Palabora Mining Company Limited

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AFRICA'S COPPER BOTTOM

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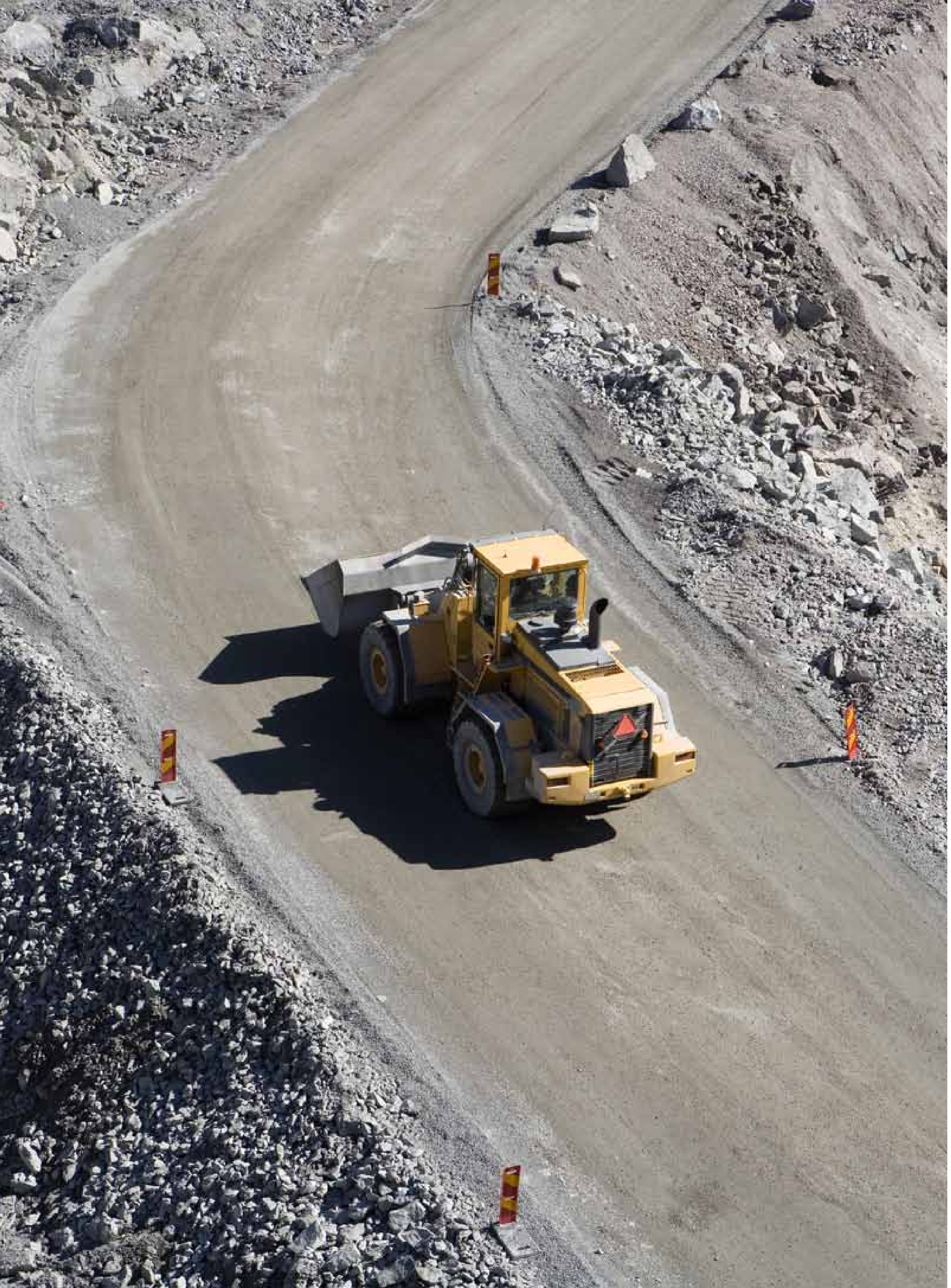

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Modern mining methods continue to extract significant quantities of copper from a deposit that has been worked for over a millennium – now Palabora Copper is preparing for an ambitions expansion programme to maintain production for another decade

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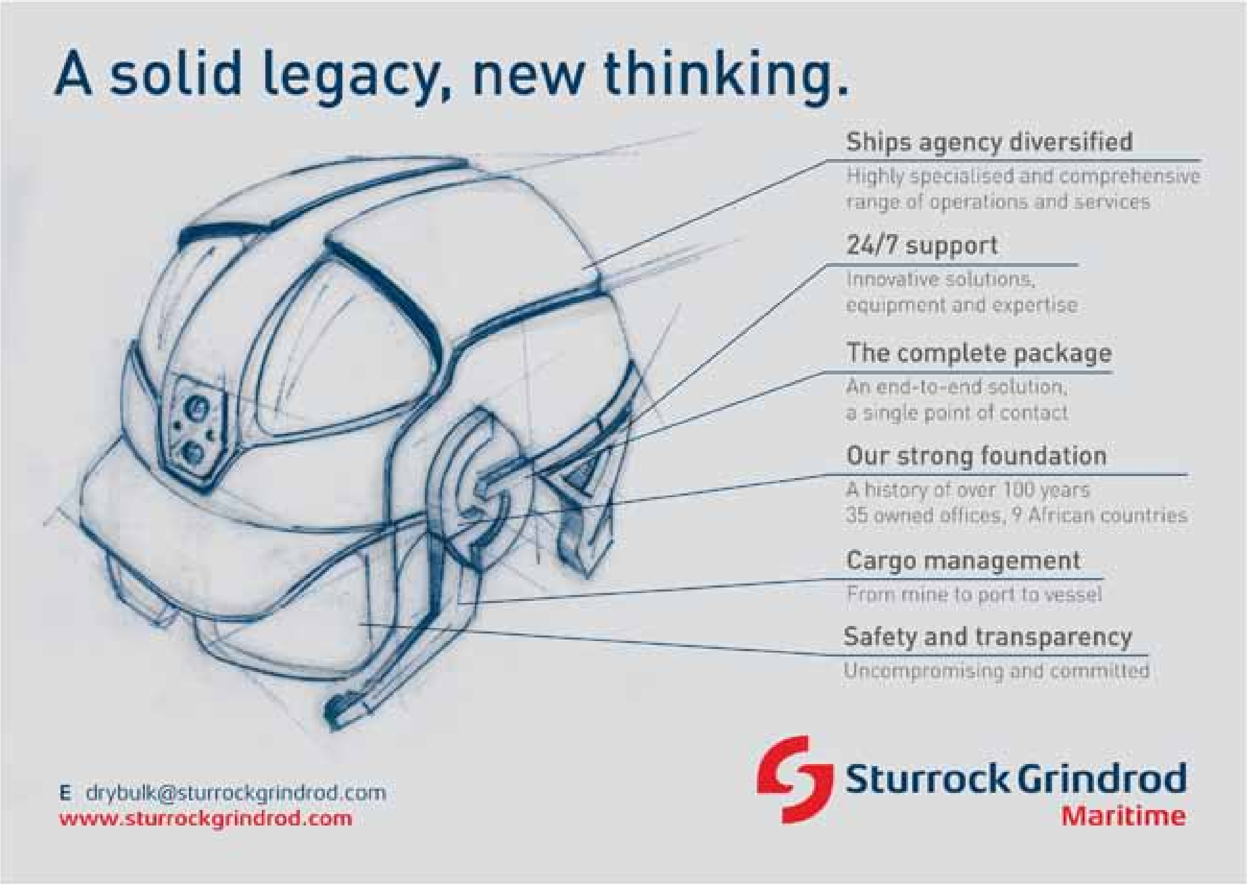
Palabora Copper extracts and processes copper and other by-products in the Ba-Phalaborwa area of Limpopo Province. The unique formation known as the Palabora Igneous Complex is a geologically fascinating region. Archaeological evidence and carbon isotope dating indicate that primitive mining and smelting of copper took place at Phalaborwa some 1,000 years ago. This was followed by the smelting of iron ore 700 years later. From artefacts found in the area it is known that copper of remarkable purity was produced in the Phalaborwa area as early as the 8th century. At that time the Ba-Malatji metal-working tribe, on discovering iron and copper 150 kilometres north of Bushbuckridge where they had settled, moved to this site and named it ‘Phalaborwa’, which means ‘better than the south’.

The area is rich in many other minerals than copper, notably phosphate, which is mined locally on a large scale to feed demand from the agricultural industry. However Palabora Copper does what its name says: though it also mines and exports other by-products such as magnetite, vermiculite sulphuric acid, anode slimes and nickel sulphate it is focused on copper. Palabora is South Africa’s only producer of refined copper and provides the South African market with 85 percent of its copper requirements, exporting the balance of the 80,000 tonnes of refined copper it produces each year.

Palabora Mining Company, which is listed on the Johannesburg Stock Exchange, was incorporated in South Africa as long ago as August 1956. The company was owned and managed by Rio Tinto, which owned 57.7 percent of the shares with Anglo American holding a 16.8 percent stake. On 5 September 2012, the two companies announced their intention to sell their respective interests in Palabora. On 11 December 2012, Rio Tinto announced that it had reached a binding sales agreement with a consortium which



is committed to the ongoing sustainable management of Palabora. The consortium comprises South African and Chinese entities led by the Industrial Development Corporation (IDC) of South Africa Limited and China's Hebei Iron & Steel Group. The sale agreement was concluded in July 2013, and the company's name changed from Palabora Mining Company to Palabora Copper (Pty) Limited.

The Palabora copper mine is what is known in the trade as a block-cave mine. Block caving is a mass mining method that allows for the bulk mining of large, relatively lower grade, ore bodies. It involves undermining an ore body, allowing it to progressively collapse under its own weight – in effect an underground version of open pit mining. A large section of rock is undercut creating an artificial cavern that fills with mineral bearing rock as it collapses. This broken ore falls into a pre-constructed series of funnels and access tunnels built into a bunker-like mass of rock at its base, whence miners extract it continuously from below.

However Palabora claims to take a different approach to the technique. It is in fact a benchmark for integrated design. No other block-cave mine has been put into such a high grade ore-body. And its scale is truly impressive: the block height of the cave reaches a record 450 metres at its centre, increasing up to 700 metres on the periphery, making Palabora a world-class mine. The

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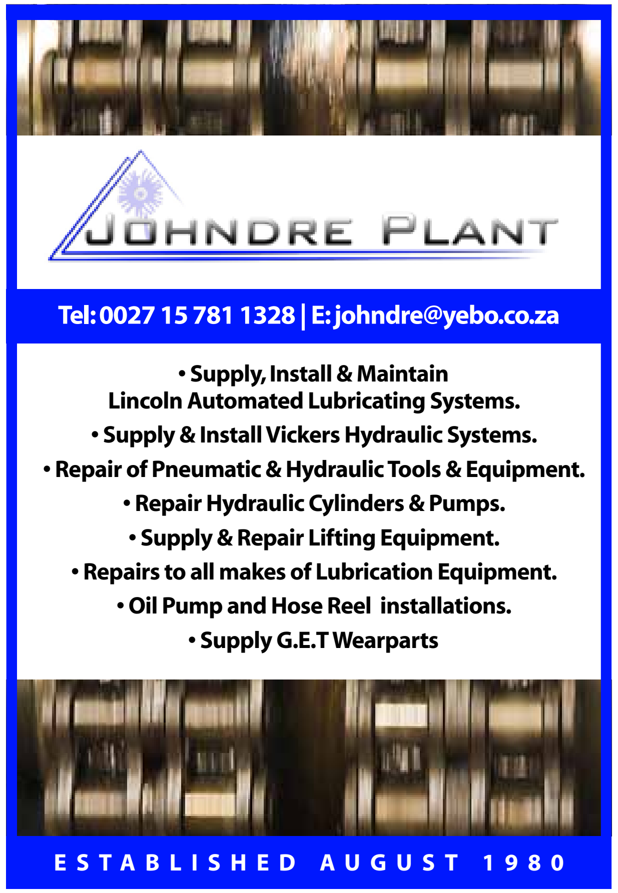

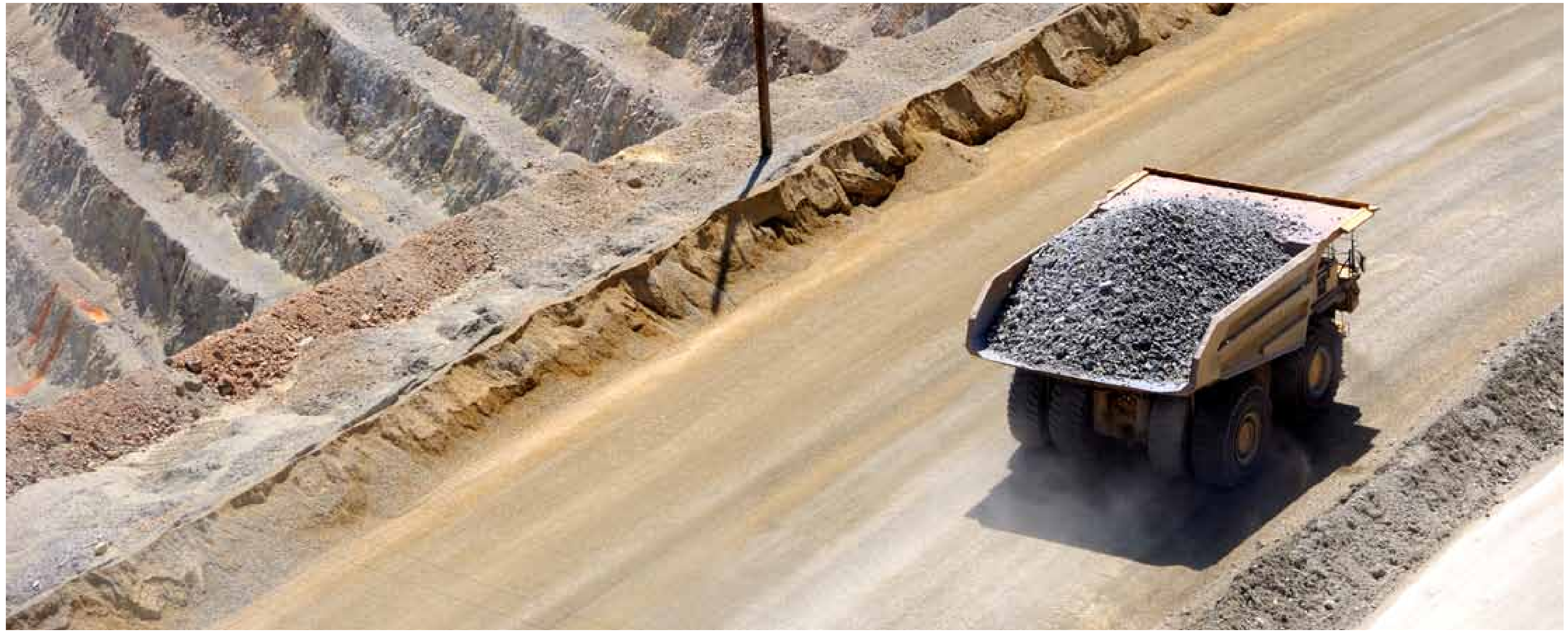

production footprint is however very small, measuring 650 metres in length and 200 metres wide, with 20 production cross-cuts and 320 draw-points. Construction of the underground mine was completed in October 2004 when the 20th cross-cut was brought into full production. By May, 2005 the mine was consistently achieving 30,000 tonnes per day - one of the fastest ramp-ups to full production in the world.

Because of the coarse fragmentation of the ore body, a large number of secondary breaking activities are required to break up oversize lumps of rock and to keep ore flowing through the draw-points for the loaders to haul using a fleet of Load-Haul-Dump (LHDs) vehicles that tip 3,000 buckets of ore every day into four jaw crushers on the northern side of the production area. The ore is crushed to less than 220 millimetres, then fed onto a high-capacity conveyor system up to the shaft complex from where it is hoisted to the surface and delivered to the concentrator.

"Production at Palabora Copper can be extended on an economically rational basis beyond [2015] with the construction of a second lift underground block cave operation"

And since block caving involves subsidence Palabora uses current leading practices in production, scheduling, reconciliation, rehabilitation and maintenance of the mine. This includes leading practices in roadway construction, oversize and hang-up treatment and the maintenance of loader efficiencies and dust suppression systems. Safety is a major consideration at a site which is in continuous operation for 24 hours a day, 365 days in the year. It never stops! This is achieved by dividing the working day into three eight hour shifts. Production, maintenance and service activities are carefully scheduled to obtain maximum benefit from the mining, fixed plant and production machinery; and optimal output from highly trained work teams.

A culture of safety and professionalism is maintained by fostering an open working relationship between key stakeholders,

such as the Department of Minerals and Energy (DME), mine leadership, work teams and trade unions. In a country where strikes and unrest seem almost the order of the day, Palabora Copper has managed to avoid major disruption. A seven day sit in last year was resolved amicably, and the mine restarted without compromising safety or equipment.

The current underground block cave operation, known as Lift I, was originally projected to remain productive until 2020, but this had to be revised when grades were found to be lower than anticipated at the north side of the resource. Now it is expected to become uneconomical after 2015, so the company is pressing ahead with plans for Lift II, one of the largest underground construction operations in South Africa costing some R10 billion. "Comprehensive geological, mine and financial study has demonstrated that copper production at Palabora Copper can be extended on an economically rational basis beyond this date with the construction of a second lift underground block cave operation," said Keith Mathole, the company' general manager for corporate affairs and company secretary.

A R55 million feasibility study was commissioned in November 2013 and completed in May 2014, following a pre-feasibility study that was conducted last year. At the same time, in the first half of this year, some R700 million has been invested in early works, infrastructure and the ongoing development of the twin decline ramps, which were seen as essential to maintaining Lift II as a viable long term option.

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