

# Metals of Africa Limited (ASX: MTA)

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#### **MTA Capital Structure**

Shares on Issue: 266m Listed Options: 58m

(\$0.15, 07/01/2017)

Performance Rights 3.5m Unlisted Options 11m

(various price, expiry)

Market Cap. @ \$0.067 **\$18m** 

#### **MTA Board**

#### Gilbert George

Non-Executive Chairman

#### Cherie Leeden

Managing Director

#### **Brett Smith**

Non-Executive Director

#### Steven Wood

Company Secretary

Projects (Refer Table 1 Appendix)

#### Mozambique - Graphite

#### **Montepuez Central**

61.6Mt at 10.3% TGC, 0.26% V2O5

#### **Balama Central**

16.26Mt at 10.45% TGC, 0.21% V2O5

#### Gabon - Lead Zinc

#### Kroussou

Up to 9.69% zinc and 33.10% lead

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#### **AUSTRALIA**

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# **Exceptional Metallurgical Results - Balama Central and Montepuez Graphite Projects**

- Flotation testwork achieves 99.2% TGC purity concentrate
- Exceptional results achieved without the use of chemicals
- Results confirm largest proportion of recoverable large flake graphite of all Mozambique graphite deposits
- High graphite recovery confirmed with coarse primary grind size
  - o 50.9% large and jumbo flake product at Balama Central project
  - o 28.2% large and jumbo flake product at Montepuez project
- Favourable flotation parameters correlate with potential to reduce plant capital and operating costs
- Metallurgical testwork and further optimisation of the flotation flow sheet ongoing
- Results will feed into the Balama Central and Montepuez Feasibility Study currently underway and fully funded as a result of recent capital raising
- High grade chemical free flotation testwork results are significant milestone in pursuing natural graphite as viable alternative to synthetic spherical graphite
- Spherical graphite test mill to produce Lithium-ion anode-ready material on schedule for delivery to USA this month
- Graphite "End User" discussions and testing ongoing and progressing well

Metals of Africa Limited (ASX: MTA) ("the Company") is pleased to announce exceptional detailed metallurgical test work results from its Montepuez and Balama Central Graphite Projects in the Cabo Delgado Province of Mozambique.

Metals of Africa Managing Director, Ms Cherie Leeden said:

"These are exceptional metallurgical results and provide the Company with further impetus to rapidly pursue its aim of producing high quality and high margin natural and spherical graphite products to supply the emerging Lithiumion battery market for electric vehicles and energy storage, which is being driven by a push globally to reduce carbon emissions and establish non-traditional energy networks.

Collectively the ongoing positive results confirm the high quality of our projects and prove that they have the potential to deliver industry best operating results without any costly and environmentally unfavourable chemical processes."



Figure 1 – the simple, chemical free production process of high grade graphite concentrate from the Company's graphite (GS03 Weathered Composite Rougher Flotation without Collector).

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The Company understands that simple metallurgy is a key to successful graphite deposits and these results confirm that both deposits host very high quality graphite with an enviable range of flake size. Metals of Africa has the ability to generate finer material if required, however the large and jumbo size fractions are currently attracting much of the end-user interest and subsequently receiving higher market prices.

The Company's Balama Central Project has the potential to produce over 50% large and jumbo flake, and this compares favourably with other deposits in the region which report around 20.5% large and jumbo products.

MTA released preliminary metallurgical test work results in April (ASX announcement, 11 April 2016), and is now pleased to report the successful completion of detailed, Stage 1, comminution and flotation test work from the Balama Central and Montepuez Projects.

Sieve Size (um)	MTA: Montepuez	MTA: Balama Central	Syrah Resources: Balama	Size Classification	Price (USD) Guide for 96-97% TGC p/t
>300	8%	21.8%	8.5%	Jumbo	\$1,600
180-300	20.2%	29.1%	12%	Large	\$1,000
150-180	10.9%	10.5%	11.5%	Medium	\$950
75-150	33.8%	25.1%	22.5%	Fine	\$900
<75	27.1%	13.5%	45.5%	Very Fine	\$300

Table 1 - Process plant product flake sizes for MTA's two projects and SYR (Price guide based on May 2016 data from Asbury Carbons Inc.)

#### **Background**

Composite metallurgical samples from drill core were sourced from all mineralised lithologies from the Montepuez Project, which has a JORC Resource Estimate of 61.6Mt @ 10.3% TGC (ASX announcement, 16 November 2015) and the nearby Balama Central Project, whose JORC Resource Estimate is 16.3 Mt at 10.4% TGC (ASX announcement, 21 March 2016). These samples were utilised to perform detailed metallurgical work for both projects which was conducted by a reputable laboratory located in Perth, Western Australia using industry standard processes.

The Company recently commenced a Feasibility Study into the Balama Central and Montepuez Projects. The test work for the Feasibility Study will progress in three stages. Stage 1 test work, reported in this announcement, provides input into the preliminary plant design for the Feasibility Study. Stage 2 test work is currently underway and incorporates the bulk flotation test work program to produce sufficient concentrate sample for end-user/vendor test work and downstream spherical graphite processing. Stage 3 test work will involve a final, variability sample for verification of the process flow sheet design.

### Stage 1 Test Work Technical Summary

#### Montepuez Project

Samples from the Montepuez Project reported an average of 28.2% mass recovery to the coarse flake (+180  $\mu$ m), at an average grade of 97.8% TGC. The graphitic carbon grade remains above 96.9% TGC for size fractions greater than 75  $\mu$ m. The -38  $\mu$ m product which is commonly used as refractory material averaged 90.7% TGC.

The Montepuez flake size and assay data produced from the cleaner flotation test work is presented in Table 2.

MONTEPUEZ						
Screen Size	MESH	Distribution	Grade			
(μm)	#	(%)	(%)			
+300	50	8.0	97.6			
+180	80	20.2	97.9			
+150	100	10.9	97.7			
+106	150	17.8	97.5			
+75	200	16.0	96.9			
+38	400	16.8	95.9			
-38	-400	10.3	90.7			
Calc HEAD	_	100.0	96.5			

Table 2 - Montepuez Flake Size and Assay Results

### **Balama Central Project**

The Balama Central samples reported an average of 46.6% mass recovery to the coarse flake (+180  $\mu$ m), at an average grade of 98.4% TGC. The graphitic carbon grade remains above 97.4% TGC for size fractions greater than 38  $\mu$ m. The -38  $\mu$ m product used as refractory material averaged 90.8% TGC.

Some tests were able to achieve >99% TGC confirming the exceptional liberation properties of this deposit. The - 38 µm product used as refractory material averaged 93.6% TGC – a much higher grade than is typically required.

The Balama Central flake size and assay data produced from the cleaner flotation test work is presented in Table 3.

BALAMA CENTRAL						
Screen Size	MESH	Distribution	Grade			
(μm)	#	(%)	(%)			
+300	50	21.8	98.4			
+180	80	29.1	98.4			
+150	100	10.5	98.4			
+106	150	13.9	98.2			
+75	200	11.2	98.1			
+38	400	9.5	97.4			
-38	-400	4.0	90.8			
Calc HEAD		100.0	97.8			

Table 3 - Balama Central Flake Size and Assay Results

MTA's Stage 1 flotation testwork has achieved up to 99.2%TGC purity without the use of chemicals. This higher grade equates to lower downstream production costs, hence why a higher dollar value is generally realised for the higher grade products.

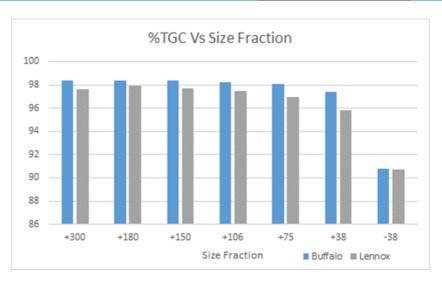


Figure 2 - TGC % versus Size Fraction. Blue bar represents Montepuez deposit and grey bar represents Balama Central deposit

Ten test work composites were provided for the test work program, and cover all lithologies and weathering profiles, and will allow optimisation of a proposed mine plan over any initial period of operations.

Initial Rougher Flotation recovery results range from 94% to 98% and are presented in Table 4. These recoveries are achieved using a coarse grind size of  $P_{100}$  = 850  $\mu$ m. The recoveries can be increased to 98%+ by further grinding, however, to preserve flake size the coarser grind size was utilised. It is expected a coarser grind size will require less grinding equipment, and the associated lower power consumption will positively impact CAPEX and OPEX.

High recoveries were delivered in the Rougher Flotation. These were achieved using minimal reagent, with no collector required in the first Rougher stage (See Figure 1: MTA sample undergoing flotation without collector). The graphite flakes are hydrophobic and attach to the air bubbles without the aid of a collector. Lower reagent consumption will also reduce OPEX in any future mining operation.

Initial multiple stage cleaner test work results have also been received, with >96% TGC grade achieved. This is the first step in determining the number of re-grind and cleaner stages required across all lithologies and optimisation of flake size. Detailed cleaner test work is in progress.

Lithology	Deposit	Recovery
GS1	Balama Central	94%
GS2	Montepuez	95%
GS3	Balama Central	95-97%
GS4	Balama Central	96-97%
GSQF	Montepuez	95-98%

Table 4 - Rougher Recovery by Lithology

-Ends-

#### On behalf of Board of Directors Metals of Africa Ltd

For further information, please contact

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#### **About Metals of Africa Limited**

Metals of Africa Limited (ASX: MTA) is a graphite focused exploration company, rapidly progressing towards development. MTA has successfully delineated two world class, high grade graphite resources in Mozambique, East Africa.

The 100% owned Montepuez Resource boasts 61.6Mt at 10.3% TGC, and the nearby Balama Central Resource contains 16.3 Mt at 10.4% TGC. The Balama Central Resource was defined in less than one month of drilling, less than 5% of the prospective geology has been tested and both resources remain open in all directions, signifying the potential scale of the projects.

MTA is now seeking a partner to advance its zinc project located in Gabon.

Table 1:

## Montepuez Graphite Project November 2015 Mineral Resource Estimate (6% TGC Cut-off)

Class	Tonnes	TGC	V <sub>2</sub> O <sub>5</sub>	Cont. Graphite	Cont. V <sub>2</sub> O <sub>5</sub>
Class	Mt	%	%	Mt	Kt
Measured	-	-	-	-	-
Indicated	27.6	10.4	0.23	2.9	62
Inferred	34.1	10.2	0.30	3.5	101
Total	61.6	10.3	0.26	6.3	163

### **Balama Central Graphite Project**

#### March 2016 Mineral Resource Estimate (6% TGC Cut-off)

Class	Tonnes	TGC	V <sub>2</sub> O <sub>5</sub>	Cont. Graphite	Cont. V <sub>2</sub> O <sub>5</sub>
	Mt	%	%	kt	kt
Measured	-	-	-	-	-
Indicated	8.9	9.3	0.16	836	14
Inferred	7.3	11.8	0.27	863	20
Total	16.3	10.4	0.21	1,699	34

MTA has uniquely positioned itself amongst its peers and is now poised to quickly transition into development with an extremely low cost operating profile. MTA prides itself on its environmental best practice policies, zero harm and ongoing positive community development programs.

Metals of Africa is conducting a series of research and development activities and trials in both Australia and Africa in establishing the best process methodology in mineral exploration, mining and processing. This activity is for the benefit of the company's holdings and in the licensing of intellectual property as a means of bringing these ideas to the market.

#### **Competent Persons Statement**

The information in this report that relates to Exploration Results is based on information compiled by Ms. Cherie Leeden, who is Managing Director and who holds shares and options in the Company. Ms. Leeden is a Member of the Australian Institute of Geoscientists and has sufficient experience of relevance to the styles of mineralisation and the types of deposits under consideration, and to the activities undertaken, to qualify as a Competent Person as defined in the 2012 Edition of the Joint Ore Reserves Committee (JORC) Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Ms. Leeden consents to the inclusion in this report of the matters based on information in the form and context in which it appears.

The information in this report that relates to Exploration Targets and Mineral Resources is based on information compiled by Mr Robert Dennis who is a Member of Australian Institute of Geoscientists and a full time employee of RPM Limited. Mr Dennis has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr Dennis consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.