Tamarack Mining Project - EIS Scoping

RGU Comments on Talon Metals (USA) LLC's Project Proposal

On June 21, 2023, Talon Metals (USA), LLC, (Talon) submitted a Project proposal for its Tamarack Mining Project. This is a proposed new underground mine near Tamarack, Minnesota, focused on the extraction of high-grade metal ore containing nickel, copper, and iron. Because the proposed project involves construction of a new facility for mining metallic minerals, an Environment Impact Statement (EIS) must be prepared in accordance with Minnesota Rules Chapter 4410. The Minnesota Department of Natural Resources (DNR) is the designated Responsible Government Unit (RGU) under Minn. R. 4410.4400, subp. 8, and is responsible for overseeing the environmental review process including preparation and review of environmental documents.

The review process for projects requiring an EIS can be divided into the following steps: EIS scoping, draft EIS preparation, final EIS preparation, and adequacy determination. The Tamarack Mining Project is in the EIS scoping stage. An initial step in the EIS scoping stage is for the RGU to determine whether a proposer's Project proposal, which is the filled-out Environmental Assessment Worksheet (EAW) form, is complete, and if not, the RGU must return the submittal to the proposer for completion of the missing data.

The DNR has determined that Talon's June 21, 2023, Tamarack Mining Project proposal is incomplete. The table below includes the DNR's comments associated with its completeness decision. Talon has been provided the DNR's comments and may address the identified deficiencies and resubmit the EAW with the additional information requested. A list of abbreviations and acronyms is provided after the tables.

Comment No.	EAW Section	Line No.	Table	Figure	Graphic	DNR Comment	Requested Action by DNR
1	3	21				Partial information can be provided at this time for Item 3, RGU. For "Contact person," list: MN Department of Natural Resources. For "Address," list: 500 Lafayette Road. For "City, State, ZIP," list: St. Paul, MN 55155.	Modify text.
2	5	39	1			Table 1 and Table 2. The project Legal Land Description for T48N, R22W, Section 04 may be incorrect. Recheck location in T48N, R22W, Section 04; is the project actually in the NENE ¼-¼-Section (for PID 05-0-005300) instead of SENE ¼-¼-Section as listed in Table 1?	Confirm listing in Table 1; edit document if necessary.
3	5	39	1, 2			Confirm if the following ¼-¼-Sections should be listed in Table 1. Specifically: 05-0-003500 in T48N R22W S03 in NESW and also in NESE; 05-0-004600 in T48N R22W S03 in SENW and SESW, and also in SENE and SESW; 61-0-002600 in T48N R22W S10 in NWSE, and also in NWSW; 61-0-033000 in small segments of: T48N R22W S10 in SESW, and also in SESE T48N R22W S15 in NENW, NWNW, and NWNE, and also in NENE and NWSW; and also in T48N R22W S16 in NESE and NESW though it appears not all of 61-0-033000 is part of the Project.	Confirm listing in Table 1; edit document if necessary.
4	5	100		1		Figure 1 would benefit from inclusion of an inset that shows the project site relative to the State of Minnesota, or at least the north-central part of the state.	Edit figure to include inset scaled to regional location of project.

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5	5	103		4		Figure 4 would benefit from addition of a few of the larger, basic facility labels so the reader does not have bounce between other figures to determine where drainage may be impacted.	Edit figure as noted.
6	5	107		8		In Figure 8, geologically relevant faults and fracture zones should be identified, probably in a second figure as a side-view cross section.	Edit figure as noted.
7	Abbreviations	121				Consider adding units or descriptors measuring noise and vibration to the acronym table.	Address comment; modify text if warranted.
8	Abbreviations	121				The list of acronyms needs to add Tribal Historic Preservation Officer (THPO), Minnesota Indian Affairs Commission (MIAC), National Register of Historic Places (NRHP), Traditional Cultural Properties (TCP), National Historic Preservation Act (NHPA), Minnesota Field Archaeology Act (MFAA).	Address comment; modify text if warranted.
9	6a	166				Item 11a notes at Line 1112 "[t]he [Tamarack Intrusive Complex (TIC)] hosts nickel-copper-cobalt sulfide mineralization with associated platinum, palladium, and gold." Recognizing the Environmental Quality Board's (EQB) guidance is to limit the Monitor notice to 50 words or less, if platinum, palladium, and gold are anticipated to be extracted as marketed (bi-)products, acknowledging this may be warranted in the Monitor project summary or elsewhere in the document.	Advisory only; future discussion item as part of developing the purpose statement and ensuring an accurate project description. The EQB Monitor notice text should be consistent with the purpose statement.
10	6a	166				The DNR notes that including "…for use in electric vehicles and other industries…" in the EQB Monitor notice could be viewed as articulating the project's need (beyond disclosing project purpose). Disclosing project need is typically done for public actions although not prohibited for private actions. Not required for Monitor notice.	Advisory only; future discussion item as part of developing the purpose statement and ensuring an accurate project description. The EQB Monitor notice should be consistent with the purpose statement.
11	6a	178				The document should consistently reference the out-of-state processing facility as being located in North Dakota. The term "location outside of Minnesota" is used at Lines 170 and 220; these should be changed to North Dakota.	Modify text.
12	6b	178				For clarity and to inform future permitting, providing some additional detail regarding agreement types, business structure, roles, and similar would be useful to public understanding.	Modify text; future discussion item if desired.

Comment No.	EAW Section	Line No.	Table	Figure	Graphic	DNR Comment	Requested Action by DNR
13	6b	182				The text to this part of Item 6b provides the operational areas in acres, but the way the information is laid out results in confusing mathematics. When discussing Project acreage, one approach would be to: 1) Explain the total project area as being approximately 447.0 acres due to approximately 263.3 acres of surface boundaries, approximately 224.9 acres of underground boundaries, with approximately 41.2 acres of overlap; 2) Describe the approximately 263.3 acres of surface boundaries (which may not add-up with the current descriptions provided; requires checking); and 3) Describe the approximately 224.9 acres of underground boundaries.	Consider the proposed approach and apply to the description of project elements and acreages. Otherwise edit document to address potential points of confusion.
14	6b	182				The proposed EAW text identifies the presence of both existing and new/created impervious surface associated with project development. The RGU notes both EAW Item 11 and the Draft Scoping Decision Document (DSDD) would likely require assessment of potential impacts due to project-related impervious surface creation in the EIS.	Advisory only; future discussion item.
15	6b	182				The DNR has yet to determine the EIS scope regarding non-Minnesota components, including how targeted-mineral concentrates might be addressed. However, full characterization of ore and waste rock will be necessary to support both the EIS analyses and permitting requirements. This could include identifying the average fractions expected for target metals, such as nickel, copper, cobalt, and iron (for example) out of the 800,000 short tons of ore mined out annually.	Advisory only; future discussion item.
16	6b	182				DNR has yet to determine the EIS scope regarding non-Minnesota components, including potential rail transport. However, assessment of potential rail transport effects within Minnesota could include changes to rail traffic estimates between Aitkin County and the Minnesota border with North Dakota.	Advisory only; future discussion item.
17	6b	182				DNR has yet to determine the EIS scope regarding non-Minnesota components, including the proposed concentrating facility in North Dakota. However, it is appropriate for Item 6b to acknowledge the actual processing and tailings management site if it is known prior to document release for public review and comment.	Provide a sentence detailing the location of the North Dakota facilities; edit document as required.
18	6b	182				DNR has yet to determine the EIS scope regarding non-Minnesota components, including any required permits or approvals from any jurisdiction in North Dakota. However, it is likely the Draft Scoping Decision Document will include a provision to summarize any permits and approvals required in North Dakota in a format similar to that in EAW Item 9.	Advisory only; future discussion item.
19	6b	182				The EAW provides an overview of the mine ventilation system at Lines 477-484. It is likely the Draft Scoping Decision Document would require estimates of how much air the ventilation system move, the types of contaminates that may be captured, including method(s) of capture (e.g., filtration). This is partially addressed in EAW Item 17a at Lines 2023-2027.	Advisory only; future discussion item.

Comment No.	EAW Section	Line No.	Table	Figure	Graphic	DNR Comment	Requested Action by DNR
20	6b	182				The document provides little discussion of the water treatment plant itself but does identify it plays a key role in water management. Some information is provided at Lines 658-663, including identification of the preferred reverse-osmosis treatment technology. It is likely the Draft Scoping Decision Document would identify the need for a detailed water treatment plan for reference in the EIS assessment of potential impacts to water resources. Specific to the development of the Scoping EAW, Item 6b would benefit from developing a paragraph that consolidates the description of the water treatment plant components, preferred treatment method, and other relevant information (likely already present but dispersed in the greater text).	Consider the proposed approach and apply to Item 6b. Modify text as appropriate.
21	6b	182				The project description would benefit from a mining process flowsheet that captures all activities associated with rock movement from underground to the surface. This would not replace the existing graphics (e.g., 9, 10, 11) but would provide a simplified presentation of how mining would occur.	Consider how to depict mining process and add graphic to document.
22	6b	182				Currently, the discussion regarding the surface boundary condition is discontinuous, which adds to the confusion. There is a discussion about the approximately 79.1 acres of new development, but no discussion regarding the approximately 3.9 acres of existing development. However, this is only approximately 83.0 acres. What about the remaining approximately 180.3 acres?	Address comment; modify text if warranted.
23	6b	187				The text here is partially duplicative of information provided in Lines 203-206. To reduce duplication, eliminate the first sentence and add the second sentence to the paragraph at Lines 183-186.	Consider comment; edit text.
24	6b	187				It is unclear what " total additional developed surfaces" is referring too? Is this based on the current developed surface status or is it beyond the 224.9 acres listed on Line 194?	Respond to question; clarify text as warranted.
25	6b	196		1, 2	1	The surface facilities outlined in Graphic 1 do not appear to be consistent with the "surface boundary" in Figures 1 or 2. Confirm consistency.	Consider comment; edit figure as warranted.
26	6b	196		2	1	It is not clear how the outline of the areas represented on Graphic 1 is correspond to the outline on Figure 2. Confirm consistency.	Consider comment; edit figure as warranted.
27	6b	196			1	Graphic 1 needs a legend to distinguish above ground and underground components/areas. Also, should reorient the map, with the north at the top of the page as with the other figures	Consider comment; edit figure as warranted.
28	6b	200		1		The project full area (Black outline in Figure 1) is not mentioned within the document. The processing area is stated as 447 acres, but the full site area is closer to 600 acres (from google earth estimations). This would be valuable information to include.	Consider comment; edit figure as warranted.

Comment No.	EAW Section	Line No.	Table	Figure	Graphic	DNR Comment	Requested Action by DNR
29	6b	200		3	2	The identified 'facility elements' within the EIS Scoping Document do not match the names used on Figure 3. For clarity the same names/identifiers should be used throughout the document and match what is used within the Figures. Example: Cemented Backfill Plant vs Backfill Materials Crusher Building? Enclosed Ore Storage and Railcar Loadout Building = Ore Receiving Building?; Stormwater Wet Sediment Basin = Storm Water Pond?; Glacial Till is not identified on Figure 3 but it is called out in Line 233.	Consider comment; edit figure and/or text as warranted.
30	6b	202				Note to Editor: May need to consider some separation in document of any discussion for underground acreage (surface expression) versus actual surface development acreage. Potential for confusion with reviewers.	Advisory only.
31	6b	203				Should include the number of structures and facilities and their anticipated size and height. This information may be needed to assess visual impacts to natural features and cultural landscape(s)/traditional cultural properties.	Consider comment; add detail if available. If not available, then the issue flagged for the Draft Scoping Decision Document.
32	6b	204			2	It is unclear which of the facilities shown in Graphic 2 already exist on the surface. Clarify if the 3.9 acres of existing developed surface has infrastructure already built upon it, and if so, identify what the structures are and what they are being used for.	Consider comment; edit document as needed.
33	6b	207				Should provide approximate acreage.	Consider comment; edit document as needed.
34	6b	212				Typo: "For these activities, an offset distance of at approximately 200 feet has been applied ..."	Make edit.
35	6b	216				The full list of metals that will be extracted from ore needs to be stated. If more than one concentrate will be produced the types of concentrate also need to be stated.	Consider comment; edit document as needed.
36	6b	217				The extraction timeline should be better defined. Is the 7-10 year period expected to be contiguous or potentially 7-10 years staggered over a larger time period (e.g., based on market demand)?	Answer question; modify text if warranted.
37	6b	217				Provide greater details on the duration of the entire mine life, including a description of mine life phases and in what year each phase is anticipated to begin. The Project Description only states the length of the operations period, but not closure or post-closure. Some reclamation activities are mentioned in later sections of the EAW. How would water, stockpiles, and discharge be managed in closure and during periods of care and maintenance? This information is being requested for inclusion in the next data submittal.	Consider comment; edit document as needed.
38		218				What are the North Dakota project components? What metal concentrate products are planned to be produced?	Answer questions.
39	6b	222				Include the Temporary Modular Water Treatment plant as a facility element.	Consider comment; edit document as needed.

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40	6b	227				Bullet 3, Line 4: '… an offset distance of at approximately…' should read '… an offset distance of approximately…'	Consider comment; edit document as needed.
41	6b	229				There appear to be multiple separate treatment plants needed for the site: contact water, non-potable water, potable water, & sanitary treatment (in addition to ISW treatment). These may each generate their own waste streams (reverse osmosis (RO) reject, filter backwash solids, sludge, etc.). information on these systems will need to be substantially expanded for the EIS.	Advisory only. Level of detail to be determined for the Draft Scoping Decision Document.
42	6b	238				More detail relative to railcar handling and localized environmental impacts is needed in the EIS.	Advisory only. Level of detail to be determined for the Draft Scoping Decision Document.
43	6b	238				Provide additional detail and description in text and in graphic or figures of the ore storage and rail loadout facility to evaluate potential for impact and level of review in the EIS.	Consider comment; edit document, add graphic or figure, as needed. Final level of detail to be determined for the Draft Scoping Decision Document.
44	6b	244				At Line 217 the document indicates a 7-10 year production rate while here it indicates 10 years. To reduce confusion these estimates should be reconciled. More broadly, addressing the timing of construction, operations, and reclamation and closure would benefit from being consolidated into a section at the end of Item 6b.	Consider comment; edit document.
45	6b	245				Little detail provided for timing and duration of construction. Construction slated to begin 2026. To the degree that information is available, describe activities seasonally, especially related to peatland disturbance. The draft scoping decision will likely require detailed information on construction sequencing for the impact assessment(s).	Consider comment; edit document.
46	6b	245				Provide estimated years/months for construction.	Consider comment; edit document.
47	6b	249				Regarding site preparation, little detail is provided on historical land use or existing conditions to put demolition and construction requirements into context. Clearly there are existing infrastructure, buildings, and utilities.	Consider comment; edit document.
48	6b	249				Confirm if there is a need for any blasting at or near the surface. If so, include in construction plans.	Consider comment; edit document.
49	6b	256				RGU notes that the wastewater generated by the tunneling of the loop access tunnel will need to be quantified/qualified and the mobile/modular treatment plant will need to be specified to address all water quality needs if this water is to be discharged.	Advisory only; treatment of topic to be captured in Draft Scoping Decision Document.
50	6b	259				Additional detail necessary to describe railway spur construction plans for reviewers to assess the potential types of impacts, along with potential extent and reversibility, on the peatland that the spur would disturb.	Consider comment; edit text with additional detail for clarity, including new construction figures.

Comment No.	EAW Section	Line No.	Table	Figure	Graphic	DNR Comment	Requested Action by DNR
51	6b	259				Provide additional information regarding construction of the railway through the wetlands. Wetland impacts (i.e., permanent, temporary, or indirect), including hydrologic impacts, should be evaluated. Any construction dewatering should be described and a plan for monitoring for ground and surface water impacts during construction should be developed.	Consider comment; edit text with additional detail for clarity, including new construction figures.
52	6b	259				Using a permeable fill material to construct the railway spur in the wetland should be investigated to allow for ground and surface water flow through the spur.	Consider comment; edit text with additional detail for clarity.
53	6b	260				RGU notes that the loss of wetlands and peat may have an effect on water levels, CO2 and CH4 flux, sulfate, and mercury concentrations. Likely that monitoring of sulfate and mercury concentrations as well as CO2 and CH4 emissions would be necessary in the surrounding wetlands.	Advisory only; it will likely be necessary for the draft scoping decision to specifically address peat excavation and range of potential impacts. Modify submittal text where it makes sense to fill in details on treatment of excavated peat.
54	6b	260				This section suggests potentially large volumes of peat would be excavated as part of the rail spur construction. Peat excavation is not discussed as part of the mine surface facility construction, and it is not clear if this detail is omitted or not required. Further, no specific offsite location is stated for dredged material, and it is not possible to assess impacts of these spoils materials.	Advisory only; it will likely be necessary for the draft scoping decision to specifically address peat excavation and range of potential impacts. Modify submittal text where it makes sense to fill in details on treatment of excavated peat.
55	6b	262				Excavation of peat on state lands may require a state lease for the removal of peat. More detail required to better understand the potential regulatory requirements and identify potential impacts from proposed activity.	Consider comment; provide additional detail on proposed action.
56	6b	263				Would the peat being "beneficially reused" occur as a land application or by product sale? If land application, this could potentially need additional permitting (not already identified within Section 9).	Answer question; modify text if warranted. Future discussion item in development of Draft Scoping Decision Document. If land application is occurring, this would need to be discussed and considered within the GHG and Cumulative effects sections.
57	6b	263				Detailed information on peat thickness is needed for the DEIS. If peat is proposed to be used at other Talon properties, this should be identified.	Advisory only regarding details on peat resource, however any proposed uses should be captured in the document. Future discussion item around treatment of peat, including any potential for offsite transport and any potential impacts for inclusion in the Draft Dcoping Decision Document.

Comment No.	EAW Section	Line No.	Table	Figure	Graphic	DNR Comment	Requested Action by DNR
58	6b	265				Upland offsite soil/peat disposal sites should be identified.	Consider comment; edit document as needed.
59	6b	266			4	In Graphic 4: Three-Dimensional Sketch of Underground Mine Workings, the graphic illustrates the various components that will make up the underground mine features. But the graphic seems to leave out the collection and removal system of the water that infiltrates through the ventilation raises and escapeways. If available, understanding of the project would benefit from inclusion of a graphic of the water collection and removal system. Regardless, a detailed understanding of the proposed system will be required to assess potential impacts.	Address comment; modify text and/or provide new graphic if possible. Future discussion item for proposed treatment in the Draft Dcoping Decision Document.
60	6b	266				This section also discusses the water-tight liner that would be installed and progressively extended as the tunnel advances in order to permanently control ingress of groundwater. Is a leak detection system proposed?	Answer question. If yes, then modify text to include this project feature. If no, then provide an explanation why this is the case?
61	6b	266				If known, what type of maintenance and repair protocol would be applied to the water-tight liner?	Answer question.
62	6b	266				How long is the water-tight liner projected to last?	Answer question.
63	6b	266				Will the water-tight liner be left in place or removed upon mine closure?	Answer question.
64	6b	266				When available, the design for the circular access tunnel should be provided. Information should include the final tunnel location, tunnel depth, tunnel diameter, precast concrete liner thickness etc. It would be helpful to provide figure(s) that show where the tunnel will be constructed in surficial sediments and where it will be constructed in bedrock.	Consider comment; edit document as needed. Add figures as suggested.
65	6b	266				Clarify whether there will be any groundwater inflow during the construction of the loop-shaped declines. It was stated in Lines 276-277 that a pressurized-face tunnel boring machine (TBM) was selected to drill the loop-shaped tunnel because it can excavate through saturated soils without needing to remove water from the surrounding soils or rock formations. However, in Lines 1491-1492, it was stated that the construction of the declines would use a tunnel boring machine, which is able to develop the declines with minimal groundwater inflow from the surrounding unconsolidated sediments. Groundwater inflow must be estimated if there will be minimal inflow during access tunnel construction and groundwater and wetland impacts must be evaluated. A plan for monitoring for groundwater and wetland impacts during decline construction should be developed.	Edit document as needed to address comment. Further discussion of issue required to for treatment in Draft Dcoping Decision Document.
66	6b	267				Is a separate emergency egress being considered?	Answer question.

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67	6b	275				It is likely the loaded haul trucks will induce ground-borne vibration as they travel from the working face, through the tunnel, to the surface. It will be necessary to understand what those vibration levels would be, whether there is a potential to induce cracks in the tunnel (creating a pathway for pollutants to enter groundwater) to be evaluated, any monitoring required to monitor for cracks in the tunnel, and how will the tunnel design prevent cracks from allowing pollutants to enter groundwater?	Advisory only; future discussion issue for development of Draft Scoping Decision Document.
68	6b	275				Is monitoring proposed for groundwater to determine if pollutants enter groundwater along the inside or outside of the tunnels throughout the lifespan of the project (and after closure)?	Answer question; modify text if warranted.
69	6b	276				It is noted that TBM cutting surfaces are abraded as they work. It will be necessary to understand what is the chemical composition of the different cutting surfaces, what metals and other elements could be introduced into groundwater due to this abrasion, in what quantities, and how do those quantities affect surrounding water quality? Similar information could be needed for any lubricants, paints, or other materials that will wear off during TBM use.	Advisory only; future discussion item in development of Draft Scoping Decision Document.
70	6b	277				It would likely be necessary to assess any changes in groundwater resulting from tunnel boring machine excavation and grouting. This includes changes to aquifers, groundwater flow, and potential changes to wetlands at the surface.	Advisory only; future discussion item in development of Draft Scoping Secision Document.
71	6b	279				General Question: What dictates the radius of the tunnel arc? Is the tunnel radius determined by the limitations of the TBM or the equipment that will be used in the mine? Is the amount of tunneling minimized?	Answer question.
72	6b	281				Does Talon propose to assess potential blasting-related impacts in terms of by ground vibration and airblast? Would the environmental or acceptable human response be evaluated? Would a limit to prevent structural damage be evaluated? Would Talon develop ground vibration contours (from blasting), and airblast contours for overpressure levels?	Answer questions.
73	6b	281				Regarding assessment of blasting-related impacts, does Talon propose to identify impacts to sensitive receptors, which could include residences, recreational areas or sites, or impacts to tribal members that may have a cultural or spiritual connection to the project vicinity.	Answer question.
74	6b	289				More information on the watertight liner is needed. Will the entire liner be left in place? It will need to be understood how the liner may change hydraulic conductivity in the overburden, saturated unconsolidated sediments and bedrock.	Answer question.

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75	6b	290				Assessing potential impacts to the surrounding strata would require information on the expected performance of the watertight liner. This would involve a number of considerations. A range of water leakage values (from excellent installation/performance to poor installation/performance) could be expected. Information on the expected lifespan of the liner is needed. Would the liner need to be replaced? What happens to the liner over the long term? This is important given that the current plan is not to backfill the access tunnels in the glacial till.	Advisory only; future discussion item in development of Draft Scoping Decision Document, especially in terms of data needs, requisite analyses, and reporting. Edit document where clarification is warranted.
76	6b	292				This section describes various features of the two box cuts. However, missing from the box cut descriptions are the handling of the overburden material generated by the box cut and decline excavation process.	Consider comment; edit document as needed.
77	6b	292				How long will be the overburden be set aside?	Answer question.
78	6b	292				How much of the overburden will be set aside and how much will be used as a backfill for the box cuts?	Answer question.
79	6b	292				At mine closing, will these box cuts be removed and the stored overburden used to refill the opening?	Answer question.
80	6b	292				How will the overburden be protected during its storage? Will there be a cover? How about a liner?	Answer question.
81	6b	292				What is the overburden’s soil chemistry; is it high in sulfide-bound minerals?	Answer question.
82	6b	292				Where is excavation material placed from "box-cut" construction and what is done with groundwater pumped during construction (prior to liner installation).	Answer question.
83	6b	298				More information on the watertight liner is needed. Will the entire liner be left in place? It will need to be understood how the liner may change hydraulic conductivity in the overburden, saturated unconsolidated sediments and bedrock.	Answer question.
84	6b	312				The EIS would likely evaluate the impact of a pressurized-face Tunnel Boring Machine (TBM) that pressure-pushes its drill bit through a water-saturated substratum of rock and soil by using its own air or water, thrusting aside from the bored hole the groundwater and overburden it displaces. The potential for impacts on the water table and underground water hydraulics during its operations, leading to surface water alterations in a wetland and spongy area like Tamarack, would need to be evaluated.	Advisory only; future discussion item in development of Draft Scoping Decision Document.
85	6b	312		6		Where is the TBM assembled? How is it shipped to the site? What types of maintenance are required?	Answer questions; edit text as needed.
86	6b	312		6		Need to discuss maintenance requirements/operational constraints of TBM.	Consider comment; edit text as needed.
87	6b	336				What kind of monitoring and control measures will be emplaced to assess potential ground settlement as a result of tunneling with the TBM?	Answer question.

Comment No.	EAW Section	Line No.	Table	Figure	Graphic	DNR Comment	Requested Action by DNR
88	6b	336				In describing the decline that develops beyond the box cut, this section briefly describes the bedrock material referred as the “development rock”, but then points the EAW reader to a different section for detailed information, but this section is misidentified as “Overburden and Development Management” rather than the correct Overburden, Development Rock, and Backfill Materials Management section.	Consider comment; edit text as needed.
89	6b	337				Development rock is termed waste rock in Minnesota Rules Chapter 6132 which applies to this project. Revise to refer to the various categories or types of rocks with terms that apply in Minnesota.	Edit document.
90	6b	338				It does not appear that the temporary overburden storage area will be lined. What is the rationale (as currently known) for not lining the storage area? This is a potential concern since wetland peat will be a portion of overburden removed, which may lead to risk of mercury/methyl mercury leaching after rain events.	Answer question. Response will inform development of Draft Scoping Decision Document.
91	6b	338				Activities defined as temporary will need more discussion and review as they may related to determination of start of construction as well as any electrical generating units as they may need permit authorization prior to being brought onsite.	Advisory only. Permitting consideration.
92	6b	340				what is the liner design for the backfill materials storage area?	Answer question.
93	6b	340				Describe how the development rock would be staged in the backfill materials storage area including length of time before being used as backfill material, as well as associated geochemical characterization.	Consider comment; edit text as needed.
94	6b	343				Provide additional detail on "temporary" facilities that are needed for the TBM operations, including layout, locations, etc. and which ones are planned to serve a "permanent function" for mine operations, hence not temporary.	Consider comment; edit text as needed.
95	6b	347				What are the noise and/or vibrational effects to the area from the use of the TBM?	Answer question. The Draft Scoping Decision Document could identify the need to determine whether this activity could impact species sensitive to noise and vibration (as an EIS issue).
96	6b	347				There is a brief discussion regarding the use of a temporary water treatment while the permanent water treatment plant is under construction. If known what is the comparison of water output quality and quantity between the temporary and permanent water treatment systems?	Answer question.
97	6b	347				More information is required regarding the specific parameters that will be treated by the mobile or modular water treatment units, as well as supporting evidence of the parameter removal rates achieved (i.e., bench work, analogue site results, etc.).	Advisory only. Future discussion in development of Draft Scoping Decision Document.

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98	6b	347				Detail on mobile/modular water treatment units is needed. How much water is treated by these units? What is their performance? What are their energy and maintenance needs?	Advisory only. Future discussion in development of Draft Scoping Secision Document.
99	6b	347				A more detailed description of the temporary water treatment mobile/modular units (comparable to the TBM description) and expected water parameters that will need treatment to meet standards would assist reviewers in assessing sufficiency of such technology for the initial project phases.	Advisory only. Future discussion in development of Draft Scoping Decision Document.
100	6b	347				What does "as necessary" mean for temporary water treatment?	Answer question.
101	6b	347				How long will the temporary water treatment system be used until the permanent system comes online?	Answer question.
102	6b	347				This section also mentions how the temporary water treatment system's water discharge will meet water quality standards, but whose? Minnesota's? This should be explicitly stated.	Consider comment; edit document as needed.
103	6b	347				What type of treatment is proposed for the modular water treatment plant that will be used during construction? What contaminants are expected to be elevated in construction contact water and what contaminants will the modular water treatment system address? Where will the system be located (not currently indicated in any figures/graphics)? Where will the water be discharged? How were discharge quality/quantity objectives developed?	Consider comment; edit text with additional detail for clarity.
104	6b	353				Any long-term consequences of the TBM, both during the mine operation and after mine closure, would need to be considered.	Advisory only; future discussion item in development of Draft Scoping Decision Document.
105	6b	355				The document provides use of the TBM for light rail construction in the Metro Twin Cities. Given these tunnels typically operate at shallower depths than proposed for the Tamarack Mine, it is appropriate to identify examples of TBM usage to greater depths, especially for mining-related applications.	Consider comment; provide examples if available.
106	6b	355				Have TBMs been used for other mining projects? If first time, more explanation as to why this technique is being used instead of other underground mining techniques.	Answer question.
107	6b	358				In this section, it says "Both [underground development and ore extraction] would utilize conventional drill-and-blast excavation methods to advance the mining "heading." Are seismic impacts predicted?	Answer question.
108	6b	358				What are the noise and/or vibrational impacts to the area from use of conventional drill-and-blast excavation methods?	Answer question. The Draft Scoping Decision Document could identify this as an issue whether this activity could impact species sensitive to noise and vibration.

Comment No.	EAW Section	Line No.	Table	Figure	Graphic	DNR Comment	Requested Action by DNR
109	6b	358				In the mining cycle, explosive ammonium nitrate and fuel oil (ANFO) are used. At a high level what are the types of environmental impacts associated with use of ANFO?	Answer question. The response can be considered in development of the Draft Scoping Decision Document.
110	6b	358				The assessment of potential vibration effects will likely require development of an underground seismic profile for explosive detonations.	Advisory only. Future discussion in development of Draft Scoping Decision Document.
111	6b	358				The document indicates that prior to release, exhaust air would undergo a filtration or scrubbing process to reduce the amount of suspended dust and particulates. Why would the ventilation system be reducing and not eliminating the suspended particulates? Are there limits to efficacy of elimination, and if yes, what would they be?	Answer question.
112	6b	358				RGU notes that the EIS could investigate potential health risks associated with suspended dust and particulates.	Advisory only. Future discussion in development of Draft Scoping Decision Document.
113	6b	358				RGU notes that these EIS could require identification of individual protection measures to safeguard workers from any impacts associated with suspended dust and particulates.	Advisory only. Future discussion in development of Draft Scoping Decision Document.
114	6b	358				Can an estimate be provided regarding the rate that fresh air would need to be brought in to service the mine such that there is adequate amount of air for the employees and in excess to adequately remove the dust and blasting gasses?	Answer question.
115	6b	358				Is it known whether the dust would include silicate fibers? If so, will ventilation be enough to capture these fibers in order to protect employee health and prevent silicosis?	Answer question. The response can be considered in development of theDdraft Scoping Decision Document.
116	6b	358				In bolting, there may be situations where grouted bolts will be used. At a high level are there types of environmental impacts known to be associated with the use of the cementitious or resin grout?	Answer question. The response can be considered in development of the Draft Scoping Decision Document.
117	6b	358				What would cause bolt corrosion? Simple oxidation from air? Reaction with the sulfide-laden rock? Acidic gasses from the explosives?	Answer question.
118	6b	358				Will there be a sound-dampening curtains over the two surface portals that lead underground?	Answer question.
119	6b	358				Has there been a baseline study conducted for the whole of Aitkin County to determine its past and current seismic profile to establish a seismic baseline?	Answer question.

Comment No.	EAW Section	Line No.	Table	Figure	Graphic	DNR Comment	Requested Action by DNR
120	6b	358				After the blasting, fans and ducting are used to remove dust and blasting gasses. Will these be temporary features attached to permanent features, and then having the permanent feature extended farther into the mine?	Answer question.
121	6b	358				Will continuous emission monitoring system (CEMS) be used to detect carbon monoxide (CO), carbon dioxide (CO2), nitrogen dioxide (NO2), and other gasses from the explosives, from releases from the rock, and from releases due to other human activities?	Answer question.
122	6b	358				How will the blast area and the rest of the mine opening be monitored to ensure air quality compliance?	Answer question.
123	6b	365				A likely project goal is to accurately blast along the margins of the ore body to minimize the amount of waste rock that is removed. The EIS would likely require detail on exactly how this would be accomplished.	Advisory only. Future discussion in development of Draft Scoping Decision Document.
124	6b	365				Underground drill and blast cycles will need more information to determine impacts. Specifically, air emissions generated from explosives and rock material. Ventilation to surface will also need more characterization for evaluation of impacts due to blasting.	Advisory only. Future discussion in development of Draft Scoping Decision Document.
125	6b	366				What are the face dimensions?	Answer question.
126	6b	370				Will ANFO impact contribute to increased nitrate levels in groundwater and how would this be monitored and remediated?	Answer question.
127	6b	376				What is the estimate of fan power and airflow?	Answer question.
128	6b	378				Could there be mercury released from exhaust air? Will this be monitored and measured?	Answer question. Future discussion item where the response can be considered in development of the Draft Scoping Decision Document.
129	6b	397				The three classifications are based on “low-sulfur”, “moderate-sulfur”, and “high-sulfur” levels of sulfate in the rock, with Class 1 being the lowest, and Class 3 being the highest. DNR will work with Talon to establish the appropriate chemical thresholds to classify the rock into those three classifications. The EIS would likely require research literature to support the classifications?	Advisory only. Future discussion in development of Draft Scoping Decision Document.
130	6b	397				If known, how often would the development rock be analyzed for their sulfide content?	Answer question; edit text as needed.
131	6b	397			3, 4	In its initial description of the underground development, a typical underground site layout is described and then points the reader to “Graphic 3” instead of the correct Graphic 4: Three-Dimensional Sketch of Underground Mine Workings.	Consider comment; modify text to address the issue if needed.

Comment No.	EAW Section	Line No.	Table	Figure	Graphic	DNR Comment	Requested Action by DNR
132	6b	397				The bedrock that is being excavated deemed as “development rock” will be classified into three classifications based on their sulfur content; over the course of the mine’s lifetime, how will the proportions of these three classes of rock vary?	Answer question. Future discussion item where the response can be considered in development of the Draft Scoping Decision Document.
133	6b	408				RGU notes the EIS will likely require additional elemental analyses and/or ABA testing to establish the classifications.	Advisory only. Future discussion in development of Draft Scoping Decision Document.
134	6b	412				What pumping rates are expected?	Answer question.
135	6b	425				The term “Tamarack Resource Area” is used without defining what this means. Does this reference the Tamarack Intrusive Complex (TIC) or something else that includes the TIC, or a small segment of the TIC?	Answer question.
136	6b	425				The ore extraction is targeting the ore rock, and minimizing dilution from unintentional excavation of non-ore rock, but what are the chemical properties of these non-ore rock? Are they sulfate rocks as well?	Answer question.
137	6b	425				Will the non-ore rock have a compounding or a synergetic effect on pollution?	Answer question.
138	6b	425			4, 10	Graphic 10: Simplified Illustration of Underground Mining Method does not correspond well with Graphic 4: Three-Dimensional Sketch of Underground Mine Workings. For example, Graphic 10 is missing the portal of the mine shaft.	Consider comment; modify document as needed.
139	6b	425			10	Graphic 10: Simplified Illustration of Underground Mining Method begs the question: what contact exposure to atmospheric air and rainwater will the excavated rock have?	Answer question.
140	6b	444				If information is available: 1) how much cement would be used during the project; 2) where would that cement come from; and 3) what transportation methods would be used to transport cement? This information can be used to inform Item 18's assessment of the greenhouse gas emissions of this activity.	Answer question. Future discussion item where the response can be considered in development of the Draft Scoping Decision Document.
141	6b	444				RGU notes that the EIS could investigate any potential for cemented rock fill (CRF) usage to result in water quality impacts.	Advisory only. Future discussion in development of Draft Scoping Decision Document.

Comment No.	EAW Section	Line No.	Table	Figure	Graphic	DNR Comment	Requested Action by DNR
142	6b	444				RGU notes that examination of potential CRF water quality impacts not only involve operations but also through the reclamation and closure phases of the project. This could include consideration of the make-up of the CRF and level of constituents that would be present and/or mobilized in groundwater.	Advisory only. Future discussion in development of Draft Scoping Decision Document.
143	6b	444				For the backfill, an engineered CRF will be used. Have there been studies done on their leaching characteristics?	Answer question.
144	6b	444				What is the long-term mitigation strategy to ensure little to no reactivity of the CRF with the air and water?	Answer question.
145	6b	444				Has the “crown pillar” strength been analyzed?	Answer question.
146	6b	444				How will the “crown pillar” be kept safe during blasting to prevent subsidence?	How will the “crown pillar” be kept safe during blasting to prevent subsidence?
147	6b	444				What happens if after excavation happens the deflection at the surface becomes not negligible?	Answer question.
148	6b	445				Has limited backfill mixing underground to minimize "double hauling" been considered?	Answer question.
149	6b	445				What are the properties of the CRF compared to (for instance) concrete? Concrete would typically be 10-15% cement vs 4-10% cited for CRF. What would the strength and permeability of this material be expected to be? I'm assuming this will not be high strength (compared to concrete) and will have higher compared to the surrounding bedrock. What would the strength requirements be for this type of backfill?	Answer questions.
150	6b	445				The hydraulic characteristics of the cemented rock fill and any other material that is used for backfilling should be evaluated because it will affect groundwater hydrology at closure and may impact the leaching of contaminants from the waste rock that is used in the backfill.	Advisory only. Future discussion in development of Draft Scoping Decision Document.
151	6b	450				If underground drainage becomes acidic, then use of acid-resistant materials may become necessary. Has this been considered?	Answer questions.
152	6b	452				If known the EIS should identify the source of externally purchased aggregate, which could allow greater specificity in assessing potential environmental impacts with this project.	Advisory only. Future discussion in development of Draft Scoping Decision Document.
153	6b	456				It is appropriate to note that no tailings are proposed for use in CRF. At Line 458, add the sentence: "No tailings usage is proposed with the project."	Edit text.
154	6b	466				Has any modeling been done to backup pillar depth and estimated subsidence?	Answer questions.

Comment No.	EAW Section	Line No.	Table	Figure	Graphic	DNR Comment	Requested Action by DNR
155	6b	466				The hydraulic characteristics of the bedrock that comprises the crown pillar should be evaluated in order to determine whether mine dewatering will impact groundwater levels in the unconsolidated sediments above the pillar. A plan to monitor for impacts to the surficial aquifer from mine dewatering should be developed.	Advisory only. Future discussion in development of Draft Scoping Decision Document.
156	6b	466				Does Talon propose to prepare a report analyzing the potential for subsidence and assessing crown pillar stability? Factors that could be considered would be proposed mining methods; depth of extraction; thickness of deposit; topography; and features of the rock mass located above the deposit.	Answer question.
157	6b	466				Does Talon propose to report the crown pillar design methodology and provide a summary of all known fractures and joints considered in the design?	Answer question.
158	6b	466				Does Talon propose to assess the potential for subsidence and crown pillar stability using a three-dimensional numerical simulation to be used over the operating life of the project? Would this include both the empirical Scaled Crown Pillar assessment plus numerical modeling?	Answer question.
159	6b	466				Does the modeling for subsidence and crown pillar stability need to account for the presence and/or lack of backfill in the mined-out stopes?	Answer question.
160	9	466	8			Does Talon propose to consider the potential for any area above the stopes to be in a fracture of shear zone that could influence the potential for subsidence?	Answer question.
161	6b	468				The EAW indicates that the crown pillar is 200 feet of bedrock plus 100 feet of overburden. Should it be assumed that the overburden does not have structural value and therefore the crown pillar thickness that applies to the project is 200 feet?	Answer question.
162	6b	468				The EAW states numerical and empirical analyses have shown less than 0.2 inches of subsidence over the mine. Provide these analyses and any supporting data so they can be reviewed.	Provide documentation to confirm the assertion.
163	6b	469				No margin of error is provided for the crown pillar depth at the ground surface. Is the depth consistent throughout all locations and depths? In very low gradient wetlands such as peatlands, even small changes in elevation due to subsidence can impact microtopography and water chemistry and therefore plant communities. More detail is needed on this analysis.	Provide documentation to confirm the assertion.
164	6b	471				If known, what is the volume of development rock that is expected to be generated?	Answer question.
165	6b	471				As 90 percent of the backfill is expected to be CRF, an understanding of how this will change groundwater flow long-term will be needed.	Advisory only. Future discussion in development of Draft Scoping Decision Document.

Comment No.	EAW Section	Line No.	Table	Figure	Graphic	DNR Comment	Requested Action by DNR
166	6b	473				The EIS will likely require additional information on the areas to be filled with uncemented rock. If known would using cemented backfill everywhere reduce the chances of subsidence even more?	Answer question. Future discussion item where the response can be considered in development of the Draft Scoping Decision Document.
167	6b	477				Is there the possibility that if there isn't an adequate air moving system in the portals, could the exhaust air vented through the exhaust stack system near the secondary portal be sucked back into the portal, returning diluted exhaust air back into the mine, reintroducing unwanted gasses and particulates?	Answer question.
168	6b	477				How will the portals be designed so that one would serve as a fresh-air intake and the other as exhaust?	Answer question.
169	6b	477				Like with the Mining Cycle section before, this section says, "Prior to release, the exhaust air would undergo a filtration or scrubbing process to reduce the amount of suspended dust and particulates." Why would the ventilation system be reducing and not eliminating the suspended particulates?	Answer question.
170	6b	477				Are there any potential impacts from the fact that there will be no frost around the portals in winter?	Answer question.
171	6b	478				Would booster fans and air doors be required?	Answer question.
172	6b	491				This section describes a water collection system to gather runoff, which would undergo treatment to comply with relevant water quality standards. If known, how often will the water be tested to ensure the water quality standards are met?	Answer question.
173	6b	491				The backfill plant creating the CRF is essentially a cement plant. The Draft Scoping Decision Document will detail how potential impacts would be evaluated.	Advisory only.
174	6b	498				RGU notes that overburden contains organic material as well as mercury. If known are there plans to line the overburden stockpile, including collection of leachates to be treated as contact water, to avoid increases in methylmercury in surrounding surface waters? The EIS would likely require a detailed description of the water quality of leachate from the overburden stockpile. Also, would peat that is excavated from the rail corridor be stored here?	Answer question. Response will inform development of Draft Scoping Decision Document, especially in considering potential for mercury or other impacts from stockpiling of these materials.
175	6b	498				If known detail should be added that describes how the overburden and topsoil would be screened (prior to placement in outdoor stockpile) as being appropriate for the listed potential uses identified in Lines 499-501.	Consider comment and edit text where anything is known at this time. Future discussion item for treatment of topic in Draft Scoping Decision Document.
176	6b	498				EAW should describe how the overburden and topsoil stockpile footprint would be graded and lined to collect and treat leachate.	Consider comment and edit text where anything is known at this time.

Comment No.	EAW Section	Line No.	Table	Figure	Graphic	DNR Comment	Requested Action by DNR
177	6b	498				What is the anticipated height of the overburden pile?	Answer question.
178	6b	501				The text implies that overburden would be stored long enough to be used in reclamation. Long term soil stabilizations methods would be needed to limit erosion in addition to Best Management Practices (BMPs) for dust generation. Clarification as to whether the proposed overburden storage site is intended for short-term as well as long-term storage.	Consider comment; add detail if available. If not available, then the issue flagged for the Draft Scoping Decision Document.
179	6b	501				RGU notes that if the overburden contains mercury, consideration of the adequacy of dust control BMPs would likely be needed for the EIS. The analysis may determine the possibility that additional dust controls are needed beyond standard BMPs.	Advisory only. Future discussion item for the Draft Scoping Decision Document on treatment of issue for EIS.
180	6b	501				The EIS would likely require further explanation around what would constitute "best management" practices for dust control.	Consider comment; add detail if available. If not available, then the issue flagged for the Draft Scoping Decision Document.
181	6b	503				If known, how would the peat and muck deposit be removed or stabilized to prevent settlement from causing distress to the liner and leachate collection system placed for the CRF manufacturing area footprint?	Answer question. Modify text as needed.
182	6b	503				The EIS would likely require a detailed project description, which among other project components address the design of the outside area to be used to manufacture the CRF material. Issues to be considered in the design include, but are not limited to, the following: 1) how the CRF would be separated from the surface environment, 2) how infiltration of water into the CRF and into the liner system would be restricted, 3) how temperature extremes would be addressed including freeze-thaw, 4) how cyclic wetting and drying of the liner system would be addressed, 5) how penetration of roots or burrowing animals through the liner system would be addressed, 6) how total and differential settlement of foundation soils would be addressed, 7) how long term moisture changes of the natural soil or liner system would be addressed, and 8) how the hydraulic barrier liner system and pad would be selected.	Advisory only. Information recommended for consideration in selecting design for CRF. Future discussion item for Draft Scoping Decision Document.
183	6b	503				Would sulfur be the only proxy used for classification? Preliminary characterization has found that metals, and other parameters, are not well correlated as a function of sulfur within the various waste rock units.	Answer question.
184	6b	504				The document correctly notes that metal leaching criteria must be established for the project to determine materials that are suitable for construction and materials that must be specially managed for metal leaching. Continue to work with DNR to develop appropriate metal leaching criteria suitable for protecting the environment and meeting regulatory expectations. This would likely include metal leaching and acid mine drainage management objectives and conceptual design that must be developed to help plan for waste management mitigation at the level determined appropriate for the EIS.	Advisory only. Future discussion item for the Draft Scoping Decision Document on treatment of issue for EIS.

Comment No.	EAW Section	Line No.	Table	Figure	Graphic	DNR Comment	Requested Action by DNR
185	6b	504				RGU notes that sulfur concentration may not be sufficient to classify different waste rock categories. A comprehensive waste characterization program needs to be completed to accurately define the level of material management required.	Advisory only. Future discussion item for the Draft Scoping Decision Document on treatment of issue for EIS.
186	6b	504				Note, the mine waste material classification and management strategies for EIS requirements may not be detailed enough or sufficient for a permit to mine application.	Advisory only.
187	6b	507				More data and discussion relative to analyses and classification method and ranges could be required. Are there enough drill core left for this or will another drilling program be needed?	Answer question. Future discussion item for the Draft Scoping Decision Document on treatment of issue for EIS.
188	6b	507				How are the different rock categories (2 and 3 specifically) determined during mine operation?	Answer question. Modify text as needed.
189	6b	512				How will the class 1,2,3 development rock be analyzed and segregated? When will the sampling size, frequency, plan, and Quality Assurance/Quality Control (QA/QC) plan be developed for this?	Answer question. Modify text as needed.
190	6b	514				Will there be a testing regime to determine sulfur content during development?	Answer question.
191	6b	514				The overburden/bedrock mixed material will need to be classified based on waste characterization testing of the two materials. Perhaps it would fall into the undefined Class 2 type, but waste characterization test work will need to be used for determining the correct class type.	Advisory only. Future discussion item for the Draft Scoping Decision Document on treatment of issue for EIS.
192	6b	515				It is not explained why the mixed material of overburden and bedrock would be handled as Class 2 bedrock. Provide a rationale for this and if there are any implications for storing the two together considering any differences in geochemical characterization, etc.	Answer question.
193	6b	518				If known, exactly how much sulfur is found in each of the rock categories?	Answer question.
194	6b	520				What is the purpose of blending the high and low-sulfur rock? A different approach would be to treat the high-sulfur rock separately than low-sulfur rock with extra precautions taken, not blended as proposed.	Answer question. Future discussion item for the Draft Scoping Decision Document on treatment of issue for EIS.
195	6b	522				To the degree known the document should describe the method of blending Class 1 and 3 development rock, where and when the blending process is to take place (surface or underground) and a testing program to ensure the blended Class 2 rock maintains homogeneity.	Consider comment and edit document if possible. Future discussion item for development of Draft Scoping Decision Document.
196	6b	523				Will monitoring be conducted to measure any release of sulfur to groundwater or surface water from the lined storage area?	Answer question.

Comment No.	EAW Section	Line No.	Table	Figure	Graphic	DNR Comment	Requested Action by DNR
197	6b	524				This talks about a water collection system for runoff - what about groundwater/seepage? Is a subsurface system needed to collect seepage through the liner or control groundwater?	Answer question.
198	6b	526				Commercial aggregate would be used to make CRF after development rock is depleted. If the potential source(s) is known, has the candidate aggregate been determined and studied as to the chemical reactivity to air and water?	Answer question. Response will inform development of Draft Scoping Decision Document, especially in considering potential long-term impacts to groundwater.
199	6b	526				The RGU notes that it remains to be determined how the acquisition, transport, and use of commercial aggregate would be evaluated in the EIS.	Advisory only. Future discussion item for the Draft Scoping Decision Document on treatment of issue for EIS.
200	6b	530				Note, ensuring no net acid production from any of the mine wastes stored underground will be a project requirement. In addition, release of metals or other potentially harmful constituents under neutral to alkaline conditions will also need to be evaluated to ensure protection of natural resources.	Advisory only. Future discussion issue for development of Draft Scoping Decision Document.
201	6b	536				The document notes proposed use of an appropriate amount of alkaline material to "… neutralize any potential acidity that could be generated from the material." Has the type of alkaline material been determined? Is it lime?	Answer question. Response will inform development of Draft Scoping Decision Document.
202	6b	536				What are the alkaline material's longevity and effectiveness? Have they been analyzed?	Answer question. Response will inform development of Draft Scoping Decision Document.
203	6b	536				How exactly will these fines be analyzed? Provide specific methods.	Answer question.
204	6b	537				How would the alkaline material be incorporated and tested to determine it won't be acidic?	Answer question.
205	6b	538				Although the fines might only account for 2 percent of the backfill, this material could still have a potential for significant impact on water quality. Future waste characterization of this material should be considered and discussed.	Advisory only. Future discussion issue for development of Draft Scoping Decision Document.
206	6b	541				The document indicates project-related activities would result in combinations of various materials that may or may not be used as backfill components. Analysis of all these combinations of materials, whether used as backfill or not used as backfill, would be needed along with their planned disposal methods and locations for the EIS.	Advisory only. Future discussion issue for development of Draft Scoping Decision Document, where the EIS will require detailed information to assess potential impacts.

Comment No.	EAW Section	Line No.	Table	Figure	Graphic	DNR Comment	Requested Action by DNR
207	6b	541				Information regarding the character and management of water treatment residue is required. This may be important given the preference of using reverse-osmosis or other membrane-based water treatment technologies, which generate a liquid brine waste. If known, the document should discuss the volume, character, and management of this stream in some measure of greater detail.	Advisory only. Future discussion issue for development of Draft Scoping Decision Document, where the EIS will require detailed information to assess potential impacts.
208	6b	541				All material movement within the project will need to be evaluated for various types of impacts.	Advisory only. Future discussion issue for development of Draft Scoping Decision Document, where the EIS will require detailed information to assess potential impacts, especially for air and water resources.
209	6b	543				Information regarding how the lined stockpile pad at the backfill materials storage area will be constructed (e.g., will it have a geomembrane liner, will it use gravity drains or pumps) should be provided, including hydraulic conductivity estimates for all liner materials.	Respond to request with information as now known. Project description for EIS will require detailed information around all proposed liners. Future discussion issue for development of Draft Scoping Decision Document.
210	6b	544				If known the document should identify what liner type is proposed. Based on the selection, the EIS may include further identification and assessment of the risk for short term or long-term failure for the following liners: single compacted bentonite amended soil liner (BAL), single compacted clay liner (CCL), single geomembrane (GM), single geosynthetic clay liner (GCL), two component composite line GM/CCL, two component composite liner GM/GCL. Consideration is likely around the polymer choice and why it was been selected for the GM.	Respond to request with information as now known. Project description for EIS will require detailed information around all proposed liners, including potential alternatives to the proposed action. Future discussion issue for development of Draft Scoping Decision Document.
211	6b	545				It is likely that dust originating in the backfill materials storage area would be reactive (to some degree). The EIS may consider the efficacy of dust control BMPs to ensure that they are sufficient to prevent contamination from blowing dust.	Advisory only. Future discussion issue for development of Draft Scoping Decision Document, where there may be consideration of potential alternatives that reduce handling/dust generation within the backfill storage facility.

Comment No.	EAW Section	Line No.	Table	Figure	Graphic	DNR Comment	Requested Action by DNR
212	6b	547				A Fugitive Dust Control Plan is forthcoming in EIS. Recommend review of National Institute for Occupational Safety and Health (NIOSH) Dust Control Handbook for Industrial Minerals Mining and Processing (NIOSH, 2019) in preparation of the Fugitive Dust Control Plan. Plan for sampling and analysis of types and quantity of fugitive dust has not been presented.	Advisory only. Future discussion issue for development of Draft Scoping Decision Document, where there may be consideration of the required sampling and analysis protocols for the types and quantity of fugitive dust generated during operations; this would be needed to assess the predicted efficacy of the measures.
213	6b	550				If known, describe the plan to control fugitive dust while backfill materials are stored for 4-5 years temporarily.	Consider comment and edit text as currently understood. This would be detail required for the detailed project description for the EIS.
214	6b	561				If known, describe dust control system that would be included within the crushing facility and how worker respiratory health will be protected in accordance with Mine Safety and Health Administration (MSHA).	Consider comment and edit as currently understood. The response will inform the EIS's consideration of potential worker respiratory health issues, especially protection in accordance with MSHA requirements. Future discussion item.
215	6b	563				If known, how much cement is anticipated for the CRF? The trucking of cement should be considered with the traffic plan.	Answer question and modify text as known.
216	6b	566		11		Graphic 11 only describes material flows at the mine site. The document would benefit from a similar, additional graphic/table/etc. describing materials flow of supplies to the mine (cement, grout, aggregate, etc.) and from the mine (ore, reverse osmosis waste solids, garbage, etc.).	Consider comment and edit document to address.
217	6b	566			11	In describing the TBM generating a small quantities of Class 3 development rock when passing through bedrock intervals containing elevated sulfur, and the plan appears to be to blend Class 3 rocks with Class 1 rock to affectively create a Class 2 rock equivalent. However, this process is not shown in Graphic 11: Flowchart of Material Transfer between Surface and Underground.	Consider the comment and modify text and/or graphic as indicated.
218	6b	566			11	The language found in Graphic 11: Flowchart of Material Transfer between Surface and Underground does not match the language used in the EAW text. Most prominent of these is the use of “Type” instead of “Class” when describing the three categories of development rock.	Consider comment; modify text as needed for body and graphic.

Comment No.	EAW Section	Line No.	Table	Figure	Graphic	DNR Comment	Requested Action by DNR
219	6b	569				The potential for railcars to be contaminated with dust from the loading of ore with a front end loader is a consideration. This could lead to dust sticking to the railcars that would subsequently leave the site that could be deposited along the rail line between the mine and the Minnesota border (or even the rail line to the processing facility in North Dakota). In this respect, consideration could also be given to treating the railway yard as a contact water area.	Advisory only. Future discussion item in development of the Draft Scoping Decision Document, which could include consideration of washing the rail cars before they leave the rail loadout facility. More broadly, the project description will require detail on this project component to assess potential impacts.
220	6b	569				The proposer should anticipate the EIS identifying the need for a comprehensive monitoring program for the rail line and the rail switches north of the BNSF rail line determine if reactive dust/material spills are occurring.	Advisory only. Such a monitoring program would be used to minimize potential impacts to wetlands or water resources.
221	6b	569				Estimates around the size and frequency of: 1) the number of rail cars; and 2) number of transports per week, are not consistent. Item 20 at Line 2234 says ore would be shipped "approximately every two days." What accounts for this variability?	Answer question and try to make the text consistent on this estimate.
222	6b	569				Are there ways to decrease the number of transports per week but have the amount being transported out be consistent in total tonnage?	Answer question.
223	6b	569				How do these rail transport size and frequency estimates relate to a rate up to 800,000 short ton per year?	Answer question.
224	6b	570				If known: 1) what is the capacity of the ore storage and rail loadout facility(?); 2) should there be any delays in transportation of material to North Dakota, how many days can the ore/Class 3 rock be stored in the facility before running out of space(?); and 3) are there other areas of the mine contemplated for contingency storage?	Answer questions.
225	6b	571				Some type of verification would likely be required to verify "enclosed building" is achieved prior to making any assumptions related to air quality assessments.	Advisory only. Future discussion item, potentially component of work plan development.
226	6b	577				If known, what kinds of railcars are being used? Can fine sulfide minerals escape out the bottom along the railroad tracks?	Answer question; response will be used in development of Draft Scoping Decision Document.

Comment No.	EAW Section	Line No.	Table	Figure	Graphic	DNR Comment	Requested Action by DNR
227	6b	577				The detailed project description should allow understanding of all sources of fugitive dust, including from ore/development rock handling among other cited sources.	Advisory only. Future discussion item for development of Draft Scoping Decision Document, especially related to assessment of potential dust-related contributions to contact water and industrial stormwater. This would be in addition to assessing fugitive dust impacts to water quality and associated mitigations generally.
228	6b	578				The EIS may require more information around any contingency plans in place for holes, leaks, or malfunctions with covers for railcar transport. Supplying case studies or reference sites describing fugitive dust control measures associated with movement of material with MLARD potential may be needed.	Advisory only. Future discussion topic in development of Draft Scoping Decision Document.
229	6b	585				The detailed project description may require more specificity around ore movement schedules and railcar loading and unloading.	Advisory only. Future discussion topic in development of Draft Scoping Decision Document.
230	6b	586				If known, any measures associated with temporary slow periods or shutdowns should be provided, especially for when the ore/Class 3 rock would sit in the loadout facility for an extended period of time. It is not uncommon for mines to enter into periods of care and maintenance and so the appropriate planning for such periods should begin as early as possible. How materials ready to be shipped would be managed during a temporary closure period would be useful to document.	Consider comment and add detail to the document where appropriate. Detail here may be needed for the project description to support the EIS analyses.
231	6b	587				Source terms for water quality modelling must be developed for all potential waste stored for short and longer periods. Contingency planning and source term development are critical even if waste may be moved off site.	Advisory only. Future discussion item in development of the Draft Scoping Decision Document.
232	6b	589				More detail is needed about construction of the railway spur.	Advisory only. This would be accomplished in the detailed project description. Detail needed to assess potential impacts to wetlands and surrounding areas.
233	6b	596				Detailed water balance is needed and a range of different alternatives for water management need to be developed.	Advisory only. Future discussion in development of Draft Scoping Decision Document.
234	6b	596				A detailed water balance model should be constructed for the mine to estimate the quantities of water that will be generated for each category of water, and where and in what quantities water will be moved, stored, used, and discharged at the site.	Advisory only. Future discussion item for development of Draft Scoping Decision Document.

Comment No.	EAW Section	Line No.	Table	Figure	Graphic	DNR Comment	Requested Action by DNR
235	6b	598				If known provide an estimate of the volume of contact water that will be generated.	Address comment and update EAW as appropriate.
236	6b	606				How will the contact water from the underground mine be processed?	Answer question.
237	6b	615				Explain how the TBM water is to be permitted. Will it be considered construction dewatering (permitted under the construction stormwater permit) or industrial wastewater (under the industrial wastewater permit)? It is unclear at this time whether the TBM water can be covered under a construction stormwater permit.	Answer question.
238	6b	621				For the non-potable water "used for other purposes," information on reuse locations and water quality will be needed.	Address comment and update EAW as appropriate.
239	6b	628		3	12	The graphic shows there will be an industrial stormwater pond/treatment system, yet Figure 3 does not indicate where on site this system will be located. Revise Figure 3 to show this.	Address comment and update EAW as appropriate.
240	6b	629			12	More information on the anticipated wastewater quality, quantity, flow rates, and wastewater treatment processes and design will be required for the EIS and permitting.	Advisory only. Future discussion in development of Draft Scoping Decision Document.
241	6b	630				The EAW needs to contain what action Talon will take in order to address community's concerns about potential environmental impacts.	Address comment and update EAW as appropriate.
242	6b	630				Specifically describe the "advanced, affective, and sustainable technology" Talon will be utilizing for the proposed project.	Address comment and update EAW as appropriate.
243	6b	630				In the event of an extreme storm event, and the overflow water from the contact water sumps are routed to the lined footprint of the backfill materials storage area to temporarily accept overflow contact water, what happens if the volume is so great that even the backfill materials storage area overflows? Will the lined ditches convey contact water overflow?	Answer question.
244	6b	630				Different sources of contact water described. What is a conservative estimate of contact water volume? This would help with assessment of storage and treatment capacity needs.	Address comment and update EAW as appropriate.
245	6b	630				The above-ground storage tank facility features a secondary containment area in the event of a tank leakage or failure. What are the design volume capacities for the tanks and for the secondary containment area?	Address comment and update EAW as appropriate.
246	6b	630				Are there provisions made for the secondary containment to withstand a 100-year storm event? A 200-year storm event? With climate change impacts, how about a 500-year and 1,000-year storm events?	Answer question.

Comment No.	EAW Section	Line No.	Table	Figure	Graphic	DNR Comment	Requested Action by DNR
247	6b	630				The impact of non-geochemical sources of contaminants should be discussed in the EAW and incorporated into water quality modeling. Specifically, water soluble blasting residue from ANFO should be included in water quality modeling and discussed in the context of water treatment and discharge planning.	Address comment and update EAW as appropriate.
248	6b	633				Throughout the EAW, it is reiterated that treated water will meet the "applicable water quality standards", yet the EAW does not specify what these standards are. Provide a table of the water quality standards the treated effluent is anticipated to meet and how the discharge of treated water of this quality reaches/maintains water quality objectives in the receiving environment. This information is required to understand the project and better assess environmental impacts.	Address comment and update EAW as appropriate.
249	6b	651				How will the integrity of the lined ditches and water sumps be evaluated and ensured through the life of the project? Are the lined ditches and water sumps designed to address larger-than-expected inflows of water? How would overflow of ditches and/or sumps be monitored/addressed?	Address comment and update EAW as appropriate.
250	6b	651				Provide more information regarding how the lined ditches and sumps will be constructed, including hydraulic conductivity estimates for all liner materials.	Address comment and update EAW as appropriate.
251	6b	653				More discussion is needed regarding using the backfill storage area as a temporary storage area for contact water during extreme storm events. It is unclear how overflow water from the contact water sumps would be routed to the lined footprint of the backfill storage area. It is also unclear how much water the area can hold, whether it is designed to contain standing water, and whether it will have enough storage capacity if there is rock stored in the storage area at the time of a storm event. The maximum amount of water that will need to be stored in the backfill storage area during an extreme storm event must be estimated. The storage volume at the time of maximum rock storage must also be estimated and must be compared to the maximum runoff volume to demonstrate that the backfill storage area will have adequate storage capacity.	Address comment and update EAW as appropriate.
252	6b	653				Using storage tanks and/or ponds and the secondary containment area to hold all water from an extreme storm event should be evaluated in the EIS in addition to using the backfill storage area to store excess water.	DNR will evaluate available information during the development of the Scoping EAW to determine the treatment in the EIS.
253	6b	654				What is the definition of an "extreme storm"?	Answer question.
254	6b	654				Explain the implications of storing both backfill materials (Class 1/2 development rock) and overflow water from the contact water sumps within the same storage area. What is the potential for additional contaminant release when these materials are in the same storage area?	Address comment and update EAW as appropriate.

Comment No.	EAW Section	Line No.	Table	Figure	Graphic	DNR Comment	Requested Action by DNR
255	6b	658				The EIS would likely require evaluation of technologies, whether proposed or technically feasible, that can effectively remove high sulfate concentrations from water. This would apply to all sources of contact water, including rock excavated with the TBM as described at Lines 523-525.	Advisory only. Future discussion issue for development of Draft Scoping Decision Document.
256	6b	660				It is difficult to comment on the types of treatment methods contemplated as information on the quality of influent/contact water, water quality standards, contaminants of potential concern (COPCs), effluent quality, etc. are missing from the EAW. Provide this information and clarify whether Talon has conducted/will be conducting assessments to determine the best technology suited for the water at the site.	Address comment and update EAW as appropriate.
257	6b	662				Provide design plans and data to support the statement, "Talon is resolved to have a water treatment solution that meets or exceeds regulatory standards and safeguards water resources."	Address comment and update EAW as appropriate.
258	6b	666				The EAW states, “When mining occurs in areas where enhanced permeability zones are expected to be encountered, probe holes would be regularly drilled in front of the advancing mining faces in order to confirm the extent and boundary of the upcoming permeability zone and evaluate the degree of water inflows.” Will the degree of water inflows and the volume while mining, as it may be highly variable. How will this be considered with regards to the water treatment plant?	Address comment and update EAW as appropriate.
259	6b	668				Provide any mapped bedrock zones with enhanced permeability as part of the quantitative groundwater hydrologic model, including, but not limited to, hydraulic conductivity estimates for all bedrock units. Estimates of unanticipated inflow from enhanced permeability zones should be included in the sensitivity and uncertainty testing of the water balance model to estimate maximum inflow volumes.	Regulatory guidance. Future discussion item.
260	6b	669				The submittal indicated that zones of enhanced permeability exist but does not indicate the cause or locations of these zones. Are the zones of enhanced permeability mapped? What is the basis of believing these zones to be enhanced permeability?	Answer questions.
261	6b	669				Holes will be drilled ahead of mining to probe for areas of high water inflow potential. How far ahead of mining? When will the predetermined rate of inflow limits be established? Through a valve? How will inflows be managed? Needs better explanation. Did any core holes intersect faults or high permeability zones? Is there sufficient drilling or geophysics data to model the faults/fissures, and high permeable zones.	Answer questions.
262	6b	673				What information is available regarding the location of those potential high permeability zones, the flow rates, and the total quantity of flow? Is it possible that zones are connected to the bedrock/till interface?	Answer question.
263	6b	676				How specifically would discrete zones of enhanced permeability be sealed to minimize groundwater inflow and how would potential failures in these attempts be addressed?	Answer question.

Comment No.	EAW Section	Line No.	Table	Figure	Graphic	DNR Comment	Requested Action by DNR
264	6b	677				What is the minerology and sulfur content of the waste and low grade. Have the core holes been assayed for sulfur in sufficient detail to make a 3D model?	Answer question.
265	6b	677				How fast do the sulfides in the stopes oxidize? How much elapsed time from development of a stope to ARD production if water contacts the stope surface and overbreak fractured ground (i.e., can the stopes be backfilled before metal oxides form that can be washed out if there is a water influx)? Can this be managed by the pumping and water treatment facilities?	Answer questions.
266	6b	680				Is the grout mixed on site? Or trucked in?	Answer question.
267	6b	683				What would necessitate diverting water to storage tanks rather than the water treatment plant?	Answer question.
268	6b	685				Talon claims that industrial stormwater would be managed in accordance with the requirements of a future NPDES/SDS permit and an associated Project-specific industrial stormwater pollution prevention plan (SWPPP), but any discharges from the wastewater treatment plant (WWTP) need to be considered with rest of the Project. EIS cannot assume there will be no impacts if National Pollutant Discharge Elimination System (NPDES) and State Disposal System (SDS) permit conditions are followed. What will be the estimated discharge rate? One million gallons per day? More? Less?	Answer question.
269	6b	685				How will Industrial Stormwater impact Tamarack River, Prairie River, and ultimately Big Sandy Lake?	Address comment and update EAW as appropriate.
270	6b	691				RGU notes that stormwater quality and quantity impacts to wetlands and public waters will likely be analyzed in the EIS to support any NPDES permitting.	Advisory only; information and analyses necessary to assess impact will be addressed during the development of the Scoping EAW to determine the treatment in the EIS.
271	6b	691				More information is requested for details regarding the project-specific industrial stormwater pollution prevention plan (SWPPP) and details for best management practices (BMP) that will be in place to prevent contaminants from entering the watershed.	Future discussion item.
272	6b	697				How will stormwater be evaluated to ensure it is meeting the appropriate standards? What specific standards will be used?	Answer question.
273	6b	699				This section should also mention the permanent treatment requirements for new impervious surfaces in the construction stormwater permit. Must attempt to infiltrate first where possible on site and can then move to stormwater ponding if that is prohibited under the permit.	Regulatory guidance.

Comment No.	EAW Section	Line No.	Table	Figure	Graphic	DNR Comment	Requested Action by DNR
274	6b	706				How will construction stormwater BMPs be evaluated to ensure proper construction and maintenance over the life of the project?	Answer question.
275	6b	707				How will the discharge of treated water change wetland and surface water hydrology? This is very flat terrain and the ability of receiving waters to absorb additional hydrology and move it downgradient must be clearly determined. Any changes that additional water causes to wetland function and value must be defined and disclosed.	Address comment and update EAW as appropriate.
276	6b	707				Will all construction stormwater BMPs be removed at the end of the project?	Answer question.
277	6b	707				How will impacts to nearby wetland and/or ditches from construction stormwater discharge be monitored and assessed? What specific standards will be used?	Answer question.
278	6b	714				Same comment as in Line 275.	Address comment and update EAW as appropriate.
279	6b	715		5		On Figure 5, recommend adding a clear label or distinction between the public ditch and the natural stream along the discharge route.	Address comment and update EAW as appropriate.
280	6b	715				The capacity of the ditch, as well as the unnamed stream, that will receive treated contact water will need to be determined, as well as the amount of water that will be discharged.	Regulatory guidance. Future discussion item.
281	6b	717				Additional information on the unnamed stream would be beneficial. For example: Will it have adequate flow capacity all year? What are the seasonal effects? Would excessive vegetation limit flow in the summer or ice in the winter? Who has authority over this stream (e.g., access rights for clearing to ensure proper flow).	Address comment and update EAW as appropriate.
282	6b	718		5		On Figure 5, Check whether flow direction arrows on County Ditch 23 are correct.	Address comment and update EAW as appropriate.
283	6b	718				How will potential impacts of non-potable treated water on the unnamed stream/tributary of Tamarack River be monitored and assessed? What specific standards will be used?	Address comment and update EAW as appropriate.
284	6b	719				Impacts to groundwater for all new wells must be analyzed. Cumulative impact analysis of wells along with changes to surficial aquifers from drilling the drifts must be performed.	Advisory only; future discussion item during development of the Draft Scoping Decision Document.

Comment No.	EAW Section	Line No.	Table	Figure	Graphic	DNR Comment	Requested Action by DNR
285	6b	728				Identify plans to work with Minnesota Department of Health (MDH) Drinking Water Protection Section confirming the category of public water supply for this facility and moving forward with compliance with the Safe Drinking Water Act as appropriate for the category of public water supply. This facility will presumably qualify as a noncommunity public water system (PWS). Responsibilities as a PWS should be understood. https://www.health.state.mn.us/communities/environment/water/docs/ncom/noncom.pdf	Regulatory guidance. Future discussion item.
286	6b	728				What type of water treatment? Would there be any water treatment residual waste streams?	Address comment and update EAW as appropriate.
287	6b	728				An aquifer pumping test should be completed in wells to obtain estimates of aquifer properties, using additional observation wells where possible.	Future discussion item.
288	6b	728				How will mining activities impact the capture area of the well and chemistry of the well water? How will the chemistry of the well water be monitored and what specific standards will be used?	Address comment and update EAW as appropriate.
289	6b	728				How will the safety of the drinking water be ensured? For example, who will test the water and how frequently, what contaminants will be tested for, and what specific standards will be used?	Answer question.
290	6b	728				Construction of an additional potable water supply well should be reviewed by Well Management Section and Drinking Water Protection Section staff from the Minnesota Department of Health. Proper siting of new wells will be required to ensure all potential contaminant setback distances are met and are maintained for the life of the well and/or project. Identify the proposed water-supply well location including reference to separation distance to potential contamination sources and utilities such as electric, propane, other; e.g., mine site map with wastewater systems, buildings, petroleum storage and piping, buried stormwater ponds and piping, propane storage and piping etc..	Regulatory guidance. Future discussion item.
291	6b	731				Provide more detailed information on the sanitary water treatment plant and how and to what standards the water would be treated?	Address comment and update EAW as appropriate.
292	6b	737				How will potential impacts of treated sanitary water to the local watershed be assessed and remediated if there are impacts?	Address comment and update EAW as appropriate.
293	6b	739				Provide the rationale for combining treated waters for discharge rather than discharging separately. There needs to be more information provided on the receiving water bodies, what volumes and quality of water they can accept, any existing impacts to the waters, etc.	Address comment and update EAW as appropriate.
294	6b	743				In consideration of the nearby Fond du Lac Indian Reservation and its Federal Class I air-shed designation, will incremental impacts assessment be done to quantify the impacts from the diesel engine sets from their use while awaiting on the substation development, and for emergency use during the Project operations?	Answer question.

Comment No.	EAW Section	Line No.	Table	Figure	Graphic	DNR Comment	Requested Action by DNR
295	6b	743				How will the various pipelines to be used to move various types of water around the mine site impact the surface and near-surface water flow? Will the potential impacts be assessed in a study or other?	Answer question.
296	6b	743				Will condensate impacts from the outer pipe-walls due to temperature differences between the pipe and the ground be considered?	Future discussion item.
297	6b	743				How impacts of all project utilities would be assessed will need to be identified for the Scoping EAW and Draft Scoping Decision Document.	Advisory only. Future discussion item that could include consideration of both specific impacts and potential cumulative impacts.
298	6b	743				Will an EA or Supplemental EIS be required for the new substation and power distribution system?	Address comment and update EAW as appropriate.
299	6b	743				The EAW speaks of a new electrical substation that will be built to serve the Project. Will this be a 69-kilovot (kV) service? Or will it be a step-down to 46-kV, 34.5-kV, 23-kV, or 14-kV?	Address comment and update EAW as appropriate.
300	6b	743				After mine closeout, will the new substation remain in service for the area as a permanent infrastructure, or will it be removed?	Address comment and update EAW as appropriate.
301	6b	743				If the peak load may be 33 megawatts, where will the electricity primarily come from?	Future discussion item. DNR will evaluate available information during the development of the Scoping EAW to determine the treatment in the EIS.
302	6b	743				What kind of emissions increases are expected from the power generation plants in order to service the Project?	Future discussion item. DNR will evaluate available information during the development of the Scoping EAW to determine the treatment in the EIS.
303	6b	743				Can there be onsite or near-onsite electrical power generation that isn’t diesel or natural gas that can be employed to decrease the total load from the electrical grid system?	Answer question.
304	6b	743				What are the expected emissions from the diesel engines used temporarily until the installation of the new electrical substation?	Address comment and update EAW as appropriate.
305	6b	743				During the Project operations, how will these diesel generators be protected for emergency backup power generation for critical systems in case of significant emergency such as a wildfires or extreme flooding?	Answer question.
306	6b	755				More detailed information on the emergency power is necessary. Will an EA or Supplemental EIS be required?	Answer question.

Comment No.	EAW Section	Line No.	Table	Figure	Graphic	DNR Comment	Requested Action by DNR
307	6b	757				Fuel tanks will need to be identified and characterized for air quality related impacts.	Address comment and update EAW as appropriate.
308	6b	766				How will the integrity of pipelines be ensured?	Answer question.
309	6b	766				Will any secondary containment structures be placed around the contact water pipelines to contain potential leaks?	Answer question.
310	6b	771				Support Facilities may include items defined as 'insignificant activities' and will need to be characterized in air quality related impacts.	Regulatory guidance. Future discussion item.
311	6b	780				What materials will be handled in the cold storage warehouse?	Answer question.
312	6b	785				Emissions generated from employee parking lots may also be included in the air quality emission calculations.	Regulatory guidance.
313	6b	794				Are there other potential beneficial uses of the mine at closure rather than backfilling that could be maximized with front-end design to reduce to reduce potential climate and environmental impacts?	Future discussion item. Alternatives analysis.
314	6b	794				The EAW states, “The mine access declines and mine development areas excavated outside the orebody would not be backfilled.” Please provide additional information. Will Full Closure and Post-Closure Plans and Monitoring Plans be considered in the environmental impact statement (EIS) in terms of both environmental impacts and financial assurance requirements?	Provide more information regarding the proposed abandonment of declines. Treatment of closure and post-closure plans in the EIS will be evaluated during development of the Scoping EAW.
315	6b	794				This section says that the “[w]ater from the underground mine would be managed to meet regulatory requirements.” How will this be managed, according to which regulatory requirements?	Address comment and update EAW as appropriate.
316	6b	794				Add a note stating that regrading would be to match existing grades and natural drainage paths (to maintain conditions/drainage to downstream waterbodies). Specify the type of vegetation that would be used to revegetate the site taking climate change impacts into consideration. Matching the existing (native) vegetation may not make sense 10 to 20 years from now. As Line 113 states, “Project water balance and estimated discharge quantities” will be provided at a later date.	Future discussion item.
317	6b	798				Clarify how the stockpiles (overburden, development rock) on site will be dealt with in closure. What steps would need to be taken if the mine closed early following an extended period of care and maintenance, including considerations for management of stockpiles, particularly any Class 3 development rock and/or ore left in the rail loadout storage area, and water management?	Address comment and update EAW as appropriate.
318	6b	800				Any wells constructed on site will require proper sealing once they are no longer in use.	Regulatory guidance.

Comment No.	EAW Section	Line No.	Table	Figure	Graphic	DNR Comment	Requested Action by DNR
319	6b	800				The locations and design, including permeability estimates, for any engineering controls to limit water movement should be described. In particular, engineering controls to isolate bedrock groundwater from water in the surficial aquifer should be provided and described. These engineering controls should also be included in post-mining modeling scenarios.	Regulatory guidance. Future discussion item.
320	6b	801				If known, would method of underground mine closure require perpetual maintenance?	Answer question.
321	6b	803				Describe the other mitigation measures that will be evaluated.	Address comment and update EAW as appropriate.
322	6b	805				Identify the rationale behind why the mine access declines and development areas will not be backfilled at closure? If the amount of back-fill is the issue, then indicate how long-term or perpetual maintenance is planned to be carried out to ensure there isn't a collapse or seepage begin discharged from the access portals?	Address comment and update EAW as appropriate.
323	6b	806				Which regulatory requirements and how will water from the underground mine be managed to meet those regulatory requirements? This should be explicitly stated.	Address comment and update EAW as appropriate.
324	6b	806				Comprehensive details on underground water management are needed. Groundwater modeling, using locally collected data, should be done for water quality and quantity. Detail on water treatment needs after closure and clear information on how long treatment and maintenance would be required at the site after mining has stopped are needed.	Advisory only. Specifying how this would be accomplished in the document is desirable. Future discussion item in the development of the Draft Scoping Decision Document.
325	6c	819				Visual impact analysis for a 78-foot structure is needed	Future discussion item in development of the Draft Scoping Decision Document.
326	6b	823				The Objective Statement here is written as Problem Statements and Goals, and not as Objective Statement. This section needs to be reworded so that if Problem Statements and Goals are to be stated, they must be clearly stated in their own sections, and then have the Objective Statement focus on the Objectives that result from those Goals that addresses the Problem Statement.	Future discussion item.
327	6d	823				Include calculations that would support a statement that speaks to the total carbon footprint of the mining operation. How does this carbon footprint compare to the projected savings in carbon emissions from the materials mined from the site?	Future discussion item.
328	6d	823				EAW Item 6d only requires explanation of project purpose. The objective statement provides information somewhat more appropriate to project need, which is not required for private actions; it is also unsupported in present form.	Advisory only. Future RGU decision item.

Comment No.	EAW Section	Line No.	Table	Figure	Graphic	DNR Comment	Requested Action by DNR
329	6d	834				What is the community engagement plan? How has the project already interacted with local communities and what are plans for engagement moving forward? How has or will the project incorporate community input? This information should be included in EIS and more details of what the community engagement plan will consist of should be included in scoping	DNR will evaluate available information during the development of the Scoping EAW to determine the treatment in the EIS.
330	6d	838				What are estimates for types of and numbers of jobs needed? What are salary ranges of those jobs? An analysis of the economic impacts to Minnesota/surrounding communities should be included in EIS. More detail on what that analysis will include should be provided in scoping.	DNR will evaluate available information during the development of the Scoping EAW to determine the treatment in the EIS.
331	6b	851				Item 11a notes at Line 1112 "[t]he TIC hosts nickel-copper-cobalt sulfide mineralization with associated platinum, palladium, and gold." Recognizing the EQB's guidance is to limit the Monitor notice to 50 words or less, if platinum, palladium, and gold are anticipated to be extracted as marketed (bi-)products, acknowledging this may be warranted in the Monitor project summary or elsewhere in the document.	Advisory only; future discussion item as part of developing the purpose statement and ensuring an accurate project description.
332	6b	851				EAW Item 6d only requires explanation of project purpose. The objective statement provides information somewhat more appropriate to project need, which is not required for private actions; it is also unsupported in present form.	Advisory only. Future RGU decision item.
333	6b	851				DNR notes that the socioeconomic analysis will likely include projected revenue to the State of Minnesota from the operation.	Advisory only. Future discussion item in development of Draft Scoping Decision Document.
334	6b	851				Regarding the list of beneficiaries, this is not required for private actions.	Advisory only. DNR will determine whether the Scoping EAW will contain information regarding project need, including a list of potential beneficiaries.
335	6b	851				The Purpose Statement must be framed broadly enough to encompass potential alternatives beyond mere adjustment to the proposed Project. To be useful in the decision-making process, the EIS must be able to evaluate a broad range of alternatives (recycling, sourcing materials from other regions, etc.)	Refinement/modification of Purpose Statement will be considered further by RGU during development of Draft Scoping Decision Document.
336	6d	855				Sentence states the Cu and Ni concentrate will be shipped outside Minnesota, however iron, as mentioned in Line 830, is not included in these concentrates. Clarification needed.	Address comment and update EAW as appropriate.
337	6d	880				RGU notes that statements in bulleted list are not factually supported. Regardless, remains to be determined how project need would be addressed in the Scoping EAW. Not required for private actions.	Advisory only. Future RGU decision item.

Comment No.	EAW Section	Line No.	Table	Figure	Graphic	DNR Comment	Requested Action by DNR
338	6e	890				A significant percentage of the ore body is located outside the proposed project. An analysis of the potential for future mining at this site is needed.	Advisory only. DNR will evaluate available information during the development of the Scoping EAW to determine the treatment in the EIS.
339	6e	890				EAW states that "[t]here is ongoing exploration activity in the vicinity of the Project Area…" Does mean other sections of the TIC? Or does this statement refer to the Emily Manganese Project owned by the Nevada Silver Corporation, a subsidiary of North Star Manganese Inc?	Answer question.
340	6e	890				DNR notes that EIS scope will be re-evaluated if the project changes over the course of the EIS. If the project proceeds, DNR as RGU will monitor its progress for any changes requiring supplemental review or other requirements.	Advisory only. DNR will evaluate available information during the development of the Scoping EAW to determine the treatment in the EIS.
341	6e	890				Should this box be marked yes? Why is Talon currently doing ongoing exploration in the vicinity of the Project Area if they are not planning on developing on any other property?	DNR will evaluate available information during the development of the Scoping EAW to determine the treatment in the EIS.
342	6e	894				Since this project could be the catalyst for future similar efforts, potential cumulative effects should be discussed to address potential for additional mining activity in the area.	DNR will evaluate available information during the development of the Scoping EAW to determine the treatment in the EIS.
343	7a	901				An exposure assessment to evaluate how climate change impacts may affect the facilities and/or mining operations at all stages of mining should be considered. This will enable the proposer to identify the mitigation and/or adaption strategies needed to address these potential impacts. Consider the overall project timeline: Mine Construction – 2026-2027 Mine Operation (10 years) - 2027-2036 Site Restoration (approx. 5 years) – 2036 – 2040 Consider more than just extreme precipitation. Evaluate the impact(s) of drought conditions, wind, extreme heat, etc.	Advisory only; future discussion item as part of developing the Draft Scoping Decision Document
344	7a	901				It is incorrect to say "climate change will have minimal impact on the location during this time" since impacts of climate change are currently occurring and the rate of change is expected to increase each year. In 10 years, climate change could impact this Project, especially in terms of wildfire events, prolonged drought conditions, and floods.	Consider comment; edit text as warranted.

Comment No.	EAW Section	Line No.	Table	Figure	Graphic	DNR Comment	Requested Action by DNR
345	7a	901			15	In Climate Trends, once anomalies are removed, it appears the annual precipitation for the Mississippi River – Grand Rapids Watershed is trending –0.77-inches/decade. Among the climate trends circles, the word is that we are having less precipitation events, but more precipitation per precipitation event—this makes the likelihood of flood events to become greater. Because of this, although an analysis shown in Graphic 15: Number of 100-year Storm Events from 1916 to 2020 for 38 Stations in Northeast Minnesota is insightful, the EIS must also do similar analyses for 200-year, 500-year, and 1,000-year storm events.	Advisory only; future discussion item as part of developing the Draft Scoping Decision Document.
346	7a	906				The EAW includes historical and projected climate data. Conducting an exposure assessment requires evaluating more than just annual temperature and precipitation. The applicant should consider the range of information available as well as the range of scenarios that may impact the facilities as well as the mining operations/processes so that adaptation strategies can be identified accordingly.	Advisory; future discussion item as part of developing the Draft Scoping Decision Document.
347	7a	910			13, 14	P values should be included with all regressions to show significance, as well as confidence intervals and prediction intervals for all regressions.	Consider comment; edit figure and/or text as warranted.
348	7a	919				Explain why the drought period of 1910-1940 was excluded from the data set and why 1990-2022 is specifically called out.	Consider comment; edit figure and/or text as warranted.
349	7a	919			14	Historical annual precipitation data and trendlines for Mississippi River - Grand Rapids watershed do no match output from the Minnesota Climate Explorer Tool. Ensure correct data and trends are presented.	Consider comment; edit figure and/or text as warranted.
350	7a	930			15	Ensure the proper source is referenced for data presented in Graphic 15. Reference 8 (Minnesota Climate Explorer Tool) does not provide historical data for 100-year storm events.	Review and edit as appropriate.
351	7a	938				The statement that “A more detailed analysis of the future climate will be addressed in the EIS” needs to be supplemented with a more complete exposure assessment in order to evaluate climate adaptation and resilience.	Advisory only; future discussion item as part of developing the Draft Scoping Decision Document.
352	7a	943				Consider impacts to the railroad corridor. Develop an emergency management plan for the material being hauled to North Dakota in the event of an extreme precipitation event or other accident.	Advisory only; future discussion item as part of developing the Draft Scoping Decision Document.
353	7a	957			17	Graphic 17 shows comparisons for nine models, while the University of Minnesota climate projections provide output for only eight models. Clarify whether "Model 1" represents the "Model Mean" or one of the eight models.	Address Comment and edit as appropriate.
354	7a	965			18	Graphic 18 shows comparisons for nine models, while the University of Minnesota climate projections provide output for only eight models. Clarify whether "Model 1" represents the "Model Mean" or one of the eight models.	Address Comment and edit as appropriate.

Comment No.	EAW Section	Line No.	Table	Figure	Graphic	DNR Comment	Requested Action by DNR
355	7a	969				The exposure assessment should consider all available information when evaluating impacts related to climate change. In addition to the EPA Climate Resilience Evaluation and Awareness Tool, the assessment should consider locally downscaled climate data from University of Minnesota, using National Oceanic and Atmospheric Administration Atlas 14 values for the 100-year, 24-hour storm that are on the 90th percentile and storm transposition as an example of an extreme precipitation event.	Advisory only; future discussion item as part of developing the Draft Scoping Decision Document.
356	7a	969				Text states "The EPA Streamflow Projections Map anticipates an increase in streamflow by a ratio of 1.2 to 1.4 in 2071-2100 (RCP 8.5)…". Clarify what the reported ratio represents (e.g., projected change in annual average or annual high daily streamflow).	Address Comment and edit as appropriate.
357	7a	971				This type of information can be further supplemented by running additional scenarios (based on additional sources of information) to evaluate the range of streamflows that may occur in this area as a result of climate change.	Advisory only; future discussion item as part of developing the Draft Scoping Decision Document.
358	7a	972				Changes in climate have already occurred (e.g., increase in frequency/intensity of storm/flood events), so it is not accurate to say climate change will have minimal impact on the project location during the 10-year project period.	Address Comment and edit as appropriate.
359	7a	972				What if the project extends past 10 years? How will mine impacts be minimized after closure of the mine?	Advisory only; future discussion item as part of developing the Draft Scoping Decision Document.
360	7a	973				The exposure assessment should consider the full life cycle of the project including design and construction, mining operations, closure and restoration. It should also consider the full extent of the project including facilities and transportation to the Minnesota/N. Dakota border. Consider projections for mid-century for the exposure assessment.	Advisory only; future discussion item as part of developing the Draft Scoping Decision Document.
361	7a	974				Will the frequency of climate related events such as droughts, wildfires, and extreme heat be discussed in the more detailed analysis of climate change impacts during the project's life?	Answer Question. Future Discussion Item as part of developing the Draft Scoping Decision Document.
362	7b	976	4			What evidence is there to conclude that there won't be climate impacts? In addition to project duration, project magnitude has an effect on climate impacts. Please provide supporting information.	Consider comment; edit text as warranted.
363	7b	979	4			There is insufficient consideration to how long-term climate trends will impact the Project and potential adaptations in project design to reduce impacts and increase project area resilience. Table is incomplete.	Consider comment; edit text as warranted.
364	7b	979				This statement does not account for impacts that may occur at the project site after closure.	Consider comment; edit text as warranted.

Comment No.	EAW Section	Line No.	Table	Figure	Graphic	DNR Comment	Requested Action by DNR
365	7b	979	4			More discussion is needed regarding future storm intensities and the design storm size that will used in the storm water model and will be used to size storm water and water treatment infrastructure. Also, provide information to explain why a 200-year, 24-hour storm was proposed as the design storm size that will be used to design the storm water management plan and how it was determined to be adequate. Table 4 lacks key details on Project Information and Adaptations.	Advisory only; future discussion item as part of developing the Draft Scoping Decision Document.
366	7b	979				Details of how the recent historic increase in intense rainfalls are incorporated into project design should be provided in the EAW, including assumptions of rainfall depth, distribution and frequency, and how the design accounts for these rainfalls.	Consider comment; edit text as warranted.
367	7b	983	4			Increases in precipitation intensity in the Great Lakes region due to climate change are statistically significant. The region has experienced several 500- and 1000-year events over the past 10-15 years. Does the design of the mine at a minimum accommodate a 500-year precipitation event? Also, does the design account for the probable maximum flood for the area?	Address comment and edit as appropriate. These are factors likely to be considered in project-related impact assessment modeling. Future discussion item in the development of the Draft Scoping Decision Document.
368	7b	983	4			Explain how water resources will be unaffected if wetlands will be lost and flooding could occur.	Consider comment; edit text as warranted.
369	7b	984	4			Consider all phases of the project including construction phase, operational phase, post-mining/restoration phase. The content in Table 4 appears to consider impacts to the facilities after they have been constructed. It will be important to evaluate impacts (e.g., extreme precipitation event) during construction in order to assess impacts to the stormwater management and erosion and sediment control plan. Similarly, it would be important to evaluate impacts/conditions post-project and assess impacts to the restoration plans (e.g., seasonal temperature and precipitation changes, minimum and maximum extremes, impacts to vegetation establishment and viability). An assessment of how an extreme precipitation event could impact mining operations would be important. An emergency response plan to address these impacts should also be stablished.	Consider comment; edit text as warranted.
370	7b	984	4			Consider additional adaptation strategies like planting native vegetation that also improve biodiversity and wildlife habitat.	Consider comment; edit text as warranted.
371	7b	985				This conclusion cannot be made based on the lack of relevant information presented in the EAW. Please provide the rationale and supporting data (i.e., animated effluent water quality, studies assessing potential impacts of discharge on fish/wildlife/plant ecosystems in receiving water bodies, etc..) to substantiate this claim.	Consider comment; edit text as warranted.

Comment No.	EAW Section	Line No.	Table	Figure	Graphic	DNR Comment	Requested Action by DNR
372	7b	985				Evaluating impacts related to climate change and adaptation is a requirement of the EAW and needs to be conducted regardless of the size of the project. By completing an exposure assessment of the facilities as well as the processes, the Proposer and the State of Minnesota can more accurately evaluate the need to incorporate adaptation strategies to protect the facilities as well as the surrounding environment and communities. This assessment should consider data beyond annual averages in precipitation and temperature as the facilities and processes will likely be more vulnerable to seasonal and/or monthly variations as well as daily variation (e.g., higher nighttime lows). The proposer should consider all climate-related impacts including more frequent extreme precipitation events, drought conditions, temperature (i.e., warmer winters and nights, increased summer heat).	Consider comment; edit text as warranted.
373	8	988	5			In Table 5, Please provide clarification on where the wetland cover type change is occurring.	Consider comment; edit text as warranted.
374	8	988	6			Were possible future green infrastructure and incorporation into project design considered when developing Table 6?	Answer question.
375	8	990	5			Google Earth suggests that there are potential ditches or water conveyances that should be considered. This is mentioned within the document but isn't identified within Table 5. Are these included within the wetlands/shallow lakes category?	Address comment and update EAW as appropriate.
376	8	991	5, 6, 7			Tables 5, 6, and 7 appear to be incomplete or incorrect. Given that impacts related to climate change have not been evaluated, and the stormwater management plan and restoration plans have not been completed, it is extremely difficult to assess proposed cover types, proposed green infrastructure, and proposed tree coverage.	Consider comment; edit text as warranted.
377	8	994	5			Describe changes in carbon sequestration due to changes in cover type. (983, Table 4)	Address comment; modify text as warranted.
378	8	994	5			The table indicates that brush/grassland will increase as a result of the project. Is this due to the loss or conversion of wetlands?	Answer question. Edit text as necessary
379	8	994	5			Mitigation strategies are discussed in Lines 1448-1464.	Do not forward to proposer
380	8	994	5			How will the impervious area decrease? Will impervious areas be removed after the mine is closed? How will that be done? What restoration for the land is planned after mine closure?	Answer Questions; Future discussion item for development of the Draft Scoping Decision Document
381	8	996	6			It is noted that no green infrastructure is proposed. Permeable pavement and infiltration systems to mitigate for increase in impervious surfaces/wetland loss should be considered.	Consider comment; edit figure and/or text as warranted.

Comment No.	EAW Section	Line No.	Table	Figure	Graphic	DNR Comment	Requested Action by DNR
382	8	999	7			The potential noise reduction associated with vegetated strips of land are oversimplified in Reference 50 and incorrectly summarized in the text. An ISO9613-based propagation model can evaluate that potential noise reduction but only if spectral noise emissions data is entered for the noise sources. Vegetation alone provides more noise reduction in high frequencies and much less reduction to lower frequencies.	Address comment; modify text as warranted.
383	9	1001	8			An Underground Injection Control (UIC) Permit is identified as needed from the US EPA. The EAW and accompanying documentation do not include information about why a UIC permit is necessary. If there will be a UIC permit, there should be a discussion in the project description (item 6b) on what activity or activities would require this.	Address comment; modify text as warranted.
384	9	1008	8			Include the Office of the State Archaeologist (OSA) License. This will be required for archaeologists working on non-federal state and public Lands.	Advisory.
385	9	1008	8			The document identifies the need for a Minnesota Department of Transportation (MnDOT) approval for a Railroad Warning Signal Operator License. Are there any other federal, state, or local permits or approvals required for ore to be shipped by rail on the existing BNSF line from Tamarack, Minnesota, to the processing facility in North Dakota?	Answer question.
386	9	1008	8			If known, what federal, state, or local permits and approvals are needed for the North Dakota project components?	Answer question.
387	10ai	1017				There should be a discussion regarding safeguarding of Tribal treaty resources in this section.	Address comment; modify text as warranted.
388	10ai	1017				This section describes snowmobile trails in the Project area, but neglects to mention that portions of Savanna State Forest are there, and if flooding happens, how the project may impact Grayling Marsh Wildlife Management Area (WMA).	Consider comment; edit text as warranted.
389	10ai	1017				Perhaps a further discussion in Question 15: Historic Properties would be warranted, but in this section there should be a short acknowledgement that in the past Native American Tribes have used the wetland complex as burial grounds.	Consider comment; edit text as warranted. Future discussion topic in development of Draft Scoping Decision Document.
390	10ai	1019				The land use description is limited to a very small area near the Project area. Given that the description of water discharges in two HUC-12 watersheds that the Project lies within, it would be appropriate to also list WMAs and State Parks that lie downstream of project area.	Consider comment; edit text as warranted.
391	10ai	1019				DNR notes the state water quality standard for sulfate in wild rice waters is 10 mg/L. The EIS scope will likely require identification of wild rice waters and subsequent assessment for project-related discharges to adversely impact these resources (if present) due to project-related sulfate contributions.	Advisory only; modify text if needed.

Comment No.	EAW Section	Line No.	Table	Figure	Graphic	DNR Comment	Requested Action by DNR
392	10ai	1021				Typo: mission punctuation after 'infrastructure'	Edit EAW.
393	10ai	1021				Sentence is stated twice. Remove duplicate.	Edit EAW.
394	10ai	1028				The project could potentially result in the loss of public hunting land. This issue will need to be considered in the development of the Draft Scoping Decision Document.	Advisory only; future discussion item as part of developing the Draft Scoping Decision Document.
395	10aii	1042				The text indicates that the Project would result in further conversion of land use from open to industrial, but does not describe how the Aitkin County Comprehensive Land Use Management Plan assessed such conversion. Additional detail should be provided.	Consider comment; edit text as warranted.
396	10aiii	1051		6		There is no figure that clearly illustrates public vs private land. That could be on this figure or a separate figure.	Consider comment; edit text as warranted.
397	10aiii	1058				The text provides reference to the Aitkin County Mining and Reclamation Ordinance, but provides no detail regarding the contents of the ordinance. Additional detail should be provided.	Consider comment; edit text as warranted.
398	10aiv	1066				The Federal Emergency Management Agency (FEMA) is updating their floodplain mapping. What data was used to make this determination?	Answer question; edit text as needed.
399	10aiv	1066				Even if the areas are not "identified as at risk for localized flooding" the EIS needs to evaluate the potential for localized flooding during extreme weather events.	Advisory; future discussion item as part of developing the Draft Scoping Decision Document.
400	10b	1067				These areas have yet to be identified. FEMA floodplain mapping is outdated. Hydrologic and hydraulic modeling is needed to identify flood extents and areas at risk for localized flooding.	Advisory; future discussion item as part of developing the Draft Scoping Decision Document.
401	10b	1070				The text states that conversion of land use from open to industrial would occur, but makes no statement regarding the land zoned as city. The conversion or non-conversion of city-zoned land should be described and its compatibility with zoning should be discussed.	Consider comment; edit text as warranted.

Comment No.	EAW Section	Line No.	Table	Figure	Graphic	DNR Comment	Requested Action by DNR
402	11a	1078				The RGU offers the following notes: 1. The document should provide a high-level summary of what is known on the geochemical characterization of the overburden or any rock types. Furthermore, mineralogy and geological information should be used to develop the geochemical rock types for the project based on expert geochemists and geologists site knowledge. 2. Once the geochemical rock types are understood, the project geochemists should assess the potential for acid rock drainage and metal leaching. Neutralization potential ratio (NPR) criteria for the project should be developed and proposed for review to support treatment of the issue in the EIS. 3. If known, the document should discuss the expected quantities of each rock type and a high-level schedule of year over year extraction of different rock types. More precise estimates would likely be required for the EIS.	Consider comment and edit text where anything is known at this time. Future discussion item for treatment of topic in Draft Scoping Decision Document.
403	11a	1084		6, 7		A more detailed description of the surficial and bedrock geology at the project site is needed. The description could be constructed from drill logs and other sources of site-specific geologic information and include descriptions of all major surficial and bedrock units at the project site. The geologic description should describe all faults, fractures and aquifers in the area and identify any other susceptible geologic features. Maps and cross-sectional drawings showing the locations and thicknesses of the different surficial and bedrock units, locations of faults and fractures and other susceptible features and horizontal extents of the of the different surficial and bedrock units should also be described and mapped.	Consider comment; edit text as warranted.
404	11a	1100				There needs to be a discussion of structure and hydrogeology somewhere in this section	Consider comment; edit text as warranted.
405	All EAW	General				New Comment for Line 1100: The EAW should identify that mineralogical characterization would include acid-base accounting and dynamic testing, including the supporting technical data/information required to conduct the analyses. New Comment for Lines 1307-1311: The EAW should identify that hydrogeologic modeling is necessary, including the supporting technical data/information required to conduct the analyses. New Comment for Lines 468-470: The EAW should identify that rock dynamics/subsidence modeling is necessary, the supporting technical data/information required to conduct the analyses. New Comment for Lines 172-177: General comment. The Project Description and other relevant items should provide supply consumption estimates as appropriate.	Address comment; modify text if warranted.

Comment No.	EAW Section	Line No.	Table	Figure	Graphic	DNR Comment	Requested Action by DNR
406	11a	1101				Note, some of the geology terminology is unclear or incorrect. For example, it is stated the Thomson Formation (incorrectly spelled as Thompson) consists of "metamorphosed sediments". Note, sediments are not a rock type. Classically the Thomson Formation is described as consisting of intercalated slate, siltstone, and graywacke. Also, "hornfels grade" is not technically accurate. Hornfels is a metamorphic facies not a metamorphic grade. The hornfels facies metamorphic grade increases from Albite-Epidote => Hornblende => Pyroxene. Lastly, the major metamorphic event history for the Thomson Formation is regional metamorphism during the Penokean Orogeny followed by thermal metamorphism during the Mid-Continent Rift event.	Consider comment; edit text as warranted.
407	11a	1112				The document lacks any information of the geochemical characterization of the Class 1, 2, and 3 development rock (bedrock). If known the document would benefit from some explanation. Regardless, the project should conduct acid base accounting (ABA) testing for materials (static) and humidity cells (kinetic) for waste materials based on the expected proportion of Geochem rock types in the waste materials to inform the EIS analysis. The testing should be representative and meet the expected guidance documents. The humidity cell tests should run for sufficient time such that a stable release rate is achieved. Following the assessment static and kinetic data by geochemical rock type, affective NPR (critical NPR) for the project should be established with the assessment of the time to onset of acidity.	Consider comment and edit text as needed. Future discussion item in development of the Draft Scoping Decision Document.
408	11a	1112				The EIS would likely require description of the geologic components of the bedrock to be excavated during development of the mine. Example: units including serpentinite rock often contain Federally hazardous levels of Nickel and Chromium. It is likely a plan for sampling, analysis, waste disposal of overburden and ore would be needed for the EIS. Additional considerations may include provisions for worker protection.	Advisory only. Future discussion item for the Draft Scoping Decision Document on treatment of issue for EIS.
409	11a	1112				RGU notes that mafic and ultramafic rock types often contain elongate minerals, including asbestiform amphiboles and chrysotile. Background data needs for the EIS would likely include sampling and analysis results for elongate minerals. In terms of regulatory requirements if elongate minerals are present, Occupational Safety and Health Administration (OSHA) and MSHA require worker protection and mitigations to prevent inhalation & ingestion, transport of dusts on soiled clothing, and aerial transport of dust off-Site (beyond project fence line).	Advisory only. Future discussion item for the Draft Scoping Decision Document on treatment of issue for EIS.
410	11a	1112				The EIS would likely require a thorough analysis of source rock for the purposes of assessment, characterization and quantification of elongate mineral particles (EMPs). Analysis of potential impacts would require the results and original laboratory data including elemental composition, crystal structure, and growth habit.	Advisory only. Future discussion item for the Draft Scoping Decision Document on treatment of issue for EIS.
411	11a	1112				This indicates sulfide is mixed with the nickel-copper-cobalt. It should be addressed how the sulfide would be handled when these minerals are removed.	Consider comment; edit text as warranted. Future discussion topic in development of Draft Scoping Decision Document.
412	11a	1112				If the cobalt, platinum, palladium, and gold will be extracted from the ore that needs to be indicated in the project description.	Consider comment; edit text as warranted.

Comment No.	EAW Section	Line No.	Table	Figure	Graphic	DNR Comment	Requested Action by DNR
413	11a	1118				What is the proportion of each of the three basic types of mineralization in the TIC?	Answer question. Edit text as necessary
414	11a	1121				Because of the mercury impairments at Big Sandy Lake, it is important to know how the peat removed from the surface of the project area will be managed to prevent additional mercury from entering the watershed particularly because there is a peat harvesting operation nearby.	Advisory only; future discussion item as part of developing the Draft Scoping Decision Document.
415	11a	1123				The submittal does not identify the location of fractures, joints, fissures, and faults. This detailed information will be needed to assess impacts in the EIS	Advisory only; future discussion item as part of developing the Draft Scoping Decision Document.
416	11b	1140				The section indicates over 50 percent of the project is peat or muck soils. Information regarding the depth of organic soils is absent and should be provided	Consider comment; edit text as warranted.
417	11b	1140		10		Recommend using a different color for the Soil Unit as the green blends with the background.	Review for accessibility; modify figure if needed.
418	11b	1143				What is the volume and acreage of peat and much that would be removed for building the site?	Answer question. Edit text as necessary.
419	11b	1145				It would be helpful to indicate the percent of peatlands in the project area	Address comment; modify text as warranted.
420	11b	1149				Please indicate the percentage of peatlands in the project area. (Note that this question also addresses part of 571 and 572)	Consider comment; edit text as warranted.
421	11b	1150				The description of impacts to hydric soils, particularly due to the railroad spur construction, is insufficient.	Consider comment; edit text as warranted.
422	11b	1150				Underground mining techniques are stated to minimize impacts to soils. However, no explanation is provided as to how or to what extent impacts would be minimized. The use of the word "minimize" rather than "avoid" also suggests that there would still be impacts. Peat accumulating wetlands are extremely sensitive to hydrologic changes and topographic changes (i.e., subsidence). Detailed explanation of how impacts would be avoided or minimized is justified.	Advisory; future discussion item as part of developing the Draft Scoping Decision Document.
423	11b	1159	10			These numbers do not indicate if potential remediation of peat soils would require additional excavation. This potential should be considered in excavation estimates.	Advisory; future discussion item as part of developing the Draft Scoping Decision Document.
424	12ai	1170				The potential impacts resulting from changes to surface water flows should be evaluated in the EIS.	DNR will evaluate available information during the development of the Scoping EAW to determine the treatment in the EIS.

Comment No.	EAW Section	Line No.	Table	Figure	Graphic	DNR Comment	Requested Action by DNR
425	12ai	1170				Will there be in-field delineations of floodplains in addition to the FEMA-delineated floodplains?	Answer question.
426	12ai	1180				Provide additional detail and clarification with regard to general surface water from the project area in particular as it pertains to the Tamarack River and Mud Lake watersheds.	Answer question and update EAW as appropriate.
427	12ai	1183				Instead of stating that there are no public waters basins located within one mile of the project area, provide the distances from the project for the Tamarack River, Minnewawa Creek, Sandy River, Tamarack Lake, and Big Sandy Lake.	Answer question and update EAW as appropriate.
428	12ai	1183				It is not clear if "public water basins" indicates mapped basins of the Public Waters Inventory, or mapped basins plus potential public waters that meet the definition of Minnesota Statute 103G.005, Subdivision 15a but may be unmapped. This distinction should be clarified.	Answer question and update EAW as appropriate.
429	12ai	1187				Only public waters with wild rice are listed. Have field surveys been competed to determine additional wild rice habitat downstream of project area (and therefore receiving project discharge)?	Future discussion item.
430	12ai	1187				How will the protection of the wild rice waters be ensured & are relevant tribal governments or stakeholders being consulted for their input?	Answer question.
431	12ai	1188				These lakes are also now listed at the Minnesota Pollution Control Agency (MPCA) as waters used for the production of wild rice and the 10 mg/L sulfate standard would apply to the lakes.	Regulatory guidance. Future discussion item.
432	12ai	1196	11			Round Lake (WID = 01-0023-00) should also be listed as a water used for the production of wild rice	Address comment and update EAW as appropriate.
433	12ai	1196	11			State shoreline classifications and standards are the minimum that must be followed; the local government unit (LGU) can adopt stricter standards and classes. LGU standards for lakeshore classifications and standards must be determined and met. Recommend providing those in the document.	Address comment and update EAW as appropriate.
434	12ai	1221				What reference was used to determine public waters?	Address comment and update EAW as appropriate.
435	12ai	1250				A hydrologic and hydraulic model that incorporates updated precipitation information (e.g., Atlas-14) should be used to evaluate where the floodplain would be. Impacts of the proposed project should be evaluated relative to these simulated floodplain elevations.	Future discussion item.

Comment No.	EAW Section	Line No.	Table	Figure	Graphic	DNR Comment	Requested Action by DNR
436	12ai	1255				Back in Item 6b, Line 519, the TBM is expected to cross from the overburden to bedrock containing elevated sulfur. The potential release of elevated sulfur from the bedrock to surrounding waters (including those supporting wild rice) is a concern. It is also a concern if any aspect of the project results in releases of sulfur dioxide (SO2) that could also adversely affect wild rice resources. The EIS would likely require the conceptual model to be capable of addressing this potential flowpath and assess potential water quality impacts to surface waters.	Advisory only. Future discussion item for the Draft Scoping Decision Document on treatment of issue for EIS.
437	12ai	1255				Provide more complete description of surface water flow and surface water quality monitoring efforts. Currently, the information is Insufficient to determine whether current efforts will adequately inform EIS.	Address comment and update EAW as appropriate.
438	12ai	1255				How would potential negative impacts to surface water quality or quantity be assessed and remediated if they occurred?	Answer question.
439	12ai	1255				The stormwater management plan for the project should be based on a hydrologic and hydraulic model that allows for simulations of both design events (i.e., 100-year, 24-hour rainfall event) and continuous simulations in order to assess the potential impacts to downstream waterbodies under existing and future conditions. This information should be provided in order to assess impacts to surface water and natural resources.	Future discussion item.
440	12ai	1255				How often is monitoring occurring and at what locations? What parameters are being monitored?	Answer question.
441	12ai	1255				Will monitoring of surface water flow and quality be of the same, or similar, frequency during mine operation?	Answer question.
442	12ai	1255				Provide the locations of all surface water monitoring sites and flow measurements collected at the sites as well as manual flow measurements, logger data and rating curves for the purpose of reviewing flow measurements. Additional stream flow monitoring locations may be recommended if it is determined that more measurements are needed to adequately characterize baseline surface water flows.	Address comment and update EAW as appropriate.
443	12ai	1255				It is recommended that the conceptual surface water flow model be discussed with the DNR prior to constructing the quantitative models that will be used to estimate the effects of the project on water resources. Changes may need to be made to the conceptual model depending on the outcome of the discussion(s).	Regulatory guidance. Consult DNR Lands and Minerals regarding potential groundwater models.
444	12ai	1255				Provide figures showing surface water baseline conditions. It would be helpful to display variations in streamflow over time using time series plots (hydrographs), as well as graphs displaying surface water quality in ditches, streams, and lakes.	Future discussion item.
445	12ai	1255				Does Talon propose to include a quantitative water model to simulate contact water management, industrial stormwater management, and construction stormwater? If yes, the EAW should identify the type of simulation software and what conditions would be modeled.	Answer question.

Comment No.	EAW Section	Line No.	Table	Figure	Graphic	DNR Comment	Requested Action by DNR
446	12ai	1255				For quantitative surface water hydrology modeling, what software program would be used to simulate runoff (if necessary)? The modeling should specify exactly where and how precipitation falling on the project features may be released back into natural systems, including during the reclamation and closure phases.	Answer question.
447	12ai	1255				Does Talon propose to tailor the water model to address different potential operating conditions (full operation; partial shutdown; temporary idle; or similar)?	Answer question.
448	12ai	1255				Does Talon propose to specify the potential pathways for how industrial stormwater, contact water, or leakage from other project features that could be released to surface waters and quantified?	Answer question.
449	12ai	1255				Does Talon propose to develop a water mass balance model for the project?	Answer question.
450	12ai	1255				Does Talon propose to develop a LiDAR assessment of current topology to describe current conditions, with an elevation model of the final topography after reclamation, to support analysis of potential hydrological change?	Answer question.
451	12ai	1259				The document notes that evaluations will be conducted…to estimate potential effects…on water resources. Does Talon propose the waterbodies listed in Tables 11 and 12 as constituting the complete list of waterbodies to be evaluated? Any other waters to be evaluated?	Answer question.
452	12ai	1257				Provide more details on the surface water flow conceptual model in the next data submittal. The EAW currently lacks any discussion of conceptual modelling, for example listing sources, pathways and receptors so as to ground numerical modeling. A review of the water management strategies on site cannot be completed without this critical information.	Address comment and update EAW as appropriate. Future discussion necessary.
453	12ai	1258				Water quality modelling is also required for contingency planning for metal leaching and acid rock drainage (MLARD) source terms and mitigation planning. This must trace sources, treatment options, source control strategies and discharges to the receiving environment. Water quality modeling should include base case as well as upper case source terms for MLARD planning purposes.	Address comment and update EAW as appropriate.
454	12ai	1261				The type of wetland delineation (Level 1 or Level 2) is not specified. This information is needed to determine level of detail and if finer resolution is warranted.	Address comment and update EAW as appropriate.
455	12ai	1261				There is inconsistent use of project acreage and project acreage impacts. Here the EAW states there are approximately 302 acres of wetland present within the Project Area, earlier the project area was considered either 224.9 or 263.3 acres, of which not all was considered wetlands?	Address comment and update EAW as appropriate.
456	12ai	1261				Information must be provided on methods and considerations for determining the Project Area. Additional wetland delineation may be necessary to determine the potential for indirect wetland impacts.	Address comment and update EAW as appropriate.

Comment No.	EAW Section	Line No.	Table	Figure	Graphic	DNR Comment	Requested Action by DNR
457	12ai	1263		14		The wetland delineation was conducted in growing season 2022 but no submission date to the agencies is provided. Agency review timelines should be adequate to provide boundary and type review within this timeframe. Given the large quantity of wetlands present on site, an approved Level 2 wetland delineation is critical to assessing potential wetland impacts. Figure 14 appears to illustrate National Wetlands Inventory (NWI) wetland boundaries, but it is not clear if they are NWI or delineation boundaries.	Answer question regarding wetland boundaries in Figure 14.
458	12ai	1264				Text indicates that wetland delineations are considered preliminary until technical evaluation panel (TEP) review. Wetland delineations are preliminary until DNR, as the Wetland Conservation Act (WCA) approving authority, decides on a wetland delineation.	Advisory. Regulatory guidance. Future discussion item.
459	12ai	1266				Wetland categories found in project area are listed, but water quality and discharge volume impacts cannot be assessed without knowing more about water sources for different wetlands. Basic water quality data such as pH and conductivity would be useful for initial review of subsequent wetland impacts subsection in item 12.	Future discussion item.
460	12ai	1266		14		The color chosen to represent the "National Wetlands Inventory" (NWI) is very faint. Choose a color that is more visible.	Address comment and update Figure 14 as appropriate.
461	12ai	1269				Ditching in wetlands is a past impact that is now reflected in the current hydrologic behavior of the ditched wetland system. This will need to be accounted for in the assessment of project-specific impacts to these previously impacted systems.	DNR will evaluate available information during the development of the Scoping EAW to determine the treatment in the EIS.
462	12ai	1272				RGU notes it will be necessary to describe potential groundwater flow impacts resulting from peat excavation.	Consider comment; provide additional detail on what is currently known. The issue will have to be addressed in the Draft Scoping Decision Document.
463	12ai	1272				More information needed on monitoring and additional information on the types of models that will be used	Note comment.
464	12ai	1272				Provide more complete description of wetland water level and water quality monitoring efforts. Insufficient information to determine whether current efforts will adequately inform EIS.	Address comment and update EAW as appropriate.
465	12ai	1272				Further detail of wetland water level and water quality monitoring methods is warranted. No details are provided other than that data is being collected. Some knowledge of methods is needed to assess potential scoping needs. Further, floristic quality monitoring should be considered given the potential of large peatland complexes and adjacent wetlands to harbor high quality plant communities and rare species. Hydrogeomorphic classification and corresponding functions should also be considered to further assess potential impacts.	Future discussion item.
466	12ai	1272				Will monitoring of wetlands be of the same, increased, or similar frequency during mine operation?	Answer question.

Comment No.	EAW Section	Line No.	Table	Figure	Graphic	DNR Comment	Requested Action by DNR
467	12ai	1272				How would potential negative impacts to the wetlands be assessed and remediated if they occurred?	Answer question.
468	12ai	1272				Provide a summary of the wetlands water quality data collected to date, along with a map identifying the locations of the monitoring stations. It is unclear from the EIS into which wetland(s) the mine plans to discharge effluent into. Providing baseline water quality/water flow and seasonal variation of each will assist in appropriate discharge planning and identify any potential effects to surface water as a result of wastewater discharges.	Address comment and update EAW as appropriate.
469	12ai	1272				Provide the locations of all wetland monitoring wells and baseline wetland monitoring data. Additional wetland monitoring wells may be recommended if it is determined that more wells are needed to adequately characterize wetland hydrology.	Address comment and update EAW as appropriate.
470	12ai	1272				It is recommended that the conceptual wetland hydrology model be discussed with the DNR prior to constructing the quantitative models that will be used to estimate the effects of the project on water resources. Changes may need to be made to the conceptual model depending on the outcome of the discussion(s).	Future discussion item.
471	12ai	1272				It is recommended that the quantitative wetland hydrology models that will be used to estimate the effects of the project on wetlands be discussed with the DNR prior to the start of modeling.	Future discussion item.
472	12ai	1272		15		Wetland hydrology monitoring should include measurement of vertical gradients between the wetland and underlying aquifers to evaluate hydrologic connections between the wetlands and aquifers to be affected by mining. Are the monitoring wells referred to in this paragraph shown on Figure 15?	Future discussion item. Answer question concerning monitoring well locations.
473	12aii	1282				The EAW states, "One well is completed in a Quaternary undifferentiated aquifer and no information is available for three wells." Will the EIS evaluate potential interference with water supply wells?	No action necessary. Comment refers to existing MWI wells.
474	12aii	1282		15		The EAW states, "Monitoring wells have been installed in and around the Project Area (Figure 15) to characterize baseline groundwater conditions (groundwater levels and groundwater quality)." How were the location of these monitoring wells determined?	Provide additional information on monitoring well network as it relates to baseline conditions and conceptual models that will be presented in the EIS.
475	12aii	1282				Although there are no mapped springs near the project area, the possibility exists for artesian springs to be present across this wetland-dominated landscape. Does the proposed hydrologic characterization program account for this possibility, and if yes, how is this proposed to be done? If not, conducting surveys for springs may be needed as part of the hydrologic characterization to address this potential concern.	Answer the question; edit document as needed. Possibly a future discussion item to specify what additional field surveys for springs may need to be conducted as part of the baseline hydrological characterization.
476	12aii	1282				"Johnson's Beaver Pond", identified within the Minnesota Spring Inventory, may be within 20 miles.	Note comment.

Comment No.	EAW Section	Line No.	Table	Figure	Graphic	DNR Comment	Requested Action by DNR
477	12aii	1290				Assessment of potential impacts to drinking water wells should include the TBM.	Consider comment; edit text as needed.
478	12aii	1290		15		Plans to monitor surrounding water supply wells during mine dewatering should be discussed.	DNR will evaluate available information during the development of the Scoping EAW to determine the treatment in the EIS.
479	12aii	1290		15		Are piezometers part of the monitoring well network?	Answer question and update EAW as appropriate.
480	12aii	1290				Modeling of the impact of mine dewatering and appropriations on the artesian sand and gravel aquifers used by water supply wells near the project area should be submitted. The same is true for impacts to wetland hydrology.	Future discussion item.
481	12aii	1305		15		Only one quaternary monitoring well (22TKW059) is near the underground workings and south of the minor watershed boundary. The next nearest well south of the minor watershed boundary is approximately a mile south (22TKW060). There are no shallow bedrock monitoring wells south of the minor watershed boundary. While a minor watershed boundary may not significantly affect groundwater flow, there is reason to need evaluation of whether there is a groundwater divide. This is important for understanding groundwater flow direction. The nearest multi-level upgradient wells (08TKW005, 21TKW0022, etc.) are ~4,000 feet away from the next downgradient locations (i.e., the "Inset 3" and "Inset 2" wells) in the approximate surface projection of underground workings. Groundwater flow is believed to be generally west, so the nearest multi-interval and upgradient wells (08TKW005, 21TKW0022, etc.) might not even be true upgradient wells; a flow line from those wells could conceivably bypass the surface projection of underground workings area, especially when there is a distance of thousands of feet between well locations. As noted in EAW Figure 15, and starting on Line 1290, there are water supply wells near and downgradient of the underground workings.	Regulatory guidance. Future discussion item.
482	12aii	1305				To evaluate the adequacy of the monitoring well network, boring logs, monitoring well construction reports (including surveyed elevations), data collected (parameters and monitoring period) for each monitoring well should be included.	Future discussion item.
483	12aii	1305				It will be important for well locations to be representative of the area of potential affect and the scope not to be too narrowly focused on just the project site. Will the current distribution of monitoring wells proposed be able to determine impacts outside the Mississippi watershed if it were to occur?	Answer question and update EAW as appropriate.
484	12aii	1305				Are existing monitoring wells completed in the same aquifer(s) as nearby water wells?	Answer question.
485	12aii	1305				Identify plans for sealing any existing water-supply/monitoring wells and exploratory borings located within the footprint of the mine project by a licensed well contractor. MDH Well Management Section can be contacted for questions.	Regulatory guidance. Provide discussion of well and boring abandonment procedures in EAW as appropriate.

Comment No.	EAW Section	Line No.	Table	Figure	Graphic	DNR Comment	Requested Action by DNR
486	12aii	1305				Well construction logs, stratigraphy reports, monitoring details and monitoring data for all monitoring wells installed in and around the project site should be provided. Additional monitoring wells may be recommended if it is determined that the current monitoring well network does not adequately characterize the hydrologic conditions at the mine site.	Future discussion item.
487	12aii	1305				To better understand existing conditions, the following figures would be helpful: horizontal and vertical hydraulic gradients in the surficial and bedrock aquifers using cross sections and/or potentiometric surface maps; groundwater level variations over time displayed using time series plots (hydrographs); graphs displaying groundwater quality in both bedrock and surficial aquifers.	Provide requested figures.
488	12aii	1305				When available, provide information from all pumping tests, slug tests, or any other tests performed to evaluate aquifer properties. Additional testing may be recommended if it is determined more information is needed to adequately characterize the hydrologic conditions at the mine site.	Future discussion item.
489	12aii	1305		15		A separate figure showing the locations of the monitoring wells and bore holes that are currently being used to monitor groundwater levels should be provided. The monitoring wells should be separated into bedrock and surficial wells in the figure or be provided in separate figures. Wells in the figure(s) should be labeled so they can be correlated with groundwater monitoring data.	Provide requested figures.
490	12aii	1305		15		The number and locations of the existing monitoring wells may not be adequate to formulate a comprehensive site conceptual model. Wells seem to be concentrated in the northern half within the project area. There are only 5 monitoring wells outside the project area boundary. There are no monitoring wells south of the project area. Information to be obtained from monitoring wells is not stated.	Provide additional information on monitoring well network as it relates to baseline conditions and conceptual models that will be presented in the EIS.
491	12aii	1305				Does Talon propose development of two conceptual models to assess impacts to groundwater? One conceptual model could be used to model current conditions while the second could be used to model future conditions, including into reclamation and closure.	Answer question.
492	12aii	1305				Does Talon propose to rely on a finite-difference numerical groundwater flow model to assess impacts? Would this model be coupled with other analytical or analog models to answer specific questions for the project area?	Answer question.
493	12aii	1305				Does Talon propose for the numerical models to be capable of assessing changes to the groundwater systems predicted from initial mine construction, underground mine operations, or other project elements that could affect aquifer recharge?	Answer question.
494	12aii	1305				Does Talon propose to configure the groundwater impact models so that the results can be used in the surface water and wetland impact assessments?	Answer question.

Comment No.	EAW Section	Line No.	Table	Figure	Graphic	DNR Comment	Requested Action by DNR
495	12aii	1305				Does Talon propose for groundwater modeling to assess project-related groundwater depressurization effects during operations?	Answer question.
496	12aii	1305				Has Talon identified potential pathways for how contact water or industrial groundwater could be released to groundwater?	Answer question.
497	12aii	1305				Does Talon propose to model potential changes to deeper bedrock groundwater quality as the project transitions from underground operations to reclamation and closure? Potential issues could be flow from the flooded underground mine workings in closure or groundwater interaction with the cemented rock backfill.	Answer question.
498	12aii	1305				Does Talon propose to assign a pathway for any potential precipitation to infiltrate roadways and any subsequent impacts to groundwater quality?	Answer question.
499	12aii	1307				The DNR requests the opportunity to review and discuss the conceptual groundwater model prior to constructing the quantitative groundwater models that will be used to estimate the effects of the project on water resources. Changes may need to be made to the conceptual model depending on the outcome of the discussion(s). The DNR also requests the opportunity to discuss the quantitative groundwater models that will be used to estimate the effects of the project on water resources. This will help ensure that the DNR agrees they will adequately predict all impacts to water resources from the project.	Regulatory guidance. Consult DNR Lands and Minerals regarding potential groundwater models.
500	12aii	1308				As stated, quantitative modeling will include groundwater and particle tracking (Line 2064). As additional information relating to aquifer and bedrock hydraulic properties will gradually become available as the mining drifts and stopes advance, A plan should be in place to: (i) perform bounding analysis for the EIS and (ii) update the model during the mine operation to confirm the bounding analysis and to guide mining operations, if necessary. If the infiltrating water includes potential contaminants, the modeling plan should include the development of a transport model to assess the mixing between the infiltrating water and ambient groundwater.	Future discussion item.
501	12aii	1309				What type of quantitative groundwater flow models will be constructed, and will they be sufficient enough to model changes in groundwater flow direction and/or contaminant transport, as well as potential impacts to nearby surface waters & wetlands, as a result of mining activities? Will all models, modeling software and data, and inputs to the model be available for MDH staff so it can be verified and replicated?	Answer question and update EAW as appropriate.
502	12aii	1312				Depth to groundwater should be mapped in a figure with the proposed project features overlain for clarity.	Provide requested figure.
503	12aii	1312		16		Site specific monitoring well data should be used to characterize the depth to water in the project area rather than general National Resource Conservation Service (NRCS) soils information.	Update EAW with depth to groundwater information from monitoring well network.

Comment No.	EAW Section	Line No.	Table	Figure	Graphic	DNR Comment	Requested Action by DNR
504	12bi	1333				The EAW states that "Significant additional hydrological data has been collected since 2020." Will additional modeling be completed to determine inflow? A new model is needed.	Answer question with additional detail if known. Future discussion item in development of Draft Scoping Decision Document.
505	12bi	1333				RGU notes the summary regarding discharges from the water treatment plant and sanitary water treatment plant is not at the level of detail required to assess potential impacts to aquatic species. The EIS will require detailed information for these project components.	DNR will evaluate available information during the development of the Scoping EAW to determine the treatment in the EIS.
506	12bi	1333				The EAW states, "Generally, a stream can adapt to an increase in flow that is up to 20% above its channel forming flow (defined as the 1.5-year recurrence flood flow)." Was there any analysis completed for the ditch system, Tamarack River, and Prairie River that will be receiving the treated waters? What happens if the flow increases naturally due to flooding due to climate change?	Answer questions and update EAW as appropriate.
507	12bi	1333				The EAW states, "Therefore, this preliminary assessment indicates that potential impacts due to increased flow from the Project discharge could be controlled by permit conditions of a future NPDES/SDS permit and water appropriations permit." What were the preliminary assessment figures? What were the estimated discharge volume per day?	Answer questions and update EAW as appropriate.
508	12bi	1333				The EAW states, "Current Minnesota climate trends and anticipated climate change in the general location of the Project are not expected to influence how a discharge of treated water would affect water resources." Provide modeling/data to support this conclusion.	Future discussion item.
509	12bi	1333				The EAW states, "The EIS will provide additional information on the potential influence of current climate trends and anticipated climate change on potential Project effects on water resources." The EIS should evaluate how the project will exacerbate existing climate changed induced stressors.	DNR will evaluate available information during the development of the Scoping EAW to determine the treatment in the EIS.
510	12bi	1333				Talon says, "Additional evaluation of potential effects associated with the flow increase from the water treatment plant discharge and sanitary water treatment plant discharge will be addressed in the EIS." In the EAW, they should describe impacts on all native species in the stream and on those that use the stream for any purpose.	Comment noted. This Section of EAW specifically requests information on impacts to surface and groundwater, not fish and wildlife.
511	12bi	1335				EAW item 12.b.i.3 requests information on effects to surface or groundwater from wastewater discharges; however, the response provided defers any discussion of potential effects to the EIS. Provide information to address the item, such as effects of increased flow above baseline levels, contact/stormwater discharge, and including mitigation to the impacts.	Update the EAW with the requested information.

Comment No.	EAW Section	Line No.	Table	Figure	Graphic	DNR Comment	Requested Action by DNR
512	12bi	1344				The EAW included an estimation of mine inflow as one number – peak life of mine inflow. Would it be more useful to know the inflow in stages? What is this number based on? Is the inflow expected to be spatially variant (getting back to enhanced permeability)?	Answer questions and update EAW as appropriate.
513	12bi	1344				Provide more information to show how the inflow rates were calculated. Relying on data only up to 2020 may be inadequate when "Significant additional hydrogeological data has been collected since 2020". Current data should be used to calculate inflow rates and include or reference all data and analysis.	Provide additional information on the inflow rate data.
514	12bi	1344				The methods and data used to estimate the mine inflow rate should be provided in sufficient detail to allow reviewing the calculations. In particular, how flow along lithologic contacts and faults was quantified needs to be described, including methods for hydraulic conductivity testing of fractured bedrock (such as packer testing and core description).	Future discussion item.
515	12bi	1344				A reference is needed for "a peak life-of-mine inflow of 800-1,600 gpm".	Provide reference material requested.
516	12bi	1352				The amount of contact water generated on the surface should not be evaluated solely based on the maximum average of approximately 40 gpm. This evaluation should also consider the flow rate that would be routed to the wastewater treatment facility under an extreme precipitation event.	Address comment and update EAW as appropriate.
517	12bi	1352				It should be specified whether areas outside of the 1,148,000 square foot "contact water area" could generate runoff that flows through that area, increasing the volume of contact stormwater that would need to be treated.	Address comment and update EAW as appropriate.
518	12bi	1356				Runoff during individual storm events can exceed 40 gpm and will likely exceed underground mine inflow rates. Therefore, it is not agreed that 40 gpm is a conservative estimate of the maximum amount of runoff from the contact water area that may need to be treated because it assumes the precipitation rate is constant over the entire year. Runoff from individual storm events should be evaluated to estimate the maximum amount of water that will need to be stored and treated. More discussion is needed to regarding the maximum storm size that will need to be evaluated.	Future discussion item.
519	12bi	1357				Converting rainfall to an average flow of 40gpm spread out over a whole year is not necessarily a helpful conversion due to the sporadic and seasonal nature of precipitation. Depending on how the system is designed and the amount of equalization capacity, discharge is likely to be significantly higher during spring/runoff and discharge may be negligible for winter months.	Address comment and update EAW as appropriate.

Comment No.	EAW Section	Line No.	Table	Figure	Graphic	DNR Comment	Requested Action by DNR
520	12bi	1358				DNR notes that stormwater generation with the project is likely to receive detailed analysis in the EIS. Whether the proposed estimated maximum average of 40 gpm that would be routed for treatment constitutes a "conservative estimate" remains to be determined. Also, whether the "maximum average" is the most insightful measure remains to be seen, for example when accounting for extreme precipitation events in the impact assessment.	Address comment and update EAW as appropriate. Future discussion item in development of Draft Scoping Decision Document.
521	12bi	1364				Information on treatment plant design and the data used will need to be provided.	Future discussion item.
522	12bi	1368				Detailed stream flow modeling should be performed using HEC-RAS or another stream flow modeling program to demonstrate that the north ditch network has the capacity to handle discharges from the water treatment plant and the sanitary treatment plant without causing adverse impacts to the downstream receiving waters and infrastructure. StreamStats is not a sufficiently accurate tool for this application. Results from StreamStats must always be field verified. Modeling should be supported by and calibrated to site specific monitoring data.	Future discussion item.
523	12bi	1368				Potential effects of increased flow on hydrology, wetlands, and shallow and deep groundwater flow systems should be included in the bounding analysis based on the quantitative groundwater flow model. (See comment for Line 1308.)	Future discussion item.
524	12bi	1371				Use of stream guidelines for ditch conditions may be inappropriate. Peatland ditches may not respond to changes in flow in the same way as streams. Provide references that describe ditched peatland hydrology for basis of preliminary evaluation of discharge capacity in ditches.	Address comment and update EAW as appropriate.
525	12bi	1371				Further explain the logic behind the initial evaluation of ditch capacity to handle the proposed discharge of treated water. The concept of channel forming discharge applies to periodic high flow events for an alluvial channel, not a persistent discharge in a ditch. The extended duration of increased flows for pumped discharge may cause greater sediment transport than a short-term runoff event of similar discharge. Provide a reference for the stream adaptation statement on Lines 1373-1374 and clarify what "adaptation" means in this context. What physical changes are expected (e.g., increased bank erosion and downstream sediment transport)? An alternative method to evaluate impacts to the surface drainage network should be provided.	Address comments and update EAW as appropriate. Future discussion necessary regarding alternative methods.
526	12bi	1373				These assumptions about the ditch that would be used for discharge must be fully supported by data and analysis. Extreme precipitation events must be factored into the analysis	Address comment and update EAW as appropriate.
527	12bi	1379				Does Talon propose to obtain supplemental information regarding stream channel morphology and watershed characteristics to allow modeling of in-channel impacts from the project to the receiving water/ditch? Would this include the mean, maximum, and minimum monthly flows, while seasonal timing data could be used to address pre-project, operations, and post-closure instream flows to support assessment of impacts to instream aquatic resources?	Answer question.

Comment No.	EAW Section	Line No.	Table	Figure	Graphic	DNR Comment	Requested Action by DNR
528	12bi	1379				Does Talon propose to use detailed reporting from the PART and any other analyses regarding assessment of baseflow?	Answer question.
529	12bi	1384				Impacts related to discharges from the water treatment plant and the sanitary water treatment plant should consider the wetland bounce and inundation to downstream wetlands, thermal impacts, and water quality standards specific to wild rice.	DNR will evaluate available information during the development of the Scoping EAW to determine the treatment in the EIS.
530	12bi	1387				Impacts related to climate change should evaluate all sources of information; for example, in addition, to taking historical trends and climate change projections into account, evaluation should also consider the extreme events in the historical data set by utilizing the NOAA Atlas 14 values on the 90% confidence intervals and by simulating local extreme precipitation events by completing storm transposition (e.g., the impacts of simulating the extreme precipitation event that hit the City of Duluth which is 50 miles from the project site).	Provide information regarding the sources of information
531	12bi	1387				Uncertainty and predicted ranges of modeled changes should be considered instead of simply using long term trends (e.g., in Lines 960-964 proposer describes changes in annual average precipitation projections as an average of +1% from baseline average. But the estimates range from -14% to +29% and represent very different conditions under which to consider impacts to discharge and water quality).	Provide information regarding the sources of information.
532	12bi	1387				Were conclusions about stormwater runoff, groundwater recharge, and other aspects of site hydrology informed by data other than NOAA Atlas 14; for example, using current estimates of rainfall depth-duration-frequency? Did conclusions account for climate change that has already occurred but is not represented in standard hydrologic references?	Address comment and update EAW as appropriate.
533	12bi	1387				It was stated in Lines 968-969 that the Environmental Protection Agency (EPA) Climate Resilience Evaluation and Awareness Tool anticipates an increase in the 100-year storm intensity of 13.5% in 2030 and 26.3% in 2060 indicating storm intensity will increase during the project lifetime. More discussion in needed regarding what size storm event will be used to evaluate impacts from discharges on receiving waters.	Address comment and update EAW as appropriate.
534	12bi	1390				DNR notes that water modeling will need to account for local climate trends around variability and trends as applied to this part of Minnesota. The project area is already wetter and warmer than past conditions, with precipitation extremes increasing all seasons (that is expected to continue).	Advisory only. Future discussion item for development of Draft Scoping Decision Document.
535	12bii	1399				The EAW states that, "The current stormwater management plan is designed to manage up to the 200-year, 24-hour storm event until such contact water can be routed to the water treatment plant for treatment." Why was a 200-year storm event chosen? Should longer durations be evaluated?	Address comment. Future discussion item.

Comment No.	EAW Section	Line No.	Table	Figure	Graphic	DNR Comment	Requested Action by DNR
536	12bii	1399				What modeling/data/references support the following statement in the EAW: "Current Minnesota climate trends and anticipated changes in rainfall frequency, intensity, and amount are not expected to significantly influence the environmental effects from stormwater discharges on receiving waters”?	Address comment and update EAW as appropriate.
537	12bii	1434				What information or data support the following statement in the EAW: "environmental effects from industrial stormwater discharges on receiving waters are anticipated to be minor"?	Address comment and update EAW as appropriate.
538	12bii	1436				Extreme rainfall events must be considered in the design of the stormwater treatment system.	DNR will evaluate available information during the development of the Scoping EAW to determine the treatment in the EIS.
539	12bii	1439				State where the precipitation numbers are coming from (i.e., Atlas 14?) Also provide the rainfall amount.	Address comment and update EAW as appropriate.
540	12bii	1441				More details are requested in the next data submittal, specifically a map indicating the proposed discharge locations.	Provide additional information on discharge locations, including a figure as requested.
541	All EAW	General		3		Looking at the site picture (Figure 3), the hydrology looks like there is some runoff discharging north at the end of the rail line. When the rail cars are stored on site, what is the possibility of any contaminants being drained into the nearby unnamed channel if it were to rain on the site?	Answer question; modify text if warranted.
542	12bii	1444				All discharge routes and receiving waters for all discharges should be clearly shown. It is unclear if ditches will need to be constructed if water is discharged to wetlands and not to existing ditches. If ditches will need to be constructed through wetlands, the impacts from the ditching should be fully evaluated.	Provide additional information on overall discharge plans and update EAW as appropriate.
543	12bii	1450				Disagree that the effect of adding impervious surface is "minimized" or "mitigated" by collection, treatment and discharge of contact water. Added impervious surfaces results in the discharge of water directly to surface waters instead of allowing it to infiltrate into the ground, resulting in a slower discharge to nearby surface waters.	Address comment.
544	12bii	1453				Clarify meaning. How will discharge of treated water mitigate altered surface hydrology in the immediate vicinity of the project area?	Address comment.
545	12bii	1459				See comment about Item number 7.a., Lines 901-975. (Future climate projections and additional information about past climate can be found at www.heat.gov and www.heat.gov/pages/climate-explorer)	Note comment.
546	12bii	1461				Were closure and reclamation periods considered in addition to the operation periods?	Answer question and update EAW as appropriate.

Comment No.	EAW Section	Line No.	Table	Figure	Graphic	DNR Comment	Requested Action by DNR
547	12bii	1461				Text states that the water balance in the area (precipitation and evapotranspiration) is expected to remain in the current range over Project lifetime. Evapotranspiration trends are not addressed or described elsewhere in the submittal. Additional information is needed to support the statement.	Address comment and update EAW as appropriate.
548	12bii	1464				The proposer should identify the requirements that are going to be the most restrictive to discharge and/or other impacts from the site. Water quality standards to address impacts to wild rice may be the driver for stormwater management and wastewater treatment. The standards noted by the proposer in this section are likely not the over-riding drivers for treatment.	Future discussion item.
549	12biii	1470				The EAW states, "The potential maximum daily withdrawal from this well for potable water use could be up to approximately 13,200 gpd (4.8 million gallons per year)." Even if the impact during mine operation is expected to be minimal, the EIS should evaluate the impact of the operation on the quality and quantity of the aquifer such that it would be more susceptible to risk factors in the years following the mining operation.	DNR will evaluate available information during the development of the Scoping EAW to determine the treatment in the EIS.
550	12biii	1470				Is there modeling to support the statement in the EAW: "The Project's water use of potable water would be resilient with respect to climate trends...."? What other uses of groundwater are expected/anticipated during the operational timeframe?	Address comment and update EAW as appropriate.
551	12biii	1470				What is the current expected need of non-potable water?	Address comment.
552	12biii	1484				More information about the groundwater appropriation for temporary construction dewatering, potable use, non-potable use, and pumping of groundwater inflow to the underground mine will be needed. DNR will need to evaluate potential impacts from the proposed appropriations.	Address comment and update EAW as appropriate.
553	12biii	1488				How would the removal of groundwater be temporary? Would water be pumped back into the ground?	Address comment and update EAW as appropriate.
554	12biii	1488				Identify how or if dewatering for mine infrastructure or mine workings (construction and ongoing during mine operations) will or potentially will affect nearby water supply wells.	Comment noted. Addressed in other comments. EAW indicates that conceptual and quantitative groundwater flow models will be developed.
555	12biii	1488				Provide descriptions of any temporary dewatering that may be needed for the construction of the surface facilities and box cuts, including estimated dewatering amounts so that potential impacts to ground and surface waters from the temporary dewatering can be evaluated. A plan for monitoring ground and surface water impacts during construction should be developed.	Address comment and update EAW as appropriate.
556	12biii	1489				Indicate on a map where the upland areas are and describe what is considered "upland" at this project site and please overlay the project features for clarity.	Address comment and provide requested figure.

Comment No.	EAW Section	Line No.	Table	Figure	Graphic	DNR Comment	Requested Action by DNR
557	12biii	1493				The EIS will require detailed information to develop a clear estimate of where from and how much water would be generated during the construction-related activities cited in the text. If known, this section would benefit from stating the depth from the surface the groundwater must be to begin construction along with an estimate of the volume of water expected. In other words, how much water will have to be pumped to drop the surface levels to a depth that construction can commence at the site? In addition, will the mine access portals have seepage through the watertight barrier?	Address the questions in the comment and update EAW as appropriate. Respond to questions as known. Future discussion item in the development of the Draft Scoping Decision Document.
558	12biii	1493				The methods and data used to estimate groundwater pumping rates for temporary construction dewatering should be provided.	Future discussion item.
559	12biii	1494				Total water usage estimated at 50 million gpy. Does this include potable water (see Line 1501)?	Address comment and update EAW as appropriate.
560	12biii	1494				How will the volume of water be monitored/determined?	Address comment.
561	12biii	1494				DNR will need to determine if construction dewatering will be covered under General Permit 1997-0005 or an individual water appropriation permit.	Regulatory guidance. Future discussion item.
562	12biii	1494				A reference is needed for the total amount of water to be withdrawn of "50 million gallons per day".	Provide reference material requested.
563	12biii	1500				References are needed for the estimated amount of potable water to be withdrawn (3.6 (average) and 4.8 (maximum) million gallons per year).	Provide reference material requested.
564	12biii	1505				What plans are in place should the potable water not actually be resilient to future climate trends?	Address comment.
565	12biii	1507				The EAW states that "the Project would primarily rely on the recycling of treated contact water." Water quality and water treatment system will need to be evaluated to determine the suitability for reuse and/or discharge	Regulatory guidance. Future discussion item.
566	12biii	1509				Any new non-potable well that will be used to supply water for the TBM and early stages of mine operations should be included in the EIS as well as the proposed appropriation amount so that potential impacts from the appropriation can be evaluated.	Regulatory guidance. Future discussion item.
567	12biii	1511				How will this change in water level of the groundwater affect the surrounding hydrology of the area?	Answer question.
568	12biii	1518				It may be incorrect to assume that the inflow water comes from deep TIC only. Information to support this assumption is not presented. It is likely that groundwater inflow would include water from above 400-foot depth as well as surficial deposits. Surficial water bodies and wetlands may be impacted.	Address comment.

Comment No.	EAW Section	Line No.	Table	Figure	Graphic	DNR Comment	Requested Action by DNR
569	12biii	1523				It will be necessary to understand what impacts to groundwater the water-tight liner would have, since it will be inserted into “saturated unconsolidated sediments (quaternary deposits),” and displacing the groundwater.	Consider comment and edit text where anything is known at this time. Future discussion item for treatment of topic in Draft Scoping Decision Document.
570	12biii	1523				Withdrawing ground water would most likely have an impact on surface water and wetland features especially if wetlands are primarily groundwater fed. The impact of changes in water level on water quality should also be considered including mercury, dissolved organic carbon, and sulfate & sulfide concentrations.	Address comment and update EAW as appropriate.
571	12biii	1523				The hydrogeochemical evaluation should include assessment of the risk of Acid Mine Drainage and other mechanisms of contaminant mobilization.	Future discussion item.
572	12biii	1526				All groundwater appropriations are required to be sustainable under Minnesota Statute 103G.287, Subd. 5. Groundwater appropriations could be affected if it is determined that they are harming ecosystems, degrading water, or reducing water levels beyond the reach of public water supply and private domestic wells.	Regulatory guidance. Future discussion item.
573	12biv	1528				As stated in the EAW, "... an estimated 21.7 acres of wetland including flooded borrow pits would be permanently impacted." How many acres of wild rice would be impacted or potentially impacted?	Address comment and update EAW as appropriate.
574	12biv	1528				The EIS should evaluate potential permanent and temporary impacts to wetlands using an ecosystem-based approach.	Future discussion item.
575	12biv	1528				Describe the surface, groundwater and wetland studies that are proposed to be performed during EIS preparation. Will there be a study on potential impacts to wild rice?	Address comment and update EAW as appropriate.
576	12biv	1528				What areas are being considered for mitigation when they say, "Unavoidable wetland impacts would be mitigated through compensatory wetland mitigation such as purchasing wetland bank credits from approved wetland banks from the appropriate service area"?	Address comment and update EAW as appropriate.
577	12biv	1529				There will be direct wetland impacts as a result of proposed discharges from the water treatment plants into wetlands north of the Project Area. This is not discussed in response to 12.b.4.a. Provide a discussion of potential environmental impacts to wetlands, measures to mitigate environmental impacts, and rationale supporting the efficacy of these mitigation measures in the next submission.	Address comment and update EAW as appropriate.
578	12biv	1532				Impacts to the watershed and consideration of climate change are not included in the impact assessment. These appear to be headwater wetlands and consideration of watershed impacts is warranted. Consideration of climate change impacts may also be warranted given the potential for peatland impacts, which are carbon sinks.	Address comment and update EAW as appropriate.

Comment No.	EAW Section	Line No.	Table	Figure	Graphic	DNR Comment	Requested Action by DNR
579	12biv	1539				Peat accumulating wetlands are extremely sensitive to hydrologic changes and topographic changes (i.e., subsidence). Detailed explanation of how impacts will be avoided or minimized is justified.	Address comment and update EAW as appropriate.
580	12biv	1539				Wetland sequencing and thorough alternatives analysis should be provided for all unavoidable impacts.	Future discussion item. The comment is appropriate for the alternatives process. Issue deferred to development of the Draft Scoping Decision Document.
581	12biv	1539				Insufficient discussion of reasonably foreseeable physical, biological, hydrological, and geochemical wetland impacts that will require significant further study in EIS. More than half of project area is comprised of hydric soils and wetlands.	Address comment and update EAW as appropriate.
582	12biv	1542				Further describe methods to remediate peat solid.	Address comment and update EAW as appropriate.
583	12biv	1542				It is not clear if impact estimates are based on NWI or delineated wetland acreages. The data source should be specified and consistently identified. It is not clear the types of wetlands that are proposed for impact. A table would be helpful.	Address comment and update EAW as appropriate, including requested table.
584	12biv	1542				Information regarding the flooded borrow pits including, but not limited to, what the borrow material will be used for, where they will be constructed, their size, and whether water will be appropriated from them should be provided.	Address comment and update EAW as appropriate.
585	12biv	1543				More detail is needed about construction of the railway spur and the impact(s) to wetlands/surrounding area.	Address comment and update EAW as appropriate.
586	12biv	1543				Will the railway spur be a permanent feature or will that be removed once the mine is closed? How will the construction of the railway spur affect waterflow in the peatlands?	Address the questions in the comment and update EAW as appropriate.
587	12biv	1545				Provide additional detail on the scale and method of temporary impacts to wetlands. Are peatlands included in the accounting, as impacts to peatlands could result in permanent change?	Address comment and update EAW as appropriate.
588	12biv	1545				How might the removal/alteration/impact of area wetlands impact surface- and groundwater quantity and quality, and what efforts will be made to mitigate those impacts? How will this be monitored and what specific standards will be used?	Address comment and update EAW as appropriate.
589	12biv	1548				Describe potential indirect impact in more detail. For example, what activities might cause fragmentation or hydrologic changes (e.g., groundwater appropriation, subsidence from underground mining). Better define indirect impacts (e.g., complete loss due to drainage or wetland type change to altered hydrology).	Address comment and update EAW as appropriate.

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590	12biv	1550				Describe how potential indirect impacts would be assessed.	Address comment and update EAW as appropriate.
591	12biv	1552				Were wetland impacts not strictly defined by Clean Water Act and the Wetland Conservation Act considered, such as excavation in Type 1/2/6/7/8 non-jurisdictional wetlands or impacts to floristic quality?	Address comment and update EAW as appropriate.
592	12biv	1556				Are wetland bank credits the only mitigation method being considered for impacts to wetlands?	Comment noted. The EIS will examine other appropriate mitigations as necessary.
593	12b	1576	8			Documentation needed on legal status of on-site ditches. Legal abandonment proceedings through the Public Drainage Authority is needed for any Public Ditches. If so, a ditch abandonment process should be identified in Table 8 (Line 1008).	Address comment and update EAW as appropriate.
594	12biv	1578				There is no discussion of measures to mitigate impacts to downstream water as a result of treated water discharge (i.e., changes to water quality, water flow, temperature). Provide this information.	Provide the information requested and update the EAW as appropriate.
595	12biv	1581				Define typical watercraft.	Provide definition.
596	13a	1583				A list of all mine activities that would use Polyfluorinated Substances compounds is needed. Listings of all solvents and chemicals used in the mine are needed. Detail on the volumes of waste, including waste from water treatment operations and their ultimate disposal locations should be provided.	Advisory; future discussion item as part of developing the Draft Scoping Decision Document.
597	13a	1593		17		In reference to Figure 16, what's the shallowest point for the stormwater pond location and is it possible for infiltration to be used?	Answer question.
598	13a	1618				Considerations should be made with respect to existing and future groundwater flow fields, drinking water wells, and location of any septic systems or leach fields.	Consider comment; edit figure and/or text as warranted.
599	13b	1625				Which solid waste types are expected to be recycled and what volume is expected? If there isn't a recycler in the area that would take the recyclables, would recycling be taken elsewhere to a recycler not in the area? If so, which recyclables would make sense to recycle locally, which recyclables would make sense to take elsewhere, and which recyclables would make no economic sense and would go to a landfill?	Consider comment; edit text as warranted.
600	13b	1625				The EIS should evaluate options to maximize recycling of all waste generated by the Project.	Advisory only; future discussion item as part of developing the Draft Scoping Decision Document.
601	13b	1630				With the overburden pile for mined material, where is the water flowing to? Is this going to the stormwater ponds or discharged into the nearby wetlands?	Answer question.

Comment No.	EAW Section	Line No.	Table	Figure	Graphic	DNR Comment	Requested Action by DNR
602	13c	1664				These measures mentioned in the text, in addition to being identified, should be supported with data about what and how much could be reduced/recycled.	Consider comment; edit text as warranted.
603	13c	1703				ANFO comes in a prill (pellet) form and as an emulsion. At a highly level what are the clean-up procedures if either of the ANFO forms spill?	Answer question. The response can be considered in development of the Draft Scoping Decision Document.
604	13c	1715				Recognizing more detail to come in EIS, be sure to consider placement of materials with respect to any wells installed on site and groundwater flow directions/well capture areas. Remediation and potential water treatment needs should be addressed.	Advisory only; future discussion item as part of developing the Draft Scoping Decision Document.
605	14a	1751		11		The text and Figure 11 do not identify that many streams in the Big Sandy Lake Outlet and Headwaters and Big Sandy Lake watersheds have wild rice.	Consider comment; edit figure and/or text as warranted.
606	14a	1751				The EIS should analyze any potential impacts to wild rice, not just in lakes and streams downstream of the Project, but also to wild rice upstream of the Project and in adjacent watershed due to the area being prone to flooding.	Advisory; Future Discussion Item in Developing the Draft Scoping Decision Document.
607	14a	1751				Natural Resources field surveys should include impacted areas outside of the Project perimeter as well.	Advisory; Future Discussion Item in Developing the Draft Scoping Decision Document.
608	14a	1751				Natural resources field survey information gathered for the EIS will need to be an ecosystem-based evaluation of potential impacts.	Advisory; Future Discussion Item in Developing the Draft Scoping Decision Document.
609	14a	1751				There isn't much of an elevation difference between the two watersheds identified and the watersheds surrounding them. In flood years, this whole area has the potential to become one large lake. Any contaminants from the Project during flood times have the ability to spread upstream of the Project. EIS needs to evaluate this flood scenario and how the Project can affect fish and wildlife resources as well as habitats and vegetation in those other areas.	Advisory; Future Discussion Item in Developing the Draft Scoping Decision Document.
610	14a	1759				Though it may be correct that the only watercourses in the Project Area are county ditches, these ditches could have suitable habitat and also drain to public waters (natural streams and lakes) that have suitable habitat and could be impacted by discharge or other Project activities. This needs to be addressed.	Consider comment; edit text as warranted.
611	14a	1761				Type and quality of habitats for fish, reptiles, amphibians should be provided and surveys for these beings should be part of the data gathering process. Field observations of the ditch that is proposed to receive mine effluent confirmed the presence of turtles and insects.	Future Discussion Item in Developing the Draft Scoping Decision Document.

Comment No.	EAW Section	Line No.	Table	Figure	Graphic	DNR Comment	Requested Action by DNR
612	14a	1762				Are mitigation measures being considered to protect nearby wild rice lakes? If so, what are they? If not, why not?	Answer question. Discussion item for development of Draft Scoping Decision Document.
613	14a	1762				Include the specific number of wild rice lakes (4 total)	Address comment; modify text as warranted.
614	14a	1766				Common wildlife is stated as present but no discussion of Species in Greatest Conservation Need or Wildlife Action Plan critical habitat is provided. Additional detail should be provided regarding potential important habitat within the project area. A more focused habitat decryption of direct surface development impacts could be provided beyond regional generalities. Ensure Minnesota Conservation Explorer is queried for potentially affected resources.	Address comment; modify text as warranted.
615	14a	1769				Further detail of natural resources monitoring methods is warranted. No details are provided other than that data is being collected. Some knowledge of methods is needed to assess potential scoping needs.	Address comment; modify text as warranted.
616	14b	1771				Information for Planning and Consultation (IPaC) did not identify the rusty patched bumble bee as a species potentially occurring in the Project area, but Minnesota DNR has (see: https://www.dnr.state.mn.us/rsg/profile.html?action=elementDetail&selectedElement=IIHYM24020). Surveys should be conducted to verify this, and state and federal guidelines should also be reviewed to make further determinations.	Address potential concerns about the rusty patch bumblebee in the EAW.
617	14b	1777				This is a very cursory review of State-listed threatened and endangered species. All species from the state list (link below) with the potential to exist on site should evaluated. https://files.dnr.state.mn.us/natural_resources/ets/endlist.pdf	Consider comment; edit text as warranted.
618	14b	1810				The DNR has launched the Minnesota Conservation Explorer (MCE) to provide consultation on potential impacts to National Heritage Information System (NHIS) data. The environmental review process should consider at what stage of review the project should be submitted to MCE for review.	Consider comment; edit text as warranted.
619	14b	1810				The Minnesota Conservation Explorer should be queried to assess the potential for the project to impact state-listed rare species and natural communities. The results of this query should be reported in the data submittal and the correspondence provided to the RGU.	Address comment and update EAW as appropriate.
620	14b	1821				The EAW indicates that no wild rice is present with the project area due to lack of lake habitat. Wild rice may be found in any shallow open water under suitable conditions. Given the large area of wetland within the Project Area, it is feasible that suitable wild rice habitat may be present.	Identify potential wild rice areas within the Project Area.

Comment No.	EAW Section	Line No.	Table	Figure	Graphic	DNR Comment	Requested Action by DNR
621	14b	1821				It should be noted here (or elsewhere) that the state water quality standard for sulfate in wild rice waters is 10mg/L and that this project must comply with the standard in wild rice waters that have been identified in close proximity to the project.	Address comment. Modify text if needed.
622	14b	1823				Will baseline data collection be included in the EIS? It would be beneficial to include pre-mine wild rice status.	Edit EAW, Include analysis in EIS.
623	14b	1823				Wild rice may also be present in non-public waters. Requires thorough survey potential habitats downstream of project.	Advisory only; future discussion item as part of developing the Draft Scoping Decision Document.
624	14b	1830				Bulk treatment of plant communities. Peatlands can often have unique and sensitive plant species. The EIS will need additional information about types of peatlands present to assess potential project impacts on peatland plant communities.	Advisory, Future discussion item in development of Draft Scoping Decision Document.
625	14c	1845				It should be noted that not all biota are mobile and have the ability to move from the project area in response to construction. Further consideration needs to be given to non or less mobile biota such as plants and invertebrates, as well as species vulnerable based on phenology or life stage such as nesting birds or overwintering amphibians. More detail should be included.	Include information on these types of biota and how they will be impacted by the Project.
626	14c	1845				Project area lies between several public lands (e.g., WMAs, State Park, and State Forests) and could be considered to be along a wildlife corridor	Discussion topic
627	14c	1852				Discussion of future climate trends on project impacts does not adequately address uncertainty of climate predictions.	Advisory, Future discussion item in development of Draft Scoping Decision Document.
628	14c	1864				If federal laws are followed impacts to species can still occur. The EIS should analyze and disclose impacts to species whether those impacts meet a legal criteria or not.	Advisory, Future discussion item in development of Draft Scoping Decision Document.
629	14c	1865				Risk assessment is a useful tool for evaluating other sources of contamination, hazardous materials and hazardous wastes. Applying risk assessment methods will provide a sound technical basis for drawing conclusions about the potential impacts of other contamination sources.	Advisory only; future discussion item as part of developing the Draft Scoping Decision Document.
630	14c	1867				The date of last rusty patched bumble bee observation is used as justification that rusty patched bumble bee is not likely present within the Project Area. It is not appropriate to disregard a rare feature record based on date alone. Additional information demonstrating negative resurveys should be provided under this rationale, otherwise rusty patched bumble bee should be considered potentially present within the area.	Advisory only; future discussion item as part of developing the Draft Scoping Decision Document.

Comment No.	EAW Section	Line No.	Table	Figure	Graphic	DNR Comment	Requested Action by DNR
631	14c	1873				The impacts to the SBS appear to be disregarded based on lack of rare species records. However, the SBS is of moderate significance indicating that occurrences of rare species, moderately disturbed native plant communities, and/or landscapes that have strong potential for recovery of native plant communities are present within the Project Area and may be impacted. Lack of impact cannot be disregarded without provision of additional information that demonstrates more specifically why the area is mapped as an SBS and subsequent thorough assessment of potential impacts. For example, the SBS may have been flagged as an area likely to provide habitat for rare species, but may have never been ground surveyed.	Advisory only; future discussion item as part of developing the Draft Scoping Decision Document.
632	14c	1876				The text indicates that no wild rice is present within the Project Area. While it appears likely no extensive populations exist, it should be clearly demonstrated that no wild rice habitat is present rather than assumed wild rice is restricted to exclusively lakes.	Consider comment; edit figure and/or text as warranted.
633	14c	1876				Groundwater drawdown and surface water inundation from the project pumping activities would be expected to negatively impact nearby wild rice waters including Big Sandy and Tamarack lakes and Tamarack and Minnewawa rivers. If there is data that suggests nearby wild rice waters will not be impacted by the project, please provide the data to support that hypothesis.	Address comment; modify text as warranted.
634	14c	1880				Colonization of an area by invasive species can also be encouraged by changes in hydrology and water chemistry resulting from mining discharge. Peatlands are susceptible to cattail invasion following changes in hydrology and geochemistry.	Address comment; modify text as warranted.
635	14d	1890				Very little detail is provided regarding potential impacts to aquatic biota. More detail should be provided about potential impacts from discharge based on water quality standards and how those standards will be met.	Address comment. Modify text as needed.
636	14d	1890				This sentence does not align with what has been previously noted in section 12 of the EAW. The responses to prompts in section 12 acknowledge potential for direct/indirect impacts to downstream waters as a result of the release of treated waters. If downstream impacts could be anticipated, it is likely there is potential for impacts to aquatic biota. Please provide data to support the statement in Line 1890.	Address comment. Modify text as needed.
637	14d	1890				Discharge is not the only potential impact to aquatic resources. Impacts to wetlands are proposed and likely include indirect impacts also. Groundwater withdrawals are also proposed. Broader consideration of potential impacts to aquatic resources should be considered.	Address comment. Modify text as needed.
638	14d	1890				It is stated that "direct impacts to aquatic biota are not anticipated because Project discharge would meet all applicable water quality standards". However, changes to water quantity (flow) can impact aquatic biota as well as changes to water quality. This needs to be addressed.	Address comment. Modify text as needed.

Comment No.	EAW Section	Line No.	Table	Figure	Graphic	DNR Comment	Requested Action by DNR
639	14d	1893				Underground mining techniques are stated to reduce impacts to wildlife habitat. However, no explanation is provided as to how or to what extent impacts are minimized. No consideration of impacts to plant communities is provided. Peatland plant communities are sensitive to even minor changes in hydrology. Many rare peatland plants rely on fine scale microtopography. Detailed explanation of how impacts will be avoided or minimized is justified.	Address comment. Modify text as needed.
640	14d	1894				The extent of the fenced area is not specifically described. Depending on the extent of the fenced area, fragmentation impacts could be larger than expected. For example, this could preclude use of suitable habitat by federally listed lynx and gray wolves for the duration of the fencing. The extent of the fenced area and type of habitat within should be further specified.	Address comment. Modify text as needed.
641	15	1899				The distance and visibility from Big Sandy Lake should be evaluated. Big Sandy Lake is the site of the annual Ojibwe Sandy Lake Ceremony. Assessment of noise, vibration, and traffic changes is needed.	Advisory. Future Discussion topic for development of Draft Scoping Decision Document.
642	15	1900				The Assiniboine, Gros Ventre (Atsina), Cree, and Tionontati, are other Indigenous groups that have called the Project area home before being relocated westward and northward. They should be included in this section.	Address comment. Modify text as needed. Future discussion topic for Draft Scoping Decision Document.
643	15	1900				The Minnesota Office of the State Archaeologist (OSA) Portal for archaeological sites was reviewed on May 16, 2022. But there also needs to be a review of Dakota and Ojibwe toponymy of the area because area features, area resources, area habitat, etc.., are encoded in those toponomies. They tell us information on land uses and functions.	Address comment. Modify text as needed.
644	15	1900				In addition to viewing state historic preservation office record, the area's tribal historic preservation office should be engaged to conduct a detailed survey from an Indigenous perspective.	Advisory. Future Discussion topic for development of Draft Scoping Decision Document.
645	15	1900				The sentence "The Project is located on the traditional, ancestral, and contemporary lands of the Očhéthi Šakówiŋ (Dakota/Lakota), Mdewakanton (Dakota/Sioux), and the Anishinaabe (Ojibwe) peoples." is strangely worded. The Dakota description provided is akin to saying like saying "the Anishinaabeg and the Ojibweg", where Anishinaabe may or may not be Ojibwe, but Ojibwe are Anishinaabe. So, why this particular wording?	Address comment. Modify text as needed.
646	15	1900				Grayling Marsh and the Tamarack River are connections between the Mississippi River and the Kettle River systems. There may be many undocumented cultural properties in the area, so a detailed archeological survey is needed. Additionally, the wetland complex of the area had been known for use as burial sites, to the possibility of inadvertent discovery is high. EIS needs to further evaluate this.	Future Discussion and EIS topic
647	15	1910				The assessment for Item 15 should include existing buildings on the property for evaluation of any potential historical significance (if that has not already been completed) for inclusion in the EIS.	Advisory only; edit text if warranted.

Comment No.	EAW Section	Line No.	Table	Figure	Graphic	DNR Comment	Requested Action by DNR
648	15	1910				A risk assessment is a useful tool for evaluating project-related generation/storage of solid wastes, project-related use/storage of hazardous materials, and project-related generation/storage of hazardous wastes. Mentioning these applications of risk assessment would assure the reader that a sound technical approach will be implemented to address solid waste, hazardous materials, and hazardous wastes.	Advisory only; future discussion item as part of developing the Draft Scoping Decision Document.
649	15	1911				For consistent terminology, a definition of archaeological site should be included. An archaeological site is "a location that contains the physical evidence of past human behavior that allows for its interpretation." (Advisory Council on Historic Preservation) Any location that is 50 year or older are to be documented.	Address comment. Modify text as needed.
650	15	1923				This section should include a statement that the previously recorded architectural resources will be revisited and re-evaluated during the cultural resources inventory and that all buildings within the indirect APE as defined by the USACE will be noted and evaluated as needed.	Address comment. Modify text as needed.
651	15	1924				Assessment of potential impacts to archeological resources could benefit from MnDOT's "MN Model", which is a set of mapping tools that help the contractors and agencies assess potential impacts on archaeological resources throughout Minnesota. Model data shows that the area in and around the proposed project area has not been covered through previous inventories. The applicability of this model remains to be determined.	Advisory only; future discussion item as part of developing the Draft Scoping Decision Document.
652	15	1929				This section should include text saying the planned cultural resources inventory would be conducted and directed by a Secretary of Interior-qualified archaeologist and architectural historian and would meet Minnesota State Historic Preservation Office and Minnesota State Archaeologist standards. If there are plans for the survey team to include cultural resource specialists from regional tribes who will assist with the identification and evaluation of archaeological resources, that should be included.	Consider comment; edit figure text as warranted.
653	15	1929				The EIS could require identification of other types of archeological and cultural resource investigations, for example an Ethnographic Overview and Inventory report of potential Traditional Cultural Properties and cultural landscapes if required by the Corps of Engineers	Advisory only; future discussion item as part of developing the Draft Scoping Decision Document.
654	15	1930				As the project area involves state land, any archaeological investigation will also need a field investigation permit from MnOSA and MIAC under Minnesota Field Archaeology Act (MS 138.31-138.42). The review of the project and its associated cultural and archaeological resource studies will be reviewed by the Minnesota Office of the State Archaeologist and will be conducted concurrently with the Section 106 review. A map of state vs. private lands would be helpful.	Consider comment; edit figure and/or text as warranted.
655	15	1935				The document correctly identifies the need for cultural resources investigations, including tribal cultural resources. These investigations should recognize the tribes have a very distinct role in assessment of potential impacts, including waters supporting wild rice stands. Also, there are treaty obligations concerning wild rice stands and usufructuary rights.	Advisory only; future discussion item as part of developing the Draft Scoping Decision Document.

Comment No.	EAW Section	Line No.	Table	Figure	Graphic	DNR Comment	Requested Action by DNR
656	15	1938				Should Section 106 of the National Historic Preservation Act be required, evaluation of indirect impacts may likely include discharge into area waters and the effect on wild rice stands; a potential Traditional Cultural Property/Ethnographic Landscape. With the possibility of a 70+ foot structure on the plant, indirect APE may be defined as extending up to 1 mile from the project site. The inventory may include all areas associated with the proposed operation, including ground above the below-surface area of the mine and the railroad spur, including impacts to potentially sensitive areas supporting wild rice stands.	Advisory only.
657	15	1938				Should note that the Section 106 consultation process will involve the SHPO, any and all interested Tribal Historic Preservation Offices, MnOSA, local and state officials, MIAC, any local interested party or parties, USACE, and any other agency that has an interest in the project. At a minimum, the following tribes and nations will be invited to participate in the Section 106 consultation -- Apache Tribe of Oklahoma, Bad River Band of the Lake Superior Tribe of the Chippewa Tribe, Cheyenne and Arapaho Tribe of Oklahoma, Fond du Lac Band of the Minnesota Chippewa Tribe, Fort Belknap Indian Community of the Fort Belknap Reservation on Montana, Grand Portage Band of the Minnesota Chippewa Tribe, Keweenaw Bay Indian Community, Michigan, Lac Vieux Desert Band of the Lake Superior Chippewa Indians of Michigan, Lac du Flambeau Tribe, Lac du Flambeau Band of Lake Superior Chippewa Indians, and the Leech Lake Band of the Minnesota Chippewa Tribe. Other interested organizations and tribes would also be encouraged to participate the consultation process.	Answer question. Edit text as necessary.
658	16	1946				A figure/map showing surrounding cover types and locations of residences/other mentioned sites would be useful	Consider comment; edit figure and/or text as warranted.
659	16	1963				Why are nighttime operations required? I would expect most of the light and noise pollution to be an issue at night and impacts would be minimized if those hours were avoided	Answer question. Edit text as necessary.
660	16	1998				The viewshed analysis should be performed for a "with trees" and "without trees" scenarios. The EAW state that the tallest building is 78 feet. If temporary features (e.g., construction cranes) are taller than 78 feet, then the height of the tallest feature should be used in the analysis.	Advisory only; future discussion item as part of developing the Draft Scoping Decision Document.
661	17a	1999				Back at Item 6b at Line 528, the project description notes that an estimated up to 450KCY tons per year could be sourced aggregate, which translates to approximately 35 trucks per day with a 35 tons per truckload. Once this traffic enters the property, potential emissions could be considered in the: risk assessment; Class I modeling; Class II modeling. This traffic could be assessed as part of tailpipe on/offsite for GHG.	Consider comment and edit document as current information allows. Future discussion item for development of Draft Scoping Decision Document.
662	17a	1999				Regarding the treatment of off-site aggregate in Item 6b at Line 526, bringing it on-site would need to be characterized within plan for air quality impacts. This would include, but be not limited, to haul road traffic, unloading, reloading, air emission estimates from dust and tailpipe emissions, and operating hours.	Advisory only. Future discussion issue for development of Draft Scoping Decision Document.

Comment No.	EAW Section	Line No.	Table	Figure	Graphic	DNR Comment	Requested Action by DNR
663	17a	1999				Other point sources and non-point sources/mobile sources should be included in this section, such as locomotive, Operational Trucks, Mobile Equipment, Maintenance Activities, and emissions from water treatment facilities.	Address comment and update EAW as appropriate.
664	17a	1999				Underground mobile equipment emissions may be required to be categorized as point or stationary sources by MNR for Air Permitting purposes.	Regulatory guidance. Future discussion item.
665	17a	2000				The EIS will do a detailed assessment of the air emissions profile. Potential pollutants of interest could include total suspended particulates (TSP), HCN, NH3, H2S, SVOC, and NMOC, as appropriate.	Advisory only; future discussion item as part of developing the Draft Scoping Decision Document.
666	17a	2000				Does the definition of volatile organic compound in this document include Semi-volatile organic compounds (SVOC) and/or nonmethane organic compounds (NMOC)?	Answer Question; future discussion topic for development of Draft Scoping Decision Document.
667	17a	2000				Clarify what is meant by Carbon Dioxide Equivalent (CO2e) for this section. A comprehensive list of all pollutants included in CO2e would provide clarity.	Address comment; modify text as warranted.
668	17a	2000				In addition to nitrogen oxides (NOX), EIS should also be evaluating for hydrogen cyanide (HCN), ammonium (NH3), and hydrogen sulfide (H2S), as these are typical emissions from explosives.	Advisory only; future discussion item as part of developing the Draft Scoping Decision Document.
669	17a	2007				Will the portals be located far enough apart that the intake air will not be recirculating the mine exhaust? Provide data to support this.	Answer Question; future discussion topic for development of Draft Scoping Decision Document.
670	17a	2007				Will there be any baseline monitoring for ambient air prior to construction?	Answer Question; future discussion topic for development of Draft Scoping Decision Document.
671	17a	2007				Will Mercury from the rock formation and peat add mercury to the air in addition to the impact on local waters?	Answer Question; future discussion topic for development of Draft Scoping Decision Document.
672	17a	2007				Would be good to lay out the key elements of a human health risk assessment and the approach (pursuant to specific guidance) to developing each element (i.e., preparation of a conceptual site model, identification of chemicals of concern, exposure assessment (including identification of sensitive and other receptor groups), toxicity assessment, and risk characterization). Also identify and at least briefly discuss the MPCA applicable requirements. This way the reader will know that we know what we are talking about.	Advisory only; future discussion item as part of developing the Draft Scoping Decision Document.

Comment No.	EAW Section	Line No.	Table	Figure	Graphic	DNR Comment	Requested Action by DNR
673	17a	2017				EMP review will need a thorough evaluation using approved MDH methodologies for air and water analyses.	Advisory only; future discussion item as part of developing the Draft Scoping Decision Document.
674	17a	2019				Will potential silica release be addressed?	Answer Question; future discussion topic for development of Draft Scoping Decision Document.
675	17a	2020				As indicated, this document provides a high-level review of projected emissions. Complete review of proposed project within the scope of the air regulatory requirements will occur when more information is provided by proposer.	Advisory only; future discussion item as part of developing the Draft Scoping Decision Document.
676	17a	2021				(EMP assessment results were not included. NIOSH defines EMP as any mineral particle with a minimum aspect ratio of 3:1 and length > 0.5 um (NIOSH Bulletin 62, 2011). Describe method for sampling and analysis for the presence of EMPs.	Address comment on EMP. Methodology is a future discussion item considered in development of Draft Scoping Decision Document.
677	17a	2022				Back in Item 6b, Line 345 describes activities, such as generator sets, that appear to be construction activities, but are they not also operations? Will there be multiple air dispersion modeling scenarios to account for activities that are occurring at different phases of the mine's operations?	Answer question; modify text as needed. Future discussion item in development of Draft Scoping Decision Document.
678	17a	2022				Relating back to the discussion of ventilation in Item 6b (Lines 376-379), it will be important to consider the capture efficiency and control efficiency of any control system that is installed. These efficiencies will have a direct correlation to the emission rates that will need to be used in an air dispersion modeling from the portals. While this specific comment pertains to the mentioned CO and NO2 emissions from blasting, it is also pertinent to any other foreseeable pollutant that may be emitted and controlled at the portals. (This comment assumes that the "mine exhaust circuit" ultimately vents to atmosphere through the portals).	Advisory only. Future discussion in development of Draft Scoping Decision Document.
679	17a	2022				Relating to Item 6b at Line 484, it is likely important to identify what pollutants will be present in this exhaust air stream, how capture (and its related efficiency) will be achieved, and the proposed control strategies to assess impacts for the EUS. These will be needed for any proposed control efficiency credit in the air dispersion modeling.	Advisory only. Future discussion in development of Draft Scoping Decision Document.
680	17a	2022				Relating back to the discussion of blasting in Item 6b (Lines 372-375), the randomness of a blasting schedule may pose issues for the air dispersion modeling. In an effort to not overestimate the occurrences of blasting and its associated air emissions, will this be addressed by using a schedule or simulated schedule in the air dispersion modeling?	Answer question. Future discussion item where the response can be considered in development of the Draft Scoping Decision Document.

Comment No.	EAW Section	Line No.	Table	Figure	Graphic	DNR Comment	Requested Action by DNR
681	17a	2022				The document indicates that emissions produced from both surface and underground activities would undergo a "filtration or scrubbing process to reduce the amount of suspended dust and particulates." Activities of interest would include (but not be limited to): site development; blasting; ore extraction; and transport. Would the planned mitigations be designed to avoid and/or control release of EMPs during these activities?	Consider comment; modify text to address the issue.
682	17a	2022				Relating to Item 6b at Line 483, the EIS analyses will likely require a detailed description of the filtration method for reduction of suspended dust and particulates. It is also likely that target goal be established for release into outside air (PM 10, PM 2.5, something else?). How levels will be monitored over time and mitigation methods in the event that the filtration method fails could also be required.	Advisory only. Future discussion in development of Draft Scoping Decision Document.
683	17a	2022				Relating to Item 6b at Line 483, exhaust air will need full characterization of pollutants as well as final design on a filtration or scrubber system.	Advisory only. Future discussion in development of Draft Scoping Decision Document.
684	17a	2022				Will there be additional air emission treatments during or after explosions? How will these differ from other operations ventilation?	Answer question.
685	17a	2022				What kind of filtration or scrubbing process would exhaust air undergo before release?	Answer Question. Future Discussion Item as part of developing the Draft Scoping Decision Document.
686	17a	2022				Explosive emissions should be monitored for HCN, NH3, and H2S in addition to pollutants already listed.	Advisory only; future discussion item as part of developing the Draft Scoping Decision Document.
687	17a	2022				There should be both a source of oxygen from the ventilation and an oxygen level monitor, so that there aren't pockets of low oxygen, especially if combustion sources are used in the mine.	Advisory only; future discussion item as part of developing the Draft Scoping Decision Document.
688	17a	2022				What about Personal Protection Equipment when personnel are in the exhaust stack source? Will all people be evacuated from the mine at each blast cycle?	Answer question. Future topic of discussion for treatment of health issues in development of the Draft Scoping Decision Document.
689	17a	2022				This section says underground emissions will exhaust through a stack. Is this in addition to the 2 portals? Line 269 in Orebody Access says no additional openings to the surface are anticipated.	Answer question.
690	17a	2031				How will storage pile dust be controlled?	Answer question. Edit text as necessary
691	17a	2038				Explain why PSD construction permit requirements likely would not be triggered.	AAddress comment. Edit text as necessary.

Comment No.	EAW Section	Line No.	Table	Figure	Graphic	DNR Comment	Requested Action by DNR
692	17a	2038				"Minnesota Pollution Control Agency (MPCA) Mercury Rick Estimation Method" should say "MPCA Mercury Risk Estimation Method".	Address comment. Edit text as necessary.
693	17a	2056				Will there be controls for other constituent in minerals such as cadmium, lead, chromium, etc., in addition to mercury?	Answer question.
694	17a	2056				Describe type and quantity of hazardous air pollutant (HAP) expected. Provide sampling method and analysis data used to determine this.	Answer question.
695	17a	2058				Is there a contingency plan if mercury is found to be contained in the ore and emitted?	Answer Question. Future Discussion Item as part of developing the Draft Scoping Decision Document.
696	17a	2063				It isn't just the Boundary Waters, Voyageurs, and Isle Royale that are Class I but also Rainbow Lake and Fond du Lac Indian Reservation.	Consider comment; edit figure and/or text as warranted.
697	17a	2063				Although Mille Lacs Air is a Federal Class II, 11 MLBS §119 requires treatment of Mille Lacs Air "Pursuant to Class I".	Consider comment; edit figure and/or text as warranted.
698	17a	2063				"MPCA Risk Assessment Screening Spreadsheet" should be fully identified as "MPCA Air emissions risk analysis (AERA) Risk Assessment Screening Spreadsheet (RASS)(aq9-22)"	Address comment. Edit text as necessary.
699	17	2068				The railway spur will need to be evaluated against the ambient air boundary.	Advisory only.
700	17a	2075				Will vehicle emissions be included in air modeling that is used to support a health risk assessment?	Answer question. Future topic of discussion for treatment of health issues in development of Draft Scoping Decision Document.
701	17a	2075				Pursuant to the question about dust and odors and the effects thereof on sensitive receptors and quality of life, briefly discuss how health risk assessment will be used to address fugitive dust and odors.	Answer question. Future topic of discussion for treatment of health issues in development of Draft Scoping Decision Document.
702	17	2080				All vehicle emissions above and below ground will need to be included in the various air quality impact reviews.	Advisory only. Future discussion in development of Draft Scoping Decision Document.
703	17b	2080				Include emissions from trains.	Advisory only; future discussion item as part of developing the Draft Scoping Decision Document.

Comment No.	EAW Section	Line No.	Table	Figure	Graphic	DNR Comment	Requested Action by DNR
704	17b	2080				What about emissions from possible use of propane or natural gas-powered vehicles?	Answer Question; future discussion topic for development of Draft Scoping Decision Document.
705	17c	2092				Dust and Odors section did not mention nearby sensitive receptors/quality of life impacts. Sensitive receptors should be identified/referenced as well as whether they could be expected to experience dust/odor impacts.	Answer question. Future topic of discussion for treatment of community health issues in development of Draft Scoping Decision Document.
706	17c	2094				How would the overburden and construction-related materials piles be kept safe from wind erosion?	Answer Question; future discussion topic for development of Draft Scoping Decision Document
707	17c	2097				A Fugitive Dust Control Plan is forthcoming in EIS. No dust control plan prepared yet. Recommend review of NIOSH Dust Control Handbook for Industrial Minerals Mining and Processing (NIOSH, 2019) in preparation of your Fugitive Dust Control Plan. Plan for sampling and analysis of types and quantity of fugitive dust has not been presented.	Note comment. A Fugitive Dust Control Plan will be presented in the EIS.
708	17c	2105				Will there be monitoring or confirmation testing that the air is being scrubbed sufficiently of dust and particulates? What specific standards will be applied when determining if suspended dust/particulates have been sufficiently reduced?	Answer Question; future discussion topic for development of Draft Scoping Decision Document.
709	17c	2107				Describe visible emission inspection procedure. Describe specific location, frequency, and method for inspections (example: daily fence line measurements using PM2.5 instrumentation).	Note for Fugitive Emissions Plan in EIS.
710	17c	2109				Describe frequency of dust suppressant application. Describe criteria for use of additional chemical dust suppressants, if needed.	Note for Fugitive Emissions Plan in EIS.
711	18a	2117				Peat wetlands are an important carbon store. Draining them and/or using peat as soil amendments where it can decompose releases carbon dioxide. Assessment of land use change based GHGs should include disturbed peatlands.	Edit document as needed to address comment. Further discussion of issue for treatment in Draft Scoping Decision Document.
712	18a	2117				Would the lifetime GHG emissions include the 1-2 years of construction + 10 years of operation + years for closure. A timeline discussion would be valuable here.	Answer question.
713	18a	2123				Odors from water treatment and the storm water pond should be considered within this section.	Consider comment; edit figure and/or text as warranted.

Comment No.	EAW Section	Line No.	Table	Figure	Graphic	DNR Comment	Requested Action by DNR
714	18a	2140	15			Cement production is a major source of Greenhouse Gases. The project proposes to use substantial amounts of cement for the CRF. Cement manufacturing should be included in the greenhouse gas (GHG) budget.	Advisory only; future discussion item as part of developing the Draft Scoping Decision Document.
715	18a	2141	15			Evaluate impacts of removing peat lands on carbon sequestration.	Advisory only; future discussion item as part of developing the Draft Scoping Decision Document
716	18a	2148				"a. GHG Assessment" should be "b. GHG Assessment"	Edit EAW.
717	18bi	2148				Only include mitigation measures that were purposely intended to mitigate for greenhouse gas emissions in the list of mitigation measures. Measures such as minimizing the use of uncemented backfill, which were not primarily intended to mitigate for greenhouse gas emissions, should not be included in the list of mitigation measures. Also, it is unclear how biosolids applications will mitigate for GHG emissions.	Consider comment; edit text as warranted.
718	18bi	2149				Other aspects of construction should be discussed in this section. Have emissions from temporary water treatment and emergency generators been considered in the GHG calculations?	Consider comment; edit text as warranted.
719	18bi	2150				Define feasibility criteria.	Consider comment; edit text as warranted.
720	18bi	2150				The EIS should identify all possible GHG mitigation alternatives (e.g., on-site production of renewable energy).	Advisory only; future discussion item as part of developing the Draft Scoping Decision Document.
721	18bi	2150				For mitigation measures, the EIS needs to include, at a minimum, the GHG emissions for transporting the ore to the processing facility so that a meaningful comparison can be made with the alternative of processing ore on-site. To the extent that ore processing on-site would result in materially different GHG emissions than a comparable processing facility in North Dakota, that information also should be evaluated.	Advisory only; future discussion item as part of developing the Draft Scoping Decision Document.
722	18bi	2163				Where would biosolids applications occur and what would the source of biosolids be?	Answer Question; future discussion topic for development of Draft Scoping Decision Document.
723	18bi	2163				Would this be land application from the water treatment plant or the peat relocation? Depending on the product and use, this could require a Land Application Permit (not listed in Section 9). More information and elaboration on this is needed.	Respond to comment; edit document as needed.
724	18biii	2169				What options are available to further reduce the project related GHG emissions beyond the Next Energy Act Goals?	Answer Question; future discussion topic for development of Draft Scoping Decision Document.

Comment No.	EAW Section	Line No.	Table	Figure	Graphic	DNR Comment	Requested Action by DNR
725	18biii	2173				GHG emissions from water treatment should be considered and discussed in this section.	Consider comment; edit text as warranted.
726	19	2179				DNR notes the Draft Scoping Decision Document would likely account for the numerous stationary and mobile noise sources in models of daytime and nighttime activity, with results required to be compared with measured daytime and nighttime noise levels (to assess increase over existing and potential annoyance) and MPCA daytime and nighttime Noise Standards to address compliance with MPCA noise standards.	Advisory only; future discussion item as part of developing the Draft Scoping Decision Document and noise/vibration impact assessment work plan.
727	19	2179				The assessment of potential noise impacts should recognize that explosives are detonated underground (as noted in Item 6b at Lines 358-396), and in particular predict any potential for surface noise impacts.	Advisory only. Future discussion in development of Draft Scoping Decision Document.
728	19	2179				Noise is discussed but not vibration from blasting. Maps with contour lines for both noise and vibration are needed for the project. Analysis of effects of vibration on wells, houses, etc. is needed.	Address comment; modify text as warranted.
729	19	2179				Are noise impacts to wildlife considered?	Answer Question; future discussion topic for development of Draft Scoping Decision Document.
730	19	2179				What if the pre-established barrier or the additional natural barrier fails (due to blowdown, wildfire, pest infestation, disease, etc.), what other sound control measures will be used?	Answer Question; future discussion topic for development of Draft Scoping Decision Document.
731	19	2185				The characterization of existing noise environment at nearest noise-sensitive parcels does not accurately describe the outdoor soundscape of the remote, isolated, scattered homes nearest the project site.	Consider comment; edit text as warranted.
732	19	2187				Nearby sensitive receptors should be specifically identified with their distances to project boundaries indicated. Inclusion of a figure/map showing locations and distances would add clarity.	Consider comment; edit text as warranted.
733	19	2190				The TBM operations should be added to the equipment that could contribute to noise and vibration effects of note. The potential for the TBM's operations to generate dust effects should be noted.	Consider comment; modify text to address the issue. The Draft Scoping Decision Document could identify TBM operations as a potential source of noise and vibration impacts to humans and wildlife. Similarly, the Draft Scoping Decision Document could identify TBM as source of dust impacts to humans and wildlife.
734	19	2191				Noise impacts of blasting and TBM operation should be discussed in detail.	Consider comment; edit text as warranted.

Comment No.	EAW Section	Line No.	Table	Figure	Graphic	DNR Comment	Requested Action by DNR
735	19	2195				The noise analysis should be performed by a qualified acoustician with demonstrated expertise using modern ISO9613-based environmental noise modeling software. The noise analysis should evaluate compliance with MPCA Noise Standards, and also changes in the quiet rural soundscape. The methodology used to measure existing noise levels should be based on ANSI/ASA s3/sc1.100-2014 ANSI/ASA S12.100-2014 (R2020) Methods to Define and Measure the Residual Sound in Protected Natural and Quiet Residential Areas.	Advisory only; future discussion item as part of developing the Draft Scoping Decision Document.
736	19	2200				FRA methods should be used to evaluate noise from project-related trains, and project-related noise on local railways. Ideally this would be included in the models of stationary and mobile noise sources.	Advisory only; future discussion item as part of developing the Draft Scoping Decision Document.
737	19	2200				The noise analysis should model stationary and mobile noise sources using spectral noise emissions data and a three-dimensional noise modeling software product that utilizes ISO9613 propagation equations, and not use a spreadsheet-based noise model. CadnaA and Soundplan are two software-based noise models that are appropriate for modeling noise from stationary and mobile noise sources on the project site, and also the proposed railroad. FHWA TNM should be used to evaluate project-related traffic.	Consider comment; edit text as warranted.
738	19	2200				At a minimum there should be daytime and nighttime noise models for construction, opera ration, and closure.	Advisory only; future discussion item as part of developing the Draft Scoping Decision Document.
739	19	2200				The EIS should evaluate construction noise levels using FHWA/FTA methods that identify equipment and noise levels used during each phase of construction and closure. The assessment of noise from construction and closure should be detailed and reflect actual equipment likely to be used.	Advisory only; future discussion item as part of developing the Draft Scoping Decision Document.
740	19	2203				Project-related noise is subject to Minnesota Noise Standards.	Advisory only.
741	19	2205				Considering wild rice waters in the vicinity of the project, a description of how far the sounds of mine, including blasting, could be heard would be helpful.	Address comment; modify text as warranted.
742	19	2205				Potential noise reduction associated with vegetated strips does not correctly reflect what Reference 50 says. Reference 50 oversimplifies acoustical absorption by vegetation and is not an appropriate reference for this project.	Address comment; modify text as warranted.
743	19	2208				Details of various barrier options should be discussed as well as why chosen option(s) were selected over others (e.g., trees vs berm etc.).	Address comment. Future discussion topic.

Comment No.	EAW Section	Line No.	Table	Figure	Graphic	DNR Comment	Requested Action by DNR
744	20a	2212				The document states: "Due to the rural nature of the Project location, alternative transportation modes are not available." This is likely incorrect as alternative transportation modes are available (e.g., Arrowhead Transit, taxi services, ride-share services, etc.), however those modes of transportation are not practical or feasible, due to lack of service frequency or the high cost of using those services.	Consider comment and edit document.
745	20a	2212				The project description for the EIS will require greater detail around the proposed rail shipment of ore to the concentrator.	Advisory only. Future discussion item for development of the draft scoping decision as the detail is needed to support the impact assessment.
746	20a	2212				"Future parking would consist of approximately 160 spaces." So, will the parking lot be surface be permeable or impermeable surface for the bulk stormwater runoff?	Answer question.
747	20a	2217				If known include a brief description of volume of any Oversize/Overweight and/or truck volumes during construction and operation.	Edit text with detail as currently known.
748	20a	2231				Back at Item 6b at Lines 569-595, there will be both outgoing shipment of ore and returning empty railcars, plus potential incoming shipment of aggregate, all of which represents an increase in rail traffic over existing conditions. Estimates of this increase in rail traffic should be restated here.	Edit document as indicated. Future discussion item in development of Draft Scoping Decision Document.
749	21a	2255				RGU notes that it remains to be determined what project impacts would operate at a geographic scale and timeframe that may interact with other projects, including land management activities.	Advisory only; the issue will be explored over the development of the Scoping EAW and Draft Scoping Decision Document.
750	21a	2255				RGU notes that even though current condition typically provides a good representation of past actions or activities, it may be necessary to detail previous development.	Advisory only; the issue will be explored over the development of the Scoping EAW and Draft Scoping Decision Document.
751	21a	2258				The EIS scope may include discussion of the surrounding community, its sociodemographic, environmental justice, and human health issues.	Advisory only; future discussion item in development of the Draft Scoping Decision Document.
752	21a	2266				RGU notes consideration may be given to adding tribal lands and ceded territories.	Advisory only; future discussion item in development of the Draft Scoping Decision Document.

Comment No.	EAW Section	Line No.	Table	Figure	Graphic	DNR Comment	Requested Action by DNR
753	21b	2271				The document states: "At this time there are no other known projects within the vicinity that may interact with the proposed Project." DNR as RGU will independently assess the potential for the proposed project to interact with any reasonably foreseeable future projects (for which a reasonable basis of expectation has been laid). This is necessary for all mining actions as it is common for potential resource exploitation to extend into neighboring lands over extended timeframes.	Advisory only; future discussion item in development of the Draft Scoping Decision Document.
754	21b	2274				A potential area of cumulative effects could involve mercury impairments and how both Premier Horticulture and Talon propose to address potential additional loading of mercury to already impaired waters.	Advisory only; future discussion item as potential impacts are better understood in development of scoping documents.
755	21b	2279				As noted in Item 6b at Lines 894-898, the RGU will be required to consider whether other reasonably foreseeable actions meet EQB's guidance as future mining activity requiring consideration for potential cumulative effects.	Advisory only; future discussion item as potential impacts are better understood in development of scoping documents.
756	21c	2281				Scoping could include consideration the potential for the project to result in community-scale health effects to Native American and local populations.	Advisory only; future discussion item as potential impacts are better understood in development of scoping documents.
757	21c	2284				The RGU agrees that identifying Premier Horticulture's Wright Bog Project constitutes a project whose impacts could interact with those of the proposed project.	Advisory only; future discussion item as potential impacts are better understood in development of scoping documents.
758	22	2293				Scoping could include consideration of Environmental Justice issues that may be associated with the project.	Advisory only; future discussion item as potential impacts are better understood in development of scoping documents.
759	23	2306				Including the NI43-101 report as a reference and cited within the EAW would be beneficial.	Address comment and update EAW as appropriate.
760	23	2306				Should add the following reference Current Records -- Map -- https://osaportal.gisdata.mn.gov/CurrentRecordsMap -- July 1, 2023	Edit document.
761	23	2306				Should add the following reference Tribal Directory Assessment Tool -- https://egis.hud.gov/tdat/ -- July 1, 2023	Edit document.
762	23	2306				Should add the following reference -- NRHP -- Database Research -- https://www.nps.gov/subjects/nationalregister/database-research.htm -- July 1, 2023	Edit document.
763	23	2391				A discussion regarding the increase of traffic and rail usage to the area should be discussed within the cumulative impacts section in association to GHG and air emissions.	Advisory only; future discussion item in development of the Draft Scoping Decision Document.

Comment No.	EAW Section	Line No.	Table	Figure	Graphic	DNR Comment	Requested Action by DNR
764	6	General				DNR notes the description does not provide enough information to identify location of project features on a map or aerial photo, which will be needed to determine where noise- and vibration-sensitive land uses are located relative to the proposed project site.	Advisory only; future discussion item as part of developing the Draft Scoping Decision Document and noise/vibration impact assessment work plan.
765	13	General				Risk assessment is an important tool for developing waste management programs for hazardous and non-hazardous wastes. Risk assessment information can be used to inform waste minimization programs, support applications for operating permits, and assess the need for cleanup actions, including setting cleanup goals.	Advisory only; future discussion item as part of developing the Draft Scoping Decision Document.
766	15	General				The cultural resources inventory report should include a comprehensive and near-exhaustive overview of the prehistoric/protohistoric, early historic, and historic developments in the Tamarack region. The text should also note that the National Register-listed Sandy River Lumber Company Horse Barn is located south of Tamarack. Exact location of the property in relation to the project area will need to be provided.	Address comment. Modify text as needed. Future discussion topic for Draft Scoping Decision Document.
767	16	General				A discussion regarding DNR Visual Sensitivity Classification should be included for the project area and adjacent land.	Answer question. Edit text as necessary
768	17	General				Fugitive Dust and Particulate Matter are considered but, are there concerns regarding parameters of concern (CO, NOx, etc..) and will these need treatment prior to emission release?	Answer Question; future discussion topic for development of Draft Scoping Decision Document.
769	17	General				This section of the EAW is problematic in that it covers air emissions from only stationary sources and mobile sources, and from dust and odor. There is no spot to explore other anthropogenic emissions, nor a way to quantify biogenic emissions. Since explosives are not stationary sources or mobile sources, though they may generate dust and odor, the EAW makes no room to address emissions from these explosives. The EAW should include this so that we can better evaluate the Project.	Answer question, modify text, if needed.
770	18	General				All discussions regarding mobile sources so far have not discussed emissions from increased rail traffic.	Include discussion on emissions from rail.
771	21	General				The EIS scope may include assessment of potential impacts to the uses in and around the proposed project area including Treaty rights (e.g., wild rice harvest), hunting and gathering (foraging), and recreation.	Advisory only; future discussion item in development of the Draft Scoping Decision Document.
772	All EAW	General				There is no mention of Ecosystem Services Valuation in the EAW document.	Advisory only; future discussion item as part of developing the Draft Scoping Decision Document. Likely considered as part of socioeconomic analysis.

DEPARTMENT OF NATURAL RESOURCES

List of Abbreviations and Acronyms

ABA	Acid base accounting
AERA	Air emissions risk analysis
ANFO	Ammonium nitrate and fuel oil
BAL	Bentonite amended soil liner
BMP	Best Management Practices
CCL	Compacted clay liner
CEMS	Continuous emission monitoring system
CO	Carbon Monoxide
CO2	Carbon Dioxide
CO2e	Carbon Dioxide Equivalent
COPC	Contaminants of potential concern
CRF	Cemented rock fill
DSDD	Draft Scoping Decision Document
DNR	Minnesota Department of Natural Resources
EAW	Environmental Assessment Worksheet
EIS	Environmental Impact Statement
EMP	Elongate Mineral Particle
EPA	Environmental Protection Agency
EQB	The Environmental Quality Board
FEMA	Federal Emergency Management Agency
GCL	Geosynthetic clay liner
GHG	Greenhouse gas
GM	Geomembrane
Gpd	Gallons per day
Gpm	Gallon per minute
Gpy	Gallons per year
H2S	Hydrogen sulfide
HAP	Hazardous Air Pollutant
HCN	Hydrogen Cyanide
IPaC	Information for Planning and Consultation
Kv	Kilovolt
LGU	Local government unit
MCE	Minnesota Conservation Explorer
MDH	Minnesota Department of Health

ABA	Acid base accounting
MFAA	Minnesota Field Archaeology Act
mg/L	Milligrams per liter
MIAC	Minnesota Indian Affairs Commission
MLARD	Metal leaching and acid rock drainage
MnDOT	Minnesota Department of Transportation
MPCA	Minnesota Pollution Control Agency
MSHA	Mine Safety and Health Administration
NH3	Anhydrous Ammonia
NHIS	National Heritage Information System
NHPA	National Historic Preservation Act
NIOSH	National Institute for Occupational Safety and Health
NMOC	Nonmethane Organic Compounds
NO2	Nitrogen dioxide
NOX	Nitrogen Oxides
NPDES	National Pollutant Discharge Elimination System
NPR	Neutralization potential ratio
NRCS	National Resource Conservation Service
NRHP	National Register of Historic Places
NWI	National Wetlands Inventory
OSA	Office of the State Archaeologist
OSHA	Occupational Safety and Health Administration
QA/QC	Quality Assurance/Quality Control
RGU	Responsible Government Unit
RO	Reverse Osmosis
SDS	State Disposal System
SVOC	Semi-volatile organic compound
SWPPP	Stormwater Pollution Prevention Plan
TBM	Tunnel Boring Machine
TCP	Traditional Cultural Properties
TEP	Technical Evaluation Panel
THPO	Tribal Historic Preservation Officer (THPO)
TIC	Tamarack Intrusive Complex
TSP	Total Suspended Particulates
UIC	Underground Injection Control
WCA	Wetland Conservation Act
WMA	Wildlife Management Area
WWTP	Wastewater Treatment Plant