

Middindi Consulting provides
Rock Engineering, Geotechnical and Geological
services to the mining and minerals industry.

"The local and international Geotechnical Engineering consultants
of choice, driven by Integrity and dedicated to excellence."



ROOTED IN TRADITION WITH A VISION FOR EXCELLENCE

Middindi Consulting (Pty) Ltd was established in 2003 by the complete merging of MIDD Consulting (Pty) Ltd and IndiRoc Consulting CC. The company is led by its Managing Director and Principal Geotechnical Engineer, Trevor Rangasamy. Trevor is a well-respected and renowned expert with more than thirty years of experience in the industry.

The core business of the company is the provision of Rock Engineering, Geotechnical and Geological services to the mining and minerals industry. Middindi Consulting specialises in the quantitative investigations of rock behaviour and support performance. The services delivered are supplemented by experience, numerical modelling, open pit investigations and underground investigations. Middindi provides practical and sustainable solutions to Rock Engineering problems.

COMPREHENSIVE KNOWLEDGEBASE, NON-EXHAUSTIVE EXPERIENCE

Middindi Consulting started as a small company with only two employees on the books. The company currently employs nineteen professionals, fifteen of which comprise the technical divisions. Middindi's appropriately qualified and experienced personnel use a quantitative approach to base recommendations on observations and measurements rather than solely on experience or numerical modelling.

The team has collectively been involved in production rock engineering, research and development, instrumentation and monitoring, geotechnical engineering, seismology, geology, due diligence, and auditing for more than 60 years.

HANDS-ON SUPPORT, DEDICATED TEAMS

Middindi's team of engineers and geoscientists provide integrated rock engineering services for all stages of projects, ranging from the initial investigations through to design and implementation. Stability and stress analyses are conducted using state-of-the-art numerical techniques, where appropriate.

The company uses its wealth of experience and technical knowledge to service the total spectrum of ore bodies in South Africa. Beyond the borders of South Africa, the team has concluded projects in Ethiopia, Ghana, Turkey, Zambia, Democratic Republic of Congo, Botswana, Russia, Canada, Chile, India, Ireland, Mali, Mozambique, Namibia, Saudi Arabia, Scotland, Sierra Leone, Spain, Tajikistan, Tanzania, Ukraine and Zimbabwe.



EXTENSIVE SERVICES, FAR-REACHING METHODOLOGY

Middindi's team of engineers and geoscientists provide integrated rock engineering services for all stages of projects from the initial investigation through to design and construction. Stability and stress analyses are carried out using state-of-the-art numerical techniques where appropriate. The company uses its wealth of experience and technical knowledge to service the total spectrum of ore bodies in South Africa.

Within South Africa, the team has conducted projects in Barbeton, Brits, Burgersfort, Carletonville, Delmas, Evander, Gravelotte, Groblersdal, Johannesburg, Kimberly, Kriel, Kuruman, Loxton, Lydenburg, Machachadorp, Mafikeng, Messina, Middelburg, Northam, Ogies, Orkney, Phalaborwa, Pilansberg, Polokwane, Postmansburg, Pretoria, Rustenburg, Secunda, Swartruggens, Thabazimbi, Upington, Vereeniging, Vhembe, Volksrust, Welkom, White River, and Witbank.

Outside of South Africa the team has concluded projects in Europe, North America, Asia and Oceania.

The team's exposure to different styles of orebodies and mining methods is extensive.



VAST EXPERIENCE, EXTENSIVE KNOWLEDGE

Middindi Consulting offers a multitude of services that complement one another and assure clients of comprehensive solutions which are the edge of market developments and suited to their unique requirements.

EFFORTLESS MINING EXPERIENCE

Middindi consulting is an independent consultant and specialist service provider offering rock engineering, geotechnical and geological services to the mining and mineral industry. The company was founded based on empowering previously disadvantaged South Africans and advancing transformation in the mining industry and this remains a core part of our mission to this day.



We are a team of highly skilled professionals with extensive experience across a broad range of mining environments that include; deep level gold mining, coal mining, and copper mining in South Africa. Our depth of experience allows not only to take on highly technical projects but to deliver on large projects seamlessly and with effortless expertise.

We offer a set of practical services across the spectrum of geotechnical services and because of our experience in different mining environments, we are able to develop solutions to better assist our other clients. We provide legal compliance for all the solutions we deliver as standard.

As part of our commitment to delivering solutions and services at the highest possible standards, and to the latest specifications and market developments, Middindi Consulting is a member of several leading organisations. These all require significant investment into quality, training, expertise and deliverables and further assure our clients of our qualifications and capabilities.

Currently, we have active memberships with the following organisations: SANIRE, SAIMM, SOMP, SACNASP, ISRM.

MEET OUR MANAGING DIRECTOR TREVOR RANGASAMY



Trevor started his career working for mining houses then made the transition to consulting. He serves as MD of Middindi Consulting.

He has completed study work in over 31 countries. Trevor was an active participant in SANIRE, SAIMM and MQA both at local and international levels.

He is passionate on development and training of young scientists and engineers.

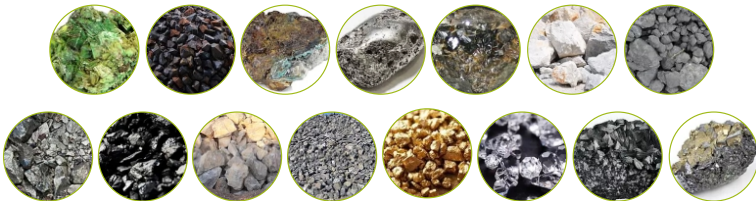
His particular interests are forensic investigations of instabilities, third party reviews, ITEs and due diligences.

Trevor is a principal who has been practising in the field for 31 years.

OREBODIES AND MINING METHODS

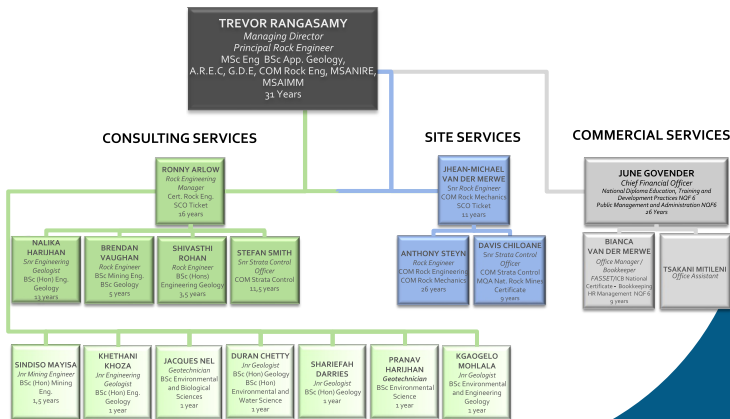
Middindi Consulting has completed projects and serviced several operations within the following commodity sectors:

Chrome, Coal, Copper, Diamonds, Gold, Iron, Lead, Limestone, Manganese, Nickel, Phosphate, Platinum, Polymetallic, Tin, Uranium and Zinc.



A MIRROR OF SOUTH AFRICAN DEMOGRAPHICS

Middindi consulting which started with two employees, has grown to nineteen employees in a relatively short period of time, with a wide range of qualifications.



ABOUT OUR SERVICES

CONSULTING SERVICES



- Open Pit & Underground Mine Designs
- PEA, Scoping Study, PFS, & FS
- ITE, DD and Third Party Reviews
- Geotechnical Logging & Sampling of Core
- Scanline Mapping
- Needs driven Research & Development
- Support System Designs
- Compliance Audits
- Numerical Analysis
- Validation of mine design criteria
- Technical investigations • Codes of Practice
- The design and selection of support systems



SITE SERVICES

- Contract Rock Engineering Services (14.1(8) legal appointments)
- Routine site inspections
- Incident and accident investigations
- Monthly planning and design input
- Risk assessments
- Validation of mine design criteria
- Technical investigations

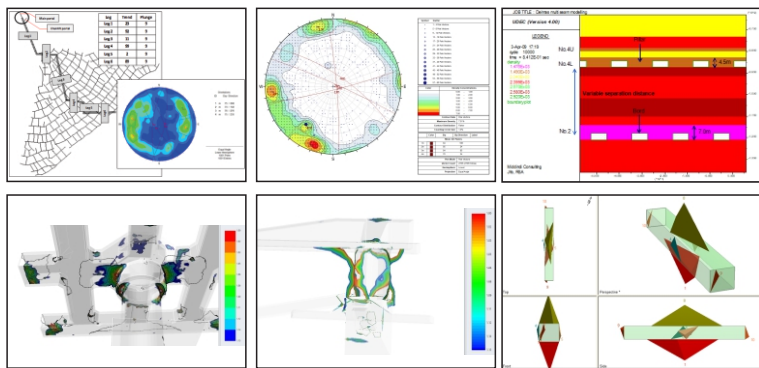


TRAINING SERVICES

- COM Strata Control Certificate theory and practical exams
- COM Rock Engineering Certificate theory exams
- Geotechnical logging, scanline and window mapping, and sample collection
- Training in the use of geotechnical 2D & 3D modelling software

SOFTWARE AND TECHNOLOGY

- Comprehensive statistical evaluation of datasets
- Point Load Testing
- Impact Split Testing
- Geotechnical mapping tools, both orientated and unorientated core
- Software: Dips, Slide, RSData, Unwedge, Swedge, RocPlane, UDEC, FLAC, MAP3D, RS2, RS3, @Risk & Microsoft Projects



In addition, we have quick and seamless access to geotechnical orientation tools and close ties to the suppliers of complex and simple instrumentation and monitoring sites.

Middindi Consulting has used the combined experience and expertise of its employees and director to develop several papers and educational resources. Ground-breaking study guide material based on the existing Rock Engineering Certificate Syllabus, funded by the Mining Qualifications Authority (MQA) and initiated by the South African Chamber of Mines and the Rock Engineering Technical Advisory Committee, was compiled by Middindi Consulting.

Our employees are currently involved in offering training courses to the industry and have, in the past, volunteered as:

- Examiners for the Chamber of Mines Rock Engineering Certificate
- SANIRE local and regional committee members
- Partaken in organising committees for various symposia
- Presented lectures at the University of Pretoria and the University of the Witwatersrand.

Middindi's practical and experienced personnel use a quantitative approach to base recommendations on observations and measurements rather than solely experience or numerical modelling.

The team has collectively been involved in production rock engineering, research and development, instrumentation and monitoring, geotechnical engineering, seismology, geology, due diligence and auditing, concept, PFS, DFS, FEED and execution level projects.

SUSTAINABLE DESIGNS, STABLE RELATIONSHIPS

Middindi has well-established client relationships with many organisations in the mining industry, some of them include:

A&B Globe Mining Consulting
Africa Rainbow Minerals
AGES (Pty) Ltd
Alphamin Resources Corporation
Amari Manganese (Pty)Ltd
Anglo American
Anglo Gold Ashanti
Arcelor Mittal
Assmang Limited
BARA Consulting
BARA Consulting UK
Barrick Platinum SA
Barris van Houten Consultants
Bearing Man Group
Benhaus Mining
BHP Billiton
Black Mountain Mining (Pty) Ltd
Blackthorn Resources Limited
Brentley, Lucas & Associates (Pty)Ltd
Boskop Manganese Mine
Cellis Geotechnical CC
Cheadle Thompson & Haysom Inc
Attorneys
CSA Global
CSIR
Cupric Canyon Copper
Dathcom Mining SAS
Deloitte
Deswik Mining Consultants (Pty) Ltd

Diacor CC
DRA Projects SA (Ptd)Ltd
Eramet South Africa (Pty)Ltd
Goldfields
Golo Mining (Pty)Ltd
Golder Associates
Gecko Cobalt Mining (Pty) Ltd
Glencore
Harmony Gold
Hummingbird Resources
Impala Platinum
International Ferro Metals (SA)(Pty)Ltd
Kalakgadi Manganese
Keaton Energy Holdings
Khoemacau Copper Mining (Pty)Ltd
Kinsenda Copper Company
Lanxess Chrome Mining (Pty)Ltd
Lonmin Platinum
MATSA
Metorex Copper Corporation DRC (Pty)Ltd
MDT Madencilik Tic.Ltd. Sti
Mine Health and Safety Council (MHSC)
Mining Qualifications Authority
Modikwa Platinum Joint Venture
Motototo Mine Joint Venture
Morokwa Manganese
New Concept Mining
Northam Platinum Limited
Paterson And Cooke

Petra Diamonds
Platmin South Africa (Pty) Ltd
ScotGold Resources
Sebilo Resources (Pty)Ltd
Seismology in Mining (SIM)
Shaft Sinks (Pty)Ltd
Sibanye Stillwater
Sibanye Gold Limited
SIM Mining Consultants
Seriti Coal South Africa
Sishen Iron Ore Company (Pty) Ltd
Siyanda Bakgatla Platinum
Snowden
Somika S.A.R.L South32
SRK Consulting
Tetra4 (Pty) Ltd
The MSA Group (Pty)Ltd
The Mineral Corporation
Tshipi Entle Manganese Mining
TWP Consulting Engineers
Trichardt Crushers
Ukwazi
United Manganese of Kalahari(UMK)
University of Pretoria
Vedanta Resources
Wescor Holdings Limited
Wiszw Platinum Limited
West Wits Mining
Zimplats



PROJECT IN NAMIBIA

The diverse team of employees collectively has extensive experience in the following mining methods and waste management facilities:

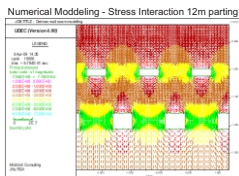
- Block caving
- Bord (room) & pillar
- Cut & fill
- Longwall mining
- Open pits
- Scattered- & sequential grid (conventional) mining
- Shrinkage stopes
- Slurry ponds and tailings storage facilities
- Stockpiles and waste rock dumps
- Sub-level caving
- Sub-level open stoping
- Various types of mechanised mining



EXTENSIVE SERVICES, FAR-REACHING METHODOLOGIES

In order to best meet their clients' needs, Middindi has access to a large range of industry-relevant software and technologies, including:

- UDEC, FLAC, Map3D, Phase 2, RS3, SLIDE, DIPS, JBlock, Swedge, Unwedge
- Point load testing equipment
- Range of CAD software
- In-depth knowledge of seismic system installations
- Geotechnical mapping tools
- Close ties to suppliers of complex and simple instrumentation



SUSTAINABLE DESIGNS, STABLE RELATIONSHIPS

Middindi Consulting is well positioned to establish and maintain relationships with large and smaller mining houses. A wide range of services can enhance any mining house's available skills:

- Codes of Practice
- Concept Level
- Contract Services
- Definitive Feasibility Study
- Due Diligence
- Forensic Investigations
- Geotechnical Data Acquisition
- Numerical Simulation
- Operational Guidelines
- Pre-Feasibility Study
- Research and Development
- Rock Engineering Strategies for Optimal Mining and Mine Design
- Strategic Audits
- Subsidence Assessment
- Surface Infrastructure
- Training and Development



KNOWLEDGE

Taking an active role in the industry, Middindi's Director, Trevor Rangasamy together with Middindi's personnel, regularly attend conferences and contribute to several publications. Below is a list of some published papers.

Hagan T, Vieira F.M.C.C, Kiboko M & Rangasamy T (2003). Guidelines for the extraction of shaft pillars in South African gold mines. Guidebook. FutureMine. Johannesburg, South Africa

James J.V, Rangasamy T & Petho S.Z (2008). Excess shear stress analysis of seismicity associated with dykes. Proceedings. Deep and high stress mining 2008. Perth, Australia

Leach A.R, Naidoo K, Spencer D & Rangasamy T (2001). Accounting for non-standard geotechnical conditions in the gold and platinum industries. ISBN Guidebook. SIMRAC. Johannesburg, South Africa

Leach A.R, Naidoo K, Spencer D & Rangasamy T (2001). Accounting for non-standard geotechnical conditions in the gold and platinum industries. ISBN Guidebook. SIMRAC. Johannesburg, South Africa

Le Bron K, Murphy S, Ward AK & Rangasamy T (2003). The use of 'optimine' to design the extraction of a highly stressed block of ground. Proceedings. ISRM 2003. Johannesburg, South Africa

Rangasamy T (2007). Analysis of fracture imprints for appropriate selection of inter-panel lead/lag distances in South African gold mines. Proceedings. ISRM 2007. Volume 2, p779. Lisbon, Portugal.

Rangasamy T (2015). The use of underground mines for High Head Underground Pump Storage Schemes. Muldersdrift, South Africa. Presentation Proceedings, SANIRE 2015 Symposium.

Rangasamy T, Harijhan N & Petho SZ & Swanepoel D (2012). Geotechnical design of the buffer zones located around the waste rock dump cut 17 at Goedgevonden Colliery, Xstrata Coal South Africa. Sun City, South Africa. Proceedings, Southern Hemisphere International Rock Mechanics Symposium.

Rangasamy T & A.J Jager (2002). A selective review of remnant definitions and creation in the South African gold mining industry. Proceedings. SARES 2002. Macceuvlei, South Africa.



Meet the Middindi Staff:



TREVOR RANGASAMY
PRINCIPAL ROCK ENGINEER



JUNE GOVENDER
CHIEF FINANCIAL OFFICER



RONNY ARLOW
ROCK ENGINEERING MANAGER



NALIKA HARIJHAN
SNR ENGINEERING GEOLOGIST



JHEAN-MICHAEL VAN DER MERWE
SNR ROCK ENGINEER



SHIVASTHI ROHAN
ROCK ENGINEER



BRENDAN VAUGHAN
ROCK ENGINEER



DAVIS THAPELO CHILOANE
SNR STRATA CONTROL OFFICER



ANTHONY STEYN
SITE ROCK ENGINEER



STEFAN SMITH
SNR STRATA CONTROL OFFICER



SINDISO MAYISA
JNR MINING ENGINEER



KHETHANI KHOZA
JNR ENGINEERING GEOLOGIST



JACQUES NEL
GEOTECHNICIAN



DURAN CHETTY
JNR GEOLOGIST



SHARIEFAH DARRIES
JNR GEOLOGIST



PRANAV HARIJHAN
GEOTECHNICIAN



KGAOGELO MOHLALA
JNR GEOLOGIST



BIANCA VAN DER MERWE
BOOKKEEPER AND OFFICE MANAGER



TSAKANI MILENI
OFFICE ASSISTANT



Please look for Middindi Consulting on Google Maps for direction



Contact Details

011 662 1085 / 011 662 2847
admin@middindi.co.za

Address:

Middindi Consulting
Willowbrook Office Park,
Block C, Unit 43 & 44
15 van Hoof Street, Ruimsig,
Roodepoort, 1724



www.middindiconsulting.com