

Executive Summary to the Comments of Northeastern Minnesotans for Wilderness and The Wilderness Society, et al., Submitted February 28, 2018 with respect to the Northern Minnesota Federal Minerals Withdrawal Environmental Assessment

The following Executive Summary is intended to be read with the comment letter and supplemental appendix submitted on February 28, 2018 by Northeastern Minnesotans for Wilderness and The Wilderness Society on the Environmental Assessment for the proposed Northern Minnesota Federal Mineral Withdrawal of 234,328 acres of Superior National Forest lands in the Rainy River-Headwaters (Withdrawal Study Area).

Executive Summary

Some places are too sensitive, special, and beloved to mine or to expose to harm from mining. The Boundary Waters Canoe Area Wilderness (Boundary Waters) is the most-popular Wilderness Area in the nation. It is “Minnesota’s Yellowstone,” a uniquely water-intensive lakeland wilderness ecosystem characterized by a massively interconnected system of lakes, rivers, streams, and wetlands set in a forested landscape. The waters, some of the cleanest in America, lack buffering capacity, which leaves them uniquely vulnerable to pollutants.

“Mining by its nature and scale causes significant changes in the landscape and ecosystem.”
(MiningMinnesota/Global Minerals Engineering)

The development of a sulfide-ore copper mining district on Superior National Forest lands in the Rainy-River Headwaters – along and under waterways that flow directly into the Boundary Waters – would transform the ecosystem from a healthy, well-managed, productive multiple use national forest that supports a full range of recreational and economic activities into a single-use area that would be devoid of nearly all the natural resource and community values it now provides. Scientific evidence shows that without a doubt the Boundary Waters itself would be harmed by sulfide-ore copper mining in the Rainy-River Headwaters.

The loss to society would be huge and long-lasting, dwarfing any claimed economic benefits.

The value and vulnerability of the Boundary Waters watershed has significance beyond the ecological. The entire watershed is ceded territory under the 1854 Treaty of LaPointe, where members of the Grand Portage, Fond du Lac, and Bois Forte Bands of Lake Superior Chippewa retain rights to hunt, fish, gather, and continue spiritual and cultural practices. In addition, its scale, accessibility, and capacity to absorb more than 155,000 annual visitors pursuing high-quality backcountry recreational, hunting, and fishing resources make the Boundary Waters watershed too important socially and economically to risk. Contamination of the watershed would harm the outdoor recreational industry. The broader economy of northeastern Minnesota’s three-county Arrowhead Region would suffer as well. The Boundary Waters is a powerful natural amenity that helps retain existing residents and attract new ones to Minnesota, particularly to the Arrowhead Region. Development of sulfide-ore copper mining in the Boundary Waters watershed would damage the Boundary Waters and its Wilderness characteristics and would result in immediate and long-term recurring economic costs (property value decline, job losses, and losses of income and economic activity).

The proposed Withdrawal is necessary to protect the water and other natural resources of the Superior National Forest, the Boundary Waters, the Mining Protection Area (MPA), and protected areas such as Voyageurs National Park (Voyageurs) and Quetico Provincial Park (Quetico) located downstream in the Rainy River-Headwaters.

The proposed action, a 20-year Withdrawal of 234,328 acres of federal land from disposition under United States mineral and geothermal leasing laws, is appropriate and necessary to protect the Superior National Forest, the MPA, the Boundary Waters, Voyageurs, and Quetico from environmental harm that would be the inevitable result of sulfide-ore copper mining in the watershed. The Withdrawal would protect public assets of incalculable value: the existing wide spectrum of recreational opportunities in the watershed; the unique landscape and natural resources defined by clean water and a forested landscape; the most-visited Wilderness Area in the nation and its only significant lakeland Wilderness; retained treaty rights; and the diverse, strong, and steadily-growing modern economy in northeastern Minnesota.

Sulfide-ore copper mining is inherently dangerous.

Sulfide-ore copper mining is inherently dangerous; no sulfide-ore copper mine in the U.S. has failed to pollute surrounding waters. Studies of mine performance show that all sulfide-ore copper mines, including newer mines in the U.S., experienced releases of mining-generated contamination, and that nearly all (90% or more of) hardrock mines located in close proximity to surface and groundwater contaminated waters in violation of water quality standards and limits. The contamination occurs despite modern technology, state-of-the-art mining operations, and mitigation measures designed to prevent pollution violations. Risk of water pollution is exacerbated in the Withdrawal Study Area because of the low-grade nature of sulfide-ore deposits. Less than one percent of the ore contains copper, nickel, and other minerals, and waste rock and tailings will be massive in quantity relative to small quantities of metals extracted from the ore. Waste rock and tailings would be a source of pollution in the watershed of the Boundary Waters for centuries.

The Duluth Complex is acid-generating; the Withdrawal Study Area is in the Duluth Complex.

The Duluth Complex is acid-generating. The Dunka Pit, the Spruce Road bulk sample site, and a proposed copper mine (NorthMet) located in the Duluth Complex outside of the Rainy-River Headwaters all confirm the existence of acid mine generating characteristics. Concentrations of metals and sulfate pollution in leachate from waste rock, tailings, and lean ore are excessive and will exceed water quality standards for decades (Spruce Road and Dunka Pit) or centuries (NorthMet). Moreover, the four deposits identified by Twin Metals contain sulfides at higher concentrations than the NorthMet deposit or Dunka Pit waste rock. The Twin Metals deposits would be expected to produce the same contaminants as are produced at Dunka, but at higher rates and concentrations due to the higher amounts of sulfide mineralization and lower pH. Sulfate contaminant levels of the discharges from conventional and passive water treatment systems will be two or more orders of magnitude higher than the Minnesota water quality standard for sulfate of 10 mg/L.

The Boundary Waters watershed is uniquely vulnerable to sulfide-ore copper mining pollution.

Sulfide-ore copper mining and related mining facilities and processes, if allowed in the Withdrawal Study Area, threaten the Superior National Forest, the MPA, the Boundary Waters, Voyageurs, Quetico, public health, and downstream communities and protected areas.

The extremely high-water quality, low buffering capacity, interconnectedness, and ubiquity of freshwater resources make the waters and other natural resources in the Boundary Waters watershed uniquely sensitive and vulnerable to sulfide-ore copper mining pollution, and at great risk of permanent and significant contamination. Sulfide-ore copper mining along rivers and lakes that flow directly into the Boundary Waters will lead to pollution of the lakes, rivers, wetlands, and wetland forests of the Boundary Waters, the MPA, Quetico, and Voyageurs. The inevitable damage to the Boundary Waters watershed and to the Boundary Waters cannot be avoided or prevented, mitigated, remedied, or fixed.

“The BWCAW watershed includes vast, interconnected very high quality waters. In such a watershed existing mining and mitigation techniques cannot be expected to sufficiently reduce the risks to water quality (and other resources) posed by sulfide-ore copper mining. Were mining contaminants to reach waters flowing into the BWCAW it is highly unlikely that existing mitigation measures or technologies could effectively protect water quality and/or be consistent with the BWCAW’s wilderness character.”

The economic harm of sulfide-ore copper mining in the Withdrawal Study Area to the three-county Arrowhead region of Minnesota would be significant.

The salient economic effects of the Withdrawal would include, as a benefit to society, the avoidance of costs associated with actual and potential sulfide-ore copper mining in the Withdrawal Study Area. Sulfide-ore copper mining would result in an annual loss of \$288 million in visitor spending that would otherwise support 4,490 local jobs, \$76 million in residents’ income, \$31 million in state and local taxes, and \$181 million in proprietor's income and business-to-business transactions. The suppression or reversal of the amenity-based economic growth in northeastern Minnesota as a result of sulfide-ore copper mining in the Withdrawal Study Area would result in the loss of an additional 5,000+ to 22,000+ jobs, and between \$402 million and \$1.6 billion in lost annual income. A one-time drop of \$509 million in lost property value would result in ongoing annual reductions in local property tax revenue throughout the three-county Arrowhead Region.

“By implementing the mining withdrawal, as proposed, these and other costs would be avoided, thus delivering a benefit to the American people and Minnesotans equivalent to a one-time payment of more than \$6.1 billion.”

The only economic study that has been presented to the USDA-Forest Service in opposition to the Withdrawal claims that 427 direct jobs would be added to Minnesota and Douglas County, Wisconsin if sulfide-ore copper mining were developed. In contrast, the harm or cost of such

mining would result in more than ten times that many lost jobs in local communities alone. Moreover, even these job gains advanced by opponents to the Withdrawal are likely over-stated. Modern developments in mining, including robotics and the replacement of workers with autonomous mining equipment mean that any mine developed a decade or more from now will have far fewer human workers than would be required to mine ten years ago or today.

See the following economic reports:

- *Key-Log Economics LLC letter to the Forest Service dated February 27, 2018*
- *Sulfide-Ore Copper Mining and/or A Sustainable Boundary Waters Economy: The Need to Consider Real Tradeoffs* by Key-Log Economics LLC (Oct. 2017)
- *A Review of 'The economic impact of ferrous and non-ferrous mining on the State of Minnesota and the Arrowhead Region'* by Key-Log Economics LLC (2013)

New polling results and analysis of scoping comments received by the USDA-Forest Service show there is no social license for sulfide-ore copper mining in the Boundary Waters watershed.

February 2018 polling by Fabrizio Ward documents that Minnesotans oppose sulfide-ore copper mining near the Boundary Waters and opposition is growing. Seventy percent (70%) of Minnesotans oppose copper mining near the Boundary Waters as opposed to only 22% in support. Fifty-six percent (56%) of Minnesotans who live in the 8th Congressional District (location of the Boundary Waters) oppose copper mining near the Boundary Waters. Three out of five Minnesotans oppose renewal of federal mineral leases for copper mining near the Boundary Waters. Governor Dayton's ban on state approvals for a Twin Metals mine is intensely popular among Minnesota voters; two-thirds of Minnesotans support the state ban, including a majority in the 8th Congressional District.

An analysis of the scoping comments submitted to the USDA-Forest Service through August 17, 2017 found that of 81,032 unique comments, 79,568 (98.2%) support the Withdrawal. A separate review of the 44,028 postcards and petition signatures, found that an additional 42,112 persons support the Withdrawal. Altogether, 121,539 persons out of 125,449 who submitted comments during the scoping period support the Withdrawal.

A 30-day comment period that ended on February 28, 2018 resulted in at least 55,949 additional comments in favor of the Withdrawal.

The scientific evidence of harm of sulfide-ore copper mining to the Superior National Forest, the Boundary Waters, the MPA, Quetico, Voyageurs, and local communities is overwhelming and not disputed.

More than forty studies directly applicable to proposed sulfide-ore copper mining in the Withdrawal Study Area – environmental, economic, social, human health, and copper mine performance – have been submitted to USDA-Forest Service. These studies document in great detail the high risk and inevitable harm that would result if the Withdrawal were not approved. A summary of the most applicable science is attached to this Executive Summary. *See **The Science February 2018***. New maps, attached, show surface waters in Twin Metals proposed footprints,

with multiple flow paths to Birch Lake and the South Kawishiwi River, and from there into the Boundary Waters.

New studies outlined in The Science February 2018 include:

- *Terrestrial ecosystem impacts of sulfide mining: scope of issues for the Boundary Waters Canoe Area Wilderness, Minnesota, USA* by Dr. Lee Frelich, submitted for publication 2018
- Four peer-reviewed and published reports in the Minnesota Pollution Control Agency Wild Rice Sulfate Study and this submittal by one of the lead scientists: “Given the abundant evidence...that sulfate releases from mining operations through the Kawishiwi watershed and into the BWCAW pose substantial environmental risk to these outstanding resource value waters, it is scientifically prudent that mining leases held by Twin Metals and other mining interests be withdrawn by the Secretary of the Interior for a 20-year term as requested by the Forest Service.”
- *Comment letter* by four medical professionals dated Feb. 2018 confirming that 30,000 health professionals have expressed grave concern about opening Superior National Forest lands in the watershed of the Boundary Waters to sulfide-ore copper mining.

Denial of the USDA-Forest Service's withdrawal application would fail to meet the purpose of the USDA-Forest Service's requested withdrawal. These points are well-supported in the technical memoranda, reviews, reports, and peer-reviewed articles published in scientific journals, which are summarized in Part 1 of the February 28, 2018 comment letter and included in their entirety in the supplemental and original appendices.

Rebuttal to Arguments Advanced by Opponents to the Withdrawal:

The Withdrawal environmental review process now underway is the correct process for considering if the Rainy River-Headwaters is the wrong place for sulfide-ore copper mining.

The Withdrawal environmental review process now underway is the appropriate means to determine whether federal public lands in the Rainy River-Headwaters should be off-limits for sulfide-ore copper mining. The appropriate time for a review of the potential environmental, economic, and social impacts of converting Superior National Forest lands into a sulfide-ore copper mining district is before rights are granted for mining, not after. Such a determination - no sulfide-ore copper mining in the Withdrawal Study Area – would lead to a twenty-year protective Withdrawal, the appropriate action necessary to ensure the ecological integrity and the associated values of the Boundary Waters. During this period, no federal mineral leases or prospecting permits would be issued.

If water pollution and other environmental harm to the Boundary Waters is not acceptable nor tolerable then no rights to mine should be issued. The Boundary Waters is classified as an Outstanding Resource Value Water – meaning no water degradation is allowed. This is a standard that no sulfide-ore copper mine can guarantee.

If, on the other hand, federal mineral leases are issued, a mining project would undergo only a project-specific environmental review. For this type of review, the location for a proposed project is assumed to have been approved. All sulfide-ore copper mines pollute water and cause significant changes to the landscape and the ecosystem, and granting rights to mine federal lands in the Rainy River-Headwaters would constitute an agency acknowledgement that water pollution and environmental degradation of the watershed are permissible.

Unfortunately, project-specific reviews have a track record of failing to accurately predict groundwater and surface water contamination, permit limit exceedances, and water quality standard violations that in fact occur. Project-specific environmental reviews wrongly assume that proposed mitigations will function as described to prevent such violations.

For proposed mining areas near surface and/or ground water in high acid-generating deposits project-specific environmental reviews have failed to accurately predict violations of water quality standards roughly nine out of ten times. Project-specific environmental reviews cannot be relied upon to protect the Boundary Waters.

No pollution control or mitigation technologies in existence or under development can prevent pollution from sulfide-ore copper mining in the Boundary Waters watershed from flowing into the Boundary Waters. It is highly unlikely that contamination of the Boundary Waters could be prevented, mitigated, remedied, or fixed without harming the Boundary Waters' wilderness character.

White papers submitted by Twin Metals Minnesota that address hydrology and acid-generation fail to rebut evidence that proposed mines in the Withdrawal Study would generate mining pollution that would reach the Boundary Waters.

A white paper by Foth argues that the Rainy River-Headwaters should be opened to sulfide-ore copper mining and water quality modeling at the project-specific stage can be relied on to protect surrounding waters. That assertion is incorrect. Levit and Chambers in their 2018 reports explain that Foth's basic premise is fundamentally flawed.

A peer-reviewed survey by Kuipers & Maest (2006) of 25 hardrock mines in the United States showed that project-specific environmental reviews do a poor job of predicting compliance with water quality standards. The study compared water quality performance predictions in project-specific environmental review documents with actual water quality performance after operations commenced. The review found that actual performance at seventy-six percent (19/25 or 76%) of the mines did not comply with 'predictions' and instead operations led to violations of water quality standards for surface water or groundwater.

A subset of mines in this study group are located in close proximity to groundwater and/ or surface water and are known to have acid drainage or contaminant leaching potential. This subset was found to generate even greater water pollution. Ninety-two percent (all but one) produced pollution impacts to ground water and 85% produced pollutant exceedances in surface water. The research team concluded that "Some mine projects are so high risk that water quality exceedances are a near certainty: those mines that are both near groundwater or surface water

resources and possess an elevated potential for acid drainage or contaminant leaching.” The Withdrawal Study Area clearly meets this criteria of high risk of near certain pollution.

Finally, a peer-reviewed 2012 report examined the record of all sulfide-ore copper mines in the U.S. that had been operating for at least five years and found that all (100%) had pipeline spills or other accidental pollution releases and that at ninety-three percent (13/14), water collection and treatment systems failed to contain contaminated mine seepage, causing significant negative water quality impacts.

A white paper by Golder & Associates suggests that a proposed Twin Metals mine would be unlikely to generate acid, and that a Twin Metals mine would be safe because one of the deposits is below-ground. The Golder white paper provides inadequate information; it discusses only one of four deposits that Twin Metals seeks to develop, the Maturi deposit. It fails to address three other deposits that Twin Metals would develop: Spruce Road, Maturi SW, and Birch Lake deposits and all other deposits or areas in the Withdrawal Study Area. Therefore, it has limited applicability to the potential for acid mine drainage in the Withdrawal Study Area. Moreover, Golder is refuted by a 2018 report by Dr. Chambers that provides an extensive explanation of the potential for acid mine drainage in the Duluth Complex.

Golder asserts incorrectly that underground mines present ‘very little risk’ of acid mine drainage. Golder’s assertion is not supported by the facts. Acid mine pollution escapes from underground mines via fractures and fissures. In his 2018 report Dr. Myers describes the numerous pathways through bedrock and surficial aquifers for mining contaminants to reach surface waters in the Boundary Waters watershed and refutes claims that geophysical analysis and video of boreholes can be determinative of the location of fractures and fissures. Dr. Myers concludes that “mining in the Rainy headwaters presents a substantial risk to water quality” including from underground mining.

Mine companies argue that backfilling of toxic waste rock into mine cavities reduces pollution. Underground mines have limited capacity and are too limited in space to accommodate the backfilling of all acid-generating waste. The remaining waste is then stored permanently in surface stockpile locations. Even AMD-generating waste rock that eventually is backfilled is stored on the surface for decades.

Third, underground mines require a range of surface mining infrastructure that pollutes (e.g., ventilation raises eject pollutants into the air, which falls directly or is washed indirectly into water; surface processing facilities generate pollution from dust and from leaks, spills, and structural or tailings basin failures). Fourth, mining development in the Withdrawal Study Area would involve underground mines, open pit mines, and substantial surface processing and waste storage infrastructure. For example, two of the Twin Metals deposits would likely be open pit mines.

See five new scientific reports:

- *Potential for Acid Mine Drainage in the Duluth Complex Magmatic PGE Deposits* by Dr. David Chambers (Feb. 16, 2018);

- *Editorial Comments on ‘Twin Metals Minnesota Project – Acid Mine Drainage White Paper,’ Golder Associates, August 9, 2017 and Editorial Comments on the Memorandum, ‘Lack of Hydrological Basis for BLM and USFS Decision to Reject Renewal of Twin Metals Mineral Leases and Potentially Withdraw Federal Minerals in the Rainy River Watershed,’ Foth Infrastructure & Environment, LLC, August 9, 2017 by Dr. David Chambers (Feb. 16, 2018);*
- *Technical Memorandum: Twin Metals Mining and the Boundary Waters Canoe Area Wilderness, Identifying Flow Pathways by Dr. Myers (Feb. 14, 2018)*
- *White Paper: An Overview of Mine Facilities and Issues, Stu Levit, M.S., J.D. ((Feb. 12, 2018)*
- *Follow-up Report: Acid Mine Drainage and other Water Quality Problems at Modern Copper Mines Using State-of-the-Art Prevention, Treatment, and Mitigation Methods by Stu Levit, M.S., J.D. (Feb. 12, 2018)*

School Trust Lands (STL) are no obstacle to the proposed action.

The proposed Withdrawal does not put STL acres off-limits to mining.

The proposed Withdrawal would result in the enclosure of STL by federal Withdrawal lands of only a small portion (2.9%) of STL acres overlying the Duluth Complex. As to these STL, access would be provided by law for all uses, including mining, timber harvest and other uses.

Moreover, the State of Minnesota has already determined that not all STL overlying the Duluth Complex should be used for mining. The State has classified 5.2% of its STL acres into management categories effectively off-limits to mining. These STL are administered by Ecological and Water Resources, Fisheries, Parks and Trails, and Wildlife or are within the Mineral Management Corridor. *See Maps Minnesota School Trust Lands*

The Withdrawal finds good precedent in the State's earlier actions, and it protects some of the biggest State investments in this regard, which were made to protect the waters in and flowing into the Boundary Waters.

Finally, sulfide-ore copper mining on STL acres could result in the trust being held liable for the costs of cleaning up mining waste.

Critical minerals, to the extent they might be present in the Duluth Complex, do not present an obstacle to the Withdrawal.

Most (14 of 19) Duluth Complex deposits are unaffected by the proposed Withdrawal.

Minerals that have been identified as ‘critical’ that exist in the Duluth Complex are not present in discrete areas or in sufficient concentrations to allow economical mining. In the Withdrawal Study Area, identified minerals occur in trace amounts. While mining would permanently damage the ecology, social uses, and economy dependent on the Boundary Waters watershed, it would not improve the nation’s position with respect to critical minerals. In addition, minerals from Duluth Complex ore deposits, if mined, would likely be refined outside the U.S.

The U.S. possesses other better alternatives for acquiring and holding important minerals. Existing metals markets, strategic stockpiles, and other mining locations all are better means of securing important minerals in the U.S.

The USDA-Forest Service has the right and legal obligation to request, and the Secretary of the Interior has the authority to order, the proposed Withdrawal.

The Federal Land Policy and Management Act (FLPMA) gives the Interior Secretary, with consent of the Forest Service, broad authority to make the proposed Withdrawal of 234,328 acres of the Superior National Forest in the Rainy River-Headwaters from disposition under the mineral leasing laws. *See* Letter from John D. Leshy, former Interior Solicitor, dated February 23, 2108.

FLPMA withdrawal authority applies to mineral leasing on the Superior National Forest. The proposed withdrawal is subject to valid existing rights, is not an attempt to modify prior withdrawals, and is fully consistent with 16 U.S.C. § 508b and other congressional actions, as well as with Forest Service policies and with state expectations.

Given the significant public interest and potential impacts associated with this high-profile federal action, it is crucial that the Forest Service, as the lead agency, and the BLM, as a cooperating agency, ensure robust analysis and public input under the National Environmental Policy Act (NEPA). We are concerned by the January 26, 2018 Forest Service announcement that it will be preparing an environmental assessment (EA), rather than an environmental impact statement (EIS). Given the numerous significant adverse environmental impacts associated with sulfide-ore mining activity in the Rainy River-Headwaters, the Interior Department cannot support a denial of the Forest Service's application for withdrawal (as represented by the no action alternative) with an EA and a Finding of No Significant Impact (FONSI). Denial of the Forest Service's application for withdrawal will require an EIS, as well as a significant forest plan amendment. In any case, it is imperative that the Forest Service ensures robust public participation and thoroughly documents the reasonably foreseeable direct, indirect, and cumulative impacts in its environmental analysis, with a particular focus on the the numerous impacts that would result from denial of the USDA-Forest Service's application.

The proposed action is entirely consistent with the 2004 Superior National Forest Plan, but denial of the Forest Service's withdrawal application would require a forest plan amendment.

As described in detail in our October 12, 2017 scoping comments, part 2, pp. 45-50, the proposed withdrawal is entirely consistent with the 2004 Superior National Forest Plan, which did not contemplate, analyze, or anticipate sulfide-ore mining. Indeed, mining was identified among the "Issues Not Addressed in Detail" in the forest plan EIS, with active and anticipated mining activities focused only on gravel and granite. FEIS, p. 1-29. Unsurprisingly, the plan provides virtually no management direction for mining. The proposed withdrawal would largely maintain the no-anticipated-mining circumstances and expectations that informed the 2004 plan, and a plan amendment generally would be unnecessary. Any necessary clarifications to the

current plan could be made via a narrow administrative change designed to ensure conformance of the plan to new regulatory requirements associated with the Withdrawal. If the Forest Service determines that an amendment is necessary in the context of a Withdrawal, it should be extremely narrow in scope.

By contrast, a decision to deny the Forest Service's application for a withdrawal would require a significant forest plan amendment to reflect vastly changed circumstances and expectations. Since 2004, interest in sulfide-ore mining has grown, with significant exploration activities occurring under more than two dozen prospecting permits, numerous lease applications and additional prospecting permit applications pending, and significant uncertainty around the fate of the Twin Metals' leases. The numerous significant impacts associated with ongoing and reasonably foreseeable sulfide-ore exploration and mining activities under a no-withdrawal scenario were not analyzed or anticipated in the last plan revision process, and so a decision to deny the Forest Service's application for withdrawal and select the no action alternative would represent a significant change in circumstance since the 2004 forest plan and thus necessitate a forest plan amendment. Given the significant impacts of sulfide-ore mining on resources ranging from watershed to wilderness to wildlife to recreation, the scope of a forest plan amendment to address ongoing and reasonably foreseeable exploration, leasing, and mine development activities would need to be broad in the absence of a withdrawal. Importantly, the necessary amendment would directly implicate substantive requirements of the 2012 planning rule, including but not limited to the requirements to provide for ecological sustainability, including soil and water quality, the diversity of plant and animal communities, and protection of congressionally designated wilderness areas. Ensuring compliance with those substantive provisions almost certainly would require plan direction prohibiting sulfide-ore prospecting, leasing, and development in the Rainy River-Headwaters. While a detailed forest plan amendment would be required to consider necessary controls on mining activity in the absence of a withdrawal, such an amendment is outside the scope of the current action to study the proposed withdrawal.

The proposed Withdrawal of federal lands on the Superior National Forest within the Boundary Waters watershed is necessary, and indeed the only way to achieve the stated purpose of the project, that being, “to protect and preserve the natural resources and waters located within the Rainy River Watershed that flow into the Boundary Waters Canoe Area Wilderness (BWCAW) and the Boundary Waters Canoe Area Wilderness Mining Protection Area (MPA)....”

Twin Metals proposes several 'terms' to consider in mitigation if the Withdrawal proposal is denied. All of these 'terms' fundamentally fail to protect the Superior National Forest, the MPA, the Boundary Waters, local communities, and downstream lands and waters and protected areas (Quetico and Voyageurs) and, if implemented, would result in significant, permanent negative environmental damage. *See*, pages 55 – 137 of the Feb. 28, 2018 comment letter.

Conclusion.

The only way to protect the Superior National Forest, the Boundary Waters, the MPA, Quetico, Voyageurs, and local communities is to complete the Withdrawal.