Today’s Topics

• Minnesota Mining – Current & Future
  • Challenges and Expectations

• Lands and Minerals Strategic Plan
  • Innovative Science
  • Innovative Communication
• Over 130 years of iron ore mining
• 6 active taconite mines
• 1 mine under construction
• 4 scram mining facilities
• 2017 – 18.6M tons production
• $1.1 billion in revenues for the School Trust
Minnesota Mining - Future

- Iron ore - 100+ years
- 50+ years of state mineral leasing
- 533 active metallic mineral leases
- Cu+Ni – Duluth Complex, Tamarak
  - $2-3B potential School Trust revenue from just 3 deposits
- Gold – promising early exploration
- Illmenite, Lithium, Titanium
Minnesota Mining - Challenges and Expectations

- Public interest & scrutiny
  - Expectations for information & participation
- Attracting investment
  - Expectations for fair and consistent processes
- Strong science critical
- Communicating the science

Letter to the Editor: “...We cannot continue to be at the mercy of an agency that is politically controlled and has the dual mission of both promoting and regulating mining.” MinnPost

Mining exploration spreading across northern Minnesota

Eureka! DNR strikes more gold near Lake Vermilion

Mining in Minnesota's Boundary Waters under review

PolyMet approval process is setting a high bar — as it should

Editorial counterpoint: No, PolyMet process would set a low bar
Vision

“To provide exceptional real estate and mineral expertise to enhance Minnesota’s future, uphold strong environmental protections and support our economy by demonstrating the highest professional standards”
Strategic Plan - Who we are

- Regulators
- Researchers
- Surveyors
- Trustees
- Real estate agents
Strategic Plan – Trends, Goals & Strategies

Building Strong Foundations

INNOVATIVE SCIENCE

Goal: Excel as stewards of public mineral ownership by conducting innovative research, optimizing revenue generation, and supporting a diversified minerals economy

Strategy: Use applied research to advance innovative solutions to environmental issues, inform decision making, and advocate for best industry practices

INNOVATIVE COMMUNICATIONS

Trend: Increasing demand for government information and communication

Strategy: Increase public education efforts about LAM

Sign up for Lands and Minerals News

Email Address

SUBMIT
Surveys identify state-managed lands with high potential for metallic mineral deposits.

- Metallic mineral lease sales
- Land management
Strategic Plan

Innovative Science - Drill Core Library

Drill core and exploration data

- 9,000+ drill holes
- 3,000,000+ feet
- 300,000+ boxes
- web map access
- 13,000+ exploration documents online
New and on-going environmental research

- Hibbing laboratory and field research site

Microscopic methods to calculate specific sulfide oxidation rates

Specialized weather equipment to supplement local records and improve on-site field studies

On-going monitoring of humidity cell rock weathering experiments for over 30 years

Field scale study evaluating leachate quality from sulfide bearing Ely Greenstone
Innovative Science - Reclamation Field Research

Mine site research and reclamation

- Reclaimed surface overburden stockpile slope after 10 growing seasons
- 2014-15 field study of hydrology and chemistry of taconite tailing basins

Supporting innovative mine site reclamation ideas

Laurentian Vision Partnership
Transforming pits and piles into lakes and landscapes
Strategic Plan
Innovative Communications

5 years ago:

• Little communication about most of LAM’s work
• Limited methods
• “Dark of Night” accusations

Now:

• LAM GovDelivery – 5000 subscribers
• User friendly access to information
• Increased focus on the message
Strategic Plan
Innovative Communications – Mineral Leasing

• 2011 Mineral Lease Sale – opposition and call for more transparency

• Convened industry and environmental group stakeholders

• Designed a new process
  • Public input opportunity
  • Interactive web maps

• Result – 130K acres of successful lease sales
• Posting mineral exploration plans since November 2013

Minerals Exploration Plan on State Nonferrous Metallic Minerals Leases

Submitted by Kennecott Exploration Company on November 16, 2017 and summarized here by the DNR Division of Lands and Minerals

Narrative: Kennecott Exploration Company (Kennecott) submitted an Exploration Plan to explore for metallic mineral deposits by drilling this winter and early spring. Kennecott plans to drill exploratory borings at 6 to 10 sites in an area about 3.5 to 4 miles north of Tamarack, Minnesota (Figure 1). Seven drill sites are depicted in Figure 1. Kennecott may add more drill sites on state mineral leases, depending on drilling results. The additional drill sites will be within 1200 feet of the drill sites depicted in Figure 1.

Kennecott will use a diamond core drilling method. Kennecott plans to run down-hole geophysical surveys in each exploratory boring that is drilled.

State nonferrous metallic mineral lease ID: Drilling is proposed on 4 leases: MM-3765-P, MM-9849-N, MM-10007-N, and MM-10010-N.

Public Land Survey location: Section 3 of T48N R22W and Sections 27, 34 and 35 of T49N R22W in Atkin County.

Types of exploration activity: Exploratory borings (diamond core drilling), and down-hole geophysical surveys.

Expected time period of activity: Upon approval through approximately April 15, 2018.

Access: Kennecott will use existing trails and develop some new trails to access the exploratory boring sites.

Surface ownership: Pending DNR approval, which may include stipulations, Kennecott will have the right to explore as described in the exploration plan on state-owned surface lands. Kennecott has coordinated or will coordinate with the Atkin County Land Department as well as any other affected
Strategic Plan
Innovative Communication – High Profile Projects

Providing information and facilitating public input

• One-stop portal for project information and updates

• Electronic comment submittal form
Strategic Plan

Innovative Communication - Public Participation

• Over 1200 in recent PolyMet events
• Structured to welcome all perspectives
• Opportunities to speak publically
• One-on-one access to staff
• A new standard for large public meetings!
Strategic Plan

Innovative Communications - Partnerships

- Tribes
- Industry
- Other state agencies
- Universities
- Environmental groups
- Communities
  - County Boards
  - Local citizen groups
• 250,000 visitors in 2017

• Interactive mineral education for all ages
What’s Next:

**INNOVATIVE SCIENCE**

- Expanded drill core library
- Continued drive toward new value added iron ore
- Improved mineral potential research
- Continued environmental research to prepare for future permitting

**INNOVATIVE COMMUNICATIONS**

- Work with industry to communicate environmental successes
- Regular public education on the benefits of mining, environmental protections, and post-mining land use
- Convene stakeholder conversations on a vision for Minnesota’s mining future
The Goal

Successful mining & successful future use!!

Benefits to communities, schools & universities
Questions?
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