

INDUSTRY EXPERIENCE

PROJECT

Enhancing local flora and fauna, creating a sustainable future

SECTOR

Environmental Mgmt., Planning & Approvals

COMMODITY

Cu

LOCATION



ISO

9001:2015 | 14001:2015 | 45001:2018





SGME was engaged to ensure environmental authority (EA) compliance and to gain approval for an additional mine under the existing EA.

Site description

The mine is located 60 kilometres north-west of Mount Isa, Queensland. It focuses on exploration and discovering oxide copper deposits that can be treated by heap leach and solvent extraction at an existing processing facility.

The problem

The mine faces considerable environmental and regulatory challenges that necessitate meticulous planning and stakeholder collaboration to ensure compliance, minimize negative impacts, and guarantee long-term sustainability. Mining activities can significantly disrupt local habitats, leading to biodiversity loss, ecosystem fragmentation, and specific species impacts. Such disturbances can cause notable reductions in local flora and fauna, particularly affecting species sensitive to environmental changes.

Creek diversion is a critical issue, as it can significantly alter local ecosystems. When creek diversion is necessary to separate mine-affected water from the surrounding environment, obtaining the required approvals can be complex and challenging. Previous applications for creek diversion faced difficulties meeting regulatory standards, complicating the approval process and highlighting the need for stringent compliance and detailed planning.

Effective surface water management is crucial to prevent contamination and ensure proper water flow. Failure to manage mine-affected water properly can lead to severe environmental damage, impacting downstream water quality, the environment, and local communities, and potentially resulting in regulatory non-compliance. Additionally, the mine's overlap with land used for cattle grazing introduces potential land-use conflicts, requiring careful management to balance both activities sustainably. The revised mine layout calls for updated erosion and sediment control plans, necessitating comprehensive environmental planning and the development of effective control measures.

SGME solution

SGME's experienced scientists and engineers were engaged to implement a multi-faceted strategy and robust approach to complex environmental and regulatory challenges. This comprehensive solution encompassed an assessment of matters of state environmental significance (MSES) and offsets, groundwater and surface water management, EA amendments, updating the water management plan, habitat and biodiversity management, and environmental planning.

Assessment of MSES and offsets - SGME conducted a thorough and in-depth evaluation of the mine's environmental impacts to identify areas of state environmental significance. We identified and proposed potential offsets under the Environmental Offsets Act 2014 to mitigate the identified impacts and ensure compliance with environmental standards and regulations.

Groundwater and surface water management - Thorough assessments of groundwater and surface water were conducted, and the groundwater monitoring program was updated to reflect best practices and regulatory requirements.



The consequence category assessment for regulated structures was evaluated to determine their revised consequence categories, ensuring appropriate risk management. The surface water impact assessment was analysed to understand potential impacts on surface water systems, and findings were incorporated into the overall environmental management plan to minimise negative effects on water quality and ecosystem health.

Environmental authority amendments - SGME developed comprehensive draft conditions for the EA amendment including detailed mapping, and worked closely with regulatory bodies to ensure all environmental concerns were addressed. Preparation of the EA amendment supporting information report involved providing a thorough rationale for the proposed amendments and detailed information to facilitate government approval.

Water management plan update - The water management plan underwent comprehensive updates to ensure it followed best practices and regulatory requirements for managing surface water and groundwater resources. Best practices and compliance knowledge were applied to ensure the updated plan effectively managed water resources and mitigated potential environmental impacts.

Habitat and biodiversity management - Biodiversity conservation strategies were developed to mitigate biodiversity loss and ecosystem fragmentation caused by mining. We also recommended that potentially acid-forming materials be managed through segregation and encapsulation techniques to reduce the risk of environmental contamination.

Environmental planning - Our team of experts developed a comprehensive plan for the creek diversion that addressed ecological concerns and ensured regulatory compliance. We implemented measures to maintain ecological integrity of the creek and surrounding habitats, thereby mitigating long-term impacts on local flora and fauna. Revised erosion and sediment control plans were recommended to align with the revised mine layout and to ensure effective management of soil and water resources.

Throughout these phases, SGME's multi-disciplined team worked in close collaboration with local stakeholders, including communities and government agencies, to address concerns and ensure transparent communication. By implementing these comprehensive measures, we ensured that the mine met its environmental obligations, minimised its impact on the surrounding environment and maintained regulatory compliance. This holistic approach supported sustainable mining practices and fostered positive relationships with stakeholders and regulatory bodies.

SGME consistently demonstrates exemplary proficiency in preparing environmental approval, management and planning documents for the mining industry, showcasing meticulous attention to detail, comprehensive data analysis, and a steadfast commitment to regulatory compliance. Our ability to succinctly encapsulate complex environmental processes into clear and compelling reports drives transparency and underscores our unwavering dedication to environmental stewardship and sustainable land management practices.