have a significant adverse impact on the water quality of Wyman Creek. Discharges from Project activities will be regulated by the MPCA under a NPDES/SDS permit and a stormwater pollution prevention plan (“SWPPP”). As part of its review of the NorthMet Project, the MPCA conducted an antidegradation assessment and review of the NorthMet Project’s potential effects on surface waters within the state and preliminarily concluded they met applicable requirements. *See* Draft NPDES/SDS Permit Attachment 3 – Poly Met Mining, Inc. NPDES Antidegradation Review – Preliminary MPCA Determination, <https://www.pca.state.mn.us/sites/default/files/wq-wwprm1-51n.pdf>. In addition to these regulatory requirements that are subject to the regulatory authority of the MPCA, PolyMet has received a public waters work permit for a culvert extension on a tributary to Wyman Creek associated with the widening of the Dunka Road. Special Condition 79 of the PTM requires PolyMet to revise its reclamation plans based on the final design of the Dunka Road. Unless the culvert extension is approved to remain for future use at the site, the culvert would be removed and the area reclaimed.

46. **Education or research use.** The special consideration set forth in Minnesota Rule 8420.0515, subp. 8 is inapplicable because the wetlands at issue are not known to be used for educational or research purposes.

47. **Waste disposal sites.** The Approved WRP satisfies the special consideration set forth in Minnesota Rule 8420.0515, subp. 9 for waste disposal sites. There are no waste disposal sites or activities that involve the use of hazardous materials at the Mine Site or the Corridor. *See* FEIS §§ 4.2.1.3 and 4.2.1.4. There are areas of concern (“AOCs”) at the Plant Site, which are being addressed through the MPCA’s Voluntary Investigation and Cleanup Program and are also addressed in the PTM, particular through the requirement of financial assurance for closure costs. *See id.* § 4.2.1.4.2; Table 4.2.1-2. All activities related to the Project involving known or potential hazardous wastes at the Plant Site will be conducted according to applicable state and federal standards. *See* WRP § 12.8.

48. **Consistency with other plans.** The Approved WRP satisfies the special consideration for other plans set forth in Minnesota Rule 8420.0515, subp. 10 because, as comprehensively analyzed in the FEIS, activities associated with the NorthMet Project are consistent with formally adopted local land use plans, zoning requirements, and comprehensive plans in the area. *See* FEIS § 5.2.1; WRP § 12.9; Table 12-2.

#### C. Minnesota Rule 8420.0520 – Sequencing

49. **Sequencing requirement.** The sequencing requirements set forth in Minnesota Rule 8420.0520, subp. 1, establish a priority order for wetland replacement ranging from avoidance to compensatory replacement. *See also* Minn. Stat. §§ 103A.201, subd. 2(b),

103G.222, subd. 1(b). A proposed WRP cannot be approved unless the applicant demonstrates that the activity impacting a wetland complies with this order of priority. As detailed herein, the Approved WRP meets these sequencing requirements. *See also* FEIS § 3.2.3, Appendix B.

50. **Impact avoidance.** The DNR reviewed the Approved WRP to determine whether it complied with the impact avoidance criteria set forth in Minnesota Rule 8420.0520, subp. 3. As detailed in [Section VI.B](#) above, the Approved WRP satisfies the special considerations detailed in Minnesota Rule 8420.0515, and, thus, avoidance is not required under Minnesota Rule 8420.0520, subp. 3.A. The Project is not wetland dependent, so Minnesota Rule 8420.0520, subp. 3.B. is inapplicable to the DNR’s consideration of the Approved WRP.

51. Avoiding and minimizing wetland impacts was one of the objectives of the analysis of the NorthMet Project within the FEIS. The environmental review process comprehensively analyzed the feasibility of alternatives that affected the Project’s direct wetland impacts, including a no-action alternative and an underground mining alternative. *See* FEIS § 3.2.3, Appendix B; *see also* WRP § 6.4.2. Alternative mine pit layouts were examined during the course of environmental review. WRP § 6.4.2; Large Figure 7. As detailed in the WRP, extensive exploration programs have been conducted to define the ore resource and refine the locations of mine pits at the Mine Site. WRP § 6.4.2. Fundamentally, however, PolyMet’s mining activities are dependent on the underlying geology and the location of the ore reserves. PolyMet’s proposed Plant Site activities involve rehabilitation of existing mine processing infrastructure. The DNR’s ROD concluded that the FEIS “addressed the potentially significant issues and alternatives” and analyzed all significant issues in accordance with applicable rules. *See* Minn. 4410.2800, subp. 4. The comprehensive alternatives analysis set forth in the FEIS and deemed adequate in the ROD satisfies the alternatives analysis requirements set forth in Minnesota Rule 8420.0520, subp. 3.C. *See* FEIS §§ 3.2.3, 5.2.3.3. Relying upon the comprehensive analysis within the FEIS, the DNR concludes that there are no available proposed feasible and prudent alternatives to the Project that would avoid impacts to wetlands. Although using wetland banking credits as mitigation was not proposed in the FEIS, the DNR notes that relying on wetland banking credits is preferred over use of project-specific compensation under the sequencing requirements of the 2008 Federal Mitigation Rule and 2009 USACE St. Paul District Policy. *See id.* § 5.2.3.3.2.

52. **Impact minimization.** Through the course of environmental review, the NorthMet Project was modified to minimize impacts to the waters of the United States as well as to other biological resources. Alternative layouts for features at the Mine and Plant Sites were examined in an attempt to minimize wetland impacts associated with the Project. *See* WRP §§ 6.4.2, 6.5, Large Figures 7, 8.<sup>6</sup> The Project will employ numerous methods to minimize wetland impacts as required under Minnesota Rule 8420.0520, subp. 4. *See* WRP §§ 6.4.2.1, 6.4.2.2, 6.5.1, 6.5.2, 6.6; *see also* PTM Application § 12.2, Table 12-2 (summarizing modifications made to Project plans to avoid and minimize potential wetland impacts and to reduce or eliminate wetland impacts over time). Such methods include minimizing the footprint and optimizing the placement of mining features at the Mine Site, reuse of existing infrastructure

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<sup>6</sup> As noted in Section II above, roughly 60% of the anticipated wetland impacts at the Plant Site are related to the implementation of engineering controls associated with the seepage capture system at the FTB, which is necessary to address water quality considerations at the FTB.

at the Plant Site, collection and treatment of contact water, and reclamation of the site under the mining and reclamation plan under the PTM. The WRP comprehensively detailed minimization alternatives for activities associated with the NorthMet Project. As detailed above in the avoidance analysis, the purpose of the Project is to mine specific ore reserves, and the location of these reserves dictates in large part the placement of features within the NorthMet Project. Each of the factors detailed in Minnesota Rule 8420.0520, subp. 4 was addressed in detail during the course of environmental review. The DNR has reviewed and considered this earlier analysis and the WRP and concludes that PolyMet has demonstrated to the agency's satisfaction that the Project minimizes impacts by limiting the degree or magnitude of the wetland activity or its implementation in accordance with the criteria set forth in Minnesota Rule 8420.0520, subp. 4.

53. **Impact rectification.** There are no temporary impacts associated with the Project, so Minnesota Rule 8420.0520, subp. 5 is inapplicable to the Approved WRP. Adaptive management is required for any temporary indirect impacts that are discovered through monitoring.

54. **Reduction or elimination of impacts over time.** Under Minnesota Rule 8420.0520, subp. 6, "further impacts must be reduced or eliminated by maintaining, operating, and managing the project in a manner that preserves and maintains remaining wetland functions" after an activity is completed. In addition, this Rule requires applicants to implement best management practices to protect wetland functions. Reclamation of the mining area will be required under the PTM. PolyMet's mining and reclamation plan discusses the potential construction of wetlands over the backfilled combined East/Central Pit at the Mine Site as part of reclamation activities in the future. *See* PTM Application § 3.5.1; WRP § 5.2.3.1 (noting potential development of wetlands in the East Pit and within the footprints of temporary stockpiles during reclamation); *see also* FEIS § 5.2.3.1 (estimating that ~101.8 acres of wetlands would likely be established during reclamation of the Mine Site). Reclamation activities required under the PTM will serve to reduce certain wetland impacts associated with the Project over time. *See* PTM Special Condition 83c (requiring PolyMet to submit a plan for the establishment of wetland habitat in the footprint of the backfilled East Pit). A condition of the Approved WRP requires that, as a best management practice, the Permittee must stake out the limits of the wetland boundaries as a visual representation for the footprints permitted for impacts. This will serve to help protect wetlands within the mining area from inadvertent disturbance. Comprehensive wetland monitoring will be required under the Approved WRP, and water level monitoring and reporting is required under water appropriation permits for the NorthMet Project. If monitoring results show water levels or wetlands are being, or could potentially be, impacted by Project activities, then adaptive management and/or additional mitigation may be required under the Approved WRP or the water appropriation permits. These various requirements will serve to reduce or eliminate further impacts by maintaining, operating, and managing the sites associated with the Project in a manner that preserves and maintains remaining wetland functions as required under Minnesota Rule 8420.0520, subp. 6.

55. **Unavoidable impacts.** The Approved WRP requires PolyMet to replace unavoidable wetland impacts in accordance with Minnesota Rule 8420.0520, subp. 7 and the requirements of Minnesota Rule 8420.0522 as discussed in greater detail in [Section VI.D](#) below.

56. **Sequencing flexibility; Wetlands on cultivated fields.** Minnesota Rule 8420.0520, subps. 7a and 8 are inapplicable to the Approved WRP as PolyMet did not make a request for sequencing flexibility and the Project does not involve wetlands on cultivated fields.

D. Minnesota Rule 8420.0522 – Replacement Standards

57. Minnesota Rule 8420.0522, subp. 1 identifies that the general requirement of wetland placement is to replace the public value wetlands lost as a result of an impact.

58. The ratios applicable to wetland replacement are set forth in Minnesota Rule 8420.0522, subp. 4. Under this Minnesota Rule 8420.0522, subp. 4.A(1), a replacement ratio of 1:1 may be used when (1) a project involves wetland impacts in a greater than 80% area and (2) the replacement consists of “withdrawal of available credits from an approved wetland bank site within the same bank service area as the impacted wetland.”<sup>7</sup> A higher ratio may be required “if necessary to replace the public value of the wetland lost.” Minn. R. 8420.0522, subp. 4.D.

59. Wetland mitigation under the Approved WRP requires PolyMet to replace and mitigate for direct and fragmented wetland impacts resulting from the Project with credit purchases from an off-site wetland bank in Bank Service Area (“BSA”) #1, in the St. Louis River watershed prior to such impacts. The wetland impacts associated with the Project and the bank credits are in the same BSA, and within a greater than 80% area. *See* WRP § 14.1; Large Table 5. As such, the minimum replacement ratio is 1:1. *See* Minn. R. 8420.0522, subp. 4.A(1). After review, the DNR has determined that a higher ratio is not necessary to replace the public value of the wetlands lost as a result of Project activities that do not involve impacts to the FPN62 – Northern Rich Spruce Swamp. The DNR, has, however, concluded that additional mitigation is necessary for impacts to the FPN62 – Northern Rich Spruce Swamp, and has required such additional mitigation in a condition within the Approved WRP as detailed in ¶¶ 36-38 above.

60. PolyMet’s proposed wetland replacement through credits from an off-site wetland bank in the same BSA as the impacted wetlands meets the siting requirements of Minnesota Rule 8420.0522, subp. 7; *see also* Minn. Stat. § 103G.222, subd. 3(c) (recognizing that the priority order for replacement through wetland banking begins with the same wetland bank service area as the impacted wetland).

61. In accordance with Minnesota Rule 8420.0522, subp. 8.A, replacement of wetland functions and values under the Approved WRP must be completed in advance or concurrent with any actual wetland impacts by PolyMet. Since PolyMet seeks to replace wetlands through wetland bank credits, it must withdraw approved wetland bank credits to fully mitigate before the impact. *Id.*, subp. 8.B(1). Each year PolyMet must withdraw credits sufficient to mitigate for the anticipated wetland impacts in the coming year. A Special Condition of the Approved WRP provides:

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<sup>7</sup> Under WCA, a greater than 80% area refers to a “county, watershed, or, for purposes of wetland replacement, bank service area where 80 percent or more of the presettlement wetland acreage is intact and: (1) ten percent or more of the current total land area is wetland; or (2) 50 percent or more of the current total land area is state or federal land.” Minn. Stat. § 103G.005, subd. 10b. The Project is located in St. Louis County, which is identified as a greater than 80% area under the applicable Rules. *See* Minn. R. 8420.0117, subp. 1.A.

If the yearly monitoring or any other information shows indirect wetland impacts are likely to occur, as determined by the DNR, then the DNR will determine whether actions to avoid or minimize wetland impacts are required. If the yearly monitoring or any other information shows indirect wetland impacts have occurred, as determined by the DNR, then [PolyMet] must provide mitigation from the Lake Superior Wetland Bank (1609) at a 1:1 ratio. If credits are not available, [PolyMet] must submit a revised or new WRP for review and approval by DNR. Mitigation for indirect impacts is required prior to any additional wetland impacts.

Notice of Decision Special Condition 10. The intent of these provisions within the Approved WRP is to use monitoring results to guide decisions and require avoidance or minimization of potential indirect wetland impacts prior to such impacts affecting the wetlands at issue and ensure that mitigation is provided for any indirect impacts that do ultimately occur. PolyMet has the right to acquire up to 1,800 credits from the Lake Superior Wetland Bank (1609). Given that PolyMet anticipates 930.2 acres of direct and fragmented wetland impacts associated with the Project, it will have access to the reserve of the bank credits for indirect impacts that cannot be avoided.

62. Minnesota Rule 8420.0522, subp. 9, relating to financial assurance is not applicable because PolyMet will replace wetlands through withdrawal of wetland credits in advance of impacts. The DNR notes that financial assurance is separately being required under the PTM for the Project.

#### E. Inapplicable Rules

63. Minnesota Rules 8420.0526, 8420.0528, 8420.0800, and 8420.0810 are inapplicable to the Approved WRP because PolyMet does not propose any activities eligible for replacement credit under these Rules, but, rather, will replace impacted wetlands in advance through withdrawals from an established account within the state wetland bank.

#### F. Minnesota Rule 8420.0930, subp. 1 – Incidental Wetlands

64. Under Minnesota Rule 8420.0930, subp. 1, impacts to wetlands that were “created by pits, stockpiles, or tailings basins, and by actions the purpose of which was not to create the wetland according to part 8420.0105, subpart 2, item D, are not regulated” under Chapter 8420.

65. PolyMet has shown that a 0.3 acre wet meadow wetland associated with the Coal Ash Landfill on the east side of the FTB and 28.56 acres of a shallow marsh wetland in the footprint of the proposed HRF are incidental wetlands under this Rule, which were created as result of prior mining activities at the Plant Site. Accordingly, wetland mitigation under the Approved WRP is not required for any impacts to these incidental wetlands.

#### G. Minnesota Environmental Rights Act – Minnesota Statutes Chapter 116B

66. The Minnesota Environmental Rights Act (“MERA”) is set forth in Chapter 116B of the Minnesota Statutes. 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; *see also* Minn. Stat. § 116D.04, subd. 6. “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.

67. As set forth in ¶¶ 30-65, in reviewing the administrative record (including the environmental review documents) and the proposed WRP, the DNR has considered the quality and severity of any adverse effects of PolyMet’s proposed wetland impacts in light of alternatives analysis undertaken in environmental review and the mitigation actions required under the Approved WRP. *See State ex rel Schaller v. County of Blue Earth*, 563 N.W.2d 260, 267 (Minn. 1997). The potential effects on natural resources resulting from the NorthMet Project, possible alternatives, and possible mitigation measures for such effects were comprehensively analyzed within the FEIS.

68. As detailed herein, wetland impacts associated with the NorthMet Project must be mitigated in accordance with the Approved WRP. PolyMet’s mining activities that impact wetlands will also be subject to other state and federal requirements and must comply with all applicable state and federal environmental protection standards, including the requirements of the separate water appropriation permits, the requirements of the USACE’s Section 404 Permit, the Section 401 certification and the requirements of an NPDES/SDS permit both under the regulatory authority of the MPCA, and the requirements of the PTM. Comprehensive wetland monitoring is required under the Approved WRP and additional wetland mitigation will be required in the event such monitoring identifies additional wetland impacts not detailed in the Approved WRP. Similarly, water level and streamflow monitoring is required under the water appropriation permits for the NorthMet Project and water quality monitoring will be required under the NPDES/SDS permit issued by the MPCA. Compliance with these regulatory requirements, including the mitigation requirements of the Approved WRP serves to ensure that wetland impacts associated with the Project will not result in pollution, impairment, or destruction of natural resources.

69. As outlined in ¶¶ 66-69, the DNR has considered the proposed wetland impacts and wetland monitoring and mitigation under the Approved WRP in accordance with MERA, and determines that it satisfies the applicable statutory requirements.

Based upon the Findings of Fact set forth above, the DNR now makes the following

### **CONCLUSIONS**

1. As required by Minnesota Rule 8420.0500, subp. 2, and as set forth in detailed in Section VI above, PolyMet has demonstrated that the Approved WRP complies with Minnesota Rule 8420.0500, and 8420.0515 to 8420.0528.

2. The Approved WRP meets the applicable requirements of Chapter 8420 of the Minnesota Rules, and, thus, is adequate in replacing lost function and value. *See* Minn. R. 8420.0500 subp. 2.

3. The Approved WRP requires PolyMet to provide mitigation for impacts to the FPN62 – Northern Rich Spruce Swamp at the Mine Site. In consideration of these required mitigation measures, the DNR concludes that this rare natural community will not be permanently adversely affected by the NorthMet Project. *See* Minn. Stat. § 103G.2242, subd. 1(d); Minn. R. 8420.0515, subp. 3.

4. PolyMet has demonstrated that the wetland impacts associated with the NorthMet Project comply with the sequencing requirements set forth in Minnesota Rule 8420.0520, subp. 1 and Minnesota Statutes § 103G.222, subd. 1(b).

5. Wetland impacts and mitigation occurring under the Approved WRP, 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.

6. 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. PolyMet’s Wetland Replacement Plan (Appendix 18.1 of Version 3.1 of the Application for Permit to Mine) is approved, subject to the conditions set forth in the DNR’s Notice of Decision dated November 1, 2018.

2. The wetland delineations in PolyMet’s Wetland Replacement Plan, Application References (9)-(14) as summarized in Large Table 1 of the Wetland Replacement Plan, are approved, subject to potential revision as detailed in the Notice of Decision.

Approved and adopted this  1st  day of  November , 2018

STATE OF MINNESOTA  
DEPARTMENT OF NATURAL RESOURCES

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/s/ TOM LANDWEHR  
Commissioner  
Minnesota Department of Natural Resources

## EXHIBIT 1 - CONSIDERATION OF COMMENTS

### A. Delineation

**Issue Statement:** Concerns relating to the delineation of wetlands in the area associated with the NorthMet Project. Recommendations that the original wetland delineation should be modified.

**Consideration:** Wetland boundaries in the NorthMet Project area were identified using the established wetland delineation procedures of the USACE Wetlands Delineation Manual (1987) that includes field mapping using GPS, aerial photo interpretation, topography, and soils information. The FEIS discusses the wetland functional assessment that relied on the MnRAM methodology with site-level data collected between 2004 and 2012. This combined assessment detailed 201 wetlands covering approximately 1,862 acres in the project area.

In August 2017, the Great Lakes Indian Fish and Wildlife Commission (“GLIFWC”) submitted a memorandum to the USACE raising questions regarding the sufficiency of the delineation of wetlands at the Mine Site during the course of environmental review. The USACE has undertaken additional fieldwork and the DNR attended a site visit in June 2018 to review potential wetland boundary modifications related to the concerns raised by GLIFWC. To date, the USACE has not modified the prior wetland delineation. A condition of the Approved WRP provides that any revisions to the wetland delineation related to the questions raised by GLIFWC in the August 2017 memo determined by the USACE will supersede the delineations approved by the DNR in its review of the Approved WRP. This condition requires PolyMet to submit a map and a concordance table identifying all changes and revise its withdrawal of wetland credits from the state wetland bank to account for any additional Project-related impacts to wetlands identified in the revised delineation.

### B. Direct Wetland Impacts

**Issue Statement:** Concerns relating to the number of direct wetland impacts associated with the NorthMet Project and questions regarding whether mitigation for such impacts is possible given the acreage at issue. General concerns regarding the idea of wetland replacement or mitigation for wetland impacts.

**Consideration:** WCA does not prohibit all wetland impacts, but rather, requires that wetlands not be impacted without first attempting to avoid and minimize any such impacts. In the event that impacts cannot be wholly avoided, WCA requires mitigation for unavoidable wetland impacts. This mitigation serves to ensure that the lost public value of wetlands is adequately replaced. The analysis and mitigation requirements apply notwithstanding the size of the project and impacts at issue.

The NorthMet Project involves unavoidable direct wetland impacts due to the nature of the activities at issue. PolyMet’s mining activities are driven in large part by the geography and location of the ore body at the Mine Site. Filling and excavation at the Mine Site are fundamental to the mining of the ore body. Similarly, wetland impacts at the Plant Site are associated with the refurbishment of existing infrastructure that is already in place. A majority

of wetland impacts at the Plant Site are due to engineering controls necessary for the Project to meet water quality standards and protect natural resources.

Alternatives to avoid wetland impacts and minimization strategies to limit wetland impacts were comprehensively analyzed during the course of environmental review and further refined during permitting of the Project. The Approved WRP requires PolyMet to mitigate wetland impacts through purchase of wetland replacement credits from an account within the state wetland bank that is in the same BSA as the wetland impacts resulting from the NorthMet Project. The Approved WRP further requires additional mitigation for impacts to the FPN62 Northern Rich Spruce Swamp, a rare natural community, found at the Mine Site. Monitoring, including hydrology monitoring, wetland boundary monitoring, and vegetation monitoring, will be required under the Approved WRP and adaptive management or additional mitigation will be required in the event such monitoring reveals additional wetland impacts.

### C. General Wetland Comments

**Issue Statement:** These comments raised a variety of general concerns related to wetland impacts and wetland replacement associated with the NorthMet Project, including requests for financial assurance for wetland impacts, concerns relating to the use of wetland credits for mitigation in lieu of the project-specific wetland replacement projects analyzed within the FEIS, and concerns relating to potential water quality impacts associated with the Project.

**Consideration:** WCA does not prohibit all wetland impacts, but rather, requires that wetlands not be impacted without first attempting to avoid and minimize any such impacts. In the event that impacts cannot be wholly avoided, WCA requires mitigation for unavoidable wetland impacts. This mitigation serves to ensure that the lost public value of wetlands is adequately replaced. The analysis and mitigation requirements apply notwithstanding the size of the project and impacts at issue. Alternatives and minimization strategies to limit wetland impacts were analyzed during the course of environmental review and further refined during permitting of the Project.

The MPCA's NDPDES/SDS permit and associated monitoring requirements will ensure that groundwater quality will not be significantly adversely impacted by the Project. The Project is required to comply with all water quality requirements, which fall under the regulatory authority of the MPCA, and include both the NPDES/SDS permit and the 401 certification. As part of its permitting process, the MPCA conducted a nondegradation evaluation for groundwater and an antidegradation review for surface water which determined the Project's compliance with applicable regulatory requirements.

The Approved WRP requires PolyMet to mitigate wetland impacts through purchase of wetland replacement credits from an account within the state wetland bank that is in the same BSA as the wetland impacts resulting from the NorthMet Project. Purchase of in-watershed compensatory mitigation credits meets the order of priority for wetland replacement under Minnesota law and the preferential sequencing for compensatory mitigation under the USACE's St. Paul District Policy for Compensatory Mitigation in Minnesota. PolyMet has the right to purchase up to 1,800 credits from this wetland bank, which far exceeds anticipated direct wetland impacts. Financial assurance for wetland mitigation is not required because the Approved WRP does not involve a project-specific wetland replacement plan and mitigation is to be provided in advance

or concurrent with the impacts. The DNR notes that financial assurance is separately being required under the PTM for the Project.

#### **D. Indirect Wetland Impacts**

**Issue Statement:** These comments raised a variety of concerns related to potential indirect wetland impacts associated with the NorthMet Project and concerns relating to the analysis of potential indirect wetland impacts undertaken during environmental review.

**Consideration:** As discussed in detail in the Final EIS, the wide range in hydraulic conductivity of geologic materials at the Mine Site (including bedrock, surficial deposits, and wetland soils) meant that attempts to model the expected effects of mine dewatering on wetlands would not produce meaningful results. See FEIS § 5.2.3. Accordingly, the analog method was developed to evaluate possible drawdown from mining operations at the mine pits. This analysis is conservative and based upon actual drawdowns observed at the Canisteo mine pit, an area with greater hydraulic conductivity than anticipated at the Mine Site. The analog method was not used to determine the amount of indirect wetland impacts. Actual indirect wetland impacts will be determined through wetland monitoring.

Comprehensive monitoring of the hydrology, vegetation, and boundaries of wetlands is required under the Approved WRP. Similarly, water level monitoring is required under PolyMet's water appropriation permits. A total of 56 wetland monitoring wells and five reference wells have been installed to collect baseline hydrology data and will continue to be used to document whether indirect wetland impacts are actually occurring. Monitoring results will be compared against baseline data that has been collected since 2005. If indirect wetland impacts occur, then adaptive management practices may be required and additional compensation for unavoidable indirect wetland impacts will be required.

#### **E. Mitigation**

**Issue Statement:** These comments raised a variety of general concerns related to whether wetland replacement can fully replace the lost functions of impacted wetlands and concerns regarding the quality of the wetland credits at the Lake Superior Wetland Bank (#1609).

**Consideration:** When avoidance of activities is not feasible or prudent, then wetlands may be impacted, but mitigation is required for such impacts. The Lake Superior Wetland Bank is an established state wetland bank under WCA. The DNR is not approving the performance criteria for the Lake Superior Wetland Bank. The Board of Water and Soil Resource is responsible for verifying that the site is meeting the requirements of the banking plans as approved. The Approved WRP requires PolyMet to verify withdrawal of wetland mitigation credits from this bank prior to wetland impacts.

The Approved WRP details the applicable wetland mitigation ratios. Under WCA, mitigation at a 1:1 replacement ratio is appropriate in greater than 80% areas when using wetland banking credits regardless of wetland type. Additional mitigation is required for impacts to the FPN62 rare natural community at the Mine Site.