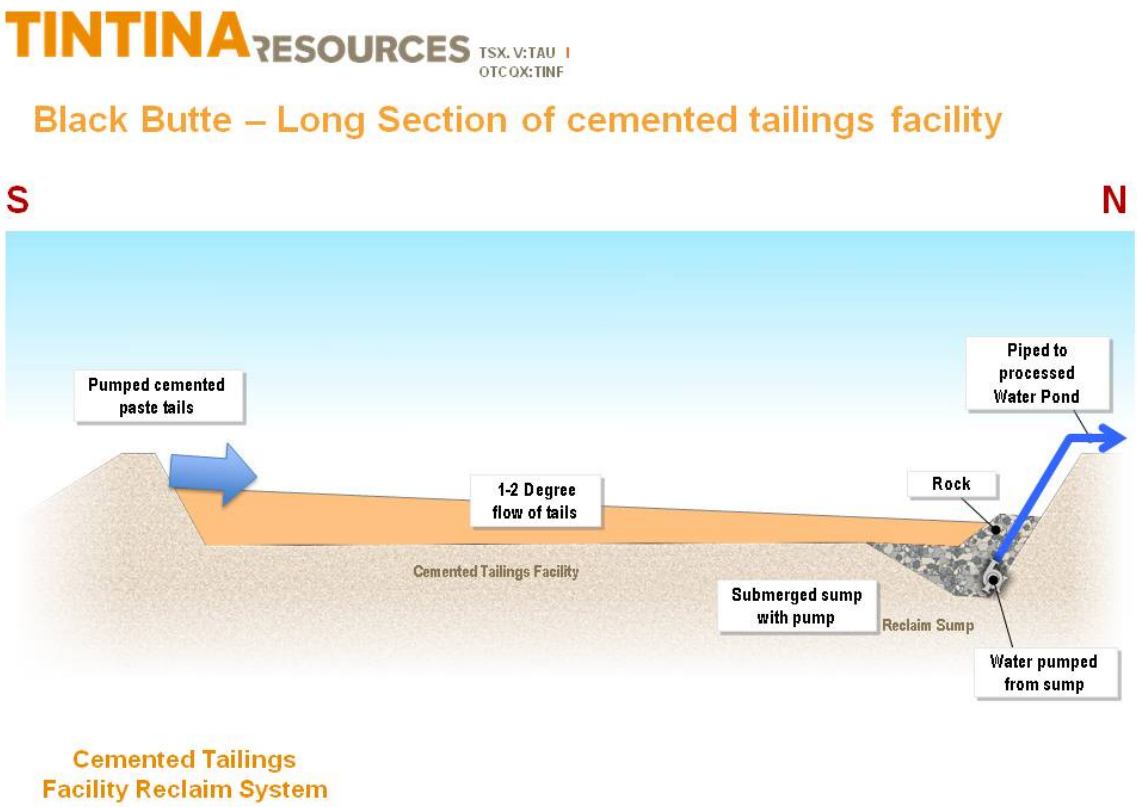
Tailings Management Facility Plan

This is the surface layout of the proposed mine site. Sheep Creek flows from right to left through the upper right hand corner of the diagram, and is paralleled by a county road whose junction with the U.S. highway 89 lies just off the right hand edge of the diagram. Another county road angles through the southwest part of the diagram. Near the top center are the outlines of the Johnny Lee upper copper zone in beige, and the Johnny Lee lower copper zone, in tan. The right hand edge of the Johnny Lee upper copper zone comes to surface just west of the county road on an east facing slope. The upper zone dips west at about 20 degrees, and is about 600 feet (183 meters) deep on its western margin. The upper zone is 3,000 feet (914 meters) long in a north south direction, and 1,500 feet (457 meters) wide in an east west direction. The Johnny Lee lower zone lies 1,500 feet (457 meters) below the bottom of the Sheep Creek valley, and gently rises to a depth of 1,100 feet (335 meters) on its western end. The lower zone is 3,000 (914 meters) feet long in an east west direction. Another smaller deposit, the Lowry deposit, lies at 1,200 feet (366 meters) depth at its north end, dips steeply south, and is about 2,000 feet (610 meters) long. Tintina is only permitting the Johnny Lee deposit for development. The surface opening (portal) for the 5,000 foot (1,524 meters) long access tunnel (decline) for the Johnny Lee deposit will lay on the south side of Sawmill Hill, and is 200 feet (61 meters) above the water table. When constructed, the tunnel will progress at a 15% grade for 1,700 feet (518 meters) before encountering water. Rock mined out of the tunnel will be temporarily stored on a lined storage pad near the opening. Once mining of the copper deposit is underway, the material must pass through a milling process at the facility shown as ‘plant’ on the map. Here the rock is ground into the consistency of fine flour (38 microns) and about 12% of it, which is the ore mineral, chalcopyrite, is ‘floated’ away from the rest through a process called flotation. This material contains about 24% copper and is

shipped off site and sold to a smelter or concentrate buyer. The remaining 88% of the ground rock is called tailings and consists of about ½ pyrite, and ½ dolomite, mica, quartz, and barite. 45% of the tailings can be returned to underground through a process called paste backfill. In the mining process, we use a method called 'drift and fill' in which at any given time miners will be mining from 18 or 20 'stopes' in the orebody. Once a stope is mined out, cemented tailings, called paste backfill, can be slurried in to fill the stope. After a few weeks, this material will have hardened enough to mine against, and the miners will return to mine out a slot adjacent to the hardened backfill. In this way, the copper deposit is incrementally mined out and replaced with tailings, leaving little void space in the mined area for uncontrolled groundwater flow after closure. This also ensures there can be no subsidence from collapse of open stopes near surface – they will be full of tailings to prevent collapse.

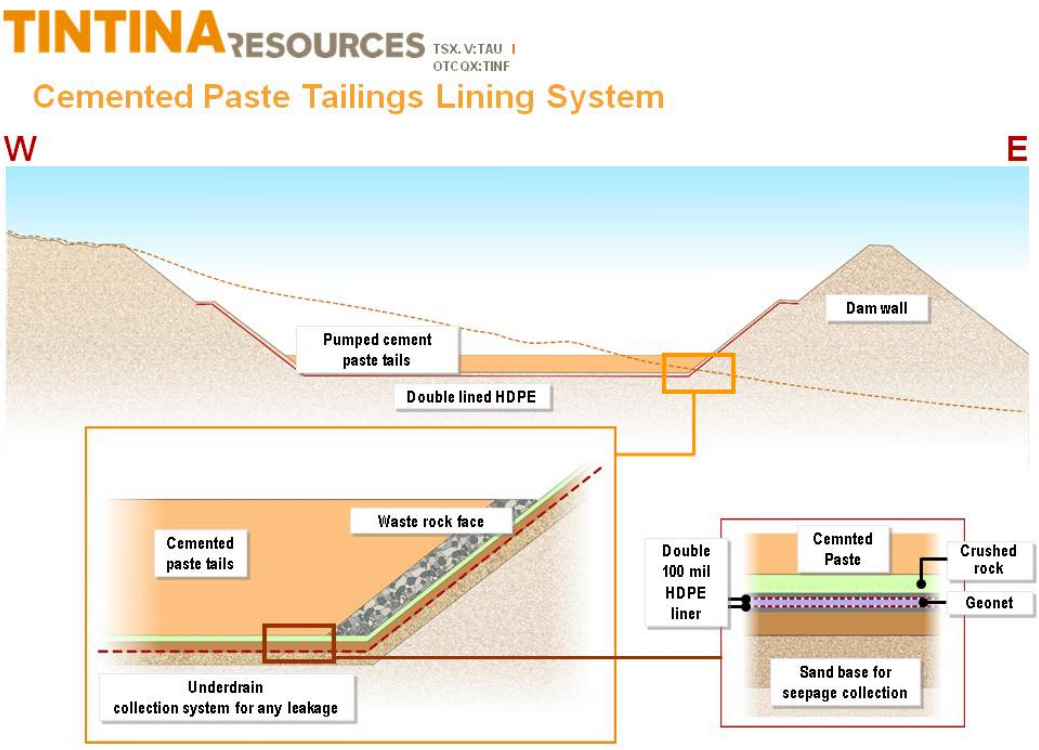
The remaining tailings must be managed on surface. After filtering to squeeze out most of the water, they will be placed in a double-lined tailings facility as non-flowable tailings, with a pump back system to ensure the small amount of water squeezed from them, and any precipitation on them, is pumped into a process water pond. Some groundwater pumped from the mine will supply most of the process water, and the remainder (over ½) will return to groundwater via a large buried drain field south of the mine portal in an area of high permeability soil and bedrock.

Although about half of the tailings will be placed back underground with cement, the remaining tailings must be managed on surface. After filtering to squeeze out most of the water, the surface tailings will will be placed with cement in a double-lined tailings facility as non-flowable tailings that set up as a solid. There will be a pump back system to ensure the small amount of water squeezed from the tailings, and any precipitation that might occur on them, is pumped into double-lined process water pond. As an added precaution a water runoff catchment pond is placed below the tailings dam to test any water below the facility to make sure it is working properly.



Cemented Tailings Facility Reclaim System

This is a side view of the cemented tailings facility. Cemented paste tails will be pumped into the facility which will have a 1-2 degree flow so that all water will settle out and drain into the gravel and rock. There will be a sump pump here which will be pump the excess water out of the facility to the process water pond.



This is a closer view of the double lined surface Cemented Tailings Facility (CTF). This shows the extent of the double lining and detail of the design. The facility can capture water above, between, and below the tailings in an underdrain system, and all capture water is pumped away to the process water pond and ultimately receives water treatment. The CTF is designed for a 1 in 10,000 yr. maximum earthquake event and a maximum storm event for the area of 22 inch (559 millimeters) precipitation on 11 inches (279 millimeters) of snow melt (1.25 years worth of precipitation for the area).