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Testimony of Robert G. Marvinney, State Geologist  
Department of Agriculture, Conservation, and Forestry  
Before the Board of Environmental Protection

September 15, 2016

Hearing on Chapter 200 Metallic Mineral Mining Rules

Chairman Parker and members of the Board of Environmental Protection, I am Robert Marvinney. My title is State Geologist and I am Director of the Maine Geological Survey in the Department of Agriculture, Conservation, and Forestry, an appointed position which I have held for more than 21 years. I have more than 30 years of experience in Maine geology, having carried out bedrock mapping in many regions across the state. I am speaking in support of the rules before you.

Only a few weeks ago, I took a Maine delegation to visit the Eagle Mine in northern Michigan, a large underground nickel and copper mine. Northern Michigan is similar to Maine in important ways. The igneous and metamorphic geology that hosts significant massive sulfide deposits is very similar to broad regions of Maine. The northern temperate climate is analogous to Maine's. We visited this mine, meeting with both the Eagle Mine's environmental managers and the State of Michigan's mine regulators, because the Eagle Mine is recognized as a modern metallic mineral mine permitted under modern, stringent regulations, that is operating in an environmentally responsible manner. In fact, this mine was singled out in floor debates on mining statutes in the Maine House<sup>1</sup> and Senate<sup>2</sup> in June 2013 because it was permitted under very strict regulations and under the mine closure plan, the wastewater treatment system will be shut down within five years, shorter than the 10 year limit in the rules before you.

I took away three important points from this visit: 1) mining of metallic sulfide minerals can be done responsibly in a northern temperate climate; 2) a successful process like Michigan's to develop modern mining statutes and rules begins with broad community engagement; 3) the proposed Chapter 200 mining rules before you are stricter than Michigan's in important ways:

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<sup>1</sup> Legislative Record, House of Representatives, One Hundred and Twenty-Sixth Legislature, State of Maine. First Regular Session, June 5, 2013, p. H-775 – H-778.

<sup>2</sup> Senate Legislative Record, One Hundred and Twenty-Sixth Legislature, State of Maine. First Regular Session, June 6, 2013, p. S-974 – S-979.

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- The primary mining zone at the Eagle Mine is 1,000 feet directly beneath the Salmon Trout River, an important fish habitat in northern Michigan. Mining is underway without significant impact to the river. Water infiltration into the mine that must be pumped and processed through the water treatment plant is about 10 gallons per minute – the equivalent of five garden hoses. The rules before you prohibit mining beneath Great Ponds, rivers, and streams.
- The Humboldt Mill used to process ore from the Eagle Mine discharges tailings to a wet storage pond which will remain flooded after the mine is closed. It may be fortuitous that northern Michigan has many old iron open pit mines that may serve this purpose. Nonetheless, the proposed rules before you prohibit wet tailings impoundments post closure.
- Michigan does not allow perpetual water treatment after a mine is closed, but the rules do not specify the number of years beyond which treatment is considered perpetual. The time frame is considered on a case-by-case basis. The proposed Maine rules limit post-closure water treatment to 10 years, beyond which treatment is considered perpetual and is not allowed. Projections for the ability to terminate water treatment are based on models and the farther out the models are extended in time, the more uncertainty is introduced to the results. I support the 10-year time frame as a reasonable timeframe to which such modeling might be applied.

Concerns have surfaced recently regarding **Title 12 §549: Mining on State Lands**.

This statute defines several tasks with regard to mineral resources on State lands, which includes submerged lands. There are several authorities provided to the Director of the Survey and the “Director of the agency having jurisdiction over the state lands.” Excerpts from the statute:

1. **Authority to explore.** Any individual over 18 years of age or other person may enter upon state lands, including lands held under specific trust instruments when the trust is consistent with mineral development, on receipt of an exploration permit from the Director of the Survey for the purpose of exploration, unless otherwise indicated in this subchapter.

Note: The fee for the permit is \$20. There currently is only one active permit to explore on State lands.

2. **Exploration for and mining of hydrocarbons.** The Director of the Survey and the Director of the Bureau of Parks and Lands may promulgate rules governing exploration and mining of hydrocarbons on all lands within the jurisdiction of the State, public and private, in order to prevent the waste of hydrocarbons and to protect correlative rights and natural resources.

Note: No rules have been promulgated. Anyone who seeks hydrocarbon resources in Maine is wasting their time and money.

3. **Location of exploration claim and maintenance of rights of possession.** Any person or corporation which has secured an exploration permit may locate one or more exploration claims by defining the boundary lines of the claim or claims.

Note: Claims are renewable for up to six additional years on an escalating rental fee basis. There currently is one active exploration claim on State lands – the submerged lands of Alder Pond in Lower Enchanted Township.

4. **Recording of exploration claim.** No person may have the right of possession of any exploration claim until the exploration claim has been recorded with the Director of the Survey.
5. **Fees and terms of exploration claim.** The fees and terms of exploration of any claim shall be as follows.

Note: Recording fee of \$100, rental fee escalates on an annual basis starting at \$0.25/acre. Claim holder must demonstrate at least \$5/acre of investigatory work per year to maintain claim.

6. **Land use ruling.** Any person with a recorded exploration claim shall make application to the Director of the agency having jurisdiction over the state lands on which the claim is located for a ruling on the question of whether mining operations can be carried on consistent with any prior or proposed other use by the State or any agency or instrumentality of the State. Such a ruling, that mining operations can be carried on, shall not be made without consulting the Director of the Survey. No mining lease may be issued under this subchapter without a land use ruling which answers the question in this subsection in the affirmative. A public hearing shall be held prior to any ruling required under this subsection. The ruling shall be made within 180 days of the date of the application and when obtained shall be binding and irrevocable for such period of time as the applicant and the State may agree.

Note: Proposed uses for public lands are established in detailed Management Plans for each unit that have been developed through a public process.

7. **Mining lease.** Mining leases may be applied for and granted as follows.
  - a. Any person with a valid recorded exploration claim in accordance with this subchapter may make application for a mining lease to the director of the agency having jurisdiction over the state lands on which the mining lease is sought.
  - b. The Director of the agency having jurisdiction over these state lands shall hold a hearing for the purpose of hearing evidence on whether to grant or deny a mining lease to mine under this section.

Note: **A Mining Lease is not a permit to mine.** It is a declaration that mining is consistent with any prior or proposed other use for that particular parcel of State land. The only Mining Lease ever issued under this chapter has been after-the-fact for mining of agricultural lime at Nadeau Pond, Fort Fairfield.

Note: At least one and possibly two public hearings are required before a Mining Lease may be issued.

8. **Common and undivided interests.** The Director of the Survey and the Director of the Bureau of Parks and Lands, acting jointly, may, by regulation, establish procedures for the filing of exploration claims and issuance of exploration permits and leases covering state-owned public lands, including public reserved lands, which are comprised of state-owned common and undivided interests.
9. **Royalty.** Royalty payments shall be made as follows.

Note: The only royalty payments made under this chapter have been for mining agricultural lime at Nadeau Pond, Fort Fairfield.

- 10. Disposition of fees and royalties.** All fees and royalties accruing to the survey under this subchapter must be paid into a separate account to be established by the Treasurer of State.
- 11. Rights-of-way.** Any person who has located an exploration claim and has been issued a mining lease in accordance with this subchapter may, with the consent of the director of the agency having jurisdiction over those state lands and consistent with the law, have the right of access across any lands owned or controlled by the State to and from that location.
- 12. Mining under bodies of water.** Where any mineral is situated under or in the bed of a stream or lake, and for the efficient working of the mineral deposit, it is necessary to divert the water of that stream within the boundaries of public land, or drain any lake, the Director of the agency having jurisdiction over these state-owned lands may permit the diversion or drainage to be done, subject to such provisions, for the benefit of any persons who are entitled to the use of the water of that stream or lake in its natural state, as to him may seem just and expedient.

Note: In the late 1960s, Nadeau Lake in Fort Fairfield was drained to allow mining of agricultural lime. Goose Pond was drained in the late 1960s to allow mining at the Callahan Mine.

- 13. Annual reports.**
- 14. Termination.**
- 15. Injunctions against violation.**

Furthermore, **Title 12 §549-C. COMPLIANCE WITH REGULATORY LAWS** states:  
Nothing in this subchapter may be deemed to relieve any explorer or mining lessee from the obligation to comply with all applicable environmental or other regulatory laws and rules of the State.

Note: The Maine DEP enforced environmental regulations in the reclamation of Nadeau Lake in Fort Fairfield upon the cessation of mining.

This statute does not vest the Director of the Survey with the authority to permit mines and makes it clear that the holder of a mining lease must comply with all environmental regulations.

With regard to Designated Lands, **Title 12 §598-A** defines Designated Lands:  
The following lands are designated lands under the Constitution of Maine, Article IX, Section 23. Designated lands under this section may not be reduced or substantially altered, except by a 2/3 vote of the Legislature.

- State-owned wildlife management areas.
- Lands held and managed as a state game farm.
- Public lands and reserved lots.
- State Parks and historic sites.
- The Allagash Wilderness Waterway.
- Public boat facilities.

- Public reserved lands.
- Non-reserved public lands.
- Baxter State Park.
- Lands gifted to the state.
- Lands acquired by the State through the Land for Maine's Future Board.

Note: Submerged lands are excluded from the list of Designated Lands.

Furthermore, **Title 12 §598** defines:

**Substantially altered.** "Substantially altered," in the use of designated lands, means changed so as to significantly alter physical characteristics in a way that frustrates the essential purposes for which that land is held by the State. The essential purposes of state parks, historic sites, public access sites, facilities for boats and the Allagash Wilderness Waterway are the protection, management and improvement of these properties for public recreation, conservation, scenic values, nature appreciation, historic preservation and interpretation, public access and related purposes. The essential purposes of public reserved and nonreserved lands are the protection, management and improvement of these properties for the multiple use objectives established in section 1847. The essential purposes of lands acquired through the Land for Maine's Future Board that are not held by the Department of Inland Fisheries and Wildlife or by the Department of Agriculture, Conservation and Forestry are the protection, management and improvement of those lands for recreation, conservation, farming, open space, plant and animal habitat, scenic values, public access and related purposes. The essential purposes of state-owned wildlife management areas and game farms are the protection, management and improvement of those properties for fish and wildlife habitat and propagation, hunting, trapping, fishing, recreation, propagation and harvesting of forest and other natural products and related purposes.

It is difficult to see how open pit or underground mining on any of these Designated Lands would not trigger the "substantially altered" issue that would require a 2/3 vote of the Legislature.

An example to consider: There is a small occurrence of molybdenum and copper minerals on the southern slope of Deboullie Mountain in the Deboullie Public Reserved Land Unit. The Northern Aroostook Region Management Plan designates this area as both an Ecological Reserve (special protection area) and a backcountry recreation area. Ecological Reserves are for the purpose of maintaining one or more natural community types or native ecosystem types in a natural condition and range of variation and contributing to the protection of Maine's biological diversity. Backcountry recreation areas are designated for their superior scenic quality, remoteness, wild and pristine character, and capacity to impart a sense of solitude. Mining in this location would clearly "alter physical characteristics in a way that frustrates the essential purposes for which that land is held by the State."