

Minining

Z I M B A B W E

ISSUE
03

JAN- MAR 2017

**ZCDC gets nod to mine
Gold in Gache-Gache**

**A Zim diamond
Smuggler
nabbed in SA**

PIRATE PARTS

ZMDC Costing Zimbabwe

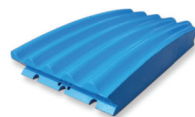
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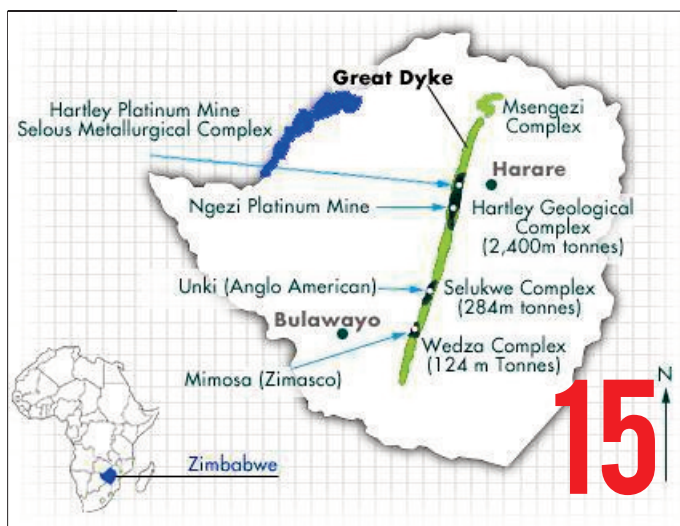
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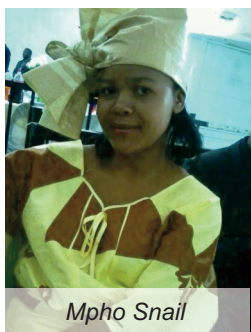
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Note from the Editor



Mpho Snail

Gold is the word. Greetings once again to all you faithful readers and we trust you have entered into the new year with new visions to be bigger and better just as we have at Mining Zimbabwe. This being our third issue we decided to look in detail into the various mining projects happening in Zimbabwe.

Our top story continues to be ZMDC and how it is costing the government billions despite having the largest share of the pie in the mining industry (page 16). I liken ZMDC to that child who has the potential and full support of everyone but still cannot live up to that full potential. Let's hope this quickly changes before more damage is done to the already frail economy. Another must read is on the diamond smuggler who was nabbed in South Africa (page 5). We understand times are hard, but smuggling diamonds or any other mineral for that matter is a crime and costs the government and mining companies more than we could ever imagine, this in turn negatively affects the economy and eventually either leads to some people losing their jobs or the mine being closed completely. It never rains it pours and ZimAlloys is living proof of this. The company is currently looking for investors so they can keep the company operational and in the midst of that they have to deal with government threats to seize a substantial percentage of their mining rights (page 6).

On the brighter side of things, the quarterly figures show that Blanket Gold Mine is the record breaker in gold production for the quarter and year ended 31 December (page 9). Another golden celebration is that ZCDC has been awarded gold mining rights after a long struggle and operations will soon resume in Gache-Gache (page 8). Our feature story on CONCARGO is testament to the fact that not all things fail. They celebrate 30 years of success in the supply chain and road freight logistics sector and we believe many of us can learn a thing or two from their success story (page 18). As you all know by now, we cannot talk mining and not look at its impact on the environment as well as safety issues. To read all about mining and the environment please look at pages 10 to 12. Safety remains a priority to us and we are so glad that one of the leading mining companies in Africa has come out to make some remarks on the issues (page 24). It would not be Mining Zimbabwe if we did not have news for the potential investor; therefore we recommend you read into ASA Unaudited results for the past 6 months (page 26).

Have anything of interest to say? Write us an email or connect with us on the various social media handles provided as we love to hear from you. Till next issue, happy reading everyone, stay awesome and stay blessed.

We welcome your comments

Contact the editor on editor@miningzimbabwe.com

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CONTACTS

Sungie Media (Pvt) Ltd

Tel: +27 11 875 2131 | Cel: 083 287 3390

advertising: info@sungiemedia.com

For more info: info@miningzimbabwe.com

Web: sungiemedia.com | miningzimbabwe.com

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EDITORIALS

Mpho Maria, Editorial Director
editor@miningzimbabwe.com
Tel: +27 11 875 2131

Keith Sungiso
info@miningzimbabwe.com
Tel: +27 11 875 2131

SALES AND MARKETING

Sipho Moyo, Sales Consultant
sipho.moyo@miningzimbabwe.com
Tel: +27 11 875 2131

Tino Charamba, Sales Consultant
tino.charamba@miningzimbabwe.com
Tel: +27 11 875 2131

Lesley Majoni, Sales Consultant
lesley.majoni@miningzimbabwe.com
Tel: +27 11 875 2131

Michael Ncube, Sales Consultant
michael.ncube@miningzimbabwe.com
Tel: +27 11 875 2131

PRODUCTION

Keith Sungiso
keith@sungiemedia.com
Tel: +27 11 875 2131

About Mining Zimbabwe Magazine

Mining Zimbabwe Magazine is a publication focused on the Mining industry of Zimbabwe and how it relates and affects the rest of mining done in other African countries. The magazine's core focus is on the ever evolving face of the mining industry, trends, new technologies, machinery, solutions being developed and used to improve this crucial sector, as well as new opportunities and investments arising from it.

The go to Publication for all Mining in Zimbabwe



Mining Zimbabwe

New \$264m Platinum mine to last 34 years

A new platinum mine in Zimbabwe will triple the reserves of Zimplats (ASX:ZIM), the country's largest platinum miner, and allow the company to replace production from the Rukodzi and Ngwarati mines once they become depleted.

Zimplats Holdings Limited and its parent company, Impala Platinum Holdings Limited (Implats) (JSX:IMP) announced on November 30 that the Mupani mine would go ahead following the completion of a bankable feasibility study.

Completing the \$264-million mine will boost the platinum reserves of Zimplats from 3 million to 9 million ounces. Developing the main underground access infrastructure, at 1,105 metres deep, is expected to take 37 months, allowing first mining to take place in early 2021.

At full production of 2.2 million tonnes per annum, expected in 2025, the room and pillar mine is expected to employ 1,000 people; it has an anticipated life of 34 years.

Eighty-seven percent owned by Implats, Zimplats currently operates four underground mines and a concentrator at Ngezi.

Platinum miners in Zimbabwe have been pressured by the government of President Robert Mugabe to process more metal locally, as the African country tries to get more value from its minerals.



In 2015 Zimbabwe suspended a 15% tax on raw platinum exports, ceding to companies' request to have at least two more years to set up smelters and refineries.

While Zimbabwe holds the world's second-largest platinum reserves after South Africa, analysts believe the volumes mined there are not high enough to make construction of multibillion-dollar refineries economically viable.

They are also skeptical that the infrastructure and the energy supply would be adequate to run such plants and point out that there is excess refining capacity in South Africa.

A Zim diamond smuggler nabbed in SA

According to the South African Police Services, the Hawks nabbed the Zimbabwean, Hardlife Bhebhura (35), and another man, Rodrigues Jose Jorge (49), in Springbok.

They had just transacted with an undercover agent.

SAPS investigation uncovered the alleged illegal enterprise operating through runners from Springbok, Port Nolloth and Steinkopf.

"Upon their arrest on Sunday, 22 January 2017, about 123 carats worth more than **1.7 million rand** were recovered. Both suspects were each charged with three counts of dealing and possession of uncut diamond and more arrests are imminent," SAPS said.

The suspects on Monday appeared before the Springbok Magistrates Court and were remanded to February 1.

Rodrigues Jose Jorge was granted R25 000

bail but Bhebhura was remanded in custody.

Zimbabwe is losing revenue through nefarious activities like the smuggling of its precious minerals through the porous borders.

The smuggled minerals include gold. SA-Home Affairs Deputy Minister Obedingwa Mguni is on record stressing the need to tighten security at the country's borders.

Zindico Consortium Update alleged lawsuit - Asa resources

Asa Resources was slapped with a \$20 million lawsuit by a group of local investors, Zindico Consortium, for refusing to acknowledge a share purchase agreement signed in 2013 with the mining group, then known as Mwana Africa Plc.

The signed agreement gave Zindico Consortium the right to acquire 26 percent of Freda Rebecca, the local gold mining unit of the Alternative Investment Market listed mining group, which has assets in Zimbabwe, South Africa and DRC.

"Asa Resource announces that, further to its announcement on 5 January 2017, Freda Rebecca Gold Mine, in which the Company has an 85% interest, has been served with a claim in the High Court of Zimbabwe. The claim has been issued by Zindico Consortium ("Zindico").

Zindico's claim appears to be based on a two year old draft, unsigned agreement which, if signed, would have been conditional upon the approval of the Directors of Mwana Africa plc (the previous name of Asa Resource).



The draft agreement was apparently negotiated by Mr Kalaa Mpinga, the then chief executive of Mwana Africa plc, who appears never to have submitted it for approval to the Board of Directors of Mwana Africa plc, and it has not been approved by the Board of Directors. The alleged claim seeks implementation of the draft, unsigned, agreement in relation to implementation of Zimbabwean Indigenisation laws.

Asa Resource is currently seeking legal advice on this matter in Zimbabwe and will update the market further in due course".

ZimAlloys searches for investors Despite government threat to seize mining claims

Zimbabwe's second largest ferrochrome producer Zimbabwe Alloys is searching for investors to inject cash in its operations despite the risk of losing half of its mining claims to government.



A former subsidiary of Anglo American, ZimAlloys was sold to a consortium of local businessmen who included banker Farai Rwodzi and Savanna Tobacco founder Adam Molai in 2005. It was placed under final judicial management in 2013 due to poor performance attributed to the closure of its four furnaces, poor commodity prices and escalating costs.

The firm has not engaged in mainstream mining and is only processing chrome from its dumps which were estimated at four million tonnes in 2015.

Mines minister Walter Chidhakwa last week told state-owned media that government was pressing ahead with its plans to repossess up to 40,000 hectares of chrome-rich idle ground from the sector.

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ZCDC gets nod to mine Gold in Gache-Gache



THE Environmental Management Agency (Ema) has issued the Zimbabwe Consolidated Diamond Company (ZCDC) with a certificate to commence mining operations in the Gache-Gache area where gold deposits worth millions of dollars were discovered

ZIMBABWE INDEPENDENT REVEALED

Gold deposits along Gache-Gache River were discovered last year by a private company, Townsend Enterprises, which was sub-contracted by the Zimbabwe Power Company (ZPC) to supply sand to Chinese firm Sino Hydro for the construction of Kariba South Power Station from a concession on the river.

Townsend tried numerous times without luck to get a special dispensation grant from government to recover the gold in the sand used for construction. Government's refusal

to grant the special dispensation was informed by a rule that riverbed mining is exclusively reserved for the state.

ZCDC last year began extracting gold without approval from Ema after it purchased gold recovery equipment worth US\$173 000.

However, operations were suspended by Mines minister Walter Chidhakwa who advised the firm to comply with Ema's environmental regulations.

According to sources close to the developments, before ZCDC operations were stopped, the plant operated on a 24-hour basis. Production output at the plant was not disclosed, with officials saying the company was carrying out exploration work and not mining.

ZCDC acting chief executive Ridge Nyashanu spoke about the project in an interview this week.

"The project is compliant and Ema has issued us with a certificate to commence mining operations."

"Currently we are mobilising resources and are in the construction phase as per our Ema requirements for mining to commence," Nyashanu said.

He said he could not reveal how soon mining operations will resume as the company was still mobilising resources. ZMDC acting general manager Farai Karonga said discussions were underway with the Ministry of mines for his firm to take over the gold project.

"It would only make sense for ZMDC to take over gold mobilisation therefore you will see progress in that regard within the first quarter of the year," Karonga said.

Mines deputy minister Fred Moyo confirmed that ZMDC would take over from ZCDC and supervise the gold mining project. Moyo said it was a mistake that ZCDC was in charge as there are no diamonds at the Gache-Gache area.



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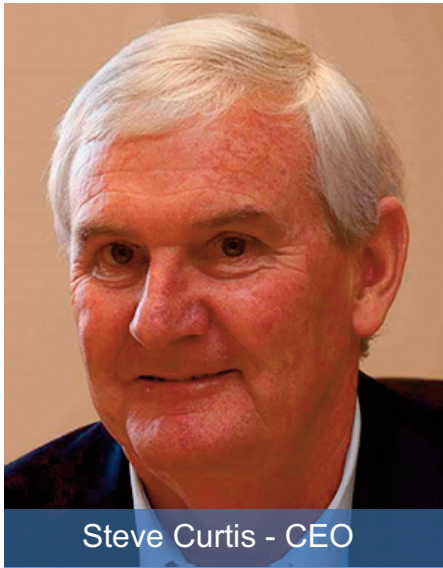
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Record gold production from the Blanket Gold Mine



Steve Curtis - CEO

Caledonia Mining Corporation Plc ("Caledonia" or the "Company") announces record quarterly and annual gold production from its 49 per cent owned subsidiary, the Blanket Gold Mine ("Blanket") in Zimbabwe, for the quarter and year ended 31 December, 2016. All production numbers are expressed on a 100 per cent basis and are subject to adjustment following final assay at the refiners. Production includes work-in-progress of approximately 754 ounces as at 31 December 2016.

- Approximately 13,591 ounces of gold were produced during Q4 2016, a new quarterly production record representing an 18% increase on the gold produced in Q4 2015 (11,515 ounces) and a 1.2 percent increase on the gold produced in Q3 2016 (13,428 ounces).

- Total 2016 gold production was approximately 50,351 ounces, a new annual production record representing a 17.6 per cent increase over the annual gold production in 2015 of 42,804 ounces.

- The increase in production in 2016 was largely due to the start of production from

below 750 meters, improvements in underground infrastructure and the commissioning of the new ball mill, in line with the Investment Plan at Blanket.

Target gold production for 2017 is approximately 60,000 ounces at an estimated on-mine cost* in the range of \$600 to \$630 per ounce and an All-in Sustaining Cost* in the range of \$810 to \$850 per ounce. Blanket remains on-track to increase annual production to approximately 80,000 ounces of gold by 2021.

Chief Executive Officer, Steve Curtis, said, "2016 was a significant year for Caledonia as the continued investment at Blanket begins to bear fruit. Gold production in 2016 of 50,351 ounces surpassed the previous record from underground operations of 45,530 ounces, which was achieved in 2013. The record level of production was due to the commencement of production below 750 meters following the successful completion of the No. 6 Winze and other infrastructure projects; improved underground infrastructure and the installation of the new ball mill late in 2016. As well as achieving this record gold production level, the sinking of the new central shaft continued according to plan and reached a depth of 534 m by year end.

We look forward to a further improvement in 2017 as we target 60,000 ounces of production from Blanket, being a 20 per cent increase on the production achieved in 2016. We continue our progress towards annual production of 80,000 ounces by 2021.

As we increase production we expect earnings will continue to benefit from the

increased sales volumes and from a lower average cost per ounce as fixed production costs and overheads are spread across higher production. This improvement makes us confident of achieving a significant improvement in earnings for 2017. Caledonia expects to publish its results for the year to December 31, 2016 on March 21, 2017."

In terms of National Instrument 51-102, Caledonia advises shareholders that following the publication of the Company's results for the quarter to September 30, 2016 on November 14, 2016 Edison Investment Research Limited updated its earnings forecast for 2017, taking into account the cost and production information included in the Q3 2016 MD&A and applying its forecast gold price of \$1,275 per ounce. This research has been prepared on a paid-for basis, projects earnings per share for 2017 of 34.2 cents and will be available on the Company's website. Edison's updated earnings forecast for 2017 of 34.2 cents is lower than the previous consensus forecast of approximately 45 cents primarily due to Edison's use of a lower forecast gold price (\$1,275 per ounce compared to \$1,341 per ounce previously) and the revised 2017 production guidance of approximately 60,000 ounces compared to 65,000 ounces previously.

The Company believes this forecast to be reasonable based on its production and cost estimates above, which are consistent with those included in the Q3 MD&A, and using Edison's assumed gold price. Additional research reports on the Company are also prepared by WH Ireland Limited and Marten & Co Limited.

Mercury and the Environment



Africa hosts a third of the world's mineral wealth and has significant deposits of gold, Zimbabwe is no exception. The country's endowment with vast gold reserves has given rise to artisanal gold mining activities, whose use of mercury in gold processing has brought several environmental and health impacts. Emerging evidence indicate that artisanal and small scale gold mining related mercury contamination in Africa is contributing to serious health and ecological impacts and has raised concern among environmentalists.

Mercury is a persistent, highly toxic heavy metal whose continued inhalation can cause death. It is estimated that artisanal small scale miners, mostly from poor and vulnerable backgrounds active in gold and diamond sectors constitute more than half of all mineral exploitation in the world. UNEP estimates that 3, 5 million people are at risk of health impacts in artisanal and small scale gold mining sector of which 2, 5 million are in Africa. A research (Global Mercury Project) by the United Nations Industrial Development Organisation (UNIDO) which was conducted between 2007 to 2012 revealed that Zimbabwe had an estimated 500 000 artisanal gold miners, the number is expected to have increased over the years.

The fact that artisanal gold mining is largely unplanned, unregulated and unmanaged has left a legacy of severe adverse (and irreversible) environmental and health impacts.

The Minamata Convention on Mercury Concerns on the negative impacts of mercury and gave rise to the promulgation of the Minamata Convention on Mercury of October 2013.

The Convention is an international treaty designed to protect human health and the environment from anthropogenic emissions and releases of mercury and mercury compounds. The Convention was a result of international action aimed at managing mercury in an efficient, effective and coherent manner, whilst member state work on towards its total elimination. Zimbabwe is one of the 147 countries which signed the convention and is working towards ratification.

The document puts an obligation on member states to ensure there is informed consent from the receiving state in relation to the trade in mercury or mercury based products. Trade in mercury or mercury based products will be restricted to allowed purposes under the instrument and also domestic law, and

only in quantities needed for those purposes.

The instrument will also put restrictive measures on the use of mercury especially in the mining sector. There is a need for the development of sustainable technologies to extract gold in preparation for the restrictions that will be imposed on trade in mercury. Once ratified, the main benefit, of the document is that it will be a reference point or provide direction on how national legislation can be developed to tackle the on-going problem of controlling the use and influx of mercury into the country and prevent the possibility of Zimbabwe being a dumping ground of such hazardous substances.

Large-scale public health crises due to mercury poisoning, such as Minamata disease and Niigata Minamata disease, drew attention to the issue. In 1972, delegates to the Stockholm Conference on the Human Environment witnessed Japanese Junior High School Student Shinobu Sakamoto, disabled as the result of methylmercury poisoning.

Why is mercury bad for the environment?

Toxic mercury vapour from the process of burning the amalgam impacts negatively on miners, their families and nearby communities. Most gold mining activities are carried out in rivers and streams which drain into dams and lakes. Mercury contaminates water, accumulates in sediments and bio - accumulates in fish and tissues and other aquatic species. Its effects on the environment include the following:

- Mercury in the air may settle into water bodies and affect water quality;
- Methylmercury accumulates in fish at levels that may harm fish and the other animals

Mercury and the Environment

that eat them;

- Methylmercury exposure on wildlife can cause mortality (death), reduced fertility, slower growth and development and abnormal behaviour that affects survival;
- Research indicates that the endocrine system of fish, which plays an important role in fish development and reproduction, may be altered by the levels of methylmercury found in the environment;
- Once present in aquatic ecosystems, elemental and inorganic mercury can undergo chemical transformations to methylated mercury species and enter the food web and high level predators such as birds, sea mammals and humans could be in danger of contamination.

Mercury effects on human beings:-



- Continued inhalation exposure to elemental mercury causes tremors, gingivitis, and excitability. At very high levels, inhalation of elemental mercury can cause death.
- For foetuses, infants, and children, the primary health effect of mercury is impaired neurological development. Mercury exposure in the womb, which can result from a mother's consumption of fish that contain mercury, can adversely affect a baby's growing brain and nervous system. Impacts on cognitive thinking, memory, attention, language, and fine motor and visual spatial skills have been seen in children exposed to

mercury in the womb.

- Impairment of the peripheral vision; disturbances in sensations ("pins and needles" feelings, usually in the hands, feet, and around the mouth); lack of coordination of movements; impairment of speech, hearing, walking; and muscle weakness.
- Mercury primarily causes health effects when it is breathed as a vapour where it can be absorbed through the lungs. Such exposure can occur when mercury is spilled or products that contain mercury break and expose mercury to the air, particularly in warm or poorly-ventilated indoor spaces. Symptoms include tremors; emotional changes (e.g., mood swings, irritability, nervousness, excessive shyness); insomnia; neuromuscular changes (such as weakness, muscle atrophy, twitching); headaches; disturbances in sensations; changes in nerve responses; performance deficits on tests of cognitive function. At higher exposures there may be kidney effects, respiratory failure and death.

On animals

- Exposure of animals to methylmercury affects the immune system, alters genetic and enzyme systems, and damages the nervous system.

What is Zimbabwe doing about mercury?

With the assistance of the World Bank, Zimbabwe has undertaken a research to collect scientific data and evidence of the impacts of mercury for use by policy makers. The research will produce a Country Diagnostic Report with current knowledge about the status of mercury contamination and environmental and health risks to miners and their families in artisanal gold mining hot spots. The findings will inform the country's next plan of action, the review of policies,



legislation, regulations and standards as well as review institutional responsibilities of various ministries and government agencies such as EMA, Government Metallurgy, Government Mining Engineering and Mining Commissioner's Departments as well as Zimbabwe Revenue Authority (ZIMRA) in regulating mercury importation and use in Zimbabwe.

It is of great importance that interested and affected parties make themselves aware of the implications of this Instrument so as ensure that preparations are made that insure voluntary compliance rather than forced compliance once the law comes to fruition.

What does the law say about mercury?

Environmental Management Act Cap (20:27) as read with S.I 12 of 2007 Hazardous Substances, Pesticides and Toxic Substances Regulations state that, any person who imports, transports, stores or sells any hazardous substance must have a license for each purpose.

What are the mercury alternatives?

As a country we should be working at embracing mercury alternatives such as the borax method and the gravitation methods which proved to be equally efficient when used as demonstrations during the Global Mercury Project which ran between 2007 to 2012 in Kadoma.

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Cyanide and the Environment

What is Cyanide?

Cyanide is a highly toxic element that is found both naturally and as an introduced contaminant in the environment. Cyanides are naturally occurring substances found in a number of foods and plants and produced by certain bacteria, fungi, and algae. Cyanide is present in a number of compounds such as hydrogen cyanide, sodium cyanide, and potassium cyanide. In Zimbabwe, sodium cyanide is commonly used by artisanal/small scale miners in gold processing.

Main sources of Cyanide Contamination

Cyanide is used in a number of industries and is found at low levels in air from car exhausts. The major uses of cyanide are as an intermediate in the production of a number of chemicals and as an insecticide for fumigating enclosed spaces. Hydrogen cyanide has been used in gas chamber executions. Two most important uses of other cyanide compounds are in electroplating and metal treatment, including gold processing.

Effects of Cyanide:

On the Environment

Cyanide and other dangerous chemicals, such as mercury, are commonly used in artisanal gold mining. Since gold mines are almost always set up near rivers, often excess chemicals are distributed directly into waterways, thus polluting water sources. Once it becomes imbedded in soil or water, cyanide is extremely toxic to humans. Artisanal gold mining also presents several environmental challenges due to the inherent digging of soil and rinsing involved in artisanal mining. Siltation, erosion, and soil degradation can be issues in rivers used for mining. Rivers are also commonly diverted as a way to access mineral rich riverbeds. The digging of mines can also spread harmful materials, such as lead, that are located within the soil. The conservation of forests is also a great concern as many artisanal mining operations take place in and around forests that are home to vast amounts of biodiversity, artisanal mining operations often cut down trees to clear space for their camps.

On human beings

Cyanide is extremely toxic to humans; long-term inhalation of cyanide affects the central nervous system. Short-term inhalation exposure to 100 milligrams per cubic meter (mg/m³) or more of hydrogen cyanide causes death in humans. Severe exposure to lower concentrations (6 to 49

mg/m³) of hydrogen cyanide causes a variety of effects in humans, such as weakness, headache, nausea, increased rate of respiration, and eye and skin irritation. Continuous exposure to cyanide in humans via inhalation results in effects such as headaches, dizziness, numbness, tremor, and loss of visual sharpness. Other effects include cardiovascular and respiratory effects, an enlarged thyroid gland, and irritation to the eyes and skin.

Legal framework for the use of Cyanide

Many countries, including Zimbabwe recommend that mines that use cyanide do so in a manner consistent with the International Cyanide Management Code, which involves minimizing the amount of cyanide used; designing measures to protect surface and groundwater; designing and operating systems that reduce cyanide levels in effluent; and preventing spills. The Environmental Management Act Cap (20:27) as read with Statutory Instrument 12 of 2007, Hazardous Substances, Pesticides and Toxic Substances Regulations state that, any person who imports, transports, stores or sells any hazardous substance must have a license for each purpose. Cyanide is a hazardous substance, and legislation requires it to be transported, handled, and disposed of by fully trained personnel in certified storage containers. Its disposal and discharge into the environment at mine sites is regulated through the use of permits and licences. In addition, the cyanide concentration of effluent leaving a metal mining operation must be less than 0,07 mg/L as prescribed in Statutory Instrument 6 of 2007 (Solid Waste and Effluent Regulations).



What should happen in case of a Cyanide spillage?

any accidental spillage must be reported to ema both verbally and in writing within 8 hours. the agency sends a reaction team to neutralise the toxic substances following which an investigation will be conducted. The cleaning up the of spill is done by the company responsible for the spillage. the area must be cleaned up to retain its usable state.

What is Zimbabwe doing about Cyanide?

The Environmental Management Agency is working on legislation (Statutory Instrument for the Control of Alluvial Mining Regulations) to prohibit the use of dangerous chemicals such as mercury and cyanide by alluvial gold miners and alluvial gold mining activities "on land within 200 metres of naturally defined banks or land within 200 metres of the highest flood level of any body of water, stream, or any bed, banks or course of any river or stream, or land within 200m of any wetland." There is need for the sector to adopt sustainable technologies to extract gold for the protection of the environment. Zimbabwe is signatory to the Minamata Convention of 2013, an international treaty designed to protect human health and the environment from anthropogenic emissions and releases of mercury and mercury compounds. The Convention was a result of international action aimed at managing mercury in an efficient, effective and coherent manner, whilst member state work on towards its total elimination.

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Metals and Minerals of Zimbabwe

Zimbabwe is a mineral rich country with great potential for further discoveries. The country has a huge and highly diversified mineral resource base dominated by two prominent geological features namely the **GREAT DYKE** and ancient Greenstone Belts also known as **Gold Belts**.

The Great Dyke is a linear geological feature that trends nearly north-south through the centre of Zimbabwe passing just to the west of the capital, Harare. It consists of a band of short, narrow ridges and hills spanning for approximately 550 kilometres. The hills become taller as the range goes north, and reach up to 460 metres above the Mvurwi Range. The range is host to vast ore deposits, including *Gold, Silver, Chromium, Platinum, Nickel And Asbestos*.

It is a group of layered ultramafic intrusions that extend across Zimbabwe with a strike of about N20°E. The width of the intrusions vary from 3 to 12 km. The Great Dyke is unusual in that most ultramafic layered intrusions display near horizontal sill or sheet forms.

The well-layered lower units of ultramafic rocks comprising the Great Dyke are locally overlain by erosional remnants of gabbroic rock. These mark the centres of the four sub-chambers within the Great Dyke magma system, namely Musengezi, Darwendale, Sebakwe and Wedza. Each of these sub-

chambers has an elongate, doubly plunging synclinal structure, and was fed by a feeder dyke continuous below almost the entire Great Dyke. Stratigraphically each sub-chamber is divided into a lower Ultramafic Sequence of dunites, harzburgites, olivine bronzites and pyroxenites together with narrow layers of chromitite that constitute the bases of cyclic units and that are extensively mined along the Great Dyke, and an upper Mafic Sequence mainly consisting of a variety of plagioclase-rich rocks, such as norites, gabbro-norites and olivine gabbros.

“Zimbabwe remains behind in exploration as the country has not invested in exploration in the last 10 years”

The Great Dyke is a strategic economic resource with significant quantities of chrome and platinum. Chromite occurs to the base of the Ultramafic Sequence and is mined throughout the dyke. Below the Ultramafic-Mafic sequences' contact, and in the uppermost pyroxenite (bronzite and websterite) units are economic concentrations of *nickel, copper, cobalt, gold, and platinum group metals* (PGM). The base metals occur as disseminated inter-cumulus Fe-Ni-Cu sulfides within an interval referred to as the base metal subzone, below which is

a sublayer enriched in platinum group metals called the PGE subzone. The base metal and PGE sub-zones together, make up the Main Sulphide Zone.

Chromite is mined throughout the Dyke, especially in the Darwendale, Lalapanzi and

Mutorashanga areas. The three largest chrome mining companies are **Maranatha Ferrochrome, Zimalloys and Zimasco**, although most mines are worked by the tribute system.

Platinum group metals are currently mined at Ngezi Mine south of Selous by Zimplats of the Impala Platinum Group, at Unki Mine near Shurugwi by Anglo American and at Mimosa Mine near Zvishavane by Zimasco for Impala Platinum. The Hartley Platinum Mine near Makwiro is not currently operating. Oxidized, near-surface ores are a promising future source for platinum-group metals because of their easy accessibility. They constitute a resource of ca. 160-400 Mt, but mining has so far been hampered due to insufficient recovery rates.

The mining sector contributes about 50% of the country's foreign exchange earnings, 4.5% of employment and is forecast to grow.

Industry growth in the medium to long term, however, depends on the ability to attract investment into current and new projects, as well as investments into key infrastructure fundamental to sustainable development of mining, i.e. power and railroad transportation. Investment of \$5-7 billion is needed to grow the sector as following: platinum 40%, gold 33%, diamonds 11%, coal 8%, chrome 4% and nickel 4%. Zimbabwe remains behind in exploration as the country has not invested in exploration in the last 10 years.

Opportunities therefore exist for investors to explore Zimbabwe's mineral wealth. The Government of Zimbabwe strongly recognizes the important developmental contributing that the private sector, both local and foreign can make by increasing investment in Zimbabwe.



ZMDC Costing Zimbabwe Billions

by Staff reporter

The Zimbabwe Mining Development Corporation's working capital position continues to deteriorate while there is continued material uncertainty in its ability to continue as a going concern, yet it remains a company with the richest mining assets in the country.

While the mining group's condition continues to deteriorate, ZMDC has rich mining assets across the country which have remained idle for years. The mining group owns almost all the mines that are currently not operating in the country. On introduction, ZMDC is the state mining vehicle established by an Act of Parliament No. 31 of 1982.

It was formed to create a vibrant and versatile mining power house necessary to transform Zimbabwe's mineral wealth to the world class standards. Since formation the company has faced challenges which affected its viability and capacity to significantly contribute to the economy. Some of the challenges have proven to be beyond the company's control especially the indigenisation and economic empowerment legislation.

Real investment remains key at ZMDC's mining assets and it has proven that the mining vehicle on its own does not have enough resources. It remains a surprise that no matter how endowed ZMDC is, it still relies on handouts.

Since formation the company has faced challenges which affected its viability and capacity to significantly contribute to the economy. The biggest challenge for ZMDC has been failure to attract serious investments and it is high time that the ZMDC board take action towards securing investors for struggling mining assets.

ZMDC mining assets remains unattractive and the most under mined yet it has the capacity to drive the country's economic growth.

Due to the non-functionality of the mines in Zimbabwe which are mostly owned by ZMDC the country is losing billions. Functioning at full capacity ZMDC has capacity to contribute 50 percent to the Gross Domestic Product.

The new ZMDC management led by Dr Farai Karonga has however started making efforts to revive some of the idle mines while investors have also started warming up to some of the assets.

Government through ZMDC has in the past failed to close investment deals and would spend years doing due diligence on investors. Looking for investors to revive the defunct mining operations has proven to be a challenge for Government at a time when it looks rather easy following the removal of ZMDC on the sanctions list.

Generally Government has lacked an aggressive approach towards turning around the fortunes of the company.

ZMDC wholly owns Sabi and Elvington gold mines, which are currently dormant and maintaining project status while Jena Mine has been the only one operating but at a loss. The state owned mining vehicle has three groups of Copper Mines namely; Mhangura Copper Mines, Sanyati and Lomagundi Smelting and Mining. These copper assets have been dormant for the 15 years yet copper is a mineral currently fetching a good price at the global market.

ZMDC also has significant interest in tin mining, platinum through the Great Dyke Investments and asbestos at Shabanie. Shabanie and Mashava mines were closed on political grounds and have been dormant for years. Just the revival of Shabanie and its associate mines has capacity to significantly contribute to economic growth.

Zimbabwe boasts of about 40 exploitable minerals but nothing much has been done to make sure those minerals will contribute. For instance, the mining of copper and cobalt is the mainstay of the Zambian economy and has traditionally driven its economic growth for years yet Mhangura copper mine remains in the dark under the stewardship of ZMDC. ZMDC former acting general manager Wilson Chinzou in 2015 told the reporters that there is significant potential on the copper mines amid reports that the mines were no longer viable.

"There is significant potential at the mines and hence ZMDC is seeking to resuscitate all three operations. Prospective investors are being sought to participate in a joint venture and take up equity in any or all the copper mines," said Mr Chinzou.

Despite efforts to revive the mines no investors have been secured by now. It is high time that the country benefits from the exploits of ZMDC and move away from playing a blame game. Investors must be secured to make sure mineral contribution to the fiscus is enhanced.

"As a nation we cannot afford to give up hope and need to now focus on our own ability and resource to build our nation", said Mbada Diamonds Chairman, Dr Robert Mhlanga in

ZMDC Costing Zimbabwe Billions

2009.

There must be an element of discipline in the running of Zimbabwean mining operations and Government interference has been limited. Despite the noise that has been made against the legislation, it has also proven that ZMDC has its own structural inconsistencies.

Government needs to enforce an element of conclusivity on shareholding levels which has proven to be an impediment because from the look of things there has been a lack of consistency in the implementation of the indigenisation legislation.

Change of management has also become a culture at the state mining company where it has continued to be run by managers on acting capacity. Barely a year the whole of ZMDC management was fired and such a conduct tends to rile investors. There must be substantive management at the state mining vehicle. As a result this sacking of managers has slowly killed consistency in the turnaround of the company.

Going forward there is need for an appointment for substantive leadership capable of making decision rather than the current situation where investors do not know who to approach. ZMDC in the past few years entered into joint venture partnerships in the diamond and tin mining operations on a 51-49 percent structure, but to date government through the mining company remains the poorest despite having a lion share of the shareholding.

Accountability remains another worrying issue at the state mining vehicle. Government in 2014 gave a directive to the ZMDC to publish financial statements in bid to ensure

transparency and accountability in the mining investments vehicle. Accountability should be fostered going forward for the state mining company to become attractive again for investment. What is only required for the idle mines is investment and fresh capital. Presenting the 2015 budget statement in December, Finance and Economic Development Minister Patrick Chinamasa told ZMDC to start publishing financial statements as a way of proving a true reflection of the company performance.

Such a directive is yet to be implemented while Zimbabwe's extractive sector's mineral and revenue disclosure remains shrouded in secrecy thereby raising concerns on transparency and accountability issues. The Ministry of Finance and Economic Development even during the reign of former Minister Tendai Biti has always raised concerns over limited transparency and accountability while on the contrary, ZMDC claimed that they reveal information to the general public and Treasury.

Among sticky issues is the disparity between purported increased production at ZMDC's mining operations against dwindling royalties paid to Government raising fears of illicit flows of mineral revenue. The lack of full disclosure by mining entities has also led to a lack of clarity on issues such as board representations in mining companies, lack of follow ups by Government through ZMDC of investments done by joint venture partners as well as some shareholding structures of mining companies.

The ZMDC 2012 annual report showed that Anjin is 10 percent owned by ZMDC and 40 percent by other Government departments.



Miners entering the Skip at Jena Mines

Government is expansive, who should we hold accountable in Government therefore it is important that there is clarity so that calls for accountability can be heard.

Even if you read the auditor general's 2012 report, it shows that 40 percent was disposed by ZMDC for \$40 million to Glass Finish. Again we don't know who Glass Finish is and reports say they did not pay ZMDC, so who should be held accountable?

Disclosure remains important as it gives a window into the operations of ZMDC and details of some parties that transact with ZMDC. Moreover, it reveals the undermining of state's commercial interest in ZMDC of optimising mineral revenue receipts as shareholding is ceded without clear fall back mechanism when payment is not honoured.

ZMDC should emulate what listed mining companies have been doing. Blanket Mine, BNC, Hwange, Falgout and RioZim have been doing absolutely well in disclosing their operations.

Real reform must be instituted in Government for the idle ghost mining assets to wake up again.....



Celebrating 30 SUCCESSFUL YEARS

in the supply chain and road freight logistics



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- Tanzania
- Uganda
- Zambia
- Zimbabwe

Logistic Road Service

- Trucks / Rolling Stock
- Abnormal Project Cargo
- Road Freight - Sub-Sahara
- Road Freight - South Africa
- Superlink Articulated Truck
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Meticulous planning, tailor-made solutions, attention to detail, delivering on time and within budget and keeping clients happy – that, in a nutshell, is Cape Town-based Concarga (Pty) Ltd's secret to beating the competition in the fast-paced, highly-competitive freight forwarding and logistics industry.

This success story began back in January 1987 when Concarga was founded, in Cape Town, by David and Beverley Kruyer. Today – 30 years on – it has a staff complement from two to xxx, has offices in all major centres in South Africa and operates within Sub-Saharan Africa and the SADC region.

The company offers an ever-expanding portfolio of supply chain solutions and transport planning with customer services as its foundation, supported by strategic partnerships and alliances.

'Our philosophy from day was 'service above all else' and this has remained the basis for all our relationships,' says David Kruyer, founder and MD.

'We are dedicated to preserving this viewpoint as a constant in all our planning and interactions with clients and suppliers. Our challenge is to find solutions and implement them while exceeding expectations.'

Reflections over the decades Kruyer says that starting his own business was a natural progression after spending time in the distribution industry, initially circulating newspapers to shops and street vendors for the Daily Mirror in the UK and then for The South African Associated Newspaper (SAAN) Group, the Cape Times Limited and Allied Publishing before working for a succession of distribution companies including DHL, TNT Skypak and Ace Express Logistics.

'The distribution business was an invaluable grounding and where I gained most of my experience and knowledge ahead of opening the doors of Concarga back in 1987,' he explains. 'My analogy of the business is a shipping one. My wife, Beverley, is and has been the rudder in my life, Gregory Bathurst Tighe has been the keel since day one and Janine Bernadette Conradie is the mast of this operation.

'It has been a long and eventful journey, navigating throughout the decades of good and lean years, learning and adapting our methodology along the way to find new solutions to logistic challenges, but we've also had loads of fun.

'When I look back to our humble beginnings and where we are today, we are clearly doing something right.

[Continued on the next page]

Celebrating 30



SUCCESSFUL YEARS

in the supply chain and road freight logistics

I can only attribute our success and longevity in the industry to solid partnerships with clients and service providers who have loyally stood alongside us as we've grown.'

It takes teamwork

Being successful in the freight forwarding industry requires teamwork and synergy of planning to ensure the smooth passage of cargo. Concarga boasts a dedicated and skilled team, as well as strategic business partners, working together to ensure a seamless and co-ordinated solution - whether transporting within South Africa or across borders into Africa or abroad.

The high experienced team has decades of experience: Greg Tighe, Projects Director has been with the company for 28 years; COO, Dean Theunis Page for 16; Director of National Transport Janine Conradie celebrates 23 years at Concarga while Loretta George, Accounts Manager, has been around for 17. The most recent addition to the senior management team is Shane Korsten who has been establishing and growing the Concarga brand within the Sub-Saharan region.

'Our management team is solid and has the experience to adapt to the new challenges presented by this ever-changing industry,' says Kruyer.

'Transport logistics in Africa is a vibrant and exciting industry to be part of. Our desire is to mentor a future generation by showcasing transport logistics as a career and are excited to have four logistics graduates join us as interns this year.'

Solutions driven

Successful delivery of cargo, no matter what the load, requires skilled staff to manage the often complicated logistics.

Over the years Concarga has been presented with some notable and rather unusual projects which have required intricate pre-planning and creative thinking to meet the brief, especially within tight time constraints.

These include:

- *Managing the transport and logistics for big budget movies such as Racing Stripes, Home Alone, Lord of War, Blood Diamonds and more*
- *Co-ordinating and managing the transport and logistics for BMW's international media launch of its 650 cabriolet series in Cape Town*
- *High security transportation and escorting of Grade 12 examination papers from SA printers to the education ministries in various Southern African countries*
- *Transportation of abnormal loads such as wine tower tubes, mining bucket wheel reclaimers, combine harvesters, 100 ton LP heaters for Medupi*

One of the most challenging projects took a total of three months to complete, a month of planning and two months of transportation. It involved relocating 45 loads of bucket wheel reclaimers from Saldanha to Sishen South mine. Considered abnormal out of gauge haulage and at 9m wide, the transportation required special permission and escorts as it snaked its way up and over the steep Piekeniersberg Pass, in four hour

intervals (to allow for other traffic to pass) as part of the route.

'This industry lends itself to new challenges on a daily basis and one learns to adapt to the situation like a chameleon,' says Janine Conradie. 'Some days are really trying and others exhilarating, but in the end, always rewarding. Transport and supply chain logistics is not for the faint hearted. This industry teaches you the skills that can carry you through any situation life presents.

'Besides all the interesting people I have met, I have also learned so much about this industry and many others too.



David Kruyer

'Taking the time to really understand a client's business is the best way to assist them when developing their logistics solution. I have been fortunate to travel to Madrid to accept a transport award on behalf of Concarga, to Antwerp for a Heavy Lift conference and to the Breakbulk Europe Expo. We have also participated as exhibitors at various expo's, such as SAPICS, The International Book Fair and at

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Celebrating 30 SUCCESSFUL YEARS



in the supply chain and road freight logistics

taking the time to really understand a client's business is the best way to assist them when developing their logistics solution. I have been fortunate to travel to Madrid to accept a transport award on behalf of Concarga, to Antwerp for a Heavy Lift conference and to the Breakbulk Europe Expo. We have also participated as exhibitors at various expo's, such as SAPICS, The International Book Fair and at Breakbulk Africa.'

Three transport divisions, scalable business model Concarga has three distinct transport divisions encompassing all aspects and types of logistics solutions, namely: Road Transport Short-haul and Long-haul and Express Distribution throughout South Africa; Road Transport Cross/Over Border via all Ports in SA, SADC and neighbouring countries in Sub-Saharan Africa; and Project Cargo Management, Abnormal Out-of-Gauge, Heavy Haulage and Mobile Crane and Rigging Services, Relocation/Mobilisation Services.

According to Kruyer, service management - within the framework of distribution and logistics - is the name of the game in providing reliable supply chain services from start to finish. 'Our expedited trucking provides a daily door-to-door road haulage service throughout South Africa, hauling general dry cargo from one tonne up to thirty-six tonne loads to and from all destinations as into all SADC, neighbouring and remote countries in Sub-Saharan Africa.

'We have invested heavily in customer relationship management (CRM) systems to preserve our knowledge base for the benefit

of our customers while encouraging old school personalised service. Our business model is highly scalable due to its Owner Driver Hauliers and Sub-Contractor fleet base.

'We can supply from 1 to 100 trucks, or more, at short notice, especially when a ship docks and cargo needs to be discharged on a scheduled basis.

'Our Project Department, manned with highly qualified engineering specialists and experienced in all aspects of project transportation, assess the scope of work, survey the terrain, and quantify the end-to-end solution to complete the project,' explains Kruyer.

'Over the years, the project division have conveyed project shipments including vast over-dimensional and heavy lifts, and delivered on time and to the client's ultimate satisfaction. We foster partnerships with a wide range of asset owners, thereby providing access to a great variety of vessels and rolling stock through our strategic partnerships and alliances.

Forward thinking

'The regulatory and business landscapes are changing dramatically and there is a transition within our industry with disruptive innovation, drone logistics, (IoT) Internet of Things, Blockchain Technology and more,' says Kruyer.

'We have had to learn to adapt and innovate as never before. But the need to keep pace

with these changes has a cost, and how we address these challenges must, in the end, benefit our customer and service providers. That's why collaboration amongst all players in the global supply chain community has never been more important.'

'Despite the many changes we are experiencing in terms of stagnation in the mining industry, reduced activity in the offshore drilling sector, the delay in infrastructure development and the unpredictable global economy we are confident of our future.

'We have a succession plan in place and continue to innovate. We are currently developing improved technology with apps to make tracking and tracing of cargo easier.

'Our experience is invaluable in being able to handle complex logistics and we have proved that no problem is insurmountable.

'We have not made it to this milestone of 30 years by sitting back, we are proactive and continue to adapt our business model to suit the business,' says Kruyer.

'But we would not have made it this far without our clients and partners and we thank them for their loyal support. We are energised about the future and look forward to continuing to be the 'go-to' company for transport and supply chain logistics in Africa.'

CONTACT DETAILS:

Concarga (Pty) Limited, Cargo House Cape Town, 6 Tierberg Road, Avondale, Cape Town
Tel: +27 21 930 9160
Email: management@concarga.com

Trotec Laser expands the product

portfolio of the Galvo marking lasers with a new laser source MOPA



Expand your possibilities when marking metals and plastics. With the MOPA laser, you can now also mark plastics higher-contrast and achieve more legible results, mark (anodised) aluminium in black or create reproducible colours on steel. In addition, you can produce qualitatively equivalent markings with the MOPA laser often faster than with the conventional fiber laser while the advantages of the conventional laser sources (maintenance-free, long life, air-cooled, economical purchase price, etc.) remain unchanged.

More possibilities with the MOPA Fiber laser source

With the MOPA fiber laser sources you can variably adjust the pulse duration and reduce it to a few nanoseconds compared to conventional fiber laser sources. Due to the short pulses as well as the lower pulse energy, the material is heated less.

Higher-contrast, more homogeneous laser markings on plastics

For some plastics, the MOPA fiber laser can



make full use of its strengths - short pulses and thereby less material heating. Thereby, plastics which are difficult to mark with a conventional fiber laser, can be laser-marked with the MOPA laser in a clearly nicer and more homogeneous manner, with less burning and foaming (e.g. ABS). Especially on dark plastics (e.g. PA 66 GF, PA 6 GF, PP GF, etc.), the shorter pulses often produce "vivid", lighter markings, which results in a higher contrast. Thus, some plastic parts, which could not be adequately marked with a fiber laser before, can now be laser-marked in a clearly (machine) readable manner.

Marking natural anodized aluminum in black and the colour effect.

The MOPA laser also offers some advantages for metals. Marking (natural anodized) aluminium in black is thus possible. This process is also used to mark high-quality smartphones. A faster and corrosion-free annealing on steel is possible. In general, the MOPA laser with pulse durations between 4 and 200 ns offers a wide spectrum of possibilities for marking on metals producing different colors on steel most products.

Additional advantages of the MOPA fiber lasers

In addition, the MOPA fiber laser offers the

possibility to produce industry standard qualitative equivalent markings faster than conventional fiber lasers. In order to make full use of the numerous advantages and possibilities for the marking of plastics and metals, an extensive application knowledge is necessary. The application experts from Trotec provide detailed advice for our customers needs.

The laser systems of the SpeedMarker series from Trotec offer all these advantages now. The known advantages of these marking lasers, e.g. the intuitive and intelligent marking software SpeedMark, which is equipped



for all requirements for industrial marking tasks (such as serial numbers, code generation, are compatible with customer-specific ERP systems, HMI, etc.).

About Trotec:

Trotec is a leading international provider of laser systems for a wide range of applications, from laser cutting and engraving to industrial marking. The company's extensive line of quality laser engravers, cutters and markers, coupled with its unmatched service and support offerings, have made Trotec one of the industry's leaders. Trotec offers software and a line of exhaust systems and laser and rotary engraving materials. Trotec's machines are currently in use in over 90 countries around the globe.

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AngloGold Ashanti Remarks on approach to Safety



There is no higher priority for AngloGold Ashanti than the safety of every one of its employees. It is a commitment that the company will continue to demonstrate across its global portfolio, including the world's deepest mines that it operates in South Africa.

Over the past decade, AngloGold Ashanti has reduced operating fatalities by more than 80%. Over the same period, it has improved its all injury frequency rate, the broadest measure of workplace injuries, by more than two-thirds. We will not relent in our endeavours to prevent harm to employees.

The improvements of the past decade have come through a focus on improved operating and safety systems and technologies, as well as an emphasis on ensuring that every person in the company place a greater focus on identifying and avoiding risk. In an environment where minor missteps can have catastrophic consequences, it is critical that we not only are relentless in identifying and eliminating hazards, but that we instil a culture that prizes safety above all else. We have made encouraging strides in that regard and will continue to look for ways to improve.

Like in any heavy industry, and especially in a company like ours that employs more than

50,000 people globally, human error remains among our greatest challenges. This is an aspect of the business that we continue to work hard to mitigate in cooperation with a broad group of stakeholders.

As AngloGold Ashanti has continually demonstrated, we value close cooperation with all role players in this industry, including our employees and our partners in organised labour, and also our regulator in the Department of Mineral Resources. We believe it is crucial to the wellbeing of every employee that this relationship is not only professional and respectful, but also tightly bound by the laws and regulations that govern the industry.

We continue to seek dialogue with the DMR at every level, with the primary aim of improving safety and ensuring fair and proportional application of applicable safety legislation. Where there is disagreement, we will continue – as we have done – to use the proper appeal mechanisms and legal remedies available under the Mine Health and Safety act and associated legislation.

We believe that through close cooperation among stakeholders and fair application of regulations with due regard to proportionality, as well as continued vigilance in an

unpredictable operating environment, we can further improve on the safety gains made in the past decade.

AngloGold Ashanti released this press release after the South African government accused AngloGold and Sibanye Gold of refusing to comply with safety laws.

Last week mines minister Mosebenzi Zwane said the number of workers killed in the country's mines dropped in 2016 to a new record low of 73 from 77 they year before. However, he also said the platinum and gold industries were the two biggest contributors by sector to mine fatalities last year, adding that 19 miners died at AngloGold Ashanti and Sibanye Gold operations.

"If companies cannot mine safely, they should not be mining at all, and should allow other potential holders," Zwane said in the statement. "It is unacceptable that these companies are choosing to cheapen the lives of mineworkers in this manner."

South Africa had 73 mining fatalities in 2016, a record low and a ninth consecutive year of declines. The country's gold and platinum mines are the world's deepest and among the most dangerous.

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Asa Unaudited results for the six months ended 30 September 2016 & brief update on operations

Asa Resource Group plc is pleased to announce its unaudited interim financial results for the six months ended 30 September 2016 and offer a brief update on its mining operations.

Operational highlights

ASA Gold — Freda Rebecca Gold Mine — Zimbabwe

- Profit before tax 61% higher to \$5.3m (H1 FY2016: \$3.3m)
- Revenue 2% lower at \$39.8m (H1 FY2016: \$40.4m)
- Gold production 13% lower at 30,367oz (H1 FY2016: 35,052oz)
- Tonnes mined and milled decreased by 0.4% and 11% respectively compared to H1 FY2016 due to cracked shield cap of main mill but issue offset by new mills
- C1 increased by 8% to \$967/oz (H1 FY2016: \$899/oz) and C3 by 7% to \$1,133/oz (H1 FY2016: \$1,057) due to lower gold production
- Two small additional mills sourced within the Group and refurbished

Bindura Nickel Corporation (BNC) Trojan Nickel Mine — Zimbabwe

- Revenue increased by 9% to US\$22.5 million (H1 FY2016 \$20.6 million)
- Increased nickel production contributed to a 34% decrease in cash costs to \$5,216/t (H1 FY2016: \$7,864/t) and a 33% decrease in the all-in sustaining costs to \$5,759/t (H1 FY2016: \$8,601/t)
- Profit after tax of \$1,184,245 (H1 FY2016: loss of US\$3,359,512)
- 19% reduction in realised average nickel-in-concentrate price to \$6,198/t (H1 FY2016: \$7,654/t)
- Trojan sales increased 25% to 3,464t nickel-in-concentrate (H1 FY2016: 2,762t)
- Head grade increased to 1.89% (H1 FY2016: 1.41%) following the adoption of the new mine plan to blend massives with disseminated ore
- Tonnes mined and milled decreased by 11% to 201,707t (H1 FY2016: 226,294t) and 11% to 205,290t (H1 FY2016: 231,224t) respectively compared to H1 FY2016

Bindura Smelter and Refinery (BSR)

- Upgrade and refurbishment of the smelter project on course (above 71% complete)
- Capital expenditure of US\$4.2 million incurred during the period mainly on smelter project

CEO STATEMENT - Mr Yat Hoi Ning, Group Chief Executive Officer, commented, "The first half of the current year saw steady progress across the Group with an after tax profit of \$3.1m, predominantly coming from its two key mining operations in Zimbabwe. While I am pleased with this progress, we must remain focused on reducing our corporate and operating costs further to reflect the contrasting movements in nickel and gold.

ASA GOLD

The challenges at Freda Rebecca are different to that of BNC. The mining performance at Freda has been very consistent over the years, but milling capacity has held them back. With the commissioning of two additional small mills, this problem will finally be resolved in the next few quarters. It remains our objective to have C3 costs below \$1,000 oz and reach gold output of 80,000 to 100,000 oz per annum. There is a new mill plan to gradually reach these targets. This plan includes repairing the cracked shield cap of our main mill and the refurbishment of both existing mills. This plan will be executed in the next six months and I am confident that, when the milling capacity of 1.8m tonnes is achieved, Freda Rebecca will be in a good position to contribute significantly to the Group's future prospects.

Asa Unaudited results for the

Six months ended 30 September 2016 & brief update on operations

At Zani Kodo, where we hold an 80% stake in a substantial gold reserve of almost 3m ounces, management has been actively engaging with the DRC government to validate our mining licences. As part of this process, a pre-feasibility study has been provided to the DRC Minister for Mines and awaits final approval. In the meantime key equipment for a gravity plant has been ordered with a view to starting a basic operation as soon as possible in 2017.

ASA NICKEL

Trojan's \$1.2m after tax profit reflects the steady rise in the price of nickel and the impressive all-insustaining costs of \$5,759/t for the half year. However, in contrast to Freda, their issue has not been milling, but mining. Annual sales targets of 7,000 to 8,000 tonnes have been slow to achieve on a quarter-on-quarter pro rata basis this year. Based on a cost analysis, a decision was taken to outsource the supply of operating LHDs and dump trucks earlier this year to help speed up development. The subcontractor purchased two new 20t dump trucks, but experienced delays with delivery resulting in reduced availability of ore. Supply issues have been rectified and production is expected to improve in the next two quarters. Given this scenario, BNC has performed relatively well so far this year.

With nickel close to \$11,500/t, BNC should be able to take advantage of their low C3 costs of around \$5,000/t and produce nickel-in-concentrate in excess of 600/t per month (equal to 7,200/t pa).

With the price outlook for nickel more encouraging and the smelter taking shape (\$19.5m committed and 71% complete), management is revisiting phase 2 of the shaft re-deepening project. On completion, it would extend the life of mine by about 5 years and give Trojan increased access to known ore reserves and potentially higher grades in advance of the smelter restart. As reported previously, Trojan's concentrate can only provide sufficient output to meet 50-55% of the smelter's total capacity and, without third party feed, it would not be running at optimum levels on present production. The re-deepening project could provide increased feed for the smelter and, equally important; allow exploration drilling to continue to evaluate resources below 45/0 level. It will cost approximately \$5m to complete this project and extend the shaft system from 43/0 to 45/0 level. Management is exploring ways on how to mitigate its impact on production. To assist with bringing both of these projects to fruition in 2017, bondholders have agreed to place a 12-month moratorium on the principal Bond debt; in the meantime BNC will continue to make interest payments as normal. When the previous executive originally negotiated the \$20m Bond, in 2014, it was assumed nickel prices would be higher and this moratorium gives BNC time to complete the smelter project and hopefully, for nickel prices to increase further.

Nickel at \$11,000/t or above would help increase margins and contribute to these capex commitments. A contract with a third party to supply concentrate would obviously improve margins.

SUMMARY

The period Jun - Dec 2016 has been an encouraging half-year with steady progress across the Group. While there are significant capex demands in the second part of the year, our commitment remains strong. We continue to press ahead to meet output production and cost targets. We also remain focused on our long-term strategy to unlock the untapped potential of the Group's impressive portfolio of assets.

Pirate Parts

Pressure is on to save costs but pirate pump parts are not the answer

Many companies use high flow, high pressure peristaltic pumps in their treatment processes and it's no surprise to learn that there are just as many manufacturers out to make a 'fast buck' by supplying counterfeit or 'pirate' replacement parts for these pumps.

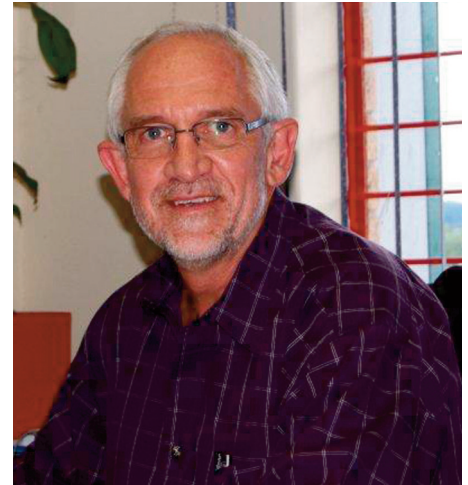
It's easy to understand why these low-cost offerings – as much as 50 percent less – are attractive, but buying non-standard replacement hoses for pumps is false economy.

"Using pirate parts can reduce a pump's efficiency by up to 30 percent," says Nico van Schalkwyk, General Manager of Watson Marlow Bredel SA. "Numerous problems can occur over time, such as bearing or shaft failures and reduced life cycles on components such as rotors and shoes."

Lower efficiency levels, higher power requirements, greater wear and increased maintenance which invariably accompany cheaper alternative offerings are overlooked in the face of perceived significant savings. Using genuine spares in any pump may cost a little more, but operators and production managers will see the cost benefits in the end fewer breakdowns, better production and qualified and trained personnel to assist when problems arise.

"At one installation where the operator had opted for a cheaper alternative hose, pumps were required to run faster and for longer periods with a serious adverse effect on running costs and the overall efficiency of the sludge handling system," van Schalkwyk points out.

At another site using Bredel 100 pumps, the result of using inferior hoses was two cracked pump housings that added up to extremely expensive replacement costs.



Nico van Schalkwyk

Bearing failures due to uneven loading and/or overloading and stemming directly from variations in hose wall thickness can have serious consequences in terms of operating costs and downtime.

"As the only component in contact with the pumped media, the hose is the heart of any peristaltic pump," says van Schalkwyk.

"Dedicated hoses such as those produced by Bredel are the end product of continuous research and development. They consist of a thick, resilient inner layer and an outer layer of natural rubber, reinforced internally with braided nylon.

"They are produced to close dimensional tolerances between 0.25mm on larger hose bore sizes and 0.4mm on smaller sizes and ground to the precise diameter."

In the light of hard facts and figures, it's difficult to understand how using non-standard parts can ever be viewed as a good business decision. Yet it causes ongoing problems in the industry, particularly in the context of negative impacts on pump performance and system failures, which almost inevitably necessitate additional



Bredel Hose grinding

Pirate Parts

costs.

Recent measurements of a cheaper 'pirate' hose found the bore to wall ratio to be out of concentricity by 1.5mm each side for instance, on a compressed hose up to 3mm difference. On a Bredel 100 hose

pump for example, the approximate 8,000N of load from this degree of over-occlusion would reduce bearing life by over 50 percent.

Figures for hose life are equally in favor of dedicated manufacturer's hoses, notably on sewage sludge pumping and similar arduous waste handling applications. One example of this is at a site where two identical pumps are installed for the same duty. A maintenance contractor replaced the original hose with a cheaper 'pirate' alternative on one of the pumps.

Twelve months later, the original Bredel hose is still in service. The

second pump, using the pirate, is on its fourth hose fitting. In another comparable sludge pumping installation, 'pirate' hoses lasted approximately 200 hours, equivalent to about one month's service a retrofitted hose is still in service after more than eight months.

"It is also important to take into account lack of provenance, non-compliance with standards, the reputation of often little known manufacturers and products with no real validation that the parts being purchased will perform at anything like the required levels and no comeback if they fail to perform," says van Schalkwyk.

"Add in the complications of compromising original manufacturers' warranties, with insurance implications where 'pirate' parts are used, and the seemingly significant savings on offer very quickly start to unwind," he concludes.

For further information please contact: Watson-Marlow Bredel SA +27 (11) 796 2960 or info@wmftg.co.za



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WATSON MARLOW
Fluid Technology Group

Volvo's electric load carrier wins quality innovation award



The HX1 prototype autonomous, battery-electric, load carrier from Volvo Construction Equipment (Volvo CE) has scooped the Swedish Institute for Quality's (SIQ) Quality Innovation of the Year Award. Winning in the Potential Innovations category, Volvo CE's vision of a futuristic machine is one element of a present-day electric site research project that is predicted to cut carbon emissions by

up to 95% and lower total cost of ownership costs by a quarter.

The concept HX1 represents a new approach to a sustainable future concept, one based on electro-mobility and autonomous vehicles. Rather than having a few, large, versatile machines (as is common on construction and mining sites today), the HX1

demonstrates the emergence of smaller and more numerous, specialist machines. This 'elephants to ants' concept is a new way of meeting customer needs, combining intelligent machines, automation and electro-mobility.

"The HX1 forms part of Volvo CE's long term ambition of achieving sustainable transportation solutions," says Patrik Lundblad, senior vice president of Volvo CE's Technology function. "This award is a tribute to the hard work and vision of Volvo CE's employees, who continue to push the boundaries of technology and innovation. This is a welcome recognition that demonstrates Volvo CE's position at the forefront of technological development."

KCM Introduces 80Z7 Tier 4 Final Wheel Loader



KCM Corporation, a subsidiary of Hitachi Construction Machinery Group and marketers of KCM loaders in North America, is proud to announce the Tier 4 Final version of their popular 80Z7. The new 80Z7 cycles faster. It is more powerful. It has near zero emissions. And, it is designed to be even more fuel efficient than previous models. It is equipped with a 4.2 cu. yd. GP bucket, and produces 200 gross hp. from the reliable Cummins QSB6.7 diesel engine. Key to these performance breakthroughs is the industry exclusive KCM IntelliTech Operating System that provides sophisticated control

of all systems.

Other features in the IntelliTech package include a variable speed reversible fan that minimizes parasitic power drain while providing maximum cooling as needed. For added efficiency, a lock up clutch in the transmission provides better hill climbing, faster acceleration — and greater fuel economy. The KCM 80Z7T4F has one of the simplest emission systems in the industry. It achieves Tier 4 Final standards without a Diesel Particulate Filter. No DPF plugging and none of the costs associated with DPF

servicing. Use of a Diesel Oxidation Catalyst (DOC) and Selective Catalytic Reduction (SCR) technology that injects Diesel Exhaust Fluid (DEF) meets all Tier 4 Final emission requirements for construction machinery. The 80Z7 T4F is very fuel efficient, too. The roomy cab is ROPS/FOPS certified and offers outstanding visibility in all directions. In addition, a standard super wide angle rear view camera provides a clear view to a monitor easily viewed by the operator. Steering is done with either a conventional steering wheel with a tilting/telescoping column or quick response, Joystick steering.

The standard telematics system KCM Global e Service, monitors and collects operating data and alerts, which it transmits to equipment managers, owners, and dealer personnel allowing for a pro active and efficient management of fleets, maintenance schedules and operating efficiencies.

Doosan Portable Power adds G25, G50 AND G70 models to mobile Generator lineup

Doosan Portable Power has added redesigned models to its mobile generator lineup – G25, G50 and G70. The new models incorporate numerous innovations based on customer input and are aimed at improving operator experience. The newly packaged Tier 4 Final-compliant generators offer improved fuel efficiency, extended runtimes and the industry's lowest sound levels all without sacrificing reliability and performance.

The G25, G50 and G70 models are the first mobile generators equipped with Doosan-built engines – the D18, D24 and D34 respectively. The high-performance engines deliver increased fuel economy, unrivaled motor starting capability and reliable operation in extreme conditions. The D18 and D24 engines are designed with a diesel oxidation catalyst (DOC) aftertreatment system, which is virtually maintenance-free. The D34 engine consists of DOC with selective catalytic reduction (SCR) after treatment.

"The Doosan powertrain allows our Doosan Portable Power authorized dealer network to provide end-to-end service and full warranty support, offering customers the advantages of a single source for all maintenance and repairs," said Todd Howe, global generator product manager, Doosan Portable Power.

The G50 mobile generator is a size increase in the Doosan Portable Power generator product line. The G50 (51 kVA) replaced the G40 (35 kVA) generator, a change driven by customer demand for higher kVA output.

Another customer-driven feature of the G25,



G50 and G70 is increased onboard fuel capacity for runtimes in excess of 24-hours at any load factor. An optional 48-hour runtime solution is available on the G25 and G70 models. The newly packaged generators are also quieter than previous models, most notably the G25 which features one of the industry's lowest sound levels at 63 dBA.

"These multipurpose generator models are popular rental items, especially for general construction and event applications where extended runtime without refueling and low sound levels are required," said Howe.

The generators also feature enhanced controls for easy operation. The Doosan engine controller includes a backlit LCD screen for easy viewing of common parameters while analog gauges allow at-a-glance monitoring for operator convenience.

Fault codes are displayed in simple text for faster diagnostics and troubleshooting. The new controls allow integration of a variety of telematics packages for customers that desire remote monitoring capability.

Further expanding the models' versatility is a dual-frequency feature that allows an operator to select 50 Hz or 60 Hz, dependent upon the application, and a multi-voltage selection switch.

Doosan Portable Power generators are designed to withstand rugged transport and jobsite needs. Built on heavy-duty skid bases, the generators boast a 14-gauge, galvanized steel enclosure and rugged running gear for easy towing.

Rototilt launches new tiltrotator models and the next generation in control system features



Rototilt recently introduced three new tiltrotator models with enhanced control system technology for excavators from 10 to 30 tonnes.

The R4 is for 10- to 16-tonne excavators, the R6 is for 15- to 24-tonne excavators, and the R8 is for excavators up to 30 tonnes.

These new models with optional rotate and tilt sensors and Rototilt's ICS (Innovative Control System) allow operators to see tilt and rotation angles in a compact display monitor, provide a return to dig "home" function, and are GPS ready.

Other features with Rototilt's ICS system include proportional control of all Rototilt functions using only one auxiliary hydraulic circuit, a shake/pulse mode for spreading materials, and Rototilt speed settings for four different operators.

Komatsu offers a preview of its latest mining class "intelligent" dozer

Komatsu America Corp recently previewed its new 636HP, D375Ai-8 intelligent machine control crawler dozer. Featuring more production and faster cycle times, including 20% more horsepower in reverse than the prior model, the first mining-class dozer equipped with intelligent machine control also comes with structural enhancements for increased durability of mainframe and track frame. The D375Ai-8 also features improved undercarriage, cab mounts and seat, for overall operator comfort. In 2017, a remote-control machine option will be available for difficult applications.

The dozer packs a powerful, Tier 4 Final, 636HP in forward and class-leading 775HP in reverse, SAA6D170E engine that offers faster cycle times and up to five percent more productivity than the prior model with no Selective Catalytic Reduction (SCR) system needed. Additional features include a variable geometry turbocharger (VGT), dual diesel

particulate filters and large capacity & high efficiency EGR coolers.

Whether its reclamation, large construction or production mining applications, the D375Ai-8 is the right machine for the job," said Joe Sollitt, product manager, Komatsu America. "Between the extra horsepower and the addition of intelligent machine control, this will be one of the most productive machines on the market," Sollitt said.

"Operators are empowered with more data and more automated capabilities than ever before in a mining-class Komatsu dozer," said Jason Anetsberger, senior product manager, Komatsu America. "Extending the benefits demonstrated with intelligent dozers in the smaller construction-size classes to mining applications will mean bigger machines can produce even bigger results for our customers," Anetsberger said.



Intelligent Value

Eliminating the need to install and remove blade-mounted sensors each day not only saves on machine and operator wear and tear, it converts potential downtime into more time spent running the machine.

First-to-last pass, rough-to-finish automatic dozing extends production gains. Once engaged, the system automatically cuts and lowers the blade to grade in a typical dozing pass. If the load increases to a maximum, the blade automatically raises to minimize track slip to keep dozing productively.

Wacker Neuson expands skid

Steer and compact track loader offerings



Built for performance, versatility and Convenience

Wacker Neuson is introducing a new line of medium frame skid steer and compact track loaders that are the ideal fit for a variety of applications. Four new skid steer and two new compact track loaders were developed from the ground up, offering the power and torque needed to lift more, push more, work longer and maneuver through challenging jobsite obstacles. They have the comfort and convenience owner operators expect and the durability they demand. With a best-in-class transferable engine warranty of four years or 4,000 hours, these new models are ideal for inventory management and resale.

The new skid steers and compact track loaders are built for performance, versatility and convenience. Class-leading hinge pin height on the vertical loaders provide

maximum loading and unloading capabilities. An engine torque of 221 foot-pounds provides the power needed for improved ground-engaging performance in all kinds of terrain. The Kohler diesel engine features maintenance free, regeneration-free aftertreatment system, eliminating the impact of extreme heat or of the need for filters.

Versatility comes standard with every Wacker Neuson loader. The universal skid steer attachment plate enables attachments to be switched out easily, accomplishing more in less time. Category-leading hydraulic horsepower is standard and high-flow enables these machines to handle high-performance attachments like rakes, movers, tillers and augers with ease. The 30-gallon fuel tank

gives operators more time in the cab and less time refueling.

Wacker Neuson created a cab environment with operator comfort and convenience in mind. Access in and out is easy, there's no restrictive lap bar and controls are intuitively placed. Mechanical Hand-Foot and selectable Electric-Hydraulic options (ISO/H-Pattern) ensure operators with a variety of experience can efficiently operate these machines. Additionally, these machines offer the only one-piece pod style cab that fully tilts forward with the arms down, providing complete access to all maintenance components.

New SM 720 SA screen is highly

Mobile, productive and adaptable to wide range of materials



Designed to be extremely powerful, versatile, user-friendly and applicable anywhere, the new Doppstadt SM 720 SA Plus screen offers a solution for operators who have to process large quantities of various recyclables in different places quickly and reliably.

Recycling enterprises, compost and earth-working plants, underground engineering, gravel and sand operators or container services can separate nearly any solid input material into up to six different fractions by means of this screen: construction rubble, industrial waste, biomass or garbage, plastic, glass, paper or wood, sand, gravel, scrap or slag. The SM 720 SA Plus adapts to the screening tasks by component change.

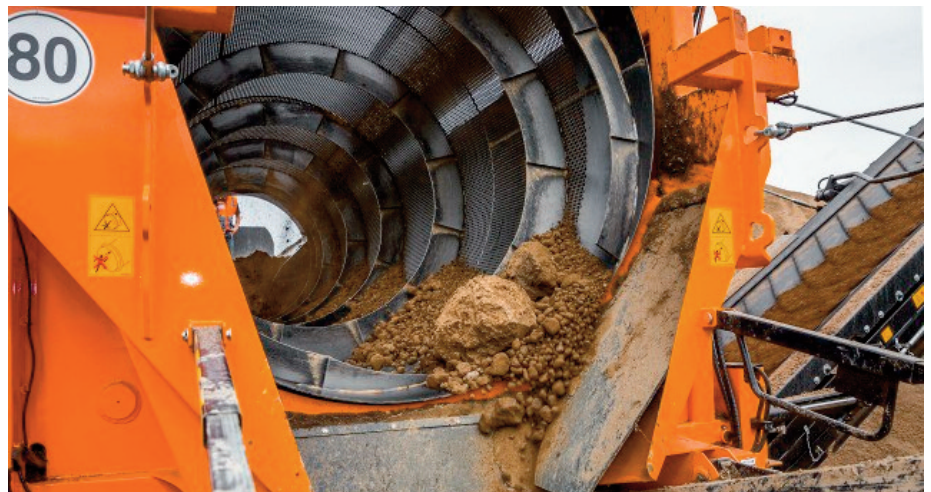
20 Percent Higher Pile Volume

Compared to model it replaces, this new screen is considerably larger and more powerful: The 7,2 m³ hopper can be filled continuously, the screen can receive and discharge more bulk material in shorter time. The rear and side discharge conveyors are longer, so that the conical pile becomes higher and larger by a quarter and has to be removed less frequently. The driving power

of the trommel has nearly doubled (plus 40 per cent) thus enabling a higher throughput. Furthermore, the SM 720 SA Plus adapts to changing screening requirements. It can be equipped with various screening trommels with different mesh sizes. Different recyclables can be processed in one machine, the trommels can be changed without tools in less than fifteen minutes. Even the user-friendliness of the machine has been optimized: Start and stop and the screening trommel speed are controlled comfortably at the machine rear.

In only 15 minutes SM 720 SA Plus Screen is ready to leave with clean engine performance

A further advantage of the new SM 720 SA screen is its mobility. As a semi-trailer it is transported on the roads without special permit. „In spite of its size, the SM 720 SA Plus can be used nearly anywhere“, product manager Karsten Runge explains. „Just tow it to the truck, fold away the projecting components and go to the site of operation.“ The Doppstadt machine is efficient and clean: it complies with the exhaust limit values of Euro IV (Tier 4 final). „An environmental enterprise must take the environment protection seriously,“ adds Runge. „Our machine solutions are separating with EU IV / Tier 4 exhaust standard engines. On this point, we are pioneers in our branch.“



The Longest LASTING PUMPS IN THE Business”

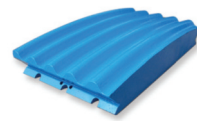


Gorman-Rupp Africa

2 Kelly Road
Jet Park
Boksburg, 1459
REPUBLIC OF SOUTH AFRICA
Office Phone: +27 (011) 397-3536
Visit our Website: <http://www.gormanrupp.co.za/>

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