

3100 Hartley Point Road
Ely, Minnesota 55731

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F. David Radford, Deputy State Director of Geospatial Services
BLM Eastern States Office
5275 Leesburg Pike
Falls Church, Virginia 22041
BLM_ES_Lands@blm.gov

Re: Superior National Forest Withdrawal Application

Dear Mr. Radford,

Thank you for the opportunity to provide comments on the Superior National Forest Withdrawal Application noticed in the Federal Register on October 21, 2021.

I strongly support the proposed mineral withdrawal. Sulfide-ore mining in the proposed withdrawal area would be, simply put, a monumental catastrophe—environmentally, socially, and economically.

I write as a resident of Morse Township, St. Louis County, Minnesota. My home is only a few miles from the edge of the Boundary Waters Canoe Area Wilderness. My wife and I and thousands of other people live in Northeastern Minnesota because of the extensive and healthy forests and waterways of the Superior National Forest. The economy of our region is lively and sustainable because of the thousands who live here and the hundreds of thousands who visit every year because of the Boundary Waters and the outdoor recreation opportunities the Superior provides.

Further, the Quetico-Superior ecosystem, including the Boundary Waters and the rest of the Superior National Forest, has been identified by The Wilderness Society and The Nature Conservancy as one of the most important areas in North America to act as a bulwark against the worst of the climate and extinction crises.

Introduction: the significance and logic of the proposed withdrawal, the extraordinary importance of the Withdrawal Area and water in it, and the threat posed to both by sulfide-ore copper mining.

The Superior National Forest (SNF) is a well-managed and immensely popular national forest, in which many thousands of people live, work, and play. Converting large areas of the national forest lands in the Withdrawal Area to single use—an industrial mining district stretching over scores of miles—would seriously, perhaps fatally, unbalance that sustainable economic-residential-recreational region. Few would wish to live or play in the vicinity of a vast industrial operation that degrades established uses in surrounding areas (including the Protected Areas,

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below), and that requires ongoing maintenance and remediation for 500+ years in order to mitigate unpreventable pollution of the waters of the SNF; the Withdrawal Area (225,378 acres identified in the Withdrawal Application); the Mining Protection Area created by Public Law 95-495, the Boundary Waters Canoe Area Wilderness Act of 1978; the Boundary Waters Canoe Area Wilderness (BWCAW); and the downstream areas of Ontario's Quetico Park and Voyageurs National Park. Altogether, the BWCAW, Quetico, Voyageurs, and the Mining Protection Area are referred to herein as the Protected Areas.

The Withdrawal Area, the BWCAW, and Voyageurs encompass a water-dominated landscape unique in America's public lands inventory; they hold ecological, social, and economic significance of continental and worldwide importance. The Withdrawal Area encompasses the federal lands and minerals lying within the Rainy River Watershed (including the Vermilion sub-watershed and the Rainy River Headwaters (Headwaters) sub-watershed, the latter of which forms the major portion of the headwaters of the BWCAW), which are greatly at risk of and remain unprotected from sulfide-ore copper mining. From the Withdrawal Area, groundwater and surface waters flow into and through the BWCAW and along its northern border lakes (the southern lakes of Quetico) and into Voyageurs. Protection of water resources (quality and quantity) for the public's enjoyment was the reason these Public Domain lands were withdrawn in 1902, 1905, and 1908 from the inventory of public lands available for homesteading. Protecting water quality has always been of the highest priority for these and acquired Weeks Act lands. Protecting water quality and quantity requires protecting the lands from which the water flows.

The BWCAW is the most heavily visited Wilderness in the National Wilderness Preservation System—a distinction it has held every year since the Wilderness Act passed in 1964. At 1.1 million acres, it is the largest Wilderness east of the Rocky Mountains and north of the Everglades. The BWCAW is the only large lake-land Wilderness and the most family-friendly Wilderness in America. It offers unmatched fishing, hunting, and recreational opportunities for all Americans. The Boundary Waters significantly contributes to more than 22,000 jobs and \$1.4 billion in tourism economic activity in northern Minnesota alone. It is at the heart of a diverse and stable economy in St. Louis, Lake, and Cook Counties.

The BWCAW and the Superior National Forest are within the 1854 Treaty Ceded Territory; the Grand Portage, Bois Forte, and Fond du Lac Bands of Lake Superior Chippewa ("the Bands") have treaty rights (to hunt, fish, gather, and conduct cultural practices) that depend on protecting the land and existing water quality. All federal agencies share in the federal government's trust responsibility to the Bands to maintain those treaty resources.

Federal lands in the Withdrawal Area are managed for a variety of compatible, renewable, non-exclusive uses. The proposed Withdrawal would protect lands in the Withdrawal Area and its multiple compatible uses, as well as the BWCAW and other Protected Areas, from the greatest threat they have faced. An extensive bibliography of scientific reports documents both the high risk of long-lasting environmental damage to forests and waters and the impossibility of prevention and mitigation of sulfide-ore copper mining pollution, especially in this fabulously-water-rich environment. Proposals to develop sulfide-ore copper mines (including four deposits targeted by Twin Metals Minnesota) within the BWCAW watershed threaten this unique

Wilderness, other Protected Areas, other parts of the Superior National Forest, and their enormous ecological, social, cultural, and economic values. Peer-reviewed science published in the Journal of Hydrology shows that pollution from sulfide-ore copper mining in the Withdrawal Area would enter the waters of the BWCAW, which are designated Prohibited Outstanding Resource Value Waters (the highest level of protection afforded in Minnesota's federal-compliant anti-degradation rules).

The BWCAW is uniquely vulnerable to sulfide-ore mining and acid mine drainage because of the abundance of water, the massively interconnected surface water and groundwater, and the low buffering capacity of the waters. Twenty percent of all freshwater in the entire 190-million-acre National Forest System is in the Superior National Forest. These waters are among the cleanest in America.

The Duluth Complex geological formation contains only trace amounts of copper and other metals (less than one percent). As a result, enormous quantities of waste rock, polluted process and contact water, and tailings would be generated if mining were to occur. Pollution from sulfide-ore copper mines would cross the international boundary and damage Quetico, one of Canada's premier wilderness parks, and, farther downstream, Voyageurs.

Without the proposed withdrawal, the BWCAW will be at risk of devastating and irremediable water pollution by acid, heavy metals, and sulfates; 80.1% of the Boundary Waters lies within the Headwaters, downstream of the areas in the Headwaters where Antofagasta of Chile and other companies seek to mine copper and other sulfide-ore metals. Further, aquatic and terrestrial ecosystem destruction from mine development on the periphery and upstream of the Wilderness would have unpreventable spillover effects into the Wilderness. Frank Ongaro, the executive director of Mining Minnesota, a copper mining industry group, admits that mining causes major damage. *"Mining by its nature and scale causes significant changes in the landscape and ecosystem."* (Successful Non-Ferrous Mining: Promise or Reality, Eger, P. and Ongaro, F., 2014).

The BWCAW is a national treasure. The late Vice-President Walter Mondale called it "Minnesota's Crown Jewel." This vast lakeland Wilderness is of incalculable value socially, economically, and recreationally; as habitat for countless wild creatures; and as a bulwark against the worst of the climate and extinction crisis.

Completing the proposed withdrawal is an essential first step toward permanent protection.

Protecting the Water Quality in the Boundary Waters is an Overriding Principle of Minnesota State Law

Under Minn. Rule 7050.0335, Subp. 3.A., the waters of the Boundary Waters are "prohibited outstanding resource value waters." Minn. Rule 7050.0255, Subp. 14 states:

"Exceptional characteristics of outstanding resource value waters" means characteristics for which an outstanding resource value water is designated, including wilderness, scientific, educational, ecological, recreational, cultural, or

aesthetic resource characteristics or other special qualities that warrant stringent protection from degradation.” (emphasis added)

Minn. Rule 7050.0265, Subp.7 is clear about the stringency of that protection: “*The commissioner [of the Minnesota Pollution Control Agency (MPCA)] shall prohibit a proposed activity that results in a net increase in loading or other causes of degradation to prohibited outstanding resource value waters identified under part [7050.0335](#), subparts 3 and 4.*”

The antidegradation provision is designed to achieve and maintain the highest possible water quality: “[W]ater quality necessary to preserve the exceptional characteristics of outstanding resource value waters shall be maintained and protected.” MN Rules 7050.0250.C.

During the past 20 years or so, Minnesota has expanded its policy regarding the protection of state lands and waters. In Minn. Stat. Sec. 103A.212 (2018), first adopted in 2010 (2010 Minn. Laws ch. 361, art. 4, Sec. 48), the Legislature set forth the watershed management policy of the state:

“The quality of life of every Minnesotan depends on water. Minnesota’s rivers, lakes, streams, wetlands, and groundwater provide a foundation for drinking water and the state’s recreational, municipal, commercial, industrial, agricultural, environmental, aesthetic, and economic well-being. The legislature finds that it is in the public interest to manage groundwater and surface water resources from the perspective of aquifers, watersheds, and river basins to achieve protection, preservation, enhancement, and restoration of the state’s valuable groundwater and surface water resources.”

Thus, the policy of the State of Minnesota is to manage its waters from a watershed perspective and to preserve and protect those waters. It is simply beyond dispute that allowing a highly polluting and damaging activity like sulfide-ore mining (the most toxic industry in the nation according to EPA toxic release inventory) in the upstream half of the Headwaters would irreparably harm the downstream half—the BWCAW.

Sparkling Clean Water—the Rainy River Headwaters

In 2017, the Minnesota Pollution Control Agency (MPCA) released its water quality assessment of the Headwaters, the Rainy River-Headwaters Watershed Monitoring Assessment Report (Report). The Report describes the excellent quality of the watershed:

“The immaculate waters found within the watershed not only produce some of the highest quality fisheries in the state but also offer visitors many scenic and natural views. The most visited Wilderness Area (Boundary Waters Canoe Area) in the United States is located within this watershed, with water as a major focal point. Today over 99% of the Rainy River-Headwaters Watershed is undeveloped and utilized for timber production, hunting, fishing, hiking, and other recreational opportunities. Large tracts of public land exist within this watershed, including county land, national and state forests, wildlife management areas, scientific and natural areas, state parks, and a national park. . . . Overall, water quality conditions are good to excellent and can be attributed to the forests and wetlands that dominate land cover within the Rainy River-Headwaters Watershed. . . . The

majority of the waterbodies within the watershed had exceptional biological, chemical, and physical characteristics that are worthy of additional protection.” (emphasis added) Report p.1.

The Report promised that the 2021 Watershed Restoration and Protection Strategies report (WRAPS) for the Headwaters, released in draft form in August 2021, would focus on protection strategies to ensure that the watershed would remain pristine. As the draft WRAPS report, the MPCA press release about the report, and the water quality data make clear, the Headwaters deserves and requires complete protection.

“The rivers and lakes in these watersheds are some of the cleanest waters in the state,’ says Katrina Kessler, MPCA assistant commissioner for water policy and agriculture. ‘That’s why it’s so important that we focus not only on restoring waters that don’t meet water quality standards, but also protecting lakes and streams from becoming impaired in the first place. That’s especially true for areas like the Boundary Waters that are enjoyed and treasured by so many residents and visitors.’” MPCA reports: Protection rather than restoration is priority for two Boundary Waters watersheds (August 30, 2021 WRAPS press release)

The Headwaters includes 80.1% of the Boundary Waters. The MPCA notes that “wilderness recreation and national park tourism are the prime economic drivers due to the scenic beauty, camping and fishing opportunities.” (<https://www.pca.state.mn.us/water/watershed/rainy-river-headwaters>) The extraordinary high water quality in the upstream portion of the Rainy River Headwaters was noted: “[L]akes and streams in the watersheds **bordering** the Boundary Waters Canoe Area in northern Minnesota offer some of the most pristine water quality in the state.” (emphasis added) This extraordinary high water quality is attributed to the fact that “[m]ore than 99 percent of the watershed is undeveloped and used both for timber production, and for hunting, fishing, hiking, and other recreation.” (<https://www.pca.state.mn.us/water/watershed/rainy-river-headwaters> and WRAPS press release) This 99% naturally-vegetated landscape generates and delivers exceptionally clean water downstream through and to the non-wilderness portion of the Headwaters to the BWCAW and on to the border lakes shared with Ontario in Quetico and Voyageurs.

MPCA Processes and MPCA History Demonstrate That State Action May Be Insufficient to Protect the Boundary Waters

A serious flaw appears in the 2021 WRAPS; it omits and avoids the most pressing threats to the watershed: sulfide-ore copper mining; the direct link from sulfide-ore mining to sulfate; and the role of sulfate in the methylation of mercury. This failure in the WRAPS means that it undercuts the very protection strategies promised in 2017 and urgently needed for the Headwaters and for the BWCAW if some of the cleanest waters in the nation are to be protected from the nation’s most toxic industry.

Abundant evidence exists that sulfate releases from mining operations in the Kawishiwi watershed in the Headwaters and into the BWCAW would pose substantial environmental risk to these prohibited outstanding resource value waters. This is true of other pollutants as well.

The failure to include an analysis of sulfide-ore mining and sulfate makes the WRAPS report a flawed document. The introduction of sulfate into receiving waters, especially low-sulfate waters, and its impacts are well-understood. The correlation between sulfate releases and the high risk of enhancing methylation of mercury is known and documented by the MPCA elsewhere. The release of sulfates from sulfide-bearing ore in the Duluth Complex from mining operations has been studied extensively. The MPCA itself has funded research and developed four peer-reviewed and published journal articles on the harmful impact of sulfate on wild rice. The harmful human health impact of methylmercury is also documented in many peer-reviewed studies.

Perhaps the most disturbing provision in the Rainy River Headwaters WRAPS report is the statement that [mining and] sulfate would be addressed through “separately defined processes (e.g., environmental review, permitting).” (WRAPS report Executive Summary, at p. x) The failure of hardrock mining environmental review processes to accurately predict pollution is well-documented. What is also accurately predicted and known is that all copper mines degrade water, destroy landscapes, and negatively impact ecosystems. In addition, Minnesota’s standards for mine operations expressly allow pollution discharges that exceed the current conditions of the immaculate waters of the Headwaters. In other words, mines operated in conformance with Minnesota’s standards would degrade the exceptionally clean waters of the Headwaters.

Further, it is common knowledge that Minnesota has only weakly enforced, if it has enforced at all, its regulations and permits that purport to protect Minnesota waters from mine pollution. Taconite mining companies on the Minnesota Iron Range have for decades routinely exceeded pollution standards for pollutants like sulfates, bicarbonates, dissolved salts, specific conductivity, and metals, such as copper, nickel, and mercury, to both immediate and downstream receiving waters. Several bodies of water, including the St. Louis and Embarrass Rivers, have seen significant declines in the numbers and diversity of aquatic organisms, including fish, as a result of mining discharges.

Excluding sulfate from the WRAPS process denies the ‘immaculate’ waters of the Headwaters the benefit of strategies for protection from future sulfate pollution. Excluding a discussion of sulfide-ore copper mining denies the ‘immaculate’ waters of the Headwaters the benefit of strategies for protection of the 99% undeveloped landscape and the waters of the watershed. Omitting the threat of the most destructive industrial activity that one could conceive from the very agency report that is designed to provide protective strategies for the headwaters of the BWCAW denies the BWCAW the protection strategies it and the American people deserve.

In 2017, the MPCA emphasized the need for additional protection for the Headwaters, citing, in particular, the importance and health of the Boundary Waters. Yet its 2021 WRAPS report fails to provide protection strategies to address the greatest danger to the watershed.

Completing the proposed mineral withdrawal is thus essential to protecting the BWCAW from the ravages of sulfide-ore mining in its watershed. Half-measures will not do. The mining industry recites *ad nauseam* its claims that modern technology will contain its toxic wastes and protect water from pollution, but every objective observer knows that is highly unlikely to be

true. A peer-reviewed report on 14 modern sulfide-ore copper mines representing 89% of current US copper production showed all 14 experienced accidental releases of pollution, and 13 of 14 (92%) copper mines experienced water collection or treatment system failures that resulted in significant water pollution. [US Copper Porphyry Mines Report](#), Bonnie Gestring; *Earthworks*. 2012. In an update to the 2012 report, Earthworks reviewed available records reflecting the performance of 15 copper mines in the United States, the combined output of which represented essentially all (99%) of copper production in 2015 and found that 14 of the 15 top U.S. copper mines (93%) failed to capture and control wastewater, resulting in significant water quality impacts. U.S. Operating Copper Mines: Failure to Capture & Treat Wastewater, *Earthworks*. 2019.

Technology is indeed a slender reed upon which to rest the welfare of the BWCAW in light of the overall history of industrial accidents and technological failures that regularly beset the world: pipelines, trains, oil refineries, space shuttles, and mines. For example, in August 2014 the tailings dam at the Imperial Metals Mount Polley mine in British Columbia failed, with disastrous consequences. Just one year earlier, Knight-Piesold—the designer of the failed tailings dam—had this to say: “Modern dam design technologies are based on proven scientific/engineering principles, and there is no basis for asserting that they will not stand the test of time.” Really? “I apologize for what happened. If you asked me two weeks ago if this could have happened, I would have said it couldn’t.”—Brian Kynoch, President of Imperial Metals, speaking after the Mount Polley disaster.

Further, extraction industries have a sordid history of concealment and misrepresentation. Recently in Minnesota, Enbridge did major damage to a crucial aquifer, in violation of its permit for construction of its Line 3, and it failed to report the violation to the Minnesota Department of Natural Resources as required:

In construction plans Enbridge submitted during the permitting process for Line 3, the company indicated that it would dig a trench 8-10 feet deep for the pipeline near the Clearbrook Terminal, which is located near calcareous fens — a unique type of wetland that relies on mineral-rich groundwater, said Barb Naramore, deputy DNR commissioner.

“Based on those plans, we determined that there was no potential for adverse impacts to the fens because the excavation at that depth was not going to interfere with the groundwater flow to the fens,” she said.

Instead, the company allegedly dug a trench about 18 feet deep and drove sheet piling 28 feet down, Naramore said. That pierced the soil layer atop an artesian aquifer — one that contains groundwater under pressure — resulting in a continuous flow of groundwater into the trench, she said.

The agency estimates that the breach has resulted in the release of about 24.2 million gallons of groundwater from the aquifer — water that Enbridge wasn’t authorized to use, Naramore said. Under state law, that’s considered a “taking” of state water without a permit, she said.

Enbridge did not report the breach to the DNR, Naramore said. It wasn't until June when DNR staff, during discussions with independent environmental monitors over conditions they'd observed, realized that there was a potential aquifer breach, Naramore said. *Minnesota Public Radio News*, September 16, 2021

A recent and notorious example in the mining industry relates to the proposed Pebble Mine in the Bristol Bay watershed in Alaska:

Executives overseeing the development of a long-disputed copper and gold mine in Alaska were recorded saying they expected the project to become much bigger, and operate for much longer, than outlined in the proposal that is awaiting final approval by the Army Corps of Engineers.

The executives, who were recorded in remote meetings by members of an environmental advocacy group posing as potential investors, said the project, [Pebble Mine](#), could potentially operate for 160 years or more beyond the current proposal of 20 years. And it could quickly double its output after the initial two decades, they said.

"Once you have something like this in production why would you want to stop?" Ronald W. Thiessen, chief executive of Northern Dynasty Minerals, the parent company of Pebble Limited Partnership, said in one of the recordings. *New York Times*, September 21, 2020

I support the Forest Service's application for the 20-year withdrawal of National Forest System lands within the Superior National Forest from disposition under laws relating to mineral and geothermal leasing.

Only the complete prohibition of sulfide-ore mining in the Headwaters will protect the BWCAW and a huge swath of the remainder of the Superior from devastating permanent damage. The proposed mineral withdrawal should be completed.

Thank you,

Reid Carron

