

THE PROVIDER OF VALUABLE INTELLIGENCE TO THE ZIMBABWE MINING COMMUNITY

Min^{ing}

Z I M B A B W E

ISSUE

60

2022



TIGER WHEEL & TYRE

JOURNEY EXTENDS TO HWANGE



Tiger Wheel & Tyre Hwange, Hwange Bypass, Hwange, Zimbabwe

WEB: www.twt.co.zw



ADELINO

— MINE DRAINAGE PUMPS —

www.driptech.co.zw

0867 700 7000



Chemical solutions for unique value expectations!

www.intraquip.com



We are suppliers of mining, agricultural and water-treatment chemicals. We source quality products from world-renowned manufacturers within and outside Africa.

OUR PRODUCTS



MINING CHEMICALS



AGRICULTURAL CHEMICALS



WATER - TREATMENT CHEMICALS

Bulawayo Branch
77 Bon Accord Road
Westondale
bulawayo@intraquip.com
+263 772 126 755

Kwekwe Branch
915 Industrial Road
kwekwe@intraquip.com
+263 713 426 942

Harare Branch
17 George Avenue, Msasa
harare@intraquip.com
+263 777 241 312

Zvishavane Branch
Shabani Mine, Nil Township
zvishavane@intraquip.com
+263 777 241 273

Chinhoyi Branch
3493/4 Hull Road
chinhoyi@intraquip.com
+263 713 426 952

Filabusi Branch
Stand 347 Filabusi Business Centre,
filabusi@intraquip.com
+263 777 241 317

Kadoma Branch
256 Josiah Tongogara,
kadoma@intraquip.com
+263 713 726 959 /
+263 713 426 867

Mining

Z I M B A B W E

WRITERS/ JOURNALISTS

Rudairo Mapuranga - rudairomap@gmail.com
Anerudo Mapuranga
Keith Sungiso

Contributors

Thannary Brenda Vhiriri
Sandra Fungai Kabaya

SALES & ADVERTISING

Kelvin Sungiso
kelvin@miningzimbabwe.com
Cell/Whatsapp: 0775523000

PUBLISHER

Timelison Media (Zimbabwe)

ABOUT PUBLICATION

Mining Zimbabwe is the premier source of unfiltered Zimbabwe Mining News. Our core focus is the Zimbabwe Mining Industry, trends, new technologies being developed and used to improve this crucial sector, as well as new opportunities and investments arising from it. Mining Zimbabwe's sole purpose is growing and empowering the Mining Industry and highlighting all its challenges as well as putting forth expert solutions

AVAILABLE IN RETAILS STORES



FOLLOW US ON SOCIAL MEDIA



Online Awards



Publisher contacts

4th Floor Fidelity Life Towers Harare CBD
Tel: +263 242 777728 | Whatsapp +263 242 777728

Advertising: info@miningzimbabwe.com
Web: www.miningzimbabwe.com

CONTENT

Mining Zimbabwe Magazine | Issue 60

COVER: TIGER WHEEL & TYRE JOURNEY EXTENDS TO HWANGE



22

INSIDE MINING ZIMBABWE

- 06 Tiger Wheel & Tyre Journey extends to Hwange
- 08 Zimplats commits US\$1.1 million towards exploration
- 10 Unki production increased over 40%
- 12 A miner dies weekly from Mine accidents in Zimbabwe



14

- 14 Gold deliveries in over 33% increase
- 16 Electricity challenges, a major challenge for mining growth in 2023
- 18 Unpacking the Copper Control Amendment Act No.6, 2022
- 19 The need to have an artisanal Ms mining policy

30



- 22 Dust, Dirt and Heavy Loads Spherical Roller Bearings for Vibrating Screens
- 24 Improving Mining Equipment Maintenance and Safety
- 26 Increasing Operational Efficiency in Mining
- 25 Cheap is expensive
- 28 Smart Mining - How Technology Can Improve Operations
- 29 VTU Platinum Lodge, Turf Mhondoro-Ngezi on Expansion Drive
- 32 Performance of Small-scale mining in 2022



MINING CHEMICALS

Quote from a customer!!

"Without doubt the most reliable chemical supplier and the most respected and well known brand in Zimbabwe "

With references like that we don't need to advertise!

Servicing the mining industry in Zimbabwe without interruption for over 40 years.

Mining Manager

Ray Chiridza +263 712 605 141

Mining Sales Bulawayo

Moideen Brown 08677007425

Mining Sales Harare

Tendai Munjoma +263 774 491 477

Jonathen James and Mapfumo Marerwa
08677007426



SPECIALIST IN RUBBER AND CONVEYOR BELT SPLICING

INDUSTRIAL RUBBER CONVEYORS AND GENERAL ENGINEERING

- Conveyor belts Hot/ Cold Splicing
- Rubber Lining/ Ceramic Lining
- Hoses and Fittings
- Sandblasting/ Painting
- Fabrication and Structural installations



44 Auckland road Crn Plymouth road & Southerton Harare



0242 621266/7 0772 866 260 0773 488 726



sales@headough.co.zw



www.headough.co.zw



Tiger Wheel & Tyre

Journey extends to Hwange

A journey of a thousand miles begins with a single step. So true is this when considering the growth and expansion of Tiger Wheel & Tyre Zimbabwe as they expand their national coverage across Zimbabwe with the launch of their eighth store in Hwange.

"The expansion into Hwange is driven by the understanding of our market and the demand for end-to-end tyre solutions for Mining vehicles within the Mining sector which we are more than capable of supplying", said their Managing Director, Rishi Magecha, at their well-attended on-site launch.

The event saw representatives from the Hwange Mining community including Blake Mhathiwa, Managing Director of Hwange Colliery Company, who officiated on the day together with stakeholders from government, Hwange City Council, the corporate and local community. Rishi Magecha noted the significance of the support from these groups in Tiger Wheel & Tyre's success saying, "Our growth and success is attributed to those who rally through the most difficult times to enable our business to grow and continue to thrive into the future".

As the business grows, it has also relied on support from its staff whose compliment has grown from 40 to over 200 in their nine year existence. Wherever the business expands into, they create employment opportunities in the community both directly and indirectly. The entire management team boasts of this skill and talent base in their ambitious drive to Best-In-World status.

The vision is to have a full national footprint within the next five years, complementing the eight already existing stores in Harare, Bulawayo, Kwekwe, Hwange & Victoria Falls.

With eight stores spread across Zimbabwe, the team at Tiger Wheel & Tyre have set a target of 5 new stores in 2023 to increase their footprint and service capacity. Their aim is to provide all cities, towns and people with world class facilities that will provide safety and value to local residents and businesses at the best possible prices.

The vision is to have a full national footprint within the next five years, complementing the eight already existing stores in Harare, Bulawayo, Kwekwe, Hwange and Victoria Falls.

As he closed the event, Rishi Magecha articulated that, "Tiger Wheel & Tyre is dedicated to customer service excellence and satisfaction, value addition and

enhancing clients' mobility, through extreme knowledge of the quality products and services we provide. We have a deep respect for individuals and operate on a sound financial basis, resulting in profitable growth, thereby ensuring career opportunities, personal development and increased value for all our stakeholders".

About Tiger Wheel & Tyre Zimbabwe

Tiger Wheel & Tyre Zimbabwe is a growing force in Zimbabwe's automotive industry and brings a unique retail experience to a wide range of customers countrywide.

Their fitment centres offer world-class service, unparalleled expertise and the widest variety of wheel and tyre brands, all at amazing value for every budget. Tiger Wheel & Tyre Zimbabwe are dedicated to customer service excellence, value addition and enhancing client's mobility and are able to offer customers, innovative end-to-end tyre solutions, ranging from Passenger, 4x4, SUV & Light Truck, Commercial Truck and Bus tyres, Retreading, Agricultural, Mining and OTR tyres and related products.



SMART PROGRESS BUILDING THE FUTURE, TODAY!



CONTAINAWIS



6 Borgward Road, Msasa, Harare, Zimbabwe
P.O. Box AY73, Amby, Harare, Zimbabwe
Tel: +263 242 447957 or +263 242 447958
Cell: +263 78 272 2396
Email: sales@sbs.co.zw Web: www.sbs.co.zw

Containawise supplies and installs high quality flat pack products to suit any environment, ranging from offices, accommodation, ablutions, kitchens, dining halls, temporary or permanent camps and more. Spanning across multiple industries, we have solutions for mining, agriculture, construction to name a few.

With years of experience in container modifications and conversions, Containawise can help you make an informed decision on the right type of product to suite your needs and deliver a high quality product to your doorstep.



THE WORLD'S MOST RELIABLE AND EFFECTIVE **FLATPROOFING TYRE** TECHNOLOGY




Driven by Quality

ATT 095C

IT'S WHAT'S INSIDE THAT COUNTS



ELIMINATE FLAT TYRES



IMPROVES RIDE AND TRACTION



REDUCES VEHICLE DAMAGE



PROMOTES OPERATOR SAFETY













For specs, weight charts & more visit www.protyre.co.zw info@associatedtyres.co.zw — facebook.com/protyrez



No. 8 Portland Rd, Workington, Harare, Zimbabwe. T: Basil 0712 210 162 or Mark 0772 210 470



ZIMPLATS

commits US\$1.1 million towards exploration

The country's biggest Platinum Group Metal (PGM) producer Zimplats has committed to spending US\$1.1 Million on exploration projects during the final quarter of 2022. A total of US\$0.4 million was spent on exploration projects during the quarter that ended 30 September 2022.

According to Zimplats' quarterly report for the period ended 30 September 2022, US\$0.4 million was spent on exploration projects with US\$1.1 million committed as of 30 September 2022.



"A total of US\$0.4 million was spent on exploration projects, with a further US\$1.1 million committed as at 30 September 2022. Exploration activities included mineral resource evaluation, comprising

approximately 6 103 metres of surface diamond drilling on mining lease ML 36," the company said.

The company said a total of US\$252.2 million has been spent on the project with US\$82.4 million has been committed against a project budget of US\$468 million.

"Development of Mupani Mine and the upgrade of Bimha Mine (to replace Rukodzi which was depleted in FY2022, Ngwarati, and Mupfuti mines, which will be depleted in FY2025 and FY2028 respectively), progressed well during the quarter. A total of US\$252.2 million has been spent on the project to date. US\$82.4 million has been committed against a project budget of US\$468 million.

"The third concentrator plant, which will increase milling capacity by 0.9 million tonnes per year (equivalent to about 80 000 6E ounces) was commissioned during the quarter. Cumulative project expenditure as at the end of the quarter amounted to US\$91.3 million, with US\$9.3 million committed against a project budget of US\$104.1 million. The plant is expected to ramp up production to design

capacity by the end of the second quarter.

"Implementation of the US\$521 million smelter expansion and SO₂ abatement plant project is on course, with US\$28.8 million spent and US\$215 million committed as at end of the quarter.



"Implementation of the 35MW solar plant which is Phase 1 of Zimplats' 185 MW solar project progressed during the quarter with a total of US\$0.5 million spent against a budget of US\$37 million. The solar plant is being constructed at Selous Metallurgical Complex and is targeted for completion in FY2024. Overall, the project has four implementation phases with the last phase scheduled for completion in FY2027 at a total project cost estimate of US\$201 million," the company said.

THE MOST RELIABLE PACKAGING AND PERSONAL PROTECTIVE SAFETY SUPPLIER. WE VALUE OUR CUSTOMERS SATISFACTION.



Unki production increases by over 40 per cent



Zimbabwe's second biggest platinum group metal (PGM) producer Unki Mine has recorded a production increase of 41 per cent during the quarter that ended 30 September 2022 compared to the same quarter of last year, figures from Unki's parent company Anglo American Platinum show.

The Anglo-American Platinum-owned PGM producer recorded 59 900 tonnes during the quarter compared to 42 600 tonnes produced during the comparable quarter of 2021. However, there was a 10 per cent decrease compared to the previous quarter ended 30 June 2022 where the mine recorded 66 300 tonnes of production.

Compared to the first quarter of 2022, the

PGM producer recorded an increase from 53 300 tonnes while during the fourth quarter of 2021, the mine produced 63 200 tonnes.

During the first three quarters of 2022, the PGM producer recorded a 27 per cent increase to 179 500 tonnes from 141 400 tonnes produced during the first three quarters of the previous year.

Completion of the company's R700 million de-bottlenecking project towards year-end resulted in an improved capacity.

The project focused on upgrading the flotation circuit, the primary mill and other ancillary equipment.

Unki last year invested US\$48 million

towards increasing its concentrator capacity, which is expected to boost output by 30 per cent.

General Manager, Walter Nemasasi, at the time said the new concentrator was set for commissioning sometime in September last year.

The new plant was the second major value addition and beneficiation project by the mine after the commissioning of a US\$60 million smelting plant at the mine by President Mnangagwa in 2019.

The project was expected to increase the production of platinum group concentrate at the plant by 30 per cent and ultimately increase exports by the same margin.

The company said the project was so huge that it will increase production from 180 000 tonnes a month to 210 000 tonnes a month.

Zimbabwe is envisioning a US\$12 billion mining industry by 2023. Of the US\$12 billion, platinum will contribute US\$3 billion.



**International
Parts & Equipment
Group (South Africa)**

IPEG offers procurement and cross-border logistic solutions across Southern Africa. We specialise in the following:

- Earthmoving Equipment
- Buses, Trucks & Trailers
- Spare Parts
- Filtration & Lubrication
- Workshop & Site Consumables



Contact us today!



info@ipegroup.co.za



www.ipegroup.co.za



20 Dawn Office Park, Glen Marais, Kempton Park, Gauteng, 1619



+27 10 025 0422
+27 72 642 9505



**REVERSE CIRCULATION DRILLING
ROTARY AIR BLAST DRILLING
DIAMOND CORE DRILLING
BLASTHOLE DRILLING
BOREHOLE DRILLING
BLASTING**

**TANDAMANZI
DRILLING**



Getting your resources out of the ground successfully!

ADDRESS: Stand 323 Harrow Road Ext, Msasa, Harare, Zimbabwe

TEL: + 263 24 2486 241 or +263 24 2486 331 or +263 24 2485 675

CELL/WHATSAPP: + 263 772 709 253 or + 263 712 211 675

EMAIL: tandamanzi@zol.co.zw or quotes@tandamanzi.co.zw

WEBSITE: www.tandamanzi.com

A miner dies weekly from Mine accidents in Zimbabwe



Tapererwa Paswavaviri

Mine accidents in Zimbabwe have been on the rise with the country recording 125 accidents and 139 fatalities during the first 3 quarters of 2022, a government official has said.

Rudairo Mapuranga

Speaking at the National Mine Rescue competition at Jena Mine in Silobela recently, Deputy Chief Government Mining Engineer Mr Tapererwa Paswavaviri said the Mine Rescue Association should up its sleeves to help the Artisanal and Small scale miners who have contributed to the majority of the fatalities.

He also said that the office of the Chief Government Engineer was also taking the initiative of reaching zero harm and would work closely with the Mine Rescue Association.

In 2019 Zimbabwe recorded a total of 116 accidents with these resulting in 182 fatalities. In 2021, the country recorded a decrease in both accidents and fatalities as compared to the previous year with 121 accidents and 139 fatalities. As at 30 September 2022, the country had recorded 125 accidents and 139 fatalities.

"I note with great concern that the years 2019 to date, witnessed some serious increase in mine accidents and fatalities.

"These figures are unacceptable with an expectation of a vision of establishing a zero accident potential for all mines of Zimbabwe. Mine safety must be treated as a top priority by the entire workforce.

"In Zimbabwe, nearly one miner dies every week on an average over the last five years with 139 killed over the last nine months of 2022 indicating a disturbing trend," Paswavaviri said.

The Deputy Chief Government Mining Engineer said the government was working to establish very deterrent penalties on mines that do not uphold safety and health standards.

"I understand your association has noted the adverse impacts of these losses whilst you will be taking the responsibility squarely on your shoulders, the Chief

Government Mining Engineer is in the process of putting in place deterrent penalties to make compliance a better option.

"We must not allow situations of this nature where occurrences of mine accidents take one life and causes loss of millions of dollars.

"My office has been running around the country to do awareness campaigns with small-scale miners and believe the message has sunk in the small-scale mining sector. They have since taken it upon themselves to try and copy you the big brother with the assistance of the Zimbabwe School of Mines," he said.

Zimbabwe has been plagued with mine disasters over the last few months, often resulting in the death of scores of miners. Most of the mine accidents have occurred at illegally run disused mines, with a few happening at legally-run small scale mines.

The competition saw the How Mine Rescue team as the overall winner, winning the best Proto team followed by the Mimosa Mine rescue team which scooped the second position while the SMC Zimplats rescue team was crowned third.

Contact us:
 65 Mutare Road, Msasa, Harare | +263 242 487 932/3 | 0777 743 743
 Bulawayo Representative castain@hiltizim.com | +263 771 701 067
 www.hilti.co.zw

HILTI

Hilti. Outperform. Outlast.



**SERIOUSLY
CONVENIENT**



11 stores nationwide



halsteds@halsteds.co.zw



www.halsteds.co.zw



0781 824 212



0242 447 777



GOLD DELIVERIES

IN OVER 33 PERCENT INCREASE

Gold deliveries to the country's sole gold buyer and exporter Fidelity Gold Refinery (FGR) increased by 33.8 per cent during the first 10 months of the year compared to the same period last year, raising the prospect that Zimbabwe might achieve the 35-tonne target for this year.

According to FGR General Manager Mr Peter Magaramombe, the massive increase in deliveries has been necessitated by a host of measures taken by FGR and the Reserve Bank of Zimbabwe (RBZ) including timeous payments and incentives.

"The 5% Gold incentives to the small-scale miners are key, timeous payment to our miners, and incremental good incentives to the large-scale miners," Magaramombe said.

The 33.784 per cent increase saw 29 460.6532kgs of gold being delivered by the end of October 2022 compared to 22 024.3507 kgs delivered during the same period last year.

Artisanal and Small-Scale Miners (ASM) have contributed 67.8 per cent of the total deliveries, submitting 19 987.6292kgs compared to 9 473.0240 kgs delivered by the large-scale producers. ASM deliveries increased by 54.3 per cent from 12952.3801 kgs delivered during the same period last year with large-scale producers' gold

deliveries increasing by 4.4 per cent from 9071.9706 kgs delivered during the same period in 2021.

Gold deliveries to FGR in the nine months to September 2022 grew by 36 per cent to 25,7 tonnes, from 18,9 tonnes in the same period a year earlier.

According to FGR statistics seen by this publication, overall gold deliveries stood at a 41.0734 per cent increase to 22290.4183kgs during the period January to August of 2022 compared to 15800.5779 kgs delivered during the same period last year.

Large-scale producers increased their gold delivery by 5.02535 per cent to 1086.5330 kgs in August 2022 compared to 1034.5436 kgs in the same period last year. The Artisanal and Small-Scale Miners (ASM) increased their deliveries by 18.2789 per cent to 2263.2531 kgs in August 2022 from 1913.4886 kgs in August 2021.



FIDELITY GOLD REFINERY
(PRIVATE) LIMITED

FGR is confident that gold deliveries to FGR will reach 40 tonnes this year as a result of notable expansion projects by Large producers as well as the growth in ASM projects.

According to FGR General Manager Mr Peter Magaramombe, his organization is confident that if the government maintains gold delivery supportive arrangements in place (gold incentives schemes, 100 per cent retention for ASM to mention a few) deliveries will increase to even surpass the 40 tonnes gold target.

"If the current gold conditions that are in place are maintained or improved, projections of gold deliveries to Fidelity Gold Refinery will be 40 tonnes as at 31 December 2022.

"Why 40 tonnes? FGR is expecting to see growth in gold deliveries from the Large Scale Miners sector mainly due to notable expansion projects by Blanket Mine, Freda Rebecca (Shamva), Eureka Gold Mine and Riozim (Cam and Motor). Growth in the ASM sector is to be sustained by favourable pricing, availability of cash and the retention of the incentive scheme.

"What are some of the measures that we have put in place to maintain the positive growth in gold deliveries to FGR? Maintain the forex retention of the LSM 80-100% on the incremental gold delivered to FGR. Maintain the current timeous payment to both large-scale and artisanal and small-scale miners. FGR will continue to lobby the government to continuously provide favourable policies to miners.

"FGR will continue funding the operations of the small-scale miners and continue finding solutions for progressive growth of ASM so that they can graduate to become Large Scale miners. Fidelity shall continue to work closely with the Ministry of Mines and Mining Development and other Government departments to ensure that the gold leakages are minimised.

"In conclusion, the measures that I have highlighted were put in place to support an increase in gold production and shall be maintained and reviewed from time to time to achieve the 2023 vision of a Four Billion United States Dollar gold industry by 2023," Magaramombe said.

According to the Deputy Minister of Mines and Mining Development Dr Polite Kambamura, the government's positive policy intervention in the gold mining sector is bearing fruit. He added on saying that the government was eying more growth in the gold industry.

"Government positive policy intervention into the sector is bearing fruit. The gold sector was incentivised by the government through the Reserve Bank of Zimbabwe, this has seen an increase in gold deliveries to FGR. However, the sector has the potential to score higher," Dr Kambamura said.

FGR statistics also show that gold delivery to Fidelity in July increased by 4.9 per cent increase to 2963.9129 kgs from 2824.6174 kgs delivered in 2021 with the ASM deliveries increasing by 2.5 per cent increase to 1998.1277 kgs from 1950.3063 kgs during the comparable month of 2021 while large scale gold producers deliveries also increased by 10.5 per cent to 965.7852 kgs from 874.3111 kgs in 2021.

Gold deliveries in June however decreased by 5.20227 per cent to 2 805 kgs from 2 959.0733 kgs delivered in June 2021, ASM deliveries however increased to 1 968.0192 from 1 833.4697 delivered in June 2021 with the large-scale deliveries decreasing significantly to 837.1151 from 1 125.6036 delivered in June of the previous year.

In May 2022 total deliveries to FGR increased by 79.5403 kgs per cent to 2994.7512 from 1668.0102 kgs delivered in May 2021, with small-scale miners accounting for 1 939.0712 kgs from 783.8105 kgs delivered in May the previous year while large scale miners delivered 1 055.6800 kgs from 884.1997 kgs delivered the previous year.

FGR figures show that in April 2022 gold deliveries increased by 3.71761 per cent to 1621.9712 kgs from 1563.8339 kgs in March while Large scale producers' deliveries

decreased by 14.1343 per cent to 859.4400 kgs from 1000.9122 kgs produced in March.

The statistics show that overall deliveries to Fidelity in April decreased by 3.24925 per cent to 2481.4112 Kgs from 2564.7461 kgs delivered in March.

During the first quarter of 2022 gold deliveries jumped 92 per cent to 7.695 tonnes from 4.016 tonnes in the comparable period of 2021.


The March 2022 gold output spiked 39 per cent to 2.564 tonnes from 1.8 tonnes achieved during the comparable period following the 5 per cent mining incentives put in place by the central bank.

Of the 7.695 tonnes delivered during the first quarter of 2022, small-scale miners delivered 4.949 tonnes against 2.746 tonnes from large-scale miners.

Large gold producers delivered 11,2 tonnes to Fidelity in 2021 whilst small-scale producers contributed 18,5 tonnes. The highest tonnage of gold was delivered in the fourth quarter when small-scale miners delivered a record 7,6 tonnes, whilst primary producers weighed in with 3,1 tonnes.



KW BLASTING
A DIVISION OF DRILLING RESOURCES ZIMBABWE (PRIVATE) LIMITED

Drilling and Blasting Section

- Open Cast Mining
- Dam Excavations
- Road Earthworks

Lateral Support
Demolition & Restricted Blasting

Our RC and Borehole Section

Our RC/Borehole section trades using our registered company name, Drilling Resources Zimbabwe (Pvt) Ltd.

RC Drilling

- Vertical holes up to 200m
- Angle holes between 60° & 90°

Borehole Drilling

- Up to 200m deep

Mud Drilling

Contact Details: 54 Martin Drive, Msasa, Harare, Zimbabwe | enquiries@kwblasting.co.zw | +263 242 487244; +2638677004113 | www.kwblasting.co.zw

miningzimbabwe.com • ISSUE 60 • page 15

Electricity challenges, a major challenge for mining growth in 2023



Chamber of Mines President Collin Chibafa

While the mining industry captains are optimistic that the mining industry (though at a lower rate than 2022) will grow significantly in 2023, power challenges remain a major headache to frustrate the mining industry's upward trajectory Prospects.

Rudairo Mapuranga

Through the state of Mining Industry Survey Report which is believed to have a margin of error of not more than 5%, mining industry captains believe that the sector will grow significantly in 2023.

According to the report, the mining industry is experiencing a power outage of between 6 to 12 hours a day resulting in production stoppage and output losses in the process losing an average of 25 per cent of potential output.

The industry captains have indicated that power challenges have made the sector resort to alternative power, which is expensive. The cost of running diesel-powered generators is high, propping up



Governor Mangudya

the overall cost of production in the mining industry.

The report shows that mining executives raised concern about the increase in electricity tariffs to about US\$12.21/kW. The captains state that the increase in electricity cost will consume on average 20 per cent of mining companies stay in business Capital budget which is largely funded from retained earnings.

Speaking at the presentation of the State of the Mining Industry report at Holiday inn Hotel on recently, the President of the Chamber of Mines of Zimbabwe (CoMZ) Collin Chibafa said electricity tariffs were not fair to the growth Prospect of the mining industry as the sector pays more for power than other industries at the same time also paying more taxes.

He said it was important for the mining industry to be treated equally to other industries.

"Regarding electricity, as an industry, we struggle to accept the justification of the pricing structure. If we look at the mining sector, we surrender 40% of our forex to the Reserve Bank but a local business (those who sell locally produced goods to the local market) when they bank their money they surrender 20 per cent. Mining brings more forex currency to the country but pays more taxes, this is unfair. Local entities also pay less electricity tariffs than the mining sector, this is also unfair, we call for uniform tariffs, that are fair and sustainable," President Chibafa said.

Secretary in the Ministry of Energy Dr Gloria Sibusisiwe Magombo said the

mining sector should participate in creating renewable power projects. She also commended companies like Caledonia for participating in the renewable energy initiative to ease the national grid.

"The mining sector should do its part in participating in renewable energy projects. I would love to applaud some mines like Caledonia who have managed to install a 12 MW solar plant. We want to ensure you that we will do everything to solve power challenges, all hands are on deck to provide enough electricity. You might be surprised that by the end of next year, we won't be talking about electricity challenges," Dr Magombo said.

However, ZESA refused to adjust electricity tariffs saying that the pricing structure was justifiable and was important for ZESA to keep running. Speaking at the event, Engineer Choga said the cost of producing electricity in Zimbabwe was high thereby leading to high tariffs.

"People need to understand that cost of producing electricity is different from country to country, therefore, electricity tariffs will not be uniform. As we advocate for tariffs to be reduced, we have to also put into consideration the costs of production. I would say, the mining industry should accept the current tariffs for ZESA to work sustainably," Engineer Choga said.

Speaking at the same event, the Reserve Bank of Zimbabwe (RBZ) Governor Dr John Mangudya said the central bank was working effectively to reduce inflation and confidence in local currency. He said if successful, companies will be able to pay for electricity in local currency.

Speaking at the event, the Chairperson of the Parliamentary Portfolio Committee on Mines and Mining Development Hon Edmond Mkaratigwa said it was significant that government and parastatals lead in making the local currency effective by charging for their services in only local currency as this will reduce the risk of players paying more.



Hon Edmond Mkaratigwa

CHLORIDE

ZIMBABWE

- Exide Automotive Batteries
- Underground Locomotive Batteries
- Diesel Starting Locomotive Batteries
- Forklift Traction Batteries
- Standby Batteries



Wider Range
Faster Service
Better Value



CHLORIDE
STANDBY & MOTIVE
BATTERIES

Contact us on: 08677621470

industrial@chloride.co.zw 

Unpacking the Copper Control Amendment Act No.6, 2022

By Sandra Fungai Kabaya



Sandra Fungai Kabaya

The Copper Control Amendment Act No.6 (Copper Control Amendment Act, 2022) was gazetted on 21 October 2022 to amend the Copper Control Act [Chapter 14:06]. The Copper Control Amendment Act, 2022 introduces the following significant changes:

Certificate of Origin

No one shall deal in or possess copper as a dealer or putative dealer (as a principal or agent) unless he or she possesses a certificate of origin. The certificate of origin must include the following information

- a. name and address of both the seller and purchaser;**
- b. description of the copper;**
- c. quantity of the copper;**
- d. reasons for disposal;**
- e. endorsement by the police.**

Any person who unlawfully or intentionally deals in or possesses copper without a certificate of origin commits an offence and unless there are exceptional circumstances, is subject to imprisonment for a term not less than ten years without the option of a fine.

Forfeiture of vehicles used to transport legal copper

When a person is convicted of an offence under the Copper Control Amendment

Act No.6, the court must order that any vehicle or other device used to transport illegal copper be forfeited to the State. This appears to be problematic; the court cannot exercise its discretion, and it must order forfeiture regardless of the circumstances, even if forfeiture would result in a wholly disproportionate punishment and even if the vehicle belonged to someone who is completely innocent of the crime.



Failure to give satisfactory account for possession of copper

Anyone in possession of stolen copper commits a crime. Previously, a person who failed to give satisfactory account of copper possession was liable to a fine not exceeding level 8 or to imprisonment for a period not exceeding two years, or to both such fine and such imprisonment.

However, in terms of this amendment, if no special circumstances peculiar to the case exist, anyone in possession of stolen copper will be liable to imprisonment for a period not less than ten years without the option of a fine. The amendment makes it a crime to possess or deal in stolen copper, even if the person doing so is unaware that it is stolen.

Vandalism of any item or essential infrastructure through theft of copper cables

Any person who unlawfully, knowingly, and intentionally

- tampers with, damages or destroys utilities through theft of copper cables; or
- colludes with or assists another person in the commission, performance or carrying out of the theft of copper cables; or
- who knows or ought reasonably to have known or suspected that there are copper cables; shall be guilty of an offence and will be liable to a mandatory minimum sentence of ten years in the absence of special circumstances.

The recurring mandatory minimum ten-year sentence referred to in this Copper Control Amendment Act No.6 is unfavourable because it denies courts the ability to exercise one of its most important options: imposing sentences on convicted persons that are fair to both the State and the accused. Furthermore, mandatory minimum sentences that are grossly disproportionate to the crimes for which they are imposed are unconstitutional and constitute cruel punishment, as prohibited by section 53 of the constitution of Zimbabwe.

Conclusion

In conclusion, the best way to reduce crime is to improve the capacity of policymakers and other law enforcement agencies. Increased penalties will have little effect unless law enforcement is improved. The Copper Control Act already imposes strict controls on copper dealers, and the Amendment imposes even harsher penalties. Copper theft will be significantly reduced if perpetrators were vigorously prosecuted.

The need to have an artisanal small-scale mining policy



by Thammary Brenda Vhiriri

With the positive direction taken so far over the Mines and Minerals Amendment Bill, it becomes very imperative that the needs of ASMs are regulated and considered starting at the policy level. The mining industry is very dynamic, and changes are very rapid and the amendment of laws might not be quick enough to catch up with the changes. It is however important that a deliberate position be spelt out as to the long-term goals in respect of the ASMs in Zimbabwe.

South Africa has already taken the much-needed step and gazetted the ASM policy and listed below are some of the areas that Zimbabwe could learn from considering that the issues of concern are not different. It cannot be ignored that 3000+ ASMs are contributing meaningfully towards the economy of Zimbabwe yet there is no clear definition of ASM and the terms and conditions specifically attached to them.

The much-desired ASM policy is aimed at creating a formalised, sustainable artisanal and small-scale mining industry. Thus, it is important to define clearly who can be considered for artisanal small-scale mining licensing and now to regulate and monitor the same.

The South Africa ASMs published policy has defined ASM by the investment threshold and the type of tools and technology used. Further, under the South African policy, the ASM licence has been limited to open-core mining only. Though this method has its own limitations it is a starting point that can be refined over time. In some jurisdictions, ASM licenses are restricted and issuance of such licenses

is for local (indigenous) persons only. This will ensure that large companies will not benefit from some of the incentives afforded to ASMs.

Though persons can apply for licenses for ASM, the government of South Africa has retained the discretion to reserve specific mining areas for ASM and to issue licenses to identified groups. The government of Zimbabwe has taken an initiative to reserve some mining areas for youths and such reservations are allowed in terms of the Mines and Minerals Act, a clear policy outlining in detail the scope and assessment will go a long way in enhancing the cause.

Over the years several accidents have occurred on big mines, with artisanal miners trying to earn a living through some illegal activities on big mines. South Africa's policy has advocated for tribute agreements between the two classes, wherein the large-scale miners allow the artisanal small-scale miner to carry out mining over areas that would otherwise be unprofitable for the large company to try and extract minerals.

South Africa has provided for sector-specific taxes and royalties prescribed rates that are meant for the ASMs and this is a positive move as this does away with the uniform approach which has scared away the artisanal miners from formalising their business.

We further also note that the government of South Africa has placed a huge burden upon itself to ensure continuous training of ASM by various departments for safety, health and environment. There appears to be less appetite for punitive action but rather an informative, participatory

approach in order to promote sustainable practices. There is a specific department which is to handle this coordinated approach and ensure that the activities and services are provided.

The ASMs permits are transferable and can be mortgaged and this allows growth on the part of ASMs who can access loans to advance their mining activities over time hence graduating from ASMs to medium-large scale mining in the long run. The challenges being faced in Africa by ASM are almost similar. Zimbabwe should formulate a policy which deals with issues that makes it difficult for ASM to operate and shy away from formalising their activities in order to promote sustainable mining practices. Measures should be put in place to cut the cost of running a mining business. An example is a need to balance the need to protect the environment and to promote compliance with the EIA requirements. It is imperative to make the EIA certificate more affordable and the absence of the EIA should not invalidate a mining license otherwise this will perpetuate illegal mining. Instead, it should prevent the implementation of mining projects before its acquisition and compliance. The attainment of an EIA is expensive and cumbersome and it's not practical for one to invest such an amount of money and time over ground that you do not have title over. The current legal position in terms of the EMA Act is difficult to sustain and comply with. This position of restricting enjoyment has the effect of gradual compliance and leaves room for the regulatory authority to allow the miner to gradually work after a certain level of compliance, which is a better position than complete resistance and illegal panning.

Further, the regulating authorities for Mining and Environment should be proactive and participate in activities that promote and also actually rehabilitate areas affected by mining activities to foster and instil this culture within their clients.

Thammary Brenda Vhiriri is the CEO for TVB Focal Point (Pvt) Ltd, a mining and agricultural land consultancy company. She is also a registered legal practitioner, conveyancer and notary public, with a wealth of knowledge in mining and agricultural land issues.

Website: www.tbvfocalpoint.co.zw

Email: info@tbvfocalpoint.co.zw

Cell no : +263717 100 494 /

+263772 979 277



BT SERIES DTH HAMMERS

4" BT4 TUBELESS HAMMER



5" BT5 TUBELESS HAMMER



6" BT6 TUBELESS HAMMER



Boart Longyear's BT Hammer series offer less maintenance and increased reliability with minimal moving parts. 100% tubeless, no troublesome foot-valves. BL hammers are extremely fast as well!



BSDS is official supplier of Boart longyear rig spares and parts and as well as diamond drilling consumables.

Product range:

- Impregnated diamond bits
- Longyear™ bits
- Casing shoes
- Reaming shells
- Boart Longyear Rig Spares and parts



6867 Faber Road
Bluffhill
Harare



Tel: +263 8677 008 798, +263 242 745388
+263 771 567 532 +263 777 884 954



Web: www.bsds.co.zw



DUST, DIRT & HEAVY LOADS

Spherical Roller Bearings for Vibrating Screens

Vibration and heavy loads coupled with dirt ingress from challenging environments, mean that vibrating screen equipment has a demanding job. The high expectations of this equipment, where failure is an expensive cost of business, require robust solutions to meet the demands of the industry. These demands mean that products need to be engineered to the highest standard, to suit specific applications.

Rotech (PVT) LTD is your solution, providing industry-specific products designed to stand up to the challenge, increasing uptime and service life of plant components; while reducing costs of maintenance and safety risks of repairs. The authorised distributor of globally renowned brands, such as Timken and Challenge, Rotech has the bearings, seals, gearboxes and lubrication systems to optimise your plant's performance.

Branches nationwide and an extensive range of products, coupled with maintenance services make Rotech your perfect partner in sustainable operations. Bearing technology knowledge allows Rotech to make informed suggestions on the right bearing for your application. For example, consider Timken's spherical roller bearings, designation: 22322 EM W33

W800 C4.

These spherical roller bearings are ideally suited for shaker screen applications because they are manufactured from the finest steels to the highest quality standards. This standard-bearing material minimizes the impact of debris in harsh environments, like those commonly found in the aggregate industry. New surface finishing techniques on the roller and raceways contribute to increased performance and cooler operating temperatures. At the core of the design is a machined brass cage which precisely guides the rollers and eliminates the need for a separate ring. The robust cage and optimized internal geometries deliver maximum reliability under extreme operating conditions.

Available in a tapered or cylindrical bore, these bearings feature a lubrication groove on the outer ring with three lubrication holes to facilitate bearing lubrication. This is designated by the W33 suffix and eliminates the expense of machining a channel in the housing bore. This design feature allows the lubricant to flow between the roller paths, through a single lubrication fitting. The lubricant moves laterally outward from the centre of the bearing, reaching all contact surfaces and flushing the bearing. Adequate lubrication

is one of the main contributing factors of a bearings' service life.

Grease, in general, is easier to use than oil in industrial-bearing lubrication applications. Most bearings that are initially packed with grease require periodic relubrication to operate efficiently. It is important to use the correct amount of grease in the application. Typically, the bearing cavity should be kept one-third to one-half full. Less grease than this could lead to bearings being starved for lubrication and more than this can lead to churning. Either of these conditions can lead to higher temperatures and a decrease in viscosity.

Rotech stocks Timken's wide range of lubricants to help the bearings and related components operate effectively in demanding industrial applications. High-temperature, anti-wear and water-resistant additives offer greater protection in challenging environments.





WWW.ROTECHZIM.CO.ZW

BRANCHES NATION-WIDE : HARARE | BULAWAYO | MUTARE | KWEKWE

SPHERICAL BEARINGS FOR SHAKER SCREENS

Order your TIMKEN Spherical Roller Bearings for
Maximum reliability under extreme operating conditions



TIMKEN 22322 EM W33 W800 C4 :

The perfect bearing choice for your Shaker Screen with a bore of 110 mm,
One-piece machined brass cage, Lube Groove & three holes in outer ring;
Featuring a screen bearing mod, with reduced bore and O.D tolerances.

TIMKEN

Visit our website to contact your nearest branch, or email "sales@rotechzim.co.zw" for more information.

Increasing operational efficiency in Mining



Maximizing capacity utilization.

A good example is the loading procedures of dump trucks. The BELAZ 75306 can carry 220 tons, the Komatsu HD785 – 90 tons. Weight sensors on the truck suspension enable APCS to read the current load in the truck. This information flashes up on the shovel operator's panel screen in real-time.

The key here is the operator's motivation. Usually, the operator thinks that the sooner he can release the truck, the more he can load during his shift, especially if there is a queue of trucks. But that is wrong. The operator creates value only when he is loading. Ideally, he should not stop at all, for example when loading onto a conveyor belt. Therefore, the more distant the end operations are from each other – truck departing or truck positioning under the shovel – the higher the productivity. That means that management has to make the operator maximize the loaded weight. But care is also needed here to prevent going to the other extreme: systematic overloading will eventually affect the running gear and all the achieved efficiency will be cancelled out by increased stoppages for repairs.

Parallel processes where possible.

A working shift consists of a long sequence of organizational, operational and technical downtime. It is management's task to eliminate these stoppages where possible – but if the technological process means they cannot be eliminated altogether, management has to ensure that the stoppages occur at the same time and not consecutively.

Take, for example, a diesel excavator and a dump truck, which are refuelled once during a 12-hour shift. The refuelling time for an excavator varies between 15 and 25 minutes, depending on its shovel size.

This stoppage cannot be excluded but nor can stoppages for shift changes, which can last from 15 to 30 minutes due to the hand-over of the machine to the new operator along with an inspection between shifts. Lunch breaks last 30 minutes, a statutory time fixed by labour legislation, although as we see below, they can be further circumvented.

The first and most obvious approach is to combine refuelling with either a shift change or a lunch break.

Minimizing downtime.

In certain cases, downtime which apparently cannot be eliminated at first sight can be fully excluded. A good example is the clever combination of the shovel operator and his assistant. The operating technology of an electric excavator requires that an assistant must be present at all times. His task is mainly to take care of the electric equipment: connecting the cable to the grid after a displacement, cable repair and the like. Teaching the assistant to operate the shovel or hiring a slightly more qualified assistant to take over from the operator is not a huge expense. But that enables the company to eliminate the lunch break! This results in a 30-minute reduction in downtime during the shift.

That, however, only works when the lunch break for the truck drivers is simultaneously excluded so that the whole process keeps flowing. That in turn can be achieved by having a team of shift drivers.

It is worth mentioning here that this does not mean hiring additional staff. More than often, the truck pool has drivers-locksmiths doing the repairs. Besides, in a large truck pool, there are always 1-2 trucks in reserve. It is more than enough to have 1 shift driver for 1 mining unit consisting of 1 shovel and 5-6 dump trucks. All that is needed is to put a mobile canteen alongside the road to the dump where drivers can change. The change takes 1 minute. While the main driver is having lunch, the shift driver does at least 1 trip and then replaces the next one. It is however important to cascade the drivers' lunch breaks, but that is not hard: 6 truck lunch breaks will take just over 3 hours.

Standardizing operations.

An excellent example is changing the dump truck tires. At first glance, this is a very standard day-to-day operation if there are more than 30-40 trucks in the truck pool. But it is surprising just how disorganized the process can become, and not just because simple and inexpensive tools are unavailable, such as hydraulic jacks, electric or pneumatic wrenches, compressors or hydraulic shim extractors. Every process which combines a certain number of operations also includes at least the same number of stoppages plus excessive downtime where the operations can actually be combined together (see p. 2 above). For example, deflating a tire in order to remove the entire wheel after the pressure has fallen below 3-4 atmospheres can be combined with loosening the shim nuts. Pumping grease into the wheel gear can be combined with cleaning and replacing the damaged shims (with the addition of only one locksmith).

But the key thing here is that we are dealing with a technological process that is repeated and contains a finite number of operations. That means that every operation can be defined in terms of the necessary instruments, personnel and sequence of actions, including other problems that could arise if something does not go as expected.

On top of that, every consecutive operation should be prepared before the previous one has been completed. For instance, when the shim removal is drawing to an end, the mobile tire manipulator should already be waiting alongside rather than at the other end of the workshop pulling the wheel of another truck – ensuring that the right people and the right equipment are in the right place at the right time is the task of the shift technician.

Personnel involvement in servicing equipment – TPM.

The basic concept of Total Productive Management (TPM) involves the equipment operator in its daily inspection and servicing, using every single pause in the production process. The aim is to maximize the equipment's operational availability between the maintenance stops.

Nobody expects the operator to replace a technician. But it is surprising how many

unexpected problems can be avoided by applying simple common sense, such as keeping the equipment clean. Or applying a prophylactic coat of paint. The reason is simple. A clean piece of machinery or fresh paint makes it very easy to detect leaks of the lube oil – a clear sign of a compromised hermetic seal in the lubrication system. It is also easy to spot small cracks that can be cured by a quick weld during the next operational halt in loading before they become a big problem and cause an interruption to operations for major repairs or replacing the whole part. That, of course, will cost much more and can take weeks if the spare part is not in stock.

Take, for example, the preventive inspection of an excavator by a technician during the lunch break. In fact, the machine is inspected twice a shift (half-day), once by an operator before he takes over at the beginning of the shift when as a rule a great deal of information about the current state of the machine is handed over by the departing operator in the logbook, and then by a technician during the lunch break. The technician covers the parts and units which the operator cannot do because he lacks the qualifications and analyses the information received from the operator and the logbook.

The costs of such an inspection are miniscule, but the effect is huge. A stoppage due to technical issues far outweighs any other by its negative effect on

the production rate. We are talking about days – if not weeks – of lost production. The ability to detect future problems at their inception is therefore priceless.

The biggest is the need to effect a complete change in the psychology of the operators. They need to understand that their workstation is the only source of their income – when it works! End of story!

That requires a major overhaul of their mindset, so meticulous implementation can take weeks or months. The second big challenge – which, unfortunately, has a negative effect on the speed at which the former can be implemented – is the impossibility of quickly establishing a direct, statistically proven relationship between the implementation and the effect of the TPM. Technical issues are multifaceted and discreet, certain failures can happen as often as once a year and it is difficult to establish a connection between the new measures and their effect on the equipment availability rate in a short period.

This, of course, provides ammunition to those who are opposed to everything new, above all on the shop floor, who are used to working “as before” and do not like change.

But nothing solves this problem better than key performance indicators for the equipment operators, as well as the technicians. That cures it.

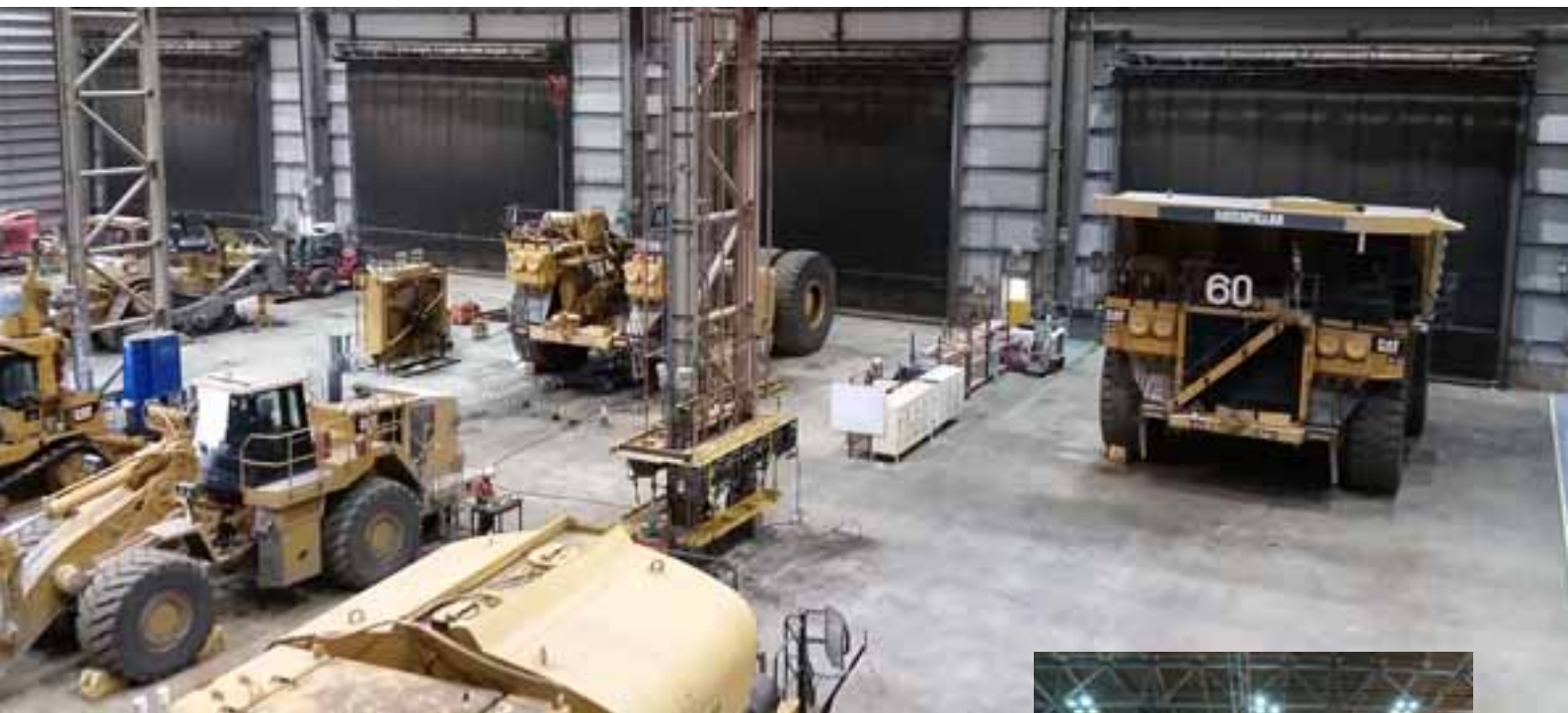


**Mining
Insurance
solutions
that give you
peace of
mind.**

info@riskmanagers.co.zw
www.firstlinkinsurance.co.zw
 0242744048/79, 0772434103, 0772666509



Improving mining equipment maintenance and safety



Safety is a huge concern in the mining industry. When mining injuries, fatalities, or near-fatalities make national or international headlines, the issue becomes even more crucial. The question is this: How does a mining company improve safety?

One often-overlooked aspect on safety issues has to do with equipment maintenance. The CDC reports that 30% of all injuries and fatalities in underground coal mining are due to machinery maintenance accidents. It can be shocking to mining managers to realize that the simple and seemingly safe tasks of maintenance are the cause of so many injuries and deaths. For this reason, improving equipment maintainability is one of the most direct and effective ways to improve safety.

The Causes of Mining Maintenance Injuries

Part of the reason why equipment maintenance is an injury-prone arena is because it is viewed as routine, even safe. To use a metaphor, if a dog looks friendly, why be on your guard? Maintenance, however, is not a friendly dog. The danger of maintenance lies also in the complexity of mining machinery. Accidents happen when workers are not properly trained to operate and maintain large and complicated machines. In the process of maintenance, some companies fail to implement proper monitoring, procedure

compliance, and procedural checklists. A final cause, not to be overlooked, is the aspect of faulty equipment design. To reduce the number of injuries and deaths, it's important to address all of these issues as thoroughly as possible. What's the best and most effective way to proceed?

How to Improve Equipment Maintenance Safety

The best single way to improve maintenance safety is to use safer equipment. A report published by the United States Department of the Interior Bureau of Mines, supplemented by investigations by the OMSHR, lists "design of equipment" as the first and primary way to improve safety.

Most mines are eager to implement checklists, improve training, change work schedules, launch new safety programs, enhance emergency response plans, and host motivational pep talks. All of those are important steps in the reduction of injuries. What they fail to do however, is to address the crucial issue of maintainability the lack of which is one of the main causes of injuries. No safety program, regardless of its effectiveness, can mitigate the risks associated with risky maintainability on poorly-designed mining equipment.

The real solution, then, is to use equipment with improved safety and maintainability, such as the equipment produced by leading mining equipment manufacturer General Kinematics. Perhaps the reason



why this issue is so easily dismissed is because it's the most expensive and complicated solution. A mining operation exists by virtue of its equipment and personnel. To change such equipment requires Herculean efforts and costly expenses.

The barriers are not insurmountable. To view the issue from a different perspective, a company can't afford not to have the right equipment. General Kinematics, a mining equipment manufacturer, is a key player in the field of safe and effective mining equipment. The rugged design of GK equipment reduces maintenance requirements by utilizing easily accessible machinery and few moving parts. This allows safer access to maintenance personnel. The heavy-duty design is also designed for significant life and uptime, reducing the frequency of required maintenance. To begin the process of improving your mine's safety, survey the amazing selection of General Kinematics Mining Equipment.



You already know the truth about mining in Zimbabwe, **CHEAP IS EXPENSIVE.**

The Atlas Copco V900 portable compressor is not cheap. In fact, the Atlas Copco V900 portable compressor is an investment.

Cheap will cost you hundreds of thousands of dollars lost to repeated capital expenditure, constant repairs and a lack of technical support.

The Atlas Copco V900 portable compressor is an investment in overall product quality, user friendliness and economical operation to ensure best in class cost of ownership.

Cheap is expensive.

The Atlas Copco V900 portable compressor is an investment in productivity, enabling you to drill more meters in an hour at a lower overall cost per meter.

Cheap will cost you hundreds of working hours lost to unnecessary downtime.

With a 500-hour service interval the Atlas Copco V900 portable compressor is an investment in hassle-free service, quick maintenance and low operational costs.

The Atlas Copco V900 portable compressor will provide you up to 805cfm @ 363 psi and allow you to control both the pressure and flow you need.

The Atlas Copco V900 portable compressor is an investment in a silenced, two-stage, oil-injected screw compressor, powered by a liquid-cooled, six cylinder Cummins diesel engine - all protected within a sound dampened power coated steel enclosure.

The Atlas Copco V900 portable compressor is an investment in ensuring you get a good return on your effort for the entire 10 000 working hour life of your machine.

Along with the dedicated support & service provided by **Mike Appel Industrial**, you're investing in reliability.



MIKE APPEL



Contact:

Munya 263 773 222 552
Tendai 263 774 729 924



Smart Mining

How Technology Can Improve Operations

What Is Smart Mining?

Smart mining is the collection of processes and technology that can increase the productivity and safety of mining operations.

Technology such as air sensors, ground-penetrating radar, video surveillance, and IoT sensors all can play a role in smart mining operations.

Private 5G enables deterministic performance for secure wireless connectivity of these devices within the enterprise premises as an essential ingredient of smart mining initiatives. Data gathered at a smart mine can be sent back to headquarters to be saved and transformed into intelligence staff can use to make more informed decisions on the job site.

Despite the challenging conditions a mining operation may endure, private cellular networks can be designed to provide reliable coverage to underground shafts and miles of subsurface land in remote locations. Operators leverage smart mining technology to gain new insights into their operations, monitor health and safety metrics and reduce their operational costs as they scale.

How is Smart Mining Different From Traditional Mining?

Smart mining uses private cellular

connectivity, edge computing, and IoT sensors to transform job site data into intelligence. For example, smart sensors placed throughout underground mine shafts can proactively alert miners to the presence of toxic gas and low-oxygen areas.

Traditional mining operations rely on collecting data on-site and then taking that data back to the main office for processing. This can be a slow process, especially if the work site is in a rural area.

This manual process can take a considerable amount of time, especially when dealing with large file sizes typical of geographical surveys and 3D renderings. Smart mining operations use high-speed private cellular connectivity to support large data sets and automatically transfer data through secure high-capacity connections at low latency.

Advantages of Smart Mining

By bridging the gap between work site devices, corporate network resources and edge computing, enterprises can increase productivity, and reduce their operational expenses. Below we will touch on a few of the key benefits of smart mining and explain how mining companies improve their business through this new technology.

Improved Workforce Safety

Mining has always been dangerous work, but smart mining tools set out to make it safer than ever before. Both open pit and underground mining pose unique safety and logistical challenges.

In mineshafts, operators can use IoT sensors to monitor seismic activity, structural integrity, and air quality. This data can be collected from underground and relayed to site offices above ground through a network of private cellular access points. This private 5G wireless connectivity can improve communication underground in areas where traditional radios struggle to reach the surface due to lack of strong coverage/range properties.

While open-pit mines don't struggle with underground conditions, landslides, flooding, and ground collapse all still put miners at risk. Smart mining IoT sensors can monitor ground stability and alert to sudden weather changes in real-time.

Reduced Costs

Private 5G for smart mining opens up the autonomous operation of vehicles and equipment. This could save companies thousands of hours in labor and downtime by relying on the deterministic latency and bandwidth offered by cellular wireless technology across mining sites. For example, automating an underground bore machine could increase operating hours by 2000 hours each year and remove

miners from working in areas at risk of collapse.

By connecting machines with IoT sensors, maintenance staff can monitor the condition of machines more efficiently from a digital display. Metrics such as temperature, fluid levels, and conductivity can be recorded and set to alert when reaching certain thresholds.

IoT sensors are inexpensive and require little power to operate, allowing businesses to deploy hundreds across their work environments. Even older analog equipment that lacks internet connectivity can use IoT sensors powered by a mobile network.

Security

In many cases, it's impractical to run fiber for high-speed internet access in remote mining locations. This can leave mining equipment and tools vulnerable to theft or vandalism. CCTV and anti-theft devices can rely on a private 5G connection to function in a smart mining operation.

Private cellular connectivity offer the predictable network capacity needed to power live high-definition streaming video, alarm systems, and GPS tracking tags - simultaneously. With 5G connectivity from back at the office, staff can monitor multiple job sites and receive alerts if they suspect stolen equipment.

Enhanced Ore Body Knowledge

Technology has come a long way to aid in the early stages of prospecting and ore detection. Mining companies can use radar data to map both subsurface and open-pit mines to identify opportunities and potential hazards. This technology has been applied to drones as well as underwater submersibles to help operators make better choices above ground.

Data Privacy

Private cellular networks encrypt traffic by default over the air and on the wire within the local area network at the mine sites. Instead of a network password, devices authenticate by device identity via SIM cards that hold the device's identity and level of network access.

Businesses have full control over their data and network resources on private mobile networks. On commercial networks, companies are limited in controlling their cellular resources and how their information is sent across the network.

How Smart Mining Works

For data to be collected, it first needs network infrastructure. Private 5G solutions use private cellular spectrum, such as the Citizens Broadband Radio Service spectrum in the United States, to broadcast reliably and without outside

interference. The Federal Communications Commission (FCC) in the US made this new portion of spectrum available for enterprises to use. Smart mines can utilize 54 private cellular access points that make up a 5G Local Area Network (LAN) to design customized networks.

With each mine being unique, a cellular network planner can be used to understand spectrum availability, coverage requirements, and estimated device density. The planning stage can also include building cellular heat maps of an area to detect potential dead zones and obstacles. This stage helps businesses understand what hardware they will need to support their goals.

Installing mobile network infrastructure is much easier than it was several years ago. Thanks to advancements in plug-and-play technologies, companies don't need to hire cellular experts or pay consultants. A network of small cells can carry 5G signals underground to miners and operating equipment and send back data to a surface-level base station.

Smart mining creates value from the data it transforms into insights. Cloud computing, artificial intelligence, and automation all play a role in smart mining. Data processing can be done on-site through edge computing or in the private cloud.

VTU Platinum Lodge, Turf Mhondoro-Ngezi on Expansion Drive



VTU Platinum Lodge recently celebrated two years of offering hospitality service which has primarily been delivered to the mining sector. VTU Platinum Lodge boasts of 18 en-suite rooms and is currently adding more rooms. Additional 20 POD rooms are set to be completed by mid-December 2022. The additional rooms are all double-bedded en-suites, air-conditioned, with DSTV and WIFI.

Each POD has a separate balcony that gives guests a place to unwind in peace. A swimming has been added as an additional experience to the clients. The pool will be accessible to both the internal and external clients.

A larger restaurant and bar would also have been built by 2023, making VTU Platinum Lodge a prime location for a variety of corporate events which may include awards presentations, private celebrations, trainings and conferencing among others.

Kamativi

in massive exploration drive

Kamativi Mining Company (KMC) is rapidly spearheading its exploration drive to transform the former tin mine into one of the biggest spodumene and Petalite ore body in Zimbabwe.

Recently Mining Zimbabwe visited the mining site to assess the progress of the potentially biggest lithium-producing project in the country and witnessed 8 Diamond drill rigs drilling at different locations to delineate the potential deposit.

Drilling

The exploration drilling at Kamativi Lithium Project is core drilling where samples of up to 300 m are being packaged for transportation to be tested. According to the site geologist at the KMC Miss Rutendo Chiota from the Midlands State University (MSU), some of the results have been submitted to the world-renowned geological group (Joint Ore Reserves Committee) JORC and KMC is currently awaiting a preliminary report. According to Miss Chiota, the pegemate ore body according to current results is going down to 250m down or more while the belt seems to be stretching for kilometres beyond the mining lease.

The Drilling process penetrates deep into the ground and brings up samples of

whatever is found are collected. If there is any mineralization at given points far beneath the surface, drilling can give a straightforward answer by indentifying available minerals, their quantities and location.

Between September 2021 and March 2022, Phase-one drilling commenced with 38 holes being drilled to the depth of 2140m and Spacing 90*90m. Phase-one drilling focuses on open-cast areas with shallow holes for Open Cast Mining.



Drilling in progress at Kamativi



Between April 2022 - June 2022 Phase-two drilling commenced and KMC managed to drill 28 holes of 5000m. The drilling was for underground mining and Mineral Processing research is still underway.

Phase-two detailed drilling of 100 holes of around 15000m is being carried out with detailed exploration for underground mining and resource report and feasibility study to be expected after drilling completed..

To date, 4900m have been drilled from late September 2022 using the 8 rigs on site .Exploration is going to be upscaled by an additional 4 rigs which are expected to be on site by early November 2022 (bringing the total number of rigs on-site to more than 12 rigs) in mid-November. The work will lead to locating the first mining area, designing for mining and carrying out mining activities.

Continued on the next page>>

It is important to point out that we are using the Core drilling method. The core is an intact sample of the underground geology, which can be examined thoroughly by the geologist to determine the exact nature of the rock and any mineralization. To quantify the mineralization, and to define the shape, size and metal content of the deposit, a step-by-step procedure in exploration activities is required. At every step of this procedure, the geologists examine the information at hand, to recommend continuing the exploration efforts or not. The objective is to be fairly certain that the deposit is economically viable by providing detailed knowledge of geology for a clear financial picture. Ore is an economic concept, defined as a concentration of minerals, which can be economically exploited and turned into a saleable product.

The type of lithium dominant at KMC

According to Chiota, preliminary sample results have shown encouraging results for the mine hosting high-grade lithium spodumene, petalite with the mine having the potential to become one of the biggest lithium producer in Africa.

Spodumene is an essential supply of lithium to be used in ceramics, cell phones and car batteries, medicine, Pyroceram and as a fluent substance.

With Zimbabwe aiming to achieve a US\$12 billion mining industry with the lithium industry expected to produce an annual revenue of US\$0.5 billion annual revenue, KMC will have the potential to become one of the country's biggest revenue generators.

Corporate Social Responsibility

The closure of Kamativi Tin Mine in early 1994 saw one of the country's promising towns deteriorate into a forgotten community with most buildings left to dilapidate to ruins. The closure of the Kamativi mine saw electricity lines being stolen plunging the community into darkness, and water becoming a major challenge among other basic human needs. People in the town resorted to drinking unsafe water from a nearby dam which they shared with animals.



Residents now fetch water at their doorstep

To solve water problems, KMC has installed two solar power boreholes with 5000l tanks which are supplying clean and safe water to the community. KMC is also planning to install more boreholes for the community to have enough water.

KMC has also continuously donated diesel to the clinic and police station to help with transportation in emergency times. The miner has also bought vehicle tyres for both the clinic ambulance and police vehicle. The mine has also donated lithium batteries to the clinic to enable power in the clinic.



Lithium batteries donated by KMC

Speaking to Mining Zimbabwe St Patrick's Clinic Sister in Charge Annacletah Ndlovu said she was grateful for the help they were getting from KMC which has seen the clinic successfully carrying out its Polio vaccination campaign to a 66 km radius area around Kamativi using fuel provided for by KMC together with the brand new tyres.

"We received lithium batteries for our solar power from Kamativi Mining Company, and they are very helpful in terms of power supply. We are so grateful and we wish to have more. We have also been timeously receiving fuel for our ambulance and recently they donated two wheels for our vehicles. The fuel they give to us helped significantly during our Polio vaccination campaign. They also promise to put electricity here, if this place is electrified our mortuary will function well," Sister Ndlovu said.



The headmistress at Kamativi Primary School Mrs Anna Mutikani thanked KMC for bringing sanity to her school saying the borehole that was drilled by the mining firm ensured that the children at the school have clean toilets and access to clean water to drink as well as a place to wash their hands. She also expressed happiness that social activities had returned to

the school after KMC donated football kits and soccer balls.



Technicians installing Electricity at Kamativi

Kamativi Residents Association Secretary General Mathius Sibanda commended KMC for bringing employment to the mining town saying it is a step in the right direction. He said, once the lithium mining company reaches full production, with over 1200 people to be employed, the town's GDP will also increase.

"As you saw, we visited where electricity lines are being constructed at that site. Our children are already getting employed despite the mine not yet being in production. The contractor for diamond drilling has also employed youth from our community. They have also promised to employ 1200 people from within this community and for that we are grateful. We had serious water challenges which exposed the community to water bone diseases that have now been eradicated with the introduction of boreholes and on behalf of the residents I would like to say we are proud to have KMC in our community," Mathius Sibanda said.

Clarification of rumours of mine houses

While it is true that indeed, KMC has brought life to the dying Kamativi town, rumours that some families will be evicted from mine houses still hang over. KMC's Project Manager Turkey Liang clarified the issue to Mining Zimbabwe. "We are here to invest and develop the mine, and we are also committed to uplifting and improving our community. We will not force people out of their houses. The mine will renovate the empty houses for future employees after consultations and agreements with ZMDC and the local community. The company prefers to build new houses rather than evict residents from the mine houses to accommodate its workers when the need for more houses arises. I want to emphasize that the development of mine is to benefit the community and improve lives. Proper communications and mutually satisfactory arrangements will be in order once there is a need to relocate people due to mining and production, for example, people staying in the mining area," Liang said.



A Compressor popular with Artisanal and small-scale miners

Performance

OF SMALL-SCALE MINING IN 2022

With the Minister of Mines and Mining Development Hon Winston Chitando envisioning that the mining sector will become a US\$12 billion annual earner by 2023, the ASM has been of great significance towards the achievement of the vision.

Although the country has over 60 known minerals, the ASM seem to be muchly involved in a handful of the minerals which include, gold, lithium, chrome and gemstones.

This is how the sector performed this year

Gold

Through the US\$12 billion roadmap, gold is expected to fetch a third of the total with the ASM currently fetching over 67 per cent of gold revenue.

During the period January to October 2022, the ASM sector contributed 67.8 per cent of the total deliveries to the country's sole gold buyer and exporter, Fidelity Gold Refinery (FGR). The ASM delivered 19 987.6292kgs compared to 9 473.0240 kgs delivered by the large-scale producers. ASM deliveries increased by 54.3 per cent from 12952.3801kgs delivered during the same period last year with large-scale producers' gold deliveries increasing by 4.4

percent from 9071.9706 kgs delivered the same period in 2021.

Chrome

In the chrome industry, although official statistics have come by, the ASM have been considered the major contributors of the chromium mined in the country reaching nearly 60 percent of the total chrome production.

Lithium

The ASM has also been at the forefront in discovering lithium resources with statistics showing that over 80 per cent of lithium exported last year ranking Zimbabwe as the 6th largest lithium producer came from the ASM since the country's sole lithium producer, Bikita Minerals was under care and maintenance.

Gemstones

The Minerals Marketing Corporation of Zimbabwe (MMCZ) is strategizing to make the semi-precious stone sector a US\$1 billion industry by 2030.

Through its General Manager Mr Tongai Muzenda, MMCZ is upbeat to tap into the global growing demand for coloured gemstones which are expected to improve every year by 4.4 per cent from 2020 to 2026 as it seeks to make a significant mark

towards the achievement of the upper middle-income economy by 2030.

Muzenda said MMCZ was however going to first create a friendly environment for gemstone miners, traders and cutters by creating a local market centre.

"Our vision is to turn around the gemstones sector into a US\$1 billion industry by 2030. This starts by creating reliable sources for gemstones. Development of convenient trading centres in gem-stone producing regions where miners link up with gemstone processors. In the end, we hope to see more cutting and polishing centres for gemstones, research hubs in tertiary institutions and technologies in cutting and polishing of coloured," Muzenda said.

The ASM has for a time played a significant role in foreign currency realisation for the country with the Reserve Bank of Zimbabwe (RBZ) recently acknowledging the importance of the ASM for economic recovery.



ZMF President Ms Henrietta Rushwaya

According to the Chairperson of the Parliamentary Portfolio Committee on Mines and Mining Development Hon Edmond Mkaratigwa “The relevance of ASM is multi-pronged. Mostly that is the economic band in which most of our indigenous business people belong, they have a wish and aspiration to grow. Therefore, at this level, many households derive economic survival. That translated from the micro level to the macro level, these people contribute to the country's GDP, as they also play a huge role in the broader market in the country.”

The role the ASM plays in economic recovery

Through the National Development Strategy_1 (NDS-1) where the country is expected to become an upper-middle-income earner by 2030, the mining industry has been predicted to produce annual revenue of US\$12 Billion by 2023. This means that the mining sector is considered an important player in national development.

Zimbabwe Miners Federation (ZMF) Chief Executive Officer Mr Wellington Takavarasha last year said the ASM was ready to contribute annual revenue of US\$4 Billion by 2023 making the sector a significant anchor in economic revival.

In gold which the government expects to contribute annual revenue of US\$4 Billion by 2023, the ASM has been the biggest contributor accounting for over 60 per cent of total gold deliveries to the country's sole gold buyer and export Fidelity Gold Refinery (FGR). Last year the ASM gold sector contributed US\$1.7 Billion to the country and in chrome mining, the sector has been significant for the past years.

Hon Edmond Mkaratigwa said the small-scale and artisanal miners form the future of mining due to their importance in the country's GDP.

“In economic recovery, some of them are loyal suppliers of gold to the national buyer, contributing to Gross National Product. Their activities further reduce the national safety net burden as these people are able to fend for themselves. Also, they form the future mining industry in Zimbabwe, they have demonstrated the resilience and initiative necessary for any business.” Mkaratigwa said.

Can ASM mine deep and low grades?

There is a perception that the ASM should

never be trusted for economic revival since they will never mine deep and low grades. Speaking to Mining Zimbabwe RioZim Chief Geologist Mr Patrick Takaedza said the ASM was far away from contributing to the resuscitation of the economy.

“Artisanals will never sustain the mining industry because of these two simple facts. They can't mine deep and they can't mine lower grades” Takaedza said.

However, ZMF Mashonaland West Chairperson Mr Timothy Chizuzu said miners in Kadoma have proven that small-scale miners can sustain the economy of Zimbabwe because some are beginning to mine low grades and affording to mine over 50 tonnes of gold ore a day.

“Some of the small-scale miners are mining as low as one gram per tonne because they are pushing volumes, some are mining up to 6000 tonnes. My appeal to the government and other stakeholders is that we need to support the sector so that it benefits much to the economy of Zimbabwe” Chizuzu said.

What needs to be done to witness the transformation of the ASM?

The Deputy Minister of Mines and Mining Development Dr Polite Kambamura said the government of Zimbabwe was determined to support the growth and development of the small-scale and artisanal mining sector in achieving serious and sustainable mining.

“Government will continue to support the sector through capacitation and formalisation (this is already in the pipeline). The sector is key to national growth as it contributes over 60 per cent of gold deliveries to Fidelity Gold Refineries. The government wants the sector to grow sustainably through responsible mining,” Dr Kambamura said.

Hon Mkaratigwa said, “The treatment the ASM is getting from the government varies from legal to economic, and a larger extent, the government is committed to turning their activities into a real business. That has not been easy as witnessed in many countries on the continent, but the cost of transforming the sector has the potential to unleash the capabilities of these giants. The support is there and mostly, their voices have been given an ear to, however, there is a need for continued efforts towards strengthening cooperation and open lines of communication amongst themselves and with the

government, for quicker processes and development of support mechanisms. They have to grow and we are for their growth.”

Is it possible for the ASM to develop into junior mining?

Junior mining companies are currently focusing primarily on-trend metals such as gold, silver, copper, cobalt, nickel, zinc, lithium and rare earth metals, that is base metals, precious metals and technology metals which are currently trading at near multi-year highs or are otherwise on the upswing.

Experts have been tipping the ASM to shift their work from micro-mining to exploration for the development of the mining industry in Zimbabwe. It is clear that Zimbabwe has lagged behind the rest of the world in terms of mining, Zimbabwe used to be one of the largest producers of gold in Africa but currently, it is nearly close to nowhere because no new deposits are being found like in other countries in Africa. The call to develop into junior miners of some sort is very significant. Junior miners are important in the discovery of new resources and secondly, they provide for the preselection of promising new sources of commodities.

According to Hon Mkaratigwa, “There is that propensity and that should be done in our own way, borrowing from others' approaches then contextualizing all the wisdom to our country's socio-economic and cultural environment. The national vision must be fully shared by all in the sector as a starting point and then, we can be assured to fully move, grow and sustain our growth just as all these other countries have managed. We have the brains and we have the resources, hence we can rise, as our limits can only be our dreams.”

Conclusion

ASM activities are at least as important as large-scale mining activities, particularly in terms of the number of people employed. ASM can play a crucial role in poverty alleviation and rural development. Most of those involved are poor and mining represents the most promising, if not the only, income opportunity available. The performance of the gold sector in Zimbabwe shows that the ASM if properly nurtured is the next big deal for mining prosperity in Zimbabwe.

TENDO

--- Total Integrated Solutions



PRODUCTS AND SERVICES

- Generators
- Energy Management
- CCTV and Access Control
- UPS and Electrical services
- Services level Agreement
- Integrated solutions
- Air Conditioning

TENDO
--- Total Integrated Solutions



21 Birmingham Rd, Southerton,
Harare, Zimbabwe



Tel: +263 4 774780/3/6



Email: sales@tendo.co.zw



www.tendo.co.zw



INSURE IT **with Cell Insurance**

CALL 08677 200 200

OR CONTACT YOUR BROKER



— CELL INSURANCE —

**Leaders in
Alternative Risk Financing**

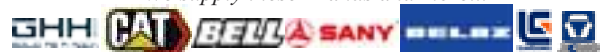


NASHY MINING COMPONENTS

Nashy Mining Components is an Engineering Services Company which specializes in the provision of **ENGINE DYNO TESTING** for mining mobile equipment and the repair of drive train components and engines, (i.e. Repair of Transmissions, Drive shafts, Final drives, Axles and Engines) for GHH, CAT, Bell, Sany, Belaz, Luigong, XCMG and Bemt equipment.



We supply these Brands and more...



**ENGINE DYNO TESTING • TRANSMISSION AND GEARBOX • ENGINE REPAIR & MAINTANANCE
• AXLE REPAIR & MAINTENANCE • SERVICE CONTRACT**

248 Williams Way
Unit 12, Msasa, Harare

Tel: +263 242 442 591/2
Mob: +263 732 222 219

+263 772 573 573
Nashy-Mining-Component

nashymining.co.zw
Email: sales@nashymining.co.zw