

Mowana comes back to life

Good news for Botswana's embattled mining sector is that Alecto Minerals, whose shares are quoted on London's AIM, is making excellent progress in reopening the Mowana copper mine in the north-east of the country, with the process plant now once again operating as part of a test phase and preliminary mining operations underway. Alecto's aim is to initially operate the plant at its nameplate capacity of 1,2 Mt/a while it carries out upgrades to allow the facility to achieve a throughput of up to 2,6 Mt/a and an average copper production of 22 000 t/a of saleable Cu in concentrate. Alecto is currently in the process of acquiring a controlling interest in the mine.



Seen here at the recent Mining Indaba are Dominic Doherty (left), Alecto's Operations Director, with Alecto's CEO Mark Jones (photo: Arthur Tassell).

Although it was placed under care and maintenance in late 2015, Mowana ranked – when it was commissioned in 2008 – as Botswana's first commercial-scale, dedicated copper mine (although copper was for many years produced as a co-product of BCL's now discontinued operations at Selebi-Phikwe, which were mainly driven by nickel). Originally known as the Dukwe (and, before that, the Bushman) copper project, Mowana was developed by African Copper plc, listed in Toronto and London, at a cost of US\$60 million.

An open-pit mine, it was designed to produce 20 000 t/a of copper in concentrate but was soon in trouble (partly as a result of a decline in the copper price in the wake of the great financial crash, although other factors were at play) and had to be rescued by Zambia Copper Investments (ZCI), which effectively gained control of African Copper in 2009. Operations continued through to 2015 when the mine was forced into liquidation after it

failed to make scheduled payments to the then mining contractor, Diesel Power Mining.

From commissioning onwards, the plant rarely worked at anything close to full capacity – average annual throughput was around 775 000 tonnes – and copper production fell far short of expectations, with, for example, only 43 301 tonnes of concentrate, representing 9 724 tonnes of copper, being produced in FY2013/14. Mining took place not only at Mowana but also the Thakadu deposit, 70 km to the south-west. While Thakadu enjoyed a higher grade than Mowana (and also offered silver credits), this was partially offset by high haulage costs.



Despite the problems experienced by its predecessors at Mowana, Alecto is confident that the mine – which has JORC mineral resources of 683 000 tonnes Cu in the measured and indicated categories and 945 000 tonnes Cu in the inferred category – can be run successfully, as the company's Operations Director, Dominic Doherty, made clear to *Modern Mining* during an interview at the recent Mining Indaba in Cape Town.

"Mowana is an excellent asset with a brilliant infrastructure, including a modern, well-maintained plant, and we are in no doubt that it can produce profitably, particularly given the fact

that we will be operating in what is currently a much improved copper price environment," he said. "We will also, of course, be bringing a fresh approach to every aspect of the operation and intend upgrading the plant with the introduction of a DMS pre-concentration process which will allow capacity to be more than doubled. In addition, we will – as a result of the way the transaction has been structured – be operating without any of the debt which encumbered the previous operator of the mine."

Alecto has identified some of the issues which it believes contributed to the demise of Mowana under the previous ownership. These

A night view of the Mowana plant area. The plant has a current capacity of 1,2 Mt/a but is to be expanded.

Centre: Drill rigs at work in the Mowana pit.

Below: A Komatsu PC850 excavator loads Cat 840B articulated haulers.





A blasthole rig being established.

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include a poor geological and mining model, process route bottlenecks, a lack of management oversight, and the presence of oxides and graphite in the sulphide ore streams without proper handling. It says that it will be re-logging drill core and developing a new geological and mining method, as well as redesigning and correct sizing mining operations.

The Mowana plant – although it is to be upgraded and expanded – is regarded as being well designed and constructed and is able to handle oxide, supergene and sulphide ores.

The crushing and screening circuit consists of a primary crusher (fed from the ROM pad) and secondary and tertiary crushers presenting a 15 mm feed size to the 150 t/h ball mill. At the heart of the plant are two flotation circuits. Minerals are separated first and tailings from the roughers are sent to an oxide flotation circuit, where most other mineral species are recovered. Concentrates are filtered (using a Larox filter) to recover excess process water while tailings are dewatered using thickeners and deposited into a tailings storage facility.

A detailed scoping study has been completed for the upgrading of the crushing circuit and the introduction of a DMS module. The estimated cost of the upgrades is US\$20 million and will be funded via an offtake financing agreement concluded with Fujax Minerals and Energy, which will make available US\$3 million as a pre-payment for copper concentrate, with a further US\$17 million being provided by Northern Heavy Industries Group Company Limited (NHI) as vendor financing for the equipment required. Fujax is a South Africa-based mineral and energy trader while NHI is a mining machinery manufacturer based in China.

According to Doherty, Alecto will be aiming to get the DMS installed and commissioned by early 2018. “At this stage, we envisage starting the upgrade around June and we estimate that it will take six months to complete,” he said. “It will be built in parallel to the crushing circuit and will not impede operations in the existing plant.”

Doherty makes the point that a very experienced team is involved in the relaunch of Mowana. “Our MD is Mark Jones, who is a graduate of the Camborne School of Mines with over 35 years’ experience in mining and associated industries, including 20 years of working in Africa,” he told *Modern Mining*. “I myself have a background with the British Army but in recent years I’ve been mainly involved in mining, both in Mali – where, among other things, I managed a small alluvial gold mine for two years – and in Zambia, where Alecto has been working on the recommissioning of the historic Matala gold mine, located 120 km west of Lusaka.

“We are also being partnered in Mowana by two well-known South African personalities – Kevin van Wouw, the founder of PenMin, and Gerald Chapman, the founder of Digmin, who was also responsible for establishing construction group Protech Khutele in 1989. PenMin specialises in ‘Design, Build and Operate’ contracts in the mining sector while Digmin is a construction and mining contracting group, operating through subsidiaries and associate companies such as Bamboo Rock Construction, BC Mining and Bamboo Rock Drilling. Both companies have been involved with Alecto at Matala in Zambia so we have a track record of working together. Kevin, incidentally, has had an involvement with Mowana – via another of his companies, Minéro – dating back a number of years and has an intimate understanding of the mine.”

Minéro, in fact, along with SENET (which built the Mowana plant in 2007/08), was responsible for the DMS scoping study mentioned above. This was carried out for African Copper, which was aware of the desirability of installing a DMS circuit but was never financially in a position to implement the upgrade.

The mining contractor selected to undertake the first six months of mining at Mowana (under the management of Digmin) is Giant Transport Holdings, a Gaborone-based company with experience of working on mining operations in Botswana, while Capital Drilling, an LSE-listed company which derives most of its revenue from contracts in Africa (including Botswana), has been appointed as the



A view of the Mowana pit. Recent heavy rains have necessitated a dewatering programme to be instituted in some parts of the pit but near-term production areas have been unaffected.

drill-and-blast contractor. The plant will be operated by PenMin.

In another recent development, Paddy Conran has been appointed as General Manager of Mowana. Commenting on the appointment, Alecto’s Mark Jones said, “Paddy’s vast experience running mines in Southern Africa, and particularly his in-depth knowledge of the treatment processes that are applicable to the Mowana project, further strengthens our confidence that we will achieve our near-term goals.”

The significance of the Mowana deal to Alecto is that it will transform a company with a range of exploration projects in West Africa and Southern Africa but no producing assets into a fully-fledged mine operator and metals producer. It will also mark a shift in the company’s operational focus from West Africa to Southern Africa. While it is retaining its West African assets, Alecto’s strategy is now to pursue these via joint ventures. In Mali, its Kossanto West and East gold projects are now being advanced by Randgold Resources and Ashanti Gold Corp respectively under joint venture agreements,

while a partnership has also been concluded with Kola Gold over the Karan project. Alecto is also in negotiations to joint venture its Kerboulé gold project in Burkina Faso.

“We now have a situation where our West African projects are being managed by very competent partners, allowing us to concentrate on Botswana and Zambia,” said Doherty. “Our immediate priority will be to get Mowana up and running but we anticipate that this will also have a beneficial effect on our Matala gold project in Zambia and – beyond that – the neighbouring Dunrobin project. Matala, which will be a low-cost open-pit mine, is basically ready to roll. What’s holding us back is financing and the problem here is our balance sheet – it’s difficult to get backing unless you can offer adequate security. Mowana will change this. Not only is it a very attractive project in its own right but it will give Alecto the profile to pursue Matala and other projects that come the company’s way in the Southern African region.”

Report by Arthur Tassell, photos (unless otherwise acknowledged) courtesy of Alecto

Complex deal will give Alecto a 60 % share in Mowana

The Mowana deal is relatively complex and the full details are available on Alecto’s website. In essence, however, Alecto is acquiring Cradle Arc Investments, a company incorporated in Botswana which currently owns the Mowana mine and plant.

Cradle Arc was established by PenMin (see our main article) as a vehicle to take the assets of Messina Copper (Botswana) or MCB out of liquidation. MCB, prior to its liquidation, was a subsidiary of African Copper plc, which in turn was controlled by JSE-listed ZCI.

The net result of the transaction when concluded is that Alecto’s interest in Mowana will be 60 % with ZCI – which is

converting a major portion of the debt owed to it by MCB into equity – holding the balance. The deal will also see PenMin and Gerald Chapman becoming major shareholders in Alecto.

As part of the overall transaction, Alecto has agreed a 10-year management contract for Mowana with its partners and will receive a management fee equal to 1.5 % of turnover.

As the transaction represents a reverse takeover in terms of AIM rules, trading in Alecto’s shares has been suspended and will remain suspended until the publication of a re-admission document. Alecto believes that this document should be ready for submission to AIM by the end of May. ■