Appendix 13

Annual Report

Appendix 13.1 Annual Report Template
Appendix 13.2 Annual Report Year 1

Appendix 13.1

Annual Report Template

POLYMET
MINING

NOTE: This appendix is a **template** for an annual report that PolyMet will update each year to meet the requirements of Minnesota Rules, part 6132.1300.

NorthMet Project

Annual Report

Version 3

Issue Date: March XX, 20XX

NOTES TO AUTHOR:

Text in red is intended to provide guidance on what should be included within each section.

Text in blue indicates text that needs to be updated.

After all updates are complete, all red text should be deleted and all blue text should be changed to black.

20XX is the annual report year; 20XX+2 is the upcoming year; the annual report for 20XX will be submitted by March 31, 20XX+1.

Table of Contents

Acronyms, Abbreviations, and Units

Acronym	Stands For
DNR	Minnesota Department of Natural Resources

< Review and update list of acronyms, abbreviations, and units with each issuance of the Annual Report.>

<Need another table row? Just hover your mouse pointer outside the left edge of the table and then click the plus sign that appears between rows or tab at the bottom of a table.>

1.0 Introduction

Nonferrous Metallic Mineral Mining Rules (Minnesota Rules, part 6132.1300) require permittees to submit an Annual Mining and Operating Report to the Minnesota Department of Natural Resources (DNR). The purpose of the report is to document actual mining and reclamation completed in the past calendar year (20XX), to describe the mining and reclamation activities planned for the upcoming year (20XX+2), and to provide a contingency reclamation plan to be implemented if operations cease in the upcoming year. If any corrective actions were required by the Project, in accordance with Minnesota Rules, part 6132.3100, subpart 2, a corrective action plan will be included as part of this annual report. This Annual Mining and Operating Report will be submitted to the DNR by March 31 of each calendar year of operation starting with the first March after the Permit to Mine (PTM) issuance.

In addition to the content requirements for the Annual Mining and Operating Report, the following additional information is tabulated and attached as follows:

Table 1	Changes to PolyMet Personnel Contact Information
Table 2	Permits Held and Permit Status
Table 3	Flotation Tailings Basin Dam Height Status for Year 20XX and planned for Year 20XX+2

2.0 Mining and Reclamation Completed in Year 20XX

(Minnesota Rules, part 6132.1300, subpart 2)

This section describes the mining activities conducted, the reclamation and corrective actions conducted (if any), changes to the approved mining and reclamation plan and how they were proactively addressed with the DNR (if any)[1], new rock types or formations encountered (if any), changes in ownership or organizational structure (if any), and wetland replacement activities that occurred in 20XX. It also describes monitoring activities and results.

2.1 Mining Activities

(Minnesota Rules, part 6132.1300, subpart 2, item A)

2.1.1 Types, Amounts, Sequence, and Schedule of Mining

(Minnesota Rules, part 6132.1300, subpart 2, item A(1))

<In this section, describe types, amounts, sequence, and schedule of mining the ore body and stockpiling materials, including the quantities of ore, lean ore (none anticipated), and waste rock. Also document the generation of Flotation Tailings, Hydrometallurgical Residue, and Concentrates.>

Table 4 summarizes the mining rates and schedule for the various materials mined and produced for year 20XX and 20XX+2.

Table 5 provides additional waste rock stockpile and pit backfill activity information for year 20XX.

2.1.2 Beneficiation Process

(Minnesota Rules, part 6132.1300, subpart 2, item A(2))

<In this section, describe changes in the beneficiation process, including changes in the types and amounts of chemicals added, and their effect, if any, on the types, amount, and means of waste disposal.>

2.2 Reclamation Activities

(Minnesota Rules, part 6132.1300, subpart 2, item B)

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[1] No approved mining and reclamation plan exists at the time this template was developed. An appropriate reference to the approved plan would be added in the future. The means by which potential effects of changes shall be addressed is likely to be evaluated on a case-by-case basis; these will be addressed with the DNR if the need arises.

<In this section, describe the reclamation activities and corrective actions (if any) performed in year 20XX.>

2.2.1 Reclamation Research

<In this section, describe any reclamation research conducted during the year 20XX as well as any grants provided for such research or reclamation.>

2.2.2 Reclamation Methods and Sequence

<In this section, describe reclamation methods applied during year 20XX and sequencing of such activities.>

A summary of reclamation activities is provided on Table 7.

2.2.3 Corrective Actions

<In this section, describe corrective actions conducted in year 20XX (if any).>

2.3 Status of Ongoing Postclosure Maintenance Activities

(Minnesota Rules, part 6132.1300, subpart 2, item C)

<In this section, describe ongoing postclosure maintenance activities (if any) conducted in year 20XX.>

2.4 Scope and Schedule Changes from the Approved Mining and Reclamation Plan

(Minnesota Rules, part 6132.1300, subpart 2, item D)

2.4.1 Changes to the Approved Mining Plan

<In this section, discuss changes to the approved mining plan (if any) that occurred during year 20XX including:

- changes to the mining rate and/or schedule (if applicable)
- changes to the beneficiation processes (if applicable)
- potential effects of such changes to the approved mining and reclamation plan>

2.4.2 Changes to Approved Reclamation Plan

<In this section, discuss changes to the approved reclamation plan (if any) that occurred during year 20XX including:

- changes in types of reclamation

- changes to scheduling and sequencing of reclamation
- potential effects of such changes to the approved mining and reclamation plan>

2.5 Characterization of New Rock Types or Formations

(Minnesota Rules, part 6132.1300, subpart 2, item E)

<In this section, describe new rock types or formations encountered during year 20XX including:

- description of new rock types or formation encountered
- information on methods utilized for management of the rock (e.g., processed as ore, stockpiled as waste rock)
- general mineralogical description with potential for acid generation and/or release of weathering products
- waste rock characterization, in accordance with Minnesota Rules, part 6132.1000
- potential effects to the approved mining and reclamation plans>

2.6 Ownership or Organizational Structure Changes

(Minnesota Rules, part 6132.1300, subpart 2, item F)

<In this section, describe changes in the permittee's ownership and organizational structure. For the organizational structure changes, focus on the general management and the mining and environmental departments.>

2.7 Wetland Replacement Activities

(Minnesota Rules, part 6132.1300, subpart 2, item G)

<In this section, describe wetland impact activities and wetland replacement activities that occurred during year 20XX.>

A summary of wetland impacts and wetland replacement activities is provided on Table 8 and Table 9. The approved wetland replacement plan(s) for these impacts is included as Appendix ?.

<The list of appendices will need to be updated, at the end of the document, to reflect the appendices that are included.>

2.8 Annual Monitoring Summary

A summary of the annual monitoring required by the Permit to Mine, as well as an update on waste characterization, is summarized below. Additional details are provided in Appendix A through Appendix ?.

<The list of appendices will need to be updated, at the end of the document, to reflect the appendices that are included.>

<This section includes only the monitoring that is required by the Permit to Mine. In this section, describe monitoring activities that were conducted in year 20XX for the following topics:

- Mine pit monitoring
    - assessment of rock stability in the mine pit and slopes
    - management of blasting in the pit
    - monitoring of groundwater inflows into the pit (in conjunction with similar requirements for Water Appropriation permits)
- Stockpile monitoring
    - Placement verification monitoring
    - Survey monitoring
    - Stability monitoring
    - Drainage monitoring
    - Category 1 Waste Rock Stockpile confirmation sampling
- Transportation and Utility Corridors monitoring
    - Ore car inspections
    - Quarterly track inspections
- FTB and HRF monitoring
    - Material characteristics verification

  - HRF geosynthetics evaluation
  - Vegetation and erosion control monitoring
- Flotation Tailings monitoring
  - Tailings sampling and in-situ testing
  - General characteristics
- Dust control
  - Updates, if any, to the Fugitive Emission Control (FEC) Plans (updated FEC Plans to be included as an appendix to the Annual Report)[2]
  - Any air quality permit deviations related to the FEC Plans
- Updated mine waste characterization data>

The annual wetland monitoring reports will be provided to the DNR for WCA under separate submittal. Dam stability monitoring will be provided to the DNR as part of Dam Safety Permit requirements.

[2] If substantive changes are made to an FEC Plan, which would include any reduction in control techniques employed or associated corrective actions, monitoring, recordkeeping, and reporting requirements, PolyMet will submit the respective MPCA-approved FEC Plan to the DNR within 30 calendar days of MPCA approval.

3.0 Operating Plan – Mining and Reclamation Planned for the Upcoming Year 20XX+2

(Minnesota Rules, part 6132.1300, subpart 3)

This section describes the planned mining and reclamation activities, intention to close a mining area or portion of an area, changes to the approved mining and reclamation plan and how they will be proactively addressed with the DNR (if any)[3], evidence of liability insurance, anticipated changes in ownership or organizational structure (if any), and planned wetland replacement activities for 20XX+2.

3.1 Anticipated Rate of Mining and Mining Activities

(Minnesota Rules, part 6132.1300, subpart 3, items A and B)

3.1.1 Types, Amount, Sequence, and Schedule of Mining

<In this section, describe anticipated mining for year 20XX+2 including: types, amounts, sequence, and schedule of mining the ore body and stockpile materials, including anticipated quantities of ore, lean ore, and waste rock and generation of Flotation Tailings, Hydrometallurgical Residue, and Concentrate.>

Table 4 summarizes quantities of ore, lean ore (none anticipated), waste rock, Flotation Tailings, Hydrometallurgical Residue, and Concentrates for year 20XX+2.

Table 6 provides additional anticipated waste rock stockpile and pit backfill activity information for year 20XX+2.

3.1.2 Beneficiation Process

<In this section, describe any anticipated changes to the beneficiation process, including a discussion on types and amounts of chemicals to be applied for the upcoming year, and their anticipated effect, if any, on the types, amount, and means of waste disposal.>

3.2 Anticipated Reclamation Activities

(Minnesota Rules, part 6132.1300, subpart 3, item C)

<In this section, discuss anticipated reclamation activities for year 20XX+2.>

[3] No approved mining and reclamation plan exists at the time this template was developed. An appropriate reference to the approved plan would be added in the future. The means by which potential effects of changes shall be addressed is likely to be evaluated on a case-by-case basis; these will be addressed with the DNR if the need arises.

3.2.1 Reclamation Research

<In this section, describe any reclamation research planned for year 20XX+2 as well as any grants provided for such research and reclamation.>

3.2.2 Reclamation Methods and Sequence

<In this section, describe anticipated reclamation methods and sequencing to be completed in year 20XX+2.>

3.3 Notification of Intent to Close a Mining Area or Portion of a Mining Area

(Minnesota Rules, part 6132.1300, subpart 3, item D)

<If PolyMet plans to close a Mining Area or a portion of a Mining Aarea in the upcoming year, notification of intent will be provided in this section. The reclamation methods and sequencing for the Mining Area or a portion of a Mining Area intended to be closed in year 20XX+2 will be described in Section 3.2.2 of this Annual Report.>

3.4 Anticipated Scope and Schedule Changes from the Approved Mining and Reclamation Plan for Year 20XX+2

(Minnesota Rules, part 6132.1300, subpart 3, item E)

3.4.1 Anticipated Changes to the Approved Mining Plan

<In this section, discuss any planned changes to the approved mining plan that will occur in year 20XX+2 including:

- anticipated changes to the mining rate and/or schedule (if applicable)
- anticipated changes to the beneficiation processes (if applicable)
- potential effects of such changes to the approved mining and reclamation plans

If PolyMet believes the anticipated change will require a permit amendment, that will be included, and separate discussions with the DNR would be initiated.>

3.4.2 Anticipated Changes to the Approved Reclamation Plan

<In this section, discuss any planned changes to the approved reclamation plan that will occur in year 20XX+2 including:

- anticipated changes in types of reclamation
- anticipated changes to scheduling and sequencing of reclamation

- consequences or effects of such changes to the approved mining and reclamation plans

If PolyMet believes the anticipated change will require a permit amendment, that will be included, and separate discussions with the DNR would be initiated.>

3.5 Evidence of Liability Insurance

(Minnesota Rules, part 6132.1300, subpart 3, item F)

<Provide evidence that the liability insurance (policy or evidence of self-insurance) submitted as part of the permit application remains in force or provide a description of any changes in liability insurance.>

3.6 Anticipated Changes in Ownership or Organizational Structure

(Minnesota Rules, part 6132.1300, subpart 3, item G)

<In this section, describe anticipated changes in the permittee's ownership and organizational structure. For the organizational structure changes, focus on the general management and the mining and environmental departments.>

3.7 Wetland Replacement Plan

(Minnesota Rules, part 6132.1300, subpart 3, item H)

<In this section, provide a description of any changes anticipated to the wetland replacement plan or activities for year 20XX+2. If wetland impacts are planned to occur that fall outside of previously completed wetland permitting activities, provide a summary of the updated wetland permitting activities and permitting status. Provide a description of planned wetland impacts and the wetland mitigation that will be used to offset these impacts.>

Table 10 provides a summary of anticipated wetland impacts, and Table 11 provides a summary of anticipated wetland replacement activities.

4.0 Contingency Reclamation Plan

(Minnesota Rules, part 6132.1300, subpart 4)

<In this section, describe the contingency reclamation plan, including closure and postclosure maintenance activities that would be implemented in year 20XX+2 if operations cease during the calendar year.>

4.1 Anticipated Closure Activities

(Minnesota Rules, part 6132.1300, subpart 4, item A)

<In this section, describe the methods, sequence, and schedule of reclamation needed to address the goals and meet the requirements of Minnesota Rules, parts 6132.2000 to 6132.3200.>

4.2 Maps and Cross Sections

(Minnesota Rules, part 6132.1300, subpart 4, item B)

<Provide maps and cross sections that depict the construction, including shape, extent, and content, and reclamation, including contouring, covering, vegetation, closure, and postclosure maintenance of each area affected by mining.>

4.3 Cost Estimates and Financial Mechanisms

(Minnesota Rules, part 6132.1300, subpart 4, item C)

4.3.1 Cost Estimates

<Provide a cost estimate, as required under Minnesota Rules, part 6132.1200, to implement the contingency reclamation plan if operations cease in year 20XX+2.>

4.3.2 Financial Instruments

<In this section, describe the financial mechanisms, as required under Minnesota Rules, part 6132.1200, necessary to implement the contingency reclamation plan if operations cease in year 20XX+2.>

5.0 Corrective Action Plan (if necessary)

(Minnesota Rules, part 6132.1300, subpart 5)

<When a corrective action plan is required under Minnesota Rules, part 6132.3100, subpart 2, describe the corrective actions completed for year 20XX, anticipated corrective actions to be completed in year 20XX+2, and the corrective action cost estimate for the year 20XX+2.>

5.1 Corrective Actions Completed in Year 20XX

(Minnesota Rules, part 6132.1300, subpart 5, item A)

<In this section, describe the corrective actions completed in year 20XX.>

5.2 Anticipated Corrective Actions for Year 20XX+2

(Minnesota Rules, part 6132.1300, subpart 5, item B)

<In this section, describe the anticipated corrective actions to be completed in year 20XX+2.>

5.3 Corrective Actions Cost Estimate for Year 20XX+2

(Minnesota Rules, part 6132.1300, subpart 5, item C)

<Provide a cost estimate for the anticipated corrective actions to be completed in year 20XX+2.>

6.0 Maps

(Minnesota Rules, part 6132.1300, subpart 6)

6.1 Mining and Reclamation Maps for Year 20XX

<Provide updated mining and reclamation maps showing the status of mining, construction, reclamation, including closure and postclosure maintenance, and watershed modifications for year 20XX.>

6.2 Mining and Reclamation Maps for Year 20XX+2

<Provide updated mining and reclamation maps showing the anticipated status of mining, construction, reclamation, including closure and postclosure maintenance, and watershed modifications for year 20XX+2.>

List of Tables

List of Figures

<Additional appendices should be added here, as needed, and a flysheet should be added at the end of the document with a page break between each. Appendices should be introduced in the order they appear in this list so you may need to reorder your list of appendices.>

List of Appendices

<Additional appendices should be added here, as needed, and a flysheet should be added at the end of the document with a page break between each. Appendices should be introduced in the order they appear in this list so you may need to reorder your list of appendices.>

Tables

Table 1 **Changes to PolyMet Personnel Contact Information since the last Annual Report**

Position	Name	Phone number	Email Address

<Need another table row? Just hover your mouse pointer outside the left edge of the table and then click the plus sign that appears between rows or tab at the bottom of a table.>

Table 2 Permits Held and Permit Status as of March 1, 20XX+2

Type of Permit	Permit Number	Date Issued	Date of Expiration	Permit Status (in compliance, under SOC, etc.)	Additional Information

<Need another table row? Just hover your mouse pointer outside the left edge of the table and then click the plus sign that appears between rows or tab at the bottom of a table.>

Table 3 Flotation Tailings Basin Dam Height Status for Year 20XX and Planned for Year 20XX+2

Dam Segment Location (Stationing)	Figure Reference[1]	Permitted Dam Height[2]	20XX	20XX+2
			Dam Height (ft MSL)[2]	Planned Dam Height (ft MSL)[2]
Cell 2E North Dam (Station XX to YY)				
Cell 1E/2E East Dam (Station XX to YY)				
Cell 1E/2E South Dam (Station XX to YY)				

Notes:
(1) See Figure X, which shows the Dam Segment Locations and stations.
(2) Elevations of tailings basin dams/dikes are in feet, relative to Mean Sea Level (MSL). Elevations shown or for the end of the calendar year.

<Need another table row? Just hover your mouse pointer outside the left edge of the table and then click the plus sign that appears between rows or tab at the bottom of a table.>

Table 4 Mining Rates and Production Summary for Year 20XX and Planned for Year 20XX+2

Facility[1]	20XX (Actual)				20XX+2 (Planned)			
	Ore		Concentrate		Ore/feed		Concentrate	
	short tons	cubic yards[3]	Cu short tons	Ni short tons	short tons	cubic yards[3]	Cu short tons	Ni short tons
East Pit Ore			N/A	N/A			N/A	N/A
Central Pit Ore			N/A	N/A			N/A	N/A
West Pit Ore			N/A	N/A			N/A	N/A
Plant								
Total								

Waste Rock[2]	20XX		20XX+2	
	short tons	cubic yards[3]	short tons	cubic yards[3]
Stockpiled				
Used in Construction				
Total				

Flotation Tailings	20XX		20XX+2	
	short tons	cubic yards	short tons	cubic yards
Total				

Hydromet Residue	20XX		20XX+2	
	short tons	cubic yards	short tons	cubic yards
Total				

Saturated Mineral Overburden	20XX		20XX+2	
	short tons	cubic yards[4]	short tons	cubic yards[4]
Total				

Notes:
N/A – not applicable
(1) Tracking includes both ore feed and concentrate; therefore, "facility" can be either a pit or the plant.
(2) Total waste rock including all categories. See Table 5 for breakdown by waste rock category.
(3) Cubic yards based on conversion factor of XX short tons per cubic yard for ore and waste rock.
(4) Cubic yards based on conversion factor of XX short tons per cubic yard for saturated mineral overburden.

Table 5 Stockpile and Pit Backfill Activity for Year 20XX

Stockpile Name and Location	Waste Rock to In-pit Disposal	20XX (Actual)			
	(Y/N)	Average Sulfur Content %	Amount of Material (short tons)	Amount Surface Storage Used (CY)	Amount Surface Storage Remaining[(1)] (CY)
Category 1 Stockpile					
Waste Rock					N/A
Unsaturated Overburden or Peat	N/A	N/A			
Total					
Category 2/3 Stockpile					
Waste Rock					N/A
Overburden	N/A	N/A			
Total					
Category 4 Stockpile					
Waste Rock					N/A
Overburden	N/A	N/A			
Total					
Ore Surge Pile					
Ore	N/A				

Notes:
"In-pit" indicates whether rock is placed in one of the waste rock stockpiles on the surface or within the East and Central Pits in later years.
CY = cubic yards
Y/N = yes/no
N/A = not applicable
(1) Amount surface storage remaining is based on the total capacity of the stockpile in tons and the density of placed rock.

Table 6 Stockpile and Pit Backfill Activity Planned for Year 20XX+2

Stockpile Name and Location	Waste Rock to In-pit Disposal	20XX+2 (Planned)		
	(Y/N)	Amount of Material (short tons)	Amount Surface Storage Used (CY)	Amount Surface Storage Remaining[1] (CY)
Category 1 Stockpile				
Waste Rock				
Category 2/3 Stockpile				
Waste Rock				
Category 4 Stockpile				
Waste Rock	N			
Saturated Overburden (Planned)[2]				
Overburden	N/A			N/A
Ore Surge Pile				
Ore	N/A			

Notes:
"In-pit" indicates whether rock is placed in one of the waste rock stockpiles on the surface or within the East and Central Pits in later years.
CY = cubic yards
Y/N = yes/no
N/A = not applicable
(1) Amount surface storage remaining is based on the total capacity of the stockpile in tons and the density of placed rock.
(2) Saturated Overburden is included as a separate "location" for planned amounts of materials needing storage. Saturated Overburden will be placed on lined stockpiles or disposed of in-pit.

Table 7 Reclamation Summary for Year 20XX

Name	GPS Coordinates Entry Point	Figure Reference	Area (acres)	Landform Type(1)	Physical Alterations(2)	Seed Mix Composition	Amendments(3)	Additional Comments(4)
Temporary Reclamation								
Permanent Reclamation								

Note:
(1) Landforms include stockpile, pit, tailings basin, dike, reclaimed road, etc.
(2) Physical alterations include sloping, discing, crimping, application of overburden, or other physical alterations.
(3) Amendments include biosolids, fertilizer, mulch, etc. If this includes fertilizer, include the type of fertilizer, pounds per acre, NPK ratio, timing, and method of application in the comments.
(4) Include any acceptable research or innovative reclamation grant information in comments.

<Need another table row? Just hover your mouse pointer outside the left edge of the table and then click the plus sign that appears between rows or tab at the bottom of a table.>

Table 8 Wetland Impacts Summary for Year 20XX

Wetlands Impacted – 20XX (Actual)[1]										
Mining Area	Wetland ID	Dominant Circular 39 Community	Total Wetland Area within the Mining Area (acres)	Direct Wetland Impacts (acres)	Fragmentation Impacts (acres)	Remaining Wetland Area (acres)	Dominant Eggers and Reed Wetland Community	Wetland Quality	Type of Impact[2]	Reason for Impact
		TOTAL								

Note:
(1) See Figures X to Y, which shows the wetland impacts.
(2) The types of wetland impact are excavation (E), fill (F), fragmentation (Fr), and seepage containment system (C).

<Need another table row? Just hover your mouse pointer outside the left edge of the table and then click the plus sign that appears between rows or tab at the bottom of a table.>

Table 9 Wetlands Mitigation Summary for Year 20XX

Wetland Mitigation – 20XX (Actual)[1]				
Wetland	**Direct Wetland Impacts (acres)**	**Bank Credits Required[2]**	**Bank Credits Available[3]**	**Remaining Bank Credits after 20XX[3]**
Type 2 Fresh (Wet) Meadow				
Type 2 Sedge Meadow				
Type 3 Shallow Marsh				
Type 4 Deep Marsh				
Type 5 Shallow, Open Water				
Type 6 Shrub-Carr				
Type 6 Alder Thicket				
Type 7 Hardwood Swamp				
Type 7 Coniferous Swamp				
Type 8 Open Bog				
Type 8 Coniferous Bog				
Wetland Total				

Note:
(1) See Table 8, which shows the wetland impacts.
(2) Per Minnesota Rules 8420.0522 Subp. 4.A.(1), the replacement ratio for withdrawal of existing wetland bank credits from within the Project bank service area (#1) is 1:1 for a greater than 80% area.
(3) PolyMet will obtained bank credits prior to wetland disturbance after DNR makes a final decision on whether to issue a permit in response to this Application.

<Need another table row? Just hover your mouse pointer outside the left edge of the table and then click the plus sign that appears between rows or tab at the bottom of a table.>

Table 10 Planned Wetlands Impacts for Year 20XX+2

Wetlands to be Impacted – 20XX+2 (Planned)[1]										
Mining Area	**Wetland ID**	**Dominant Circular 39 Community**	**Total Wetland Area within the Mining Area (acres)**	**Direct Wetland Impacts (acres)**	**Fragmentation Impacts (acres)**	**Remaining Wetland Area (acres)**	**Dominant Eggers and Reed Wetland Community**	**Wetland Quality**	**Type of Impact[2]**	**Reason for Impact**
		TOTAL								

Note:
(1) See Figures X to Y, which shows the wetland impacts.
(2) The types of wetland impact are excavation (E), fill (F), fragmentation (Fr), and seepage containment system (C).

<Need another table row? Just hover your mouse pointer outside the left edge of the table and then click the plus sign that appears between rows or tab at the bottom of a table.>

Table 11 Planned Wetlands Mitigation Summary for Year 20XX+2

Wetland Mitigation – 20XX+2 (Planned)[1]				
Wetland	**Direct Wetland Impacts (acres)**	**Bank Credits Required[2]**	**Bank Credits Available[3]**	**Remaining Bank Credits after 20XX[3]**
Type 2 Fresh (Wet) Meadow				
Type 2 Sedge Meadow				
Type 3 Shallow Marsh				
Type 4 Deep Marsh				
Type 5 Shallow, Open Water				
Type 6 Shrub-Carr				
Type 6 Alder Thicket				
Type 7 Hardwood Swamp				
Type 7 Coniferous Swamp				
Type 8 Open Bog				
Type 8 Coniferous Bog				
Wetland Total				

Note:
(1) See Table 9, which shows the wetland impacts.
(2) Per Minnesota Rules 8420.0522 Subp. 4.A.(1), the replacement ratio for withdrawal of existing wetland bank credits from within the project bank service area (#1) is 1:1 for a greater than 80% area.
(3) PolyMet will obtained bank credits prior to the issuance of a Permit to Mine.

<Need another table row? Just hover your mouse pointer outside the left edge of the table and then click the plus sign that appears between rows or tab at the bottom of a table.>

Appendices

Appendix A

Add name of Appendix

Appendix 13.2

Annual Report Year 1

NorthMet Project

First Year Annual Report

Version 4

Issue Date: November 30, 2017

Table of Contents

Acronyms, Abbreviations, and Units

Acronym	Stands For
CPS	Central Pumping Station
CRE	Contingency Reclamation Estimate
FTB	Flotation Tailings Basin
PTM	Permit to Mine
MPP	Mine to Plant Pipeline
OSP	Ore Surge Pile
WWTS	Wastewater Treatment System

1.0 Introduction

This report describes Poly Met Mining, Inc.'s (PolyMet) NorthMet Project proposed first year of operations as required under Minnesota Rules, part 6132.1100, subpart 8 and part 6132.1300, subparts 3 through 6.

The purpose of the report is to describe the mining and reclamation activities planned for the first year of operations, and to provide a contingency reclamation plan to be implemented if operations cease in the upcoming year.

The first year of operation would commence with the site development work (construction) for future mine operations, which would begin following the issuance of the Permit to Mine (PTM) and other required operating permits. Activities planned for the first year will include construction within four project development areas: Mine Site, Plant Site, Transportation and Utility Corridors, and Colby Lake Pipeline Corridor. In the PTM Application, this phase of site development is referred to as the construction phase.

A template for the Annual Report proposed to be used by PolyMet for subsequent years is provided in Appendix 13.1 of the PTM Application. This First Year Annual Report follows the general format of that template for anticipated activities associated with work for the first year of operation.

In addition to the content requirements for the first year annual report, the following additional information is tabulated and included as follows:

Table 1 Changes to PolyMet Personnel Contact Information since the last Annual Report

Table 2 Permits Held and Permit Status as of August 25, 2017

Table 3 Flotation Tailings Basin Dam Height Status for Current Conditions and Planned for End of the Construction Phase

2.0 Mining and Reclamation Completed in Preceding Year

There was no mining or reclamation completed in the preceding year because this report is for the first year of operation.

3.0 Operating Plan – Mining and Reclamation Planned for the First Year of Operation

(Minnesota Rules, part 6132.1300, subpart 3)

This section describes the planned mining and reclamation activities, intention to close a mining area or portion of an area, changes to the approved mining and reclamation plan and how they will be proactively addressed with the DNR (if any)[1], evidence of liability insurance, anticipated changes in ownership or organizational structure (if any), and planned wetland replacement activities for the first year of operation.

The first year of operation will begin upon issuance of permits and commencement of site development activities to support the Project Mining and Reclamation Plan, as described in the PTM Application in Section 3 and set forth in more detail in Sections 7 through 10 and 15, along with related appendices. Site development is anticipated to take 18 to 24 months of construction. The final construction schedule will be defined in detailed design. For purposes of the PTM Application and this First Year Annual Report, the first year of operation is defined as the entire 18 to 24 month construction phase.

3.1 Anticipated Rate of Mining and Mining Activities

(Minnesota Rules, part 6132.1300, subpart 3, items A and B)

The focus of the work associated with the first year of operation will be development of the Mining Area. There will be no Duluth Complex or Virginia Formation rock blasted within the mine pits. Beneficiation processing will not begin at the Plant Site, and therefore no nonferrous tailings will be deposited in the Flotation Tailings Basin (FTB).

The following provides an overview of anticipated site development activities within the Mine Site, Plant Site, Transportation and Utility Corridors, and Colby Lake Pipeline Corridor.

3.1.1 Mine Site Development

Mine Site development is anticipated to include the clearing of trees and woody vegetation and the construction of:

- approximately 22,000 feet of the haul roads
- the Overburden Storage and Laydown Area (OSLA)
- the stockpile footprints:
  - approximately 13 acres of Category 1 Waste Rock Stockpile foundation and Groundwater Containment System
  - approximately 63 acres of Category 2/3 Waste Rock Stockpile foundation, underdrain system, if necessary, liner system, and overliner drainage system

[1] No approved mining and reclamation plan exists at the time this report was developed. An appropriate reference to the approved plan would be added subsequent reports. The means by which potential effects of changes shall be addressed is likely to be evaluated on a case-by-case basis; these will be addressed with the DNR if the need arises.

  - approximately 29 acres of Category 4 Waste Rock Stockpile foundation, underdrain system, if necessary, liner system, and overliner drainage system
  - approximately 32 acres of Ore Surge Pile (OSP) foundation, underdrain system, if necessary, liner system, and overliner drainage system
- stormwater ponds A, B, C-East, and D and related ditches and dikes
- the Equalization Basin Area, including the Construction Mine Water Basin, High Concentration Equalization Basin, Low Concentration Equalization Basins, the Central Pumping Station (CPS), and Construction Mine Water Pumping Station
- mine water management system infrastructure, including sumps, ponds, pipelines, and pumping systems
- approximately 127,000 linear feet of Mine to Plant Pipelines (MPP) and associated mechanical and electrical controls
- stripping of approximately 95 acres of overburden from the East Pit footprint
- the Mine Site power distribution system
- the Mine Site Fueling and Maintenance Facility (MSFMF)
- the Railroad Spur

These features are shown on Figure 1. Table 4 summarizes the planned handling of blasted rock (outside of the mine pit footprints) and saturated mineral overburden at the Mine Site for these activities. Table 5 provides additional anticipated waste rock stockpile and pit backfill activity.

3.1.2 Plant Site Development

Plant Site development will include the clearing of trees and woody vegetation as well as the following construction and refurbishment (repair/upgrade of existing infrastructure) activities:

- construction of the WWTS and Lined Pretreatment Basin
- refurbishment of the existing buildings to accommodate Project ore beneficiation processes and production schedule
- construction of the Beneficiation Plant Flotation and Reagent Buildings
- construction of the Concentrate Dewatering, Concentrate Storage, Concentrate Loadout, and Limestone Preparation Buildings
- refurbishment of maintenance and shop buildings in the Process Plant and at Areas 1 and 2 Shops
- construction of the first lift of the FTB buttress and dams and associated underdrain and emergency overflow
- construction of the Flotation Tailings discharge system and return water system installation and refurbishment
- construction of approximately 24,000 linear feet of FTB Seepage Containment System, including access road, cutoff wall, piping, valves, pumps, and other mechanical and electrical systems
- construction of stormwater management system (ponds, ditches, culverts, and dikes)
- construction of the Sewage Treatment System

- refurbishment of raw water, potable water, and fire water systems and Plant Reservoir for plant operations
- refurbishment of power distribution systems across the Plant Site
- refurbishment and construction of rail line and roads

These features are shown on Figure 2.

3.1.3 Transportation and Utility Corridors Development

Transportation and Utility Corridors infrastructure construction will begin during Construction Year 1, including construction of approximately 11,000 linear feet of new rail (Connection Track) and power distribution system between the Mine and Plant Sites, and refurbishment of the railroad track along the Railroad Corridor (Mainline Railroad), as needed. Construction of the MPP and upgrades to Dunka Road will also commence.

These features are shown on Figure 3.

3.1.4 Colby Lake Pipeline Corridor Development

The Colby Lake Pipeline infrastructure refurbishment will begin during Construction Year 1, and will include the refurbishment of the pipeline and Colby Lake Pumphouse.

3.2 Anticipated Reclamation Activities

(Minnesota Rules, part 6132.1300, subpart 3, item C)

Reclamation will be progressively completed as construction of site features advances. Reclamation during the construction phase will generally include restoring areas disturbed during construction and temporary laydown areas associated with site development that are no longer needed. These areas will be graded, scarified, and seeded according to the Reclamation Seeding and Mulching Plan (Attachment 1 of Appendix 14 of the PTM Application). During construction of FTB dams, the exterior face of the dams will be amended with a bentonite layer to limit oxygen infiltration into the Flotation Tailings as indicated on Drawing FTB-024 of Appendix 6 of the PTM Application. The bentonite amendment will entail addition of granulated bentonite (approximately 3% by dry weight) to an 18-inch thick layer of the dam construction material, overlain by an additional 30-inch layer of dam construction material. The exterior dam faces will be permanently vegetated by a qualified reclamation contractor according to Minnesota Rules, part 6132.2700, and requirements of the Reclamation Seeding and Mulching Procedure (Attachment 1 of Appendix 14). In addition, the pit rim overburden backslopes and associated pit rim berms and exclusion dikes will be reclaimed once portions reach their final extents. The toe of the overburden portion of the pit walls will be set back at least 20 feet from the crest of the rock portion of the pit wall. The overburden portions of the pit walls will be sloped and graded (refer to Drawing EW-008 of Appendix 3 of the PTM Application). The sloped areas and other areas disturbed will be vegetated to conform to Minnesota Rules, part 6132.2700.

Not all locations that will require reclamation during the construction phase are known at this time, as these will be determined during final design and construction. However, anticipated areas for reclamation are shown on Figure 4 and Figure 5.

3.3 Notification of Intent to Close a Mining Area or Portion of a Mining Area

(Minnesota Rules, part 6132.1300, subpart 3, item D)

No portions of the Mining Area are planned to be closed during the construction phase.

3.4 Anticipated Scope and Schedule Changes from the Approved Mining and Reclamation Plan for the First Year of Operation

(Minnesota Rules, part 6132.1300, subpart 3, item E)

There are no anticipated scope or schedule changes to the Mining and Reclamation Plan, as described in the PTM Application in Section 3 and set forth in more detail in Sections 7 through 10 and 15, along with related appendices.

3.5 Evidence of Liability Insurance

(Minnesota Rules, part 6132.1300, subpart 3, item F)

Evidence of liability insurance required for first year of operation is included in Appendix 1.8 of the PTM Application.

3.6 Anticipated Changes in Ownership or Organizational Structure

(Minnesota Rules, part 6132.1300, subpart 3, item G)

There are no anticipated changes in PolyMet's ownership, as compared to the information provided in Section 2 of the PTM Application. For the organizational structure, PolyMet does not anticipate changes to the general management or management level of the environmental or mining teams. PolyMet does anticipate increasing its staff once draft permits are obtained.

3.7 Wetland Replacement Plan

(Minnesota Rules, part 6132.1300, subpart 3, item H)

The Wetland Replacement Plan is included in Appendix 18.1 of the PTM Application and includes tables of the anticipated wetland impacts and wetland replacement activities.

4.0 Contingency Reclamation Plan

(Minnesota Rules, part 6132.1300, subpart 4)

The goal of the Construction Contingency Reclamation Plan is to identify reclamation actions that would need to be performed by the state in the event PolyMet fails to meet its PTM obligations.

4.1 Anticipated Closure Activities

(Minnesota Rules, part 6132.1300, subpart 4, item A)

The Construction Contingency Reclamation Plan is provided in Appendix 15.1 of the PTM Application and includes:

- demolition and removal of ferrous and nonferrous buildings and structures
- reclamation of haul roads and OSLA
- reclamation of stockpile footprints
- reclamation of the stormwater systems and mine water management systems
- reclamation of the Equalization Basin Area
- reclamation of the power distribution systems
- reclamation of the MSFMF and Railroad Spur
- reclamation of the tailings basin

4.2 Maps and Cross Sections

(Minnesota Rules, part 6132.1300, subpart 4, item B)

Figures of the activities associated with the Construction Contingency Reclamation Plan are included in Appendix 15.1 of the PTM Application.

4.3 Cost Estimates and Financial Mechanisms

(Minnesota Rules, part 6132.1300, subpart 4, item C)

4.3.1 Cost Estimates

The Construction Contingency Reclamation Estimate (CRE) is presented in Appendix 15.2 of the PTM Application.

4.3.2 Financial Instruments

The financial instruments planned for use for Construction Financial Assurance are presented in Appendix 15.1 of the PTM Application.

5.0 Corrective Action Plan (if necessary)

(Minnesota Rules, part 6132.1300, subpart 5)

PolyMet does not foresee violations of the PTM during the construction phase. As such, corrective actions have not been included here.

6.0 Maps

(Minnesota Rules, part 6132.1300, subpart 6)

Maps showing the development of the Mining Area planned for Construction Year 1 are attached as follows:

- Figure 1 Mine Site Development at End of Construction Phase
- Figure 2 Plant Site Development at End of Construction Phase
- Figure 3 Transportation and Utility Corridors Development at End of Construction Phase
- Figure 4 Mine Site Reclamation at End of Construction Phase
- Figure 5 Plant Site Reclamation at End of Construction Phase
- Figure 6 Watershed

List of Tables

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Tables

Table 1 **Changes to PolyMet Personnel Contact Information since the last Annual Report**

Position	Name	Phone number	Email Address

Table 2 Permits Held and Permit Status as of August 25, 2017

Type of Permit	Permit Number	Date Issued	Date of Expiration	Permit Status (in compliance, under SOC, etc.)	Additional Information

Table 3 Flotation Tailings Basin Dam Height Status for Current Conditions and Planned for End of the Construction Phase

Dam Segment	Figure Reference[1]	Permitted Dam Height[1,2]	Existing Conditions	End of Construction Phase
			Dam Height (ft MSL)[3]	Dam Height (ft MSL)[3]
Cell 2E North Dam	Drawings FTB-008 and FTB-010	1,732	1,580 (±2 ft)	1,602
Cell 1E/2E East Dam	Drawings FTB-011 and FTB-012	1,732	N/A[4]	N/A[4]
Cell 1E/2E South Dam	Drawings FTB-013 and FTB-014	1,732	1,670 (±15 ft)	1,670 (±15 ft)

Notes:
N/A – not applicable
(1) See Flotation Tailings Basin Permit Application Support Drawings included in Appendix 6 of the PTM Application.
(2) Proposed dam height.
(3) Elevations shown are for the end of the calendar year.
(4) Cell 1E/2E East Dam is not needed until Mine Year 7

Table 4 Mining Rates and Production Summary for the Construction Phase

Facility[1]	Construction Phase (Planned)			
	Ore/feed		Concentrate	
	short tons	cubic yards[2]	Cu short tons	Ni short tons
East Pit Ore	0	0	N/A	N/A
Central Pit Ore	0	0	N/A	N/A
West Pit Ore	0	0	N/A	N/A
Plant	0	0	0	0
Total	0	0	0	0

Waste Rock[2,3,4]	Construction Phase (Planned)	
	short tons	cubic yards
Stockpiled	1,310,000	690,000
Used in Construction	0	0
Total	1,310,000	690,000

Hydromet Residue	Construction Phase (Planned)	
	short tons	cubic yards
Total	0	0

Flotation Tailings	Construction Phase (Planned)	
	short tons	cubic yards
Total	0	0

Saturated Mineral Overburden[2]	Construction Phase (Planned)	
	short tons	cubic yards
Total	1,690,000	1,150,000

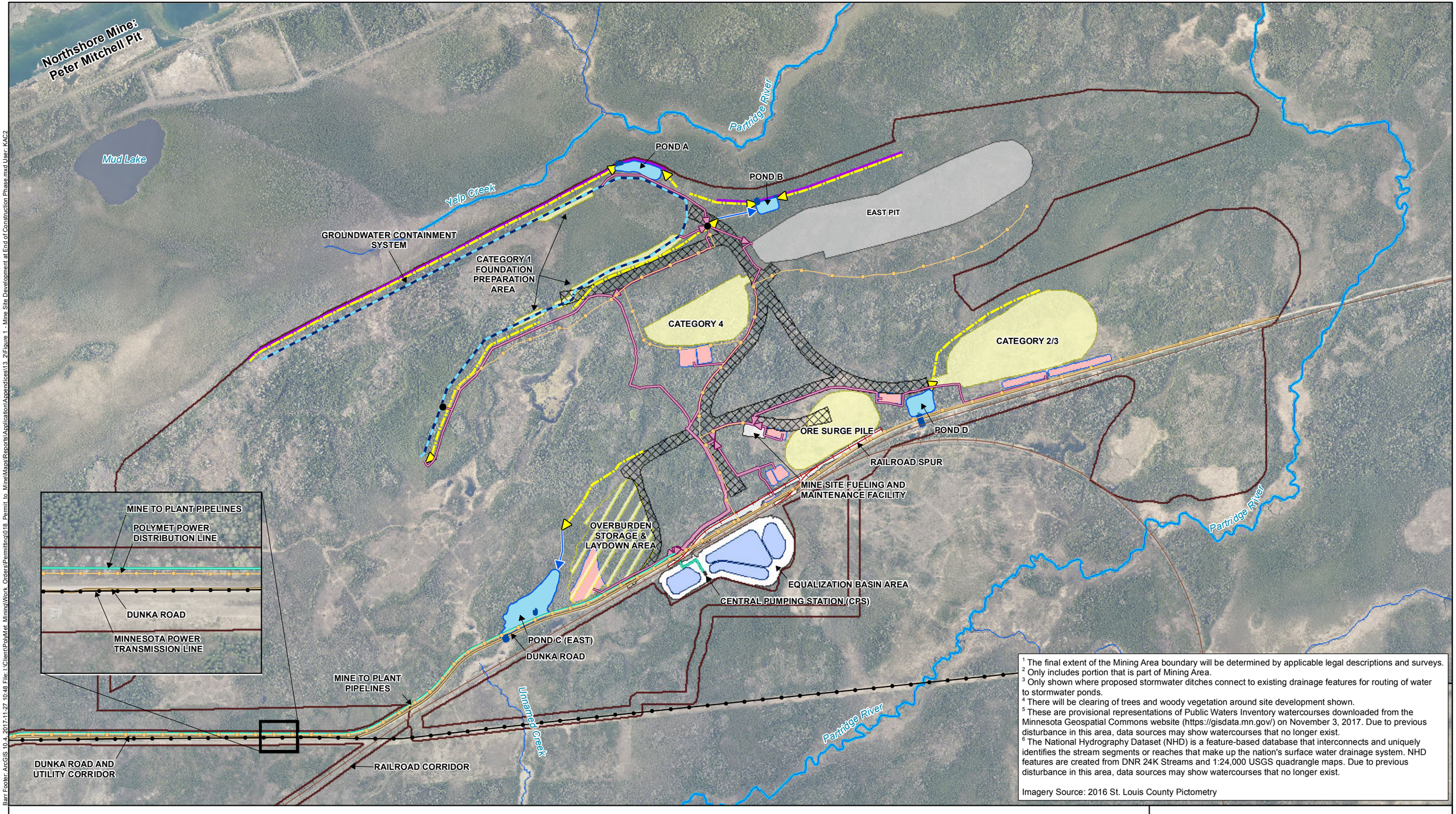
Notes:
N/A – not applicable
(1) Tracking includes both ore feed and concentrate; therefore, "facility" can be either a pit or the plant.
(2) Does not include off-site waste rock brought in for construction.
(3) Total waste rock including all categories. See Table 5 for breakdown by waste rock category.
(4) Volume of waste rock accounts for the material swell from removing the rock.

Table 5 Stockpile and Pit Backfill Activity Planned for Construction Phase

Stockpile Name and Location	Waste Rock to In-pit Disposal	Construction Phase (Planned)		
	(Y/N)	Amount of Material (short tons)	Amount Surface Storage Used (CY)	Amount Surface Storage Remaining[1] (CY)
Category 1 Stockpile				
Waste Rock	N	0	0	90,530,000
Category 2/3 Stockpile				
Waste Rock	N	0	0	31,890,000
Category 4 Stockpile				
Waste Rock	N	1,080,000	570,000	7,320,000
Saturated Overburden (Planned)[2]				
Overburden	N/A	1,800,000	1,210,000	N/A
Ore Surge Pile				
Ore	N/A	0	0	1,620,000

Notes:
"In-pit" indicates whether rock is placed in one of the waste rock stockpiles on the surface or within the East and Central Pits in later years.
CY = cubic yards
Y/N = yes/no
N/A = not applicable
(1) Amount surface storage remaining is based on the total capacity of the stockpile in tons and the density of placed rock.
(2) Saturated Overburden is included as a separate "location" for planned amounts of materials needing storage. Saturated Overburden will be placed on lined stockpiles or disposed of in-pit.

Figures



[1] The final extent of the Mining Area boundary will be determined by applicable legal descriptions and surveys.
[2] Only includes portion that is part of Mining Area.
[3] Only shown where proposed stormwater ditches connect to existing drainage features for routing of water to stormwater ponds.
[4] There will be clearing of trees and woody vegetation around site development shown.
[5] These are provisional representations of Public Waters Inventory watercourses downloaded from the Minnesota Geospatial Commons website (https://gisdata.mn.gov/) on November 3, 2017. Due to previous disturbance in this area, data sources may show watercourses that no longer exist.
[6] The National Hydrography Dataset (NHD) is a feature-based database that interconnects and uniquely identifies the stream segments or reaches that make up the nation's surface water drainage system. NHD features are created from DNR 24K Streams and 1:24,000 USGS quadrangle maps. Due to previous disturbance in this area, data sources may show watercourses that no longer exist.

Imagery Source: 2016 St. Louis County Pictometry

- Mining Area[1]
- PolyMet Power Distribution Lines
- Minnesota Power Transmission Line
- Dunka Road[2]
- Existing Private Railroad
- Proposed Railroad Track

End of Construction Footprints
- Mine Pit Stripping
- Stockpile
- Storage & Laydown Area
- Haul Roads

- Groundwater Containment System Sumps
- Groundwater Containment System
- Mine to Plant Pipelines
- Mine Water Pipes
- Mine Water Ponds and Sumps

- Perimeter Dike
- Existing Drainage[3]
- Stormwater Ditches
- Stormwater Culverts
- Stormwater Ponds
- Public Waters Inventory (PWI) Watercourses[5]

- National Hydrography Dataset (NHD) Rivers & Streams[6]

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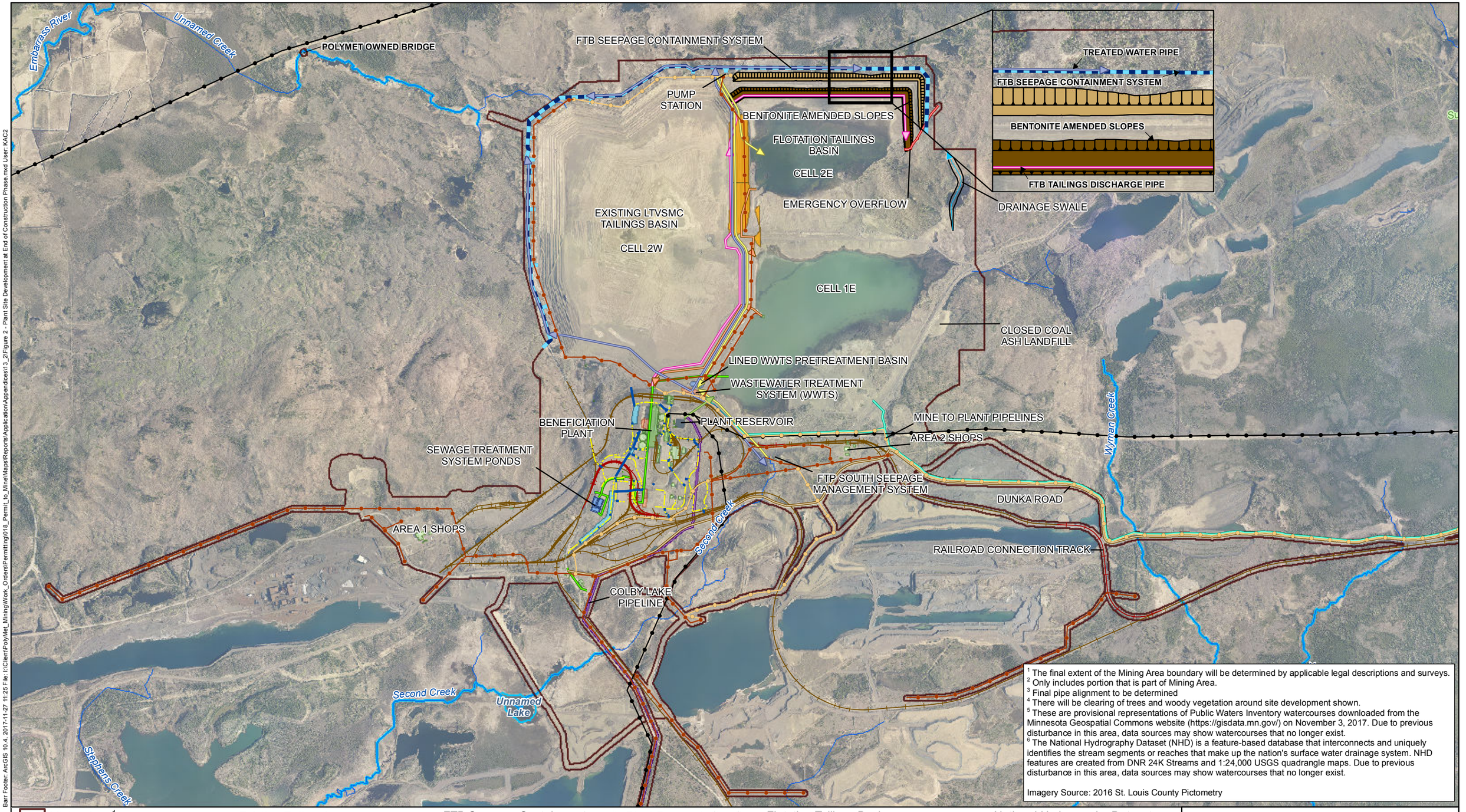
MINE SITE DEVELOPMENT AT END OF CONSTRUCTION PHASE
NorthMet Project
Poly Met Mining, Inc.

Figure 1
First Year Annual Report



[1] The final extent of the Mining Area boundary will be determined by applicable legal descriptions and surveys.
[2] Only includes portion that is part of Mining Area.
[3] Final pipe alignment to be determined
[4] There will be clearing of trees and woody vegetation around site development shown.
[5] These are provisional representations of Public Waters Inventory watercourses downloaded from the Minnesota Geospatial Commons website (https://gisdata.mn.gov/) on November 3, 2017. Due to previous disturbance in this area, data sources may show watercourses that no longer exist.
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Imagery Source: 2016 St. Louis County Pictometry

- Mining Area[1]
- Dunka Road[2]
- Existing Beneficiation Plant Building
- Existing Other Plant Building
- Proposed Beneficiation Plant Building
- Existing Railroad
- Proposed Railroad
- PolyMet Power Distribution Lines - Existing
- PolyMet Power Distribution Lines - Proposed
- Minnesota Power Transmission Lines
- FTB Seepage Containment System
- FTB Water Return Pipe
- FTB Tailings Discharge Pipe
- Tailings Basin Seepage Water Pipe
- Treated Water Pipe
- Plant Reservoir Overflow
- Mine to Plant Pipelines
- Proposed Sewer Pipe[3]
- Stormwater Pond
- Stormwater Culvert
- Stormwater Ditch
- Flotation Tailings Basin
- Dam
- Partial North Buttress
- Borrow Area
- Public Waters Inventory (PWI) Watercourses[5]
- National Hydrography Dataset (NHD) Rivers & Streams[6]

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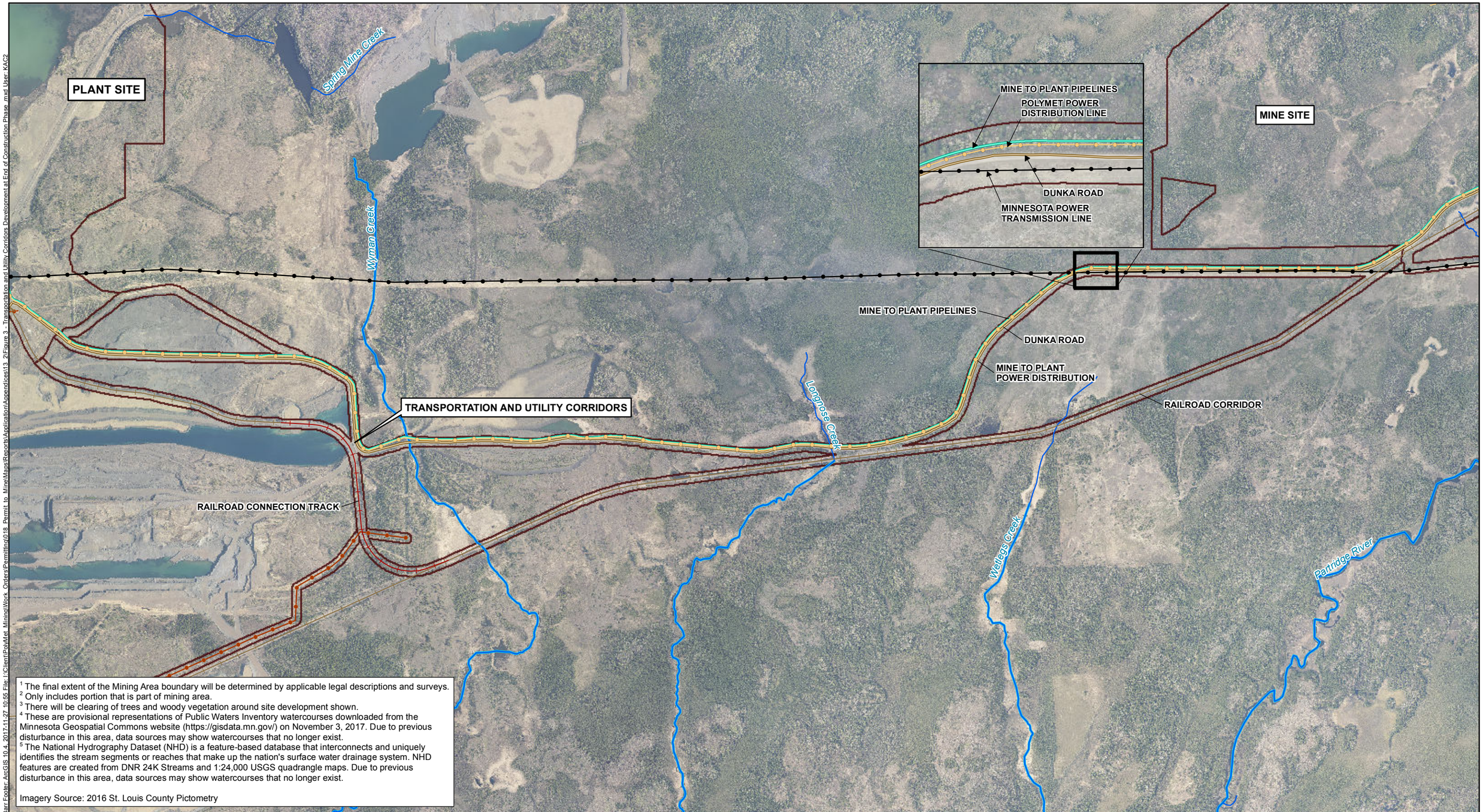
PLANT SITE DEVELOPMENT AT END OF CONSTRUCTION PHASE
NorthMet Project
Poly Met Mining, Inc.

Figure 2
First Year Annual Report



[1] The final extent of the Mining Area boundary will be determined by applicable legal descriptions and surveys.
[2] Only includes portion that is part of mining area.
[3] There will be clearing of trees and woody vegetation around site development shown.
[4] These are provisional representations of Public Waters Inventory watercourses downloaded from the Minnesota Geospatial Commons website (https://gisdata.mn.gov/) on November 3, 2017. Due to previous disturbance in this area, data sources may show watercourses that no longer exist.
[5] The National Hydrography Dataset (NHD) is a feature-based database that interconnects and uniquely identifies the stream segments or reaches that make up the nation's surface water drainage system. NHD features are created from DNR 24K Streams and 1:24,000 USGS quadrangle maps. Due to previous disturbance in this area, data sources may show watercourses that no longer exist.

Imagery Source: 2016 St. Louis County Pictometry

- Mining Area[1]
- Dunka Road[2]
- Existing Private Railroad
- Proposed Railroad Track
- PolyMet Power Distribution Lines - Existing
- PolyMet Power Distribution Lines - Proposed
- Minnesota Power Transmission Line
- Mine to Plant Pipelines
- Public Waters Inventory (PWI) Watercourses[4]
- National Hydrography Dataset (NHD) Rivers & Streams[5]

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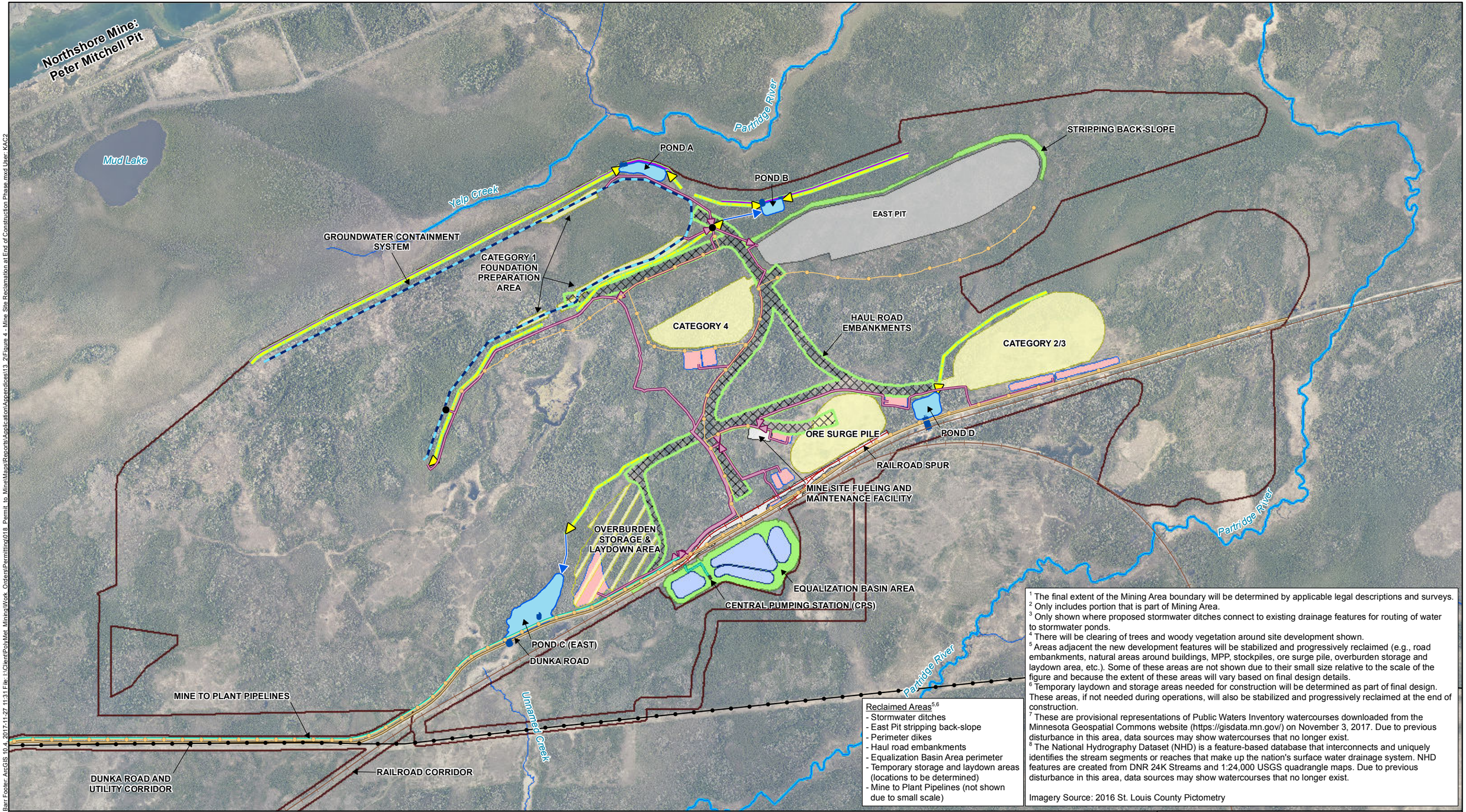
Feet

TRANSPORTATION AND UTILITY CORRIDORS DEVELOPMENT AT END OF CONSTRUCTION PHASE
NorthMet Project
Poly Met Mining, Inc.

Figure 3
First Year Annual Report



Barr Footer: ArcGIS 10.4 2017-11-27 11:31 File: i:\Client\PolyMet Mining\Work Orders\Permitting\018 Permit to Mine\Maps\Reports\Application\Appendices\13_2\Figure 4 - Mine Site Reclamation at End of Construction Phase.mxd User: KAC2

[1] The final extent of the Mining Area boundary will be determined by applicable legal descriptions and surveys.
[2] Only includes portion that is part of Mining Area.
[3] Only shown where proposed stormwater ditches connect to existing drainage features for routing of water to stormwater ponds.
[4] There will be clearing of trees and woody vegetation around site development shown.
[5] Areas adjacent the new development features will be stabilized and progressively reclaimed (e.g., road embankments, natural areas around buildings, MPP, stockpiles, ore surge pile, overburden storage and laydown area, etc.). Some of these areas are not shown due to their small size relative to the scale of the figure and because the extent of these areas will vary based on final design details.
[6] Temporary laydown and storage areas needed for construction will be determined as part of final design. These areas, if not needed during operations, will also be stabilized and progressively reclaimed at the end of construction.
[7] These are provisional representations of Public Waters Inventory watercourses downloaded from the Minnesota Geospatial Commons website (https://gisdata.mn.gov/) on November 3, 2017. Due to previous disturbance in this area, data sources may show watercourses that no longer exist.
[8] The National Hydrography Dataset (NHD) is a feature-based database that interconnects and uniquely identifies the stream segments or reaches that make up the nation's surface water drainage system. NHD features are created from DNR 24K Streams and 1:24,000 USGS quadrangle maps. Due to previous disturbance in this area, data sources may show watercourses that no longer exist.

Imagery Source: 2016 St. Louis County Pictometry

Reclaimed Areas[5,6]
- Stormwater ditches
- East Pit stripping back-slope
- Perimeter dikes
- Haul road embankments
- Equalization Basin Area perimeter
- Temporary storage and laydown areas (locations to be determined)
- Mine to Plant Pipelines (not shown due to small scale)

- Mining Area[1]
- PolyMet Power Distribution Lines
- Minnesota Power Transmission Line
- Dunka Road[2]
- Existing Private Railroad
- Proposed Railroad Track

End of Construction Footprints
- Mine Pit Stripping
- Stockpile
- Storage & Laydown Area
- Haul Roads

- Groundwater Containment System Sumps
- Groundwater Containment System
- Mine to Plant Pipelines
- Mine Water Pipes
- Mine Water Ponds and Sumps
- Perimeter Dike

- Existing Drainage[3]
- Stormwater Ditches
- Stormwater Culverts
- Stormwater Ponds
- Reclaimed/Stabilized Areas
- Public Waters Inventory (PWI) Watercourses[7]

- National Hydrography Dataset (NHD) Rivers & Streams[8]

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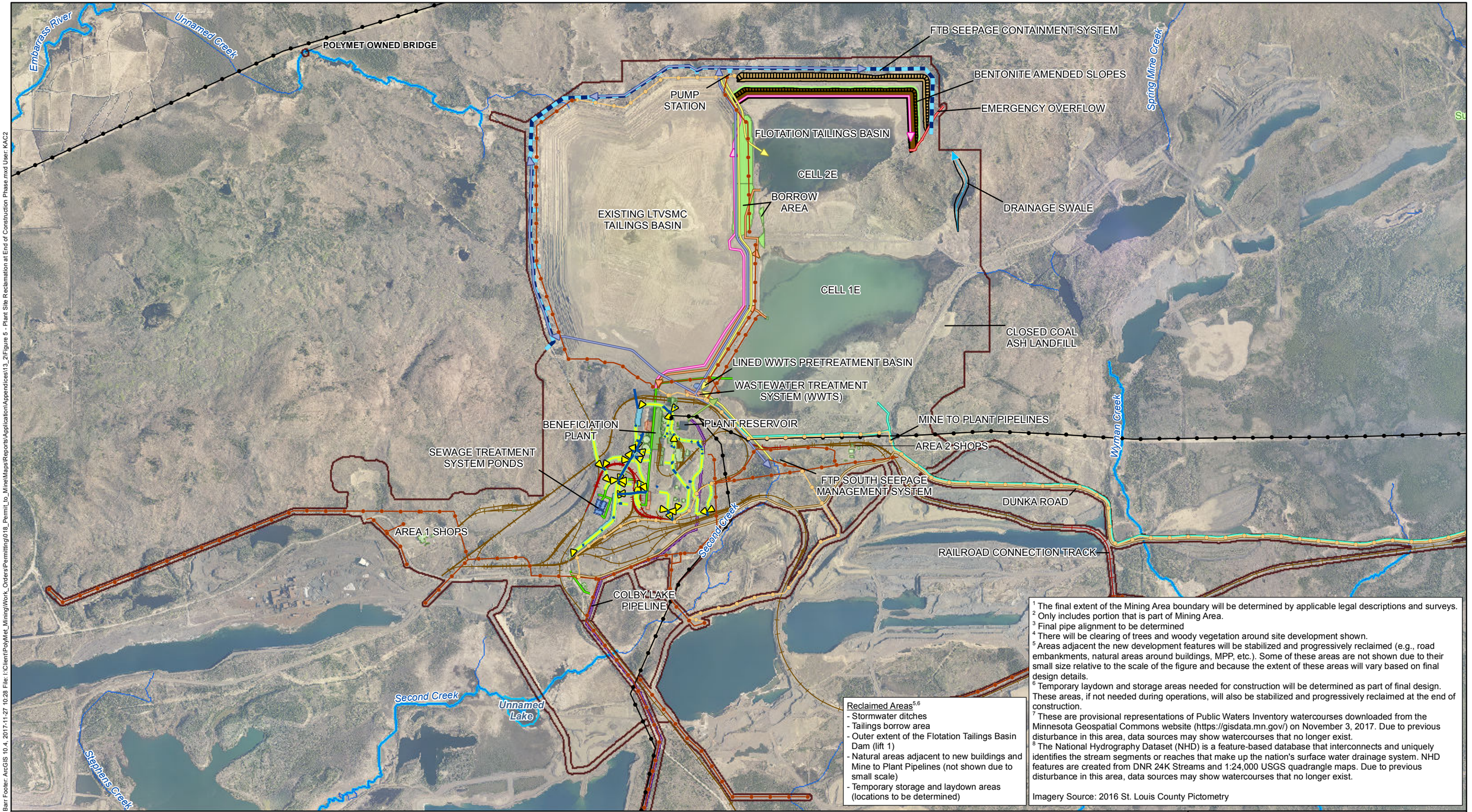
MINE SITE RECLAMATION AT END OF CONSTRUCTION PHASE
NorthMet Project
Poly Met Mining, Inc.

Figure 4
First Year Annual Report



Reclaimed Areas[5,6]
- Stormwater ditches
- Tailings borrow area
- Outer extent of the Flotation Tailings Basin Dam (lift 1)
- Natural areas adjacent to new buildings and Mine to Plant Pipelines (not shown due to small scale)
- Temporary storage and laydown areas (locations to be determined)

[1] The final extent of the Mining Area boundary will be determined by applicable legal descriptions and surveys.
[2] Only includes portion that is part of Mining Area.
[3] Final pipe alignment to be determined
[4] There will be clearing of trees and woody vegetation around site development shown.
[5] Areas adjacent the new development features will be stabilized and progressively reclaimed (e.g., road embankments, natural areas around buildings, MPP, etc.). Some of these areas are not shown due to their small size relative to the scale of the figure and because the extent of these areas will vary based on final design details.
[6] Temporary laydown and storage areas needed for construction will be determined as part of final design. These areas, if not needed during operations, will also be stabilized and progressively reclaimed at the end of construction.
[7] These are provisional representations of Public Waters Inventory watercourses downloaded from the Minnesota Geospatial Commons website (https://gisdata.mn.gov/) on November 3, 2017. Due to previous disturbance in this area, data sources may show watercourses that no longer exist.
[8] The National Hydrography Dataset (NHD) is a feature-based database that interconnects and uniquely identifies the stream segments or reaches that make up the nation's surface water drainage system. NHD features are created from DNR 24K Streams and 1:24,000 USGS quadrangle maps. Due to previous disturbance in this area, data sources may show watercourses that no longer exist.

Imagery Source: 2016 St. Louis County Pictometry

- Mining Area[1]
- Dunka Road[2]
- Existing Beneficiation Plant Building
- Existing Other Plant Building
- Proposed Beneficiation Plant Building
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- Proposed Railroad
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- PolyMet Power Distribution Lines - Proposed
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- Public Waters Inventory (PWI) Watercourses[7]
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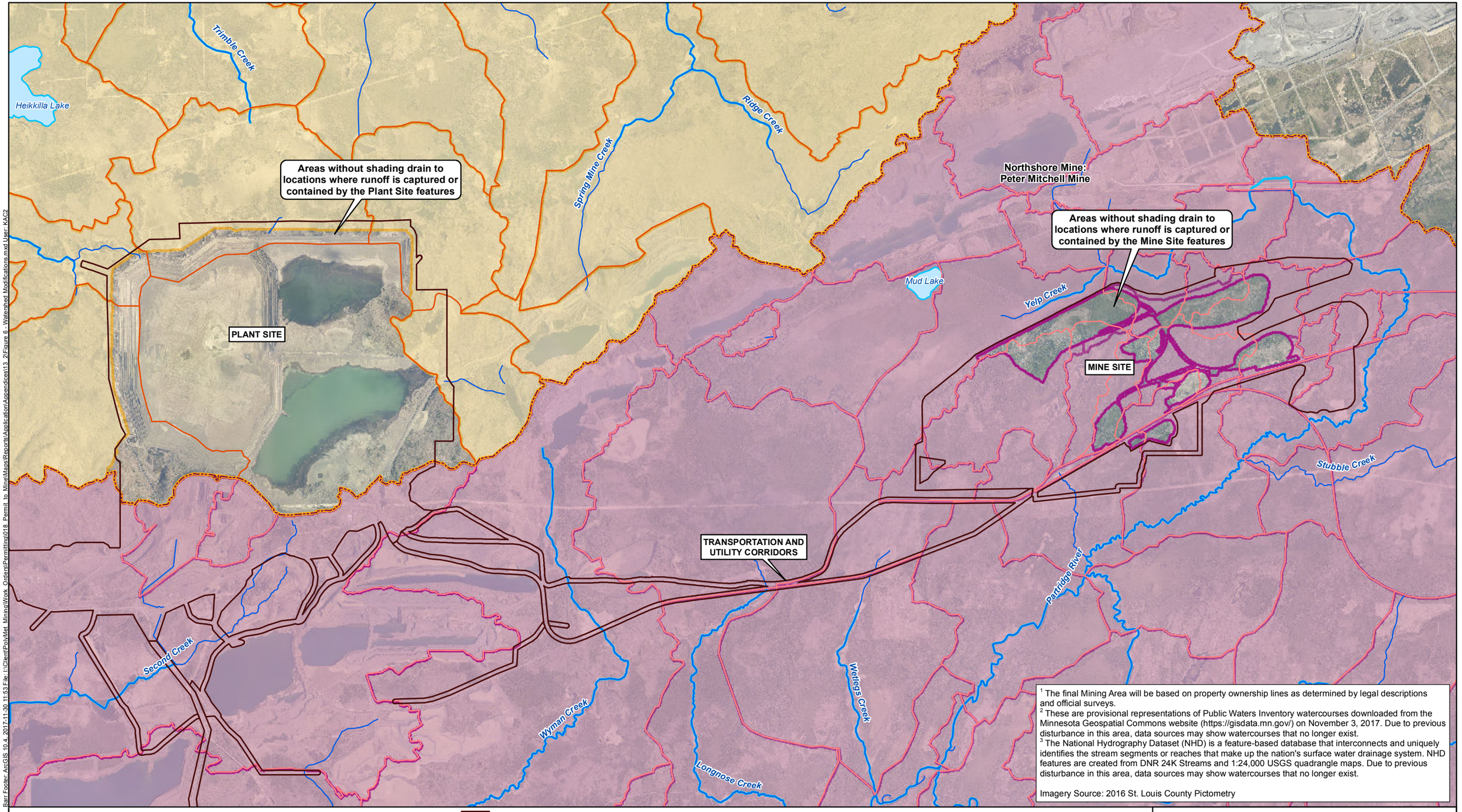
PLANT SITE RECLAMATION AT END OF CONSTRUCTION PHASE
NorthMet Project
Poly Met Mining, Inc.

Figure 5
First Year Annual Report



[1] The final Mining Area will be based on property ownership lines as determined by legal descriptions and official surveys.
[2] These are provisional representations of Public Waters Inventory watercourses downloaded from the Minnesota Geospatial Commons website (https://gisdata.mn.gov/) on November 3, 2017. Due to previous disturbance in this area, data sources may show watercourses that no longer exist.
[3] The National Hydrography Dataset (NHD) is a feature-based database that interconnects and uniquely identifies the stream segments or reaches that make up the nation's surface water drainage system. NHD features are created from DNR 24K Streams and 1:24,000 USGS quadrangle maps. Due to previous disturbance in this area, data sources may show watercourses that no longer exist.

Imagery Source: 2016 St. Louis County Pictometry

End of Construction Phase
- Watershed Divide
- Embarrass River Subwatersheds
- Partridge River Subwatersheds
- Area Drains to Plant Site Features
- Area Drains to Mine Site Features

Existing Conditions
- Partridge River Subwatersheds
- Embarrass River Subwatersheds

- Mining Area[1]
- Public Waters Inventory (PWI) Basins
- Public Waters Inventory (PWI) Watercourses[2]
- National Hydrography Dataset (NHD) Rivers & Streams[3]

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Feet

WATERSHED MODIFICATIONS
NorthMet Project
Poly Met Mining, Inc.

Figure 6
First Year Annual Report