

## Case Study

# Increasing TSF Capacity Through Cover System Design

**Department of Industry NSW  
Conrad Mine, NSW, Australia**

### > Background

Okane was retained by the NSW Government to assist with a cover system design and remediation at the former Conrad Mine site (Conrad), New South Wales. The project scope included a site investigation and sampling campaign to identify contamination sources and assess potential rehabilitation materials. Deliverables included landform design for a mine waste storage facility, cover system design, and development of remediation activities for all domains of the derelict site.

### > Approach

The main objectives were to improve water quality generated from the site by reducing generation of Acid and Metalliferous Drainage (AMD) onsite, and to limit transport of sediments. Other objectives included providing stability and erosion protection to the landforms and identifying suitable materials for establishment of vegetation while minimising impacts on historical mine features.

### > Client Benefit

Okane recommended an enhanced store-and-release cover system incorporating a geosynthetic clay layer (GCL) as a low permeability layer. Use of a GCL reduced covers system thickness and in turn increased the capacity of the tailings storage facility (TSF). The additional capacity, combined with landform and surface water management improvements, allowed contaminated materials from other locations to be relocated to the TSF negating the need to construct multiple cover systems.

**“An optimized cover system leading to increased tailings storage facility (TSF) capacity.”**

**Integrated Mine Closure  
and Relinquishment Solutions**



(unknown). King Conrad Shaft Historical Feature. NSW Government

