

STATE OF MINNESOTA
COUNTY OF RAMSEY

DISTRICT COURT
SECOND JUDICIAL DISTRICT
CASE TYPE: Other Civil

Northeastern Minnesotans for Wilderness,
Plaintiff,

Court File No. 62-CV-20-3838
The Honorable Laura Nelson

v.

Minnesota Department of Natural
Resources and Sarah Strommen, in her
capacity as Commissioner of the
Minnesota Department of Natural
Resources,

**AFFIDAVIT OF
DR. WILLIAM (BILL) C. BRICE
IN SUPPORT OF COMMENTS OF
MINING MINNESOTA ON THE
NONFERROUS MINE SITING RULE**

Defendants,

Twin Metals Minnesota LLC,

Intervenor.

I, William Brice, do upon personal knowledge declare as follows:

A. Summary

1. The Minnesota Department of Natural Resources (“DNR”) has established a public comment period seeking comments on whether the siting restrictions and mining protection areas for nonferrous mining set forth in Minn. Rules ch. 6132 are “adequate” to protect the Boundary Waters Canoe Area Wilderness or “should further restrictions on mining be extended to **all or part of** the Rainy River-Headwaters defined as HUC 09030001.”

2. In 2017, I filed a Declaration and Affidavit dated August 10, 2017, and a Supplemental affidavit dated August 15, 2017, along with extensive historical documentation in support of comments in opposition to a proposed federal withdrawal of minerals located in the Rainy River Headwaters from mineral exploration and leasing for nonferrous mining. For

ease of reference, my 2017 Declaration and Affidavit is attached as Exhibit 1 to this Affidavit (with Figures 1-9 and Exhibits A and B, but without other supporting materials to Exhibit B), and my 2017 Supplemental Affidavit is attached as Exhibit 2 (with Exhibits C, and E-H). The 2017 proposed federal withdrawal would have banned mining federal minerals and use of federal surface lands in the Rainy River Watershed within the Superior National Forrest for 20 years. My 2017 Affidavits (with all supporting materials) are also filed as Exhibits 6 and 7 to the comments of MiningMinnesota and incorporated by reference in this Affidavit.

3. Based on my personal opinion, my professional training, my experience with the regulation of all forms of mining in Minnesota for 36 years ending in 2006, and my specific personal knowledge of the development of ch. 6132, the management of the leasing of state-owned and state-managed minerals and the history of mining activities and impacts within the Rainy River Watershed, it is my opinion that:

a. The siting restrictions on mining activities in ch. 6132 are adequate to protect the BWCAW from pollution, impairment and destruction.

b. Adding further siting restrictions on mining activities in ch. 6132 is not necessary to protect the BWCAW because the rule as currently drafted authorizes DNR to reject and require relocation and mitigation of individual company siting decisions as part of its permitting decisions based on evaluation of project-specific mine plans and project-specific potential adverse environmental effects that could result from the project.

c. Adding further siting restrictions on mining activities in ch. 6132 is not necessary to protect the BWCAW because ch. 6132, itself, and existing state and federal statutes and regulations governing mining and protecting environmental media and resources, authorize DNR and other state and federal agencies to require siting alternatives, relocation, redesign and

mitigation of project-specific mine plans and facilities to protect environmental resources from adverse impacts; DNR can deny the permit to mine.

d. Over 100 years of past historical mining activities in the Rainy River Watershed in rock formations containing sulfide minerals, including sixteen commercial mines and two commercial quarries, ten test pits, two test mining shafts, thousands of drill sites, and millions of tons of sulfide-containing material stockpiled for decades, all within the Rainy River Watershed, have not resulted in adverse water quality impacts on the BWCAW.

e. There are four good examples of currently operating mines with similar characteristics to the Minnesota copper-nickel deposits, operating in proximity to sensitive wilderness, water and other environmental resources, which are operating without significant environmental impacts: Stillwater Mine, MT; Eagle Mine, MI; Lac des Iles Mine, Canada; and Northshore Iron Mine, MN. Another example of a recently operating mine is the Dunka Iron Mine, MN which is currently closed. Portions of the Northshore Mine and all of the Dunka Mine are located within the Rainy River Watershed where the surface water flows toward the BWCAW.

f. The State has successfully permitted the Northshore and Dunka Mines within the Rainey River watershed without impacting the BWCAW. Both have copper-nickel stockpiles within the operation. The Dunka mine was started pre-permit requirements, but was permitted when the ferrous reclamation rules were adopted. It had unanticipated acid rock drainage (“ARD”) and metal dissolution impacts and was mitigated under the ferrous reclamation rules. The portion of the Northshore mine which is stockpiling copper-nickel waste was approved rather recently under a ferrous reclamation permit. (*See Ferrous Reclamation Standards 6130.2100: D and F; 6130.2600; 6130.2800*). Acceptable research can modify the

standards for many aspects of ferrous and nonferrous operations including tailings basins and stockpiles so that predicted or unexpected impacts can be solved.

g. The State has successfully mitigated the Northshore and Dunka Mines through the mineland reclamation permit to mine, and an unexpected ARD and metal dissolution impact within the Rainy River Watershed without impacting the BWCAW.

h. Research and field studies on mining processes, facility siting, and mining waste, and mitigation technological research and development of mining and mineral processing has been continuous in Minnesota, nationally and internationally since 1970. As a result of these efforts, new technology, processes, facility design, and land use approaches continue to evolve which improve mining processes, reduce mining waste, speed and improve mine reclamation, and minimize environmental impacts. Chapter 6132 is designed to enable DNR and other state and federal agencies to apply those advancements and ones to come in the future to optimize siting decisions, and protection of the BWCAW and other environmental resources.

i. DNR has been conducting copper-nickel waste management research (waste characterization and mitigation) for over 45 years, and is recognized as being at the forefront of this research nationally.

j. A categorical ban on mining or siting of mining activities anywhere within the entire Rainy River Watershed in ch. 6132 will violate state statutory policy favoring mineral resource development and DNR's constitutionally based fiduciary duties as trustee of extensive state-owned school trust fund and tax-forfeited mineral lands and as trustee for other public-owned mineral lands in the Watershed.

B. Professional Education, Training and Experience

4. My professional education, training and experience are set forth in my August 10, 2017 Declaration and Affidavit, at paragraphs 1 thorough 7.

5. My background of particular relevance to the subject and scope of this affidavit are:

a. I was employed by the DNR for 36 years (June 1970 until August 2006) in various positions with responsibilities for managing the State's mineral resources and regulating mining and I served as the Director of DNR's Division of Minerals and Division of Lands and Minerals from April 1987 through August 2006. During my tenure at DNR:

i. I supervised and was involved in the development of ch. 6132, the preparation of the SONAR for ch. 6132, the hearings on the proposed rule, and its final adoption in 1993.

ii. I was personally involved in development of regulations for mining activities, including mineland reclamation and financial assurance; in land use planning and siting of mining facilities; in leasing of state-owned minerals (school trust fund and tax-forfeited minerals)—in royalty negotiations; in evaluation of mineral potential and in mineral research, including research on mining waste characterization, mining waste mitigation and stockpile design.

iii. I chaired the Minnesota Minerals Coordinating Committee which is responsible for coordinating and funding mineral research projects in Minnesota, and have personal knowledge of Minnesota DNR's historical and on-going research into the impacts of drainage from sulfide rock stockpiles.

iv. There is precedent for project-specific siting decision-making in Minnesota. My PhD thesis developed a program to identify sites suitable for locating copper-nickel mining facilities in N.E. Minnesota. I was the team leader for DNR on the Reserve Mining court case and I was responsible for identifying and evaluating alternative sites for the on-land tailings disposal basin. I participated in DNR's application of this work to evaluate alternative sites for new and expanded mining projects in Minnesota during my Minnesota DNR tenure.

C. The History and Purpose of the Mining Protection Areas in Ch. 6132

1. Watersheds

6. All watersheds are important. There are big and there are small watersheds. You don't pick one watershed to pollute over another. Pollution needs to be managed to reduce it whenever possible and wherever it is produced.

7. There are all kinds of nonferrous mines, open pit/underground, and they contain different commodities, and different kinds of facility needs. For example, the 1990 Report on The Mining Simulation Project (Exhibit 3 to my August 10, 2017 Declaration and Affidavit) evaluated "three realistic, site-specific, but hypothetical [nonferrous] mine models" located in N.E. Minnesota (a 600 tons per day underground platinum-palladium mine in the Duluth gabbro complex, a 4000 tons per day copper-zinc-gold-silver massive sulfide deposit mine in the Archean greenstones, and 2000 tons per day underground arsenic gold deposit mine associated with an Archean iron formation located near an environmentally significant Minnesota peatlands). Some facilities need to be near the mine, others can be further away—sometimes in other watersheds, sometimes in other states or countries. Each mine is different and represents a variety of pollution issues which must be considered and managed in a site-specific manner.

8. The 1990 Permit Simulation Study was a unique cooperative study about non-ferrous mining. Participants included DNR, MPCA, the mining industry, the academic community, and environmental groups. The group completed several activities including a review and analysis of the existing environmental review and permitting process using three mining case studies. One was an underground platinum-palladium mine (copper-nickel) located in the Duluth Complex in the Rainy River Watershed. Some conclusions that relate to siting and these regulations were regarding Land-use Conflicts, Water Quality and Design and Operation. An early concept draft of the reclamation rules was studied. The recommendations have been utilized by agencies in their environmental and permitting efforts.

9. The reclamation rules are written to deal with a variety of mining situations. There are three sets of reclamation rules which were adopted sequentially by DNR: for ferrous mines (1981); for peat mines (1985) and for nonferrous mines (1993). The nonferrous reclamation rules (Minn. R. 6132.2000-6132.3200) are written as a complete requirement. For example, the siting section (6132.2000), the waste characterization section (6132.2200), and the storage pile design section (6132.2400) and the tailings basin section (6132.2500) are interrelated. Each affects the others. The reclamation rules also rely on other State and Federal Rules. For example, the copper standard is included in Pollution Control Agency rules. The rules must be managed as a body of work.

10. Mines should be permitted only when they meet the rules or when a variance is considered and approved.

11. Many aspects of the Non-ferrous Mineland Reclamation Rules, in addition to the two exclusion areas (the BWCAW and the BWCAW Mineral Management Corridor) cited

in DNR's Procedural Order on Remand calling for comments, apply to all mining sites and protect the land adjacent to the mining and facilities. They also protect the BWCAW.

2. BWCAW and Mining Protection Areas

12. Mining is excluded in the BWCAW and the Federal Mining Protection Area ("FMPA"). 45 Fed. Reg. 23006 (Apr. 4, 1980). The Federal Mining Protection Area was not really designated because of mining considerations, but rather it was initially proposed as an addition to the BWCAW. It was not agreed upon at the time the BWCAW was being designated and the compromise was to designate these areas as a Federal Mining Protection Area. The FMPA is for the most part located in areas where there is no gabbro formation containing nonferrous (copper-nickel) resources, such as areas proximate to Lake Vermillion and the Echo Trail corridor between two segments of the BWCAW.

13. Since none of the FMPA lands are in the BWCAW, or near where the copper-nickel Areas (Duluth Complex) touch the BWCAW boundary, a second mining protection area was identified by the MN DNR in the Reclamation Standards Rules Section of ch. 6132 at Minn. R. 6132.2000, subp. 3 A to further protect the BWCAW, as follows:

Subp. 3 Surface disturbance prohibited. No mining activities that disturb the surface shall be allowed within or on the following:

A. within the Boundary Waters Canoe Area Wilderness Mineral Management Corridor identified on the Department of Natural Resources map entitled "Minnesota Department of Natural Resources BWCAW Mineral Management Corridor," dated February, 1991...available through the State Law Library...."

pp

The state-identified area on the 1991 map referred to in Subp. 3 A is referred to as the State Mining Protection Area or State MPA.

14. The State MPA was designed to eliminate surface disturbance by mining activities within small watersheds which flowed directly into the BWCAW. In addition, the

State MPA was designed to provide a buffer zone where water did not flow into the BWCAW and around public access points used by day-users and campers for entry to the BWCAW. Thus no surface disturbance from mining activity is allowed in the State MPA. This serves to separate physically mining from the BWCAW.

15. Additionally, the small watersheds were excluded because it would be difficult to provide back-up water discharge protection downstream of mining activity before drainage water flow could flow into, and impact the BWCA.

16. Mining facilities are sited and designed to prevent downstream impacts. Predictive models are used to predict water impacts. But sometimes unpredicted impacts do occur and downstream mitigation is required. For these small watersheds downstream mitigation outside the BWCAW would be very difficult. So they are excluded from surface activity associated with nonferrous mining.

17. One significant example of an unpredicted impact occurred in the Rainy River Watershed, involving the Dunka Mine. It did not impact the BWCAW. Downstream mitigation was developed after acid rock drainage (ARD) and metal dissolution was discovered and the problem was managed.

18. LTV mining companies and predecessor mining companies began mining the Dunka Mine Property in the 1960's. It was a valuable taconite resource and the ore was transported by train over to the Hoyt Lakes Plant. In order to get to the taconite ore, copper-nickel waste, Virginia Formation waste, copper-nickel lean ore and probably copper-nickel ore was stockpiled (as much as 50,000,000 tons in 4 stockpiles). A pollution problem of heavy metals and ARD was discovered downstream from the stockpiles by the Copper-Nickel Study

in the late 1970's. The mining started here in the 1960's prior to Ferrous Iron Ore Reclamation Rules being adopted in 1981 (codified as Minn. R. ch. 6130).

19. The Company diverted the runoff into a large portable treatment plant which they ran while they were completing mitigation of the stockpiles. Mitigation included at least the following: diversion of surface runoff away from the stockpiles, and after grading, covering and vegetation of the stockpiles, and downstream wetlands treatment of the reduced volume of runoff. The reclamation mitigation was successful and LTV mining company was allowed to close the treatment plant.

20. When the Nonferrous reclamation rules were written a few years later (1991-1993) this very concern was incorporated into the new draft rules by excluding surface mining activity use for the small watersheds near the BWCAW.

21. Watersheds adjacent to the BWCAW where the surface water flowed away from the BWCAW were not included on the map of the State MPA incorporated into Minn. R. 6132.2000, subp. 3.A. Buffer zones were also included. In general groundwater and surface water flow downhill in the same direction if they are free flowing and not impeded.

22. The Duluth Complex is a generally tight formation with limited groundwater flow and limited water availability. For example, well water supply to cabins can be challenging. A good example is the AMAX test shaft located within the Rainy River Watershed. It only produced a few gallons per minute during construction and several years of operation.

3. Siting Section of the Rules

23. DNR's Procedural Order on Remand could be read to suggest that the only two subparts of Minn. R. 6132.2000 (Siting) relate to the BWCAW. The rules in total and all 6 of

the siting subparts apply to nonferrous mines near the BWCAW or away from the BWCAW and in all watersheds in the State.

24. For example, under subp. 5 of the siting section, if a nonferrous mine (open pit or underground) or any of its facilities (processing plant, tailings basin, waste stockpiles, transportation corridors, etc.) could not meet the noise standards, or the air or water standards, etc., at the edge of the BWCAW, then it would need further “setbacks or separations” from the BWCAW.

25. Subpart 5 in the siting section (Minn. R. 6132.2000) identifies general siting criteria and refers to all mining facilities except the mine. It requires sites to minimize A-G criteria. The whole idea of siting is to choose sites which prevent or avoid environmental impacts. It is much easier to avoid a problem upfront then to fix it later.

26. As I stated at paragraph 38 of my August 10, 2017 Declaration and Affidavit: “Just because the mineral deposit is located within the Rainy River Watershed does not mean all the mining facilities will impact the land surface (including water bodies and other natural resources), or even mean that all necessary mine-support facilities necessarily must be located within the watershed. In the DNR nonferrous mineland reclamation rules, the State has included exclusion, avoidance and design criteria for siting mining facilities. *See* Minn. R. 6132.2000. These regulations require various geological, hydrological, environmental, and other technical studies to be included in every permit to mine application. Specific mine proposals will, if appropriate, evaluate whether some mine-support facilities, such as processing plants, tailings disposal facilities, stockpiles, and other infrastructure, could be located outside the Rainy River Watershed. Other alternatives that may be evaluated could include crushing and some waste disposal underground. Underground mining potentially could be developed at some locations with no permanent surface stockpiles. Predicting mining

impacts without an actual site-specific proposal that address these siting considerations is not possible or accurate. Waste characterization and mitigation procedures in the mine design will substantially reduce any surface disturbances and environmental impacts, but these procedures cannot be effectively analyzed in the abstract without a specific mine proposal.”

D. Minnesota’s Regulatory Approach and Enforcement History/Capability Work Well to Protect the Environment from Adverse Impacts of Mining Projects

27. Prior to the development of regulations, mine reclamation and enforcement by DNR was based on contractual provisions in mineral leases, as well as DNR’s common law and statutory powers to protect natural resources for mining activities such as stream diversions and water appropriation. The AMAX bulk sample test mine, discussed below, is an example of DNR’s use of lease requirements to regulate mining activities and facilities, prior to the enactment of ch. 6132. State mineral leases independently impose environmental protections. Companies must get approval for use of the surface before they can complete exploration or mining activities including drilling, test pits and shafts, road building, etc. Lease-based regulation remains available as a regulatory mechanism in addition to the extensive modern regulatory-based siting, permitting, and enforcement powers of DNR and other state and federal agencies.

28. Formal reclamation regulation and enforcement began in Minnesota when the Ferrous Reclamation Rules were adopted in 1981. After that date all ferrous mines needed to apply for a Reclamation Permit. Peat mining reclamation rules were adopted in 1985. And nonferrous mining regulations were adopted in 1993.

29. Prior to the adoption of these regulations, the Minesite Project (thesis prepared by William C. Brice with the support and assistance of DNR), the Reserve Mining On-Land Disposal EIS and permitting processes (1968-80), which provided extensive facility siting

criteria, and the Regional Copper-Nickel Study (1974-1979), which included some existing and future DNR employees who worked on the study, did a good job of identifying potential impacts, especially from waste stockpiles and water impacts.

30. At about the same time, AMAX (1974-1981) did extensive exploration including a test shaft in 1976. The AMAX test shaft was undertaken for the collection of a large bulk sample of the ore on which metallurgical testing was proposed to assess the feasibility of processing the ore to obtain the minerals. The test shaft contained a vertical shaft and horizontal stopes sufficient to allow operation of large equipment to extract representative samples of the ore to remove to the surface. The sample was to be sent to metallurgical labs for test processing and beneficiation of metal concentrates, but due to economic conditions the bulk sample remains on site and was encapsulated to prevent pollution. The AMAX operation produced stockpiles of ore and operated a small tailings basin, the first nonferrous tailings basin in the Rainy River Watershed.

31. The AMAX copper-nickel deposit straddles the watersheds between the Rainy River Watershed and the Lake Superior Watershed. It is an active exploration site today and has potential for future development.

32. In the 1970's, AMAX submitted a surface use proposal to complete a test shaft and other exploration. Under a surface land approval agreement required in State Mineral Leases, an environmental research plan was adopted and field studies of waste stockpile leaching, tailings leaching, mine shaft dewatering studies, etc. were conducted. One of these stockpiles was eventually moved to the Hibbing field research facility where many additional studies have been conducted.

33. Another study of particular note is the cooperative work completed at the Dunka mine site. Tests were conducted in the 1980's when it was already known that there were ARD and metals being released from old and newly constructed stockpiles. The research was designed and built by DNR employees and LTV. Stockpiles were built and runoff collected. Downstream from the stockpiles, disturbed wetlands were tested. A number of mitigation techniques were tested and evaluated. This work became the basis for the Dunka portion of the LTV reclamation plan. The reclamation was completed by LTV and its consultants.

34. Reclamation research continues today and encompasses a rich body of research which is being applied in the Polymet Project (Lake Superior Watershed), the Northshore Stockpile Project (About 30 million tons of copper-nickel waste is being stockpiled in the Rainy River watershed); and the Dunka Mine Project (About 50 million tons of copper-nickel waste was stockpiled in the Rainy River watershed) and would be applied in future projects. Clearly the DNR has the capability to plan and anticipate environmental impacts and they have the capability to solve unanticipated impacts from mining in the Rainy River watershed or any other watershed from copper-nickel mining.

35. DNR is continuing this research as evidenced by its recent research. The most recent DNR research work includes two reports. One of the reports compares results between standard ASTM humidity cells and a specialized column kinetic test and demonstrates how specialized column test work can improve waste characterization programs. The other evaluates a method for calculating sulfide mineral reaction rates from individual sulfide grains collected from field and laboratory rock weathering experiments. Additionally, the research group was involved in research projects related to geomembrane integrity and the microbiology of Duluth Complex rock weathering experiments. The geomembrane integrity study is being

conducted at the Hibbing field research site in collaboration with the Fabricated Geomembrane Institute. See Minnesota Department of Natural Resources, *Lands & Minerals*, Mineland Reclamation Research, Web Page 12-5-21. The nonferrous rules in ch. 6132 are flexible and the above 3 new research studies from the Agency will be used in future nonferrous permit requests.

36. The Minnesota DNR has been conducting copper-nickel waste management research (waste characterization and mitigation) for over 45 years, and is recognized as being at the forefront of this research nationally. DNR received a patent on 1 testing apparatus for waste characterization.

37. The Nonferrous Mineland Reclamation rules adopted in 1993 require a significant application process. Includes extensive Waste Characterization studies (6132.1000), a lengthy Permit Application (6132.1100), Financial Assurance (6132.1200) and Annual Report (6132.1300), so that DNR can keep close track of the operation.

38. The Standards are extensive and include: careful Siting to avoid problems, management of Reactive Mine Waste, Overburden Portion of Pitwalls, Storage Pile Design (waste stockpiles), Tailings Basin design and operation, Dust Suppression, and other aspects. The standards are detailed, but flexible to handle site specific and mine specific issues. Mining operations (especially Nonferrous Metallic Mines, see the mine models in the Permit Simulation Project 1990) are not all the same and the environment in which they are placed can be very different. Flexibility is essential to developing the best reclamation plan for each situation.

39. In addition, research advances on mineral processing, and site and facility design will also be used in future nonferrous permit requests.

40. DNR also has the right to deny permits if the proposer is unwilling or unable to meet the requirements.

E. No Impacts on the BWCAW Have Occurred from Over 100 Years of Mining Activity in Sulfide Bearing Rock

41. Past mining within the Rainy River Watershed has provided some interesting recreational opportunities, both historical (Soudan Mine State Park, Soudan, Minnesota) and environmental (Miners Lake, Ely, Minnesota). Continued mining in the Superior National Forest and the Rainy River Watershed should provide future opportunities also.

42. Sixteen commercial mines and two commercial quarries have operated within or partially within the Rainy River Watershed. Most of them have been within the Superior National Forest.

43. The Duluth Complex, Virginia Formation, and Greenstone are all rock formations which contain sulfide minerals. At least three of the mines (Dunka, Northshore and Soudan mines), and probably more on the Vermillion Range, have mined and stockpiled sulfide-containing rocks (Duluth Complex, Virginia Formation, and Greenstone) within the Rainy River Watershed. Likewise, the Mesabi Black dimension stone quarry has stockpiled Duluth Complex rocks within the Rainy River Watershed. There is at least 80 million tons of this sulfide-containing material stockpiled within the Watershed. The Dunka and Soudan mines (but not the quarry which is county-regulated) were initiated prior to enactment of the DNR mineland reclamation regulations for nonferrous mining. Nonetheless, there are no known adverse water quality impacts to the Boundary Waters Canoe Area Wilderness ("BWCAW") from this historical mining activity. The Duluth Complex and Virginia Formation stockpiles at the Northshore mine were initiated under the DNR mineland reclamation regulations for ferrous mining and, likewise, there are no reports of these

stockpiles causing adverse water quality impacts in the Rainy River Watershed or the BWCAW.

44. There are ten test pits, two test shafts, and thousands of drill sites in the Duluth Complex within the Rainy River Watershed and the Superior National Forest. Some of these were managed by the USFS as the surface land owner and were not comprehensively regulated. Again, however, there have been no known negative impacts to water quality in the BWCAW from this historical mining activity.

45. I have canoed and camped in the BWCAW with family and friends for 30 consecutive years. This year was to be our 31st year, but had to be cancelled because of the fire conditions. I have not observed any impacts in the BWCAW from the historical mining activity in the Superior National Forest and the Rainy River Watershed.

46. There have been six significant mineral resource areas identified within the Superior National Forest and the Rainy River Watershed. Each is at a different stage of exploration/development. Some sites have been studied more than others. Some sites may never be developed because of resource considerations. Some sites are generally considered to be most likely to be developed with an open-pit design, others most likely will be underground, and at least one could be both. There is a great deal of uncertainty associated with developing an individual mineral property, until there is an actual proposed mine development plan. Currently there are no actual development plans proposed in the Rainy River Watershed for environmental review or permitting. Absent such site-specific plans, it is not possible to realistically evaluate potential impacts from a proposal and to develop all of the mitigation measures that may be appropriate.

F. A Ban On Nonferrous Mining in the Rainy River Watershed Would Violate State Statutory Policy for Mineral Resource Management and the DNR's Fiduciary Duties to the Constitutionally Created School Trust Fund Mineral Assets, and the Other Mineral Assets It Manages for Local Minnesota Governments

47. The DNR Division of Lands and Minerals administers Minnesota's extensive mineral interests. These mineral interests include school and university trust fund minerals, as well as minerals associated with tax-forfeited lands managed by DNR in trust for local taxing districts. In addition, DNR manages extensive "severed" state mineral interests, which are mineral interests underlying lands where surface rights are now in the hands of non-state owners (unless reacquired by the state), or other state ownership categories. In its role as a trust fiduciary, DNR manages the state's mineral interests in a manner meant to generate revenues for the benefit of both the trusts and the counties in an environmentally acceptable manner and meeting all rules and regulations. The revenues generated are comprised of royalty income, which is income based upon the amount of ore mined, and rental income, which reflects payments made by lessees for mineral leases. In 2011, DNR projected potential total royalty income from copper-nickel development on school trust lands in Minnesota at about \$2.4 billion.

48. Attached as Figures 1-8 to my August 10, 2017 Declaration and Affidavit are eight DNR maps that reflect school, university, and tax-forfeited trust fund mineral interests, as well as acquired and unregistered severed minerals, all of which are located within the Superior National Forest and the Rainy River Watershed.

49. The state's mineral interests include extensive holdings located within the Superior National Forest in general and the Rainy River Watershed in particular, much of which is trust minerals. There are approximately 399,500 acres of school trust minerals located inside of the Superior National Forest and outside of the BWCAW. Approximately 29,300 acres are

located within one mile of the BWCAW. There are currently 13,321 acres of trust minerals lying within the Superior National Forest and within the Rainy River Watershed that are subject to state mineral leases granted to private operators. There are also approximately 6,712 acres of tax-forfeited minerals that are currently under state mineral lease in the Superior National Forest, 80 percent of the proceeds of which accrue to the local taxing districts, in this case St. Louis, Lake, and Cook Counties.

50. There is at least a similar amount of private mineral rights within the Superior National Forest and the Rainy River Watershed. Some of the private lands are leased, and contain high mineral values and potential large royalties to the private owner. This private land also has significant mineral development potential.

51. The state's interests lie not only with its fiduciary and constitutional duty to generate revenue for the trusts and the counties through mineral exploration and extraction, but also with the impacts such activities have on the Minnesota economy. The estimated combined direct and indirect economic gain from the state's mining industry is in the billions of dollars.

52. Consequently, appropriate management of Minnesota's mineral interests, including those located within Superior National Forest, has a substantial beneficial economic impact on the state in general and, as is well known, on the north-central and northeastern part of the state specifically.

53. Minnesota's Constitution created the permanent school trust fund, allows only public sale of school lands, requires income from minerals underlying trust lands to be credited to the permanent school fund, and allows distribution of income to the various school districts. As of September 30, 2015, there was \$1.1 billion in the corpus of the permanent school trust fund. Income from this fund provides a portion of the Minnesota school aids appropriation. In

the State's Fiscal Year 2014 and Fiscal Year 2015, minerals leasing and royalty payments accounted for \$53.6 million and \$30.4 million in gross revenues for the state, respectively. Minerals have provided the majority of the income to the corpus of the permanent school trust fund. In 2011, DNR projected potential total royalty income from copper-nickel development on school trust lands at about \$2.4 billion. Virtually all of this income would be generated in the Rainy River Watershed and the Superior National Forest. The inability to access and develop state mineral interests in the Rainy River Watershed would result in a huge loss of income that otherwise would be available to benefit the school kids of Minnesota.

54. DNR has issued mineral leases in at least five of the six copper-nickel deposits identified within the Rainy River Watershed. The proposed exclusion of all lands in the Rainy River Watershed would negatively affect both the development of these deposits and any nearby mining facilities (especially access and transportation). Over 13,000 acres (13,321) of school trust fund land is currently under State lease, which represents the majority of the total of 20,033 acres of state mineral lands leased within the Superior National Forest and the Rainy River Watershed. Other potential nonferrous minerals probably also occur in the Rainy River Watershed.

55. The state has about 147,600 acres of mineral ownership within the Superior National Forest and the Rainy River Watershed. All of it has mineral potential for exploration and discovery of valuable minerals. Twenty thousand and thirty-three (20,033) acres described above are currently under lease. There is at least a similar amount of private mineral rights within the Superior National Forest and the Rainy River Watershed. Some of the private lands are also leased. This private land also has significant mineral potential.

Dated: December 8, 2021


DR. WILLIAM C. BRICE

Subscribed and sworn to before me
this 8th day of December 2021.



Notary Public

