

Bauer's technologies make deep bulk sampling simple

For a group with a worldwide reputation as a technology leader, the German-based BAUER Group is probably not as well known in South Africa as it should be. The group operates in several fields but, from a mining perspective, its best known products and services relate to drilling. In Southern Africa it has carried out projects for a number of resource companies, particularly those engaged in diamond exploration and mining. Using its large rotary drilling rigs, Bauer is able to drill holes of up to 2,5 m in diameter – sufficient to extract workable bulk samples which would otherwise have to be mined using conventional – and very expensive – mining methods.

With nearly 230-years of history, Bauer is today regarded as one of Germany's flagship manufacturing and engineering companies. Over the past 40 years, it has also become increasingly global in character – it employed some **12,000 people** in more than 70 countries in 2018 and derived around three quarters of its revenues of €1,70 billion from its international operations. Headquartered in Schrobenhausen in Bavaria, it has over **110** subsidiaries which operate in three market 'segments' – Construction, Equipment and Resources. Bauer's modern reputation is based on its reputation as a specialist in foundation engineering but it is also known as a leader in the development and manufacture of specialist foundation engineering equipment, especially in the provision of drilling services and drill rigs. Apart from its expertise in large diameter drilling, it is also equipped to take on deep and large diameter water well projects in cooperation with its in-house company GWE, a premium supplier of advanced well construction materials and pumps.

Bauer is involved in a very prestigious bulk sampling project in Saskatchewan, Canada: The FalCon project of Rio Tinto Exploration Canada Inc. and Star Diamond Corporation aims to prove the commercial viability of the Fort a la Corne kimberlite fields in Saskatchewan in Canada. Due to the low grade of the kimberlites, Rio Tinto decided to use Bauer trench cutter technology to provide large-volume, high quality kimberlite samples for the final evaluation of the project in regards to diamond content and recovered diamond quality. A BAUER BC 50 cutter on a BAUER MC 128 duty-cycle crane is used for bulk sampling to a maximum depth of 250 m. In addition to the cutter and the base carrier, Bauer also supplied a BE 550 desanding plant and other accessories. After a long winter break operation started end of May 2019. The kimberlite is washed and bagged into bulk bags for further evaluation in multiple steps by the experts of Rio Tinto. The Star kimberlite on the FalCon project is covered by approx. 120 m of overburden which posed a significant additional challenge to the project.

In Africa, Bauer operates through Bauer Technologies South Africa (BTSA), which is based in Johannesburg and which forms part of Bauer Resources. The company was established just over 20 years ago with the focus initially being on the sale and servicing of Bauer machines, particularly those aimed at the civil engineering market. Starting in 2004 the emphasis shifted towards a contracting role and BTSA has carried out a number of contracts for mining companies since then, a typical example being the work carried out for mineral bulk sampling, which sees it drilling holes of 17,5 inch (44 cm) diameter to depths of 350 m and the extraction of bulk samples which are processed through an on-site DMS plant.

Explaining Bauer's strategy in Africa, the main thrust of BTSA's marketing effort is directed towards clients looking for safety, cutting edge technology and solutions to out-of-ordinary problems. "We are quite capable of taking on the conventional RC and diamond core drilling that constitutes the bulk of the exploration drilling market but this is a business dominated in South Africa at least by local companies often using relatively low-tech, locally manufactured rigs. It's highly competitive and is unlikely to be the main source of business going forward", says BTSA's managing director Lars Roesler.

Bauer believes it does not compete against other companies so much as against other technologies for mineral exploration or mining services. Bauer sees itself as very much an African player with the establishment of new companies in Botswana, DRC as well as Ghana and Senegal in West, which work closely with the South African operation. In other commodities, the Bauer rigs and technology are deployed at projects to drill large diameter dewatering and monitoring wells up to 700 m deep.

In South Africa, Namibia and Mozambique, the BAUER BG 36C large diameter bucket auger drill rigs are in use to explore mineral deposits and evaluate mine dumps. The rigs, capable of drilling 2,5 m diameter holes to a maximum depth of 70 m, averaged 67 m/day – at one point achieving 115 m in a single day shift.

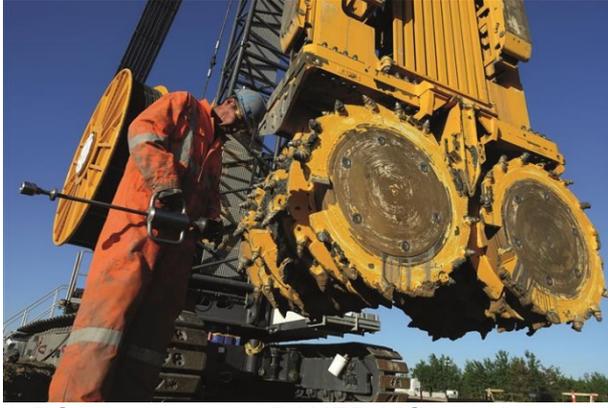
Others than exploration and sampling solutions, Bauer constructs diaphragm or cut-off wall to support open-pit mining access. These techniques have been used to seal off ore bodies or shafts against underground water ingress and are also applicable for in-site remediation of TSF embankment walls to counter seepage of contaminated process waters or dam failures.

Looking to the future, Bauer sees growth ahead for the African companies in the recovering mining and exploration market. BTSA will continue to diversify with the equipment and technologies being applicable to many other sectors of the mining industry. There is no reason for this trend not to continue.

Images: © BAUER Group



BAUER BG 26 rotary drilling rig



A BC 50 cutter on a BAUER MC 128 duty-cycle crane are in use for a prestigious bulk sampling project in Saskatchewan, Canada.



Water well drilling with a PRAKLA RB 40 rig in Ghana