

CAPABILITY STATEMENT

Mine Geotechnics (WA) Pty Ltd

A.B.N. 21 079 844 465

59 The Crest, Woodvale, WA 6026

Telephone 08 9309 4963

Fax 08 9309 4848

Email tgheslop@optusnet.com.au

Geotechnical Consultant for Open Pit and Underground Mines

PRINCIPAL Glen Heslop **BSc(Hons) MSc (Eng) MIMM, FAustIMM, FSAIMM, SME**

Commitment Committed to the best interests of the client and project
Careful and thorough analysis followed by open discussion of options
Sound technical guidance, proactive and on-going support for mine staff

Reporting: Prompt
Tailored to suit client's needs
Concise and clear with all pertinent details provided

Geotechnical Capability - Open Pits

OPEN PIT OPERATIONS AND OPEN-PIT – UNDERGROUND INTERACTION	
Structural mapping and analysis Slope stability analysis Slope support design Barrier pillar design and stability analyses	Drill and blast design Blast vibration analyses Dilution estimation

Geotechnical Capability - Underground Mines

OPEN STOPING OPERATIONS AND CUT AND FILL MINING OPERATIONS	
Structural mapping and analysis Stope stability and support Design for high stress environments Mining method selection	Mine design criteria Drill and blast design Dilution estimation
CAVING AND SUBLEVEL CAVING OPERATIONS	
Structural mapping and analysis Assessment of undercut area required Undercut and drawpoint development support Undercutting sequence selection	Draw control, ore recovery and dilution estimation Fragmentation analyses Productivity analysis
DECLINES AND SHAFT SINKING OPERATIONS	
Ground characterisation Boreability / Drillability assessment	Stability assessment Support design
STRESS MODELLING AND ANALYSES	
Stress analyses using two and three dimensional boundary and finite element modelling techniques	

General Capability - Open Pits and Underground Mines

MINE PLANNING AND DESIGN, SCOPING, PREFEASIBILITY AND FEASIBILITY STUDIES	
Geotechnical analysis In-pit crushing and conveying Production scheduling	Cost estimating Mine planning and Scheduling

Experience

Over 40 Mines and Projects in Australia, Africa, SE Asia and CIS

MAJOR CLIENTS AND PRINCIPALS INCLUDE:		
WMC Resources Newcrest Mining Ltd Normandy Mining Homestake	Minproc Engineers Rothschild Australia	Steffen Roberston & Kirsten Jack Barrett & Partners Knight Piesold Snowden Mining Consultants

**Professionally Insured :
Accountants:**

**Public Liability, Professional Indemnity, Workers Compensation
Elphick O'Sullivan 61 Hampden Rd Nedlands WA 6009**

Mine Geotechnics (WA) Pty Ltd was established in 1997 as a vehicle for managing the consultancy services of Glen Heslop and associates or subconsultants. The company is registered for GST and carries professional insurances.

Glen Heslop has 35 years experience in practical geotechnical investigation and analysis for the design and operation of both open pit and underground mines.

His consulting work has involved a substantial amount of geotechnical consulting and technical audits for operating open pit mines and underground mines. The underground mines include block caving, sublevel caving, long-hole (or bench) open stoping and cut and fill methods. He has participated many major mine feasibility studies for potential mines, and was the consultant in the development of the Elimination of Fatalities Slope Stability Standard for WMC Resources.

While specialising in the geotechnical side, he also has capability in risk assessment and management, mine design, mining cost estimation and financial modelling.

Glen started his career in mining geology, geotechnical engineering and mine planning in Swaziland and Rhodesia (later Zimbabwe) where he worked on the Havelock, Shabanie and Gaths Mines. He came to Australia in 1983 and since then he has worked as a consultant for a number of major consulting engineering companies and a large mining company as a consultant geotechnical engineer.

His investigations into block caving and in particular the development of the interactive draw theory for block caving has led to significant advances in the block caving mining method. The principles developed from this research today form the basis for the design of all major block caving mines in the world.

He played a significant role in the development of the Mining Rock Mass Rating (MRMR) classification system developed at Shabanie Mine by a team comprising Laubscher, Heslop, Taylor and others and published by Laubscher and Taylor 1976. This system has now gained worldwide acceptance.

QUALIFICATIONS

BSc University of Natal, Durban, South Africa.

BSc (Hons) University of the Witwatersrand, Johannesburg, South Africa.

MSc Mining Engineering, University of the Witwatersrand, Johannesburg, South Africa.

AFFILIATIONS

Institution of Mining and Metallurgy (London)

Australasian Institute of Mining and Metallurgy

South African Institute of Mining and Metallurgy

Society for Mining, Metallurgy and Exploration

Australian Geomechanics Society

International Society for Rock Mechanics

International Association of Engineering Geologists

Mine Geotechnics (WA) Pty Ltd

A.B.N. 21 079 844 465

**Geotechnical and mining consultants for
Open Pit and Underground Mines**

59 The Crest, Woodvale, WA 6026

Telephone 08 9309 4963

Fax 08 9309 4848

Email tgheslop@optusnet.com.au