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PROJECT CASE STUDY: Feasibility and Planning Approvals for the Construction and Operation of a Waste Rock Stockpile

SGM Environmental Pty Limited (SGME) has undertaken a feasibility study into different storage options for a waste rock stockpile and assisted with the planning approvals for its construction and operation

Site description: The mine is an underground zinc and lead operation located on the Cobar Peneplain; the area is primarily used for low intensity grazing. Most waste rock is used underground as backfill but may also be brought to the surface. Historically, when waste rock has been brought to the surface it is deposited into the tailings storage facility (TSF).

The problem: The company forecasted an increase in waste rock which would need to be stored on the ground surface as waste rock stockpiles. The waste rock stockpiles need to manage the risk of acid mine drainage (AMD) and the design must account for the final landform.

What SGME did: The project consisted of two parts: a feasibility study of the waste rock stockpile and planning and approval support.

The mining lease was reviewed to find suitable locations for the waste rock stockpile. However, most land was excluded based on one or more of the following: haulage distance, distance to growth medium stockpiles, insufficient space and degree of potential impacts. Further, the geochemistry suggested that most of the waste rock was expected to produce AMD. Therefore, the design of the waste rock stockpile considered segregation and handling options.

The surface of the TSF was chosen because it would not increase the potential for AMD. Further, the existing environmental controls were enough to manage the future AMD potential. Other benefits included: soil stripping not required, stable foundation, pits available for the management of runoff and seepage, already contaminated and low potential for groundwater contamination.

The approval process involved lodging a development application (DA) with the Cobar Shire Council, a mining operations plan (MOP) and statement of environmental effects (SEE).

