



T3 just the start of Mod's Botswana ambitions

The Mod Resources Ltd management team headed to Cape Town armed with a positive independent assessment of its T3 copper project in Botswana. The task now is to make it a sure-fire thing.

The study, released just days before the start of the annual Mining Indaba week, highlighted that T3 was capable of producing annual free cash flow of \$US85 million (pre-tax) over 8.8 years from a 2.5 mtpa operation. However, with a string of targets along its ground on the Kalahari copper belt, Mod is intent on pushing the economics of T3 further.

Mod technical director Steve McGee

said the company was pleased by the PFS results but remains committed to testing the project's wider potential.

"With the PFS Mod has demonstrated it is sitting on a very robust project," McGee told **Paydirt** during a visit to the project. "If you look at geometry of the orebody, the metallurgical results we have and the engineering, there is a lot of reasons to believe it will be a success. But, the PFS is just a base case of what could eventually be a much larger project."

A glance at Mod's exploration ground on the Kalahari copper belt indicates why the company is so confident it can add to T3's base.

The company first entered Botswana in 2012 in the footsteps of ASX-listed Discovery Metals, which had made the initial copper finds on the belt and taken its Boseto copper project into production.

Soon after operations began at Boseto, Discovery ran into processing problems having failed to correctly define the depth

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Mod executive chairman Mark Clements and country manager Gaba Chinyepi with part of a recent donation Mod has made to a local Ghanzi school

of the oxidised zones of the orebody.

The company was eventually placed in administration and it is ironic that

Mod's subsequent success has come on ground it acquired from the administrators of the company it had set out to emulate.

Mod already controlled 4,000sq km of ground in the Ghanzi district and had defined a 2.7mt @ 2% copper and 50 g/t silver underground resource at the T1 deposit but acted opportunistically to pick up the 8,000sq km Discovery ground,

bringing in AIM-listed Metal Tiger plc as 30% JV partner to help fund the deal at a time when cash was short for junior explorers.

Mod immediately set about testing some of the existing targets on the new ground, starting with the easily accessible T4 prospect which returned an encouraging intersection of 2m @ 6% copper. It quickly moved onto T3 – another target ranked largely on accessibility – and produced one of the most impressive hits on the belt to the point; 52m @ 2% copper.

As Mod stepped up drilling on T3, it began to uncover a different style of mineralisation to the narrow vein, steeply-dipping orebodies at the eastern end of the belt such as Boseto and T1.

"It quickly became apparent T3 was something a bit different," McGee said. "It wasn't on a tight fold nose, it appeared to be on something of a shallow dome and the geochem signature of 28 ppm and 27 ppm zinc was an order of magnitude less than previous discoveries."

The differences in geochem response and the mineralisation encountered demonstrated to Mod that different styles of geology were present on the belt and that geochem – the primary targeting tool to date – had had left much of the belt underexplored.

Mod moved quickly following the February 2016 discovery hole, taking just six months to define a maiden resource of 28.36mt @ 1.24% copper and 15.7 g/t silver with a high-grade core of 8.48mt @ 2.16% copper and 30.6 g/t silver.

A positive scoping study followed before the end of 2016 with Mod and Metal Tiger immediately approving a PFS for T3.

The PFS confirmed T3's viability but



Drill core is prepared at Tshukudu's core farm on the outskirts of the town of Ghanzi



A sample of mineralisation from Mod's T3 copper deposit

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Sample bags are prepared at the Tshukudu core farm

the JV is now working on making the project more robust. The first target is expansion of the existing reserve to include tonnes currently sitting outside of the pit shell.

The PFS announcement included details on an expansion case which would see throughput lifted to 4 mtpa from an increased reserve of 353,000t copper and 12.3 moz silver.

“We are already looking at expanding the pit,” McGee said. “Reducing the cut-off grades moves the in-pit reserve from 21mt to 40mt. So, we are now starting to think about staging production; starting at 2.5 mtpa before moving onto 4 mtpa. That would lift copper production from the T3 open pit from 23,000 tpa copper to 28,000 tpa.”

Infill drilling will aid this work but the economics of T3 could also be changed by an underground scoping study currently being undertaken.

A number of holes drilled in the December quarter intercepted up to four shallow-dipping high-grade veins below, down-dip and along strike from the PFS pit. Mod believes the same veins are associated with wide zones of disseminated copper mineralisation within the T3 open pit resource. Deeper holes have also been drilled to target the Ngwako Pan contact, the same contact which hosts T1 and the other orebodies in the eastern part of the belt.

“We really want to see what impact the underground mineralisation can have on T3’s economics,” executive chairman Mark Clements told **Paydirt**.

The company is also returning to its original discovery at T1, 20km east of T3. Although sub-economic as a standalone deposit, T1 could be incorporated into an expanded regional play, according to Clements.

“It is fairly typical of what you see at the eastern end of the belt but as we found



The Tshukudu team get ready for the day ahead



Mod is building a sample prep lab on site at Ghanzi. The lab will be run by ALS



Mod currently has six rigs on site in Botswana with its exploration plans to be further expanded this year

more and more ore at T3 we thought there was an opportunity to also bring T1 into the production schedule.”

Identification is one thing but successful development is a separate challenge, particularly given the failure of Discovery and others to establish Botswana as a sustainable copper producer.

The Boseto, Mowana, Thakadu and Phoenix copper mines have been shuttered in the last five years, all without ever achieving consistent production, and there has been a general failure to follow-up on the early encouraging discoveries along the Kalahari copper belt.

Much of Boseto’s problems came from poor recoveries but McGee – a well-travelled metallurgist – is confident T3 is different enough to succeed where other orebodies failed.

“There is a calcrete cap over T3 which appears to have preserved the orebody from oxidation; that is something you don’t see in the eastern part and it was the oxidation which affected the processing of those orebodies.”

Work on the T3 and T1 underground deposits will coincide with exploration on the array of targets Mod has along

140km of the central structural corridor of the Kalahari copper belt.

Targets include the 50km-long T3

Dome structure which hosts the T3 deposit and an interpreted 60km-long anomalous soil zone within the T20 Dome. An airborne EM survey conducted last year lit up numerous targets along the corridor and Mod will undertake a second survey this year to better define and rank opportunities.

Mod re-interpreted the original T3 Dome EM data during the December quarter, defining the 3D geometry of the T3 host sequence down to 500m below surface, potentially a breakthrough for understanding the structure of the T3 Dome and subsequently further high-grade veins.

Some 100km west, Mod also intends to drill the T20 Dome where soil sampling has produced copper and zinc anomalies higher in value than the T3 deposit in areas previously untested by drilling.



Mod technical director Steve McGee

McGee is confident the exploration picture will continue to widen for Mod.

"The open pit at T3 is just the start of things," he said. "We're keen to demonstrate the belt has the potential for us to become a mid-tier copper producer. We are intent on testing the geophysical targets to help us realise that ambition."

Clements agreed that Mod's ambitions were greater than simply bringing T3 into production."

"The information gleaned from T3 will be used on the wider landholding and I can't understate the excitement we have about exploration and we are in a fortunate position to demonstrate that the belt has a lot to offer," he said. "The exploration play will continue into the regional areas around the T20 Dome and T7 and beyond the T3 licences we want to ensure we meet our exploration commitments."

Mod had a healthy bank balance of \$10 million at the end of December but with such an aggressive drilling campaign ahead, it is apparent more cash will be needed.

Both Clements and McGee admitted further corporate activity was likely.

"We do have a very aggressive exploration campaign but we are generating a lot of interest," McGee said. "As we gain momentum and have gone from scoping study to PFS and onto DFS, the potential institutional support for equity and debt funding has become strong."

Paydirt witnessed evidence of the growing institutional interest in February with several international banks joining private fund managers and Australian and international brokers on site at T3.

"We have to contemplate all that as we will be looking to raise [the \$155 million capex] by the end of the year," McGee said.

Clements said the company had actively started discussions.

"It may be through our DFS discussion that we need to consider further capital raisings, either in Australia or in other markets," he said.

The company has 1.9 billion shares on issue – a legacy of more than 30 years as a listed company – but Clements said the board and management were discussing strategies for tidying up the corporate structure.

With copper set for a bull-run in the next 18 months and international investor interest returning to the African resources space, the Mod register could take on a very different look over the course of 2018.

– Dominic Piper

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