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 **DRA**

# Revival of past-producing graphite mine planned

The only historical graphite mine in Namibia, the Aukam mine in the south of the country, could soon be revived. Two North American companies, Next Graphite Inc and Caribou King Resources, are planning to process the tailings heaps on surface while pursuing in parallel an exploration and assessment programme on the in-situ resources at the site.

The Aukam mine was established in 1940 and was mined on a small-scale till 1974. Production was focused on the extraction of ‘surface visible’ vein graphite ore and high grade underground vein lodes. Mining was generally undertaken from surface, but adits and stopes were developed from 1954 to 1957, when the mine was – according to Next Graphite, which has studied the surviving records – disabled by a fire which broke out in the lower adit. It is not clear how the fire was ignited but it was probably fuelled by the concentration of pyrite minerals hosted in the deposit.

Aukam’s production peaked at 2 600 plus tonnes per year from an area measuring approximately 350 m x 150 m x 100 m and, in all, approximately 25 000 tonnes of graphite was produced over the more than 30 years of operation. Next Graphite estimates that in today’s terms this production was worth US\$30 million.

Next Graphite, whose shares are traded on the OTC Markets under ticker GPNEQB, has been involved with the project since late 2013. Talking by phone to *Modern Mining* recently, its CEO, Cliff Bream, who is based in the US, said the project was highly attractive on two counts. “Firstly, it has an estimated 140 000 tonnes of graphite contained in the three major tailings heaps on the property. This is material that has already been mined, which is a huge cost saving, and can be processed in a relatively simple plant. Secondly, our geological experts estimate that the shear zone hosting the deposit could contain significant quantities of graphite ore. Moreover, the mine is located on a 90 000-plus acre property which is highly prospective for graphite.”

He added that the project – located 50 km south-west of Goageb, which is on the road between Keetmanhoop and the port of Luderitz – is well served by infrastructure. “The site can be accessed throughout the year by a good gravel road which links to a



tar road,” he told *Modern Mining*. “Water is available from natural aquifers – there is still an old pump station on site – and a national power line passes close to the property. So the project, unlike so many in Africa, faces no significant infrastructural issues.”

In August last year, Next Graphite reported that a 500-t bulk sample extracted from the tailings heaps produced a total of 150 tonnes of high grade lumps at a 3:1 lump-to-waste ratio with an average grade of 42 % graphite. Subsequent flotation tests on composite samples drawn from the 150 tonnes of pre-screened graphitic lump, residual and waste material delivered a result of 97.1 % pure graphite after a single rougher float. An average of 96.2 % graphite was recorded in the concentrates across all samples, including waste material.

Commenting at that time, Bream said: “We could not be more pleased by these results. Our flotation tests at 212 micron grind size produced a very high purity of graphite after just one flotation, which is a strong indicator of the quality of the graphite at Aukam. The test results also provide us with the ability to begin positioning ourselves for off-take agreements with graphite consumers around the world.”

More recently (in August this year) Next Graphite announced that it had completed a 25-tonne bulk sample extracted from one of the three adits on the property. The lump graphite

obtained is currently being tested for quality and purity.

Next Graphite released a Preliminary Economic Analysis (PEA) on the above-ground assets in April this year. This estimated a 17-year lifespan for an operation targeting the tailings with the production level being 2 500 tonnes per annum (t/a) at a mining/processing cost of US\$487 per tonne. The PEA further estimated that this level of production could be increased to 5 000 and 10 000 t/a by installing parallel processing lines. The PEA estimated the initial capex for the plant at just US\$1 million.

Next Graphite’s technical programmes at Aukam have been devised and managed by a technical team led by Ian Flint, Chief Metallurgist of E12, a consultancy specialising in evaluating graphite projects. According to Bream, Flint and his colleagues are among the leading graphite experts in the world. They were largely responsible for identifying the potential of Aukam and putting together the land package for the project.

While Next Graphite currently has 100 % of the ownership rights to Aukam, this is in the process of changing. A private Namibian company, Micron Investments, concluded a joint venture agreement with Next Graphite in July this year which, in essence, allows for Micron to earn up to 63 % of the licence in return for funding the screening and processing facility



**Above:** Bagged graphitic rock after screening.

**Left:** Screening the heaps at the Aukam site.

required to treat the tailings material, as well as certain operational costs and cash to Next Graphite. Micron, in turn, has been acquired by Caribou King Resources, listed on the TSX-V, which already owns three graphite projects in Canada.

Announcing the agreement with Micron in late July this year, Caribou King’s President, Mike England, said, “We see this acquisition as an opportunity to diversify our asset base into a jurisdiction that is considered by many to be one of the most mining-friendly areas in the world. Aukam is the only past producer of graphite in Namibia and we look forward to redeveloping the site using modern technology and knowledge.”

The timeline for project development going forward is tentative at this stage, but Bream is optimistic that production from the tailings is less than a year away. “This is an excellent project, with a low capex and with all the permitting required to start mining and processing operations valid and in good standing. Moreover, our joint venture partner, Caribou King, has in-depth experience in developing graphite projects and is as determined as we are to see Aukam re-launched. Summing up, I believe there is every chance that we’ll break ground on the project this year and be in production in 2016,” he said.

*Photos courtesy of Next Graphite*