



SGM Environmental

Creating enduring value

## SGME VALUES



## PROJECT CASE STUDY: Soil Inventory for a Mine Closure Strategy

**SGM Environmental Pty Limited (SGME) did a soil inventory review to support rehabilitation planning.**

**Site description:** The mine operation is located in an arid environment that receives less than 500 millimetres of annual rainfall mainly in the wet season. The episodic rainfall results in sparse ground cover. Available materials at the mine include soil, subsoil, waste rock and tailings.

**The problem:** The mine estimated 53,231 cubic metres (m<sup>3</sup>) of stockpiled soil; however, the closure strategy required 200,000 m<sup>3</sup>. The mine needed to identify additional growth medium to reduce reliance on the soil inventory.

**What SGME did:** The project involved reviewing soil and subsoil chemical and physical characterisation and evaluating suitability for use. A review of waste rock and tailings chemical and physical properties was also done to assess if it could be used as a growth medium.

The review identified two additional soil and subsoil borrow pits that could be developed to meet the soil inventory deficit and provide the mine with a positive soil inventory balance (redundancy) resulting in a factor of safety for the mine.

Making sure that there is enough soil available at closure to rehabilitate disturbed land to a safe, stable, sustainable and non-polluting landform is necessary for effective and successful rehabilitation. Soil inventory planning is important during mine operation. Appropriate changes made during the operational phase may prevent long-term issues and challenges associated with unstable and potentially polluting landforms.

