



**GEOMECHANICS
BOTSWANA**
Proudly **GEO GROUP**

PROFILE



**GEOMECHANICS
BOTSWANA**

The GeoGroup comprises of a group of companies that provide a range of services to the Geotechnical, Civil, Exploration, and Mining industries.

The GeoGroup has branches located in Gauteng, Eastern Cape, KwaZulu-Natal, Western Cape, Uganda, Botswana, and Sweden.

www.geogroup.co.za



**GEOMECHANICS
BOTSWANA**

The GeoGroup have extensive experience in delivering Geotechnical and Exploration services at the highest standards in quality and safety in the following areas:

- Geotechnical services for railways, tunnels, dams, bridges, buildings, excavations, box cuts, roads, power stations, borrow materials, tailings facilities, void filling, and tunnel and dam grouting.
- Mineral Exploration core drilling up to 2000m deep.

Site Investigations

We own a significant fleet of geotechnical and exploration drilling machines, supported by highly trained experienced operators and maintenance staff. We have a staff count of approximately 200 employees.



Colossal CPTu-150



Jack-Tup Barge

Capabilities

- Sonic drilling and coring
- Geotechnical & exploration rotary core drilling with:
 - Double tube: TBW, TNW, T2-101, T6-131, T6-146 and ZWF
 - Split double Tube: NWD4
 - Wireline drilling: BQ, NQ, NQ3 HQ, HQ3, PQ and PQ3
- Conventional air percussion drilling (Optional Jean Lutz)
- Sonic coring
 - 6 "x 8" system
 - 3.75" x 4.75" system
- CPTu and SCPTu testing
- DPSH
- In-situ testing: SPT, Vane Shear, PMT, Lugeon and Goodman Jack
- Geotechnical instrumentation, monitoring and testing
- Drilling and grouting
- Hydro power projects
- Sub-horizontal holes for drainage of tailings dams and mine pit walls

Our Fleet of Vehicles:

- 3 x Long-haul trucks
- 50 x LDV Vehicles
- 13 x Support trucks

GEOTECHNICAL INVESTIGATIONS & EXPLORATION DRILLING

The GeoGroup provides drilling and testing services to the Minerals Exploration market and the Geotechnical, civils and renewable energy industries in Southern Africa.



We offer a comprehensive range of rigs and combination rigs to suit even the most demanding exploration projects in sands, soil and rock up to 2000m deep.

Our Fleet of Drill Rigs

Core Drill Rigs for Geotech & Exploration

- 7 x YWE D45R Drilling Machines
- 20 x YWE D90R Drilling Machines
- 2 x Delta Drill Rigs
- 3 x Boart Longyear - LF90 Drill Rigs
- 1 x Longyear 38 Drill Rig
- 2 x XY 44 Drill Rigs
- 4 x Longyear 44
- 2 x Boyles 56 Drill Rigs
- 1 x P6000 Drill Rig
- 2 x P7000SD Drill Rigs (Pacific Mining)
- 3 x Atlas Copco CS 1500 Drill Rig

Underground Machines:

- 1 x Atlas Copco Diamec 262
- 1 x Atlas Copco U6

Percussion Equipment:

- 2 x Super Rock Drill Rigs
- 1 x Casagrande C6 - Track-Mounted Rig
- 1 x Air Compressor-Ingersol Rand (24 Bar)
- 2 x Atlas Copco XRVS 476 CFM Compressors (25 Bar)

Sonic Rigs:

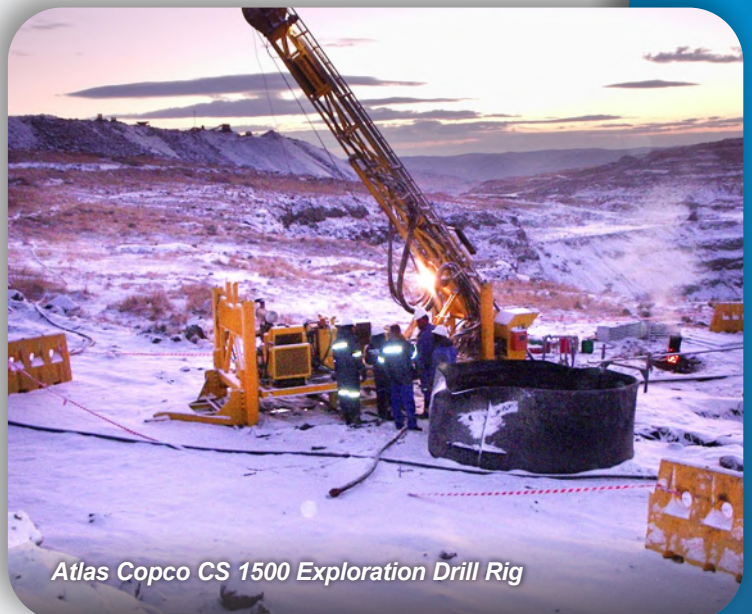
- 1 x Sonic Drill Rig SDC 450-24
- 1 x Comacchio Sonic GEO 601 (Sonic and Rotary Core Combination Rig)
- 1 x Secon Compact Sonic Crawler 190 kN (Sonic and Rotary Core Combination Rig)

CPTu Rigs

- 1 x Colossal CPTu-150
- 1 x Titan TG-150 CPTu
- 1 x Pagani CPTu TG73-200
- 1 x Pagani CPTu TG63-150



Comacchio Sonic GEO 601 Sonic & Rotary Core Combination Rig



Atlas Copco CS 1500 Exploration Drill Rig

Exploration Drilling

Black Rock

Our largest underground drilling contract to date was for Assmang's Black Rock mine operations project in the Northern Cape which was completed with a flawless safety record and uncompromising commitment to quality assurance and environmental project aspects.

The purpose of the drilling contract was twofold; Assmang wanted to prove/verify the thickness of its middling seam because it connects with the Manganese-rich 2 seam. Through our core sample drilling, the middling seam proved to be on average 25 m from existing hanging wall.

Geomech Africa also provided the geological information for the silo tips and crusher plant infrastructure development. The investigation for the tip silos was combined with proving the middling thickness and entailed drilling vertically upwards into the hanging wall. The investigation for the crusher plant entailed conventional downward drilling to a maximum depth of 25 m.

No challenge too difficult to overcome. The Black Rock geological conditions underground were challenging. The material we had to drill through was exceptionally hard. To compensate for that, we experimented with and found the best suited drill bits and lubrications. In combination with areas where the rock was softer, we were able to meet our advancement targets and in actual fact exceed them. We completed the project two days ahead of schedule.



AEL Sonic coring project at Modderfontein

Geomechanics was commissioned to determine the extent of contamination of explosive material in the ground.

The Geo-601 Comacchio combination drill rig was converted to drill remotely to reduce the risk of injury to staff from drilling into unexploded ordinance. The adaptation included the extension of hydraulic hoses from the rig's valve banks to the operator control console. This was done to allow the operator to work 30m away from the rig.

As the soil samples were recovered, they were immediately collected by AEL and taken to the on-site laboratory for analysis. Depending on the results the drilling would either progress closer or further away from the original contaminated area.



Exploration drilling for minerals in Sweden

The Hidden Mountain project was established by Horizon Blue Resources AB (HBR). In the spring of 2011, HBR was awarded 2 new exploration permits in the Sorsele Kommun to the west of Malå. Through field mapping and sampling of outcrops, 106 samples were selected and they discovered very encouraging copper, silver and gold grades at a number of locations. This gave rise to the Hidden Mountain project.

Horizon Blue attracted interest from Geomechanics to drill 3000m for an earn-in equity. In March 2014, Geomechanics imported two drill rigs, equipment, experienced personnel, and expertise to complete the exploration investigation.

The drilling programme was successfully completed by August 2014. A Total of 2430m of BQ exploration drilling with core orientations at Hidden Mountain was completed with 19 drill holes ranging from 100 to 200m in depth.



Successfully delivering Geotechnical instrumentation, monitoring and in-situ testing services to the Civil Engineering, Mining, Railway and Road Infrastructure industries since 1980.



About Terra Monitoring

We offer a turnkey solution, specifically aimed at assisting the mining industry with automation of tailings facility readouts. Terra Monitoring specialises in installing Vibrating Wire Piezometers and slimline VWP's connected to remote data loggers with a comprehensive list of additions to manage your facility.

Terra Monitoring has consistently and progressively expanded its Geotechnical Instrumentation and In-situ testing equipment portfolio by associating with world-leading manufacturers, to meet the growing demands of our customers in the market. Our broad and long-term experience translate into our sales and installation teams being able to provide clients with the best possible advice, technical support, and aftercare service.

Our sister companies, Geomechanics and Geomech Africa, offer a wide range of services that service the tailings divisions including sonic drilling for quality core recovery, CPTu testing, seismic testing, Mostap sampling, and standard standpipe piezometer installations. Working hand-in-hand with Terra Monitoring, we can offer a turnkey solution for your tailings facilities.

In-situ Testing Services

- Vibrating wire piezometers & slimline piezometers
- Standpipe piezometers
- Permeability tests: Falling head, constant head, rising head, and Lugeon testing using both conventional and wireline packers in all sizes (double and single packers)
- Goodman jack testing
- Plate bearing testing
- In-situ stress measurements
- Vane shear
- Pressuremeter testing & recycle tests
- Vibrating wire borehole stressmeters
- Norwegian hydro fracture
- Water sampling and pumping in small diameter boreholes
- Borehole pump tests - large diameter



Geotechnical Instrumentation and Testing

Terra Monitoring is an exclusive distributor of Geosense Geotechnical instrumentation products in Southern Africa. As the industry is moving away from wired systems, Terra Monitoring supplies and installs Geosense Remote Wireless Data Loggers that can fully automate readings from Slimline- and Vibrating Wire Piezometers to remotely record all the received data to a central control room.



The supplied software will analyse the data and alert all the necessary personnel directly via SMS messaging should any triggers be encountered. The operator in the control room will simultaneously receive a visible alert on the software package installed at the control room.



Instrumentation and Services

- Borehole Deformation Gauges
- Borehole Pressure Cells
- Cables
- Convergence Meters
- CPTu and In-Situ Testing
- Crack Meters
- Data Loggers
- Earth Pressure Cells
- Extensometers & Inclinometers
- Joint Meters
- Load Cells
- Pendulums
- Plate Bearing Testing
- Pressure Meter Testing
- Pressure Transducers
- Readout Units
- Settlement Sensors
- Strain Gauges
- Strain Meters
- Stress Cells & Meters
- Tape Extensometers
- Temperature Gauges
- Tiltmeters
- Vibrating Wire Piezometers
- Weir Monitors

Testing Equipment

Testing rigs:

- 1 x Pump test rig (0-10,000 litres/hour)

Testing Services:

- Ménard Pressuremeter (0-60/100 Bar)
- Packer/Lugeon
- Vane Shear
- Plate Load
- Point Load
- Borehole Camera Surveys
- DCP
- Water Sampling
- Pump Testing
- Hydro Fracture

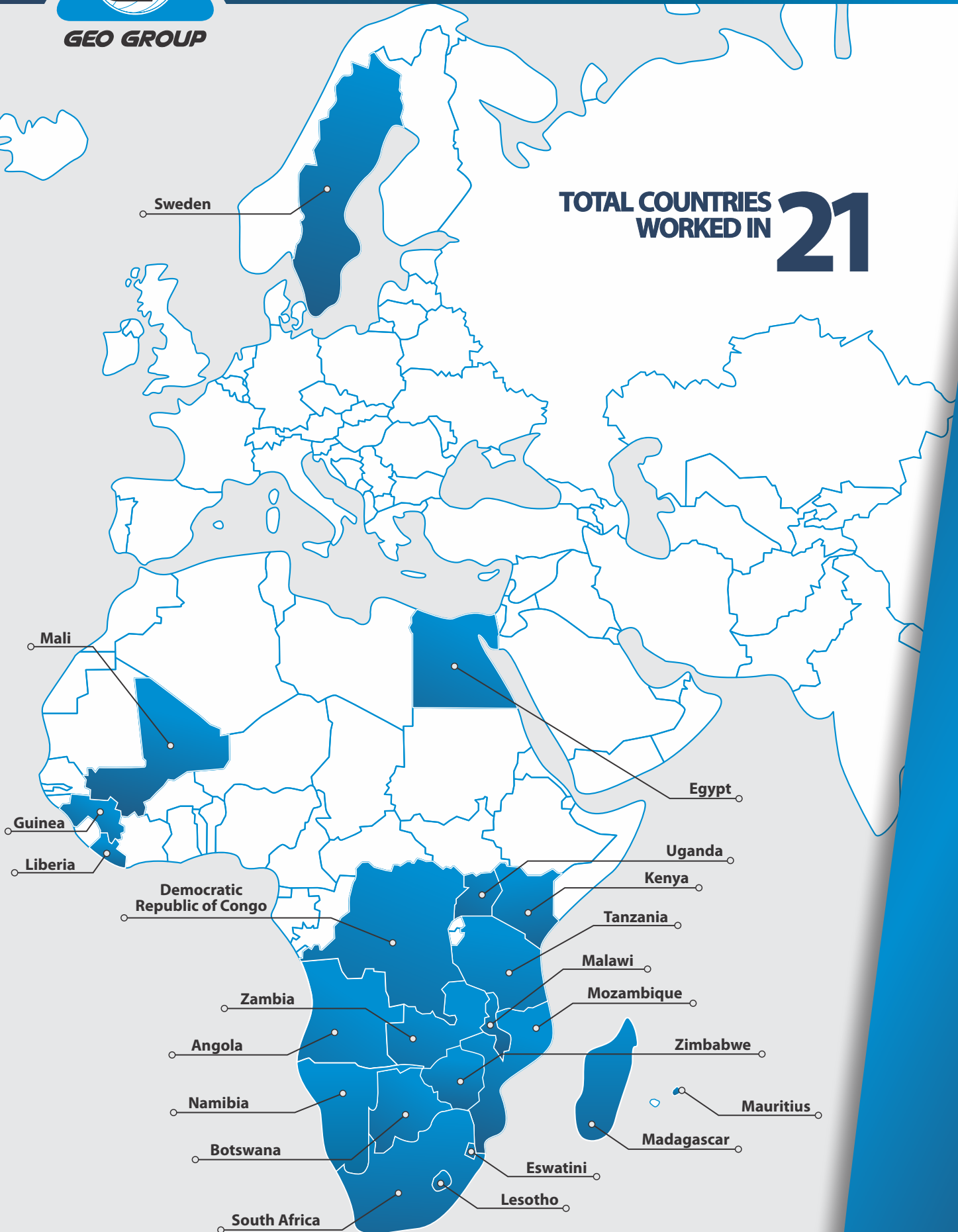
DPSH Machines:

- 5 x Penetrometer

We also offer installation and equipment maintenance services.

Contact us today for a comprehensive list of available products.

**TOTAL COUNTRIES
WORKED IN** **21**



GeoGroup Companies



The GeoGroup CONTACT US

The GeoGroup comprises of a group of companies, each a leader in its own field, that provide a range of services to the Geotechnical, Civil, Exploration, and Mining industries.



Services

- Geotechnical investigations
- CPTu & in-situ testing
- Exploration drilling
- Sonic drilling
- Water boreholes
- Geotechnical monitoring and testing
- Metal welding and fabrication

Products

- Geotechnical instrumentation
- Lighting towers

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Say "Hi" on Whatsapp



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