

**Public Hearing on the Need for Prove It First
(SF 1416 / HF 1618)**

Minnesota State Capitol, Room G23

February 22, 2024

Presiding Officers

Rep. Connie Bernardy (retired)

Rep. Steve Sandell (retired)

Witnesses

Senator Jennifer McEwen
Chris Knopf
Commissioner Kelly Applegate
Mike Maleska
Doug Watt
Dr. Steven Emerman
Bruce Johnson
Fred Campbell
Geri Nelson
Claire Peterson

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Testimony of Chris Knopf
Executive Director of Friends of the Boundary Waters Wilderness
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Good afternoon. I am Chris Knopf, the Executive Director of Friends of the Boundary Waters Wilderness.

As a child, I learned the vital importance of clean water. I grew up in Cleveland, Ohio at a time when Cleveland became famous around the world for its water. It was the city where the river caught fire.

Cleveland's economic decline coincided with this environmental calamity. Would you want to live in a place that was so dirty that its river literally burned?

I moved to Minnesota and have raised my family here. My children have grown up in the land of sky-blue water.

Clean water is our identity in Minnesota.

Clean water makes Minnesota a great place to live. Our lives in Minnesota revolve around our clean water. This is where we teach our grandchildren to swim, catch fish with friends, and cement those friendships and bonds that make life meaningful.

Clean water is Minnesota's most important natural resource.

There are more than 1,200 lakes in the Boundary Waters and 11,842 lakes throughout all of Minnesota. We have the greatest of the Great Lakes – Lake Superior – that holds ten percent of the world's freshwater. We are the headwaters of the Mississippi River.

For decades, our clean water has been under threat from sulfide-ore mining, the most polluting industry in the United States. Sulfide mining is different from Minnesota's traditional iron mining. This type of toxic mining has never been done in Minnesota. Sulfide mining produces sulfuric acid – battery acid – when the mined rock is exposed to water.

Right now, there are three sulfide mines that threaten Minnesota's clean water:

- Twin Metals, owned by Antofagasta, threatens the Boundary Waters.
- PolyMet, owned by Glencore, threatens Lake Superior.
- Talon, owned by Rio Tinto, threatens the headwaters of the Mississippi River.

In the controversy over sulfide mining, two things are abundantly clear. First, Minnesota simply does not have the laws to protect its clean water against this industry. Second, as our victories in the courtroom have shown, Minnesota regulators are unwilling to properly enforce the laws that are already on the books.

We are here today, not to demand extreme legislation, but to ask the Minnesota Legislature to take common-sense measures to protect what makes Minnesota a great home to five million people: our clean water.

We ask the Minnesota Legislature to pass Prove It First.

Prove It First is simple. Prove It First requires sulfide mining companies to first prove there is one example where this type of mining has been done elsewhere in the United States without polluting before it is done in Minnesota.

No proof. No mine.

The simplest questions are often the most profound. That is the case here. If they can't point to one example where sulfide mining has been done safely, then why would we do it here in Minnesota?

We are on this Earth for just a short time. We borrow it from future generations.

Clean water is our heritage in Minnesota. We are blessed with clean water.

The generation that came before me gave me a river in my hometown that caught fire. That was my heritage as a child.

If we poison our clean water in Minnesota with sulfide mining, we will not be able to look future generations in the eye. We will have defiled our heritage and broken that sacred trust and bond with future generations.

I ask the Minnesota Legislature to protect our clean water. I ask that it pass Prove It First. Thank you.

Testimony of Kelly Applegate
Commissioner of Natural Resources, Mille Lacs Band of Ojibwe
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Aaniin, Boozhoo. Misko-asin nindizhinikaaz. Migizi nindoodem. Misi-zaaga'iganing nindoonjibaa. My name is Kelly Applegate, and I am the Commissioner of Natural Resources for the Mille Lacs Band of Ojibwe. I am also a member of the Mille Lacs Band.

Prove It First's requirement that mining organizations prove they can operate without damaging the environment is an issue of great importance to the Mille Lacs Band of Ojibwe. The Minnesota Department of Natural Resources is currently reviewing a proposal for a nickel-sulfide mine in Tamarack, Minnesota, located just 1.3 miles from the homes of our tribal members and cultural resources, like the sites where we harvest manoomin (wild rice), medicinal plants, fish, game, maple sap, and birch bark.

It is for this reason why the Mille Lacs Band is disappointed that there have been political decisions to cancel the legislative hearing on the issue of sulfide mining.

Nickel-sulfide mines have a long history of damaging the surrounding land and watersheds and leave a legacy of contamination long after they've been closed or abandoned. There's no evidence that these mines can operate safely.

In a water-rich environment like Minnesota, impacts to the health of our watersheds ripple out across the environment. Our pristine wetlands recharge drinking water for our communities. Interconnected wetlands carry water across the landscape and link to rivers, streams, lakes and groundwater flows. Critical drinking water sources and aquatic habitats throughout the Mississippi and St. Croix River watersheds could be impacted by the pollution associated with nickel-sulfide mines. And the size of the proposed Tamarack Mine continues to expand, which would put more resources at risk.

Without proof that pollution-free operations are possible, sulfide mining in Minnesota's pristine ecosystem is a high-stakes experiment that we are not willing to be a part of.

Certain mining projects, like the proposed Tamarack Mine, are advanced in the name of green energy—justifying their need to support electric vehicle battery production. We believe the pursuit of clean energy technology and solutions to the climate crisis are crucial. But not at the expense of Indigenous people, the broader Minnesota population, our environment, and our water. Minnesota and the nation haven't fully explored other options to meet nickel demand, like

recycling nickel and metal waste, and we caution against a false sense of urgency to approve mining plans without proper due diligence and proof that they will not pollute.

It was in this spirit that we launched Water Over Nickel, an initiative led by the Mille Lacs Band of Ojibwe and allied organizations and experts, dedicated to protecting Minnesota's water, environment and communities from the risks associated with nickel-sulfide mining.

Our efforts are grounded in our commitment to preserve Minnesota's natural environment and water resources for generations to come. There is an Anishinaabe teaching that our people have. We are to care for our Earth, for those yet unborn and the next seven generations to come. If we make good decisions, we can protect the Earth and water and know that the next seven generations can have a good life.

Testimony of Mike Maleska

Iron ore miner for 42 years and local union president, retired
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Good afternoon. My name is Mike Maleska, a life-long resident of the rural Hibbing area, right in the heart of the Iron Range. I was an iron ore miner, working in one of the taconite mines for about 42 years, also serving as union steward and even local union president.

Now before Minnesotans and their elected representatives allow foreign mining companies to lurch forward opening copper-nickel sulfide mines, which, by the way, is a type of mining that has never been done in our state, I'd like you to consider this:

Say, for instance, the companies that intend to undertake this venture are in it for profit (and they are).

And say, for instance, without proof, without evidence, these companies make claims such as “modern technology and science have made pollution a thing of the past” (believe me, I hear it all the time and I'm sure you do too).

And say, for instance, the citizens come to believe that copper-nickel mining can be done without polluting – and not just the people, but our state and federal agencies come to believe this.

And say, for instance, that those state and federal agencies are gullible enough to permit these mines and we end up having the most-polluting industry in the country operating in the most pristine part of the most pristine state in the USA.

Let me repeat that – the most-polluting industry operating in the most pristine part of the most pristine state in the USA.

Then let's say someone notices a fish kill, or there's always dust in the air and the kids are always coughing, or you hear “what's that nasty smell,” or another mysterious illness appears in the area, or you see “NO SWIMMING” signs start popping up.

And say, for instance, it's discovered that the mine operator is poisoning our land, air and water. What then? Will the mine be closed? What agency or individual has the courage to do that?

As a former miner and elected union rep, I know that shutting down a mine is incredibly difficult, one might say impossible, never mind how dirty it is.

For example, at a mine I worked at, after decades of asbestos-like fibers and fugitive silica dust problems, the Mine Safety and Health Administration ordered the crushers to be shut off when workers were in those buildings. Well, surely regulators and mining companies invested in better filters or engineering solutions to fix this potentially lethal problem, right? Wrong.

Their solution was to make men shave their beards and put on a mask. Rather than ask the mine to change, they asked the people to change.

Here is a mine creating a hazardous discharge, and rather than remedy the problem, it chose to modify the humans rather than spend the money to address toxic emissions.

So I ask, how much will our communities, our lakes, rivers, forests, and air be expected to change in order to accommodate sulfide ore mining – this much more polluting type of mining?

I don't want to see the answer to that question. What I want to see is some courage from our legislators to make the mining companies do one simple thing: show proof that they won't pollute before they're allowed to put a shovel in the ground.

Testimony of Doug Watt

Witness to the Mount Polley mining disaster and former mine worker
Public Hearing on the Need for Prove It First
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Hello, my name is Doug Watt, a 25-plus-year resident of Likely, British Columbia, Canada, on the shores of the once-pristine Quesnel Lake. I had previously worked at the Mount Polley Mine as a mill operations supervisor and a metallurgist. The Mount Polley Mine is a copper-sulfide mine with a wet tailings storage facility dam design — similar to the proposed Polymet mine. I was also the Environmental Superintendent at a tungsten mine.

Quesnel Lake, a large fjord lake with depths of over 2,000 feet, is a place that was known for its clear water and trophy rainbow trout. There was a time we would eat the fish I caught and drink water directly from the lake, but that is no longer the case. In the early morning of August 4, 2014, I woke to a phone call. On the other end was a voice, urgently telling me to stop using the water, to get my boat out of the lake, and to be prepared to evacuate.

The tailings dam at the Mount Polley Mine had breached, and a slurry of toxic tailings were pouring into Hazeltine Creek, Polley Lake and Quesnel Lake. Stepping outside, I heard a roar, like Niagara Falls. This was the sound of the millions of gallons of mining sludge, tailings and trees pouring into Quesnel Lake. It took days for the flow from the breached tails pond to diminish and weeks before the mine got it slowed to a trickle.

All together, more than 6 billion gallons (25 million cubic meters) of tailings solids, water, and refuse were deposited into Quesnel Lake. Over the next two years, another 7.5 to 10 billion gallons (30 to 40 million cubic meters) of virtually untreated mine-tailings contaminated water followed. Since operations resumed, the mine is now permitted to discharge up to 2.6 billion gallons (10 million cubic meters) of their virtually untreated effluent annually into the lake.

How did this happen? How did they get this so wrong? Well, we were misled from the beginning.

During public meetings that were held in the planning stages in the 1990s, residents demanded no effluent discharge into pristine Quesnel Lake. The mining company and their consultants promised a zero-discharge operation (net negative water balance). During the permitting process, we were assured that, through modern technology, this would be a safe mine and not harm the surrounding environment. But we have learned that when the proponent or consultant said, “use best available technology,” they actually meant “this is the cheapest available technology we think we can get away with,” and unfortunately the regulators accepted it.

Even before the disaster, the mine operation had polluted the waters of Polley Lake, degrading the lake's trophic status with nutrients. The regulators did not even notice this was occurring until the public pointed out the report to them.

Immediately after the disaster, the government made a lot of promises. The BC Premier promised to hold the mine responsible and restore Quesnel Lake back to its previous pristine condition. Only one promise was kept: that the mine resumed operations in 2015 and discharged virtually untreated effluent into Quesnel Lake.

Now the Quesnel Lake ecosystem and the public are bearing the consequences. Do you know the number of charges and penalties that have been issued to date: Zero. That's right, zero.

There were no consequences for the mining company. No government agency penalized the company for mismanagement and polluting the environment!

Today, I don't eat the fish out of Quesnel Lake. I no longer drink water from the lake. The water, which was once so clear, is cloudy and murky, and water filters plug up quickly. There is rock slime (we call it "rocksnot") and algae. Many of us trusted the regulators, and trusted the mining company.

We believed them when they said this could be done safely, and now, we are living with the consequences.

What happened at Quesnel Lake with the Mount Polley Mine wet TSF storage dam failure, is also happening all over the world, and it could happen to you in Minnesota as well. Thank you.

Testimony of Dr. Steven Emerman
Internationally recognized mining expert, owner Malach Consulting
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I am Dr. Steven Emerman. I was a professor of geology for over 30 years. I have studied and worked on issues related to water and mining for over 40 years.

I will say three things:

1. Sulfide-ore mining poses a threat to clean water.
2. The sulfide mining industry has a perfect track record of water pollution.
3. The threat to clean water lasts forever.

Sulfide ores are ore bodies in which the commodity of value, such as copper or nickel, is found in the form of a sulfide mineral. Examples of sulfide minerals are chalcopyrite, which is a copper sulfide, or pentlandite, which is a nickel sulfide. When these sulfide minerals are excavated, crushed, and exposed at the surface to oxygen and water, the sulfide minerals convert to sulfuric acid with release of the heavy metals into the dissolved form. This reaction is especially problematic for the tailings, the wet and crushed rock particles that remain after the copper or nickel has been extracted, which is more than 99% of the ore body. When this mixture of sulfuric acids and heavy metals leaks into surface water or groundwater, it is called acid mine drainage. The copper and nickel mines proposed by PolyMet, Twin Metals, and Talon Metals would all be sulfide ore mines, while the existing iron-ore mines in Minnesota are not sulfide mines.

The sulfide mining industry has a perfect track record of water pollution. I repeat: A perfect track record of pollution. During the moratorium on sulfide ore mining in Wisconsin from 1997 to 2017, 10 mines were put forward as examples of sulfide ore mines that had never caused water pollution. All of these examples were discredited because, in actuality, they really did have records of water pollution. These same 10 mines are now being recycled as examples of sulfide ore mines without water pollution, even though they have already been discredited, which is the best proof of all that there are no examples.

I encourage you to read my report entitled, “The Minnesota Prove It First Bill and the Myth of Sulfide Ore Mining without Environmental Contamination.”

I will address one of the fake success stories. The Flambeau mine in Wisconsin was operated by Rio Tinto only from 1993 to 1997. Even to this day, the copper concentration in Stream C, which crosses the mine site before it joins with the Flambeau River, has been so high that the stream is nearly devoid of life and has been placed on the EPA List of Impaired Waters. The Certificate of Completion of Reclamation that the mine received in December 2022 indicated only that the

mining company had completed its reclamation plan, not that the reclamation plan had been successful in avoiding pollution.

The notion that this kind of mining has been done without polluting the surrounding water system is simply a myth.

The threat to clean water lasts forever. The tailings will be permanently stored on the surface, so that there will be a permanent threat of leakage from the tailings or even a catastrophic collapse of the tailings disposal facility. Is this the curse that we want to leave to future generations in Minnesota?

Testimony of Fred Campbell and Bruce Johnson

Retired state regulators with Minnesota Pollution Control Agency and Minnesota Department of
Natural Resources
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Thank you for the opportunity to present testimony. I'm Bruce Johnson, a retired Environmental Scientist. I worked on the Regional Copper Nickel Study in the late 1970s, and later with DNR and MPCA, I investigated polluting chemicals from two documented Duluth Complex sources of sulfide contamination – the Dunka mine waste rock piles near Birch Lake, and the tailings and waste rock at the AMAX sulfide deposit near Babbitt.

I am Fred Campbell, a retired Hydrologist. Prior to my job at the MPCA, I worked for the DNR on the Regional Copper Nickel Study, and worked for AMAX at their sulfide deposit, currently leased by Teck, and is part of the joint venture with PolyMet known as NewRange Copper Nickel LLC.

We want to talk about the unwillingness of state agencies to control pollution from a taconite mine that removed and stockpiled rocks from the overlying Duluth Complex, the same rocks that NewRange and Twin Metals want to mine for copper-nickel sulfides.

In 30 years of taconite operations at the Dunka Pit near Babbitt, the mining company stockpiled 47 million tons of Duluth Complex sulfide-bearing rock. This waste rock created toxic runoff that drained into Unnamed Creek, and ultimately into Birch Lake. Water quality monitoring shows that the release of toxic chemicals violated numerous water quality standards. Active treatment of these drainages failed to fully comply with state standards and was costly. DNR developed passive wetland treatment, but the drainage continued to exceed standards. MPCA illegally issued a permit that failed to comply with its own rules. MPCA then stated the drainage was in full compliance with the permit. This allowed DNR and MPCA management and mining companies to declare wetland treatment a success.

It is important to emphasize that the proposed copper-sulfide mines would produce much larger volumes of toxic waste rock. PolyMet waste rock volumes alone will be five times that of Dunka. The problems these sulfide mines create would also be much larger.

Exploration data from numerous companies, including PolyMet, Twin Metals and Teck, clearly show that the variable thickness and sulfide content of these deposits will make it difficult to segregate potential ore from associated waste rock. These waste rocks and tailings contain toxic chemicals, including but not limited to metals, such as nickel and arsenic; asbestiform minerals

such as serpentine; and chlorides. These chemicals are proven to cause negative impacts to the environment and human health if they are released.

Available geologic data strongly suggest that other currently unidentified toxic chemicals are also released from Duluth Complex sulfide rock.

In 47 years, MPCA and DNR have not yet controlled pollution from the waste rock source at the Dunka Pit. How can these regulators possibly protect waters from multiple full-scale sulfide mines?

Minnesota's existing legal and regulatory framework cannot protect us from the dangers of toxic sulfide mining. To adequately protect human health and the environment, Minnesota needs to adopt the proposed "Prove It First" legislation.

Testimony of Geri Nelson
Clean water advocate for 50 years
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Good afternoon. I'm Geri Nelson, a lifelong advocate for clean water and wilderness. Almost every summer growing up, our family vacationed on Basswood Lake in the heart of the Boundary Waters. We fished, enjoyed a shore lunch of walleye or northerns, picked blueberries and cooled off in the clear waters of a sand beach.

When my husband Darby and I got married, one of several honeymoon trips that summer was a canoe trip through many small lakes including Lakes One, Two and Three with more time on portages than on the water. Many trips later, first with our children, then our grandchildren, our spirits were renewed by our time on the water.

On one expedition early in our marriage, we left the cook kit in the car. Darby carved two spoons with a jack knife with a loose blade, and we cooked in cans and a rusty pie plate we found at an abandoned cabin. After two weeks of such simple living, we realized how superfluous material goods were to our joy and peace in life. This experience colored our entire life together, a touchstone for simple living. Life-changing experiences so often happen in wilderness.

All Minnesotans value clean water, but Darby did more than enjoy it; he actively strove to protect and improve it. He served as the first treasurer of the Friends of the Boundary Waters, testified before the U.S. Senate Committee in 1978 for wilderness status for the Boundary Waters, taught environmental science to students at Anoka Ramsey, and sponsored environmental legislation in the Minnesota House in the 80s. One of Darby's signature pieces of legislation was the Soil and Water Conservation District Act that came about through working with multiple water-related stakeholders to reach consensus on how to better manage and protect our clean water. After working hard to pass the Clean Water, Land and Legacy Amendment, he served on the first Lessard-Sams Outdoor Heritage Council.

Finally, after his diagnosis with Mild Cognitive Impairment, we did 150 events with his first book, *For Love of Lakes*, and he wrote his second book, *For Love of a River: The Minnesota*. Our lives centered on water advocacy.

There is a long tradition in Minnesota of coming together to protect our clean water. I am proud of having been a part of that tradition. I am here today to ask the Minnesota Legislature to step forward and continue to protect our most precious natural resource: Clean Water.

Prove It First is a common-sense bill that simply asks for proof that these mining companies won't pollute the pristine water that has nurtured the spirits of so many people. Thank you.

Testimony of Claire Peterson
Student at Lakeville North High School
Public Hearing on the Need for Prove It First
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My name is Claire Peterson. I am 17 years old, a senior in high school, and currently attend the University of Minnesota-Twin Cities. Over the past two years I have been a high school intern at the Minnesota Valley National Wildlife Refuge, and this past summer I was a youth environmental justice advocate at Climate Generation, where I helped organize a conservation conference for youth around the Twin Cities. When I was younger, I would go hiking with my dad: to Duluth along the North Shore, the river at Interstate State Park, and the bank of the Mississippi River bottoms. These experiences have allowed me to realize my passion for the outdoors. Someday I hope to become an environmental engineer, where I will work to protect what little natural spaces we have left and bridge the gap between the built and natural worlds.

Last summer, I was able to visit the Boundary Waters Canoe Area for the first time in my 17 years of existence. It might be confusing as to why someone, who has not even graduated high school, has only been to the Boundary Waters once, and has no experience in political activism, is here to speak to you today. Despite all this, I know, without a doubt, that the Boundary Waters is a special place. It has the ability to connect people to each other and the world around them in a way that no other place can. While I was in the Boundary Waters, I got to see loons and snapping turtles, beavers and minks, garter snakes and eagles. I even got to hug a 1,000-year-old cedar tree! I hauled 30-pound bags and canoes through the wilderness for four days. My crew and I woke up at 5:00 a.m. every morning so we could get an early start on paddling. We had to work together to support and motivate each other through long portages. It was hard, but through it all I got to connect with my peers. It was a beautiful and wonderful experience that I am deeply privileged to have shared with my friends. I know I will cherish the memories I made in the Boundary Waters for the rest of my life.

My hope for the future is that young people like myself can continue to discover and fall in love with the Boundary Waters, where they can witness its unspoiled beauty year after year. The decision to pass the Prove It First bill will not only affect the next 20 years, it will affect the next 70 years of my life. I, for one, would much rather spend the rest of my life planning trips to the Boundary Waters with my family, rather than trying to cleanse it of sulfide sludge.

I urge you to act. The Boundary Waters is a sanctuary that should be preserved for the future. Just as people need the Boundary Waters, the Boundary Waters needs us.

Appendix

Prove It First Bill: Frequently Asked Questions

1. Doesn't Minnesota already have strict regulations to ensure sulfide mining would be done safely?

No.

There is a misconception that the regulatory agencies charged with evaluating the safety of copper-nickel sulfide mining¹ projects — the Minnesota Pollution Control Agency (“MPCA”) and the Minnesota Department of Natural Resources (“DNR”) — execute this duty in an objective and unbiased manner. This is false.

Minnesota’s existing environmental review, permitting and enforcement laws and regulations are not designed to stop sulfide mining projects, no matter how dangerous they are.² MPCA and DNR are inherently biased regulators for at least two reasons. First, DNR has an inherent conflict of interest in that the agency is both responsible for promoting mineral extraction and for conducting environmental review for sulfide mining projects. Second, the State of Minnesota is financially incentivized to green-light sulfide mining projects because it will receive royalties from such projects and thus the MPCA and DNR are no doubt encouraged by the Governor’s Office to permit those projects.

Unsurprisingly, biased regulators produce biased decisions.

And it’s not just mining opponents that think this. Mining proponents revel in this fact. Former Minnesota Senator Tom Bakk, one of sulfide mining’s loudest champions has publicly declared that “[t]he truth is, the environmental review process is not intended to stop [sulfide mining] projects” and “[s]o, once they start down that road of applying for those permits it’s pretty hard to stop.”³

Fortunately, biased decision making is subject to judicial review. Permits issued by the MPCA and DNR for PolyMet’s NorthMet project have been repeatedly overturned by the courts for

¹ While this type of mining is also referred to as “nonferrous mining” or “hardrock mining,” throughout this document we will refer to it as “sulfide mining” for sake of consistency.

² “Releases by Chemical and Industry,” U.S. Environmental Protection Agency, accessed February 3, 2024, <https://www.epa.gov/trinationalanalysis/releases-chemical-and-industry>

³ The Timberjay, “Environmental Review: Sen. Bakk Revealed Why a Mineral Withdrawal Study Makes Sense,” *Minn Post*, January 3, 2020, <https://www.minnpost.com/community-voices/2020/01/environmental-review-sen-bakk-revealed-why-a-mineral-withdrawal-study-makes-sense/>

flouting Minnesota’s environmental laws and regulations.⁴ In so doing, Minnesota courts have chastised state regulators for their biased, industry-influenced decisions. For example, in August 2023, the Minnesota Supreme Court struck down the water pollution permit the MPCA issued to PolyMet, finding that the agency “sought to avoid public scrutiny and to hide the risk of illegal water pollution from the public eye. This secrecy is unacceptable.”⁵

While the judicial branch has been actively engaged in this consequential issue and has been a part of this conversation, the legislative branch has avoided the issue despite having an essential role to play in safeguarding our land, air, and water.

2. Are Minnesota's metal reserves needed for the transition to a green energy economy?

No.

The fact is the industry has known about the PolyMet and Twin Metals ore deposits since the 1940s. However, the ore is of such low grade, it was not economically feasible to mine. For instance, PolyMet’s ore deposit averages 0.29% copper and 0.08% nickel.⁶ Twin Metals’ deposit contains 0.69% copper and 0.22% nickel.⁷

To put this in perspective, if Twin Metals were to be fully operational, it would, at maximum capacity, produce about one-fifth of one percent, or 0.2%, of the world’s annual copper production.⁸ This is not even a drop in the bucket.

⁴ See, e.g., *In re Denial of Contested Case Hearing Requests*, 993 N.W.2d 627 (Minn. 2023) (striking down and remanding the water pollution permit MPCA issued to PolyMet); *In re NorthMet Project Permit to Mine Application*, 959 N.W.2d 731 (Minn. 2021).

⁵ *In re Contested Case Hearing Requests*, 993 N.W.2d 627, 669 (Minn. 2023) (McKeig, J., Hudson, J., Chutich, J., Thissen, J., Moore III, J., concurring).

⁶ “The NorthMet Project Overview,” PolyMet Mining, archived at the Wayback Machine, December 2, 2020, <https://web.archive.org/web/20201109195458/https://polymetmining.com/operations/duluth-complex-geology/resources-and-reserves/>

⁷ “Mine Plan of Operations,” at Table 2-11: Mine Plan Summary Based on Production, Twin Metals Minnesota, December 18, 2019, <https://www.twin-metals.com/resource/twin-metals-minnesota-mine-plan-of-operations/>

⁸ Twin Metals would produce up to 50,405 short tons of copper per year. The global mined production of copper is 22,000,000 metric tonnes per year. See “Mine Plan of Operations,” Twin Metals Minnesota, December 18, 2019, <https://www.twin-metals.com/resource/twin-metals-minnesota-mine-plan-of-operations/>;

“Mineral Commodity Summaries: Copper, January 2023” U.S. Geological Survey, accessed February 8, 2024, <https://pubs.usgs.gov/periodicals/mcs2023/mcs2023-copper.pdf>

Though nickel is an essential component of batteries in electric cars, a fraction of mined nickel is used for batteries. According to the Nickel Institute, only about 17% of mined nickel is used for batteries; meaning 83% of nickel from these mines would not go to the green economy.⁹

Further, efforts are already underway to create batteries that do not require copper,¹⁰ nickel,¹¹ or cobalt.¹² In a matter of years, electric vehicles will need far less of these minerals.

The point is, the world is not waiting for these mines. The transition to the green economy is not dependent on these mines. Major automotive producers like GM, Volvo, and Tesla have all announced major plans for electric vehicles in the near future. These automakers have made these commitments despite PolyMet's permits being struck down and delayed by litigation and the federal government's cancellation of the mineral leases Twin Metals needs for its project to be viable. The green revolution is *not* waiting on Minnesota mines.

3. Can we recycle the minerals we need instead of mining?

Yes.

Metals recycling is on the rise. If Minnesota invests in this industry, we can source far more copper, nickel and other minerals than would be supplied by PolyMet and Twin Metals. Moreover, when compared to sulfide mining, metals recycling is more cost-effective, and better for the economy and the environment.

Copper is the most recyclable metal in the world. Nickel is also highly recyclable and can be reused without a loss to quality. Currently, the United States only recycles 34% of its discarded

⁹ "About Nickel," The Nickel Institute, accessed February 5, 2024, <https://nickelinstitute.org/en/about-nickel-and-its-applications/>

¹⁰ Gregory Barber, "Can Reengineered Aluminum Help Fill the Demand for Copper?" *Wired*, July 14, 2022, https://www.wired.com/story/can-reengineered-aluminum-help-fill-the-demand-for-copper/?utm_source=onsite-share&utm_medium=email&utm_campaign=onsite-share&utm_brand=wired

¹¹ Jacqueline Holman, "Almost half of Tesla EVs produced in Q1 had no nickel, cobalt in battery," *S&P Global Commodities Insights*, April 21, 2022, <https://www.spglobal.com/commodityinsights/en/market-insights/latest-news/energy-transition/042122-almost-half-of-tesla-evs-produced-in-q1-had-no-nickel-cobalt-in-battery>

¹² Magdalena Petrova, "Here's why battery manufacturers like Samsung and Panasonic and car makers like Tesla are embracing cobalt-free batteries," *CNBC*, November 17, 2021, <https://www.cNBC.com/2021/11/17/samsung-panasonic-and-tesla-embracing-cobalt-free-batteries-.html>; Anne Trafton, "Cobalt-free batteries could power cars of the future," *MIT News*, January 18, 2024, <https://news.mit.edu/2024/cobalt-free-batteries-could-power-future-cars-0118>

copper,¹³ almost half the amount of the European Union’s copper recycling rate of 60%.¹⁴ Increasing the U.S. copper recycling rate to just 50% would create more copper than the total amount of mined copper from thirteen PolyMet mines.¹⁵

The opportunity to expand metals recycling is immense. In 2018, the U.S. sent about a billion and a half pounds of non-ferrous metal to landfills from municipal trash alone.¹⁶ According to a recent study from the Iron Range Partnership for Sustainability, recycling 100% of Minnesota’s e-waste would create enough copper for 155,000 electric vehicles and enough silver for 441,000 solar panels each year, and would generate 3,345 new jobs and add \$3.2 billion in annual state economic activity.¹⁷

From an economic viewpoint, this just makes sense. Securing copper from recycling requires 80% to 90% less energy than mining for it.¹⁸ This makes recycling much less carbon-intensive than mining. Copper recycling even emits 65% less greenhouse gas pollution than mining, and nickel recycling produces 90% fewer emissions than mining.¹⁹

¹³ “2018 Minerals Yearbook,” at Table 1, U.S. Geological Survey, accessed February 8, 2024, <https://pubs.usgs.gov/myb/vol1/2018/myb1-2018-recycling.pdf>

¹⁴ “Rare metals have huge potential for recycling in Europe,” European Commission, January 20, 2020, <https://projects.research-and-innovation.ec.europa.eu/en/projects/success-stories/all/rare-metals-have-huge-potential-recycling-europe>

¹⁵ “Evaluating the ‘Copper for Clean Energy’ Talking Point,” Minnesota Center for Environmental Advocacy, March 3, 2021, <https://www.mncenter.org/sites/default/files/document-grid/3-3-21%20MCEA%20copper%20recycling%20factsheet.pdf>

¹⁶ “Facts and Figures about Materials, Waste and Recycling,” U.S. Environmental Protection Agency, accessed February 3, 2024, <https://www.epa.gov/facts-and-figures-about-materials-waste-and-recycling/other-nonferrous-metals-material-specific>

¹⁷ Maria Jensen, Roopali Phadke, Keith Steva, and Marlise Riffel, “The Economic Potential of E-Waste Recycling in Minnesota: A Pilot Study,” *Iron Range Partnership for Sustainability*, August 2023, <https://www.irpsmn.org/ewaste-recycling>

¹⁸ “Copper Recycling,” International Copper Association: The Copper Alliance, accessed February 3, 2024, <https://copperalliance.org/wp-content/uploads/2017/12/ica-copper-recycling-201712-A4-HR.pdf>

¹⁹ Sue Grimes, John Donaldson, and Dr Gabriel Cebrian Gomez, “Report on the Environmental Benefits of Recycling,” Bureau of International Recycling, August 2008, https://www.mgg-recycling.com/wp-content/uploads/2013/06/BIR_CO2_report.pdf

Investing in metals recycling — not polluting sulfide mines — is the way to support a just, clean energy transition in Minnesota.

4. Are there mines outside of Minnesota that already provide sufficient amounts of copper and nickel?

Yes.

Mines located in other regions of the United States and in our allied nations are already permitted and operational and can produce these metals. Mines operating in the American Southwest continue to produce a staggering amount of copper.²⁰ Because of the arid climate, pollution from these mines is not remotely as severe as it would be in a water-rich region like Minnesota. Additionally, there are mines operating in allied nations like Canada and Australia, that provide a steady, reliable source of copper and nickel.

With regard to nickel, mining in Minnesota would make little impact on the domestic or global supply for at least two reasons. First, nickel reserves in the U.S. constitute about 0.35% of the world's total nickel reserves, according to the U.S. Geological Survey.²¹ And second, existing nickel mines are currently suffering from closures and production cuts due to a sharp reduction in nickel prices driven by a jump in Indonesian supply.²² Moverover, one of the United States's closest allies, Australia, has almost 10 times the total nickel reserves as the United States.²³

Below is a non-comprehensive list of permitted and operational copper and nickel mines operating in North America or allied countries:

Robinson Mine – Nevada; Kennecott Copper Project – Utah; Bingham Canyon – Utah; Morenci Mine – Arizona; El Chino – Arizona; Ray – Arizona; Mission Complex – Arizona; Continental Pit – Montana; Bagdad Mine – Arizona; Pinto Valley – Arizona; Sierrita Mine – Arizona; Safford Mine – Arizona; Voisey's Bay – Canada; Highland Valley Copper Mine – Canada; Gibraltar Mine – Canada; Mount Milligan Mine – Canada; Copper Mountain Mine – Canada; Red Chris Mine – Canada; Nickel West – Australia.

5. Would Prove It First apply to PolyMet?

²⁰ “Five Largest Copper Mines in US in 2020,” *Mining Technology*, September 21, 2021, <https://www.mining-technology.com/marketdata/five-largest-copper-mines-the-us-2020/>

²¹ “Mineral Commodity Summaries: Nickel, January 2022,” U.S. Geological Survey, accessed February 1, 2024, <https://pubs.usgs.gov/periodicals/mcs2022/mcs2022-nickel.pdf>

²² “Australia's nickel producers reel from supply glut,” *Reuters*, January 21, 2024, <https://www.reuters.com/markets/commodities/australias-nickel-producers-reel-supply-glut-2024-01-17/>

²³ “About Nickel,” The Nickel Institute, accessed February 5, 2024, <https://nickelinstitute.org/en/about-nickel-and-its-applications/>

Yes.

Prove It First applies “to all permits for or pertaining to mining nonferrous sulfide ore.”²⁴ In short, if Prove It First becomes law, it applies to all state-issued permits PolyMet needs to put a shovel in the ground. Because PolyMet’s Permit to Mine and Wastewater Permits have been struck down, PolyMet would be required to reapply under the Prove It First regulations.

6. Do Minnesota's students depend on revenue generated from sulfide mining?

No.

No sulfide mines have ever operated in Minnesota. Therefore, no students, schools or universities are dependent on these dangerous projects. Even with sulfide mines operational, the associated revenue generated from School Trust Lands would be negligible. Minnesota can and should find ways to support students without sacrificing its land, water, and air, and its iconic natural resources, such as the Boundary Waters and Lake Superior.

7. Isn't sulfide mining the same as taconite or iron mining?

No.

Sulfide mining is much different than the traditional form of iron mining. While iron or ferrous mining has a rich history in the state, sulfide mining has never been done in Minnesota. Sulfide mining is especially dangerous in northern Minnesota due to the likelihood of acid mine drainage because of that region’s water-rich environment and the low-grade quality of the target minerals.

Because of the Duluth Complex’s low-grade quality of the mineral deposits, hundreds of millions of tons of waste reactive rock needs to be excavated to make sulfide mining projects economically viable. Because the ore and surrounding rock at these mines is laden with sulfide minerals, the mining process exposes these sulfides to water and air.

When sulfides react with air and water it results in the formation of sulfuric acid, otherwise known as acid mine drainage. Acid mine drainage is catastrophic to the flora and fauna in water-rich ecosystems as it has a pH similar to battery acid.²⁵ Even worse, this type of pollution has the potential to continue indefinitely, even long after sulfide mining projects have ceased. Because of its inherently polluting nature, the EPA has listed sulfide mining as the most polluting industry in the country.²⁶

²⁴ Prove It First, S.F. No. 1416, 93d Session (Minn. 2023).

²⁵ “Acid Mine Drainage,” Earthworks, accessed February 8, 2024, <https://earthworks.org/issues/acid-mine-drainage/>

²⁶ “Releases by Chemical and Industry,” U.S. Environmental Protection Agency, accessed February 3, 2024, <https://www.epa.gov/trinationalanalysis/releases-chemical-and-industry>

In fact, there has never been a sulfide mine that has *not* polluted surrounding water sources.

8. Do Minnesotans support these proposed sulfide mines?

No.

Polling shows that Minnesotans are against these dangerous sulfide mining proposals. According to a Star Tribune/MPR News statewide poll, 60% of registered Minnesota voters said they opposed building new mines near the Boundary Waters, while only 22% supported it.²⁷ According to the survey, the level of opposition did not change greatly by region, age, income, or education, with opposition ranging from 54% to 69% in different parts of the state.

9. Would opening copper-sulfide mines in Minnesota stop child labor in other countries?

No.

Mining in Minnesota will not end labor abuses in other countries. It will not result in a major shift in trade policy. It will not close the mines where children are exploited.

While the conditions in cobalt mines in the Democratic Republic of Congo are abhorrent and have been found to include child labor, the idea that polluting our own water will end child labor at those mines is false. Opening polluting mines here will in no way affect how these massive conglomerates operate in other countries. In fact, Glencore, the Swiss-based mining giant that also owns PolyMet, has been implicated in child labor abuses in the Democratic Republic of Congo.²⁸ If we are truly concerned about mining corporations exploiting people and children in places like the Democratic Republic of Congo, do we want to invite those same corporations into Minnesota?

10. Are the sulfide mines that are proposed for Minnesota locally owned?

No.

It's important to emphasize that foreign mining conglomerates own all the proposed sulfide mines in Minnesota: Antofagasta is a Chilean corporation, Glencore is Swiss, Teck is Canadian, and Rio Tinto is English-Australian. Minnesota's people, environment and natural resources are

²⁷ Jennifer Bjorhus, "Minnesotans opposed to new mining near Boundary Waters, poll shows," *Star Tribune*, February 25, 2020, <https://www.startribune.com/minnesotans-opposed-to-new-mining-near-boundary-waters-poll-shows/568158962/>

²⁸ Dominique Soguel, "Glencore named in Congo child labour case targeting Big Tech," *SWI swissinfo.ch*, December 20, 2019, <https://www.swissinfo.ch/eng/glencore-congo-cobalt-mining-lawsuit/45446800>

not their concern. Instead, these international corporations will seek to maximize profits to fulfill their fiduciary responsibilities to shareholders. Because of the nature of international trade, the profits they make, along with the minerals they extract, will not stay in Minnesota. They will go overseas to be traded on an international market.

These corporations have a notorious, and long, record of corruption, human rights abuse, and environmental degradation. In 2022, Glencore pled guilty to bribery and commodity and price manipulation charges, and agreed to pay over \$1.1 billion in fines to resolve civil and criminal investigations by the U.S., the U.K., and Brazil.²⁹ And this is only one of many examples of why Minnesotans should be alarmed about these corporations operating in our state.

11. Doesn't Minnesota's economy need the jobs created by these sulfide mines?

No.

It is important to recognize that Minnesota, including the Arrowhead region, is confronted with a worker shortage and not a job shortage. As of December 2023, the unemployment rate in Minnesota was 2.9%.³⁰ As of November 2023, for the counties of the Arrowhead, the unemployment rates were:

- St. Louis County – 2.2%³¹
- Lake County – 2.6%³²
- Cook County – 3.1%³³

²⁹ United States Attorney's Office, Southern District of New York. "Glencore Entered Guilty Pleas to Foreign Bribery And Market Manipulation Conspiracies," May 24, 2022, <https://www.justice.gov/usao-sdny/pr/glencore-entered-guilty-pleas-foreign-bribery-and-market-manipulation-conspiracies>

³⁰ "State and National Employment and Unemployment," Minnesota Employment and Economic Development, accessed February 8, 2024, <https://mn.gov/deed/data/current-econ-highlights/state-national-employment.jsp>

³¹ "Unemployment Rate in St. Louis County, MN," Federal Reserve Bank of St. Louis: Economic Data, accessed February 8, 2024, <https://fred.stlouisfed.org/series/MNSTLO7URN>

³² "Unemployment Rate in Lake County, MN," Federal Reserve Bank of St. Louis: Economic Data, accessed February 8, 2024, <https://fred.stlouisfed.org/series/MNLAKE5URN>

³³ "Unemployment Rate in Cook County, MN," Federal Reserve Bank of St. Louis: Economic Data, accessed February 8, 2024, <https://fred.stlouisfed.org/series/MNCOOK1URN>

These low unemployment statistics demonstrate that in St. Louis, Lake, and Cook Counties, open job postings go unfilled,³⁴ and it is difficult to find skilled tradespeople – construction workers, electricians, and plumbers.

Further the mining companies’ own contradictory remarks make it difficult to say with certainty how many jobs these proposed sulfide mines would create, let alone how many of those jobs would be union jobs, or if those jobs would be filled by locals or by people out of state. PolyMet’s own Draft Environmental Impact Statement stated that, when the mine was operational, only 25% of their workforce would be local.³⁵

While it would be great for a company to come to town with hundreds of jobs, wave a wand and make everything vibrant and prosperous, that is not how communities develop long-term economic health. Small businesses in northeastern Minnesota have created a thriving outdoor recreational economy. Research has shown that these existing jobs, created by small businesses, will be put at risk if these sulfide mines become operational.³⁶

Most jobs in the United States are created by small businesses — entrepreneurs with energy and ingenuity. Small businesses need access to capital. We should work to ensure that entrepreneurs in northeast Minnesota have access to capital — not give handouts to giant, foreign mining conglomerates.

If legislators are truly committed to addressing the needs of thriving communities in northeastern Minnesota, they should work on pressing issues such as affordable housing, supporting local schools and keeping doctors, dentists, and other health providers in local communities.

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³⁴ “Understanding Minnesota's Labor Market,” U.S.Chamber of Commerce, accessed February 8, 2024, <https://www.uschamber.com/workforce/understanding-minnesota-labor-market>

³⁵ Draft Environmental Impact Statement at 4.10-15, NorthMet Project, PolyMet Mining, Inc., October 2009, https://files.dnr.state.mn.us/input/environmentalreview/polymet/draft_eis/volume_i_text_and_tables_deis.pdf

³⁶ James H. Stock and Jacob T. Bradt, “Analysis of proposed 20-year mineral leasing withdrawal in Superior National Forest,” *Ecological Economics*, vol. 174 (2020), <https://scholar.harvard.edu/files/stock/files/1-s2.0-s0921800919309954-main.pdf>

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