

Geomech Africa drilling flawless safety record

Southern Africa's geotechnical investigations specialist **Geomech Africa** (part of the Level 1 BBBEE **Geo Group**), recently completed an underground drilling contract for **Assmang's Black Rock** mine operations project in the Northern Cape. Geomech Africa achieved a zero incident safety record on the project which was hailed as a great success, writes **LAURA CORNISH**.



Geomech Africa has extensive drilling expertise as shown underground

"Geomech Africa's primary aspiration is to be the leading geotechnical drilling company in southern Africa," starts Espee van Huyssteen, site manager for Geomech Africa. Having completed the major underground drilling contract for the Black Rock project with a perfect safety record and uncompromised commitment to quality assurance and environmental project aspects, the company is undoubtedly positioning itself at the forefront of its sector.

Once complete, Assmang's Black Rock mining operation will have a capacity of 4.6 Mtpa due to modernisation. It is operated by Assmang Proprietary Limited, which is jointly owned by Assore Limited and African Rainbow Mineral Limited.

Having successfully completed a smaller-scale drilling contract for the Black Rock

mine in 2012, Geomech Africa was well positioned to execute the new project which it first tendered for early in 2014 and won in December the same year.

The purpose of the drilling contract was twofold, Van Huyssteen says. "Assmang wanted to prove/verify the thickness of its middling seam because it connects with the manganese-rich 2 seam."

Geomech Africa also had to provide the geotechnical 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."

The tender specification required 100% core recovery from the rotary drilling contract which Geomech Africa successfully achieved – from 640 m of drilling in total. The project geologist makes vital decisions and analyses based on this information, revealing the importance of the entire project, Van Huyssteen notes.

Four drilling teams delivered the project, which was completed two days ahead of schedule in August. The teams were overseen by a Geomech-appointed safety officer, two 2.9.2 supervisors and a 2.6.1 site manager (Van Huyssteen).

Uncompromised commitment to safety and quality assurance

To ensure the drilling programme commenced on schedule on 9 March 2015, Geomech Africa moved onto site just over a month before in order to complete all the necessary medical inductions, artisan and driver training, etc. "As a result, we started the project on schedule."

"Safety is always our first priority," Van Huyssteen highlights. "Geomech Africa's business philosophy and approach is safety first, followed by quality control and production/development targets. We work according to a very comprehensive safety and risk management plan which entails following and implementing every activity according to an approved site file outlining all project parameters, as set out in the Mine Health & Safety Act."



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Espee van Huyssteen does a review of the issued based risk assessment and expands it with the DSTI 2

Safety is so critical that no potential risk situation was ignored. For example, fire extinguishers get examined on a two weekly basis. Light duty vehicles used to transport materials and employees were tested daily on site according to a check list.

Geomech Africa also provided a quality control plan for each borehole (55 boreholes in total) which requires substantial upfront planning and pre-approval. Deviation from this control plan was non-negotiable.

The Black Rock project's two weekly safety meeting, including all contractors on site, revealed Geomech Africa's leading safety profile achievements, throughout the duration of its contract. "Our daily cooperation with Black Rock's mine captains, providing daily safety declarations for each shift, alongside our 100 lost time injury-free shifts certification from the mine proved this. We never cut corners."

THE BROADER GEO GROUP BUSINESS

Geogroup is a group of companies which was established 26 years ago with the formation of the geotechnical and exploration company Geomechanics. More recently additional companies have been formed which provide services in geophysical instrumentation: in situ borehole testing; piled foundations; geotechnical and exploration drilling; solar PV supply and installation and development of utility scale solar and wind projects.

Excellent environmental compliance

A detailed environmental method statement was also essential for the project, outlining requirements when using hydraulic equipment – specifically drip trays which catch potential hydrocarbon spills – a common potential consequence when operating hydraulic rotary drills. "The capacity of every tray was verified, marked and positioned in all strategic places where hydraulic pumps and motors were operating," Van Huyssteen notes.

In the event of a spill, Geomech Africa's trained and certified personnel could clean and dispose of any contaminated soils using hydrocarbon spill kits. Fortunately, this was not required at Black Rock.

No challenge too difficult to overcome

The Black Rock geological conditions underground were challenging, Van Huyssteen notes. "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 lubricants. 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."

Two Diamec hydraulic rotary core drills were used, powered by two 550 V/ 75 kW power packs.

The mine also remained operational throughout the duration of Geomech Africa's contract. "Working within the parameters of a mine responsible for maintaining its production targets had to be respected at all times. The mine facilitated the transportation of drills on behalf of Geomech Africa, between drill positions, and also supplied electricity points and water supply to those positions as required.

"Our project at Black Rock represents a significant milestone achievement for Geomech Africa. It has strengthened our name with one of South Africa's largest manganese producers and verified our capabilities within the underground mining sector," Van Huyssteen concludes. **MRA**



Black Rock core

