

CASE STUDY

PROJECT

Quarry environmental compliance, sediment control and final land use

SECTOR

Quarry Closure

COMMODITY

Gravel, sand

LOCATION



ISO

9001:2015 | 14001:2015 | 45001:2018





SGME conducted an environmental compliance review at a quarry that assessed erosion and sediment control strategies. We provided immediate action recommendations, soil and water sampling, and proposed design strategies for improved environmental management.

Site description

The quarry is located next to a village near Byron Bay in New South Wales. It primarily extracts raw materials such as sand, gravel and crushed stone for use in construction, road building and other civil engineering projects.

The problem

Erosion and sediment controls are vital to ensure future sustainable growth and environmental preservation. The quarry had inadequate erosion and sediment control measures in its east and west pits, and had issues related to groundwater monitoring and discharge water quality. Immediate action was needed to address deficiencies, comply with environmental regulations and restore basin capacity to prevent environmental harm in accordance with regulatory requirements.

A second phase of the project required SGME to consider a landform for the quarry that could be transformed into a residential subdevelopment.

SGME solution

SGME conducted an in-depth review and assessment of the east and west pits, groundwater monitoring, discharge water quality, and erosion and sediment control measures. We collected soil and water samples, conducted ground-truthing exercises and proposed design strategies for improved erosion and sediment control. This is an indispensable practice that we apply at SGME for environmental management and land development across a large variety of projects. Through the recommended control measures including daily water sampling, groundwater level monitoring and lowering water levels in sediment basins, SGME promoted sustainable development and safeguarded the resilience of infrastructure. SGME's comprehensive approach aimed to meet regulatory requirements and mitigate environmental impacts at the quarry.

Our comprehensive approach and conceptual landform solution for the proposed subdevelopment was well-received by our client. A logical framework and systematic approach were used to complete a detailed site assessment followed by a conceptual design plan. The conceptual design plan focused on erosion control, environmental considerations and ongoing monitoring to ensure the integrity, functionality and sustainability of the landform in order to meet project objectives while minimising potential environmental impacts.

SGME adds value to quarry rehabilitation through expertise in environmental engineering and sustainable land management. We conduct thorough site assessments to understand ecological needs and regulatory requirements. Our solutions include innovative cover design, landform design, erosion control measures and revegetation strategies that enhance biodiversity and minimise potential environmental impacts. We also bring expertise for ongoing monitoring and adaptive management plans to ensure long-term sustainability and compliance with regulatory standards, providing enduring value to quarry rehabilitation projects.