

Zimbabwe dumps

worth their weight in gold

With the current state of the global economy, mining specialist Deswik International has identified an untapped area of business that could see it establish a significant presence within the Zimbabwean mining sector. Deswik Technologies sales director, Dave Capstick, tells Laura Cornish about a specialised technology that could deliver considerable gold ounces by unlocking the potential value contained within some selected mine waste dumps in Zimbabwe.

While Zimbabwe still remains untouched by the majority of the mining community, despite a changing government, Deswik International is carving a niche business in the country which could see it emerge as a significant gold processor.

The Deswik International group, through its subsidiaries, offers a variety of services, including consulting (Deswik Mining Consultants) and ultra-fine grinding mill solutions (Deswik Technologies).

While Zimbabwe remains a high-risk investment option, the new government is trying to introduce progressive policies. In the interim, Deswik International is carving a niche business in the country which could see it emerge as a significant gold processor.

Considering the market's current state, and the slow re-emergence of Zimbabwe as a business-worthy country, Deswik has completed the installation of its first pilot site at

Zimbabwean Mining Investments' (ZMI) Farvic gold mine in southern Matabeleland, Zimbabwe.

The project is a joint venture between Deswik International and ZMI – its local partner – whereby the combined entity can conduct laboratory testing on dump material to ascertain its applicability to fine grinding and the consequent increase in metal recovery.

On a positive result from lab testing, a larger bulk sample is recovered from the dump (50t – 100t) and processed at the fine grind bulk testing pilot plant facility at the Farvic mine.

“The gold reefs in Zimbabwe are most collectively part of a greenstone belt, constituting refractory ore, which lends itself to fine grinding technology,” Capstick indicates.

The Deswik Technologies mill is capable of milling to a size of between 10 and 20 microns extremely fine – and one of the only solutions viable for re-processing dump material.

It has thus far been proven that the ultra-fine grind Deswik

mill in combination with a customised CIP/CIL circuit can result in gold recoveries of 70% upwards, on refractory dump material which previously would only yield a 20-30% recovery.

Capstick says a Deswik Technologies plant reduces leach time by half, with (usually) substantially less cyanide.

The plant will come with a cyanide destruction system prior to the re-deposition of the tailings. In some circumstances a Merrill Crowe recovery system will be used which produces a dry tail as opposed to a carbon-in-leach (CIL) plant.

The pilot plant consists of a 24m³ pre-conditioning tank that prepares the dump material prior to milling and can produce between six and 10 dry tonnes of product per day.

This particular mill at Farvic will process about 0.5tph, but plants can be built up to a processing size of about 40tph. The mill took five weeks to construct and install.

Capstick says there are hundreds of dumps in Zimbabwe, mostly constituting high-grade gold from small size mines. Thus far, six top priority dumps have been identified.

The Deswik-ZMI JV offers dump owners a range of turnkey solutions to extract value from their dump. These include the design, manufacture, installation and commissioning of the fine grind gold recovery plant, which will include the long-term management of the plant.

The combination of the technology, skills and local knowledge gives the Deswik-ZMI JV the ability to be able to extract value from otherwise uneconomic assets.

Although it is still early days, Capstick says there is already potential, and a “natural progression” for the company to become involved in processing current arisings as well. Further more, the intention is to use the technology for nickel, chrome and platinum operations.

OTHER RECENT DESWIK TECHNOLOGIES PROJECTS:

- In April this year, Deswik Technologies supplied two Deswik2 mills to R&D facilities in SA and Russia.

The first mill was purchased by Lonmin Platinum for its R&D and projects facility near Rustenburg.

The fully automated, 2l capacity mill will be used to assess the applicability of fine grinding within the Lonmin process flow throughout the group. This initiative follows on from Lonmin using a Deswik25 at its process pilot site at the Karee concentrator.

During the same month, business initiatives in Russia led to the purchase of a Deswik2 by TOMC for its testing facility in Irkutsk, Siberia. TOMC is a processing and engineering institute and will be using the Deswik2 to offer a fine grinding analysis service to its clients in the Russia/CIS region.

- Last year, Deswik Technologies completed the manufacture of two Deswik 2000 mills for Platinum Mile Resources in Rustenburg. The mills were manufactured at its manufacturing facility in Germiston. The Deswik mills are designed to produce a throughput of between 80tph and 40tph (dry tones).

- Deswik Technologies was also awarded a multi-million US dollar contract to manufacture and commission three Deswik 2000 fine grind mills for the Vasilkovsky gold project in Kazakhstan. The Deswik Technologies mills form part of a Leachox processing circuit and commissioning will be completed in August. ○

Pilot plant at Farvic.

Farvic fine grind gold plant.

Pre Conditioning tank

Deswik 25

CIL Tanks