

GISTM Public Disclosure Report

Eagle Mine Humboldt Tailings Disposal Facility

August 2025

1. Introduction

Lundin Mining is committed to the implementation of the Global Industry Standard on Tailings Management (GISTM) at its Eagle Mine in Michigan USA, which includes one active tailings facility known as the Humboldt Tailings Disposal Facility (HTDF). Principle 15 of the GISTM requires public disclosure and access to information about the tailings facility to support public accountability. This disclosure document has been prepared in accordance with the requirements of Principle 15 of the GISTM and reviewed by Lundin Mining's Accountable Executive.

2. Tailings Facility Description

The HTDF is an active in-pit sub-aqueous tailings facility, located northwest of the Humboldt Mill, which is owned by Eagle Mine, LLC (Eagle), located 24 miles west of Marquette, Michigan (Figure 1).

The Humboldt Mill was originally constructed in 1954 to concentrate low-grade iron ore from the Humboldt Mine Open Pit. Upon cessation of mining activities in 1970, the pit was allowed to naturally fill with groundwater and surface water. In the 1980's, the Humboldt Mill was used to process gold ore and the produced tailings were deposited sub-aqueously into the Humboldt Pit, which subsequently became the HTDF. Approximately 1.65 million tonnes of gold ore tailings were deposited in the HTDF. The Humboldt Mill facilities, including the HTDF, were acquired by Lundin Mining in 2013. Since August 2014, Eagle has been depositing pyrrhotite-rich nickel-copper tailings, generated from Eagle Mine ore, into the HTDF.

Eagle mine is an approximately 2,000 tonnes per day (tpd) underground nickel-copper mine. Ore is mined and transported by road to the Humboldt Mill for processing, after which the resulting nickel and copper concentrates are shipped by rail for smelting. The tailings generated are placed sub-aqueously into the HTDF at an approximate rate of 180,000 tonnes per quarter.

The HTDF was developed in a narrow valley, floored by iron-rich rocks, cutting through a ridge of silicified, dense, recrystallized sedimentary and mafic intrusive rocks. The narrow valley represents a stream channel that cuts through the bedrock ridge. The bedrock is overlain by a sequence of glacial till and outwash that is generally thinner over the ridge and thicker where it occurs in the valleys. The east and west sides of the pit are fractured bedrock overlain by a thin, patchy glacial till. Predominant groundwater flow into the pit is from a small area of the valley in the south through more than 40 ft of sand and gravel outwash towards the north. Water is naturally discharged towards the valley in the north end of the pit through outwash of similar thickness and enters into a wetland before discharging to the Middle Branch of the Escanaba River. Surface drainage is limited to a small highland watershed that extends partially into the Humboldt Mill process sector, for a total basin area of approximately 91 hectares (Ha).

Due to the acid generating potential of the nickel-ore tailings, they are deposited sub-aqueously to minimize oxidation. The tailings slurry is deposited in the HTDF via a double walled high-density polyethylene (HDPE) pipeline. At the south shoreline the pipeline splits and the tailings can be routed to one of the subaqueous outfalls located within the HTDF. A spigot system, installed in 2016 to better utilize the full capacity of the HTDF, currently discharges tailings approximately 100 ft (~30 m) below the water surface near the eastern wall of the HTDF. In 2020, a barge was used to deposit tailings 100 ft (~30 m) away from the side wall.

The surface water within the HTDF is normally maintained at an elevation of approximately 1530 ft above sea level (ft asl; ~466.3 m above sea level, masl) to maintain an annual average net negative hydraulic gradient with the groundwater flow system (i.e. groundwater discharge into the Humboldt TDF from all sides).

The current maximum permitted elevation for tailings storage is 1515 ft asl (~461.7 masl). The HTDF consists of two distinct basins. The main basin has an initial bottom elevation of roughly 1340 ft asl (408.4 masl) and has received nickel-copper ore tailings since August 2014. The northeast basin has a bottom elevation of roughly 1472 ft asl (448.7 masl). The two basins (main and northeast) are separated by a relatively shallow sill with an elevation of 1510 ft asl (460.2 masl).

The annual site water balance is positive (i.e., more precipitation than evaporation), thereby requiring discharges at specified locations and subject to effluent quality limitations. The current Water Treatment Plan (WTP) includes polymeric technology (NALMET®) to precipitate heavy metals, ultrafiltration and reverse osmosis. Tailings water is reclaimed to the mill from the south end of the main basin and treated for discharge from the northeast basin.

A cut-off wall was installed at the north end of the HTDF to limit subsurface and surface discharges of untreated water from the facility. The cut-off wall is 2,161 ft (658.7 m) long, a minimum of 3 ft (~1 m) wide and an average of 45.3 ft (13.8 m) deep. The crest elevation of the wall is 1543 ft asl (470.1 masl). A berm has also been constructed in the north part of the HTDF along certain sections of the cut-off wall to reach this elevation.

Eagle is required to submit a detailed plan for final reclamation of the HTDF and must receive written approval from the Michigan Department of Environment, Great Lakes, and Energy (EGLE) before proceeding with final reclamation of the HTDF. Eagle plans to close the HTDF as a perennially stratified (i.e., meromictic) pit lake approximately five years after the end of milling operations. At the start of the Post-Closure period, the WTP will be turned off, and the HTDF will only receive inputs from groundwater, surface runoff, and direct precipitation. Excess water will decant through a constructed channel at an elevation of approximately 1536 ft asl (468 masl). A strong density gradient is expected to develop from fresh surface water (less than 500 mg/L total dissolved solids) within the epilimnion (i.e., the upper layer of water in a stratified lake) to that of brackish to saline water down at the tailings/water interface.



Figure 1: Humboldt Tailings Disposal Facility Actual Layout

3. Consequence Classification

The consequence of failure classification for the tailings facility is determined by assessing the downstream conditions and selecting the classification corresponding to the highest Consequence Classification from the following incremental loss categories: potential population at risk, potential loss of life, environment, health, safety, cultural, and infrastructure and economics.

The GISTM Consequence Classification for the HTDF was determined and documented following breach analysis scenarios that considered the potential failure mode of overtopping. The determined Consequence Classification of the Eagle HTDF that corresponds to the highest classification for the current condition is 'Low'.

4. Summary of Risk Assessment Findings

Lundin Mining applies a risk-informed decision-making approach for all TSF lifecycle phases. Risk assessments are used to identify and evaluate risks to prevent catastrophic failures, and to inform decisions to manage risks to as low as reasonably practicable (ALARP). This approach focuses on credible failure modes and to reduce the risks at our facilities by reducing the likelihood of occurrence and/or downstream impacts, regardless of the consequence classification.

The most recent risk assessment for the HTDF was conducted in 2024 by an external independent facilitator with participation from a multidisciplinary site team and the Engineer or Record (EOR). The risk assessment included a semi-quantitative Failure Mode and Effects Analysis (FMEA). As part of this assessment, potential failure modes were deemed as credible or non-credible regardless of their likelihood, and then the risk of credible failure modes was evaluated. All failure modes were sorted according to Lundin Mining's risk management framework, with risk mitigation controls identified and tracked.

A total of 43 risks were evaluated across different potential failure modes, including geotechnical failure, groundwater seepage, overtopping, pit stratification changes, pit water quality changes, and environmental discharge. These risk evaluations were conducted for three stages of the HTDF life cycle: Operations, Reclamation, and Post-Closure. Nine of these risks were found physically possible and credible. Four of the credible risks were identified as having reached As Low as Reasonably Practicable (ALARP) status, while the remaining risks identified additional risk management measures for further evaluation. The remaining identified risks were found to be non-credible, and 10 risks were categorized as needing further investigation to complete characterization of the risk. The risk assessment methodology and results were reviewed by the Independent Tailings Review Board (ITRB).

5. Summary of Impact Assessments and of Human Exposure and Vulnerability to Tailings Facility Credible Flow Failure Scenarios

The most recent risk assessment for the HTDF was conducted in 2024. The outcome of this assessment concluded that the HTDF has no credible catastrophic failure modes that would result in flow-type scenarios.

6. Description of the Design for all Phases of the Tailings Facility Lifecycle

As the HTDF is an in-pit disposal facility with no dam construction, the main design considerations focus on the tailings deposition plan, with the following objectives: (a) keeping tailings below the maximum permitted elevation; (b) maintaining suitable surface water quality, both during operations and after closure, while ensuring the facility can treat and discharge water at a rate that sustains water balance; and (c) controlling seepage to meet groundwater quality requirements downgradient of the facility, including post-closure.

Generally, two methods have been used for tailings deposition in the HTDF; these are referred to as the winter deposition method and the summer deposition method.

The presence of lake ice (generally from mid-November through late April or early May) prevents or hinders repositioning of deposition pipelines to accommodate changes to deposition points over the winter. Therefore, the goal of the winter deposition method is to create one cone rising above a single deposition point on the floor of the HTDF that can accommodate the tailings volume produced during the entire winter deposition period. A backup deposition point is also established prior to each winter deposition period based on conditions at that time.

The goal of the summer deposition method is to fill in between the cones generated during the winter and other individual cones produced in the summer months to maximize the storage capacity of the HTDF. Eagle uses a barge to deposit tailings at targeted locations during the summer period, which enables more rapid changes between deposition points and more efficient filling of the HTDF without leaving large gaps between cones. In recent years, Eagle has also left the barge in position during the winter to serve as an additional backup deposition point.

7. Summary of Material¹ Findings of Annual Facility Performance Review and Dam Safety Review (DSR)

Given the hazard classification of the HTDF, which has been determined to be Low, the ITRB verified that a DSR is not required.

The last HTDF Performance Review was performed by the EOR in 2024. No significant risks were identified based on the site visit inspections and review. There were no major variations in the instrumentation monitoring data or activation of Trigger Action Response Plans (TARPs) in 2024.

8. Summary of Material Findings of the Environmental and Social Monitoring Program

Our operations are subject to environmental regulations in the various jurisdictions in which we operate. Permitting, approvals and compliance management are important for the effective regulation of mining-related activities to prevent possible adverse impacts on the natural environment, as well as to protect the interests and rights of local communities. There were no material environmental incidents associated with the HTDF from the 2024 environmental monitoring program.

Since 2021, the Eagle operation engaged an independent third-party to measure the SLO index. To better integrate social performance in the internal decision-making process on HTDF operations and emergency planning, questions around trust and acceptance, including environmental performance and HTDF operation strategies measured community perception. There were no material findings associated with the HTDF from the social monitoring program since its inception.

9. Summary of the Tailings Facility Emergency Preparedness and Response Plan (EPRP)

The results of the HTDF risk assessment workshop did not identify any credible failure modes that could lead to catastrophic failure scenarios. Therefore, a specific recovery plan or emergency response plan is not considered applicable to the HTDF. Nevertheless, the Humboldt Mill Emergency Response Plan and the Eagle Mine Crisis

¹ Material findings are defined as unacceptable tailings facility risks such as a dam safety issue considered immediately dangerous to life, health or the environment, or a significant risk of regulatory enforcement.

Management Plan are maintained and include general specifications to prepare and manage (eliminate or mitigate) consequences after potential events.

10. Independent Reviews

The Independent Tailings Review Board (ITRB) for the Eagle HTDF was established in 2022. The ITRB program includes an annual site visit, supplemented by follow-up online progress meetings as needed. The last ITRB site visit was completed in September 2024. The next ITRB site visit and review is scheduled for October 2025.

11. Financial Capacity

Lundin Mining confirms that it has sufficient financial resources to meet its business requirements for the planned closure, early closure, reclamation, and post-closure of the HTDF and its appurtenant structures. These costs are disclosed annually in aggregate form in our financial statements contained within our [Annual Management's Discussion & Analysis \(MD&A\) Report](#). Further, Lundin Mining maintains insurance for the HTDF to the extent commercially reasonable and available.

12. Management System Reviews and Audits

Eagle is implementing the Lundin Mining RMP through the RMMS, which includes 16 requirements. The RMMS specifies Company-wide requirements for managing health, safety, environmental and community (HSEC) aspects of our business. The last external RMMS audit at Eagle was conducted in 2024 with recommendations under review. Eagle is currently in full conformance with 87.5% of all assessed RMMS requirements and the remaining 12.5% is at least partially met with a plan in place.

In support of GISTM implementation, Lundin Mining has developed a corporate guideline for the development of a site-specific performance-based Tailings Management System (TMS). A TMS self-assessment was carried out in April 2025 for the HTDF. The self-assessment results indicated that several components of the TMS already exist at the site level. The percentage of alignment to the TMS guideline was 65%. It is anticipated that the site-specific TMS will be completed by Q1 2026. A formal internal review of the defined site-specific TMS document is planned for 2026.

13. GISTM Conformance

Lundin Mining has assessed conformance on the GISTM for the HTDF in accordance with the ICMC Conformance Protocols issued in May 2021. For the HTDF, all GISTM requirements have been met and verified as fully aligned through self-assessment.