



# Confirming the future of Zambian copper

## New player

A recent addition to the ranks of Zambian deep drilling firms is Blu Rock Mining Services, formed in March, 2007 and already proud owners of five Atlas Copco core drilling rigs. After many years of depletion, drilling for replacement of copper ore reserves is essential to the long term future of the local mining industry, and is currently carrying a high priority. Offering technically-advanced equipment for drilling the accurate holes required for what are very carefully monitored geotechnical and exploration projects seems to have found a niche in the market on the Zambian Copperbelt, and business is booming for Blu Rock and its affiliates.

## Long experience

Based in Kitwe, the strategic hub of the Zambian mining industry, Blu Rock Mining Services has long and specific experience in the deep drilling sector. The founder, Polish-born Kris Jedrzejczyk, has worked in drilling and shaft sinking for nearly 30 years. Prior to starting Blu Rock, Kris worked for Mpelembe Drilling for 22 years, and was a member of the management buy-out team that took over the operation from Zambia Consolidated Copper Mines (ZCCM) in 1997. On contract drilling jobs, he adopted a hands-on approach, taking responsibility for project planning, contract proposal writing, and negotiations with clients at all the main Zambian mines, and monitoring the execution of the projects. Consequently, he got to know most of the country's senior mining executives, engineers and experienced drill operators, earning their respect and trust.

## Equipment leasing

Through managing the Mpelembe drilling equipment fleet, and also as a



Exploration drilling with a CS1000 core drill rig at Muliashi, Luanshya Mines.

director of the specialist underground diamond drilling company, Redrilza Ltd, Kris Jedrzejczyk established a constructive and professional relationship with Atlas Copco. This was a considerable help when he decided to plan the establishment of Blu Rock Mining Services, because Atlas Copco was in a position

to provide favourable credit and equipment leasing terms.

This enabled the company to get up and running with five new Atlas Copco rigs. The chosen fleet comprised two Christensen CS14 core drilling rigs capable of drilling to 1 540 m with B size wireline, and three Christensen CS 1000



P4 rigs for conventional or wireline coring down to 1 030 m with B size wireline. The rigs were delivered and commissioned over a period from December, 2006 through to September, 2007.

They are currently working under contract for two of the regions' new generation of companies, Konkola Copper Mines (KCM) and Luanshya Copper Mines (LCM). The contracts involve exploration, geometallurgical and geotechnical drilling within two of the Copperbelt's long-established mining areas, Chingola-Chililabombwe in the west, and Luanshya towards the eastern end.

## Long-term goal

KCM has employed one CS14 and two CS 1000 rigs in the Chingola area, where they had drilled a total of 10 000 m by the end of June, 2008, with the overall aim of confirming future copper and cobalt resources.

The remaining two rigs, a CS14 and a CS 1000, are drilling for LCM on the Muliashi and Mashiba projects near Luanshya to provide information for the detailed design of new surface mining and processing facilities.

The CS14, in particular, is working at the Fitwaola open pit to monitor the dip and grade of the orebody. The pit is in operation on a daily basis, and so, in order to avoid vibration damage to the drill string it is necessary to pull the rods each time production blasting is undertaken.

The trailer mounted Christensen CS14 is equipped with a 3.5 m feed with main hoist capacity of 80 kN and 138 kN hydraulic feed cylinder. Power is supplied by a Tier 3 Cummins diesel engine rated at 153 kW, or 208 hp.

At Kakosa, north of Chingola in the direction of Chililabombwe, a CS 1000 is exploration drilling to an average depth of 200 m to find a continuation of the Chingola orebody. The Christensen CS 1000 is a lightweight basic rig of simple design that can be flown to site. It has 40 kN hoist lifting capacity and 90 kN pull from the 1.83 m stroke feed system. Power is from a Cummins 4 cylinder 86.5 kW diesel engine. The third rig is drilling a limited number



Reviewing the progress: From left: Luciano Chikabo, Foreman, Blu Rock, John Kakumbi, Sales Manager, Atlas Copco and Kris Jedrzejczyk, Managing Director, Blu Rock.

of holes to assess lime resources that KCM might be able to use. This rig may start core drilling waste dumps in the area, to check for residual metal content, following up on a reverse circulation drilling programme that KCM has started.

Using the new fleet of Atlas Copco rigs has paid off, as they drilled 2 000 m in the first two months of the contract, a much higher rate than previously achieved.

## Luanshya improvements

The LCM management team, headed by CEO Derek Webbstock, has already invested USD 50 million in upgrading both the Baluba mine and the concentrator, which can now process 10 000 t daily. Baluba has been mining 5 000 t/day, yielding 21 000 t/y of copper, and is expected to produce 24 000 t in 2007.

Now LCM intends to invest a further USD 50 million at Baluba, in particular to modernize the hoisting shaft, and USD 354 million to develop a new open pit mine at Muliashi, initially extracting oxide ore reserves. Baluba should then be able to increase mine production to 6 000 t/day while Muliashi is presently expected to contribute 60 000 t/y copper and 1 500 t/y cobalt at full rate output. Phase 1 engineering has started at the Muliashi project, and is scheduled

for completion in the first quarter of 2009.

LCM, which presently employs 2 400 people, expects to employ a further 1 000 people during construction, although only 400 will be required for the operational phase. Meanwhile, the company has started a feasibility study for mining the Mashiba sulphide orebody, which could add a further 6 000 t/y to LCM copper output.

Blu Rock's rigs were contracted to drill a total of 15 000 m, of which 9 000 m had to be completed by April, 2008. The CS14 drilled holes ranging from 20-70 m for the Mashiba project, coring for process metallurgy test work needed for the feasibility study.

Meantime, one of the CS1000 rigs was used to recover 48 mm core from a depth of 450 m to provide geometallurgical information for the mine planners and process engineers working on the Muliashi project.

Other recently won contracts seem to confirm Blu Rock's winning formula.

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