



# ABOUT US

### Karebe Gold Mining Limited (KGML) is Kenya's largest gold mine.

KGML was founded in 2008 by Managing Director David May and the Maris Group. It comprises of three separate gold mines in Nandi County in Western Kenya; Equatorial, Rock Corry and Boma Mines. Gold was first discovered in the region in the 1940's, however mining activity came to a halt after independence and there was no mining activity in the region until KGML commenced operations in 2009.

The three KGML mines are all situated on the same very high grade narrow quartz vein hosted gold deposit. The mineralised strike length is over 7kms across the current SPL of 85km<sup>2</sup>. Currently KGML mines to a depth of 180m and operates four surface shafts at its three mine locations situated over a 1.5km strike length. To date the mines have produced over 25,000oz gold. There are further known parallel quartz veins in association with the current worked vein for development.

Since 2009, KGML has grown to nearly 300 employees and is one of the largest private sector employers in the region. Over 90% of KGML employees are from the local area. KGML has a strong focus on social responsibility, including responsibility to its employees, communities and the environment in which it operates. It complies with local and international regulations, including the IFC Performance Standards on measuring, mitigating and reporting its environmental and social impact.

### **OUR MINES**

### Equatorial Mine

Equatorial Mine was the first of the three KGML mines to be developed and is responsible for over 90% of the ore produced at KGML to date. The mine has six underground levels, two haulage shafts and a pedestrian shaft. KGML has mined over 50,000 tonnes from the mine to date.



### Rock Corry Mine

Rock Corry is situated between Equatorial and Boma Mines. Redevelopment of the mine began in 2016. A new inclined shaft has been developed down to level 5. The mine should provide similar amounts of ore to Equatorial Mine in the next year.



### Boma Mine

1.2km to the North East of Equatorial Mine, on the same strike sits Boma Mine. Boma is comprised of a vertical shaft (Charles' Shaft) and an inclined shaft (Boma Inclined Shaft - 40 degree), and is 3 levels deep.

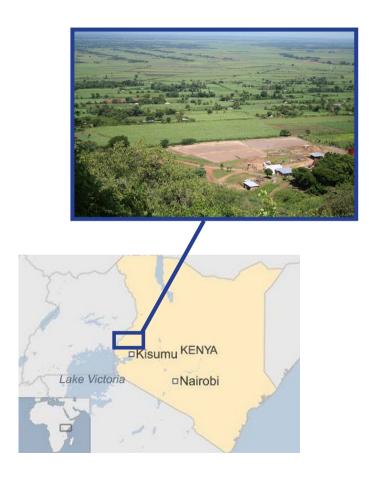


## WHERE WE ARE

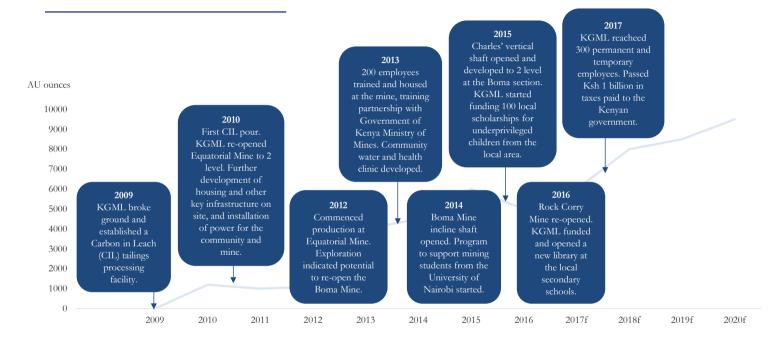
KGML operates three separate mines in Nandi County in Western Kenya; Equatorial, Rock Corry and Boma mines all situated within 1.5km on a single hosted strike.

KGML is situated at the northern extension of the Lake Victoria Gold Belt on an extension of the Tanzanian craton widely known as "elephant country." The lithologies predominantly consist of metamorphosed basalts, rhyolites and dolerite dykes. The original basalt has undergone a greenschist – amphibolitic metamorphism to metabasalt. Gold is hosted in auriferous quartz veins associated with shearing in Nyanzian volcanics.

KGML holds Special Prospecting License 264, an 85 Square Kilometer prospecting license. Within SPL264 KGML holds Location License 1113/1-8, a temporary mining license pending approval to a full mining license. KGML is fully licensed to undertake all aspects of Gold mining and exploration within its license area.



### **OUR TIMELINE**





### **OUR PROCESS**





Underground operations are carried out using conventional underground Resue mining methods suitable for narrow vein mining. Resue mining is a method of mining that allows split face firing within stopes to allow waste and ore to be mined separately, allowing dilution to be minimised. KGML operates a raising and winzing system and typical stoping techniques when mining. Ore is mined through drilling and blasting.





Mined ore is loaded into cocopans, which run on a rail system to mining shafts. The ore is tipped into ore shoots/boxes from which it is loaded into 1 tonne skips, which hoist ore to surface. Mined ore is delivered by tractor and trailor to the main ore bin, from which it travels on conveyors to a series of gyro and jaw crushers.





Ore is withdrawn from the ore bin at a controlled rate and crushed by a gyro crusher and a series of 3 jaw crushers. After each crusher, material is fed over a vibrating screen; large particles are returned for recrushing, and fine material that passes through the screens progresses towards the next crusher and eventually on to the mill feed bin.





The ball mill has a maximum capacity of 5-6ton/hr. Ore is fed from the crushing line into the mill where it is ground with steel balls. Inlet dilution water is added to the mill feed chute to control mill slurry density. The ball mill discharges the resultant slurry via a trammel screen to the gravity concentrator. Any material not collected in the concentrator is pumped to a cyclone at the head of the CIP plant and treated with cyanide.





Ore particles are subjected to a force of 60 gravities in a fluidization process in a Knelson Concentrator. Water is injected into the rotating concentrating cone, and feed slurry is forced outward and up the cone wall, filling each ring to capacity to create a fluidized concentrating bed. When the concentration cycle is complete, concentrates are flushed from the cone into the concentrate launder through a patented multi-port.





The tails empty to a tank and process water is added to produce a solids concentration of 30%, before being pumped to 100mm cyclone. The cyclone classifies the mill product into two fractions. The overflow fraction reports to a trash removal screen and then to a high thickener. The underflow fraction is controlled manually by opening or closing the thickener drain valve to attain the desired pulp density. The thickened pulp is pumped to the No 1 carbon in leach (CIL) tank.



### CIL/CIP-Carbon in Pulp



Cyanide is added into the No1CIL tank. To assist in the leaching process, hydrogen peroxide is added. Slurry overflows from the mechanically agitated leach tank through six mechanically agitated CIL tanks to ensure complete dissolution of gold as a cyanide complex and absorption onto activated carbon. Carbon recovered on the screen is delivered to a bulk bag for re-use. Tailings discharging from the tailings linear gravitates to the tailings section.





Tailings slurry passing through the CIL tailings screen gravitates via pipes to the tailings dam in the immediate vicinity of the plant. Regular sampling of the tailings slurry is done to determine the plant gold balance. Water on the tailings dam gravitates via a penstock into a return water pond from which return water is pumped to the plant for re-use.



## Refining







Concentrates from the Knelson concentrator and elutions extracted from the pregnant carbon are treated through electrowining circuits. They are treated in a secure gold room before they are then prepared for on-site refining. Refining takes place on site where bullion bars are produced to 85% purity before dispatch.





Bullion bars are drilled and assayed on site for KGML's record keeping and reconciliation with the refinery. Government royalties are paid and following export procedures the bullion is dispatched for sale.

## **OUR EMPLOYEES**

#### Health and Safety



The protection of the health and safety of KGML's employees, contractors, and the public is critical to KGML's operations. KGML is committed to conducting all of its activities in a responsible manner, providing a safe and healthy work environment for its employees, contractors, visitors and the general public. KGML is committed to achieving a zero-incident work environment with a safety culture based on teamwork and leadership. KGML complies with local and international regulations, including the IFC Environmental, Health and Safety Guidelines for Mining. The company is subject to annual local health and safety audits and on an ad hoc basis by shareholders who use internationally experienced Environmental and Health and Safety Consultants. In 2017, an audit was undertaken by the Ministry of Health which gave KGML a commendable report. Furthermore the company was also audited by the Auditor General in 2017.

#### **Technical Training**



KGML's success is driven by the skills, expertise and passion of its ~300 employees. KGML is one of the largest private sector employers in Nandi County, with over 90% of the workforce being drawn from the local community. KGML is committed to building skills and capabilities in the region, and has become a hub for local technical training. KGML has a training partnership with the University of Nairobi's Mining faculty. With a shortage of practical mining skills in Kenya, KGML has been actively seeking to develop its workforce in real on the job practical mining skills. KGML offers its staff extensive training and has sent employee's with outstanding potential overseas for specialist training in Zimbabwe and South Africa which have well developed mining sectors.

## **OUR COMMUNITY**

#### Community Development



Environmental Impact



KGML is committed to the social and economic development of the community. The tax and royalty payments KGML makes to the national and local governments are a significant source of revenue for each, and go to fund infrastructure and social programs in the region. In addition to these payments, KGML has also directly supported the region, including building or improving over 10kms of local roads, financing a water pipeline project for the local community, connecting two villages and a large and increasing number of dwellings to the Kenya Power grid, building and supplying a local medical facility, building and stocking a local library and providing monthly consumables for teaching, providing desks and beds to local educational establishments, and funding of 100 local scholarships per year for disadvantaged children from within the local area.

KGML has a comprehensive environmental management system in place to monitor the effects of its operations on the environment and address any issues should they arise. The system provides scheduled monitoring, engineering controls and reporting on a number of risk areas. KGML complies with local and international regulations, including the IFC Performance Standards on measuring, mitigating and reporting its environmental impact, as well as the IFC Environmental, Health and Safety Guidelines for Mining. KGML's Environmental Impact Assessment and Environmental Monitoring and Protection Plans have been approved by the National Environmental Management Agency (NEMA), and KGML is audited on a regular basis by NEMA. KGML has signed up to a European code on cyanide handling and usage and manages a complete closed water reticulation system. The company is environmental incident free.

### **OUR PEOPLE**

#### BOARD OF DIRECTORS

## Charlie Tryon

Charlie is the Chief Executive Officer of Maris Group, a frontier market investment group, which he founded in 2009. Maris has 20 investments in 8 countries in Africa, including 2 additional Gold Mining investments in Zimbabwe, Venice Mine Complex and Commoner Mine. Prior to Maris, Charlie developed a successful portfolio of venture businesses in Afghanistan and East Africa. www.marisafrica.com.

### David May Managing Director

David has worked in mining for 39 years, and has extensive experience in the establishment and management of small-scale mining operation in Africa. He has worked in South Africa, Zimbabwe, Tanzania, Uganda and Kenya. Prior to starting Karebe, David managed the Busitema Gold Mine in Uganda and prior to that he established Kilimepsa Mine at Lolgorian in Kenya and for International Gold Exploration AB.

#### MANAGEMENT TEAM

#### Jeremy Froome CFO

Jeremy has been with Karebe for 7 years. Prior to this he spent 3 years working for the Kenya Wildlife Service as their Finance Director. Before moving back to his native Kenya, he worked in Ireland for Allied Irish Bank in their treasury team for 7 years. Jeremy is a qualified chartered accountant with a degree in Business Management from Newcastle University.

#### Nico Van Rensburg Mine Manager

Nico has 36 years experience in the hard rock underground and surface gold and platinum industry. He began his career as a leaner official at Stilfontein GM. He advanced through the ranks to mine overseer and then technical assistant, underground manager and ultimately mine manager. He has expertise in mine planning, design, scheduling, shaft sinking, trackless mining and many other aspects of mining.

#### Vince Atkinson Mine Geologist

Vince holds a degree in Geology from the University of Rhodesia (now University of Zimbabwe). Vince has over 37 years' experience working as a geologist, mainly in Southern Africa. He has worked with various commodities, and has worked both underground and in open pits, as well as having much experience running exploration programmes. His former employers include Rio Tinto, Delta Gold and Mupane Gold.



# **CONTACT US**

Karebe Gold Mining Limited P.O. Box 19348-40123 Kisumu, Kenya.

> +254(0)721346232, +254(0)717717771

info@karebegold.co.ke/md

www.karebe.com



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