



SGMenvironmental

Creating enduring value

SGME VALUES

Honest



Trust



Innovation



Safety



Mine closure

A mine closure plan is dynamic and must reflect a level of detail appropriate to the life cycle stage of the mine. Closure plans will therefore evolve throughout the life of the mine and will include more detail as the mine nears closure. To maintain your social license and community acceptance, it is important that the information in the mine closure plan is accurate and relevant.

A mine closure plan is a public expression of your corporate standards and principles, and your ability to comply with regulatory guidelines. The closure plan will also provide a basis for estimating the cost of closure so that you can adequately provide for the eventual transition of your mine to a future sustainable land use. The closure plan will document your closure objectives and criteria that are the basis for assessing proposed closure options and identifying key performance indicators. These are the criteria by which the community and government will measure your success.

Applying leading practice and principles to your closure planning during the life cycle of the mine is key to demonstrating competency, and building trust with the community and government and building your social license.

At SGME we will work with you to develop a closure plan that considers all aspects of the environment, such as soil, water, air, and communities. We can guide you through national and state legislation which may need to be considered when closing your mine. We approach closure planning by using a risk-based strategy so that we are able to capture and consider all potential future risks and remove as many risks as possible through sound science and planning. For example, selective management and placement of mine waste to minimise the future risk of acid mine drainage. Not all risks can be removed by closure planning, for example human safety risks associated with voids. We will help you to understand what your residual risk will be after your mine closes. Finally, we will help you to understand your long-term post-closure care and maintenance requirements which will serve as a further demonstration of your responsibility for a social license.

KEY CONSIDERATIONS IN MINE CLOSURE

- 1. Mines must plan for closure from the earliest stages of project development**
- 2. Closure objectives must address legal requirements and commitments made to the community**
- 3. Closure planning must be integrated into operational activities where possible**
- 4. Closure planning must achieve the best possible use of land after the project is finished**
- 5. The project must be designed so that the full cost of closure can be met by the owner**

OUR APPROACH

At SGME we will advocate strongly for you and guide you through the process of closing your mine, from planning and decommissioning through to rehabilitation and transition to a sustainable future land use. We will help you to understand the unique risks that face your mine and provide you with innovative solutions that reduce your risk to acceptable levels while not compromising on government and community expectations.

Past projects

1

Isaac River Coal Project, progressive closure and rehabilitation plan, Qld (Coking Coal One Pty Ltd)

2

Lady Annie Mine, progressive rehabilitation and closure plan and estimated rehabilitation cost, Qld (Austral Resources)

3

Blair Athol Mine, conceptual mine closure plan and review of an encapsulated tailings storage facility and assessment against environmental authority conditions, Qld (Orion Mining)

4

Burton Mine, closure gap analysis, progressive rehabilitation and closure plan and estimated rehabilitation cost, Qld (Peabody)

5

Peabody Australia, development of a SIBERIA standard operating procedure to be used at all Peabody Mines in Australia, Qld (Peabody)

6

Century Mine, estimated rehabilitation cost and supporting information report, Qld (New Century Resources)

7

North Goonyella Coal Mine, estimated rehabilitation cost and progressive rehabilitation closure plan gap analysis, Qld (Peabody)

8

Willkie Creek Coal Mine, mine closure planning, closure risk assessment and third-party review of financial assurance, Qld (Peabody)

9

White Dam Gold Mine, mine completion planning and risk assessment and cover column trials, SA (Round Oak Minerals)

10

Cow Flats Legacy Mine, site investigation, remediation action plan and cost estimate and review of environmental factors, NSW (Legacy Mines Program)

11

Balranald Mineral Sand Project, mine operation plan, mine closure and rehabilitation plan and rehabilitation cost estimate, NSW (Iluka)

12

Glen Davis Legacy Mine, site investigation to determine source, pathways and a remediation action plan and cost estimate, NSW (Legacy Mines Program)

13

Carmichael Coal Project, rehabilitation management plans for mine, railway, off-site infrastructure and quarries, Qld (Adani Mining Pty Ltd)

14

Dugald River Mine, progressive rehabilitation and closure plan, estimated rehabilitation cost and cover column trials (MMG)

15

CSA Mine, mine closure plan and tailings storage facility rehabilitation review and gap analysis

Working with SGME

We are highly experienced and leaders in the fields of soil science, geochemistry and mine closure. At SGME we support you to achieve your objectives in ways that contribute to a sustainable outcome:

- Our director and technical leaders are 'on the tools'. We will not waiver from this commitment as it is critical to your successes
- We have a practical, solution focussed work ethic
- We are cost-effective, without the overheads of larger competitors
- A high level of responsiveness, enabling us to mobilise at short notice



Dr Timothy Rohde

Timothy is a certified professional soil scientist (CPSS), a practicing engineer in Queensland (RPEQ) and a mine closure specialist (MAusIMM(CP)). He has been a consultant for 18 years and has worked extensively throughout Australia in coal and metalliferous

mining and has published over 25 papers on soil science, geochemistry and mine closure.

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Justin Vohland — Mackay office

Justin is an environmental scientist and mining professional specialising in project management, mine closure and rehabilitation. He has actively managed closure and rehabilitation activities for over 10 years in the Bowen Basin and now provides consulting services from SGME's Mackay office.

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