



**SENTINEL**  
EXPLORATION & RESOURCE MANAGEMENT

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SERVICE SUMMARY



# SENTINEL

EXPLORATION & RESOURCE MANAGEMENT

***"Sentinel Exploration & Resource Management is able to de-risk Coal and CSG exploration projects through our continual sourcing and implementation of world's best practice, providing our clients with an effective solution to the risks and challenges of any exploration program"***







## **Sentinel Exploration & Resource Management Pty Ltd [Sentinel]**

is a multi-disciplinary service company covering all aspects of Exploration and Tenement Management. Based in Brisbane, Queensland, we provide services to clients across the whole of Australia and internationally. Our range of services includes Project Management, Exploration Drilling, Geological Consulting, as well as Coal and Gas laboratory testing facilities.

### **EXPLORATION PROJECT MANAGEMENT**

From project inception through to completion, we provide the necessary personnel, expertise and experience to plan, implement and finalise your Exploration Project. Sentinel works closely with you to ensure the successful completion of your exploration phase, giving you the foundation to develop your resource.

#### ***Services include:***

-  ***Definition of Project Objectives***
-  ***Budgeting and Cost Control***
-  ***Stakeholder Liaison***
-  ***Logistics and Procurement***
-  ***Safety Compliance and Management***
-  ***Operational Management and Reporting***



## GEOLOGICAL CONSULTING

Sentinel is one of Australia's leading Geological consultancies, providing a range of Coal and CSG focused Geological Services to customers ranging from many 'Blue Chip' mining companies, to smaller private and public clients. Sentinel offers a fully trained suite of geologists with a range of experience from recent graduate level to over 15 years in coal geology.

*Services include:*

- 🔧 *Geological Assessment and Planning*
- 🔧 *Field Data Acquisition*
- 🔧 *Drill Rig Supervision*
- 🔧 *Data Validation and Management*
- 🔧 *Resource Assessment and Modelling*

## DRILLING SERVICES

As our Drilling Service is aimed toward Coal and CSG exploration, we are specifically set up to drill open holes and core holes of all required sizes.

*We have the necessary tooling and drill pipe to offer the following:*

- 🔧 *Pre-collaring and casing (PVC and Steel)*
- 🔧 *Open (chip) holes to 800m*
- 🔧 *4C (100mm) conventional core to 400m*
- 🔧 *HQ diamond core to 1000m*
- 🔧 *Grouting of borehole*
- 🔧 *Site rehabilitation*

## COAL & GAS LABORATORY TESTING

Our Laboratory Company - International Resource Laboratories, (IRL) conducts, analyses and reports results for coal and gas testing needs in the Coal and CSG industries. The lab provides high quality and cost effective solutions for coal and gas evaluation. Analytical works are performed in accordance with Australian and International Standards. The Lab is ISO 9001 accredited and is in the process of completing NATA accreditation.

*Laboratory services:*

- 🔧 *Fugitive Gas Emissions and reporting*
  - 🔧 *Coal Quality testing*
  - 🔧 *4" & HQ size – Gas Desorption testing*
  - 🔧 *In-Situ Gas Content (Q1 Q2 Q3)*
  - 🔧 *Gas Composition*
  - 🔧 *Sample preparation*
  - 🔧 *Environmental and Civil testing*
- (request our detailed Laboratory brochure for more information)*

## EARTHMOVING

Sentinel is a provider of all facets of Exploration Earthmoving Logistics. In partnership with our preferred contractors, our earthmoving and logistics division offers effective solutions for all earthmoving projects.

*Our expertise lies in the following fields:*

- 🔧 *Drill site access tracks*
- 🔧 *Drill site pads*
- 🔧 *Sumps and pits*
- 🔧 *Exploration Site Rehabilitation*

## REMOTE CAMPS

Sentinel Camp Services Division operates throughout Australia, providing a complete Accommodation and Catering Package (and logistical support where required) which is suitable for any field operation, whether it be Mining/Exploration or Civil/Construction. We cater for various styles of camps, from small exploration-style camps to larger and more permanent camps. Our Camp Services Division is experienced and capable of delivering a professional quality service for varied scopes of work.

*Our strengths lie in the following areas:*

- 🛠 *Planning and establishment*
- 🛠 *Camp Operation & Logistics*
- 🛠 *Catering*
- 🛠 *Cleaning & Maintenance*

**Phone:** 07 3254 8114 **Fax:** 07 3254 8116

**Email:** [info@sentinel-erm.com.au](mailto:info@sentinel-erm.com.au)

18 Holland Street NORTHGATE, Qld 4013  
PO Box 83, CHERMSIDE SOUTH, QLD 4032.

[www.sentinel-erm.com.au](http://www.sentinel-erm.com.au)





## CAPABILITIES

### Exploration Project Management

- » Tenement Negotiations (competing lease holders)
- » Cultural Heritage negotiations and clearances
- » Landholder negotiations and agreements
- » Exploration planning
  - Geological
  - Logistical
  - Financial
  - Contractual
  - Authorisations
- » Reporting
- » Budgeting and cost control

### Geological

- » Safety Management (SSE, SMP development, Audits)
- » Drilling rig/ Contractor safety supervision
- » Open/chip hole logging
- » Core logging (e.g. HQ, PQ, HMLC, 4C, 6C, 8C logging)
- » Coal ply sampling for coal quality testing
- » Geotechnical logging and interpretation (open cut and underground)
- » Geotechnical sampling
- » Geotechnical testing (field point load test)
- » Line of oxidation (LOX) testing and logging
- » Gas desorption (Q1) testing. Q2 & Q3 completed at the SENTINEL Laboratory, Brisbane
- » Data entry, geophysical correction, validation, composite plotting
- » Database management
- » Construction of Exploration plans and resource models from previous reports and data
- » Water sampling, Piezometric hole development
- » Geophysical data interpretation/seam picking/ corrections and interpretation
- » Toolbox meetings, risk assessments, safety management
- » Liaison between Client's Management, Landholders, and Traditional owners
- » GPS navigation and site/access location & pegging
- » Exploration report collation and writing

### Drilling

- » HQ wireline
- » 4" (100mm)
- » Chip holes
- » Grouting
- » PVC and steel casing
- » Coal coring
- » LOX holes
- » Geotechnical drilling (mining)
- » Water bores
- » Piezo holes
- » Greenfield (remote site) equipped
- » Mine-site compliant

### Coal & Gas Laboratory

- » Proximate analysis
- » Moisture %
- » Calorific value
- » Ultimate analysis
- » Phosphorous
- » Ash analysis
- » Coke Type & Swelling Index (CSN)
- » Specific gravity
- » Chlorine content
- » In-Situ Gas Content (Q1 Q2 Q3)
- » Fugitive gas emission testing (FGE)
- » Gas composition

### Civil and Environmental laboratory

- » Acid Sulphate Soils
- » TDS (Total Dissolved Solids)
- » TSS (Total Suspended Solids)
- » Alkalinity/Total Acidity
- » NAF/PAF
- » Salinity
- » pH
- » Conductivity and Resistivity
- » Chloride, Bromide, Fluoride
- » Sulphates and Sulphides

### Earthmoving

- » Advice and design
- » Low impact tracks and pads
- » Weather-proofing of roads and pads
- » Coal and CSG drill rig pad design and construction
- » Road and track maintenance
- » Water trucks for dust control
- » Water carting
- » Gravel and road base carting
- » Basic quarrying for road materials
- » Waste water removal

### Remote Camps

- » Cleaning
- » Catering
- » Safety
- » Design
- » Logistics
- » Management



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