IVANHOE MINES
NEW HORIZONS

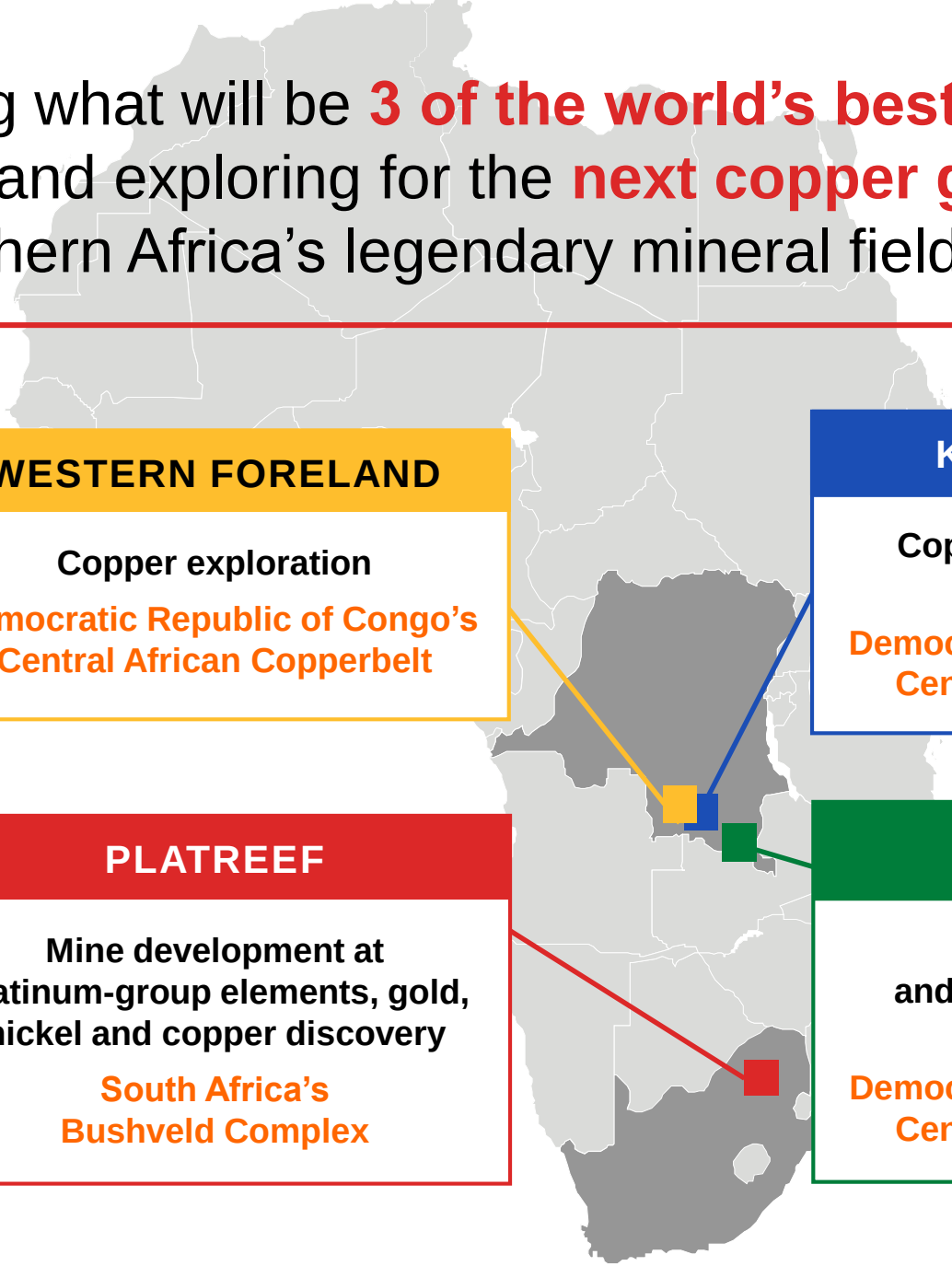
PROGRESS GALLERY / FEBRUARY 2020

Building futures. Strengthening communities.

A potable water storage tank at a small village near the Kipushi Mine, where 700 families collect their daily water.

Next month, on March 22, people around the world will observe **World Water Day**. Water revolutionizes the health and future of communities, and for that reason, Ivanhoe Mines and its joint-venture partners have committed to bringing clean water solutions to local communities near all of its mining projects.

Building what will be **3 of the world's best mines** and exploring for the **next copper giant** in Southern Africa's legendary mineral fields



WESTERN FORELAND

Copper exploration

Democratic Republic of Congo's Central African Copperbelt

KAMOA-KAKULA

Copper mine development and exploration

Democratic Republic of Congo's Central African Copperbelt

PLATREEF

Mine development at platinum-group elements, gold, nickel and copper discovery

South Africa's Bushveld Complex

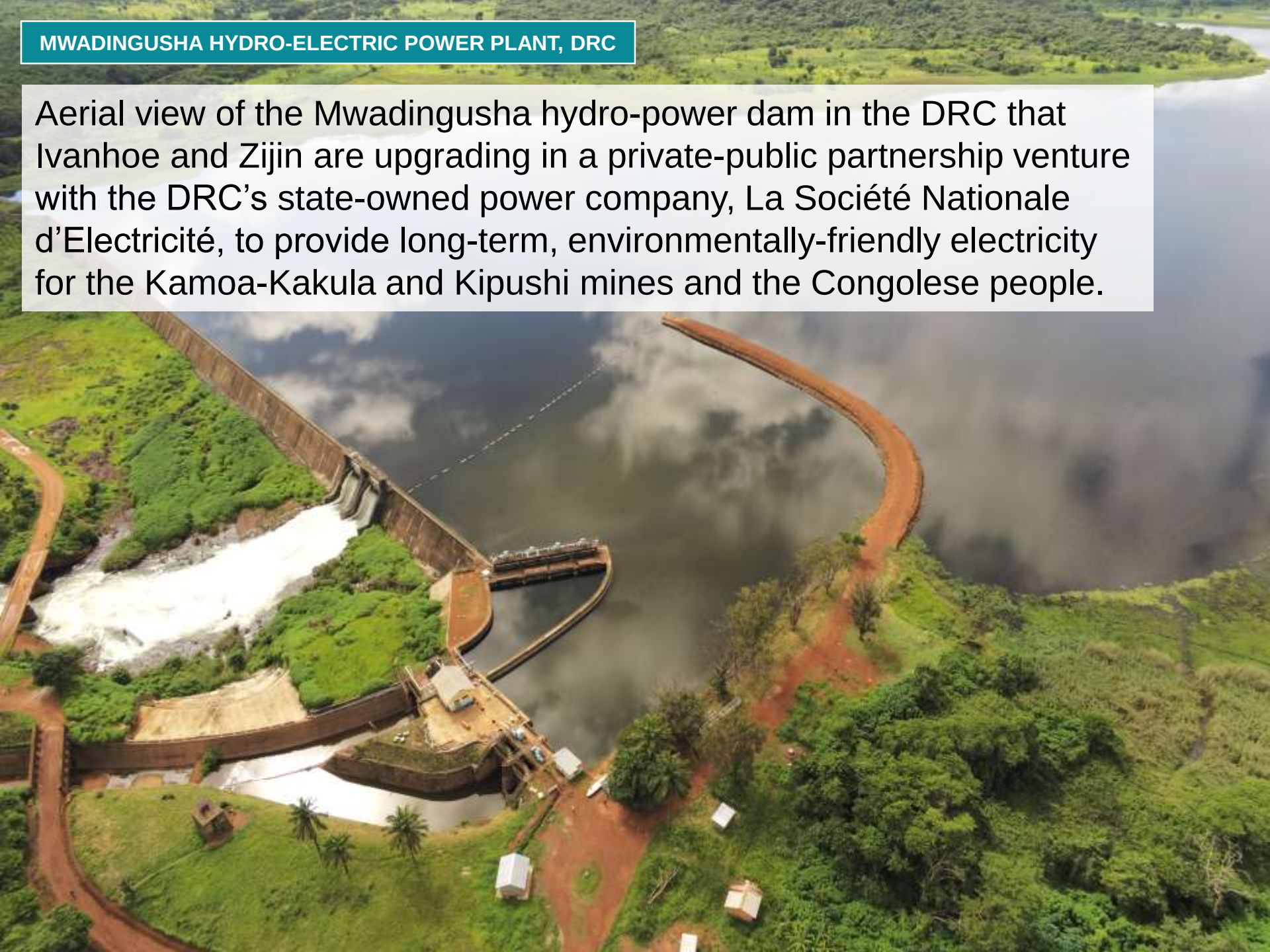
KIPUSHI

Zinc, copper, silver and germanium at historic, high-grade mine

Democratic Republic of Congo's Central African Copperbelt

MWADINGUSHA HYDRO-ELECTRIC POWER PLANT, DRC

Aerial view of the Mwadingusha hydro-power dam in the DRC that Ivanhoe and Zijin are upgrading in a private-public partnership venture with the DRC's state-owned power company, La Société Nationale d'Electricité, to provide long-term, environmentally-friendly electricity for the Kamoa-Kakula and Kipushi mines and the Congolese people.



MWADINGUSHA HYDRO-ELECTRIC POWER PLANT

Assembling one of the six new turbines at the Mwadingusha hydro-power plant. The upgrading program is restoring the plant to its installed output capacity of approximately 72 megawatts of clean, sustainable electricity.

MWADINGUSHA HYDRO-ELECTRIC POWER PLANT

Delivering new penstocks that will deliver water from the dam to the new turbines at the Mwadingusha hydro-power plant.

KAMOA-KAKULA, DRC

Frans Van Tonder, Supervisor (left), with Hope Kabambi, Operator (right), at Kakula’s operations control room.

Timothe Kayembe “operating” a piece of heavy equipment on a simulator at Kamoa-Kakula’s new training centre.

Excellent progress is being made on the high-volume conveyor system that will transport broken ore from underground to the surface processing plant. The conveyor system is expected to be fully operational in April 2020.

The underground ore transfer station at the Kakula Mine is nearing completion. Pictured here is the east tip bottom steel structure, with the west tip bulkhead in the background.

Inspecting Kakula's bottom mine-water dam. Sufficient storage is available to provide water for underground mining operations and to optimize the quantity and quality of excess underground water returned to the environment.

KAMOA-KAKULA

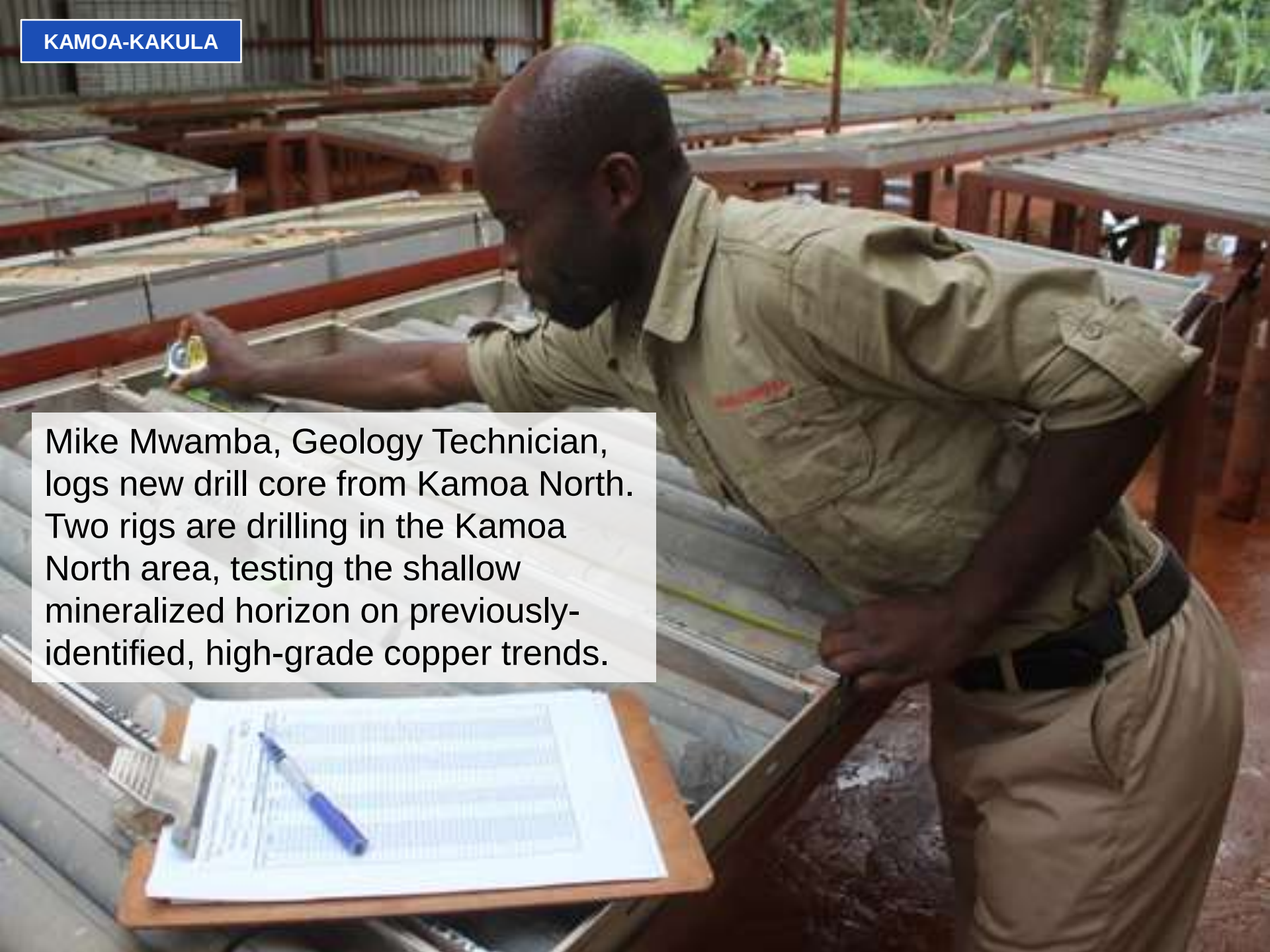
Ben Muding, Environment Officer, takes air-quality measurements near the Kakula Mine as part of the project's environmental monitoring.

KAMOA-KAKULA

Luyambo Gregorie, Electrician, and Jacques Kayumba, Mining Engineer, monitor the operation of the high-capacity fans at Ventilation Shaft 1, the first of five ventilation shafts in Kakula’s initial phase of development.

High-grade copper mineralization (chalcocite) in core from a new drill hole in the Kamoa North area.

On February 6, 2020, Ivanhoe announced that the independently verified Indicated Mineral Resource for the Kamoa North Bonanza Zone includes **1.5 million tonnes grading 10.7% copper**, at a 5% copper cut-off.

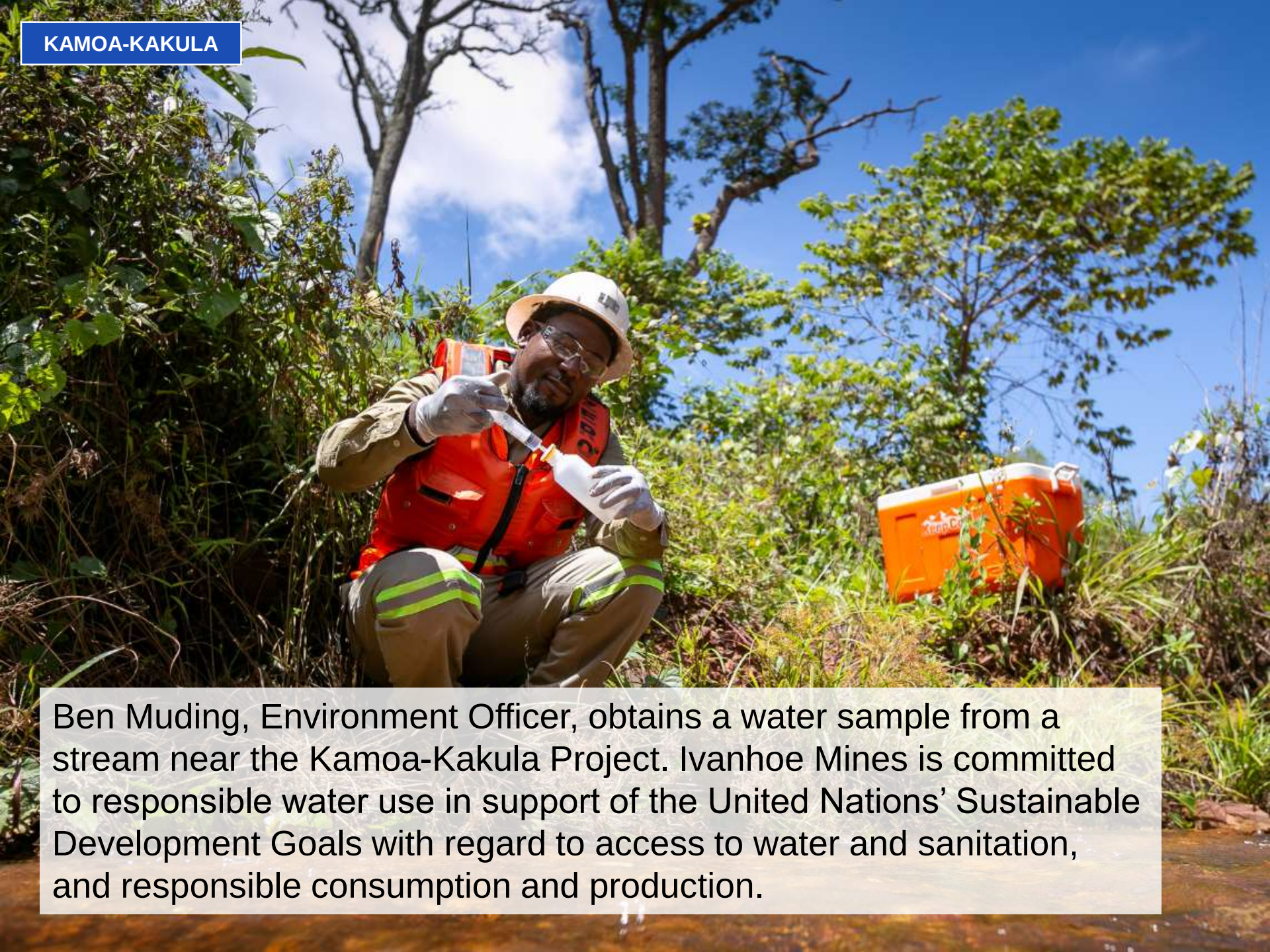


Mike Mwamba, Geology Technician, logs new drill core from Kamoa North. Two rigs are drilling in the Kamoa North area, testing the shallow mineralized horizon on previously-identified, high-grade copper trends.

KAMOA-KAKULA

Approximately **90% of Kamoa-Kakula employees and contractors are Congolese nationals**. A training program is in place to increase the number of local employees in management positions.

KAMOA-KAKULA



Ben Muding, Environment Officer, obtains a water sample from a stream near the Kamoa-Kakula Project. Ivanhoe Mines is committed to responsible water use in support of the United Nations' Sustainable Development Goals with regard to access to water and sanitation, and responsible consumption and production.

KAMOA-KAKULA

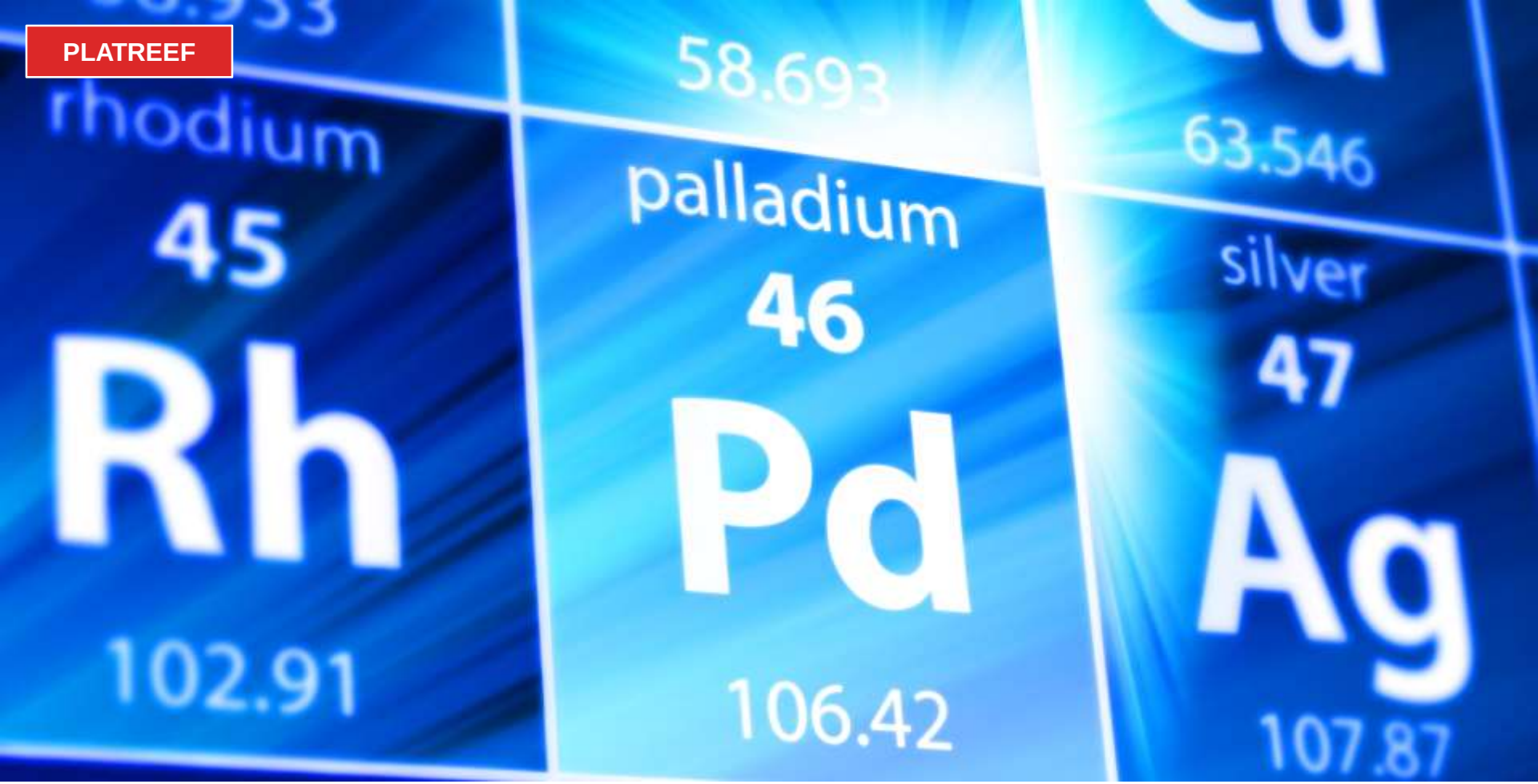
Matemba Mulemba Mamy, a member of the Community Banana Cooperative, picks bananas from a farm near the Kamoa-Kakula project, part of the Kamoa-Kakula Sustainable Livelihood Program.

During a recent project site visit, international investors visited the **Tujenge brickmaking project**, a Kamoa-Kakula-sponsored community initiative that allows local communities to participate in the mine supply chain. The Tujenge cooperative supplies bricks to Kamoa-Kakula for the construction of offices and houses.

PLATREEF, SOUTH AFRICA

Aerial view of the Platreef Project, with Shaft 1's headframe and the boxcut and concrete shaft collar foundation for Shaft 2. Ivanhoe is looking into accelerating first production by using Shaft 1 as the mine's initial production shaft.

PLATREEF

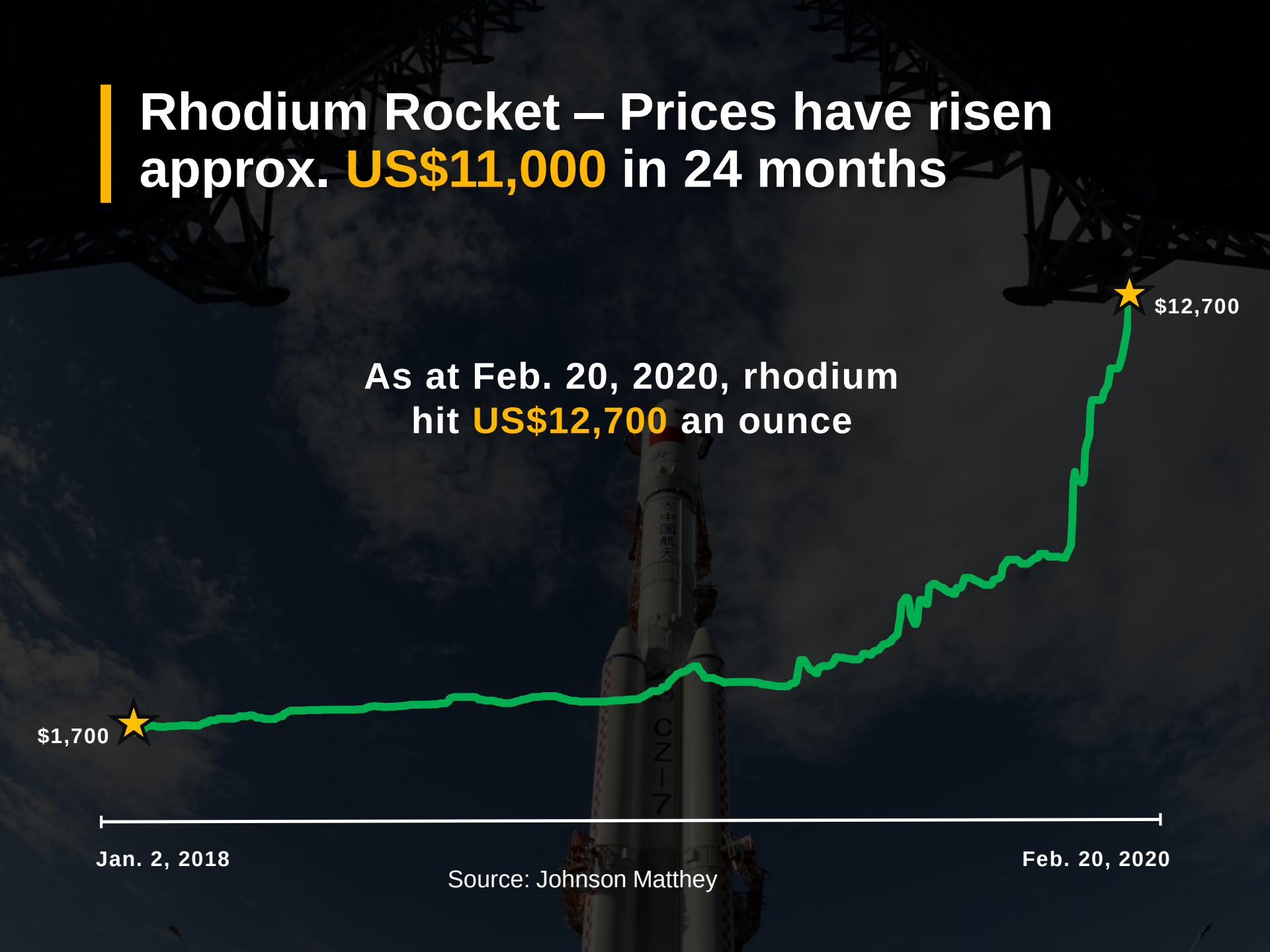


Prices of **rhodium** (Rh) and **palladium** (Pd) – two key metals in the Platreef ore and widely used by the car industry in catalytic converters – continue to surge. Platreef contains an estimated **26.8 million ounces of palladium** and **1.8 million ounces of rhodium** in Indicated Resources, plus an additional **43.0 million ounces of palladium** and **3.1 million ounces of rhodium** in Inferred Resources, at a cut-off grade of 1 gram per tonne.

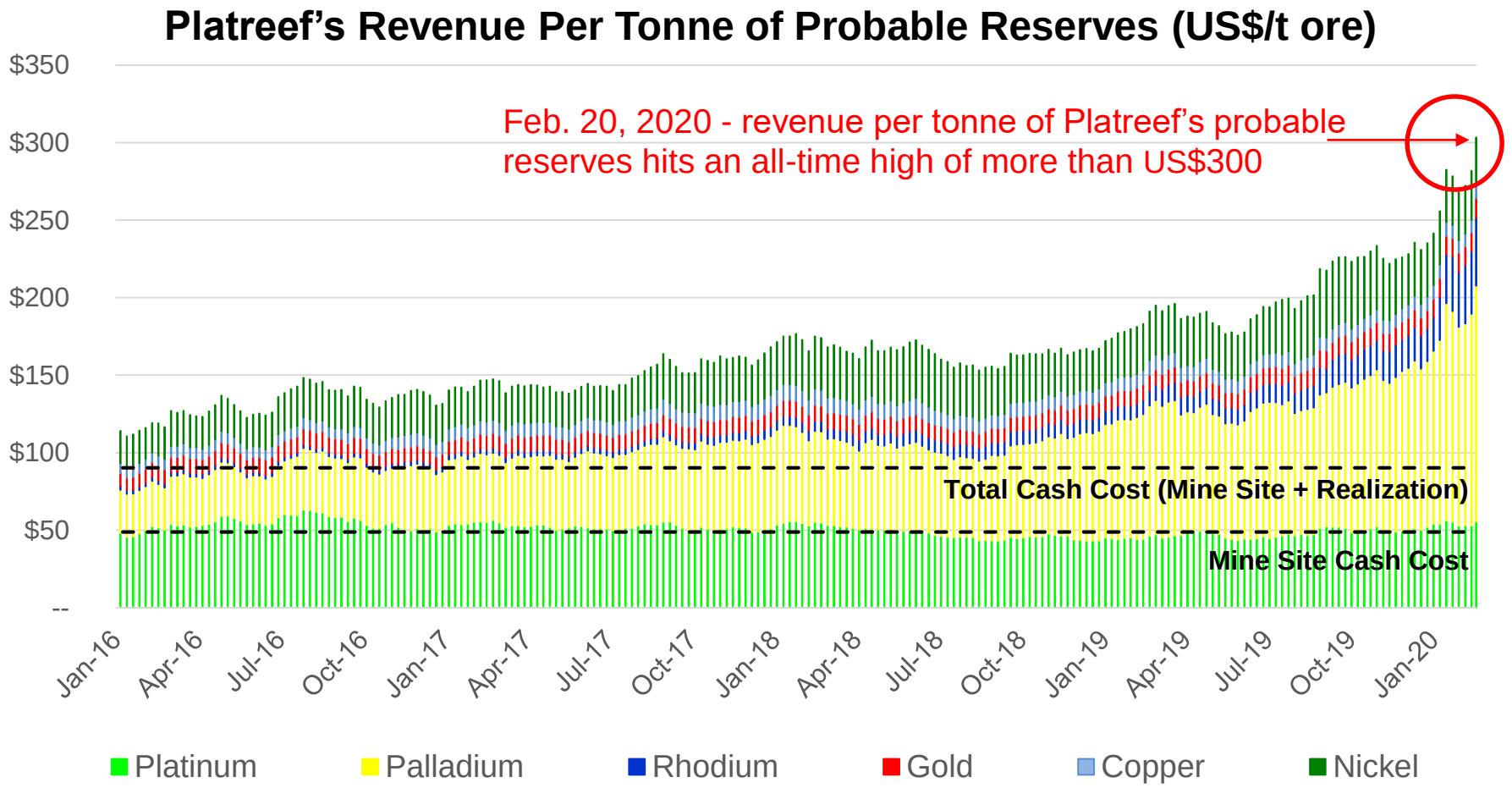
As at Feb. 20, 2020, palladium over US$2,700 an ounce

Source: Johnson Matthey

Rhodium Rocket – Prices have risen approx. US$11,000 in 24 months



Source: Johnson Matthey



Led by the surge in prices of palladium and rhodium, Platreef's 'metals-price basket' **revenue per tonne of probable reserves** reached a new, all-time high of more than **US$300**.

Ivanhoe has prioritized an increase in the number of female employees at all three of our mine development projects. At Platreef, females now make up more than 31% of the project's employees.

From left to right: Raisibe Ntini (Geology Intern); Vongani Nkuna (Group Manager, Metallurgy); Maenetja Lebea (Intermediate Life Support Practitioner); Ayakha Mbongonya (Geotechnical Engineer); Sinah Tjale (Safety Officer)

PLATREEF

Albie Brits, Senior Geologist and Manager Project Geology, inspects a piece of high-grade ore from Platreef's surface stockpile.

PLATREEF

During a recent project site visit, investors undergo a safety equipment check prior to going underground to see first hand the excellent development progress being made in Shaft 1.

PLATREEF

Thabo Makhosane, a miner, washes a newly-blasted portion of the top cut of the 950-metre-level station. The station is scheduled to be completed in March, after which shaft sinking will resume.

Empowering the Next Generation of Skilled Workers

Mothepana Shirley Matlala, Diesel Mechanic, is a member of Ivanplats' growing team of bright, young South Africans that are leading the development of the modern underground mine being built at Platreef. Ivanhoe is committed to helping build the next generation of qualified tradespeople by creating access to, and elevating, skilled trades.

PLATREEF

Ivanhoe is proud to have more women playing key roles in Platreef's success as it transitions from a world-class discovery to a world-scale mining operation. Pictured above are some of Platreef's leading decision makers.

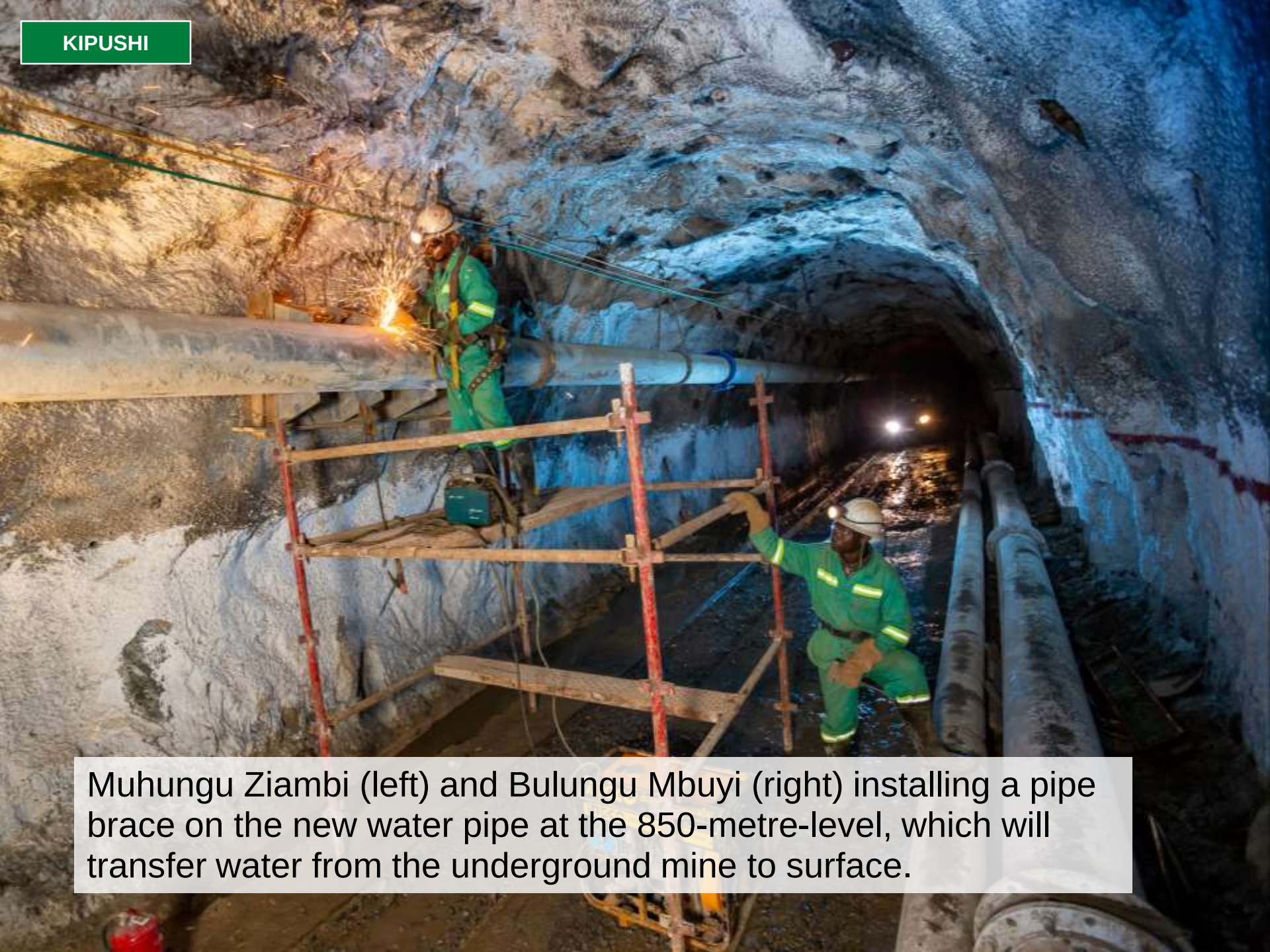
PLATREEF

Lucas Malatji, Safety Officer (left) presents a safety award to Kidebone Ledwab, Engineering Clerk (right) at Platreef's "Safety Bull" celebration earlier this month. Safety for everyone at our projects remains Ivanhoe Mines' highest priority.

Mechanical foreman Silvain Mutonji (left), together with David Mwanji (centre) and Baudouin Kabonza Tshama (right) working on water pipes in the new 850-metre-level pump station.

Mulamba Belly, a boilermaker, repairing a hand railing on the sub bank of Kipushi’s P5 shaft.

KIPUSHI



Muhungu Ziambi (left) and Bulungu Mbuyi (right) installing a pipe brace on the new water pipe at the 850-metre-level, which will transfer water from the underground mine to surface.

Kipushi’s construction team assisting in civil works for the new 850-metre-level pumping station that will significantly reduce power consumption and electricity costs during production.

From left to right: K. Mudikike, M. Kalula, K. Mukendi, G. Graham, P. Dikwenda, K. Nyandwe, M. Ngoyi, M. Mutomb, E. Ditend

Alfons Molepo, Senior Electrical Foreman (left), discussing the electrical drawings with Tshilay Pascal, Electrician (right), at the newly installed, medium voltage switchgear at the 850-metre-level pump station.

The Kushona sewing centre, established by the Kipushi Project, supplies the mine with uniforms, while providing employment opportunities to members of the community.

Ivanhoe funds an adult literacy program as part of its community skills development initiative at Kipushi. The program is a partnership with Alfa Congo, a Kinshasa-based non-profit NGO dedicated to improving literacy levels among vulnerable social groups.

Nathalie Bono Kikaba, Kipushi's Socio-Economic Development Manager (right), with a teacher and student at the local Mungoti school that is in the process of being refurbished, a Kipushi-sponsored community initiative.