CASE STUDY

SOLMAX

TAILINGS STORAGE FACILITY CLOSURE, NEW SOUTH WALES

Effective fly ash slurry management in mine closure

Industry:	Mining
Application:	Tailings storage facility
Location:	Australia
Product:	**GEOTUBE®**

Overview

GEOTUBE® dewatering technology is a cost-effective method for removing water from industrial and mineral slurries and sludges. Its flexibility allows for custom solutions to address site-specific challenges and improve operational efficiency.

In this case, **GEOTUBE®** units were used to direct fly ash slurry over specific areas of a tailings storage facility (TSF) during its closure, as part of the closure cap system.

Challenge

The project faced several challenges. First, the slurry had to be assessed to determine if polymer dosing was necessary. Testing in the Geofabrics Gold Coast laboratory concluded that polymer dosing was unnecessary, and direct discharge from the spigots was feasible.

The GEOTUBE® units were filled directly from the spigots until reaching the predetermined maximum fill heights for the slurry type.

The second challenge was to determine the optimal type and size of tubes, considering how they would be deployed and pumped to create a bunding channel for directing the fly ash slurry.

Solution

The chosen solution involved using **GEOTUBE**® units with dimensions of 9.2 m circumference (30.2 ft) x 61.4 m length (201.8 ft) and 4.4 m circumference (14.4 ft) x 30.6 m length (100.4 ft). The tubes were arranged in a "V" shape, fanning out from the fly ash, to create the discharge bunding. A **MIRAFI**® Bidim non-woven geotextile and synthetic membrane were placed over the substrate, and the tube units were deployed over the membrane. Marker posts were positioned over the TSF to aid in aligning the tube deployment and visually indicating the depth of the fly ash slurry cover.

The **GEOTUBE**® units were filled directly from the spigots until reaching the predetermined maximum fill heights for the slurry type. They were then allowed to naturally dewater to the calculated consolidated height. Once firm, the fly ash slurry was released over the TSF.

This project demonstrates the versatility of **GEOTUBE**® dewatering technology in addressing mine operational challenges in a practical and cost-effective manner. **GEOTUBE**® units are available in various sizes, with the capacity to hold up to 3,000m³ (105,944 ft³) of dry solids and can be custom fabricated to meet specific site and operational requirements.