

Transportation of Eagle Mine Ore – Information Sheet

Mineralogy

The ore mined and transported from Eagle Mine to the Humboldt Mill consists of various minerals that contain nickel (Ni) and copper (Cu). The majority minerals are Chalcopyrite, Pentlandite and Pyrrhotite which primarily contain iron and sulfur.

Chalcopyrite is the copper bearing mineral and Pentlandite is the nickel bearing mineral. Pyrrhotite also contains a small amount of Nickel. In their mined form, the copper and nickel are locked up in the chemical structure of the ore. Eagle Mine's ore does not contain free copper or nickel metal.

Oxidation and release of copper and nickel from Eagle Mine ore does not occur spontaneously. The release of copper and nickel from its mineralized form generally requires use of an industrial process such as milling or smelting. However, it can occur after long term (months to years) environmental exposure to air and water causing oxidation and decay of the mineralized material.

Mining and Transport

Eagle Mine's ore is shipped as a coarse ore (see photos below). Simply put, this means that the ore is not processed or crushed at the Mine site. After being drilled and blasted during the mining process, the ore is transported from the underground to the surface by haul truck, stockpiled, and then loaded into 45-ton covered over-the-road trucks for haulage to the Humboldt Mill site. At both the Mine and Mill sites the ore is stored and handled within enclosed buildings.



Characterization

When assessed as a workplace hazard and against transportation requirements, Eagle Mine's ore is classified as a non-regulated material. The ore is not an oxidizing agent, it does not have corrosive characteristics, and it does not exhibit explosive, readily combustible, pyrophoric, self-

heating, dangerous when wet, or an EPA Reactive hazard when subject to DOT testing.

As shipped, the ore averages in size from 6 to 36 inches in diameter, with a percentage of each load containing smaller broken pieces and fines. Using a standard estimate of Particle Size Distribution (PSD) for nickel-copper bearing rock and primary crusher products (Lapakko, 1978), less than 0.5 percent (~450 pounds) of any one load is anticipated to be material smaller than 100 microns in diameter.

Emergency Response

In the event of a traffic incident, haul truck drivers will apply the following safeguards:

1. Make sure everyone is safe and make the area safe.
2. Contact 911 and make Eagle Mine emergency notification.
3. Attend to any injuries.
4. Isolate any spilled ore if safe to do so by diking with soil or sand.
5. If safe to do so, prevent other vehicles from driving through spilled ore.
6. If there is a fuel or oil spill, use a spill kit (boom or pad) to capture hydrocarbons.
7. Unless there is a fire, work with emergency responders to minimize use of water, control run-on/run-off and if possible absorb run-off water with sand or soil.

In the event of an incident that results in an ore or hydrocarbon spill, Eagle Mine will utilize TriMedia Environmental & Engineering Services as the transportation first-responder and remediation resource.

Personal Protective Equipment

Special PPE is not required when handling Eagle Mine ore. It's recommended that personnel involved with emergency response and clean-up of an ore spill use standard industrial PPE including hard hat, safety glasses with side-shields, work clothing or Tyvek type disposable coveralls, gloves, high visibility vests, and a dust mask if needed.

Clean-up

If a spill of ore or hydrocarbon occurs, Eagle Mine will utilize M.J. VanDamme working under the direction of TriMedia Environmental & Engineering Services to clean-up the spill site.

Basic clean-up will involve the following steps.

1. Picking up spilled ore by shovel or with a front end loader.
2. Absorbing and picking up any spilled hydrocarbons with booms, pads or adsorbent.
3. Sweeping up residual material with a broom and shovel.
4. Loading recovered ore into covered dump trucks or containers.
5. Picking up any visibly contaminated soils. Soils and disposable PPE will be collected in a separate covered container.
6. Soiled clothing or coveralls will be returned to Eagle Mine for laundering with regular work clothing using an industrial laundry service.
7. Recovered ore is not a waste and will be transported to the Humboldt Mill for processing.
8. Ore contaminated soils, residue and PPE will be characterized and disposed of in accordance with Marquette County, MDEQ and EPA requirements.

9. Hydrocarbon clean-up debris will be collected, characterized and disposed of in accordance with Marquette County, MDEQ and EPA requirements.
10. Under the direction of TriMedia and in accordance with all regulatory requirements, the impacted area will be tested/monitored to ensure that required clean-up levels are attained prior to reclamation and restoration.

Safety Data Sheet

A Safety Data Sheet (SDS) for Eagle Mine Nickel-Copper Ore was developed by Actio Corporation in accordance with the Globally Harmonized System (GHS).

Contacts

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- 24-Hour Emergency Contact (Humboldt Mill Security) 906-339-7017

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