Construction slow down copper production
THE SHORTEST, QUICKEST & SAFEST ROUTE TO THE SEA FOR THE SOUTHERN AFRICA HINTERLAND
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Economic diversification dialogue has been on the lips of various stakeholders across the nation for some time now.

Yes creating several streams of revenue to support the country’s economic mainstay is an ideal development, an expectation of many and a noble development.

However, copper mining still needs all the support for the country’s economic cog wheels to continue moving and driving the aspirations of the nation.

In this edition, government bemoans ongoing construction projects at various mines, as the main contributor to slow down in copper production.

And it is clear that if large-scale construction projects, which had slowed down production, are not done the country’s copper mining industry will suffer in future.

The development being done by the companies are obviously meant to improve output in future and

Correct, government has implored miners to consider investing in alternative economic sectors such as agriculture to avoid copper price shocks on the economy.

This should however not come at the expense of the cow giving us the milk, copper industry is doing so much for the economy and it only makes sense to prioritise it when investing. More needs to be invested back into the copper industry, to allow its suitability, despite efforts of trying to prop up others sectors such as agriculture, tourism and construction.

Within the mining community diversification from copper to various minerals, such as gold, gemstones and manganese should also continue to be considered.

The country could soon slide from its as Africa’s second largest copper producer, with an average 850,000 metric tonnes after the Democratic Republic of Congo (DRC) that boasts an outturn of around 1.5 million tonnes, once limited investment is made in the sector.

Hence we say diversification is a must but should not come at the expense of the already thriving industry, which needs more support for it to continue giving the healthy milk the nation needs.

As the different stakeholders push for the copper industry to support igniting of other sectors through revenue from the copper industry make room for the copper industry to continue thriving.

Remember to share your comments, letters and opinions with us on drewmara@gmail.com

Enjoy the read!
EMR seeks concessions to develop copper mine

Australia’s EMR Capital is talking to government, seeking concessions, including a tax break, to develop a new $1 billion copper mine.

Lubambe has completed a concept study on the extension project that would produce up to 160,000 tonnes of copper annually with a mine life of more than 30 years, it said in a statement.

In addition, the company has actively engaged with all relevant levels and noted a number of approvals were required for a project of this scale to progress, including on tax-related matters.

“The concessions needed are not material compared to the benefits to Zambia. Importantly the concessions are not different to what is available in other copper mining countries,” said the company.

Low demand for copper on ballooning debt

Despite being copper rich, the local economy, the country’s external debt has surged to nearly $12 billion this year, around 80 percent of GDP.

Paying down the debt has grown harder as the country’s kwacha currency has fallen around 30 percent against the dollar since the start of the year.

Low demand for copper has pressured global prices, with knock-on effects for Zambia’s mining industry, its top export earner.

The International Monetary Fund projects Zambia’s economy to contract by 4.8 percent, this year.

Rio Tinto learns to live with COVID-19

Australian miner Rio Tinto has adjusted its operations to accommodate unraveling impacts of the COVID-19 pandemic.

Rio Tinto Chief Executive J-S Jacques made the development on the backdrop of a good operational performance across most of the company’s assets.

Jacques said the company is catching up on planned maintenance activity.

“Particularly in iron ore, and continuing to adapt to new operate conditions, as we learn to live with COVID-19.”

The CEO said Rio Tinto has shown great resilience through challenging conditions and will continue to prioritise the health and safety of our employees, contractors and communities.

“The quality of our assets, coupled with our strong focus on capital discipline and value over volume approach, means we can continue to invest in our business, support our communities, pay taxes and royalties to host governments and continue to generate superior returns to shareholders in the short, medium and long term.”

Royalty payments to be a deductible expense

Zambia Chamber of Mines wants mineral royalty payments to be a deductible expense

Since 2019, mineral royalty payments have not been treated as a deductible expense when calculating corporate income tax and that provision was kept unchanged in the government’s annual budget.

“The effect of this is that mining companies end up being taxed on income that has already been paid over as a royalty — a situation referred to as double taxation,” the chamber said in a statement.

Reversing that provision could unlock a series of investment approvals and kick-start economic recovery, it said.

The chamber welcomed the withdrawal of duty on ore imports, announced in the budget and acknowledged the sensitivity of the issue, given the initiation of negotiations to suspend bond repayments.

UK businessman faces alleged mine stealing in Zambia

Executive Chairman of two London Stock Exchange (LSE) listed companies, Xtract Resources and Bezant Resources, Colin Bird faces possible jail time in Zambia for contempt of court.

Media reports allege that Bird has aided a known felon steal a mine in Zambia.

According to media the UK businessman is part of a gang that has illegally seized a copper mine.

However, Bird has been briefing the Stock Market in London about entering a joint venture agreement with KPZ International Ltd in relation to the acquisition of a 30 percent interest in a 974 square kilometer scale exploration licence in the Kalengwa greater exploration area.

The licence is subject to legal proceedings and there have been multiple court rulings.

Zambia, Morocco cement ties

The two countries signed 19 cooperation agreements covering diplomacy, economy, science, technology, culture, investment, industrial cooperation, agriculture, education, mining, air services, energy, insurance, finance, and tourism. Morocco has also offered scholarships for Zambian students and agreed to share its expertise in fields it is competitive at.

Zambia opened on October 24 its embassy to Rabat in a move that signals a willingness to further boost ties with Morocco at all levels.
Government has bemoaned ongoing construction projects at various mines, as the main contributor to slowing down in copper production.

Richard Musukwa, Mines and Minerals Development minister has attributed the country’s low copper production to mining companies’ large-scale construction projects, which had slowed down production.

Musukwa said resources being realised from the mining sector should be invested in the agriculture sector, among others.

He implored miners to consider investing in alternative economic sectors such as agriculture to avoid copper price shocks on the economy.

Musukwa said resources in the mining sector, should be invested in other sectors, such as agriculture, tourism and construction. “And, yes, indeed, government has been working in terms of diversification from copper to various minerals, such as gold, gemstones, manganese, in order to ensure that we promote this diversity so that when there is a shock on (the) international market in terms of copper, we must be able to rely on these various minerals, which we are endowed with,” Musukwa said.

He, however, emphasised the need for a stable mine tax policy to make Zambia more competitive on the global market.

“Mining investment requires huge outlay of financial resources and it needs to be seen in terms of the laws and the PF government is actually anchored on those provisions,” said Musukwa.

Mopani and Konkola Copper Mines have invested in expansion projects and the minister is adamant the development have resulted in reduced copper production.

“In a construction phase, you are not producing at optimal. You are investing in ensuring that you grow production at the level of construction.

“So, what is expected is that when four key operations that have been at construction stage begin to ramp up, production will actually double and we are hoping to actually get more than the two million tonnes that has been projected,” said Musukwa.

Zambia remains behind the Democratic Republic of Congo (DRC) as Africa’s second largest copper producer, with an average 850,000 metric tonnes, while the latter boasts an outturn of around 1.5 million tonnes.
Authorities track illicit minerals trade practices

Zambia Revenue Authority in collaboration with United Nations Conference on Trade and Development (UNCTAD) has developed software dubbed mineral output statistical evaluation system (Moses) helping authorities track illicit trade practices and recover funds.

The data evaluation tool was developed as part of its automated system for customs (ASYCUDA), which helps developing countries modernise customs clearance processes.

According to authorities US$1 million in unpaid export dues has been tracked from mining companies within a year of piloting Moses in 2016.

In addition, to tracking minerals as they leave mines for borders, Moses allows companies to submit monthly production reports electronically to the government.

“Moses quickly demonstrated its importance for Zambia’s development strategies. Compliance by mining operators has greatly improved.” said Zambia Revenue Authority Commissioner-General Kingsley Chanda.

He said the system had also allowed the state to cut the period in producing national statistical reports from up to 230 days to less than a month, making it easier for policymakers to respond to trends. UNCTAD says Africa loses around US$89 billion annually in illicit financial flows.

Shenika Sirimanne, director of UNCTAD’s Technology and Logistics division said the system (Moses) helps countries take more control over who benefits from their mineral wealth.

Sirimanne added that the system made streamlined import-export procedures, thus improving the doing business environment.
Local News

Changing tax regime makes investment difficult

Government is ready to listen to mining companies’ grievances over double taxation claims, finance minister, Bwalya Ng’andu has revealed.

The fiscal rules have halted US$2bn in new copper sector investment, as the royalty payment regime does not allow mining firms to deduct the royalty from its overall tax payment leading to a double payment.

“We need this royalty payment regime removed for progress to begin,” Sokwani Chilembo, CEO of the Zambia Chamber of Mines.

“If the government thinking is otherwise, good luck,” he emphasized.

The revenue-based royalty increases from a minimum of 5.5% to 7.5% when copper trades at $6,000 to $7,500 a ton, with a further jump to 10% should prices top $9,000. Copper has traded above $6,000 since the end of June.

Canada’s First Quantum Minerals has halted $1bn in proposed expansion of its Kansanshi facilities in Zambia whilst EMR Capital has taken a similar view with its Lubambe copper mine.

Lubambe CEO, Nick Bowen, said earlier this month that Zambia’s changing tax regime makes investment difficult.

Government has clashed repeatedly with its mining sector over the last two years. It attempted to force through the liquidation of Konkola Copper Mines which is controlled by Vedanta, and has threatened to withdraw the mining licence of Mopani Copper Mines, run by Glencore, after the Swiss group said it would put the mine on a care and maintenance programme.

Meanwhile Bloomberg News said these developments may relate to President Edgar Lungu’s “manoeuvring” as he attempts to resolve the country’s economic problems ahead of national elections next year.

This comes amid rapidly deteriorating economic conditions for Zambia. Its debt burden is set to reach 110 percent of gross domestic product this year, according to Moody’s, the credit ratings agency.

Lungu’s administration has asked for a freeze on bond interest payments owed to international investors.

<table>
<thead>
<tr>
<th>CODE</th>
<th>MATERIAL</th>
<th>PURITY</th>
<th>USAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>AIBT</td>
<td>Allyl Isobutyl Thionocarbamate</td>
<td>84%</td>
<td>Collector. Excellent selectivity and separating performance for copper ores. Also for copper-zinc sulphide ores.</td>
</tr>
<tr>
<td>DTP</td>
<td>Sodium Diisobutyl Dithiophosphate</td>
<td>50%</td>
<td>Collector in floating of copper, zinc, sulphides and precious metals with good selectivity. Good suppressor of iron pyrites during alkali circuits. Preferable in multi-ore flotation.</td>
</tr>
<tr>
<td>MIBC</td>
<td>Methyl Isobutyl Carbinol</td>
<td>99%</td>
<td>Frother.</td>
</tr>
<tr>
<td>IPETC</td>
<td>Isopropyl Ethyl Thionocarbamate</td>
<td>95%</td>
<td>Excellent collector for flotation of copper, lead, zinc, molybdenum sulphides.</td>
</tr>
<tr>
<td>NASH</td>
<td>Sodium Hydroxysulphide</td>
<td>70%</td>
<td>Copper Floatation.</td>
</tr>
<tr>
<td>PAX</td>
<td>Potassium Isomyl Xanthate</td>
<td>90%</td>
<td>Flotation of sulphide metallic ore. Very strong flotation chemical.</td>
</tr>
<tr>
<td>SIBX</td>
<td>Sodium Isobutyl Xanthate</td>
<td>90% or 85%</td>
<td>Flotation of sulphide metallic ore.</td>
</tr>
<tr>
<td>SMBT</td>
<td>Sodium Mercaptobenzothiazole</td>
<td>50%</td>
<td>Vulcanization accelerator in the rubber industry. Collector in flotation of sulphide ore and some oxidized ores.</td>
</tr>
<tr>
<td>STG</td>
<td>Sodium Thioglycolate</td>
<td>35%</td>
<td>Flotation reagent. It has the same effect as sodium cyanide to pyrite, copper, galena and molybdenum ores. Low toxicity, easy to separate and waste water is not hazardous. Type of depilatory.</td>
</tr>
<tr>
<td>SEX</td>
<td>Sodium Ethyl Xanthate</td>
<td>90%</td>
<td>Flotation of sulphide metallic ore.</td>
</tr>
<tr>
<td>SNPX</td>
<td>Sodium N-Propyl Xanthate</td>
<td>90%</td>
<td>Flotation of sulphide metallic ore.</td>
</tr>
</tbody>
</table>
Local News

Exploration commences at Pangeni copper project

BeMetals Corp. has commenced exploration program at the Pangeni Copper Project.

According to the company, the primary objective for this year’s campaign is to extend the copper mineralization discovered at two high-priority targets during the 2019 exploration program, and potentially vector into higher grade areas.

“We are pleased to have started a follow up phase of aircore drilling at the Pangeni Copper Project. This project’s value relates to exploring through thin cover units to test for extensions of the prolific Zambian Copperbelt, which hosts several world-class copper mine,” said John Wilton, President and CEO of BeMetals.

Wilton said it’s an exciting time for BeMetals with underground drilling already advancing at the high-grade Zinc-Silver-Gold-Copper, South Mountain Project in Idaho.

The 2020 Pangeni program will comprise a total of approximately 3,500 metres of aircore drilling for 100 aircore holes and approximately 1,000 metres for five core holes.

In addition, the program is planned to run until mid-December with initial aircore results expected to be released in early December and then final core results in early 2021.

“The planned aircore holes will be spaced at various distances along lines from 400m to 200m and 100m infill centres based upon field results and observations.”

Located along the western extension of the Copperbelt, the Pangeni project is largely under-explored due to an extensive layer of Kalahari sand that covers much of the bedrock geology.

BeMetals says at Pangeni property, the sand cover is thinner than most areas in the western extension of the Copperbelt and only averages approximately 25 metres in depth.

Meanwhile the company uses interpretations of airborne magnetic data coupled with aircore drilling to generate copper targets beneath the covering units of sand.

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Maamba Collieries unveils new equipment

Maamba Collieries’ (MCL) most recent acquisition is high technology surface miner, making the company the first mining firm to operate this state-of-the-art surface miner. According to MCL the equipment could be used to mine in layers by using a milling drum without the need to drill and blast.

The high-tech equipment boasts a 3.8 m drum optimised for maximum productivity at minimum cost over Maamba’s soft rock. At the same time, the diesel tank with a capacity of 2300 litres makes it possible to operate the machine around the clock with only one stop to refuel per day, resulting in greater productivity.

The surface miner technology allowed extraction of coal and other minerals without the need for drilling and blasting as hitherto – an advancement which was in line with MCL’s commitment to sustainable mining, the company said.

Mines and Minerals Development Minister Richard Musukwa said MCL is the country’s largest independent power producer (IPP) and the second largest source of electricity generation in the country.

He said investments made by Maamba Collieries should be supported by all key stakeholders.

“Such huge investment is made on the background of sourcing resource and finance from international lenders and market players – financial giants – which Maamba has an obligation to meet, and I want to urge third players to this mix – Zesco, Treasury – to ensure that they support Maamba by meeting their obligations so as for Maamba equally to meet its obligation to the lenders,” Musukwa said.
Local News

Stanbic implores nation to maintain focus on mining

Stanbic says economic diversification should not prevent the country from exploiting its mineral wealth. The bank has warned that while pushing for economic diversification is important, there is need to ensure the country’s mineral wealth and the mining sector were not neglected.

Government has in recent years has prioritised economic diversification, with the intention to move away from over-dependence on the extractive industry, in line with Vision 2030 and the Seventh National Development Plan.

Stanbic Client Coverage, Mining and Metals Manager, Namakuka Sichone said mining’s significance to the local economy need not be overshadowed by the country’s diversification agenda.

“In as much as we should strive to reduce our over-dependence on the extractive industry on account of its high volatility in the context of fluctuating mineral prices, there is need for Government and other stakeholders to increase their investment in the sector if the country is to enjoy maximum benefit from its vast mineral wealth and reach its development targets.”

“As Zambia’s biggest bank by assets, we have a responsibility to help drive the economy forward through strategic financial support in key growth sectors. While we understand and unequivocally support the country’s diversification agenda, we realise that mining remains an essential pillar to the economy,” she said.

Meanwhile Zambia Chamber of Mines president Goodwell Mateyo said there was urgent need to translate the country’s mineral resources into wealth to compliment investment in other growth sectors.

Mateyo noted that the world was on the verge of a fourth industrial revolution that would spark fresh interest in Zambia’s mineral resources.

He however, warned that the country could miss out if investments in the extractive industry were delayed.

“Due to the industry’s long-term nature, we need to start implementing measures to prop it up as soon as possible if we are to benefit from the fourth industrial revolution which is just on the horizon. Mining investments have a long maturity period; taking years, sometimes decades before an investor can see a return,” Mateyo said.
Regional News

Geologists solve rare earth element deposits puzzle

Pioneering new research has helped geologists solve a long-standing puzzle that could help pinpoint new, untapped concentrations of some the most valuable rare earth deposits.

A team of geologists, led by Professor Frances Wall from the Camborne School of Mines, have discovered a new hypothesis to predict where rare earth elements neodymium and dysprosium could be found.

The elements are among the most sought after, because they are an essential part of digital and clean energy manufacturing, including magnets in large wind turbines and electric cars motors.

For the new research, scientists conducted a series of experiments that showed sodium and potassium - rather than chlorine or fluorine as previously thought - were the key ingredients for making these rare earth elements soluble.

This is crucial as it determines whether they crystallise – making them fit for extraction – or stayed dissolved in fluids.

The experiments could therefore allow geologists to make better predictions about where the best concentrations of neodymium and dysprosium are likely to be found.

University of Exeter researchers, through the ‘SoS RARE’ project, have previously studied many natural examples of the roots of very unusual extinct carbonatite volcanoes, where the world’s best rare earth deposits occur, in order to try and identify potential deposits of the rare earth minerals.

However, in order to gain a greater insight into their results, they invited Michael Anenburg to join the team to carry out experiments at the Australian National University (ANU).

He simulated the crystallisation of molten carbonate magma to find out which elements would be concentrated in the hot waters left over from the crystallisation process.

It showed that sodium and potassium make the rare earths soluble in solution. Without sodium and potassium, rare earth minerals precipitate in the carbonatite itself. With sodium, intermediate minerals like burbankite form and are then replaced. With potassium, dysprosium is more soluble than neodymium and carried out to the surrounding rocks.

“This is an elegant solution that helps us understand better where ‘heavy’ rare earths like dysprosium and ‘light’ rare earths like neodymium” may be concentrated in and around carbonatite intrusions. We were always looking for evidence of chloride-bearing solutions but failing to find it. These results give us new ideas,” said Professor Frances Wall, leader of the SoS RARE project.

Michael Anenburg, a Postdoctoral Fellow at ANU said: “My tiny experimental capsules revealed minerals that nature typically hides from us. It was a surprise how well they explain what we see in natural rocks and ore deposits.”

Rare earth element mobility in and around carbonatites controlled by sodium, potassium, and silica is published in Science Advances.

The SoS RARE project was funded by the Natural Environment Research Council (UK Research and Innovation) as part of its Security of Supply of Minerals programme to help secure diverse and sustainable supplies of ‘e-tech’ metals such as the rare earths.
KSB Pumps and Valves, operating out of Activia Park, Germiston, is part of the KSB group, one of the world’s largest manufacturers of industrial pumps, valves and related systems. With a company history that dates back to 1871 in Germany, the KSB Group is one of the most experienced pump manufacturers worldwide.

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Rock-related accidents have reduced significantly in recent decades, due in large part to incremental improvements in rock engineering practice.

According to William Joughin, chairman of SRK Consulting and himself a leading rock engineering expert, the company’s contribution in this field has included assisting mines with reviews of safety practices, as well as providing safe rock engineering designs and detailed seismic hazard analysis.

Fall of ground (FOG) is the leading cause of fatalities in the sector, making up a third of mining fatalities in 2019, according to the Minerals Council South Africa. The organisation has reported recently that total FOG injuries have dropped from 1,121 in 2003 to 379 in 2019, while FOG fatalities are down from 131 to 20 over this period.

Joughin notes, however, that this reduction in the number of injuries and fatalities is also linked to the general decline in mining industry employment. There have been few major technological changes implemented in the last five years in particular, which could help reduce injuries and fatalities. Instead, the focus has been on behavioural change.

“The industry is focusing its efforts on changing human behaviour, because the exposure of people remains high and workers have to manually implement safety measures,” he said.

“These efforts have had mixed results, but there is renewed research and development into mechanisation that could significantly reduce the exposure of workers to the more hazardous aspects of mining.”

Methods of seismic monitoring and hazard analysis continue to be developed as new technologies become available. Within its diverse range of projects conducted for the mining industry, SRK contributes to raising safety levels in South African mines in these and other ways, according to SRK Consulting director and principal consultant Andrew van Zyl.

“We have been involved in the Test Mine project and are currently involved with Mine Health and Safety Council (MHSC) projects on collision control and rock safety,” said Van Zyl. “We are also doing pioneering geotechnical work in both the open pit and underground environment.”

He added that the company’s work on water management and mine closure also contribute indirectly to the general levels of safety in mining, as do its contributions to tailings dam management in and around mines.
METALLURGICAL SERVICES

Alfred H Knight Zambia offers a full range of investigative metallurgical consultancy. We offer support services in exploration, plant commissioning and troubleshooting, metallurgical accounting and statutory environmental monitoring. Our scope of services includes, though is not limited to, the following:

MINERAL PROCESSING

- Laboratory Flotation Tests
  i.e. Standard Flotation, Release Analysis and Locked Cycle Flotation Tests
- Ball Mill Bond Work Index (BWI) Ore Grindability Test
- Cyclone Efficiency Test
- Plant Circuit Surveys and Data Analysis using JKSimMet software
- Wet and Dry Screening, from coarse down to sub sieve using a Cyclosizer

HYDROMETALLURGY

- Leach Tests i.e. Gangue Acid Consumption (GAC) Determination, Standard Atmospheric Agitation, Complex Agitation, Autoclave Agitation and Column Heap Leach Tests
- Settling / Clarification Tests
- Neutralisation / Filtration Tests
- Batch Solvent Extraction & Laboratory Dynamic Solvent Extraction Tests
- Ion Exchange Tests
- Precipitation Tests

PYROMETALLURGY

- Pelletising Tests
- Stack Emission Audits for Environmental Compliance and Process Control i.e. ESP efficiency, dust loading in ducts and stack and gas analysis of combustion off-gases
- Optimisation tests for combustion units such as incinerators, boilers and power plants

OCCUPATIONAL HEALTH & SAFETY

AHK Zambia performs Occupational Health Surveys to assess personnel exposure levels to noise, gases and dust in work places to determine TSP levels and respirable (PM10, PM2.4) in ambient air.

METAL ACCOUNTING & AUDITS

- Inspection of Copper Cathodes and issue of holding certificates for commercial purposes
- Process audits for metal accounting to determine Process Plant losses and production projections

MINERALOGICAL SERVICES

AHK Zambia’s Mineralogy Department provides centralised mineralogical services, covering a wide range of routine and non-routine mineralogical analysis of geological and metallurgical samples. We provide this expertise to the mining and allied industries in Zambia, Botswana and the DRC.

Other services include cutting of drill cores, polishing of rocks and metals and determination of physical properties such as Bulk Density and Specific Gravity.
Fire Protection is the study and practice of mitigating the unwanted effects of potential destructive fires. This is a critical part of the mining industry, as the potential production loss caused by a fire could mean the closure of a section or entire mining operation due to the devastation caused.

In the mining environment we address the two sides of the operation individually, mobile mining equipment and fixed plant. The fire detection and suppression systems primary objective is to save lives by suppressing the fire to allow the machine or plant operator to escape from the fire event, be it the underground LHD operator loading in a confined space underground or the large shovel operator whom has a 5 meter egress from the machine in an open pit, to the processing plant operators or maintenance personnel working in a plant area where flammable chemicals are used in the refining process.

The fire detection and suppression system secondary objective are to limit the damage caused by an unwanted fire to the mining equipment or plant, by limiting the damage the repair cost and subsequent downtime/loss of production will also be reduced.

Mobile and Fixed Plant equipment’s fire suppression systems applications needs to suit the machine or plant type and operational environment. It is critical that a detailed Fire Risk Assessment be conducted by an approved and experienced assessor, whom will recommend the most effective suppression agent to cover all the potential fire hazards and flash points. Due to the variety of equipment utilised by a mining operator to produces maximum output from the mine, it is critical that each piece of mining equipment be assessed to verify the appropriate suppression medium. Once the Fire Risk Assessment has been issued and the suppression product been established, the fitment of the system as per the FRA needs to be done by a trained, skilled and authorised installation crew. As part of the ongoing maintenance the fire suppression system needs to be maintained as per the OEM requirement’s with specific service intervals and prescribed component replacements as advised by the manufacturer.

Ansultech Fire Systems Ltd has been providing fire risk assessments and suppression agents to the mining industry in Zambia for the past 18 years, as the appointed and authorised ANSUL distributor Ansultech Fire Systems has access to the latest products produced by the ANSUL Research and Development division. The ANSUL product line meets all global standards applicable to mining equipment and due to ANSUL having over a 100 years’ worth of experience in global fire system application industry, the systems provided to our clients are one of the most effective on the market.

Ansultech Fire Systems has invested in skills training of our system installation and maintenance personnel. Internationally accredited training has been conducted on a regular basis to ensure our technical group has the required product knowledge to apply and service the fitted fire system, by effectively maintaining the fire systems it optimises its performance when required to operate in the event of an unwanted fire incident.

Article by Andrew Crease- Ansultech Fire Systems Ltd (Zambia and DR Congo)
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nstrotech is offering Kobold’s DTK rotating vane flow meter for small quantities, a versatile, efficient and very economic piece of equipment.

The flow meter was specially developed for use in low viscosity liquids. Its compact construction means it can be used in machines with restricted space as well as in industrial systems.

In addition, a special advantage of the gauge is its long term stability and robust construction.

In the DTK flow gauge, the medium flows through a specially formed flow casing, causing the impeller to rotate. Two magnets on the impeller generate electrical impulses in a Hall sensor.

The frequency emitted by the electronics is then directly proportionate to the flow velocity. Down-line electronics can use these signals for measuring, monitoring and dosing.

With a measuring range of 0.05 - 0.6 litres per minute to 1.0 – 12 litres per minute and a measuring accuracy of 2% from measuring range full-scale value, the measuring device can be used universally. The maximum medium temperature is 140 °C and the maximum pressure 30 bar.

According to the manufacturer, it can also be used under harsh industrial conditions. In order to cover a wide range of applications the housing, nozzles and axle have been made of high quality steel and the impeller is made of PVDF.

Mechanical connection is provided by means of either a G thread or an NPT thread.

APPLICATION AREAS:

- Low viscosity and non conductive liquids
- Volume dosing with external electronics
- Laundry machines and PCB manufacture machines
- Agriculture
Optical Character Recognition (OCR) is the recognition of printed or written characters by a computer. In response to the Covid-19 crisis, MineWare’s Optical Character Recognition technology, part of their Syncromine Suite, is now being used to scan health checklists that have to be filled in by everyone on the mine. This data is then seamlessly converted to digital information and analyzed. Mobile device capability allows data to be captured immediately and on-site, while data is fresh and visually available. The use of OCR systems eliminates the need for data to be read and captured by humans, negating the possibility of human error.
SignalHawk’s latest gadgets hits the market

Highly sought-after SignalHawk’s latest handheld spectrum analyzers is now on offer at Comtest.

The SH-60S-AOA Angle of Arrival spectrum analyzer and the SH-60S-TC offer good balance of price and performance up to a frequency range of 6 GHz.

The new gadgets provide test coverage for all major wireless systems in an easy-to-use, fully portable test instrument.

In addition, the instruments are building off the flexible software architecture & highly integrated, small-form-factor packaging of SignalHawk & SiteHawk platforms, these test instruments offer the ruggedness, customization and ease-of-use.

Leveraging multi-touch technology, users can change reference level and center of frequency with a touch of a finger and zoom and span just like a smart phone. Multi-task measurements are made easy with the ability to simultaneously review several windows for comparison. Need data? No problem.

With 8G of internal storage users can screenshot data and transfer then via USB/OTG/WIFI/Bluetooth to the cloud and email or upload PC for reference. Bird’s New Handheld Spectrum Analyzer family saves time, provides high precision and accuracy with ease of use.

According to the manufacturer, the equipment is a must-have for technicians, service providers, contractors, field engineers, and military personnel.

- SH-60S-TC, RF Analyzer view RF signals between 9 kHz and 6 GHz. Combines best-in-class functionality and easy-of-use, intuitive menus and predefined measurements. Higher frequency coverage and spectrogram (waterfall) display. Additional built in functions include: FM demodulation, GNSS Signal Quality, Field Strength and Spectrum masking.

- SH-60S-AOA, RF Analyzer extends the capability of the SH-60S-TC by adding the ability to triangulate the location of an interferer on a map for signals between 9 kHz and 6 GHz. Triangulation is pivotal move in spectrum analyzers by allowing users to utilize Bird’s Interference analysis and triangular functionality to locate the source within 3 measurements, forming a triangle in the area of the emitter and utilizing a built-in map to find the exact location of the problem.
MATERIALS EVALUATION SERVICES

WELDING SERVICES

Alfred H Knight Zambia provides the following:

- Welder Training & Coding (WAT)
- Qualification for Welding Procedures
- General Welding Repairs
- Specialised Welding on difficult-to-weld materials

Our clients include all major Zambian mining and manufacturing companies.

We have a fully qualified SAIW Level II Welding Inspector and Cover SMAW (stick), TIG, MIG, Flux core and submerged arc welding processes.

TRAINING & CODING (WELDER APPROVAL TESTING)

AHK Zambia conducts bespoke welder training at clients’ own premises.

Course content typically covers:

- Theory: Welding processes, care of welding consumables and safety in welding
- Welding Practical: The basic positions of 1G / 1F and out of position welding up to 6G are all covered* 
  *depending on the experience of the welders and requirements of the client

Tests are conducted to BSEN 287-1 and / or BSEN ISO 9606-1, AWS D1.1 or ASME 1X BPVC.

QUALIFICATION OF WELDING PROCEDURE SPECIFICATION (WPS)

We draw up and approve welding procedure specifications - undertaking radiography, tensile tests, bend tests, micro and analysis as necessary.

Tests are performed to standards and codes which include ASME IX, BSEN ISO 15609-1 and AWS D1.1.

WELDING REPAIRS

We perform welding repairs on cracked engineering components, vessels and difficult-to-weld materials.

METALLIC & CIVIL WORKS MATERIALS TESTING

AHK Zambia provides the following services:

- Metallic Material Identification and Quality Assurance Testing of Mill Balls, Re-Bars, Bolts, Gears, Shafts, etc.)
- Statutory Destructive Rope Testing
- Metallurgical Failure Analysis of Engineering Components
- Civil Works Materials (Aggregates & Concrete) Testing

For more information email us on ahk.zambia@ahkgroup.com or visit us at www.ahkgroup.com.
Or call us on Tel: +260 212 226 434/33 Mobile: +260 965 997 885/+260 978 779 350
MineWare’s Optical Character Recognition system (OCR) is scanning Covid-19 safety forms in mines, ensuring a safer work environment.

The Mining industry has long been considered the bedrock of the Southern African economy. According to the Central Statistical Office, GDP from mining in Zambia averaged 3.3 ZMK Billion per quarter from 2010 until 2020, reaching an all-time high of 3.8 ZMK Billion in the second quarter of 2020 with a growth rate of 14.2%.

The unprecedented lockdown as a result of the Covid-19 pandemic forced Southern Africa’s economy, including mining, to a halt - with devastating economic effect.

Post-lockdown the mining sector has been identified as a key player in the eventual recovery of the economy. In order to ensure this, it has been imperative that mines open as soon as possible, while operating safely, with relevant screening protocols in place.

In response to this need MineWare’s Optical Character Recognition technology, part of their Syncromine Suite, is now being used to scan health checklists that have to be filled in by everyone on the mine. This data is then seamlessly converted to digital information and analysed.

Optical Character Recognition (OCR) is the recognition of printed or written characters by a computer. The process of using OCR on a mine or business involves creating check sheets using management data and relevant exploratory questions. These sheets can range from information pertaining to safety, production or just general employee feedback questions.

Information is captured on physical sheets and collected at a central point for digital scanning. The system reads, populates and actions data in less than 10 seconds per sheet, so that all data is available digitally. By linking predefined answers to certain questions defined in a risk management system, called mapped questions, the system can automatically trigger predefined actions.

The use of OCR systems eliminates the need for data to be read and captured by humans, negating the possibility of human error. As an option, the Mobile tablet/phone device capability allows data to be captured immediately and on-site electronically, while data is fresh and visually available, thereby eliminating the need for physical check-sheets.

In response to the Covid-19 crisis, this technology is now being used to scan health checklists that have to be filled in by all visitors to the mines. This data is then seamlessly converted to digital information and analysed. MineWare’s OCR software feature is working around the clock to scan and verify the avalanche of Covid-19 health assessment forms that the mines have instated, in an effort to keep visitors and workers safe, while ensuring compliance with national guidelines.

MineWare Consulting is proud to be a part of the continued operation and safety protocols within the South African mining sector. Converting the current OCR system to accommodate new functionality is part of MineWare’s culture of innovation and development.
ABOUT US
ZINPRO Zambia is an EPCM (engineering, procurement and construction management) company specialising in turnkey construction projects for the mining industry.

COMPANY SERVICES
ZinPro provides services such as Draughting, Turnkey Solutions, Civil Construction, Structural and Plating Manufacture, Structural Erection, Mechanical Installation Electrical Design and Installation, Instrumentation.

Construction
Our dedicated construction crew are capable of erecting and installing major deliverables on surface and underground.

Design & Draughting
ZinPro’s in-house engineering and design team are capable of advanced mechanical, structural, civil and process design.

Structural Manufacture & Plating
Structural manufacture of tip structures, shaft bunton sets, loading bins, conveyor structures, pipe stands and pipee fittings.

Comprehensive Project Management
The ZinPro Zambia management team comprises of over 300 years of combined experience in the mining and construction industry.
Our Services:

- Mechanised Development and Tunnel Support
- Underground Large Excavations and Construction
- Engineering Solutions and Conveyor Systems Installations
- Robotic Shotcreting and Total Mine Support Application
- Plant and Equipment Supply
- Turn Key Mine and Project Management Services

Over 1 million injury free production hours