

## Black Rock Mining achieves up to 99.6% purity graphite from Mahenge Graphite Project, recovers coarser flake in optimisation

### HIGHLIGHTS

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- Black Rock validates conservative Pre-Feasibility Study numbers by **achieving up to 99.6% purity** (98%-99% concentrated grade used in PFS) and **recovers coarser flake in first-pass optimisation study at pilot plant in Canada**
- First-pass sighter tests for Mahenge Graphite Project process flowsheet and reagent optimisation have returned excellent results achieving purity of 99.6% C(t), together with a significant increase in very coarse flake for Ulanzi primary ore
- Ulanzi oxide ore achieved 98.5% C(t) with an increase in very coarse flake retention
- Improved flotation results were achieved with a simplified flowsheet, potentially lowering Mahenge capital and operating costs
- Results from a conventional flotation circuit, with process optimisation work expected to deliver additional improvements.

Tanzanian graphite developer Black Rock Mining Limited (BKT: ASX) (“Black Rock” or “the Company”) pleased announce initial metallurgical test work results from a flowsheet optimisation program being undertaken in Canada for its Mahenge Graphite Project, Tanzania.

#### **Commenting on the significance of the results from the pilot plant in Canada, Executive Director and Interim CEO, John de Vries said:**

“The initial pilot plant test results confirm we have an exceptional ore that can be easily beneficiated into a high purity concentrate.

“We were delighted to see we also have super jumbo flakes in our flake size distribution. We expected this, given earlier test work ground our flakes to a size where it was impossible to achieve the super jumbo sizing.

“We believe the results confirm we have the best ore of any development stage global graphite project. In addition, we now have confirmation of the highest purity and best flake size distribution in the market. This is a very positive outcome that will help our ongoing discussions with potential end users.”

**Black Rock Mining Limited**  
ACN 094 551 336  
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**Issued Capital**  
364.7m ordinary shares  
47.3m options  
9m performance rights

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Sizing	Sizing		Mass %	Cumulative Mass
Mesh	Micron	TGC %	Distribution	Distribution
+32	500	98.6	1.2	1.2
+48	300	99.8	14.9	16.1
+65	212	99.4	20.4	36.5
+80	180	99.6	9.9	46.4
+100	150	98.9	10.7	57.1
+150	106	99.5	18.4	75.5
+200	75	99.8	14.4	89.9
+325	45	100.0	6.5	96.4
+400	38	99.7	1.9	98.3
-400	-38	98.5	1.8	100.0
	calculated	<b>99.52%</b>	100.0	100.0
	assayed	99.60%		

**Table 1.** Ulanzi primary ore sample assay results by size fraction and %C(t). All reported analytical results have an associated measurement uncertainty based on the expected precision and accuracy relating to the method and sample concentration. Values at 100% should not be treated as pure products without additional impurity testing. The chemical analysis used to determine the total carbon content employs combustion of a sample followed by infrared detection on a LECO SC-632 instrument. The estimated measurement uncertainty for total carbon values greater than 50% C(t) is 1.4% (relative) with a resolution of 1 significant figure. Appropriate rounding applied to table.

The Ulanzi primary composite sample achieved a significant increase in overall purity to 99.5% based upon size fraction assays or 99.6% C(t) on the combined final concentrate. Of significance, these high purities are seen across the entire size fraction. In addition, the very coarse flake fraction has been increased from previous test work, together with a reduction in very fine flake.

The key outcome from this test is that exceptionally high purities in the 98.5-99.5% range were immediately achieved, validating the straightforward processing attributes of Mahenge ore **and** improving flake size distribution. Graphite at this high purity level will be sought after for battery and other applications and is expected to attract a price premium.

The Canadian metallurgical development programme is designed to optimise and finalise the Mahenge Project flowsheet to a DFS level. Sighter tests have been initially conducted to confirm ore processing characteristics from oxide and primary composite drill core samples. Pilot-scale testing is then planned to validate the flowsheet design and to provide high purity concentrate for end user evaluation.

The initial tests were conducted on identical oxide and primary drill core composite samples used in the 2016 programme.

The Ulanzi oxide bulk sample results below reported 98.5% C(t) purity with an improvement in very coarse flake distribution and a reduction in fine flake. Similar to the Primary ore results in Table 1, graphite purity by size fraction is consistent across all size fractions.

Refinements to the processing circuit are expected to improve on the impressive first-pass results received from the test facility.

Sizing Mesh	Sizing Micron	TGC %	% Distribution	Cumulative Distribution
32	500	99	0.8	0.8
48	300	98.8	11.1	11.9
65	212	99.3	18.1	30
80	180	99.1	10.0	40
100	150	97.7	11.1	51.1
150	106	98.1	19.7	70.8
200	75	98.8	16.8	87.6
325	45	98.4	7.5	95.1
400	38	98.1	2.0	97.1
-400	-38	97.1	3.0	100.0
	calculated	<b>98.60%</b>	100.0	100.0
	assayed	98.50%		

**Table 2. Ulanzi oxide ore sample assay results by size fraction and %TGC.** TGC assays are by Loss On Ignition (LOI) method using a LECO furnace. Appropriate rounding applied to table. All reported analytical results have an associated measurement uncertainty based on the expected precision and accuracy relating to the method and sample concentration. Values at 100% should not be treated as pure products without additional impurity testing. The chemical analysis used to determine the total carbon content employs combustion of a sample followed by infrared detection on a LECO SC-632 instrument. The estimated measurement uncertainty for total carbon values greater than 50% C(t) is 1.4% (relative) with a resolution of 1 significant figure.

In summary, the initial Canadian test results achieved the highest ever purities of 99.6% C(t) for Ulanzi primary ore and increased yields of very coarse flake. High graphite purities are remarkably consistent across the size fractions and the proportion of fine graphite has been reduced. Replication of high purity concentrate recoveries from first tests at a new lab is significant as it independently validates the robust processing characteristics of Mahenge ore and provides scope for further optimisation improvements. Further results will be released as the programme advances over the next three months.

**For more information:**

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**About Black Rock Mining**

Black Rock Mining Limited is an Australian based company listed on the Australian Securities Exchange. The Company owns graphite tenure in the Mahenge region of Tanzania.

In December 2016, the Company announced a JORC compliant Mineral Resource Estimate of 203m tonnes at 7.8% TGC for 15.9m tonnes of contained Graphite, making this one of the largest JORC compliant flake graphite Mineral Resource Estimates globally. 50% of the Mineral Resource is in the Measured and Indicated categories.

In April 2017, Black Rock announced results of a Preliminary Feasibility Study (PFS) for its Mahenge Graphite Project which confirmed its potential as a long-life, low capex, high margin operation. The PFS estimated a post-tax, unlevered, internal rate of return ("IRR") for the Project of 48.7%; and a net present value (NPV) using a discount rate of 10% (NPV10) of US\$624m.

Black Rock is moving towards commencing a Definitive Feasibility Study (DFS). With a successful DFS and associated financing, construction could commence in 2018 with first production in 2019.

For further information on the company's development pathway, please refer to the company's website at the following link: <http://www.blackrockmining.com.au> and the corporate video presentation at <http://www.blackrockmining.com.au/#video>.

