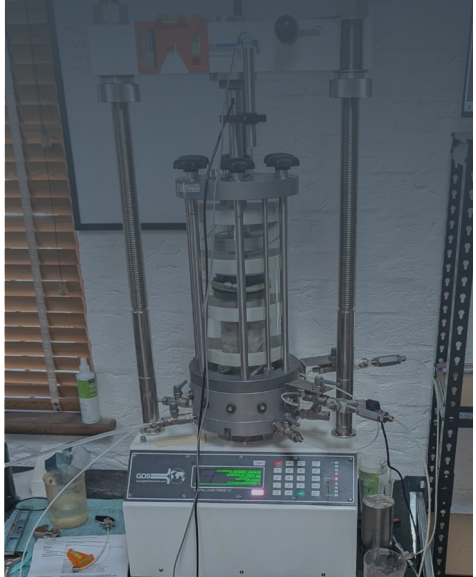
Geosyntec consultants

red earth engineering
A Geosyntec Company

MINING
CAPABILITY STATEMENT

Geosyntec
iREELab

The REELab offers advanced geotechnical testing and consulting services, specialising in tailings and foundation soil characterisation for safer, more robust engineering solutions. Under the leadership of Dr. David Reid, we offer a range of industry-leading services such as monotonic and cyclic triaxial tests, direct simple shear, constant rate of strain, and slurry consolidometer testing. Our services provide robust support for our consulting projects and the wider tailings sector.



Company Overview

Red Earth Engineering (REE), a Geosyntec Company, provides engineering and consulting services informed by a deep understanding of the mining industry, including its market drivers, government regulations, need for technological innovation, and importance of environmental and social risk management in demonstrating responsibile operations.

With a combined staff exceeding 2,800 engineers, scientists, and related technical and project support personnel, we serve our clients from more than 130 offices in Australia, the United Kingdom, Ireland, Sweden, Finland, Spain, the United Arab Emirates, Canada, and the United States.

We collaborate with leading companies to deliver cost-effective engineering solutions by understanding projects from start to finish. As the Engineer of Record for 18 sites across Australia, REE applies innovative and practical solutions to every project. We address client- and site-specific challenges, fuel business success, and build socially responsible and sustainable operations with closure in mind.

REE is a leading engineering consultancy with a reputation built on understanding and exceeding clients' expectations. We provide tailored solutions and high-level strategic advice to support critical decisions throughout a mine's life cycle.

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redearthengineering.com.au

Areas of Expertise

Our mining team includes experts in tailings, geotechnics, mining engineering, hydrogeologic modelling, water management, geochemistry, environmental services, auditing, and information management. We build long-term, respectful relationships with clients and stakeholders by offering region-specific services informed by the cutting-edge work of our colleagues and projects around the world.

Geotechnical Engineering

- Planning and scoping studies
- Investigation supervision
- Parameter verification
- Design and analysis
- Risk and optimisation studies

Civil Engineering

- Earthworks
- Hydrology and flood analysis
- Stormwater management and drainage design
- Water balance (using GoldSim)
- Hydraulic structures (spillways, culverts, levees, sediment basins)
- Road, pavement, and hardstand design
- Water management plans and erosion and sediment control plans

Geosynthetic Engineering

- Geomembrane liner selection and design
- Geocomposite drainage systems
- Leak detection and collection systems
- Geostructures (bladder tanks/floating covers)
- Independent liner integrity testing
- Soil improvement using geogrids and geotextiles

Tailings and Water Dams

- Dam design
- Closure design and planning
- Risk reviews
- Dam break analysis
- Consequence category assessment
- Tailings characterisation
- Tailings deposition modelling
- Operational plans
- Constructability reviews

Peer Review/Subject Matter Experts

- Design development
- Internal and external approvals
- Interaction with operations
- Contracting and procurement strategy
- Execution planning
- Due diligence
- Risk assessment

Construction Support and Quality Assurance

- Inspections
- Material testing and acceptance criteria
- Construction verification and certification
- Claims management and dispute resolution
- Value engineering
- Temporary structures
- Quality assurance management
- Auditing of external soil laboratories
- Technical due diligence
- Financial modelling

Mine Exploration

- Geological mapping
- Geophysical surveys
- Geochemical sampling
- Exploration, sampling, and assaying
- Mineral resource estimation
- Technical reporting (JORC, NI43-101, S-K 1300)
- Critical mineral and rare earth element

Water Management

- Hydrology and geohydrology
- Mine water treatment
- Mine waste characterization and geochemistry
- Water quality evaluation, analysis, and management
- Groundwater impacts evaluation and remediation
- Compliance and permitting

Closure and Reclamation

- Closure plans
- Integrated closure planning
- Geomorphology and landform design
- Mine water and mine waste management
- Baseline characterization
- Reclamation planning
- Environmental auditing

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