

**STATE OF MINNESOTA**  
**DEPARTMENT OF NATURAL RESOURCES**  
**RECORD OF DECISION**

**In the Matter of the Determination of the  
Need for an Environmental Impact  
Statement for the United States Steel Keetac  
Tailings Storage Facility Project, in Itasca and  
St. Louis Counties, Minnesota**

**FINDINGS OF FACT,  
CONCLUSIONS,  
AND ORDER**

**FINDINGS OF FACT**

**Description of Project**

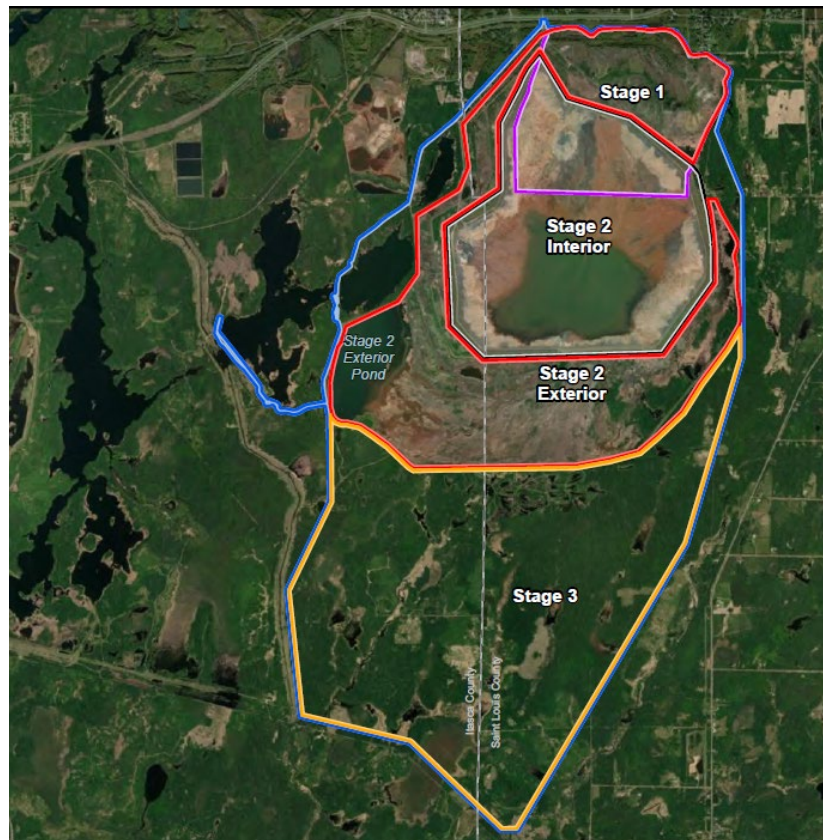
1. United States Steel Corporation-Minnesota Ore Operations (U.S. Steel) owns and operates the Keetac Mine, located in St. Louis and Itasca Counties, Minnesota. On December 18, 2024, U.S. Steel (Proposer) submitted an Environmental Assessment Worksheet (EAW) form to the Minnesota Department of Natural Resources (DNR) on a proposal to modify the existing Tailings Storage Facility (TSF) at the Keetac Mine (Project). Minnesota Rules (Minn. R.) part 4410.1400, subp. B. On August 1, 2025, the DNR determined the submittal to be complete. Minn. R. 4410.1400, subp. B. *See ROD Attachments 1 through 1.ww.* Project components consist of vertically raising existing dams and dikes,<sup>1</sup> constructing a new access road, and constructing a building and infrastructure for tailings separation and tailings dewatering.
2. Tailings produced from the Keetac Mine processing plant are stored in a tailings basin with a perimeter dike retention system that is known as the Keetac TSF. The TSF was originally planned to include three cells, called stages, that are designated as Stage 1, Stage 2, and Stage 3. *See ROD Attachment 1.d: Figure 6.3.* The entire area of the three stages was included in the 1986 Permit to Mine as the mining area boundary. *See ROD Attachment 4.a: 1986 Mining Area Boundary.* Each stage is described below:

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<sup>1</sup>All constructed tailings retention structures at the Keetac TSF, whether referred to in this Record of Decision as dams or dikes, are defined as dams pursuant to Minn. R. 6115.0320, subp. 5 (“any artificial barrier, together with appurtenant works, which does or may impound water and/or waste materials containing water...”). In its proposal, the Proposer uses the words “dam” and “dike” to distinguish between basin structures whose location stores primarily water (i.e., dams) versus other parts of the basin structure that store tailings (i.e., dikes). In this document, the words “dam” and “dike” are used in the same manner as they are used in the proposal.

- *Stage 1* is composed of approximately 1,560 acres and was the only tailings deposition site used from 1967 until dams for Stage 2 were constructed in the 1980s.
- *Stage 2* is composed of two areas – an exterior and interior. Stage 2 Exterior expanded the TSF to the south by constructing clay core perimeter dams and creating a new approximately 4,300-acre tailings deposition area. Stage 2 Exterior was used for tailings storage until use was idled in 1993. During the time the Stage 2 Exterior was idled the Stage 2 Interior dike was constructed, which raised portions of the Stage 1 area and the Stage 2 area to create an internal basin (i.e., Stage 2 Interior). The Stage 2 Interior is 2,500 acres and has been the active TSF basin since it was built. Most of the Stage 2 Interior dike was constructed upon tailings that had been deposited into the Stage 2 Exterior.
- *Stage 3* has not been used and tailings storage has not been permitted within this area.

The figure below depicts Stages 1-3 that make up the Keetac TSF. See *ROD Attachment 1.d*.



Also see all ROD Attachments 1.b-g: Figures 6.1-6.6 at 9.

3. The Keetac TSF operates under Minnesota Department of Natural Resources (DNR) Dam Safety Permit No. 2022-0721. *See generally ROD Attachment 4.b: 2022 Dam Safety Permit.* The permit requires U.S. Steel to operate the dam in accordance with all dam safety standards. *Id. at 4.* Stage 1 is near the design storage capacity and cannot accept additional tailings. Currently, tailings are primarily discharged to the Stage 2 Interior, with some limited placement into the Stage 2 Exterior. *See ROD Attachment 1: 2025 Keetac EAW at 7.*
4. At current mining rates, the Stage 2 Interior basin is anticipated to soon reach its designed and permitted height. *Id.* A 2022 Permit to Mine Amendment allowed U.S. Steel to raise the Stage 2 Exterior dikes and construct an internal diversion berm within the Stage 2 Exterior footprint; this is referred to as Phase 1 in the 2022 Permit to Mine amendment application. *See ROD Attachment 4.c: 2022 Permit to Mine Amendment.* These features created freeboard and allowed for short-term, controlled deposition of tailings into the Stage 2 Exterior, with the intent to improve the stability of the Stage 2 Interior basin embankments. U. S. Steel began discharging tailings into the Stage 2 Exterior basin as Phase I in July 2023. *See ROD Attachment 1: 2025 Keetac EAW at 7.*
5. The current design of the Stage 2 Interior and permitted Stage 2 Exterior is expected to be at full capacity by 2028. A second phase of vertical development of the Stage 2 Exterior is proposed to provide longer term storage to align with the Keetac life of mine, known as Phase 2. *See ROD Attachment 1: 2025 Keetac EAW at 7.* The Project assessed under this EAW represents Phase 2.
6. Phase 2 would be designed to vertically raise the Stage 2 Exterior dams and dikes to allow for long-term deposition of tailings into the existing Stage 2 Exterior. Vertically raising the existing dams and dikes would be completed using downstream and modified centerline construction methods. The Project would thus extend the dam and dikes beyond the current TSF's footprint. *See ROD Attachments 1.b-g: Figures 6.1-6.6 at 14.*
7. The Project would also involve constructing a new access road, as well as constructing a new industrial building and infrastructure for tailings separation and tailings dewatering. The infrastructure would produce coarse tailings for use in dam and dike construction along with thickened fine tailings for discharge to the TSF. The Project would permanently impact 608.6 acres and temporarily impact 89.7 acres. *See ROD Attachment 1: 2025 Keetac EAW at 9.*
8. While the Project proposes revisions to the existing tailings basin, there are however no proposed revisions to mining activities or taconite processing facilities. *Id.*

## EAW and Content

9. The proposed Project requires preparation of an EAW according to the rules of the Minnesota Environmental Quality Board (EQB), Minn. R. 4410.4300, subp. 11 (metallic mineral mining and processing), item B (expansion of a stockpile, tailings basin, or mine by 320 or more acres).
10. The DNR is the Responsible Governmental Unit (RGU) for the preparation and review of environmental documents related to the Project. Minn. R. 4410.0500, subp. 1, and 4410.4300, subp. 11, item B.
11. The DNR prepared an EAW for the Project according to the procedures set forth in Minn. R. 4410.1200 through 4410.1400.
12. The EAW and supporting information (2025 Keetac EAW), including figures and appendices, are incorporated by reference into this Record of Decision (ROD) on the Determination of Need for an Environmental Impact Statement (EIS). *ROD Attachment 1.*
13. The following supporting information is incorporated into this ROD:
  - a. Notice of Availability for public comment, U.S. Steel Keetac Tailings Storage Facility EAW, St. Louis and Itasca Counties. Email: To Parties on the EQB EAW Distribution List and Other Interested Parties. September 2, 2025. *ROD Attachment 1.a.*
  - b. Figure 6.1: Keetac Operations. *ROD Attachment 1.b.*
  - c. Figure 6.2 (parts 1-4): U.S. Steel-Owned Parcels. *ROD Attachment 1.c.*
  - d. Figure 6.3: Keetac TSF Areas. *ROD Attachment 1.d.*
  - e. Figure 6.4: Project Footprint and Permit to Mine Mining Area. *ROD Attachment 1.e.*
  - f. Figure 6.5: Permanent Impacts Footprint. *ROD Attachment 1.f.*
  - g. Figure 6.6: Separation Facility Infrastructure. *ROD Attachment 1.g.*
  - h. Figure 7.1: Historic Annual Average Temperature in Itasca and St. Louis Counties (1895-2024). *ROD Attachment 1.h.*
  - i. Figure 7.2: Historical Annual Maximum Temperature in Itasca and St. Louis Counties (1895-2024). *ROD Attachment 1.i.*

- j. Figure 7.3: Historical Annual Minimum Temperature in Itasca and St. Louis Counties (1895-2024). *ROD Attachment 1.j.*
- k. Figure 7.4: Historical Annual Average Precipitation in Itasca and St. Louis Counties (1895-2024). *ROD Attachment 1.k.*
- l. Figure 7.5: Historical Palmer Drought Severity Index (PDSI) Values in July for Itasca and St. Louis Counties (1895-2024). *ROD Attachment 1.l.*
- m. Figure 7.6: Projected Average Temperature for Itasca and St. Louis Counties. *ROD Attachment 1.m.*
- n. Figure 7.7: Potential Changes in Extreme Heat. *ROD Attachment 1.n.*
- o. Figure 7.8: Projected Precipitation for Itasca and St. Louis Counties. *ROD Attachment 1.o.*
- p. Figure 7.9: Potential Changes in Rainfall Intensity. *ROD Attachment 1.p.*
- q. Figure 7.10: SSURGO – Flooding Frequency. *ROD Attachment 1.q.*
- r. Figure 8.1: NLCD Landcover. *ROD Attachment 1.r.*
- s. Figure 10.1: Landownership and Recreation. *ROD Attachment 1.s.*
- t. Figure 10.2: Project Location – 1855 Treaty Area. *ROD Attachment 1.t.*
- u. Figure 10.3: Zoning. *ROD Attachment 1.u.*
- v. Figure 11.1: SSURGO Soils Map. *ROD Attachment 1.w*
- w. Figure 11.2: Mine Pits within 10 miles of the Keetac Process Facility. *ROD Attachment 1.v.*
- x. Figure 12.1: Watersheds. *ROD Attachment 1.x.*
- y. Figure 12.2: USGS NHD Mapped Waterbodies. *ROD Attachment 1.y.*
- z. Figure 12.3 (parts 1-4): DNR Determination Field Delineated Wetlands and Waters. *ROD Attachment 1.z.*
- aa. Figure 12.4: DNR Wetland Determination. *ROD Attachment 1.aa.*
- bb. Figure 12.5: Groundwater Resources. *ROD Attachment 1.bb.*
- cc. Figure 12.6: Conceptual Cross Section and Stormwater Runoff – Eastern Side of TSF. *ROD Attachment 1.cc.*
- dd. Figure 12.7: Post-Construction Watersheds. *ROD Attachment 1.dd.*
- ee. Figure 12.8: Keetac Water Flows. *ROD Attachment 1.ee.*
- ff. Figure 13.1: MPCA Contamination Sites. *ROD Attachment 1.ff.*

- gg. Figure 14.1: Wild Rice Producing Waterbodies. *ROD Attachment 1.gg.*
- hh. Figure 16.1: 2010 FEIS Visual Impacts Analysis. *ROD Attachment 1.hh.*
- ii. Appendix A: Project Location Figure. *ROD Attachment 1.ii.*
- jj. Appendix B: USS Keetac Topography Map. *ROD Attachment 1.jj.*
- kk. Appendix C: Natural Heritage Review Letter. *ROD Attachment 1.kk.*
- ll. Appendix D: FEMA Floodplain Map. *ROD Attachment 1.ll.*
- mm. Appendix E: Wetland Assessment and Delineation (Barr July 2021). *ROD Attachment 1.mm.*
- nn. Appendix F: Wetland Delineation and Functional Assess Report (Barr November 2021). *ROD Attachment 1.nn.*
- oo. Appendix G: Fugitive Dust Emissions Control Plan. *ROD Attachment 1.oo.*
- pp. Appendix H: Spill Prevention Control and Countermeasure Plan (SPCC). *ROD Attachment 1.pp.*
- qq. Appendix I: Revised Wetland Delineation and Functional Assessment Report (Barr 2023). *ROD Attachment 1.qq.*
- rr. Appendix J: Final 2023 SWPPP. *ROD Attachment 1.rr.*
- ss. Appendix K: IPac. *ROD Attachment 1.ss.*
- tt. Appendix L: Cultural Resource Literature Review. *ROD Attachment 1.tt.*
- uu. Appendix M: Mining Area Boundary Revision. *ROD Attachment 1.uu.*
- vv. Appendix N: Greenhouse Gas Calculation Spreadsheet. *ROD Attachment 1.vv.*
- ww. Appendix O: DNR Permit to Mine Notice Decision (Wetland Boundary or Type) (DNR 2023) *ROD Attachment 1.ww.*

## **Public Comment Period and Response to Comments**

14. In accordance with Minn. R. 4410.1500, the DNR filed the EAW with the EQB, and a notice of its availability was published in the EQB *Monitor* on September 2, 2025. A copy of the EAW was sent to all persons on the EQB Distribution List including each of the entities listed in Minn. R. 4410.1500 subp. A, to those persons known by DNR to be interested in the proposed Project, and to those persons requesting a copy. A statewide press release announcing the availability of the EAW was sent to newspapers, radio, and television stations. A copy of the EAW was distributed to the following locations: the Keewatin Public

Library (paper copy), the Duluth Public Library (paper copy), the Hennepin County Library (electronic copy), and the DNR Library (electronic copy). The EAW was also made available to the public via posting on the DNR's website.

15. The 30-day EAW public review and comment period began September 2, 2025, and ended October 2, 2025. Written comments on the EAW could be submitted to the DNR via email or by U.S. mail. Minn. R. 4410.1600.
16. During the 30-day EAW public review and comment period, the DNR received four comment letters on the EAW. The individuals and organizations who submitted comments are listed below.
  - a. Mike Parteka. *ROD Attachment 2.a.*
  - b. Jim Bonner. *ROD Attachment 2.b.*
  - c. Paula Maccabee, WaterLegacy. *ROD Attachment 2.c.*
  - d. Joy Anderson, Minnesota Center for Environmental Advocacy (MCEA). *ROD Attachment 2.d.*
17. Minnesota Rules part 4410.1700, subp. 4, requires the ROD to include specific responses to all substantive and timely comments on the EAW. The term “substantive” is not defined by either Minnesota Statutes (Minn. Stat.) § 116D or Minn. R. Ch. 4410. Minnesota Rule 4410.1600, subp. B, addresses the type of comments that should be submitted during the EAW comment period and provides “comments shall address the accuracy and completeness of the material contained in the EAW, potential impacts that may warrant further investigation before the project is commenced, and the need for an EIS on the proposed project.” Because these are the types of comments that commenters are directed to make on the EAW, DNR has used the directive contained in Minn. R. 4410.1600, subp. B, as the definition of “substantive” and provides response to substantive comments in Findings 20 and 21.
18. The DNR received non-substantive comments on topics related to Project support. As discussed in Finding 17, these comments do not require specific responses but are included in ROD Attachment 2.
19. The DNR received substantive comments on the following topics: water quality around the tailings basin (related to surface and groundwater) and information regarding dam stability and ongoing regulatory authority.

20. WaterLegacy submitted the following comments, noted as WL-1 through WL-30:

**WL-1:** The stated purpose, EAW at 8, of the Keetac TSF Project “to reduce risk and improve the safety of the TSF while minimizing impacts to the environment – with the ultimate goal of reducing the risk of dam failure” is laudable. Similarly, it would be a positive step if DNR has selected a factor of safety analysis “that meets or exceeds industry standards and is defensible to independent review.” Id. However, the EAW provides no evidence to support this stated Project purpose or dam safety analysis. The EAW provides none of the following pertinent information: a) the chosen minimum factor of safety criteria against which dam stability is now and will be evaluated; b) the current and projected factors of safety at the Keetac tailings dams if the proposed Keetac TSF Project is not built; or c) the projected factors of safety during construction, operations, and closure if the Keetac TSF Project is constructed as proposed. Id. at 8-9. This information must be provided to demonstrate that the proposed TSF Project is reasonably related to its stated intent and purpose.

**Response:** The principal action constituting the Project is reactivation of tailings deposition into the Stage 2 Exterior basin, which includes new dam (and dike) construction to contain the new tailings and facilitate reclamation and closure of the Stage 2 Interior basin. The Proposer submitted to DNR a 2022 Design Documentation Memorandum of Understanding (MOU) with suggested factors of safety for the proposed Project. The Proposer reports that because the Project will not have fine tailings as a foundation material, this removes the risk of static liquefaction as a source of dam failure. *See ROD Attachment 4.d: 2022 Design MOU.* Dam safety concerns are subject to mitigation by ongoing public regulatory authority meeting the EAW decision criteria in Minn. R. 4410.1700, subp. 7.C. Factors of safety<sup>2</sup> will be reviewed by DNR during permitting to ensure compliance with the dam safety requirements in Minn. Stat. §§ 103G.501 to .561 and Minn. R. 6115.0300 to .0520. Also see response to MCEA-16.

**WL-2:** The Keetac EAW also discusses geotechnical monitoring, stating that “Keetac currently has over 190 piezometers, 40 inclinometers, and 3 shape accelerator arrays to help measure the performance of the facility.” Id. at 8. But the EAW does not specify whether these instruments are functional and does not indicate on a map where they are located.

**Response:** The DNR annually reviews and confirms the functional status of the existing monitoring system (identified in the EAW) through the reporting requirements of current

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<sup>2</sup>Factors of Safety is a calculated measure of: 1) the actual load bearing capacity of a structure or component, or 2) the required margin of safety for structure or component according to code, law, or design requirements. Minimum Factors of Safety is the minimum required/acceptable ratio of the strength to the applied load of a dam or other similar load-bearing structures. During the Dam Safety Permit process, the DNR independently assesses the Factors of Safety for all tailings storage dams in Minnesota to ensure they meet or exceed recognized minimum values.

Dam Safety Permit No. 2022-0721. The functional status of the monitoring system is documented in an annual dam status report, with the most recent one provided in April 2025. *See ROD Attachment 4.k: 2025 Annual Dam Status Report at 26-30.* Similar reporting would be required by any dam safety permit issued for the Project, including instrument locations and current operating status. The Proposer reports its instrumentation is functional and is frequently observed, monitored, and replaced as necessary as part of a monitoring program. *See ROD Attachment 4.l: U.S.S. Response to Comments at MCEA-12.* Also see response to MCEA-12.

**WL-3:** Please provide information on geotechnical investigations, instruments, and “adoption of new technologies” that would be installed to monitor the health and performance of the facility.

**Response:** EAW Item 6b provides information regarding equipment currently used to monitor geotechnical performance of the facility. *See ROD Attachment 1: 2025 Keetac EAW at 8-9.* The Proposer indicates that additional performance monitoring equipment would be installed under the proposed Project. New instrumentation could include inclinometers (to measure horizontal deformations), piezometers (to measure pore water pressure), observation wells (to measure water levels), and settlement plates or other settlement monitoring devices (to measure vertical displacements). *Id. Also see ROD Attachment 4.l: U.S.S. Response to Comments at WL-3.* Detailed instrumentation transects along the entirety of the Stage 2 Exterior Project would be required by DNR in the Dam Safety Permit Amendment application as part of ongoing public regulatory authority meeting the EAW decision criteria in Minn. R. 4410.1700, subp. 7.C. This will be reviewed by DNR during permitting to ensure compliance with dam safety requirements in Minn. Stat. §§ 103G.501 to .561 and Minn. R. 6115.0300 to .0520.

**WL-4:** The EAW fails to include maps or illustrations showing either the locations or structures of Keetac TSF Project proposed “downstream dams” or “modified centerline dikes.”

**Response:** The EAW published for comment included Figures 6.4 and 6.5. Figure 6.4, “Project Footprint and Permit to Mine Mining Area Keetac TSF Project,” shows the project area, along with areas with proposed permanent impacts, areas with temporary impacts, and tailings depositions area. *See ROD Attachment 1.e: Figure 6.4.* Figure 6.5, “Permanent Impacts Footprint Keetac TSF Project,” shows the proposed project area, along with proposed locations of dams and dikes. *See ROD Attachment 1.f: Figure 6.5.* Dams are proposed on the west side of the TSF; dikes are proposed along the south and west side of the TSF. Additional information would be provided during permitting. Also, see response to WL-3.

**WL-5:** As noted above, this narrative is not accompanied by any map or illustration of where or what existing or proposed structures the DNR has decided to view as “dikes” and as “dams.”

**Response:** See responses to WL-6 and MCEA-11.

**WL-6:** The EAW states that “dams are considered to be hydraulic retaining features designed to store water while dikes are features designed to store tailings.” *Id.* However, Minnesota rules explicitly define “dams” to include all structures that “impound waste materials containing water as well as water,” and “dikes” are included in the definition of “dams” unless the dikes are “constructed for flood control purposes to divert flood waters and which are not intended to act as impoundment structures.” Minn. R. 6115.0320, subp. 5.

Any “dikes” at the Keetac TSF would impound wet slurry tailings and wastewater; they are not diversion projects for flood control or protections of agricultural lands. The EAW should be revised to explicitly designate all proposed containment structures—including those that impound tailings—as “dams.” The EAW should also underscore that all proposed “dikes” are, in fact, dams that must meet rule requirements in Minn. R. Ch. 6115, including requirements for dam stability under all conditions and compliance with prudent, current engineering and environmental practice. Minn. R. 6115.0410, subp. 8.

**Response:** All constructed tailings retention structures at the Keetac TSF, whether referred to in the EAW as dams or dikes, are defined as dams pursuant to Minn. R. 6115.0320, subp. 5 (“any artificial barrier, together with appurtenant works, which does or may impound water and/or waste materials containing water..”). In its proposal, the Proposer uses the words “dam” and “dike” to distinguish between structures whose location stores primarily water (i.e., dams) versus other parts of the structure that predominantly stores tailings (i.e., dikes). In this ROD, the words “dam” and “dike” are used in the same manner as they are used in the proposal. *See ROD Attachment 1: 2025 Keetac EAW at 8.*

Regardless of whether a “dam” or “dike,” the entire length of dams constructed along the Stage 2 Exterior basin under the proposed Project must be designed to current dam safety standards in order to be permitted and constructed. EAW Figure 6.5 shows locations indicating what parts of the Project are referred to as dams and dikes by the Proposer. *See ROD Attachment 1.f: Figure 6.5.* Areas labeled as dams in the figure are shown holding back mostly water; areas labeled as dikes in the figure are shown holding back mostly tailings. See responses to WL-4 and MCEA-11.

**WL-7:** The EAW narrative description contains another ambiguity that undermines the ability to evaluate whether the proposed Keetac TSF Project activities support its stated dam

safety purpose. The EAW uses the word “foundation” to refer to the substrate underlying both the downstream and “modified centerline” dams proposed for the Project.

However, the foundation for any downstream dam is solid ground, rather than tailings. If the foundation for the “modified centerline” dams were also solid ground, the dams would be appropriately designated as “centerline” not “modified” centerline dams. The EAW must disclose where the “modified” centerline dams are located and whether their “foundation” is actually previously deposited fine tailings and slimes.

**Response:** The term “modified centerline” is used because the upstream portion of the dam would rest on the previously constructed clay dam. The new dam would be built in stages or lifts to raise the dam elevation, which once stabilized would contain and store the subsequent new tailings deposition. See response to MCEA-11 for a typical schematic cross-section of a dam (i.e., dike) being constructed using a modified centerline method under the Project.

Regarding the “foundation” materials, this is glacial till as depicted on the figures in the response to MCEA-11. According to EAW Item 11a, the average depth to bedrock at the site is 275 feet that is overlain with Quaternary Period red clayey till. *See ROD Attachment 1: 2025 Keetac EAW at 30.* See response to MCEA-11.

**WL-8:** If the foundation for proposed new dams is fine tailings, the EAW must explain that this engineering choice does not improve dam stability and explain whether it is driven by the costs of developing off-site sources for dam construction materials.

**Response:** As noted in Response WL-7, the foundation is glacial till. The proposed new dam itself would be constructed of coarse tailings, the existing clay dam, or other suitable native materials.

**WL-9:** The EAW describes some of the Keetac TSF Project changes, but there are gaps in this description that affect evaluation of the purpose of the Project and its potential for significant environmental effects. First, the EAW does not explain the basis for the scope and scale of its construction. The EAW states that at current mining rates, for the life of the mine through 2048 the Keetac total tailings delivered to the TSF would be 340 million long tons of tailings. EAW at 9. The EAW then states that the proposed Project would allow storage of 590 million long tons of tailings. Id. The EAW also clarifies that the Project “does not propose to increase the permitted life of the mine,” “does not involve any change in mining or processing from what has been permitted,” and that the 2048 life of mine date “includes time for reclamation and closure.” Id. The EAW further states that the proposed TSF Project would not be completed until 2063. Id. at 11, Table 6.3. The only information in

the EAW provides no support for the need to construct a TSF that will not be completed until decades after closure to store 590 million long tons of tailings.

**Response:** The EAW fully evaluates Project-related dam construction to an elevation of 1,580 feet above mean sea level (amsl), which correlates to the designed TSF storage capacity when full. *Id. at 9.* While the engineering specifications for each dam lift or raise are expected to vary slightly over time, it is appropriate to evaluate the final project configuration, plus the resulting impacts, as currently understood in this EAW.

The proposer notes the permitted ultimate dam height is 1,585 feet amsl; this is 5 feet more than the maximum proposed dam elevation for the Project. *Id.* The Proposer reports that if at a future date it is determined that additional tailings storage would be required, then a new facility would likely be needed and would require compliance with environmental review and permitting requirements in place at that time. Factors to be considered might include new design methodologies, proposed footprint, closure considerations, and analysis of potential environmental impacts. As ore grades change, leases are acquired or Permit to Mine amendments are made, then actual tonnages of tailings being delivered to the TSF can change. Any such future scenario is hypothetical and therefore speculative. *See ROD Attachment 4.I: U.S.S. Responses to Comments at WL-9.*

**WL-10:** In addition, although the Keetac TSF Project proposes a massive increase in wet slurry deposition, the EAW does not describe the volume or percentage of wastewater that will be pumped into the TSF with fine tailings or the volume of wastewater that will be impounded behind what the EAW refers to as “downstream” dams. There is no evaluation of the total water flow and captured precipitation that will be contained in the TSF if the proposed Project is constructed.

**Response:** Contrary to the comment, the EAW does describe precipitation management under extreme conditions. EAW Item 7a addresses the TSF’s ability to manage both a 100-year storm event and a Probable Maximum Precipitation (PMP) event. The former was modeled for 6.35 inches of rainfall over a 24-hour period while the latter was 28.5 inches of rainfall over a 24-hour period. In developing the design for the facility, the proposed Project “is designed to store all runoff generated from a 24-hour PMP event (including wave run-up) until water can be safely discharged.” *See ROD Attachment 1: 2025 Keetac EAW at 18.*

EAW Item 6b indicates current operations into the Stage 2 Interior basin delivers tailings at approximately 16,000 gallons per minute (gpm) via a 22-inch pipeline, which has been clarified by the Proposer to be flowing at a solids content of roughly 33%. *Id. at 7.* For the proposed Project, the flow rate would drop to 6,000 gpm at a solids content of 55% for the fine tails component. The balance of coarse tails content in the tailings stream would be

collected, dewatered, and used to construct the dams. This means the total volume of water would decrease as operations in the Stage 2 Interior phase out and it is reclaimed. In terms of the overall water balance related to precipitation inputs, there would be negligible change from current conditions because there is negligible change in the contributing watersheds under the proposed Project. *See ROD Attachment 4.I: U.S.S Responses to Comments at WL-10.*

**WL-11:** The EAW states that the Keetac TSF is designed as a “closed system with no direct discharge to surface waters.” *Id.* at 46. But that is not how the TSF actually operates. In its draft NPDES/SDS permit for the Keetac Tailings Basin, the Minnesota Pollution Control Agency (“MPCA”) recently found that surface drainage from the tailings basin area, “flows to the West Swan River, unnamed wetlands, Hay Creek to Swan Lake, Reservoir 2, Reservoir 2 North and Welcome Creek.” Tailings Basin Permit at 4. In fact, the EAW proposes a seepage reduction feature along the upstream face of the water retention dam to reduce seepage through the dam. EAW at 44. The increased size, tailings volume, and wastewater volume if the proposed Project is built have the potential to increase the adverse environmental effects of direct surface seepage.

The EAW acknowledges that the “Project would increase the overall potential for seepage of process water into the groundwater system.” *Id.* at 77. In addition, for the West Swan River, the EAW states that there is “[p]otential groundwater seepage from TSF.” *Id.* at 37, Table 12.2. However, the EAW provides neither analysis nor mitigation to address potential environmental effects from increased polluted discharge to groundwater and through groundwater to surface water.

**Response:** Under normal operating conditions, discharge from Reservoir No. 6 occurs periodically through outfall SD-005 (Permit No. MN0055948). From SD-005, water flows to Reservoir No. 2, the O'Brien Diversion Channel, Hay Creek, Hay Lake, and ultimately Swan Lake. *See ROD Attachment 1.ee: Figure 12.8.*

The Proposer reports engineering best practice suggests that the dam section will experience reduced seepage; this will be assessed as part of the DNR Dam Safety Amendment permitting process. This is further supported by operational changes that reduce the volume of water sent to the basin, specifically by thickening fine tailings prior to deposition, which decreases water loss to void space. These improvements also contribute to enhanced TSF stability. *See ROD Attachment 4.I: U.S.S. Responses to Comments at WL-11.*

Additionally, the proposed water retention dam design incorporates a geomembrane liner along the upstream face to lower the phreatic surface and limit seepage through the dam. With the geomembrane liner in place, negligible differences are expected for the dike

sections between current options and the proposed Project. This would be driven by the reduction of water stored near the upstream face of the dike, as the beach area would increase driving the pooled water to the water retention dam with a geomembrane liner. *Id.*

**WL-12:** The Minnesota Supreme Court has held that groundwater protection regulations apply to protect groundwater beneath mine waste containment facilities from the adverse effects of a “discharge or deposit” that “may pollute the underground waters.” In re Denial of Contested Case Hearing Requests and Issuance of NPDES/SDS Permit for the Proposed NorthMet Project, 993 N.W.2d 627, 664 (Minn. 2023) (citing Minn. R. 7060.0600, subp. 2).

**Response:** The Supreme Court decision speaks for itself.

**WL-13:** In addition, seepage through groundwater may be the functional equivalent of a direct discharge adversely affecting surface water.

**Response:** As noted in EAW Table 9.1, the status of National Pollutant Discharge Elimination System (NPDES) /State Discharge System (SDS) (NPDES/SDS Permit) No. MN0055948 for the tailings facility is “pending reissuance” by the Minnesota Pollution Control Agency, which is the agency with jurisdiction over NPDES/SDS permits. *See ROD Attachment 1: 2025 Keetac EAW at 23.* This permit was recently placed on public notice, is currently in development, and addresses the issue raised in the comment regarding seepage to groundwater by requiring a "Functional Equivalent Evaluation." The purpose of this evaluation is to better understand the potential effects of seepage from the TSF. *See ROD Attachment 3 at WL-11.* Draft NPDES/SDS permit conditions include data collection to support the evaluation of whether there is a functionally equivalent discharge of seepage from the tailings basin to nearby surface water. The draft permit requires the Proposer to submit the Functional Equivalent Evaluation 180 days prior to permit expiration. *See ROD Attachment 4.g: 2025 Draft NPDES/SDS Permit at 26.* MPCA reports the reissued permit will require a compliance schedule to address sulfate, which is a seepage-related pollutant of interest. *See ROD Attachment 3 at WL-13.*

**WL-14:** Although the EAW hypothesizes that processing finer tailings might offset the increase in seepage of process water through the tailings, no specific facts or analysis in the EAW support this theory.

**Response:** The EAW indicates the Project would increase the overall potential for seepage of process water into the groundwater system, however the total allowable discharge under NPDES/SDS Permit No. MN0055948 is limited to the annual net precipitation that is calculated using the formula  $Y = (Af * P) - (At * E)$ . *Id.*

As the comment notes, it is expected that introduction of a finer tailings mixture would act as a less porous barrier, however the total permitted volume is limited to the annual net precipitation regardless of source in the facility. Therefore, the EAW correctly identifies the issue and possible mitigating factors with the potential environmental condition controlled by the NPDES/SDS permit.

Regarding lack of specific facts or analysis, an EAW is a brief document prepared in worksheet format that is designed to rapidly assess the environmental effects that may be associated with a proposed project. Minn. R. 4410.1000, subp. 1. The EAW in this instance identifies a potential source of impact, explores mitigating factors, and provides information on future monitoring requirements that would be required to support permitting conditions, the latter of which includes a functional equivalent evaluation to better understand the potential effects of seepage from the tailings basin. *See ROD Attachment 4.h: 2025 Draft NPDES/SDS Permit Fact Sheet at 77.*

**WL-15:** Moreover, there are no mitigation measures for the Keetac TSF Project that regulate or control potential adverse effects from seepage to and through groundwater.

**Response:** The comment is incorrect. Mitigation for seepage from the tailings basin is identified in the EAW. Examples include:

- The water retention dam would be primarily constructed of coarse tailings but will include either a linear low-density polyethylene (LLDPE) geomembrane or an inclined, mechanically placed soil-cement blanket consisting of a mixture of coarse tails and cement; these would be placed on the upstream face of the dams. *See ROD Attachment 1: 2025 Keetac EAW at 8.*
- Additional thickeners are proposed to recycle more water in the tailings prior to discharge to the tailings facility. *Id. at 28.*
- Deposition of finer tailings may act as a less porous barrier compared to the coarse tailings now in place. *Id. at 77.*

Although not a mitigation measure, the Proposer will be required to submit a Dike Seepage Survey annually of the seepage zones of the perimeter dikes that includes estimated flow rates for the seepage zones. *See ROD Attachment 4.g: 2025 Draft NPDES/SDS Permit at 25.*

**WL-16:** Currently, there is no groundwater monitoring at the Keetac TSF, and the draft NPDES/SDS permit for the Keetac tailings basin doesn't propose any. See TB Permit at 48-68. The EAW's suggestion that "installation of new monitoring wells" would be needed even to detect changes to seepage conditions and groundwater quality, EAW at 77, underscores

that there is no measurement, let alone mitigation, to evaluate or control polluted seepage to groundwater.

**Response:** DNR concurs the referenced sentence does not provide context to understand future monitoring requirements.

The Wetland Conservation Act (WCA) decision by DNR for the Permit to Mine requires a water quality and quantity monitoring plan to be implemented prior to tailings deposition into the Stage 2 Exterior basin under the proposed Project. *See ROD Attachment 4.f: 2022 WCA Notice of Decision at 2-3.* The monitoring is required to confirm the conclusions of an attachment to the WCA decision, which asserts “it is reasonable to anticipate ‘no significant adverse effect on groundwater quality’ at wells located farther from the Tailings Basin as a result of Keetac’s Phase 1 project,” in part because “groundwater concentrations immediately adjacent to the Tailings Basin are currently either below or just above applicable standards.” *See ROD Attachment 4.e: 2022 Groundwater Assessment at 9.* The WCA decision requires the plan to develop water quality modeling and predictions, including uncertainty and sensitivity analyses, to confirm groundwater quality is protected under the proposed Project. *See ROD Attachment 4.f: 2022 WCA Notice of Decision at 2-3.*

Finally, MPCA indicates the reissued NPDES/SDS permit would require additional water quality monitoring in nearby surface waters as well as in the tailings basin for evaluation. *See ROD Attachment 3 at WL-16.*

**WL-17:** In addition, MPCA has never regulated Keetac TSF seepage through groundwater that has the potential for adverse environmental effects on surface water. Despite both the Maui case and a detailed technical analysis done by the U.S. Environmental Protection Agency (“EPA”) concluding that another U.S. Steel tailings basin is a point source that is the functional equivalent of a direct discharge to surface waters, monitoring proposed for the Keetac TSF is insufficient to conduct a functional equivalent analysis and no evaluation at all is required until the next permit reissuance, at least five years away. *See TB Permit at 26.*

**Response:** The Minnesota Pollution Control Agency (MPCA) is in the process of reissuing the NPDES/SDS permits for the Keetac mining operation that DNR considers to constitute ongoing public regulatory authority that will include mitigation as provided for in Minn. R. 4410.1700 subp. 7.C. *See ROD Attachment 4.g: 2025 Draft NPDES/SDS Permit.* The reissued NPDES/SDS permit will address seepage to groundwater by requiring a "Functional Equivalent Evaluation." The purpose of this evaluation is to better understand the potential water quality effects of seepage from the tailings basin on surface and groundwater resources. The permit may require additional water quality monitoring to be required in nearby surface waters as well as in the tailings basin for the evaluation. The company is

required to comply with the requirements of its NPDES/SDS permit and meet all applicable water quality standards. Minn. R. Ch. 7001 generally. See *ROD Attachment 3 at WL-17*.

According to the NPDES/SDS draft permit, the following factors required by the *Maui* decision (*County of Maui v. Hawaii Wildlife Fund*, No. 18-260, 590 U.S. \_\_\_ (2020)) must be considered in conducting the Functional Equivalent Evaluation:

- Transit time;
- Distance traveled;
- Nature of the material through which the pollutants monitored at WS-003 and WS-004 travel;
- Amount of pollutant entering waters of the state relative to the amount of pollutant that leaves the point source;
- The manner by or area which the pollutant enters the waters of the state;
- The degree to which the pollutant (at the point of entering the water of the state) has maintained its specific activity; and
- Whether or not the tailings basin seepage has the potential to cause or contribute to any applicable state surface water quality standard applicable to all downstream receiving waters.

Once this information is gathered by the permittee, it must be supplied to the MPCA within the current permit's term so the findings can be considered in the next permit reissuance, if reissuance is sought. See *ROD Attachment 4.g: 2025 Draft NPDES/SDS Permit at 26*.

**WL-18:** Finally, the EAW describes no existing or proposed "mitigation measures specifically designed" to reduce environmental effects to groundwater or surface water from increased Keetac TSF seepage should the proposed Project be constructed. Minn. R. 4410.1700, subp. 7.B. These effects have the potential to be significant.

**Response:** See response to WL-15, which addresses potential impacts to both surface and groundwater resources.

**WL-19:** The EAW does not describe the timing, process, or scope of anticipated amendments to the Dam Safety Permit (Permit No. 2022-0721) and Permit to Mine.

**Response:** See response to WL-23. The EAW identifies that amendments would be required for both the Dam Safety Permit and Permit to Mine for the Project. Applications for these two permits are typically submitted after completion of any environmental review requirements.

Regarding the Permit to Mine, U.S. Steel has not yet submitted an application for amendment associated with this Project. *See ROD Attachment 1: 2025 Keetac EAW at 22.* Once an application is submitted and reviewed by DNR, a decision will be made as to whether the Project represents a non-substantial change amendment, or a substantial change amendment. The process follows Minn. R. Ch. 6130 and associated statutes.

Regarding the Dam Safety Permit, U.S. Steel has not yet submitted a request to amend their permit. *Id.*

**WL-20:** The DNR issued a Permit to Mine amendment to enlarge the maximum height of Keetac Stage 2 exterior dams in 2022; issued a Permit to Mine amendment for a plant expansion in 2023; and changed the mining area in the Permit to Mine to include Reservoir 6 and other areas in 2025. EAW at 15. None of these documents, including the 2025 mapping of the mine site identified as “Appendix N” to the EAW were provided to the public or included with release of the EAW.

**Response:** Given the approximately 60-year history of mining and related operations at the Keetac mine area, DNR provided the “brief history of milestones” to facilitate reviewer understanding of the facility’s past development in EAW Item 6f. *See ROD Attachment 1: 2025 Keetac EAW at 13-15.* There is no explicit requirement for an RGU to compile and make available any past permitting-related documentation that might be cited in such a timeline. These documents are available upon request.

Regarding Appendix N, the EAW clearly stated: “Appendices D through O, available upon request.” This applied to the Greenhouse Gas Calculation Spreadsheet (Appendix N) being cited by the commenter. *Id. at 4.*

**WL-21:** The EAW states that both an amended Permit to Mine and an amended Dam Safety Permit are required for the Keetac TSF Project. *Id. at 22, Table 9.1.* The EAW states that “an amended Permit to Mine will be required prior to starting Project work,” but does not state whether DNR considers this major TSF change to be a substantial change requiring notice and public comment. Minn. Stat. § 93.481, subd. 3(b). The DNR should clarify that the Keetac TSF Project represents a substantial change to the existing permit, which is subject to notice and public comment.

**Response:** See response to WL-19.

**WL-22:** Next, although the EAW states that the purpose of the Keetac TSF Project is to reduce dam failure risks and improve dam safety, *supra 2*, the EAW does not state that the Dam Safety Permit must be amended before Project work can begin. Since the Dam Safety process is likely to be the only permitting process that will consider dam failure risks, amendment of the Dam Safety Permit should be required before construction can begin.

**Response:** A dam safety permit amendment is required for the proposed work and was listed in EAW Item 9 (Permits and approvals required). *Id. at 22.* See also responses to WL-23, WL-24, and Finding 29 of this ROD.

**WL-23:** For prior TSF projects, even commenters detailing dam safety concerns in the environmental review process were denied both an opportunity to participate in the amendment process and notice when a dam permit is reissued until after any opportunity for judicial review has lapsed. If DNR is serious about amending the Keetac TSF Dam Safety Permit to improve dam safety, this situation is easily remedied. DNR has discretion to invite public comments on the proposed Dam Safety Permit amendment and to provide prompt notice of its decision to amend a dam safety permit to persons other than the permittee. These steps should be taken.

**Response:** The need to amend the Dam Safety Permit is listed in EAW Item 9 (Permits and approvals required). *Id.* Additionally, it is listed in Finding 29 of this Record of Decision. Regarding notice of the permit amendment, the DNR Dam Safety Program will follow the procedural requirements of Minn. Stat. § 103G.301, subd. 6, which requires a copy of the application with maps, plans, and specifications to be provided to the mayor of an affected municipality, the secretary of the board of managers of the watershed district, or the Tribal chair of any federally recognized Indian Tribe, as applicable. DNR may also elect to notify other interested parties as warranted.

**WL-24:** Finally, recent situations suggest that permittees may believe that DNR authorizes project construction prior to completion of the environmental review process. The EAW as well as direct communications with the permittee should remind U.S. Steel that Minnesota statutes and rules prohibit project construction once an EAW is required until either a negative declaration is issued on the need for an environmental impact statement (“EIS”) or an EIS is prepared and deemed adequate. Minn. Stat. § 116D.04, subd. 2b; Minn. R. Ch. 4410.

**Response:** EAW Item 9 (Permits and approvals required) states that all final decisions on required permits/approvals are prohibited until all appropriate environmental review has been completed. *Id.* Minn. R. 4410.3100.

**WL-25:** On several salient issues, the material contained in the EAW is incomplete or inaccurate, Minn. R. 4410.1600. The EAW doesn’t support the purpose and need for a project at the scale of the Keetac TSF Project and does not substantiate that the proposed Project would reduce rather than increase the risk of dam failure.

**Response:** An RGU is not required to assess a project’s purpose and need in an EAW. See response to WL-1. The Stage 2 Interior Dam is reaching its design elevation, which is

consistent with proposing to reactivate the Stage 2 Exterior basin to accommodate tailings storage through the remaining life of the Keetac Mine. In addition, U.S. Steel has identified that continuing to vertically raise the Stage 2 Interior Dam at Keetac in an upstream method was not sustainable. Option evaluations to reduce risk prompted the Keetac Phase I Project and the proposed Keetac Phase II Project subject to this EAW. *See ROD Attachment 1 at 13.*

**WL-26:** The Keetac TSF Project also has the potential for significant environmental effects due to the increase discharge of polluted water to groundwater and through groundwater and surface drainage to surface water, and does not adequately consider, let alone provide mitigation measures to avoid or minimize these risks. Minn. R. 4410.1700.

**Response:** See responses to WL-13 through WL-18. MPCA is in the process of reissuing the NPDES/SDS permits which will require a compliance schedule to address sulfate. The NPDES/SDS permits recently placed on public notice and currently in development addresses seepage to groundwater by requiring a "Functional Equivalent Evaluation." The purpose of this evaluation is to better understand the potential effects of seepage from the TSF. Additional water quality monitoring is required in nearby surface waters as well as in the TSF for the evaluation. The company is required to comply with the requirements of its NPDES/SDS permit and meet all applicable water quality standards. Minn R. Ch. 7001. *See ROD Attachment 3 at WL-26.*

**WL-27:** DNR should revise the EAW to address the insufficiencies described in these comments, either to substantiate the need for 590 million long tons of tailings storage or to modify the Project consistent with the 2048 life of the mine.

**Response:** The Project represents the steps necessary to complete the phase-out of tailings deposition into the Stage 2 Interior basin, which has already been permitted at an ultimate dam height of 1,580 feet that would contain 590 million tons of stored tailings. *See ROD Attachment 1 at 9.* The EAW considers the potential environmental and cumulative potential effects, including identification of potential mitigation, for re-activation of the idled Stage 2 Exterior basin to allow continued operation of the Keetac Mine to the 2048 life of mine. The tailings facility would continue to be designed in stages that reflect applicable permits and terms. *Id.*

**WL-28:** The EAW should also be revised either to substantiate the stated Project purpose of increasing dam safety and reducing the risk of dam failure or to acknowledge increased potential for harm.

**Response:** See response to WL-25.

**WL-29:** That revised EAW should also transparently and accurately describe the Keetac TSF Project construction plan and water containment projections, consider the environmental

effects of dam failure and increased discharge of polluted wastewater, and specify appropriate mitigation measures.

**Response:** EAW Item 6b describes construction-related activities under the Project, while both EAW Items 6b and 12a.ii.b identify water containment projections. *See ROD Attachment 1 at 7-9, 44.* Potential dam failure as regulated under the Dam Safety Permit is addressed in Item 6b and Table 9.1. *Id. at 8, 22.* Project-related discharges are addressed in Table 9.1 and Items 10.c and 12.b.i. *Id. at 23, 28-29, 44-45.* Mitigation is identified throughout the EAW.

**WL-30:** In addition, WaterLegacy requests that DNR clarify the permitting process for the Keetac TSF Project as follows: 1) confirm that the Permit to Mine amendment for the Project is a substantial amendment requiring public notice and comment; 2) clarify that project construction cannot begin until both the Permit to Mine and the Dam Safety Permit amendments are approved; and 3) commit to providing public notice to commenters and others who request notice prior to and at the time of the Dam Safety Permit amendment. In addition, pursuant to Minn. Stat. § 116D.04, subd. 2b, DNR should inform the permittee that construction is not authorized by the DNR and is prohibited by law until environmental review is completed.

**Response:** Regarding the Permit to Mine Amendment, see response to WL-19.

DNR reaffirms there is a prohibition on the issuance of final governmental decisions and initiation of construction until a negative declaration on the need for an EIS, or a determination of EIS adequacy, are rendered for the proposed Project. Minn. R. 4410.3100. See response to WL-24.

Finally, DNR expects to receive a request to amend Dam Safety Permit No. 2022-0721 to authorize the proposed Project once environmental review requirements have been satisfied.

21. Minnesota Center for Environmental Advocacy (MCEA) submitted the following comments, noted as MCEA-1 through MCEA-25:

**MCEA-1:** The Keetac tailings basin was first used to store mining waste from U.S. Steel's Keetac taconite mine in 1967. Since that time, the facility has been developed in stages, using topography and dams to confine the tailings. Stage 1 was used until the 1980s, when Stage 2 Exterior dams were first built to the south. The area inside Stage 2 Exterior was used for tailings deposition until 1993. Thereafter, Stage 2 Interior dams were built inside the Stage 2 space, "constructed upon tailings that had been deposited into the Stage 2 Exterior," using an upstream method, and tailings have been discharged into this interior space since

that time. After an EIS in 2010, DNR issued a permit allowing further upstream raises to Stage 2 Interior dams, which eventually rose to more than 1,500 feet.

**Response:** The EAW includes the project description at Item 6b. *See generally ROD Attachment 1: 2025 Keetac EAW at 7-12.*

**MCEA-2:** DNR's EAW distinguishes between dams and dikes, but this comment will refer to all artificial barriers intended to impound water or waste materials containing water at the tailings basin as "dams" in compliance with the definition in DNR's rules. See Minn. R. 6115.0320, subp. 5 (defining "dam" as "any artificial barrier... which does or may impound water and/or waste materials containing water," and excluding dikes that are constructed for flood control purposes "which are not intended to act as impoundment structures."). All barriers referenced in the EAW are intended to impound water and/or waste materials containing water. See EAW at 8 (defining dams as storing water and dikes as storing tailings). Regardless of whether these barriers are called "dams" or "dikes" in the EAW, they must remain in compliance with Minnesota's rules on dam safety and must remain governed by U.S. Steel's dam safety permit. To clarify this issue, DNR should revise the EAW to refer to "dams" throughout, in compliance with its own rules.

**Response:** See response to WL-6.

**MCEA-3:** More recently, however, U.S. Steel has had concerns about the stability of the Stage 2 Interior dams and its tailings deposition plan. After assessing the risk associated with the tailings basin dams, U.S. Steel "identified that continuing to vertically raise Stage 2 Interior at Keetac in an upstream method was not sustainable." U.S. Steel accordingly began evaluating options for continuing to use the tailings basin. In 2022, U.S. Steel received permission to raise the Stage 2 Exterior dams, construct an interior diversion berm, and to deposit tailings into this space, "with the intent to improve the stability of the Stage 2 Interior basin embankments." This was intended, however, to be a short-term solution.

**Response:** The EAW includes the project description on this topic in Item 6d. *Id. at 13.*

**MCEA-4:** Now, U.S. Steel expects that both Stage 2 Interior and Stage 2 Exterior will be at their full permitted capacity by 2028, and raising Stage 2 Interior dams as planned is not practicable. Accordingly, it has requested approval of a project that would vertically raise Stage 2 Exterior dams using downstream and modified centerline dams beyond the current tailings basin footprint to allow further tailings placement in the basin. DNR issued an EAW evaluating this project, which noted that the intent of the Proposed Project was not only to align the tailings basin capacity with Keetac's mine life but also "to reduce risk and improve the safety of the [tailings basin] ... with the ultimate goal of reducing the risk of dam failure."

**Response:** The Project is intended to improve safety at the Keetac tailings basin by phasing out dam construction and tailings placement at the Stage 2 Interior and re-activating dam construction and tailings placement at the idled Stage 2 Exterior basin. Dam construction under the Project would use a mix of downstream and modified centerline dam construction methods, which results in: 1) a series of dam raises to the proposed ultimate dam height; and 2) a larger dam footprint outward along the base of the existing Stage 2 Exterior dams/dikes over the life of the Project. Compared to continued tailings deposition into the Stage 2 Interior, the overall structural height of the dams at the Keetac tailings basin are reduced under the Project, which in turn reduces the potential consequences of structural failure as a function of maximum dam height. *See ROD Attachment 4.I: U.S.S. Responses to Comments at MCEA-3.*

**MCEA-5:** The Keetac EAW entirely avoids analysis of the effects of a breach of the dams at the tailings basin, even though the very purpose of the Proposed Project is to reduce the risk of dam failure. This critical absence means that DNR must revise the EAW or order an EIS to (1) analyze dam safety, to determine the potential for significant environmental effects.

**Response:** The purpose of the Project is not limited to only improved dam safety under future operations. The proposed re-activation of the idled Stage 2 Exterior part of the facility is also intended to provide storage for tailings generated through 2048 as the Stage 2 Interior basin transitions to reclamation and closure. *See ROD Attachment 1 at 9.* Very importantly, an RGU is only required to explain the project purpose under Item 6d; there is no requirement for an RGU to evaluate that purpose.

The comment incorrectly asserts that the EAW did not address dam safety for the Project. First, EAW Items 6b and 9 indicate the dams at the TSF are subject to the conditions of Dam Safety Permit No. 2022-0721, with Item 9 noting this permit must be amended before the proposed Project can proceed. *Id. at 7, 11, 22.* Second, EAW Item 6b also notes that minimum Factors of Safety criteria have been assessed for the proposed project where the facility is predicted to exceed these minimums. *Id. at 8.* Third, Item 6b also indicates that the Keetac TSF currently has over 190 piezometers, 40 inclinometers, and 3 shape accelerator arrays to help measure the geotechnical stability performance of the facility. *Id.* Fourth, EAW Item 10 addresses the potential for seismically induced ground movements, which could influence dam stability, and how this has been addressed for the proposed Project. *Id. at 30.* Finally, Items 11b and 12b.3.ii note that erosion control measures would be required under the Dam Safety Permit, in part because structural integrity can be compromised by gully formation or other factors under extreme precipitation events. *Id. at 33, 47.*

Regarding any effects of a dam breach, dam breach assessments are conducted on hypothetical scenarios of forced breaches. The Proposer reports a dam breach analysis has been conducted for the current conditions with minimal loss of life potential that is the principal focus of such assessments. The basin design is intended to hold the PMP design storm without breaching and discharge at a controlled rate following the design storm event. *Id. at 18.*

The EAW clearly recognizes the risk of dam failure at the site, which is demonstrably addressed through identification of the dam design and safety requirements, safety monitoring, geotechnical monitoring and analysis, and other measures that would be required by the Dam Safety Permit Amendment.

**MCEA-6:** Evaluate the likely results of a dam breach, to identify the significance of the environmental effects.

**Response:** An RGU is not required to conduct environmental review on the basis of speculative information, in this case the possibility of a dam breach. *Reserve Mining Co. v. Herbst, 256 N.W. 2d 808, 829-30 (1977) (holding that consideration of alternatives is unnecessary where potential impacts are remote).* DNR is not required to order an EIS to address the possible impacts of a speculative dam failure. “Potential” effects of a proposed project must be more than remote possibilities. Minn. R. 4410.1700, subp. 7. In determining the need for an EIS, an agency need only address impacts that are “reasonably expected” to occur. Minn. R. 4410.1700, subp. 6.

Although DNR is not required to evaluate speculative scenarios in EAW review, a dam’s hazard classification (e.g., low; significant; high) is reviewed in dam safety permitting that requires modeling of a worst-case breach analysis. Minn. R. 6115.0340 generally. For the purposes of modeling, a worst-case dam failure scenario typically analyzes breach widths up to 5x the dam height. Such an assessment has been conducted for both a Stage 2 Interior breach and Stage 2 Exterior breach, where the Proposer indicates the results show minimal loss of life potential that does not require a high hazard classification. In addition, the basin design is intended to hold the PMP design storm event without breaching with subsequent discharge at a controlled rate following the design storm event. *See ROD Attachment 4.I: U.S.S. Responses to Comments at MCEA-9.*

See response to MCEA-5.

**MCEA-7:** Under the Minnesota Environmental Policy Act, DNR must order an EIS if the proposed Project has the “potential for significant environmental effects.” In making this determination, DNR must consider the type, extent, and reversibility of environmental effects; cumulative potential effects; whether effects are mitigated by public regulatory

authority; and whether effects can be anticipated and controlled through other available studies. If DNR decides that “information necessary to a reasoned decision about the potential for, or significance of, one or more possible environmental impacts is lacking, but could be reasonably obtained,” DNR must order an EIS or postpone the decision on the need for an EIS in order to obtain the lacking information.

**Response:** As an RGU, the DNR understands and applies the Minnesota Environmental Policy Act together with other applicable statutes, rules, and law.

**MCEA-8:** A massive tailings basin filled with hundreds of millions of tons of dangerously polluted mining waste, like the Keetac tailings basin, poses an intrinsic potential risk of significant environmental effects because of the ever-present possibility of a breach. Notably, even DNR itself has previously recognized that a breach of the Keetac tailings basin dams would have the potential for significant environmental effects. In the 2009 EIS evaluating an expansion of the Keetac mine and tailings basin, DNR stated, “as with all tailings basin dams, there is a potential for failure, and therefore an adverse effect to the environment.”

**Response:** DNR acknowledges that any metallic mineral mining and processing facility that relies on tailings dams to store waste mine tailings could be subject to failure, which is recognized in the EAW in its discussion of dam safety. See response to MCEA-5.

As for allegations of a breach of the Stage 2 Interior dams posing “an intrinsic potential risk of significant environmental effects,” the 2010 Keetac Final EIS stated:

- “A breach of the interior dam is expected to be contained within the exterior dam, with the exception of the east side. There is no constructed embankment on the east and the basin grades into the natural landscape. As the dam height increases, there is a minor concern about potential dwellings that are approximately one mile away on the east side of the dam.
- There is a road and a few dwellings on the northwest side of the basin, with the nearest dwelling at 1,700 feet from the tailings basin dam. The elevation difference at this point is such that the danger of impact to these dwellings in the event of a breach is minor.”  
*See Attachment 4.n: 2010 Keetac Final EIS Vol. 1 at 4-116.*

Therefore, contrary to the comment, the 2010 Keetac Final EIS indicated most water and tailings released in a breach of the Stage 2 Interior dams would be contained within the Stage 2 Exterior dams except for the east side, with any impacts to human safety being characterized as minor.

Regarding the Final EIS's recognition of the potential for dam failure, the magnitude of potential adverse effects was not determined. The Final EIS did indicate that monitoring of dam embankments would be necessary, and mitigation would be identified if needed. *Id.* at 4-117. This conclusion is reasonable because maintaining dam stability is an iterative, continuous process. Geotechnical stability assessment must be ongoing so it can inform the engineering and construction of each dam raise to address new circumstances as they arise. The requirements of the Dam Safety Permit Amendment would ensure geotechnical stability is maintained under the proposed Project.

**MCEA-9:** However, sixteen years after this pronouncement by DNR, the EAW contains no analysis of the risk of a dam breach or the environmental effects of such an event, and little information about dam safety. Such information could be obtained from U.S. Steel. Accordingly, DNR does not have information necessary to make a decision about the potential for or significance of the environmental effects of a dam breach and must obtain the information or order an EIS.

**Response:** The comment is incorrect. The Proposer conducted a dam break analysis in 2023 evaluating a potential Stage 2 Interior breach and a potential Stage 2 Exterior breach at various stages/elevations including current, interim, and ultimate elevations. *See generally ROD Attachment 4.i: 2023 Keetac Dam Break Report.* Such an assessment is an information requirement in assigning the dam hazard classification that is reviewed in Dam Safety Permit permitting process; such an analysis will be conducted for any amendment to the Dam Safety Permit required for the Project.

The report includes 22 breach scenarios that were composited based on dam configuration, flow type, and hydrology. This resulted in a total of 12 composite scenarios that reported: peak flow leaving the dam; maximum depth; and arrival time to 1 foot depth for specific reference points of interest. *Id.*

Contrary to the comment, substantial information is available to DNR in understanding the potential consequences of a hypothetical dam breach at the Keetac tailings basin under current, interim, and completed dam construction scenarios. See response to MCEA-5.

**MCEA-10:** With respect to the potential for effects, the limited amount of information in the EAW raises serious questions that require further study. Tailings basins filled with mining waste will always have the potential to breach through a catastrophic failure or smaller release. Around the world, tailings facilities have failed “with increasing frequency and severity,” at much higher rates than water supply reservoir dams. As stated by the Association of State Dam Safety Officials:

Dams and the reservoirs they create are innately hazardous structures. Failure or misoperation can result in the release of the reservoir contents— this includes water, mine waste, or agricultural refuse—causing negative impacts both upstream and downstream, or even at locations remote from the dam.

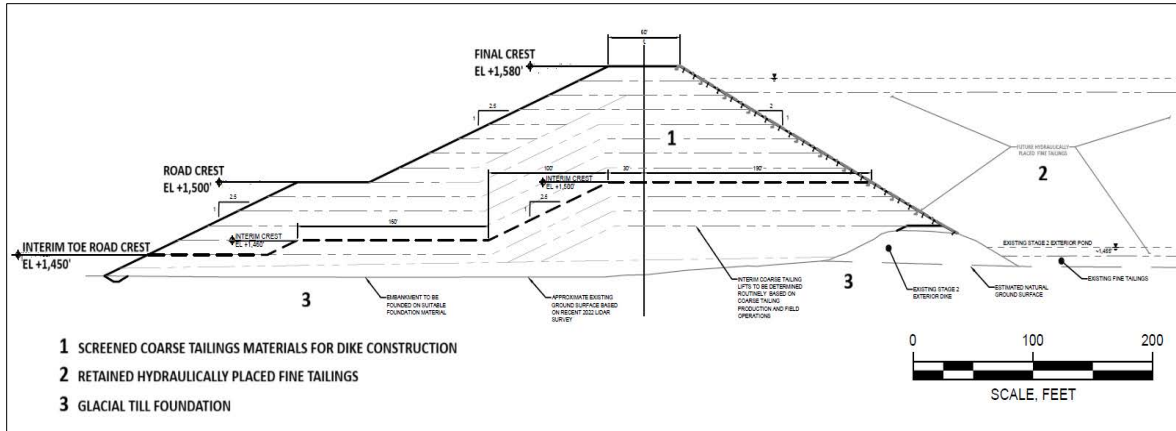
**Response:** The EAW identified the need for a Dam Safety Permit Amendment that will address the stated concerns. See response to MCEA-5.

Any time a dam is constructed at any location, there is a risk of dam failure. Because of that risk, DNR has extensive protocols around dam inspection, maintenance, design safety, and operations. See Minn. R. 6115.0300 et seq. The general observation raised in the comment does not represent the complexity of different types of dams and site-specific conditions.

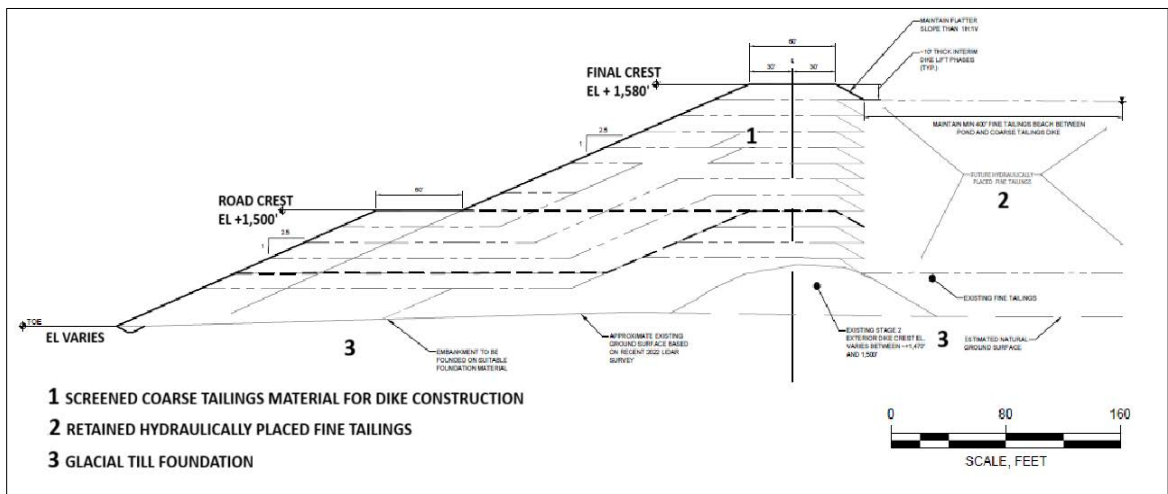
**MCEA-11:** The EAW includes few details about the dams, including information about their dimensions, maps of their precise locations, details about their construction and foundations, and their capacities, both before and after the Proposed Project, that should be included for a complete analysis.

**Response:** The DNR acknowledges the EAW did not include preliminary engineering diagrams detailing exactly how the dams would be constructed. DNR notes however that even though no general cross-sections were provided, the potential environmental effects of dam construction are thoroughly addressed in EAW Items 6, 10, 11, 12, 16, 17, 18, 19, and 20; cumulative potential effects associated with dam construction are addressed in EAW Item 21. See *ROD Attachment 1: 2025 Keetac EAW at 7-13, 28-29, 34, 46-49, and 65-80*. Finally, EAW Figure 6.4 provides reviewers with a visual presentation of the final dam footprint that corresponds to the acreage estimates provided in Tables 6.1, 6.2 and 6.4, and with the dike and dam heights provided in Table 6.3 *Id. at 10-12. See also ROD Attachment 1.e: Figure 6.4.*

The image below depicts a typical cross-section of a water retention dam under the Project; it would be constructed using a downstream method. See *ROD Attachment 4.m: Standalone Project Description & Alternatives at 8.*



The image below depicts a typical cross-section of a tailings dike under the proposed Project; it would be constructed using a modified centerline method. *Id. at 7.*



In summary, the EAW provides sufficient information to understand the Project and its potential environmental effects. Additional detailed design information would be required as part of the Dam Safety Permit Amendment application.

**MCEA-12:** The EAW states that the tailings basin has piezometers and other measuring equipment, it does not state whether all of these are functional—which has been an ongoing issue at another permitted tailings basin facility, MilePost 7.

**Response:** The EAW appropriately identified both the existing and proposed monitoring network infrastructure necessary to support additional geotechnical investigations required for the proposed Project. These include: piezometers (to measure pore pressure);

inclinometers and shape accelerator arrays (to measure horizontal deformations); observation wells (to measure water levels and water quality); settlement monitoring devices (to measure vertical displacements); and adoption of new technologies as warranted. *See ROD Attachment 1: 2025 Keetac EAW at 9.* Periodic reporting of operational status is currently a condition of the Dam Safety Permit, which would be required to continue if the Project is approved and then constructed. *See ROD Attachment 4.b – 2022 Dam Safety Permit at 4.* See response to WL-2.

**MCEA-13:** Some of the new dam raises that are part of the Proposed Project will be constructed as downstream raises, but others are less stable—and cheaper to build—types of dams. The Stage 2 Interior dams are upstream dams, initially built on the tailings discharged into the Stage 2 Exterior area and then raised in an upstream direction. These dams, because their foundation rests on the tailings they are intended to confine, are the most dangerous type of tailings dam, and they are banned in countries including Chile, Peru, and Brazil. The 2009 EIS noted that a breach of the Stage 2 Interior dam might not be contained on the east side of the facility, where there was no constructed embankment – suggesting that even 15 years ago, DNR recognized the risks posed by these dams. In addition, the EAW states that some of the raises of the Stage 2 Exterior dams will be “modified centerline dams.” Such dams are still built partially on top of tailings, thus incorporating the feature of upstream dams that makes them the least stable and most dangerous type of tailings dam. U.S. Steel itself clearly has concerns about the stability of the dams at the facility, as it determined that continuing to raise the Stage 2 Interior dams as planned was “unsustainable,” and that buttressing of these dams was needed, thus triggering the Proposed Project.

**Response:** Implementation of the Project allows for tailing placement in the Stage 2 Interior to be phased out, which sets the stage for future reclamation and closure of that part of the TSF. This allows the use of an upstream method of dam construction to be discontinued at the Keetac TSF. *See ROD Attachment 1: 2025 Keetac EAW at 13.*

While upstream construction has been employed in the operation of the Stage 2 Interior basin, continued use of that method is not proposed for reactivation of the Stage 2 Exterior basin (i.e., Project). Rather, downstream or modified centerline dam design is proposed going forward with no dam construction on top of tailings, which is incorrectly asserted in the comment. The approach under the proposed Project also improves dam stability and removes the risk of static liquefaction. Preliminary computed Factors of Safety meet or exceed DNR recommendations, which will be recalculated over the life of the Project. *See ROD Attachment 4.I: U.S.S. Responses to Comments at MCEA-13.*

**MCEA-14:** While there are few details in the EAW, it is clear that the proposed Project also involves a massive expansion of the tailings basin. The tailings basin currently holds tailings from decades of mining in a 5,800 acre deposition area—a space about twice the size of the Minneapolis-St. Paul Airport. If the proposed Project were built to capacity, the basin would hold 590 million long tons of tailings and the Stage 2 Exterior dams would rise an additional 100 feet, to a height of 1,580 feet. As dam walls get higher and the waste behind them gets deeper, the force against the dam becomes greater, with potential impacts on dam stability. The proposed Project, then, appears to increase the risk of a dam breach.

**Response:** See responses to MCEA-4 and MCEA-13.

**MCEA-15:** However, the true measure of the risks is unclear because the only information about dam stability in the EAW is disconcertingly vague. U.S. Steel asserts that the proposed Project is intended to improve dam stability, suggesting risk of a dam breach which may be mitigated by the proposed Project. Yet there is no analysis of the likelihood of a catastrophic failure or lesser breach either before or after the construction of the proposed Project, and how the Project will impact stability.

**Response:** The RGU is only required to state the Project's purpose in Item 6d; there is no requirement to analyze the Project purpose. Regarding dam safety, the EAW addressed geotechnical stability and how the facility would be regulated under the Dam Safety Permit Amendment. See responses to MCEA-4, MCEA-9, and MCEA-13.

**MCEA-16:** One critical measure of a dam's stability is its factors of safety, but the EAW states that the "DNR does not specify factor of safety criteria for analysis." Instead, U.S. Steel itself apparently selected a factor of safety that "meets or exceeds industry standards is defensible to independent review." This factor of safety—chosen by the regulated party and not the regulator—is not specified. Considering that the 2010 EIS used a Total Stress Analysis factor of safety of 1.2, which the EIS admitted was "slightly less protective than the traditional value of 1.3," allowing U.S. Steel to choose its own factor of safety without disclosing it to the public is inadequate. When the instability of the dams is the very reason for the Proposed Project, it is critical for the EAW to analyze that stability to determine the potential for environmental effects, but this EAW fails to do so.

**Response:** The EAW accurately states that DNR does not specify Factors of Safety criteria because no rule has been promulgated that identifies exact minimum Factors of Safety to be applied to dams in Minnesota. Given this situation, dam engineers in Minnesota most commonly propose to use industry standard minimum values for the various types of loading condition. This is because industry dam safety guidelines are specific with respect to what types of stability analyses should be performed, including seismic and liquefaction

scenarios. For DNR's part, the proposed Factors of Safety are independently reviewed and corroborated during the Dam Safety Permit process, including amendment(s).

U.S. Steel reports the following minimum Factors of Safety would be used for its evaluation of restarting dam construction at the Stage 2 Exterior:

- Effective Strength Analysis (ESA) = 1.5
- Peak Undrained Strength Analysis = 1.5
- Pseudo Static Analysis = 1.2

The Proposer submitted a 2022 Design Documentation MOU with suggested Factors of Safety for the Proposed Project. *See ROD Attachment 4.d: 2022 Design MOU.* The DNR will independently review the geotechnical stability of future dam construction as part of the Dam Safety Permit Amendment process, including U.S. Steel's proposed Factors of Safety.

**MCEA-17:** With respect to the significance of the effects, again, the EAW includes little information but raises serious questions that merit further analysis. A breach of a dam that holds polluted mining waste will always have the possibility of causing serious environmental problems. Around the world, breaches of tailings basin dams have led to deaths, destruction of property, devastation of wildlife and aquatic ecosystems, and long-term toxic contamination of water and soils. Even smaller, non-catastrophic breaches, leakages, or overtopping can lead to serious environmental consequences for nearby waters.

**Response:** The DNR has substantial information regarding the potential consequences of a hypothetical dam break at the Keetac tailings facility. This information was obtained through the 2023 Keetac Dam Break Report required for the dam hazard classification review for the Dam Safety Permit. *See generally ROD Attachment 4.i: 2023 Keetac Dam Break Report.* Any lesser-scale event would likely result in commensurately-less adverse impacts than expected for a full-scale breach of the dams. See response to MCEA-9.

Regarding the EAW's lack of assessment of the potential environmental impacts of a dam breach, see responses to MCEA-6 and MCEA-5.

**MCEA-18:** After the Proposed Project is constructed, the Keetac tailings basin could contain up to 590 million long tons of tailings. A breach that would spill even a fraction of these tailings could be devastating to nearby people, plants, animals, aquatic life, and waters. The Keetac tailings basin is built in the middle of forests, peatlands, and wet forests; in an area with wildlife including some federal and state-listed species such as Canada lynx and gray wolf; in the immediate vicinity of two lakes and five streams with aquatic life including fish, reptiles, and amphibians; and above several groundwater aquifers, where groundwater is

as little as three feet below the surface. The city of Keewatin is just over two miles away from the tailings basin, and in the 2010 EIS, DNR noted that there were dwellings to the east and northwest sides of the dam. These natural resources and human habitations could all be affected by a dam breach. But because the EAW explains neither what pollutants are present in the basin waste that could be released in a breach, nor where the released tailings are likely to go, determining the significance of the environmental effects is not possible.

**Response:** The breach analysis indicates the principal impacts would occur along two main paths. One path would travel down the West Swan River to Silica, Minnesota, while the other would follow a path ultimately leading to Swan Lake. *Id. at 9.* See response to MCEA-6.

The EAW has assessed the reasonably foreseeable impacts of future dam construction and tailings placement in the Stage 2 Exterior basin as tailings deposition is phased out in the Stage 2 Interior basin. See response to MCEA-5.

**MCEA-19:** DNR cannot rely on its ongoing regulatory authority to avoid including this information in environmental review, as doing so would miss a critical step. Before DNR can rely on mitigation by its ongoing regulatory authority to avoid an EIS, it must explain how its proposed mitigations are “specific, targeted, and are certain to be able to mitigate the environmental effects.” As explained by the Minnesota Supreme Court, vague promises of future mitigation are insufficient; instead, an agency “must have some concrete idea of what problems may arise and how they may specifically be addressed by ongoing regulatory authority.”

**Response:** Contrary to the comment’s assertions, the EAW does provide specific and targeted measures designed to mitigate the potentially adverse environmental impacts of the proposed Project. For example, EAW Item 6b states existing operations including dam construction and maintenance are subject to DNR Dam Safety Permit No. 2022-0721. *See ROD Attachment 1: 2025 Keetac EAW at 7.* EAW Item 9 indicates the proposed Project requires an amendment to this same permit. *Id. at 22.* Proposer requirements under this permit include but are not limited to: classification of dams; general procedures for alteration, repair, or removal of a dam; inspections; operation and maintenance; termination of operations and perpetual maintenance; and warning systems and emergency procedures. See generally Minn. R. Ch. 6115. Another example of a specific, targeted mitigation is maximizing water pond area, vegetating exposed surfaces, or modifying facility operations to minimize dust generation at the TSF. *See ROD Attachment 1: 2025 Keetac EAW at 11-12.* Employing progressive reclamation activities such as grading, disking, seeding or planting, fertilizing, and mulching to establish vegetation, represents

another specific mitigation. *Id.* Dam stability monitoring requirements would be established in the Dam Safety Permit Amendment, which in turn would inform updates to the TSF design to maintain appropriate Factors of Safety thus constituting specific mitigation. *Id. at 18.* The EAW notes “[t]he current dam safety permit requires perpetual maintenance on all components to ensure integrity of all structures.” *Id. at 19.* The Dam Safety Permit also requires annual monitoring reports and submittal of an operation and maintenance plan that must be approved by DNR, the latter containing detailed prescriptive measures to be applied to minimize adverse impacts. *Id. at 31.*

The EAW provides detailed mitigation measures in Item 10c as another example. Table 10.3 specifies reclamation mitigation practices to address a variety of mining impacts. *Id. at 28.* The EAW also indicates the goal of returning altered watersheds to pre-mining conditions to comply with Minn. R. 6130.2200. *Id. at 29.* The EAW details provisions in the TSF’s existing Stormwater Pollution Prevention Plan (SWPPP) and Spill Control and Countermeasure Plan (SPCC) that aligns with the goal of the St. Louis River Watershed Management Plan. *Id.*

Finally, DNR can identify other examples of ongoing regulatory authority that the agency would exercise under the Dam Safety Permit Amendment such as provisions detailed in specific engineering plans subject to DNR approval. Dam construction design details to mitigate potential environmental impacts that would be addressed include: foundation preparation; dike fill; material placement and compaction; coarse tailings borrow; section views; and dike plan and construction profiles. *See generally ROD Attachment 4.j: 2024 Phase I Record Drawings.* This regulatory control has already been applied to the Stage 2 Interior Project under Phase 1 in Dam Safety Permit No. 2022-0721.

**MCEA-20:** Here, DNR cannot explain how its regulatory authority will address the problems, because it has not yet identified those problems. DNR cannot jump to step three of the analysis required by the Minnesota Rules for determining the need for an EIS—first, it must identify the type, extent, and reversibility of the environmental effects and any cumulative potential effects before it can determine whether those specific effects can be addressed by mitigations. It has entirely failed to do so, and the Minnesota Environmental Policy Act requires it to conduct this analysis before DNR takes any actions with respect to the proposed Project.

**Response:** See response to MCEA-19.

**MCEA-21:** The EAW does not include the following information: Details about the dams to be built and/or raised by the Proposed Project, including their dimensions, maps of their locations, details about their construction and foundations, and their capacity, both before and after the Proposed Project.

**Response:** See responses to MCEA-11 and WL-4.

**MCEA-22:** The EAW does not include the following information: Information about the functionality of piezometers and other measuring stability equipment at the tailings basin.

**Response:** See response to WL-2.

**MCEA-23:** The EAW does not include the following information: An analysis of the current stability of the dams at the tailings basin facility, and how the Proposed Project will affect their stability.

**Response:** Slope stability analysis meets or exceeds all standards. See response to MCEA-16.

**MCEA-24:** The EAW does not include the factors of safety being used to analyze the stability of the dams.

**Response:** See response to MCEA-16.

**MCEA-25:** The EAW does not include an analysis of the environmental effects that would result from different types of dam breaches, including a catastrophic collapse, to people, wildlife, ecosystems, aquatic life, and waterways.

**Response:** See responses to MCEA-5, MCEA-17, and MCEA-18. The EAW discusses potential impacts from the proposed Project to people, wildlife, ecosystems, aquatic life, and waterways in EAW Items: 12 (Water Resources); 14 (Fish, wildlife, plant communities, and sensitive ecological resources); 16 (Visual); 17 (Air); and 19 (Noise). *See generally ROD Attachment 1: 2025 Keetac EAW.*

### **Lacking Information Compiled by the RGU**

22. The DNR collected the following lacking information determined necessary to make a reasoned decision about the potential for, or significance of, possible environmental effects of the proposed Project. Minn. R. 4410.1700, subp. 2a.B.

These documents are not exhibits to the EAW and are incorporated into this Record:

- a. MPCA Response to Comment Spreadsheet (February 13, 2026). *ROD Attachment 3.*

### **Additional Information Compiled by the RGU**

23. In addition to information provided by the Proposer and commenters, the DNR collected and reviewed additional documentation known to DNR regarding the potential effects identified by the EAW and commenters or otherwise identified by DNR. This additional information included but was not limited to:

- a. Document: 1986 Permit to Mine Application; Appendix 8: National Steel Pellet Company Tailings Area Ultimate Drainage (May 1980) [1986 Mining Area Boundary]. *ROD Attachment 4.a.*
- b. Document: 2022 Dam Safety Permit No. 2022-0721 (April 2022) [2022 Dam Safety Permit]. *ROD Attachment 4.b.*
- c. Document: 2022 Keetac Tailings Basin – Permit to Mine Amendment (February 2022) [2022 Permit to Mine Amendment]. *ROD Attachment 4.c.*
- d. Document: Keetac Tailings Basin – Permit 1965-0351 – Stage 2 Exterior Stability (January 2022) [2022 Design MOU]. *ROD Attachment 4.d.*
- e. Document: Keetac Tailings Basin Expansion Groundwater Sensitivity Assessment. Barr Engineering (April 2022) [2022 Groundwater Assessment]. *ROD Attachment 4.e.*
- f. Document: Minnesota Department of Natural Resources. 2022. Minnesota Wetland Conservation Act – Notice of Decision – Permit to Mine (September 2022) [2022 WCA Notice of Decision]. *ROD Attachment 4.f.*
- g. Document: Minnesota Pollution Control Agency. 2025. Draft National Pollutant Discharge Elimination System/State Disposal System No. MN0055948 (July 2025) [2025 Draft NPDES/SDS Permit]. *ROD Attachment 4.g.*
- h. Document: Minnesota Pollution Control Agency. 2025. Fact Sheet: National Pollutant Discharge Elimination System/State Disposal System No. MN0055948 (July 2025) [2025 Draft NPDES/SDS Permit Fact Sheet]. *ROD Attachment 4.h.*
- i. Document: Keetac Tailings Basin Dam Break Analysis Report (March 2023) [2023 Keetac Dam Break Report]. *ROD Attachment 4.i.*
- j. Document: Keetac Tailings Basin Reservoir #6 South Dike, West Dike, and External East Dike Raises (January 2025) [2024 Phase I Record Drawings]. *ROD Attachment 4.j.*
- k. Document: 2025 Annual Dam Status Report – U.S. Steel Keetac (April 2025) [2025 Dam Status Report]. *ROD Attachment 4.k.*
- l. Document: U.S. Steel Keetac Phase 2 EAW Comment Spreadsheet – U.S. Steel Responses (October 2025) [U.S.S. Responses to Comments]. *ROD Attachment 4.l.*
- m. Document: U.S. Steel Keetac Tailings Facility Project v. 02 (March 2025) [Standalone Project Description and Alternatives]. *ROD Attachment 4.m.*
- n. Document: Minnesota Department of Natural Resources. U.S. Steel Keetac Taconite Mine Expansion Project Final Environmental Impact Statement – Volume 1 (November 2010) [2010 Keetac Final EIS Vol. 1]. *ROD Attachment 4.n.*
- o. Document: Historic Properties Programmatic Agreement between U.S. Army Corps of Engineers, State Historic Preservation Office, Bois Forte Band, Grand Portage Band,

Fond du Lac Band, and U.S. Steel for the Keetac Expansion Project (October 2012) [2012 Programmatic Agreement]. ROD Attachment 4.o.

### **Record of Decision Preparation**

24. On October 10, 2025, the DNR requested a 15-day extension for making a decision on the need for an EIS for the Project. The same day, EQB granted the extension, giving the DNR until November 14, 2025, to make this decision. Minn. R. 4410.1700, subp. 2B.
25. On November 14, 2025, with the agreement of the Proposer, the DNR postponed the period for making a decision on the need for an EIS for the Proposed Project to February 12, 2026, in order to add lacking information to the EAW record. Minn. R. 4410.1700, subp. 2a.B.
26. On February 12, 2026, with the agreement of the Proposer, the DNR postponed the period for making a decision on the need for an EIS for the Proposed Project to April 13, 2026, in order to add lacking information to the EAW record. Minn. R. 4410.1700, subp. 2a.B.

### **Environmental Effects: Little to No Environmental Effects**

27. Based upon information contained in the EAW and received as public comments, the DNR identified the following EAW items reviewed for potential environmental effects to have very little or no environmental effects: a) Land use; b) Geology, soils and topography/landforms; c) Contamination/hazardous materials/wastes; d) Plant communities and sensitive ecological resources (rare features); e) Historic properties; f) Visual; g) Air; h) Noise; and i) Transportation. The basis for DNR's conclusion for each of these EAW items is discussed below.

#### **a. Land use: This topic was addressed in EAW Item 10.**

No comments were received on this topic.

Implementation of the Project would not substantially change land use. The Project lies within multiple jurisdictions, which include the City of Hibbing in St. Louis County, and the City of Nashwauk and Lone Pine Township in Itasca County. The Project appears to align with land use zoning identified in the City of Nashwauk and Itasca County plans. For the City of Hibbing, mineral exploration is a permitted use within the overlapping zoning district, however, there are portions of the zoning district that traverse the mine that have other land use designations. Rezoning and/or a comprehensive plan amendment may be necessary to align the zoning with the future land use maps in the City of Hibbing's comprehensive plan. Zoning permits would be required from the Cities of Hibbing and Nashwauk, and Itasca County, as noted in

Finding 29. The Project would not adversely affect the Treaty-reserved rights to hunt, fish, and gather within the 1854 Treaty Ceded Territory.

**b. Geology, soils and topography/landforms: This topic was addressed in EAW Item 11.**

No comments were received on this topic.

There are no unique geological features that have received state or federal protection within the Project area. No impacts to site geology are anticipated for the proposed Project. Any construction and operational impacts to soils or topography and landforms include the continued deposition of tailings into the Stage 2 Exterior. Tailings deposition would cover the existing features over time. The proposed Project would be subject to applicable best management practices (BMPs) related to soil erosion and site stabilization identified in required permits (i.e., Construction Stormwater Permit; Industrial Stormwater Permit) listed in Finding 29, including the SWPPP with measures such as use of settling ponds and basins, installation of silt fence, planting of vegetative cover, and deposition of coarse tails on dike/dam slopes.

**c. Contamination/hazardous materials/wastes: This topic was addressed in EAW Item 13.**

No comments were received on this topic.

There are no known hazardous contamination conditions within the proposed Project area. The Project would not generate or require storage of hazardous waste during construction or operation. During Project construction, solid and hazardous waste common to construction projects could be produced; these items would be removed and sent to landfills or recycling facilities. Hazardous materials used and stored on-site for construction and future operations could include materials such as fuels, engine oil, or coolant for equipment, which would be stored at the maintenance facility. An accidental spill of such materials would be mitigated with the implementation of BMPs, such as secondary containment and sediment protections around wetlands and waterbodies. The SPCC details specific measures that would be employed for proper storage and spill cleanup.

**d. Plant communities, and sensitive ecological resources (rare features) (including State and Federal listed species, vegetation/plant communities, and invasive species): This topic was addressed in EAW Item 14.**

No comments were received on this topic.

**State-listed species:** A rare plant survey was conducted in July 2022 in areas of the proposed dam/dike footprint. No state-listed threatened or endangered species were

identified during the survey, however the state species of special concern St. Lawrence grapefern, *Botrychium (Sceptridium) rugulosum*, was observed. Additional surveys for state-listed plants are not required within the proposed dam/dike footprint, however, surveys are required within other portions of the proposed Project that have not been surveyed. Surveys are planned for summer of 2026. Should any state-protected plants be observed within the Project footprint, the Proposer would be required to submit an avoidance plan which demonstrates that impacts to the protected species would be avoided, or submit an application for a permit to take, as listed in Finding 29. A DNR Take Permit, or avoidance plan, would need to be approved prior to any work near the observations.

**Federal-listed species:** The following federal-listed species were identified with potential to be within the Project area: Canada lynx (threatened), gray wolf (threatened), monarch butterfly (proposed threatened), northern long-eared bat (endangered), tricolored bat (proposed endangered), and Suckley's Cuckoo Bumble Bee (proposed endangered). The Project is not likely to have significant effects on populations of Canada lynx and gray wolf due to available habitat nearby and species mobility. The Project is not likely to have significant effects on populations of northern long-eared bat and tricolored bat as the implementation of tree clearing restrictions during the roosting season would help minimize impacts on these species. The Project is not likely to have significant effects on populations of monarch butterfly and Suckley's Cuckoo Bumble Bee as re-seeding areas with native seed mixes or allowing the site to naturally revegetate could provide suitable habitat for these species. The U.S. Army Corps of Engineers (USACE) would be required to conduct formal consultation with the U.S. Fish and Wildlife Service (USFWS) regarding potential impacts to federal listed species during permitting, as identified in Finding 29.

**Vegetation/plant communities:** There are no native plant communities or Minnesota Biological Survey Sites of Biodiversity Significance identified within the Project area. The construction of the Project would involve the clearing of vegetation within both temporary and permanent impact areas, resulting in a loss of forested, herbaceous, and wetland habitats (see discussion on Cover Types in Finding 28.c of this Record of Decision). Upon completion of construction, temporary impact areas would be restored to pre-construction contours, and erosion control measures would be implemented. These areas would be seeded with native seed mixes or allowed to naturally revegetate. During the operational phase, potential impacts to vegetation would be limited to localized dust accumulation and routine maintenance of rights-of-way and work areas. The Project would be subject to regulatory authority of the permits identified in Finding 29. Minnesota Rules Ch. 6130 requires the reclamation

of mined lands, which includes the re-establishment of vegetation in disturbed areas. Considering the proposed mitigation measures and the regulatory requirements for reclamation, the impacts of the Project on vegetation are not expected to be substantial.

**Invasive species:** Construction vehicles could potentially introduce aquatic and terrestrial invasive species to the Project site. This risk would be mitigated by inspecting vehicles, clothing, and equipment before any interaction with the site and sourcing construction materials locally. Additionally, conditions of the Dam Safety Permit Amendment would require that all equipment is free of prohibited invasive species and aquatic plants before being transported into the Project area (see Finding 29).

**e. Historic properties: This topic was addressed in EAW Item 15.**

No comments were received on this topic.

As discussed in the EAW, no archaeological sites, historic structures, or historic districts are located within the Project area. One archaeological site has been identified east of the Project boundary. The site, which has an undetermined eligibility for listing on the NRHP, is situated in a temporary impact area where staging activities could occur. The construction is designed to avoid the archaeological site by implementing a 200-foot avoidance buffer. If avoidance is not possible, the Proposer would be required to consult with the parties listed in the 2012 Programmatic Agreement, and additional investigations may be necessary to determine the site's eligibility for listing within the National Register of Historic Places (NHRP) and additional surveys may be needed.

No cultural resources surveys have been conducted for the Project. Archaeological monitoring during construction in areas near the cultural site and the implementation of a terrestrial post-review discoveries plan would help reduce potential impacts on any previously undiscovered archaeological resources encountered during construction. In the event of inadvertent discovery of a cultural resource, the Proposer would adhere to state and federal requirements to identify cultural resources, assess Project impacts, and develop treatment plans to avoid, minimize, or mitigate adverse impacts to such resources. Should human remains be identified, the Proposer would advise the applicable county sheriff and the Office of the State Archaeologist (OSA), in accordance with the Private Cemeteries Act (Minn. Stat. § 307.08). Considering the proposed mitigation measures and regulatory requirements, should additional resources be discovered, the impacts of the Project on historic and cultural resources are not expected to be significant.

**f. Visual: This topic was addressed in EAW Items 16 and 21c.**

No comments were received on this topic.

As discussed in the EAW, currently, the TSF is visible from U.S. Trunk Highway 169, the City of Keewatin, and several surrounding residences. The TSF has been present at this location and slowly growing since the 1960s. Visual analysis indicates that the 70-to-110-foot increase in TSF height from the proposed Project may make it visible from some new vantage points in southeast Keewatin, though this could be characterized as an incremental change rather than introduction of a new visual impact. The surrounding area has an established mining/industrial landscape with multiple existing tailings piles and waste rock piles visible. The proposed increase in height falls within the maximum height evaluated in prior studies which previously found no significant impacts. Significant visual impacts are not expected from the Project.

**g. Air: This topic was addressed in EAW Item 17.**

No comments were received on this topic.

The Project would use mobile generators for lighting nighttime work. The Project does not propose any other stationary source emissions. Emissions from vehicular traffic, construction equipment, logging equipment, coarse tailings haul trucks, and water would occur. The Proposer will encourage carpooling and efficient construction time to limit emissions. Haul trucks and other construction equipment would be maintained to avoid additional emissions. Emissions are likely to be minimal to the area.

Fugitive dust emissions from wind erosion and material movement caused by land clearing and excavation activities are likely from construction activities. The amount of fugitive dust generated depends on multiple factors, including the duration and type of construction activity, moisture content and nature of material disturbed, wind speed and frequency of precipitation, and the area of disturbance. Air quality is subject to conditions of required permits as identified in Finding 29. Fugitive dust emissions during construction and operation would be controlled by water application, dust suppressant application, access road maintenance, and by limiting vehicular and equipment speeds on access roads and in the right-of-way. Fugitive dust control measures are discussed in the Proposer's Fugitive Dust Emissions Control Plan in EAW Appendix G, which would be updated after permitting to reflect actions to minimize fugitive dust from dam construction, including but not limited to the addition of water on haul roads utilized by the haul trucks and reclamation of inactive areas.

See *ROD Attachment 1.00*. The deposition of coarse tailings via haul truck is not likely to be a source of fugitive emissions as the coarse tailings are high in moisture content.

**h. Noise: This topic was addressed in EAW Item 19.**

No comments were received on this topic.

Mining activities have occurred at the Project location for over 50 years. Existing noise sensitive areas (NSAs) are located approximately 0.18 to 0.76 miles east of the Project area. Noise from the Project area would come from construction-related equipment such as trucks, excavators, backhoes, moving rock, and similar activities. Construction is anticipated to begin during the winter of 2026 and take two to three years. Noise levels following completion of Project construction are anticipated to be lower than noise levels during the active construction phase. Temporary noise impacts could occur during construction of the dikes and dams from the use of haul trucks and mobile equipment twenty-four hours a day, seven days a week (24/7). The current operations intermittently extend 24/7, so this could be seen as a change in noise to NSAs. Operations stemming from the Project post-construction are not expected to increase existing noise levels significantly.

**i. Transportation: This topic was addressed in EAW Item 20.**

No comments were received on this topic.

Transportation impacts are limited to a temporary increase in road traffic volumes around the project area during the construction phase from worker commutes and equipment/material deliveries. The Proposer would mitigate and restore any temporary road impacts that may result from the Project maintenance or other ongoing operational activities that occur through regular operation of the TSF. Impacts to transportation are not expected to be significant.

**Environmental Effects: Potential Effects**

28. Based upon the information contained in the EAW and received as public comments, the DNR has identified the following potential environmental effects associated with the project: a) Project construction and design; b) Climate adaptation and resilience; c) Cover types; d) Water resources; e) Fish, Wildlife, and Wild rice; f) Greenhouse gas emissions/carbon footprint.; g) Cumulative potential effects. Each of these environmental effects are discussed in more detail below.

**a. Project construction and design: This topic was addressed in EAW Item 6.**

Comments were submitted on this topic in WL-1, WL-8, WL-9, and WL-29.

To allow for long-term controlled deposition of tailings into the existing Stage 2 Exterior, Phase 2 of the Project is designed to vertically raise the Stage 2 Exterior dams and dikes by extending both beyond the current TSF footprint. Site preparation would include grubbing vegetation, stripping, topsoil excavation, and clearing. Once the foundation site is prepared, both the water retention dam and the dike would be mechanically raised in lifts using typical construction equipment. Construction of the dams and dikes would occur in stages, with the Phase 2 water retention dam being constructed using downstream methods to vertically raise the existing embankment. The water retention dam would be constructed primarily of coarse tailings material. The design of the water retention dam includes a seepage reduction feature along the upstream face of the dam to lower the phreatic surface and limit seepage through the dam. The seepage reduction feature would consist of either a linear low-density polyethylene (LLDPE) geomembrane or an inclined mechanically placed soil-cement blanket consisting of a mixture of coarse tailings and cement. The Phase 2 dike would be constructed using modified centerline methods and be constructed of coarse tailings.

As required by the Construction Stormwater Permit, management of water runoff, and erosion control features would be used during construction and would remain in place until the Project is completed. Site stabilization would be ongoing, following final grade of each construction stage. Minimum Factors of Safety have been identified for the Project, and the DNR would independently assess these Factors of Safety during the Dam Safety Permit Amendment process. The Keetac TSF currently has piezometers, inclinometers, and shape accelerator arrays present to help measure the geotechnical stability performance of the facility. Geotechnical monitoring would continue during the life of the Project.

The Project is subject to regulatory authority of the permits identified in Finding 29, including the MPCA's NPDES/SDS permit and facility SWPPP for erosion control and water runoff. Ongoing construction of Phase 2 would be subject to conditions of the Permit to Mine Amendment and the Dam Safety Permit Amendment. The Dam Safety Permit Amendment would also require continued monitoring of the tailings basin, and geotechnical analysis during the life of Phase 2, until closure. The Project does not propose to increase the permitted life of the mine and would occur in stages to align with the Keetac life of mine predicted from permitted reserves through 2048, which includes time for reclamation and closure.

In addition to construction of Phase 2, the project proposes constructing a new access road, as well as a new industrial building and infrastructure for tailings separation and tailings dewatering. Site preparation would be similar as described above.

Total permanent impacts would be 608.6 acres, with 89.7 acres of temporary impacts. The TSF would be designed and constructed according to Minnesota Rules, part 6130.3000, and in accordance with the Dam Safety Permit Amendment. The reclamation process would include creation of wetlands where feasible, replacing some of the wetland functions and values lost through mining activities.

**b. Climate adaptation and resilience: This topic was addressed in EAW Item 7.**

No comments were received on this topic.

According to Minnesota Climate Trends, the Project area has been experiencing increases in annual average temperatures, along with rising minimum and maximum temperatures overall. Project construction would result in loss of wetlands and associated flood storage within the proposed Project footprint, as well as loss of vegetated areas, which has the potential to increase stormwater runoff. The project has been designed with consideration for potential climate change impacts and trends and has been designed to have more stable embankments and accommodate extreme weather events. Initial construction is expected to take two to three years, with the dams and dikes built in stages throughout operations. Extreme rainfall, flooding, and impacts to soils are potential major hazards that could have impacts on the Project. The TSF has been designed to have more stable embankments and accommodate extreme weather events. Analysis was completed for a 100-year rainfall event based on past precipitation and a probable maximum precipitation event. The 100-year storm was modeled for 6.35 inches of rainfall in a 24-hour period. Probable Maximum Precipitation was also modeled for the dam design and was estimated at 28.5 inches of rainfall in a 24-hour period. The Stage 2 Exterior is designed to store all runoff generated from a 24-hour PMP event (including wave run-up) until water can be safely discharged.

Water within the TSF would be discharged in a controlled manner to Reservoir No. 6, which has designed outfalls to accommodate emergency events and maintain the integrity of the TSF. Extreme rainfall also has the potential to impact soil stability.

The Project would be subject to ongoing regulatory authority of the permits identified in Finding 29. The stability of the TSF would continue to be monitored and reported to the DNR in accordance with the Dam Safety Permit. Impacts from construction to wetlands would be regulated under state and federal wetlands and waters permits.

The TSF is not planned for closure until the end of life of mine. Some portions of the TSF could be progressively reclaimed prior to that, and land areas would be seeded and vegetated with native species as appropriate for the TSF conditions to minimize erosion, and for safe maintenance. Closure of the TSF would be managed according to the reclamation and closure procedures outlined in the Dam Safety Permit, Permit to Mine, and Minnesota Rules 6130.4100. Additionally, best practices, stakeholder input, any requirements in the NPDES/SDS permit for cessation, and current conditions at the time of closure would be incorporated. The current Dam Safety Permit requires perpetual maintenance on all components to ensure integrity of all structures. Prior to the ultimate termination of the dam, a review by the DNR would be conducted to establish any perpetual activities necessary and financial responsibility is adequate by the owner.

**c. Cover types: This topic was addressed in EAW Item 8.**

No comments were received on this topic.

Cover types present in the Project area, which encompasses the Stage 2 Exterior, include: wetlands, deep lakes (i.e. the tailings basin pond), forest brush/grasslands, and developed or barren land (i.e. locations filled with tails). The Project would result in the change of cover types as shown in Table 1 below, resulting in a loss of natural cover types of wetlands, forest and brush/grassland within the project area, and increasing barren land and impervious surfaces. Converted cover types would be due to vertically raising the existing dams and dikes (using downstream and modified centerline construction methods) beyond the current TSF footprint and constructing a new access road, and a new industrial building and infrastructure for tailings separation and tailings dewatering.

**Table 1: Existing and Proposed Cover Types**

<b>Landcover type</b>	<b>Before (acres)</b>	<b>After (acres)</b>
Wetlands	595.5	16.9
Open water (i.e. i.e. the tailings basin)	420.3	0.5
Forest	553.6	0
Brush/grasslands	283.2	62.9
Impervious surface	0	37
Developed or barren land (i.e. locations filled with tails)	1082	2817.1
Total	2934	2934

Temporary construction areas outside of wetlands would be restored to pre-construction conditions. Tree clearing and grubbing would occur in temporary workspaces prior to construction. Forested and brush/grassland cover types in temporary construction areas would be reseeded, resulting in 62.9 acres of this cover type post-construction. Cover type conversion due to tailings basin features would be long-term, but not permanent, which is because after operations cease, the impacts would be partially reversible due to site reclamation requirements. Reclamation would include removing infrastructure and revegetating the site that would result in some degree of vegetative restoration and partially reverse changes in landcover due to the proposed project.

The Project would be subject to ongoing regulatory authority of the permits identified in Finding 29. The Permit to Mine Amendment would ensure activities related to site preparation, construction, and reclamation and closure procedures would be pursuant to Minn. R. Ch. 6130, and result in the restoration of natural cover. The TSF is not planned for closure until the end of life of the mine (mining at Keetac is currently permitted through 2036 but has stated reserves well beyond), though some portions of the TSF could be progressively reclaimed prior to that. All proposed revegetation/reclamation measures would be subject to DNR review and approval, per the Permit to Mine Amendment. Wetland-related mitigation required under the Minnesota Wetland Conservation Act and the Federal Clean Water Act Sections 404 and 401 ensures no net loss of wetland cover through the purchase of wetland banking credits. All proposed revegetation/reclamation measures would be subject to DNR review and approval, per the Permit to Mine Amendment.

**d. Water resources: This topic was addressed in EAW Item 12.**

Comments were submitted on this topic in WL-16, WL-17, and WL-18.

**Watersheds:** The Project area is divided between the Upper Mississippi Region and the Great Lakes Region watersheds. Most of the Project area is in the Upper Mississippi Region, HUC 02. It drains to the southwest, ultimately to the Mississippi River. The eastern edge of the Project area drains to the Great Lake Region, HUC 02, to the southeast, ultimately to Lake Superior. Construction of the expanded TSF and associated infrastructure would permanently convert 554 acres of forest and wetland to barren land/impervious surfaces; these losses could impact factors such as hydrology and water quality at the watershed scale. The projected changes constitute low percentages of total land cover within the two watersheds and would not be expected to result in local impacts, and changes to the overall watershed health scores are not expected. Watershed impacts would be subject to ongoing regulatory

authority of permits identified in Finding 29, such as state and federal wetland permits, the SWPP, and reclamation efforts at the end of the project.

**Public waters:** There are five lakes/reservoirs located in, or immediately downstream of, the Project area, including: Reservoir 2 North, Reservoir No. 6, Reservoir No. No. 2, Hay Lake, and Swan Lake. O’Brien Lake and Little O’Brien Lake are in the vicinity; however, they are not downstream of the TSF. See *ROD Attachment 1.y: Figure 12.2*. Table 2 below lists lakes/reservoirs downstream of the Project area, including major inflows and outlets to each waterbody.

**Table 2: Lakes/Reservoirs Downstream of the Project Area**

Lake	Major Inflow	Outlet
Reservoir 2 North	Welcome Creek	Drainage Ditch to Reservoir No. 2
Reservoir No. 6	Outer Tailings Basin Second Stage Pond	Plant Make-up and Drainage Ditch between Reservoir 2 North and Reservoir No. 2
Reservoir No. 2	Drainage Ditch from Reservoir 2 North	O’Brien Diversion Channel
Hay Lake	Hay Creek	Hay Creek
Swan Lake	Hay Creek	Upper Swan River

There are five streams located downstream of the TSF with potential to be impacted by the Project, including: Hay Creek, Swan River, West Swan River, the O’Brien Diversion Channel, and Welcome Creek. *Id.* Table 3 lists the streams length, flow regime, and inflow.

**Table 3: Streams Downstream of the Project Area**

Stream	Flow Regime	Stream Length (mi)	Inflow
Hay Creek	Perennial	8.5	O’Brien Diversion Channel (Receives inflows from Reservoir 4 and Reservoir No. 2)
Swan River	Perennial	87.07	Hay Creek
West Swan River	Perennial	41.74	Potential groundwater seepage from TSF
O’Brien Diversion Channel	Perennial	11.11	O’Brien Creek (Reservoir 4) and Reservoir No. 2
Welcome Creek	Perennial	1.5	Welcome Creek Weir

Construction related impacts to the above-mentioned waterbodies would most likely be related to erosion, sedimentation, and turbidity from nearby construction; impacts would be regulated by permits identified in Finding 29.

e. **Fish, wildlife, and aquatic species and wild rice: This topic was addressed in EAW Item 14.**

No comments were received on this topic.

**Fish and aquatic species:** The construction of the proposed dam would directly impact Reservoir No. 6, both temporarily and permanently, potentially affecting fish populations and aquatic habitats. The loss of habitat and spawning areas along the eastern side of the reservoir, as well as increased turbidity due to sediment disturbance, could adversely impact aquatic species. These impacts would be mitigated by replanting aquatic plants and creating suitable environments for the re-establishment of native species on the western side of the reservoir. Additionally, a silt curtain would be installed to protect the western portion of the reservoir from turbidity. The eastern portion, where permanent impacts would occur, would be stacked with rock to minimize potential impacts on aquatic habitats and water quality. The Hay Creek watershed would also be directly impacted, with the loss of habitat at the headwaters of the creek, though the impacted area would be relatively small compared to the total watershed. During the operational phase, no substantial impacts on aquatic species are anticipated, as there are no proposed water appropriations or new discharges, and the overall water balance and water quality at the TSF are not expected to change from pre-existing conditions. Considering the proposed mitigation measures and the limited scope of impacts relative to the overall watershed, the impacts of the project on aquatic species are not expected to be substantial. These impacts will be addressed by permit conditions of the Permit to Mine, Construction Stormwater Permit, and the NPDES/SDS Permit among other approvals as listed in Finding 29.

**Wildlife:** Common wildlife types that have the potential to occur within the Project area include mammals, birds, fish, reptiles, amphibians, and invertebrates. Project construction would cause temporary and permanent habitat loss for wildlife. Habitat loss and construction noise could potentially drive species from the area. Soil disturbance may increase erosion, which could further deteriorate habitat. Additional vehicle traffic due to construction could result in additional road collisions with wildlife.

Impacts to habitats would be mitigated for by the replanting of vegetation in temporary construction areas. All vegetation clearing (including tree clearing) would occur in the winter to avoid the nesting bird season. Similar habitats are available nearby for nesting birds and other wildlife to accommodate displaced species. To mitigate for potential increases in erosion, soil control devices would be installed, and topsoil conservation methods would be implemented. Vehicle collisions with wildlife could be mitigated by advising drivers to be alert. The Project would be subject to regulatory authority of the permits identified in Finding 29, including the Permit to Mine Amendment, Construction Stormwater Permit, and the NPDES/SDS permit. Minnesota Rules Ch. 6130 requires the reclamation of mined lands, which includes the re-establishment of vegetation in disturbed areas. Considering the proposed mitigation measures and the regulatory requirements for reclamation, the impacts of the Project on wildlife are not expected to be substantial.

**Wild rice:** Wild rice is present in three waterbodies downstream of the Project area: Swan Lake, Swan River, and Hay Lake. Health and abundance of wild rice varies within these waters. Wild rice in these areas is likely affected by increased water levels and elevated sulfate concentrations in the lake. Any potential impact on wild rice would be associated with changes to water conditions at the sites. The Project is not anticipated to affect the overall water balance or water quality at the TSF. Downstream waterbodies are not expected to experience substantial change from current conditions, and the Project is not expected to significantly affect current wild rice conditions. The Project would be subject to ongoing regulatory authority of the permits identified in Finding 29 that regulate water quality, such as the NPDES/SDS permit.

**f. Greenhouse gas emissions (GHG)/carbon footprint: This topic was addressed in EAW Item 18.**

No comments were received on this topic.

Greenhouse gas emissions associated with the Project consist of direct emissions from mobile equipment used during construction, land use changes, and from the haul trucks used to deposit coarse tails during operation. The separation and tailings dewatering infrastructure would generate indirect scope 2 emissions from electricity use. Using calculations methods from the Minnesota EQB's *2024 EAW Climate Guidance*, the Project would produce 9,241 tons (reported in short tons) of GHG emissions during construction (from construction activities and land conversion). Following construction, the Project is expected to generate 60,383 tons/year of GHG from operational activities; this output would diminish once operations cease. The

2020 estimate of CO<sub>2</sub>e for the state of Minnesota was 137,238,222 tons. The 9,241 tons generated by construction and land conversion are 0.01 percent of CO<sub>2</sub>e emissions that were emitted in Minnesota in 2020. The 60,883 tons/year generated by operations are 0.045 percent of Minnesota's total state emissions in 2020. While the Project would introduce additional sources of GHG, these would be partially offset by the reduction in activity at the Stage 2 Interior and with reclamation.

**g. Cumulative potential effects: This topic was addressed in EAW Item 21.**

No comments were received on this topic.

The overall geographic scale for assessing cumulative potential effects of the Project includes the Mississippi River-Grand Rapids/Hay Creek watershed, which encompasses the tailing separation and/or dewatering infrastructure and 88 percent of the Stage 2 Exterior dikes and dams; and the Lake Superior-St. Louis/Upper West Swan River HUC 12 watershed, which contains the rest of the TSF, dikes and dams on the east edge of the Project area.

The timeframe for the Project is two to three years for construction activities, staged cessation of tailings deposition into the Stage 2 Interior basin with subsequent reclamation activities, and an operation impact timeframe as tailings generation and deposition continue over the approved mine lifespan (2048), as described in EAW Item 6a.

The cumulative potential effects assessment recognizes there will be an overlap in dam construction, reclamation, and closure impacts for Stage 2 Interior basin as initial site preparation, dam/dike construction, and tailings deposition begins under the Proposed Project (at the Stage 2 Exterior basin). This overlap in construction-related impacts will begin with commencement of activities in the Stage 2 Exterior basin and decline over time as activities at the Stage 2 Interior basin come to an end.

The DNR contacted staff from local governmental units including the Cities of Hibbing and Nashwauk, Itasca County, the North St. Louis Watershed District, and the Itasca Soil and Water Conservation District about current planned projects within the same geographic area and timeframe as the Project. Based on these communications, no reasonably foreseeable future projects for which a basis of expectation has been laid have been identified.

Cumulative effects from construction and project activities are discussed below by topic.

### ***Land use***

The primary long-term impacts of the Project stem from the permanent land type modification of 608.6 acres, resulting in habitat loss, including wetlands. Temporary impacts would occur on an additional 89.8 acres for staging and site access during construction. These impacts represent an incremental augmentation of the existing disturbed area rather than introduction of new impacts to an undisturbed landscape. In the early stages of the Project, potential cumulative effects would be partially offset by initiation of reclamation activities in the Stage 2 Interior basin part of the TSF. Mitigation measures, such as progressive reclamation of temporary impact areas, compliance with construction permit requirements, and the use of timber matting or other stabilization methods to minimize impacts on wetlands, would help to reduce the Project's overall environmental footprint.

The TSF would extend beyond the mining area by approximately 700 feet to the east and 500 feet to the west. This represents a relatively small incremental increase in the context of the existing mine operations, with over 95 percent of the surrounding landcover remaining unaffected. The Project is not expected to impact nearby residential, commercial, or recreational areas, as it is located within an industrial mining site.

The Project would contribute to incremental losses of forests and wetlands at a localized scale. The Project would not introduce substantially new stressors or impact types, and the conversion of additional landcover represents a continuation of established land use impacts considering the existing level of disturbance associated with the long-term, ongoing mining operations, which is partially offset by initiation of reclamation activities in the Stage 2 Interior basin part of the tailings facility. Given the industrial nature of the existing land use, the limited extent of new permanent and temporary impacts, the proposed mitigation measures and regulatory requirements, the Project is not anticipated to substantially alter land use patterns or human settlement in the region, therefore cumulative impacts are not expected.

### ***Geology, soils and topography/landforms***

Other than the increase of topographic relief and an expanded TSF footprint due to dam construction and tailings deposition over the life of the Project, there is little anticipated change in geology, soils, and topography/landforms from current conditions under the Project. The area of impacted soils would mirror impacts identified for cover types, but these would be somewhat mitigated by reclamation requirements under the Permit to Mine for TSF closure. Considering the proposed mitigation measures and regulatory requirements, the impacts of the Project on

geology, soils and topography/landforms are not expected to be substantial and cumulative impacts to these features are not expected.

### ***Groundwater resources***

The Project would contribute to existing seepage from the TSF into the groundwater system. The potentially increased contribution may be mitigated by placement of a finer tailings mixture into the TSF, which would act as a less porous barrier compared to the (previously deposited) coarser tailings now in place in the Stage 2 Exterior basin. While surface water discharges are limited to the Annual Net Precipitation falling on the site, potential groundwater discharges and potential impacts to surface water features would be quantified by conducting a Functional Equivalent Evaluation required by a reissued NPDES/SDS Permit. Potential cumulative effects from the interaction of existing seepage from the Stage 2 Interior basin with the Project are expected to be minor, with long-term contributions from the Stage 2 Interior basin diminishing over time in reclamation and closure. Additional water quality monitoring, including groundwater resources under the DNR WCA approval, would be conducted to confirm predicted compliance with applicable water quality standards for groundwater resources. Considering the proposed mitigation measures and regulatory requirements, the impacts of the Project on groundwater are not expected to be substantial and cumulative impacts to groundwater are not expected.

### ***Floodplains***

Cumulative effects to floodplains are not anticipated. There are no mapped floodplains within or in the vicinity of the Project area. If unmapped floodplains are present in the Project area, they could be impacted by soil compaction. However, given that the site is currently disturbed because of ongoing operations, effects are expected to be minimal to floodplains because of the Project.

### ***Watersheds***

The Project's changes to watersheds, which are notable at the immediate site level, represent a small incremental shift in the historic drainage patterns of this part of the Mississippi and St. Louis River Watersheds. The projected changes are not significant as they constitute less than two percent of the Mississippi River Watershed and less than seven percent of the Lake Superior Watershed. Project-related change results from conversion of approximately 554 acres of forested and wetland areas to barren land/impervious surfaces across the two watersheds. Cumulative effects could be mitigated through stormwater management and wetland restoration/offsets to be developed over the life of the Project under required regulatory approvals. Considering the proposed mitigation measures and regulatory requirements, the

impacts of the Project on watersheds are not expected to be substantial and cumulative impacts to watersheds are not expected.

### ***Wetlands***

Cumulative wetland impacts would be apparent at the greater TSF, Mine Site, and Plant Site in the historic context of facility development since 1967. This is because the Project would lead to both permanent and temporary impacts on WCA-regulated wetlands. Direct impacts are projected for 97.47 acres with indirect permanent wetland impacts projected for 0.19 acres. Temporary impacts are projected for approximately 10 acres of wetlands. While the Project has been designed to avoid wetlands where possible, some loss is unavoidable and mitigation under the WCA and Section 404 Permits, and Section 401 Certification, would be required to compensate for the loss of regulated wetlands. Once operations begin, new impacts are not predicted. Reclamation and closure requirements could provide opportunities for some wetland creation that would offset the historic, cumulative wetland impacts at the site and within the affected watersheds. Considering the proposed mitigation measures and regulatory requirements, the impacts of the Project on wetlands are not expected to be substantial and cumulative impacts to wetlands are not expected.

### ***Contamination/hazardous materials/wastes***

There is little anticipated change in the potential for contamination and hazardous waste impacts under the Project. The risks would remain as those typical of a construction/industrial operation and would be managed like current operations. Construction waste would be managed with appropriate disposal or recycling and BMPs would include secondary containment of hazardous materials and emergency response procedures as outlined in the SPCC. Considering the proposed mitigation measures and regulatory requirements, the impacts of the Project on contamination and hazardous waste are not expected to be substantial and cumulative impacts are not expected.

### ***Vegetation***

Construction of the Project involves clearing of vegetation within both temporary and permanent impact areas, resulting in a loss of forested, herbaceous, and wetland habitats due to progression of the Stage 2 Exterior and new roads and infrastructure. The Project is not anticipated to impact any state or federal listed vegetative species. Upon completion of construction, temporary impact areas would be restored to pre-construction contours, and erosion control measures would be implemented. These areas would be seeded with native seed mixes or allowed to naturally revegetate. During the operational phase of the Stage 2 Exterior, potential impacts to vegetation

would be limited to localized dust accumulation and routine maintenance of rights-of-way and work areas. As work within the Stage 2 Exterior is being conducted, reclamation within Stage 2 Interior could occur simultaneously, potentially offsetting any vegetation impacts. Minnesota Rules Chapter 6130 requires the reclamation of mined lands, which includes the re-establishment of vegetation in disturbed areas. Considering the proposed mitigation measures and ongoing regulatory requirements for reclamation, cumulative impacts of the Project on vegetation are not expected to be substantial.

### ***Wildlife***

Construction and operation of the Project are not expected to have significant effects on populations of common or rare wildlife species analyzed, including the Canada lynx, gray wolf, monarch butterfly, northern long-eared bat, and tricolored bat and Suckley's Cuckoo Bumble Bee. The Canada lynx and gray wolf are not likely to be substantially affected due to their mobility and the availability of adjacent habitats, while the monarch butterfly and Suckley's Cuckoo Bumble Bee are expected to find suitable habitats nearby. The implementation of tree clearing restrictions during the bat roosting season would help minimize impacts on the northern long-eared bat and tricolored bat; this would also avoid impacts to nesting birds, however, migratory birds may face impacts due to the permanent loss of some forested nesting habitat, which could have long-term effects on local populations, though forested habitat exists nearby. Preconstruction surveys and nest buffers would be implemented to reduce these impacts. To further mitigate the potential impacts on migratory birds, the Proposer would prioritize the implementation of the proposed mitigation measures and consider additional measures, such as habitat restoration or compensation, to ensure the long-term conservation of these species within the Project area and its surroundings. Additionally, all vegetation clearing (including tree clearing) would occur in the winter.

Re-seeding areas with native seed mixes or allowing the site to naturally revegetate could provide suitable habitat for the monarch and Suckley's Cuckoo Bumble Bee. Reclamation could also help offset loss of habitat for other wildlife species, including some migratory birds. Considering the proposed mitigation measures and regulatory requirements, the impacts of the Project on wildlife are not expected to be substantial and cumulative impacts are not expected.

### ***Aquatic species***

The construction of the proposed dam would directly impact Reservoir No. 6, both temporarily and permanently, potentially affecting fish populations and aquatic

habitats. The loss of habitat and spawning areas along the eastern side of the reservoir, as well as increased turbidity due to sediment disturbance, could adversely impact aquatic species. These impacts would be mitigated by replanting aquatic plants and creating suitable environments for the re-establishment of native species on the western side of the reservoir. Additionally, a silt curtain would be installed to protect the western portion of the reservoir, and the eastern portion, where permanent impacts would occur, would be stacked with rock to minimize potential impacts on aquatic habitats and water quality. The Hay Creek watershed would also be directly impacted, with the loss of habitat at the headwaters of the creek, but the impacted area would be relatively small compared to the total watershed. During the operational phase, no substantial impacts on aquatic species are anticipated, as there are no proposed water appropriations or new discharges, and the overall water balance and water quality at the TSF are not expected to change from pre-existing conditions. Considering the proposed mitigation measures and the limited scope of impacts relative to the overall watershed, cumulative impacts of the Project on aquatic species are not expected to be substantial. Considering the proposed mitigation measures and regulatory requirements, the impacts of the Project on contamination and hazardous waste are not expected to be substantial and cumulative impacts are not expected.

#### ***Invasive species***

Construction vehicles could potentially introduce aquatic and terrestrial invasive species to the Project site; this risk would be mitigated by inspecting vehicles, clothing, and equipment before any interaction with the site and sourcing construction materials locally. Conditions of the Dam Safety Permit require that all equipment is free of prohibited invasive species and aquatic plants before being transported into the Project area. Considering the proposed mitigation measures and regulatory requirements, the impacts of the Project on invasive species are not expected to be substantial and cumulative impacts are not expected.

#### ***Historic properties***

The construction of the Project could potentially affect one known cultural resource site. The site, which has an undetermined eligibility for listing on the NRHP, is situated in a temporary impact area where staging activities could occur. To mitigate potential impacts, the Project plans to avoid the site by implementing a 200-foot avoidance buffer. If avoidance is not possible, the Proposer would be required to consult with the parties listed in the 2012 Programmatic Agreement, and additional investigations may be necessary to determine the site's eligibility for NRHP listing. Archaeological monitoring during construction in areas near the cultural site and the implementation

of a terrestrial post-review discoveries plan would help reduce potential impacts on any previously undiscovered archaeological resources encountered during construction. It is possible that an undiscovered archaeological site could be impacted during construction, however state and federal requirements for identifying, assessing, and mitigating impacts on cultural resources would limit the extent, scale, and magnitude of any such impacts. Considering the proposed mitigation measures and regulatory requirements, the impacts of the Project on cultural resources are not expected to be substantial and cumulative impacts to cultural and historic resources are not expected.

### ***Visual***

The existing TSF is a major visual feature with impacts originating from activities at the Stage 2 Interior basin that are occurring within an established mining/industrial landscape; tailings piles and waste rock piles already exist and are visible from various surrounding vantage points. The Proposer reports visual analysis indicates the 70-to-110-foot increase in TSF height from the Project may make the TSF visible from some new vantage points in southeast Keewatin, but this represents an incremental change rather than a new visual impact. Visual impacts would be mediated early in the Project due to reclamation efforts at the Stage 2 Interior basin. Project reclamation and closure procedures required under the DNR Permit to Mine at the Stage 2 Exterior basin would further reduce potential aesthetic visual impacts through site revegetation efforts. Considering the proposed mitigation measures and regulatory requirements, the visual impacts from the Project are not expected to be substantial and cumulative impacts are not expected.

### ***Air***

The Project would generate emissions and air quality impacts of the nature, type, and extent of current operations of the Stage 2 Interior basin. There would be temporary interaction of air effects at the beginning of the Project with activities at the Stage 2 Interior basin, but this effect should moderate and substantially diminish as operations in the Stage 2 Interior basin are phased out into its reclamation and closure. This overlap in air impacts represents an incremental change where minimal degradation of air quality and no exceedances of National Ambient Air Quality Standards (NAAQS) are anticipated under the Project. All activity at the TSF would be subject to mitigation as outlined in the Fugitive Dust Plan in the greater context within an established mining/industrial area. Air emissions would terminate at the end of mine life, with potential dust emissions addressed by revegetation requirements in reclamation and closure. Considering the proposed mitigation measures and regulatory requirements,

the impacts of the Project on air emissions and air quality are not expected to be substantial and cumulative impacts are not expected.

**Noise**

Cumulative noise effects would be present in the early years of the Project as existing noise-generating activities in the Stage 2 Interior basin are phased out while the Project comes online. This means cumulative effects would be temporary thus returning and resembling current noise levels expected from this type of activity in a mining/industrial district. Exhaust noise from diesel engines that power the equipment is usually the predominant source of construction equipment noise. The Project would ensure that functional mufflers are installed on all diesel-powered equipment. Considering the proposed mitigation measures and regulatory requirements, the impacts of the Project on noise are not expected to be substantial and cumulative impacts are not expected.

**Transportation**

Transportation impacts are limited to a temporary increase in road traffic volumes around the Project area during the construction phase from worker commutes and equipment/material deliveries. The Proposer would mitigate and restore any temporary road impacts that may result from the Project maintenance or other ongoing operational activities that occur through regular operation of the TSF. Considering the proposed mitigation measures and regulatory requirements, the impacts of the Project on transportation are not expected to be substantial and cumulative impacts are not expected.

**Ongoing Regulatory Authority**

29. Minnesota Rules part 4410.1700, subp. 7, establishes criteria for the RGU in deciding whether a project has the potential for significant environmental effects, including item C “the extent to which the environmental effects are subject to mitigation by ongoing public regulatory authority.” The following permits and approvals are, or may be needed, for the Project under ongoing public regulatory authority:

Unit of Government	Type of Application
USACE	Clean Water Act Section 404 Individual Permit
	Section 7 Endangered Species Act Consultation with USFWS
	National Historic Preservation Act Section 106 Determination for Historic Properties
USFWS	Federal Endangered Species Permits

Unit of Government	Type of Application
DNR	Permit to Mine Amendment
	Dam Safety Permit Amendment
	Public Waters Work Permit
	Wetland Replacement Plan for Wetland Conservation Act
	Burning Permit (land clearing)
	Takings Permit (for Endangered or Threatened Species)
MPCA	Air Emissions Permit (Prevention of Significant Deterioration/Title V Air Permit)
	Clean Water Act Section 401 Water Quality Certification
	Construction Stormwater Permit
	National Pollutant Discharge Elimination System (NPDES)/State Disposal System (SDS) Permit for Industrial Wastewater Discharge and Storm Water Discharge for Industrial Activity—Tailings Basin
	Storage Tank Permits (fuel tanks)
	Hazardous Waste Generator License
City of Hibbing	Building Permit
	Shoreland Alteration Permit for construction in a shoreland management district
	Rezoning, Zoning Variance or Conditional Use Permit (CUP)
City of Nashwauk	Zoning Permit
Itasca County	Zoning Permit
	Septic Permit
	Extractive Use Permit/CUP
	Shoreland Alteration Permit for movement of more than 10 cubic yards of material on steep slopes or within shore/bluff impact zones or 50 cubic yards or greater outside abovementioned zones

## Conclusions

1. Minnesota Rules part 4410.1700, subps. 6 and 7, (set forth in whole below) establish standards and criteria for the RGU to apply when deciding whether a project has the potential for significant environmental effects.

Minn. R. 4410.1700, subp. 6. “**Standard.** In deciding whether a project has the potential for significant environmental effects the RGU shall compare the impacts that may be reasonably expected to occur from the project with the criteria in this part.”

Minn. R. 4410.1700, subp. 7. “**Criteria.** In deciding whether a project has the potential for significant environmental effects, the following factors shall be considered:

- A. type, extent, and reversibility of environmental effects;
- B. cumulative potential effects. The RGU shall consider the following factors: whether the cumulative potential effect is significant; whether the contribution from the project is significant when viewed in connection with other contributions to the cumulative potential effect; the degree to which the project complies with approved mitigation measures specifically designed to address the cumulative potential effect; and the efforts of the proposer to minimize the contributions from the project;
- C. the extent to which the environmental effects are subject to mitigation by ongoing public regulatory authority. The RGU may rely only on mitigation measures that are specific and that can be reasonably expected to effectively mitigate the identified environmental impacts of the project; and
- D. the extent to which environmental effects can be anticipated and controlled as result of other available environmental studies undertaken by public agencies or the project proposer, including other EISs.”

As RGU, DNR applied the standards and criteria based on information in the EAW, public comments, and other information listed in this Record of Decision and otherwise known to DNR. The following conclusions describe DNR’s application of the standard and each of the factors listed in Minn. R. 4410.1700, subp. 7, items A through D.

2. *Type, extent, and reversibility of environmental effects.*

Based on Findings 27 and 28, the DNR concludes that the following types of potential environmental effects, as described in the Findings of Fact, would be limited in extent, temporary, or reversible:

- Project construction and design;
- Climate adaptation and resilience;

- Cover types;
- Land use;
- Geology, soils, and topography/landforms;
- Water resources (surface waters, wetlands, water quantity and quality);
- Contamination/hazardous materials/wastes;
- Fish, wildlife, plant communities, and sensitive ecological resources (rare features);
- Historic properties;
- Visual Effects;
- Air Emissions
- Greenhouse gas emissions/carbon footprint;
- Noise; and
- Transportation.

3. *Cumulative potential effects.*

As set forth in Finding 28.g, the DNR concludes that the cumulative potential effects of the Project are not significant.

4. *Extent to which environmental effects are subject to mitigation by ongoing public regulatory authority.*

Based on Findings 20, 21, 27, and 28 and the information contained in the EAW, DNR concludes that there is sufficient ongoing public regulatory authority as listed in Finding 29, and specific measures identified through permits and approvals and voluntary actions taken by the Proposer, that can be expected to effectively address the following environmental impacts:

- a. **Project construction and design:** Environmental effects from Project construction and design, including dams and new infrastructure, are subject to public regulatory authority from the: DNR Permit to Mine Amendment; DNR Dam Safety Permit Amendment; MPCA Construction Stormwater Permit; MPCA NPDES/SDS Permit; MPCA Air Emissions Permit; City of Hibbing Shoreland Alteration Permit; and Itasca County Shoreland Alteration Permit.
- b. **Climate adaptation and resilience:** Environmental effects from climate adaptation and resilience are subject to public regulatory authority from the: DNR Permit to Mine Amendment; DNR Dam Safety Permit Amendment; DNR WCA Approval; USACE Section 404 Permit; MPCA Section 401 Certification; MPCA Construction Stormwater Permit; MPCA NPDES/SDS Permit; MPCA Air Emissions Permit; and DNR Public Waters Work Permit.

- c. **Cover types:** Environmental effects from cover type conversion are subject to mitigation by ongoing public regulatory authority from the: DNR Permit to Mine Amendment; MPCA Construction Stormwater Permit; MPCA NPDES/SDS Permit; City of Hibbing Building Permit and Shoreland Alteration Permit; and Itasca County Extractive Use Permit/CUP and Shoreland Alteration Permit.
- d. **Geology, soils, and topography/landforms:** Environmental effects to geology, soils, and topography/landforms are subject to mitigation by ongoing public regulatory authority from the: DNR Permit to Mine Amendment; DNR Dam Safety Permit Amendment; MPCA Construction Stormwater Permit; MPCA NPDES/SDS Permit; City of Hibbing Building Permit and Shoreland Alteration Permit; and Itasca County Extractive Use Permit/CUP and Shoreland Alteration Permit.
- e. **Water resources:** Environmental effects to water resources are subject to mitigation by ongoing public regulatory authority from the: DNR Permit to Mine Amendment; DNR WCA Approval; USACE Section 404 Permit; MPCA Section 401 Certification; MPCA Construction Stormwater Permit; MPCA NPDES/SDS Permit; City of Hibbing Shoreland Alteration Permit; and Itasca County Shoreland Alteration Permit.
- f. **Contamination/hazardous materials/wastes:** Environmental effects due to contamination, hazardous materials, and wastes are subject to mitigation by ongoing public regulatory authority from the: DNR Permit to Mine Amendment and MPCA Spill Prevention Control and Countermeasure Plan.
- g. **Fish, wildlife, plant communities, and sensitive ecological resources (rare features):** Environmental effects to fish, wildlife, plant communities, and sensitive ecological resources are subject to mitigation by ongoing public regulatory authority from the: DNR Permit to Mine Amendment; DNR Dam Safety Permit Amendment; DNR WCA Approval; USACE Section 404 Permit; MPCA Section 401 Certification; and DNR Takings Permit.
- h. **Historic properties:** Environmental effects on historic properties are subject to mitigation by ongoing public regulatory authority from the Private Cemeteries Act and stipulations of the 2012 Programmatic Agreement.
- i. **Visual:** Environmental effects to visual resources are subject to mitigation by ongoing public regulatory authority from the: DNR Permit to Mine Amendment and DNR Dam Safety Permit Amendment.
- j. **Air:** Environmental effects to air emissions are subject to mitigation by ongoing public regulatory authority from the: DNR Permit to Mine Amendment and MPCA Air Emissions Permit.

- k. **Noise:** Environmental effects due to noise are subject to mitigation by ongoing public regulatory authority from the: DNR Permit to Mine Amendment and MPCA State Noise Standards.
  - l. **Transportation:** Environmental effects from transportation are subject to mitigation by ongoing public regulatory authority from the: DNR Permit to Mine Amendment. The Proposer commits to restore possible damage to roads during construction.
5. *Extent to which environmental effects can be anticipated and controlled as a result of other environmental studies undertaken by public agencies or the project proposer, or other EISs.*
- Based on Findings 13 and 23, the DNR concludes the environmental effects of the proposed Project can be anticipated and controlled as a result of other environmental studies undertaken by public agencies or the project proposer, or other EISs.
6. As set forth in Findings 1 through 29, the DNR has fulfilled all the procedural requirements of law and rule applicable to determining the need for an EIS on the proposed United States Steel Keetac Tailings Storage Facility Project, in Itasca and St. Louis Counties, Minnesota.
7. Based on consideration of the criteria and factors specified in the Minn. R. 4410.1700, subs. 6 and 7, to determine whether a project has the potential for significant environmental effects, and on the Findings and Record in this matter, the DNR determines that the proposed U.S. Steel Keetac Tailings Storage Facility Project does not have the potential for significant environmental effects.

**ORDER**

Based on the above Findings of Fact and Conclusions:

The Minnesota Department of Natural Resources determines that an Environmental Impact Statement **is not** required for the U.S. Steel Keetac Tailings Storage Facility Project, in Itasca and St. Louis Counties, Minnesota.

Any Findings that might be properly termed Conclusions and any Conclusions that might be properly termed Findings are hereby adopted as such.

Dated this 6th day of April 2026.

**DEPARTMENT OF NATURAL RESOURCES**



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Katie Smith  
Assistant Commissioner