









xenith
know the way

We service the industry sectors required for global growth

-  Mine Planning
-  Specialist Design
-  Geological Services
-  Studies and Assessments
-  Governance Reporting
-  Mine Closure

Minerals and Metals

Our multi-disciplinary technical teams deliver a premium integrated service to our clients offering a full suite of minerals and metals sector services. We have extensive experience in all aspects of open cut and underground operations and studies across multiple commodities operating jurisdictions and environments.

Through our technical and on-the-ground expertise our services enhance operational performance for our clients. Our expertise across all areas of mining engineering, geology, caving, ventilation and drill and blast, supported by our specialist partners in process engineering and geotechnical allow us to create value throughout all phases of the asset lifecycle.



Building on Xenith's Expertise

We leverage the depth and breadth of Xenith's technical core to deliver the best solution to our client's complex problems.

-  Technical Mining Consulting
-  Exploration & Generative Studies
-  Due Diligence
-  Advisory
(Operational/Technical/Corporate)
-  Land Access and Cultural Heritage
-  Environment and Approvals
-  ESG Solutions

Xenith have expertise to assist your project in:

Studies and Assessments

- Project studies (scoping/ concept, PFS, FS, BFS)
- Due diligence & financial modelling
- Independent expert reports
- Operational & cost improvement reviews
- Risk assessment
- Project & strategic optimisation

Specialist Design

- Underground caving
- Ventilation
- Water management and system design
- Drainage
- Underground stoping
- Underground Drill and blast design
- Geometallurgical modelling

Governance Reporting

- Reporting of Resource and Reserves in accordance with JORC and NI43-101
- VALMIN code valuations
- NGRS reporting
- Tenement Management and Reporting

Geological Services

- Geological modelling and Resources estimation
- Mine geology
- Geostatistics
- Exploration planning and support

Mine Closure

- Closure, rehabilitation and final landform planning
- Rehabilitation material balance and equipment calculation

Mine Planning

- Mining method design and optimisation
- Equipment selection and benchmark modelling
- Short term planning
- Site support

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Our Expertise

Any commodity. Any jurisdiction. Any time.

Technical Design - Ventilation

Evolution – Ernest Henry Mine

Xenith assisted Evolution with ventilation design and the assessment of diesel emissions for the Ernest Henry underground mine, which included:

- » A review of the current risk management practices at site relating to diesel emissions, considering legislation and best practice.
- » The calculation of diluting ventilation quantities required to maintain contaminant concentrations within occupational exposure limits.
- » Diesel emissions ventilation modelling using the mines OEM fleet specifications.
- » Recommendations related to future equipment and best practice control selection, to manage risk from diesel emissions.

Exploration Development

Huntore Australia – Mt Garnet Tin

Xenith provided the following long term site support to Huntore Australia at its Mt Garnet Tin projects:

- » Resource planning, scheduling and onsite exploration support for two phases of diamond drill activities at the Dalcouth and Gillian prospects.
- » Provision of personnel to assist Huntore with daily operational geology services during site drilling campaigns.
- » Implementation of best practice core processing and logging procedures.
- » Following the successful drilling campaign at Dalcouth, Xenith updated the geology model and JORC Mineral Resource Estimate.
- » Xenith have become a trusted partner and advisor to Huntore in exploration program planning, strategy and execution across various commodities in North Queensland.

Concept & Feasibility Study

Winchelsea Island Manganese Project

Xenith provided support to the Anindilyakwa Advancement Aboriginal Corporation for their Winchelsea Island Manganese Project.

The key solutions delivered were:

- » Exploration support and a JORC Resource and Ore Reserve estimate.
- » A robust mine plan, LOM Schedule and processing solution.
- » Design of the required surface infrastructure accommodating the logistics of the project.
- » An economic analysis of the project to identify critical sensitivities and support an investment decision.
- » Development of capital and operating cost estimates.
- » Forecast annual and cumulative revenue.
- » A significant risk assessment with a diverse group of over 20 people was undertaken to identify and mitigate project risks.

Specialist Design & Optimisation

BHP – Nickel West

Xenith provided onsite support and a strategic review of BHP's Nickel West mine design and scheduling services.

Key services included:

- » Review of the block cave designs and schedule, including the block cave management plan with onsite technical support.
- » Preliminary infrastructure design.
- » Strategic review of the life of mine plans for current sublevel caving and open stoping mines.
- » Scenario testing of differing schedule inputs to provide key optionality to BHP for determination of the optimum mining scenario.
- » Optimisation of the sublevel cave mine ventilation strategy and review of existing diesel emissions and heat modelling.
- » Life of mine optimisation, designs and schedules for two underground Longhole Open Stopping (LHOS) projects.

