



Twin Metals Minnesota LLC Overview – Minnesota SME

April 23, 2014

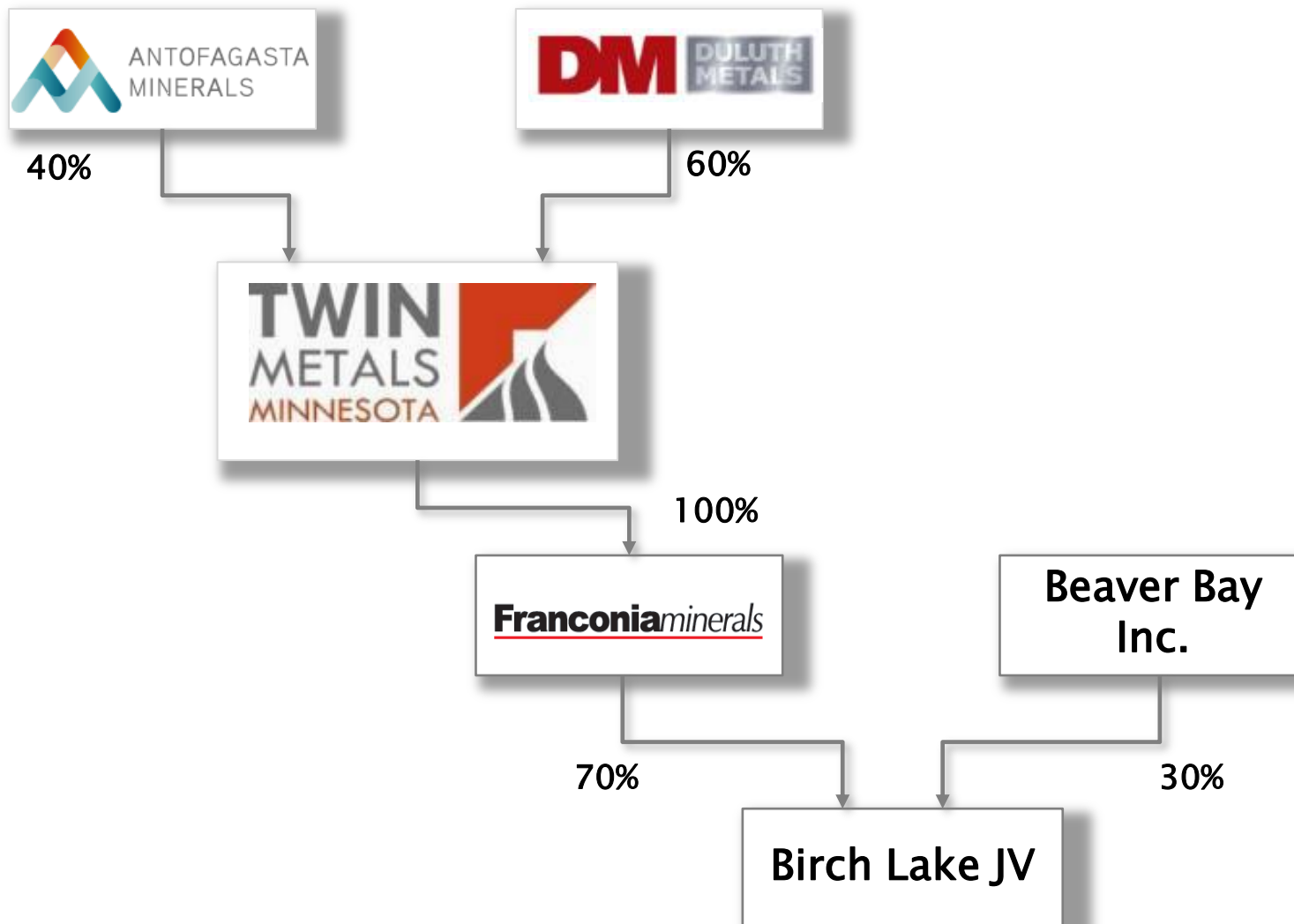
Who is Twin Metals Minnesota (TMM)?

Twin Metals Minnesota (TMM) is pursuing the development and operation of an underground copper, nickel, platinum, palladium and gold (strategic metals) mining project in northeastern Minnesota.

TMM has offices in St. Paul and Ely, Minnesota.



Twin Metals Minnesota LLC



Ernie Lehmann

Friend, Partner, Colleague and Advocate

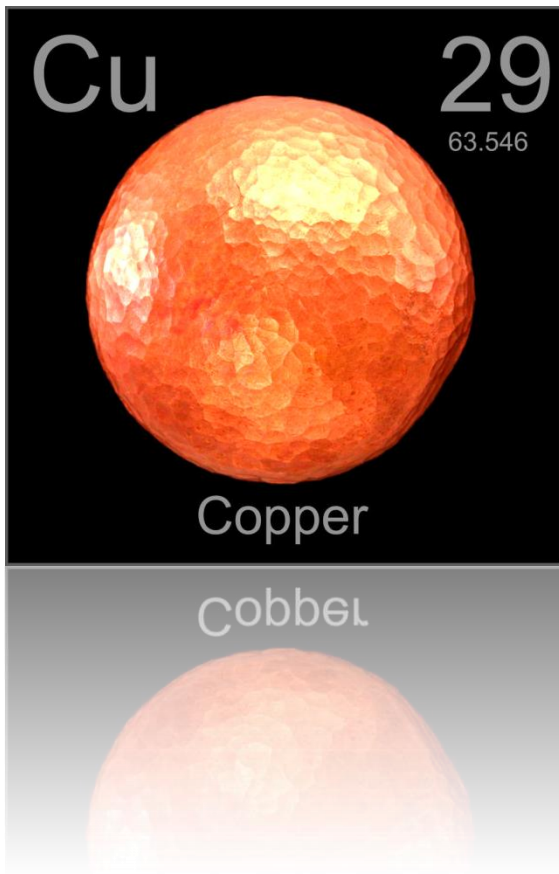
- Chairman, Director and Founder Franconia Minerals Corp.
- President and CEO Beaver Bay, Inc.
- Founder Birch Lake Joint Venture
- President North Central Mineral Ventures Inc.
- Champion Mining Minnesota



TMM – Right Project, Right Place, Right Time

- Extraordinary Value Proposition for State of Minnesota:
 - 1,000's of Jobs for Generations
 - \$\$Billions in Economic Growth
- World-class Mineral Deposit
- Extensive & Efficient Infrastructure
- Experienced Mining Labor
- Proven Technology for Mining and Environmental Stewardship
- Solid Business Foundation – Duluth Metals and Antofagasta Partnership

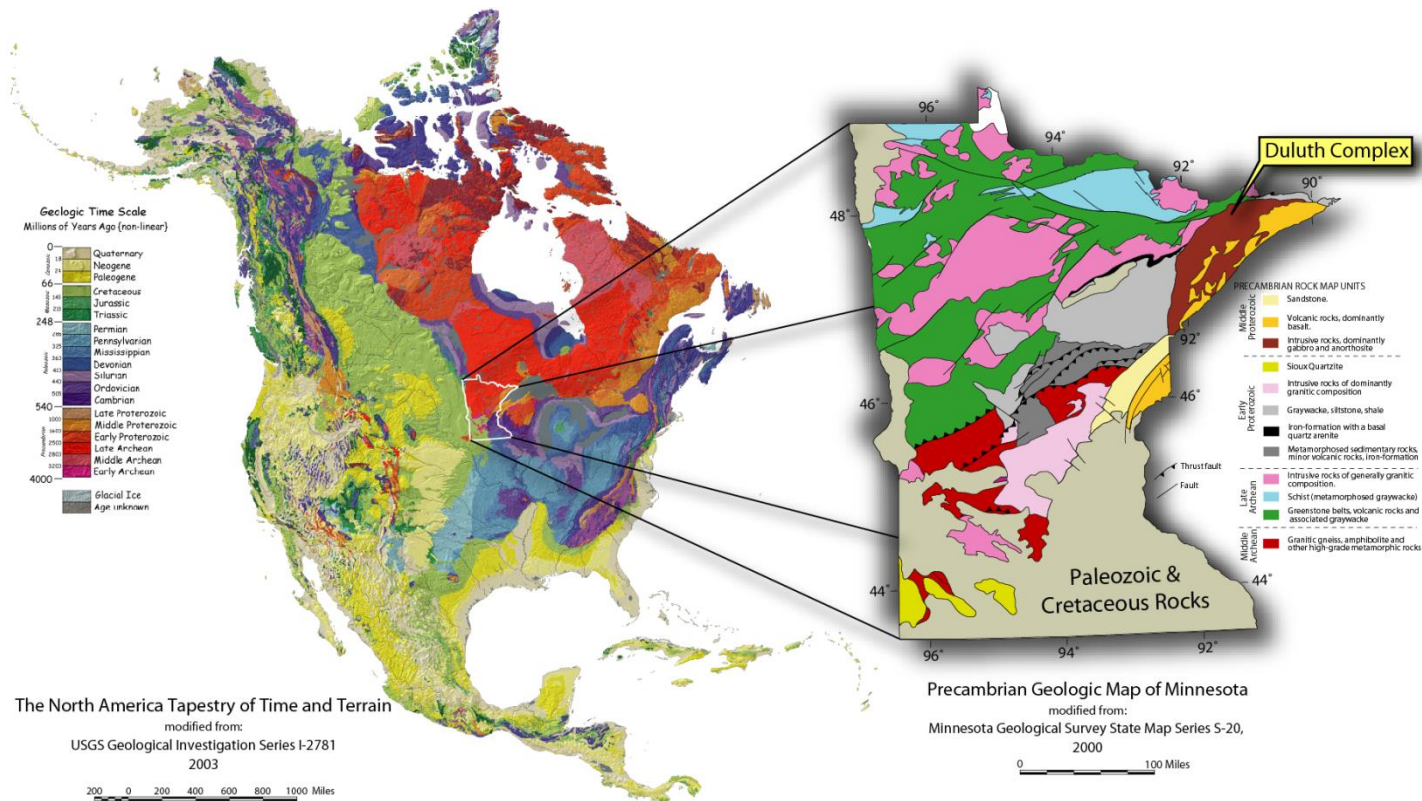




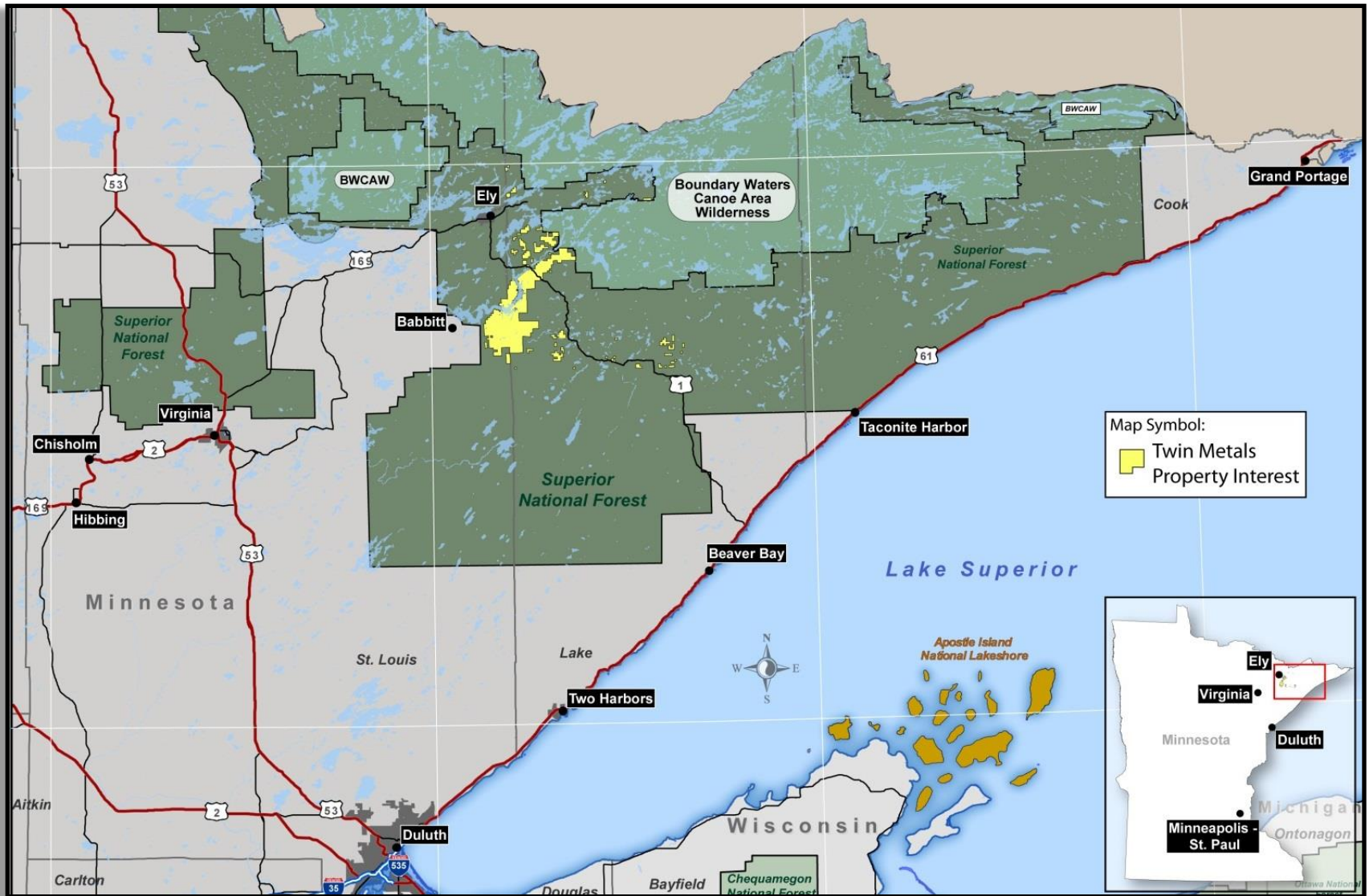
Twin Metals Minnesota Project Location

Minnesota Poised to be Global Economic Leader

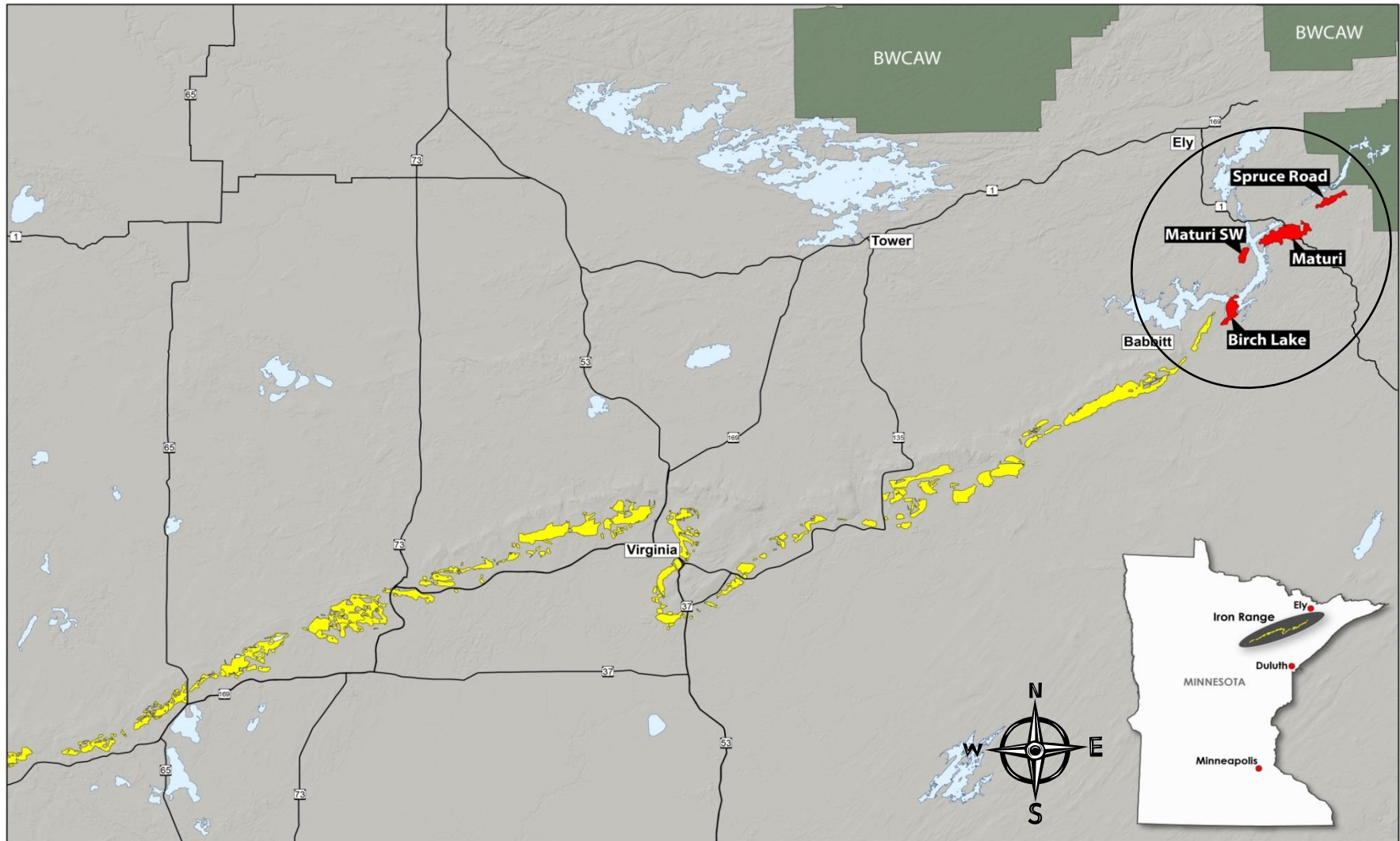
There are more than 4 billion tons of copper, nickel and other metal resources in the state of Minnesota, which represents the largest known undeveloped deposit of strategic metals in the world.

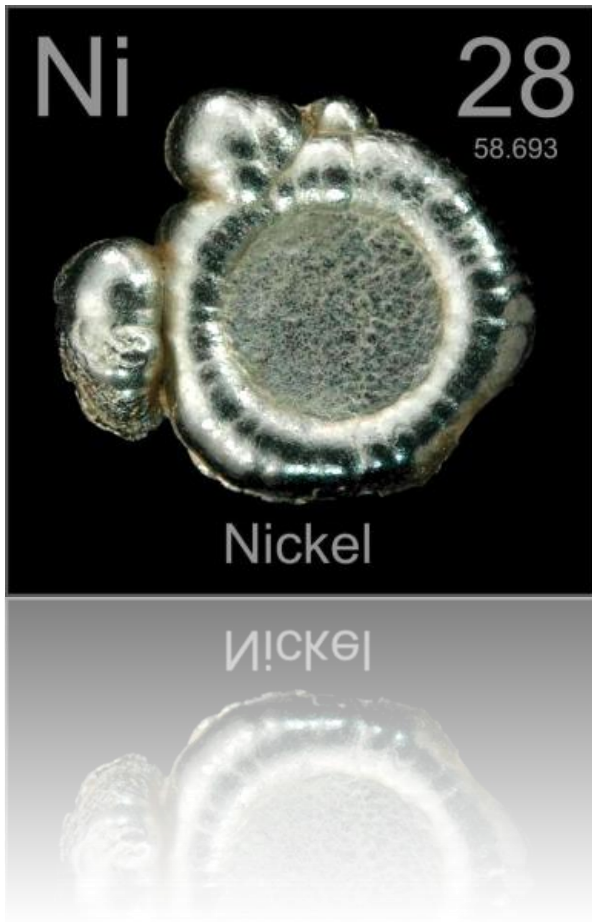


TMM – Project Location



TMM – Part of Northern Minnesota’s “Iron Range”



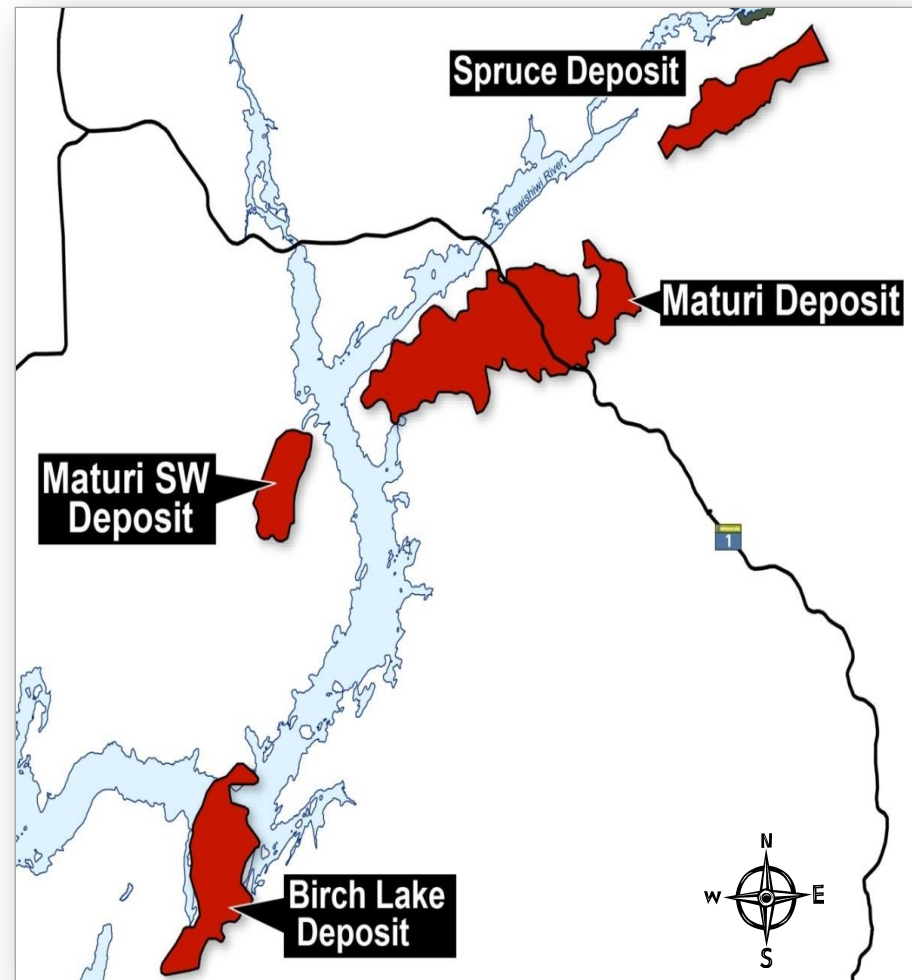


Twin Metals Minnesota Mineral Resource Base

TMM – Outstanding Mineral Resource Base

April 2014 AMEC Resource Report:

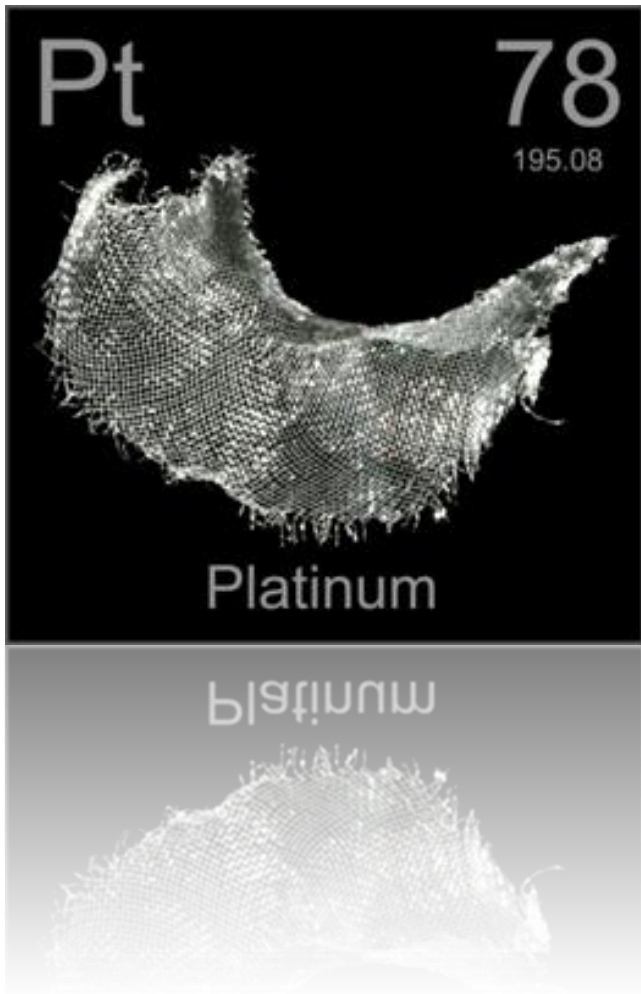
- Resource estimates support projections of decades of mining potential.
- More than 2.5 billion tons of copper, nickel and PGM mineralized resource in measured, indicated and inferred categories across four deposits.
- Nearby exploration target areas confirm significant future upside.



TMM – Details of Twin Metals Resource Base

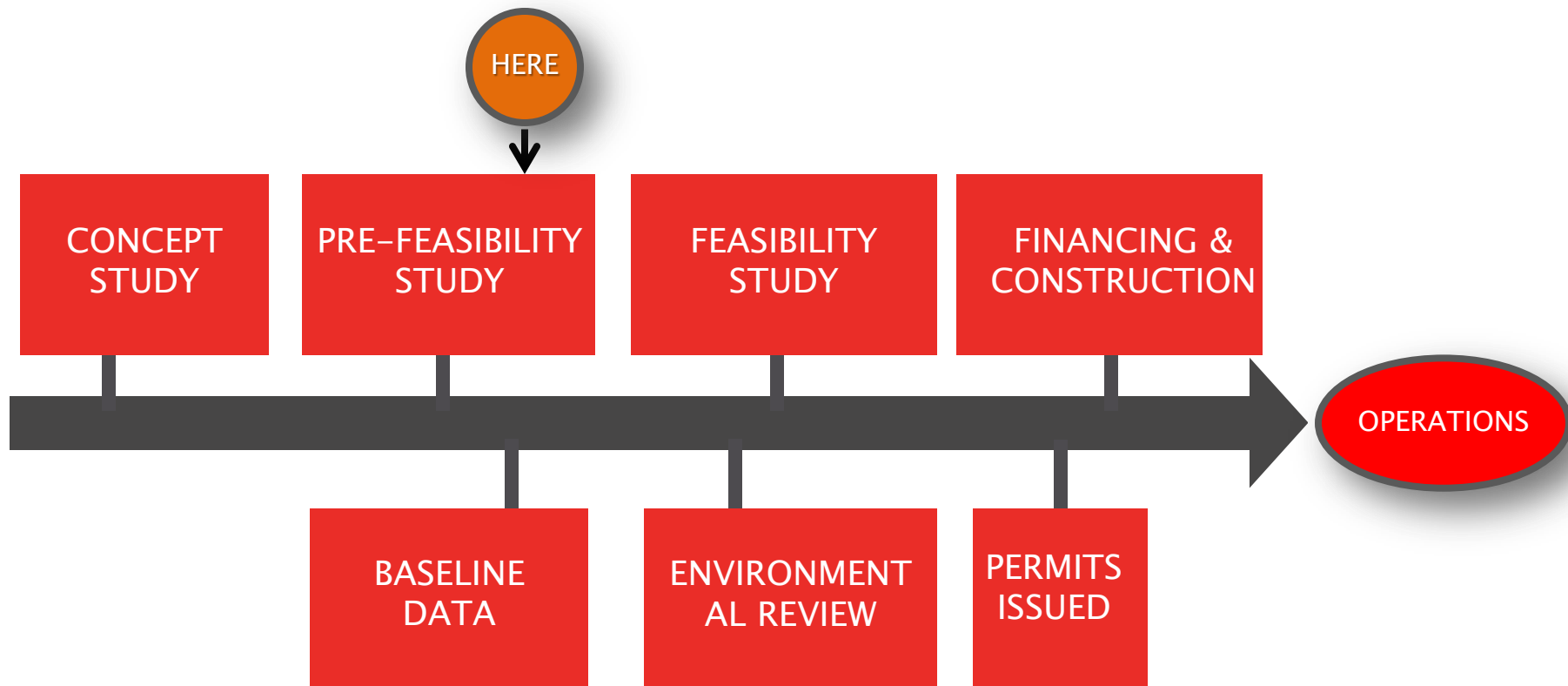
Deposit		Mtons	Cu %	Ni %	Pt ppm	Pd ppm	Au ppm
Maturi	Measured	295	0.63	0.20	0.148	0.345	0.084
	Indicated	774	0.58	0.19	0.160	0.360	0.085
	Inferred	562	0.51	0.17	0.138	0.317	0.071
Maturi SW	Indicated	103	0.48	0.17	0.08	0.185	0.048
	Inferred	32	0.43	0.15	0.065	0.157	0.041
Subtotal	Measured	295	0.63	0.20	0.148	0.345	0.084
	Indicated	877	0.57	0.19	0.151	0.339	0.081
	Inferred	594	0.51	0.17	0.134	0.308	0.069
Birch Lake	Indicated	100	0.52	0.16	0.233	0.511	0.114
	Inferred	239	0.46	0.15	0.180	0.370	0.087
Spruce Road	Inferred	480	0.43	0.16	–	–	–
TOTAL	Measured	295	0.63	0.20	0.148	0.345	0.084
	Indicated	977	0.56	0.18	0.159	0.357	0.084
	Inferred	1,313	0.47	0.16			

April 2014 AMEC Report @ Cut-Off 0.3 Cu %



Twin Metals Minnesota Project Prefeasibility Study

TMM – Current Project Development Timeline



Pre-Feasibility Study expected to be complete by mid-2014

TMM – Prefeasibility Study (PFS)

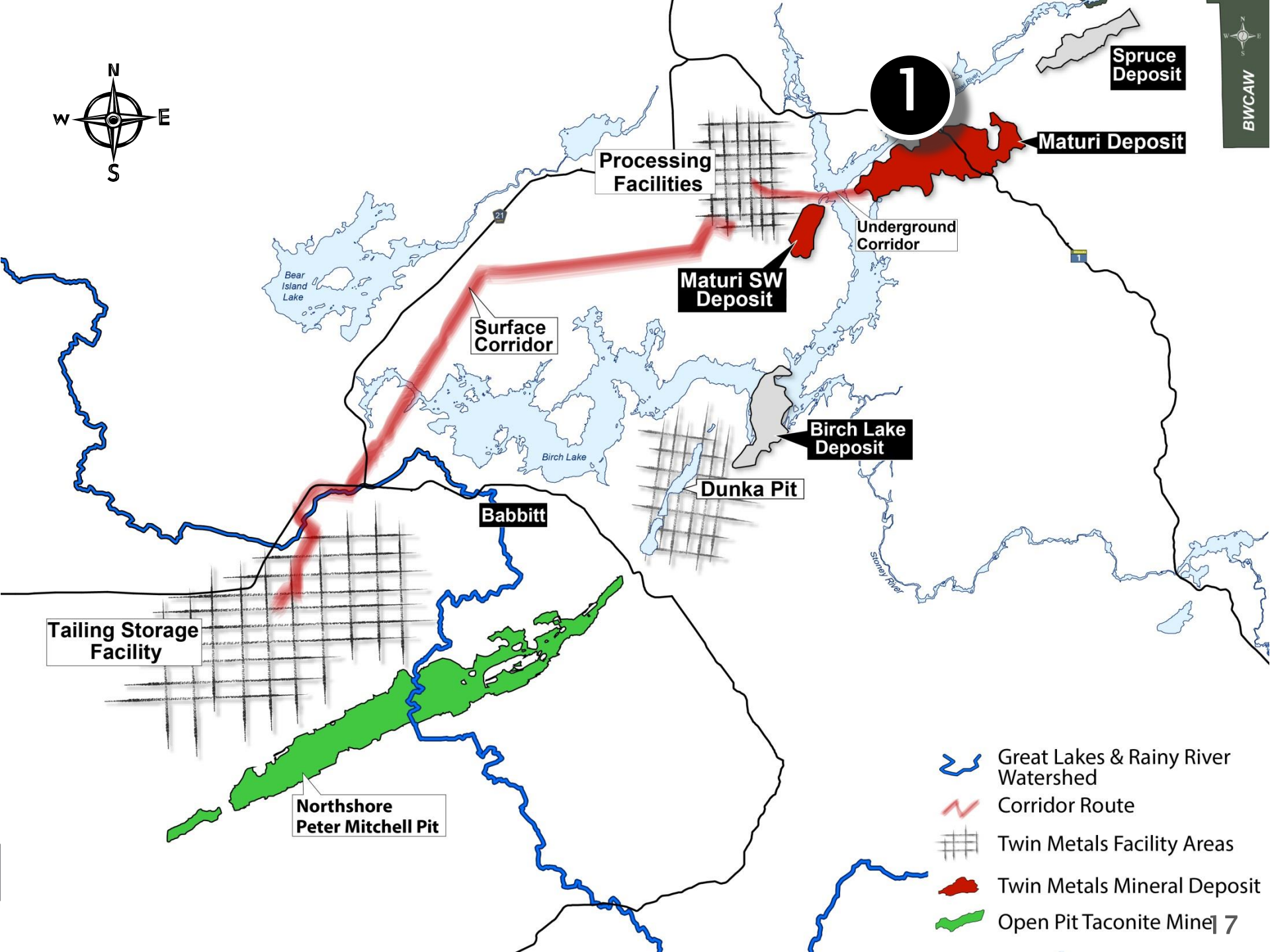
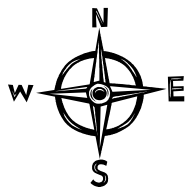
TMM is in later stages of PFS, identifying initial details of future Mine Plan of Operation proposal.

- Mine design and production rates
- Environmental impacts and controls
- Type of processing technology
- Facility locations and corridors
- Transportation methods and routes
- Power sources and transmission routes
- Economics: investment, revenues, costs, taxes, royalties and jobs





Twin Metals Minnesota Early PFS Findings Potential Facility Locations



Tailing Storage Facility

Northshore Peter Mitchell Pit

Babbitt

Processing Facilities

Surface Corridor

Maturi SW Deposit

Underground Corridor

Birch Lake Deposit

Dunka Pit

Maturi Deposit

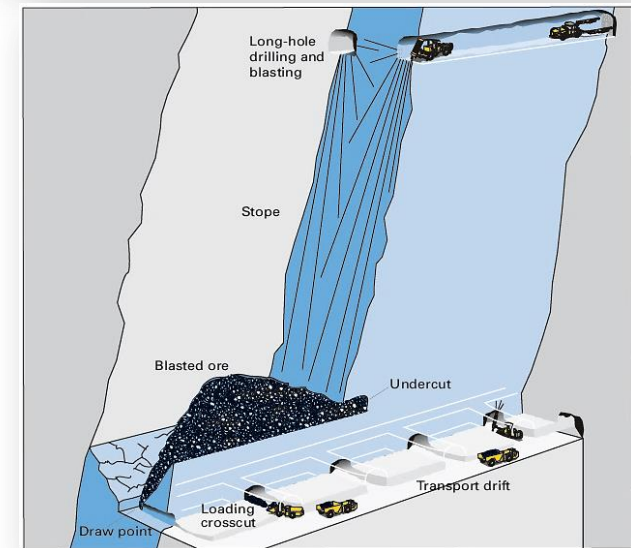
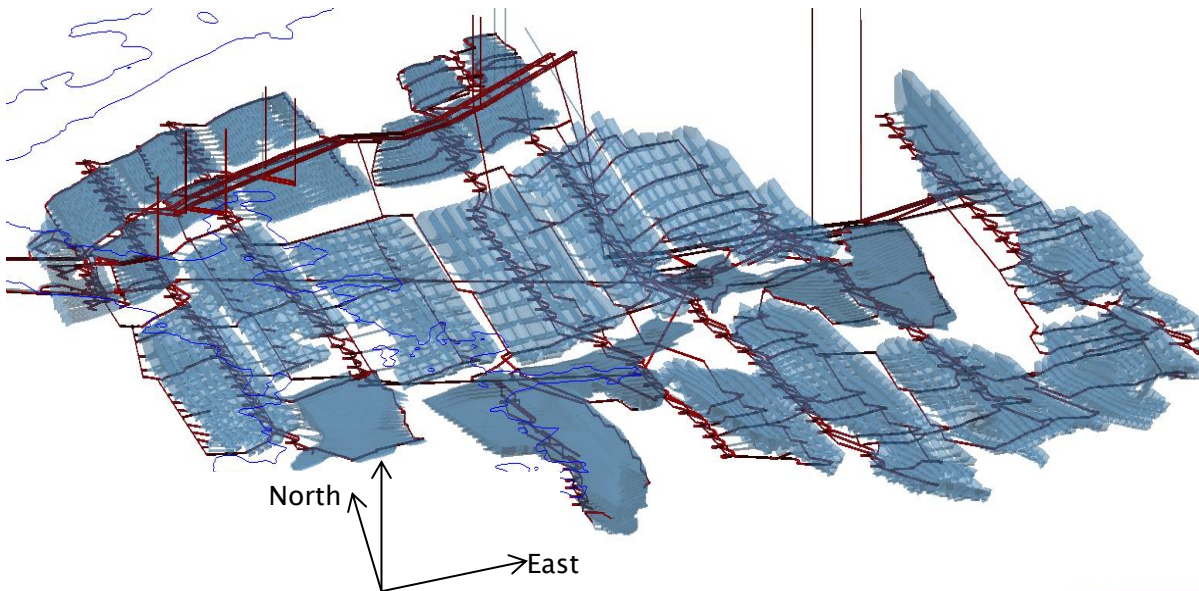
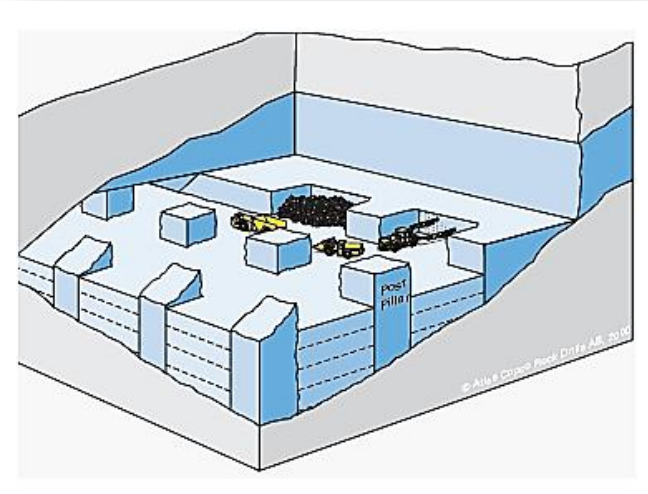
Spruce Deposit

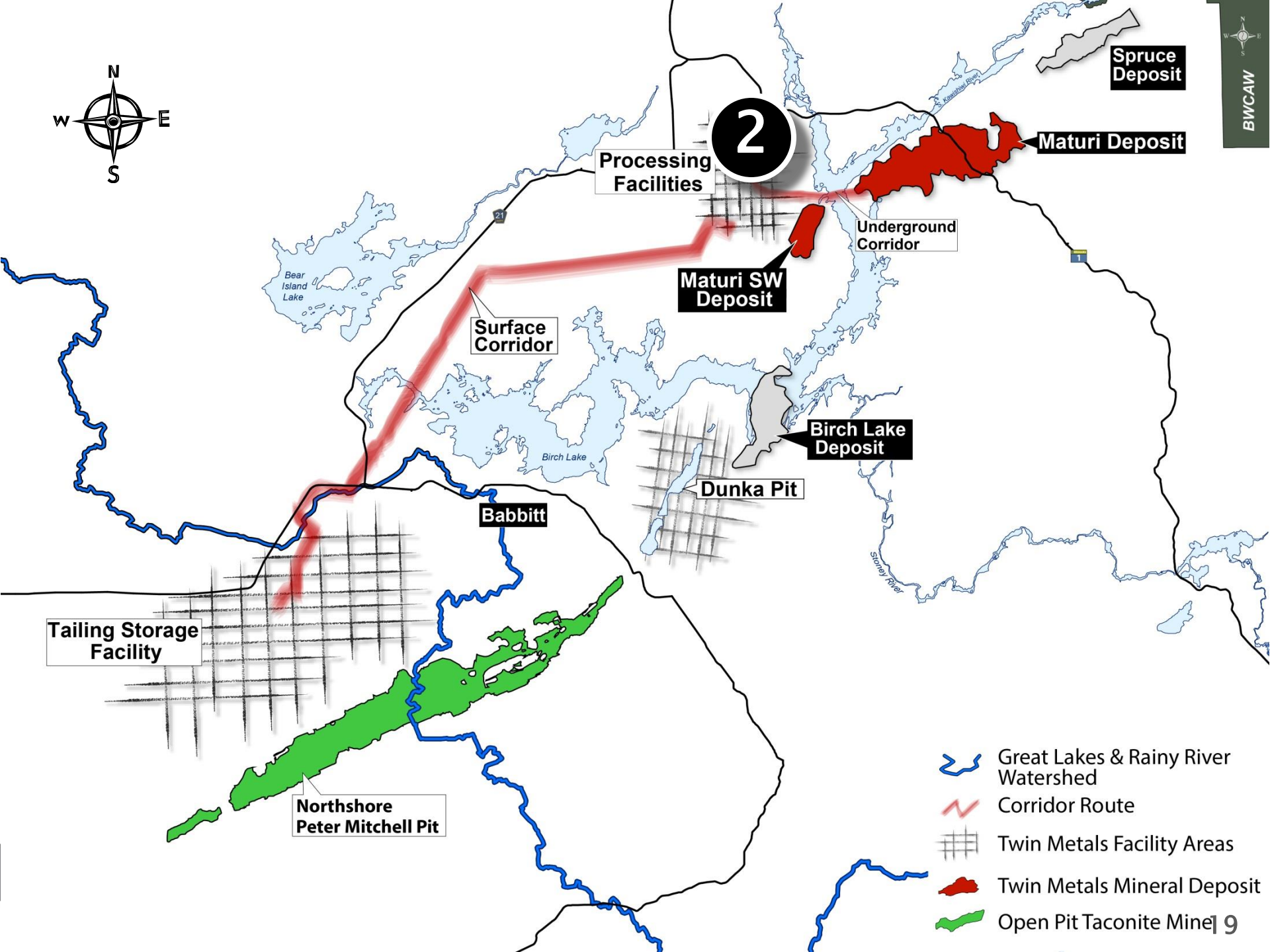
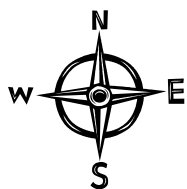
- Great Lakes & Rainy River Watershed
- Corridor Route
- Twin Metals Facility Areas
- Twin Metals Mineral Deposit
- Open Pit Taconite Mine

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TMM – Underground Mine at the Maturi Deposit

- Large scale underground mine: Maturi deposits.
- Traditional mining methods: *Cut & Fill* and *Long Hole Stoping* with cemented paste backfill.
- Paste backfill pumped back into the mine through boreholes
- Crushed ore conveyed to surface through access declines.

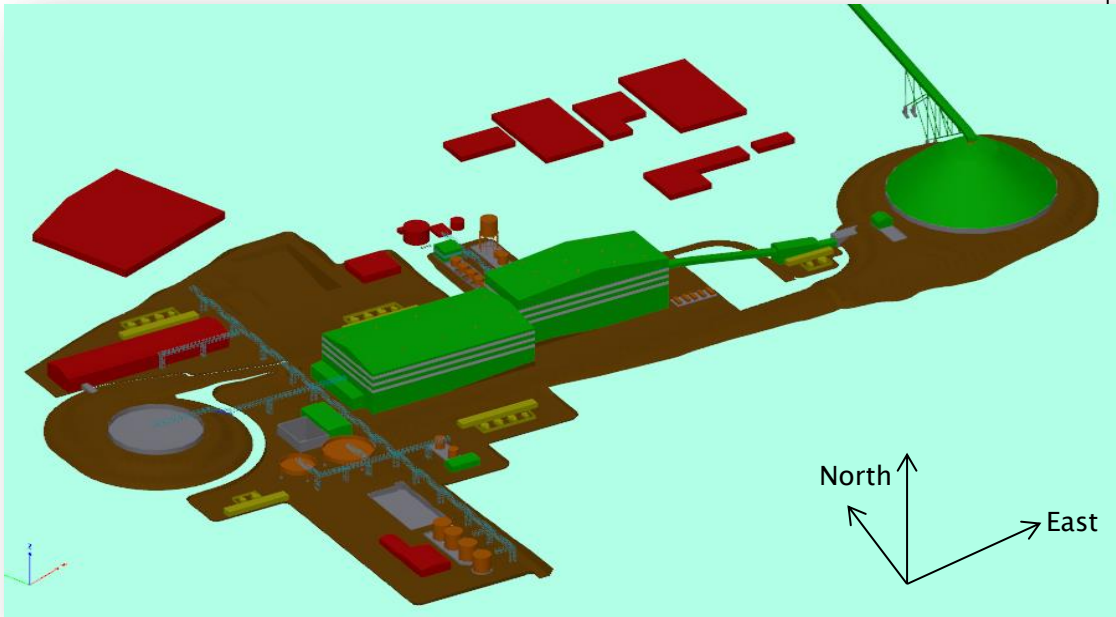
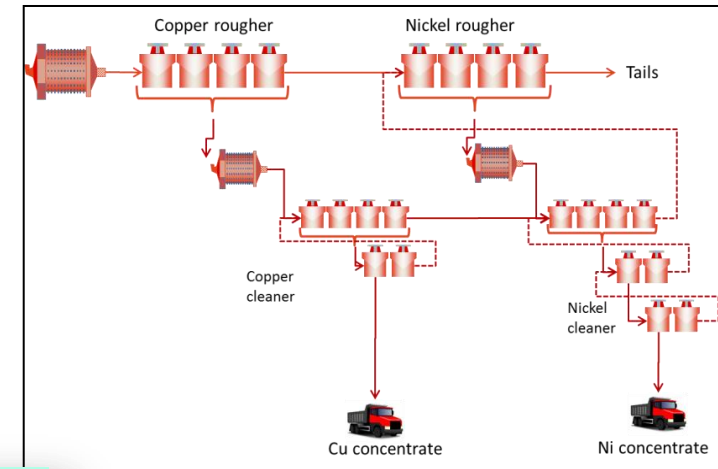


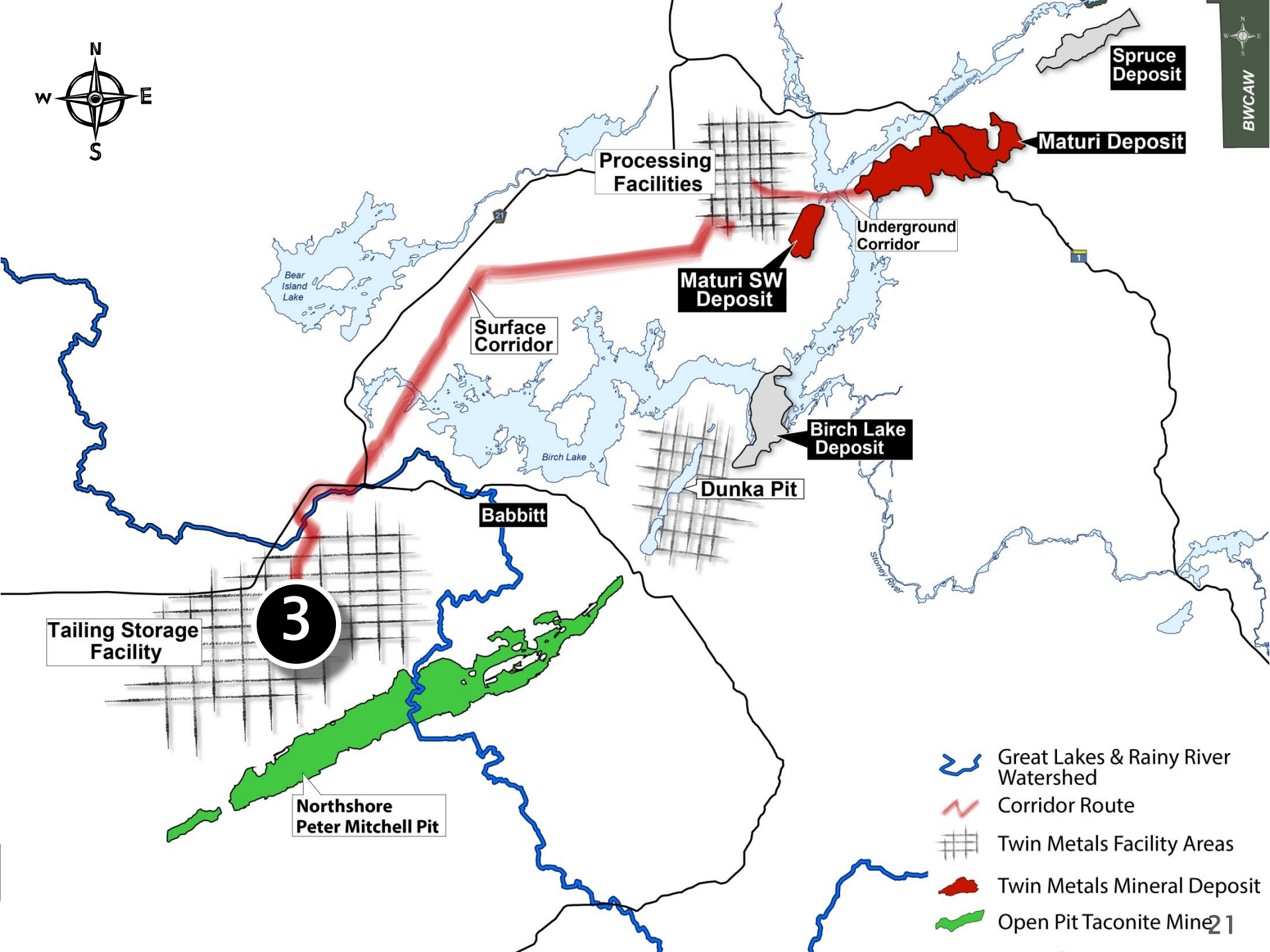
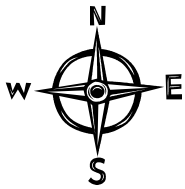


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TMM – Mineral Processing

- 21st Century concentrator.
- West of Maturi, south of Ely Airport.
- Traditional SAG – Ball mill– Flotation circuit.
- Initial focus: Cu and Ni saleable





Tailing Storage Facility

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Northshore Peter Mitchell Pit

Babbitt

Dunka Pit

Birch Lake Deposit

Maturi SW Deposit

Underground Corridor

Processing Facilities

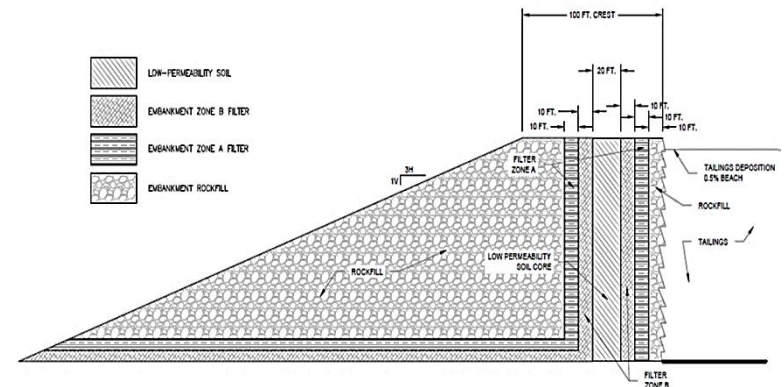
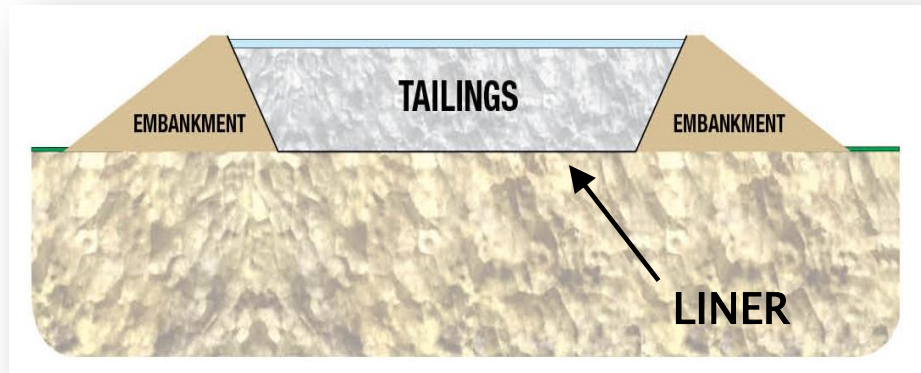
Maturi Deposit

Spruce Deposit

- Great Lakes & Rainy River Watershed
- Corridor Route
- Twin Metals Facility Areas
- Twin Metals Mineral Deposit
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TMM – Tailings Storage and Treatment

- 55% of tailings stored underground as paste backfill, reducing footprint and environmental impacts.
- 45% stored in 21st Century Tailings Storage Facility (TSF).
- TSF adjacent to an active mining area, w/in Great Lakes Watershed.
- Conventional (slurry) deposition method with liner.

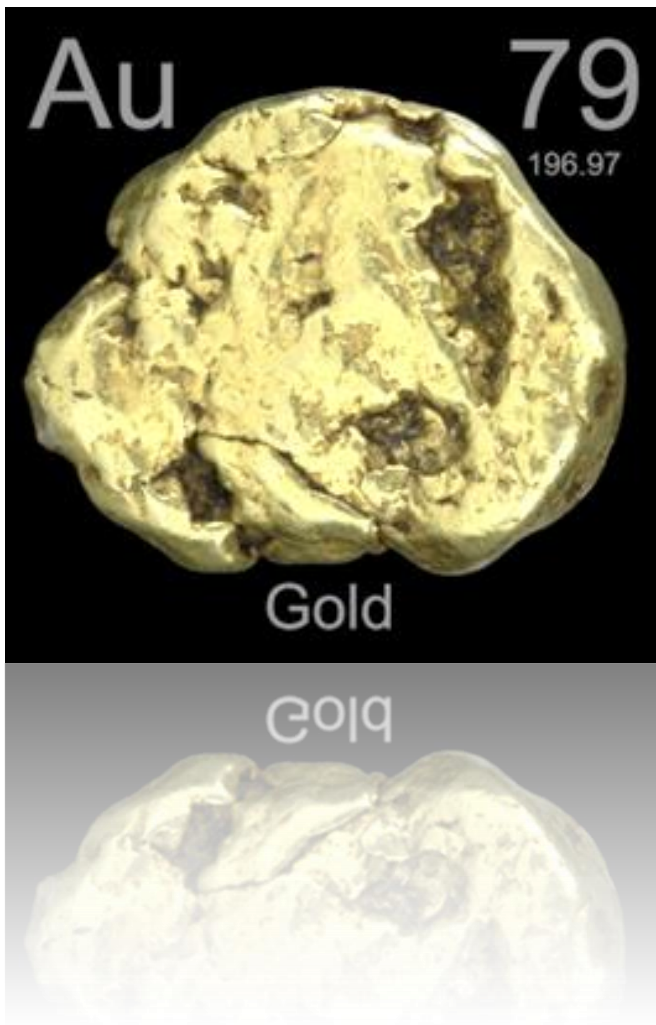


TMM – Potential Facility Locations & Environmental Principles

TMM has identified potential facility locations based on sound environmental principles:

- Minimize surface impacts.
- Protect air and water quality.
- Site facilities near existing mining or industrial operations.
- Avoid environmentally sensitive areas.
- Seek “brownfield” redevelopment opportunities.





Twin Metals Minnesota Project Job Estimates

TMM – Jobs for Generations



- Three-year construction phase.
- Potentially 12 million construction labor hours.
- Long-term operations will create approx. 1,000 mining jobs.
- Every direct mining job creates another 2.1 indirect jobs (*UMD 2012*).



Twin Metals Minnesota Environmental Stewardship

TMM – Environmental Commitment

- *Protect Minnesota's Wilderness, Natural Environment and Recreational Resources*
- *Meet State and Federal Environmental Protection Standards:*
 - Project will face rigorous, thorough and lengthy environmental review by multiple state and federal agencies and tribal governments.
 - State and federal environmental permits protecting water, air, land and wildlife will include stringent standards.
 - Project must meet those standards, or it will not be approved.



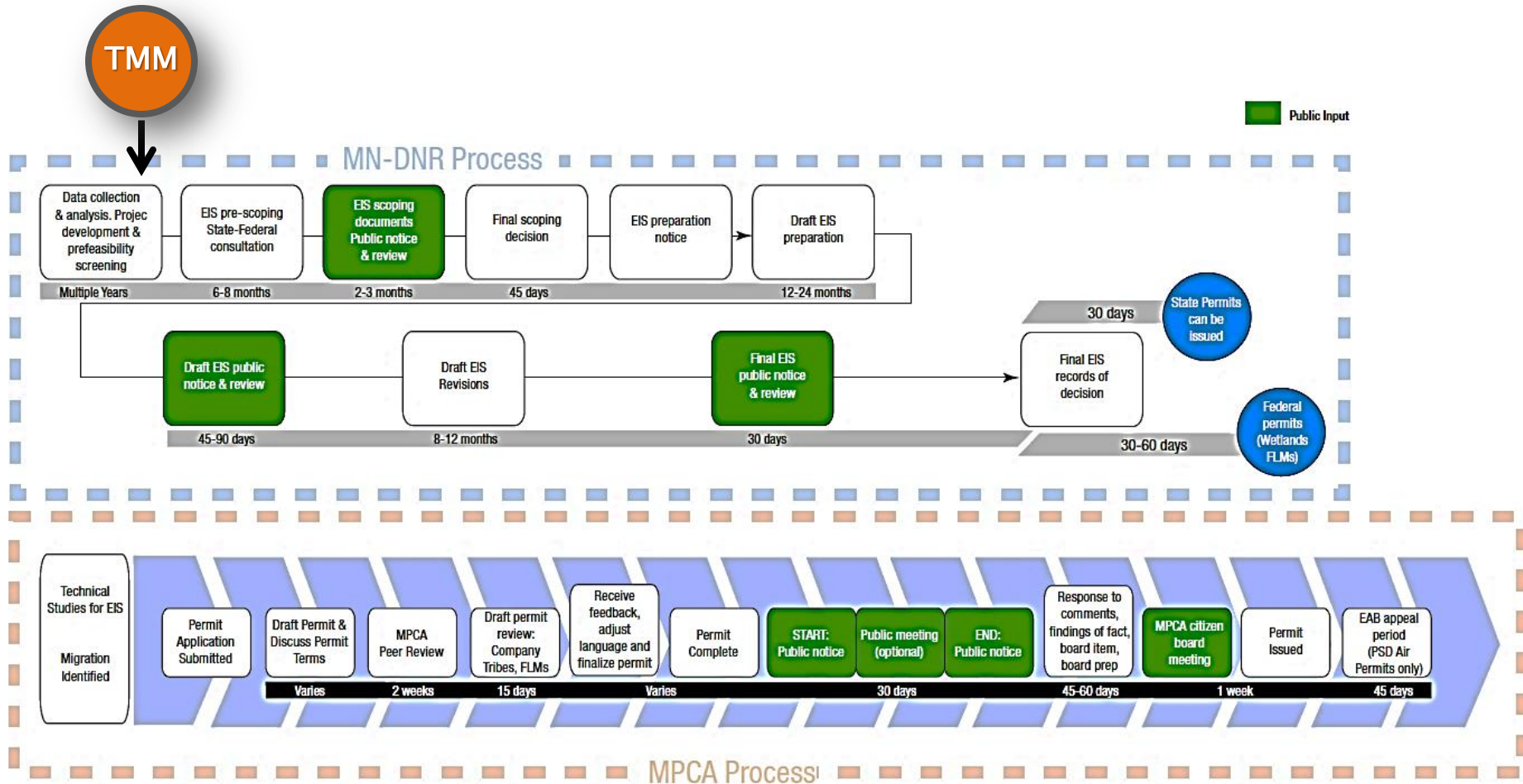
TMM – Environmental Regulation/Oversight

- MN Dept. of Natural Resources
- MN Pollution Control Agency
- MN Tribal Governments
- US Forest Service
- US Bureau of Land Management
- US Army Corps of Engineers
- US Environmental Protection Agency



Typical EIS & Environmental Permitting Process

Source: MN DNR/MPCA



TMM – Right Project, Right Place, Right Time

- Extraordinary Value Proposition for State of Minnesota:
 - 1,000's of Jobs for Generations
 - \$\$Billions in Economic Growth
- Modern Technology for Mining and Environmental Stewardship
- Twin Metals, Duluth Metals and Antofagasta are grateful for the opportunity to pursue this extraordinary project in Minnesota.



Thank You

