Case Study

A Cover Design Optimized for Haulage, Cost, and Revegetation

Mount Gibson Mining
Extension Hill, WA, Australia

> Background

Okane led a cover system trial program that quantified soil-plant-atmosphere interactions and cover system performance on sloped waste rock dump at Mount Gibson's Extension Hill Iron Ore Operation.

> Approach

Okane conducted the design, instrumentation, planting and monitoring of vegetated cover system trials to quantify the effect of cover system depth on a sloped (18°) waste rock dump over two years. The information was used to inform the most appropriate cover system depths for the site using physiological and morphological plant characteristics in conjunction with cover material physical properties. It also informed types of plant species from local provenance most likely to thrive.

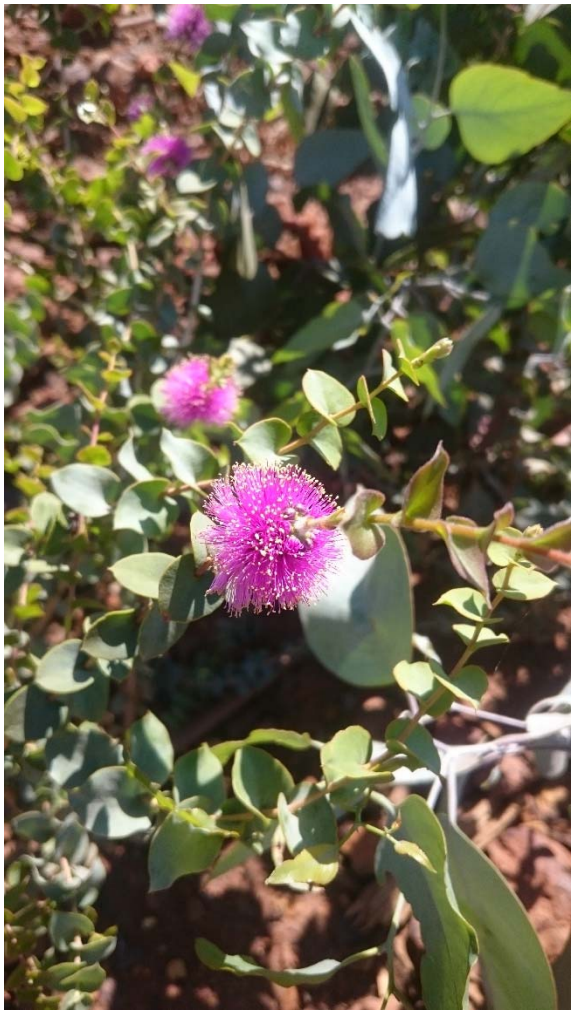
> Client Benefit

Results suggested an intermediate cover depth was sufficient to satisfy ecophysiological plant requirements for species typically growing on sandy and rocky soils from time zero to two years after planting. Confirmation of performance from a cover with intermediate cover thickness reduced the volume of material and associated haulage cost required to cover the waste rock dump. The trials also provided assurance that the selected plant species would establish a self-sustaining community.

> ***Haulage cost reduction and assurance of rehabilitation success through instrumented rehabilitation trials.***

Integrated Mine Closure and Relinquishment Solutions

okane 25 YEARS



(2016). Extension Hill. Sebastian Lamoureux.