Map Source: Barr Engineering

Figure 3.1-2
Mine Site Surface and Mineral Ownership (All Actions)
NorthMet Project
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Figure 3.1-3
Mine Plan Map - Year 1 (Proposed Action)
Figure 3.1-4
Mine Plan Map - Year 5 (Proposed Action)

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Figure 3.1-6
Mine Plan Map - Year 15 (Proposed Action)

Notes:
- Figure shows maximum size of each pit as of Year 15. In reality, the entire Pit would reach maximum by Year 11, and secondarily with water returning with water rock and water would have been recovering since Year 12. The Central Pit reaches maximum capacity by Year 13, with secondarily recovering since Year 16.

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Figure 3.1-8
Pit Cross Sections (Proposed Action)

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Figure 3.1-9
Stockpile Cross Sections (Proposed Action)

Map Source: Dean Engineering

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Figure 3.1-10
Process Water Management - Year 1 (Proposed Action)
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St. Louis County, Minnesota
October 2009

Map Source: Barr Engineering

Callouts depict the following:
- PW = Process Water Ponds
- S = Stockpile Sumps
- PW-# = Process Water Sedimentation Ponds

Pipeline alignments have been exaggerated for illustration purposes.
Figure 3.1-13
Existing Drainage Subwatersheds at the Mine Site (Proposed Action)

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Figure 3.1-14
Year 1 Stormwater Management
(Proposed Action)
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St. Louis County, Minnesota
October 2009

Map Source: Barr Engineering

Year 1 Stormwater
Stormwater Culverts
Ditches
Pit Rim and Stockpile Prep Dike
Perimeter Dike
Stormwater Sedimentation Pond
Haul Roads

Year 1 Stockpile Layout
Stockpile Contours (40' Interval)
Stockpile Breaklines
Category 1/2 Overburden
Stockpile Sumps

Year 1 Mine Plan
Index Contours (100' Interval)
Intermediate Contours (20' Interval)
Index Contours (10' Interval)
Intermediate Contours (2' Interval)

Year 1 Stockpile Covers
Not Yet Covered
Covered - Year 1
Mine Site
Railroad
Dunka Road
Partridge River

Figure 3.1-14
Year 1 Stormwater Management
(Proposed Action)
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Figure 3.1-17
Plant Site Layout (All Actions)

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Map Source: Bar Engineering

0 1,000 2,000 4,000 Feet

Private Roads
New Railroad
Existing Railroad
Plant Site
Desolated Structures

Buildings
Proposed Plant Structures
(Reuse of Existing)
Figure 3.1-19
Ore Crushing and Grinding (All Actions)

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Information Source: PolyMet
Figure 3.1-21
Concentrate Regrind, Separation & Dewatering, and Shipping (All Actions)
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PolyMet Mining, Inc.
St. Louis County, Minnesota
October 2009

Information Source: PolyMet
Figure 3.1-25
Residual Copper Recovery (All Actions)

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Figure 3.1-26
Mixed Hydroxide Precipitation (All Actions)
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St. Louis County, Minnesota
October 2009

Information Source: PolyMet
Figure 3.1-27
Existing Tailings Basin
NorthMet Project
PolyMet Mining, Inc.
St. Louis County, Minnesota
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Figure 3.1-28
Proposed Tailings Basin Layout (All Actions)

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Source: Barr Engineering

Legend:
- Yellow: Embankment
- Green: LTV Beach
- Light Green: NorthMet Beach
- Blue: Pond

0 500 1,000 2,000 Feet
Figure 3.1-30
Hydrometallurgical Residue Facility
North/South Cross Sections (All Actions)
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St. Louis County, Minnesota
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Figure 3.1-31
Hydrometallurgical Residue Facility
East/West Cross Sections (All Actions)
NorthMet Project
PolyMet Mining, Inc.
St. Louis County, Minnesota
October 2009

Map Source: Bart Engineering
Figure 3.1-32
Hydrometallurgical Residue Facility - Dike Sections (All Actions)
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PolyMet Mining, Inc.
St. Louis County, Minnesota
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Map Source: Black Engineering
Figure 3.1-33
Hydrometallurgical Residue Discharge and Water Return Pipelines (All Actions)
NorthMet Project
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St. Louis County, Minnesota
October 2009
Figure 3.1-34
Hydrometallurgical Residue Drainage Collection System
NorthMet Project
PolyMet Mining, Inc.
St. Louis County, Minnesota
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Hydrometallurgical Residue Facility
Cell Closure Approach (All Actions)
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St. Louis County, Minnesota
October 2009

NOT TO SCALE
Figure 3.1-39
Plant Site Closure Activities at Year 20 (Proposed Action)
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St. Louis County, Minnesota
October 2009

Map Source: Barr Engineering

Tailings Basin Reclamation
- Pond-Final Size May Vary
- Previous Reclamation
- Year 20 Reclamation
- Emergency Spillway

Buildings
- Building to be Demolished
- Not PolyMet Building

Pipeline to be Removed After Completion of Tailings Basin Operations

PolyMet Industrial Waste Landfill

Area 1 Buildings (#33, 34, 35, 37)

Area 2 Buildings (#27-30)

Water Tower

Water Tower Plant Site

Drive House #1 (#3)

WWTP

Additive Building & Heating Plant (#10)

PolyMet Industrial Waste Landfill

Emergency Spillway

Drive House #2 (#5)

Reagent Storage and Handling

Water Tower Plant Site

Drive House #1 (#5)

Electrowinning (#47)

Water Tower Plant Site

Drive House #2 (#5)

Warehouse Electrical (#15)

Administration Building (#44)

Area 2 Buildings (#27-30)

Figure 3.1-39
Plant Site Closure Activities at Year 20 (Proposed Action)
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Ditch filled following West Pit filling, routing drainage north to the Partridge River.

OUTLET STRUCTURE AND POND
OS-1

OUTLET STRUCTURE AND POND
OS-2

OUTLET STRUCTURE AND POND
OS-3

OUTLET STRUCTURE AND POND
OS-4

OUTLET STRUCTURE AND POND
OS-5

OUTLET STRUCTURE AND POND
OS-6

OUTLET STRUCTURE AND POND
OS-7

Outlet Structure to Remain in Place
Outlet Structure to be Removed
Filled Ditch
Rerouted Ditch
New Ditch
Existing Ditch

West Pit Drainage Area - During Flooding
West Pit Drainage Area - After Flooding

Mine Pits

Figure 3.1-40
Ditches to be Blocked, Rerouted or Constructed During Closure (Proposed Action)
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Map Source: Barr Engineering
Figure 3.1-41
North Wall - East Pit Category 4
Existing Rock Face (All Actions)
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Note
Elevations are approximate - may vary with additional monitoring or actual flows.
Figure 3.1-42

Pumps and Pipes to be Maintained or Removed in Closure (Proposed Action)

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Figure 3.1-43
Dikes to be Removed and Maintained During Closure (Proposed Action)
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Figure 3.1-44
Overflow Spillway and Emergency Basin
(All Actions)
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