

COMPLETENESS REVIEW SUMMARY OF THE PERMIT APPLICATION

for Tintina Resources' Black Butte Mine Proposal

Montana Trout Unlimited
Earthworks

February 2016

Missing Documents/Materials in the Permit Application:

- **Major Facility Siting:** Alternatives Analysis for Siting of Major Facilities is pending.
- **Spill Response Plan:** Appendix P, which outlines the company's emergency response plan, is under revision.
- **Weed Mitigation and Management Plan:** Appendix O, which outlines Tintina's weed plan, is under revision.
- **Dam Breach Inundation Study:** According to Appendix K (p. 41), this study will be completed as part of future design phases, if required.
- **Wetlands:** "Tintina is currently working with the USACE on developing a jurisdictional determination for the project area, but it isn't available." (P. 56)
- **Water Quality:** "Predictive models of water quality in the underground workings during operations and at closure, on the waste rock stockpile, and in the tailings impoundment sump are also being developed and will be reported at a later time." (P. 68)
- **Tailings:** The tests to determine metal release for saturated tailings remain online and "all interpretation is subject to change based on future results." (p. 71)
- **Waste Rock:** The tests to determine metal release from waste rock aren't complete: "Some of these tests are ongoing and, therefore, interpretation is subject to change" (p. 67)
- **Construction Rock:** No testing results are presented for granodiorite construction rock. According to the permit application, "These tests were initiated subsequent to determination of final facility locations in October 2015, and results will be available at a later time." (P. 63)
- **Aquatic Life:** Only one year of baseline data has been completed for fish and other

aquatic life. (P. 85)

- **Air Quality:** No baseline data has been provided. (P. 25-26)
- **Storm Water Management:** Storm water pollution prevention plan is pending.

Inadequate Data, Analysis and Information:

- **Surface Water Monitoring:** The monitoring sites on Sheep Creek and tributaries are too spread out and sampled too infrequently to determine where water enters the creeks and which mine facilities may contribute contaminants to different parts of the stream.
- **Groundwater monitoring and modeling:** The groundwater modeling contains major errors and is insufficient to estimate mine dewatering rates or determine impacts to stream flows. Because the groundwater hydrology is so complex, there aren't enough monitoring wells to provide sufficient information on groundwater flows or quality to determine impacts after mine development.
- **Water treatment:** The water management and treatment plan lacks sufficient detail to determine whether it will adequately manage water pollution.
- **Fish and Aquatic Life:** Baseline data is insufficient to characterize fish and other aquatic life; data collection did not follow appropriate protocols; information was not provided on the value of Sheep Creek as a spawning tributary to the Smith River/Missouri River; habitat surveys are inadequate and information missing. Baseline data for aquatic communities and their habitats are not included for significant streams put at risk from spills or otherwise affected by hauling of copper concentrate to rail heads, including Deep Creek and the Shields River.
- **Geochemistry of construction rock:** Data is missing to determine whether the rock used for construction (roads, etc.) will result in leaching of contaminants.
- **Geochemistry of waste rock and tailings:** There is insufficient sampling of waste rock to determine the range of seepage water quality; Analysis has not been conducted to determine how long it will take the cement in the cemented paste tailings to degrade, and what the resulting effects could be for groundwater.
- **Mine water disposal:** Data on soils and groundwater hydrology are inadequate to determine whether the Land Application Disposal system and infiltration trenches will effectively dispose of mine water without adverse effects to water quality.

- **Mine waste disposal:** The information and analysis is insufficient to determine whether acid mine drainage and metals leaching from mine waste stored in the tailings facility and underground tunnels will be effectively prevented and/or contained in perpetuity. It appears the tailings impoundment will be excavated below the elevation of the groundwater table, increasing risk to impoundment stability and potentially accelerating leaching of metals and acid if groundwater infiltrates the liner system. Information is absent regarding extra engineering precautions that will be taken to prevent groundwater infiltrating the impoundment.
- **Mine plan:** Overall the permit application lacks detailed information to demonstrate that the mine plan will work as proposed and contingency measures are in place if it doesn't.
- **Extent of mining:** Information on the Lowry Deposit and other deposits in the area are missing, even though the company has made it clear to investors that these deposits are part of its mining plans in the area.
- **Reclamation plan/perpetual care:** Elements are missing (e.g., weed control plan); there is insufficient long-term monitoring, operations and maintenance plan information; information and analysis is missing on how the tailings facility and underground mine waste, and its risk to water resources, will be successfully managed in perpetuity.
- **Water rights:** Detail is needed on all existing ground and surface water right claims in the area as well as points of diversion, and how often these water rights are unmet due to low flows.