AUSTRALIAN SECURITIES EXCHANGE ANNOUNCEMENT
& MEDIA RELEASE

13 July 2020

METALLURGICAL TEST WORK – KOKO MASSAVA

Key Highlights:

Metallurgical test work (100Kg bulk sample) concludes Koko Masava HMS project amenable to typical mineral sands process methodologies and conventional equipment, facilitating a simple process with three potential products:

- **An ilmenite product with potential to deliver 46-50% TiO2, containing low levels of contaminants (1% SiO2, 1% Al2O3, <15PPM U+T). This product stream is undergoing further process testwork by roasting, to reduce chromite and produce an upgraded ilmenite product with acceptable levels of Cr_2O_3, representing 36% of the heavy mineral concentrate;**
- **A non-magnetic concentrate containing 18.5% ZrO_2 and 13.6% TiO_2, of acceptable quality and believed to be readily marketable; and**
- **A titano-magnetite product containing 56.4%Fe, 15.1%TiO2 and 0.8%V_2O_5, with low level contaminants (1.4%SiO2, 1.9% Al2O3) – representing 32% of the heavy mineral concentrate produced, of acceptable quality and believed to be readily marketable.**

The bulk sample contained minimal oversize material (1.2% was >2mm grain diameter) and fines (14.6% was <45µm grain diameter), indicating low cost preliminary separation to valuable heavy mineral (VHM) components.

IHC Robbins is undertaking the metallurgical study. A further market update will follow when the Final Report is received.

Introduction

MRG Metals Limited (ASX:MRQ) is pleased to announce a progress update on metallurgical testwork undertaken on on a 100 Kg bulk sample of mineralised material from the Koko Massava Mineral Resource. The testwork is being undertaken by IHC Robbins in Brisbane.

This phase of metallurgical testwork follows the delivery of the significant Koko Massava maiden mineral resource estimate (MRE) of 1,423 million tonnes at 5.2% total heavy mineral (THM) (refer ASX Announcement 22 April 2020). Additional substantial tonnage has been identified as exploration potential.

IHC Robbins Metallurgical Testwork Progress Report is shown below.

The goal of the geometallurgical test work is to characterise the process performance of the heavy mineral sand (HMS), including conceptual process flow sheet development, the production of products and the determination of mineral recoveries.

Details

A bulk sample of approximately 100 Kg, composed from stored (Perth, Western Australia) aircore samples was sent to IHC Robbins in Brisbane. The sample is representative of mineralised zones of high valuable heavy mineral (VHM) from within the Koko Massava Mineral Resource.

In general, this scoping level test work will:

(i) develop a conceptual process methodology for the Koko Massava material,
(ii) ascertain how well the material processes, using typical process equipment and methodologies,
(iii) produce potential typical mineral sands products (ilmenite, zircon, leucoxene and monazite and titano-magnetite),
(iv) provide metallurgical recoveries for various potential products, and
(v) identify any potential risks and/or critical flaws related to the mineralised material or potential products.

The IHC Robbins Progress Memorandum is at the end of this document.

Chairman's comment "MRG has again demonstrated a methodical approach to the Corridor Central and Corridor South project development. The metallurgical analysis has provided clarity on the HMS assemblage data and has successfully produced 3 potential products which importantly have viable smelter alternatives. Of significance is the clean ease of separation and low contaminants in the 3 streams, with the ilmenite stream having a clear path to roasting success to bring Chromium levels down and Tio2 levels up to improve the value of the end product.

Particular pleasing was the quality of the Titanomagnetite stream, which had previously played no part in our economic thinking but now provides a significant uplift from 25% by weight of the total THM and is now being factored into the VHM component. While the magnetite output from the VHM components (titanomagnetite/ Illmenite/ luecoxene/ rutile/ zircon/ vanadium/ monazite) is of lower value, the quality and quantity of the iron component, with the accompanying TiO2 in this product stream, is exciting. The proposed titanomagnetite product is looking like it may become a significant credit to the Illmenite and Non Magnetic Concentrate products; something we will be evaluating.

Armed with the knowledge of this initial metallurgy at Koko Massava, our strategy of using low cost auger programs to identify very high grade mineralized footprints, with sub surface strandline potential, will make our upcoming aircore drilling very exciting, as we can now estimate value uplift based on grade. Going forward, early minerology will be undertaken on these highly minerised footprints, with the objective being to identify very high value incremental uplift to both tons and grade."

Authorised by:
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Document ID: 1872-PM-MEM-0000-8002 Rev 1
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Date: 10-07-2020

MRG Metals Limited "MRG"

Koko Masava Mineral Sands Project Metallurgical Test Work Progress Memorandum

Summary

Head sample analyses completed by IHC Robbins Pty Ltd "IHC Robbins" on a sample (100kilograms) derived from MRG's Koko Masava mineral sands project indicate the bulk sample to contain minimal oversize (+2.0mm), 15.6% fines (-45µm) and 5.0% heavy mineral (2.85sg). This is aligned with the weighted average data as derived from the individual drill core samples, which makes up the bulk sample, calculated at 1.2% oversize, 14.6% fines and 4.6% heavy mineral.

Fines settling tests and flocculent selection tests completed by BASF for IHC Robbins confirm the fines to settle readily using conventional flocculants achieving high underflow solids %.

Metallurgical test work completed confirmed the material to be amenable to the development of a simple process consisting of a feed preparation process "FPP", wet concentration process "WCP" and mineral separation process "MSP".

Processing of the Koko Masava material through the developed process produced a potential titano-magnetite product, potential ilmenite product and a potential non-magnetic concentrate (zircon/rutile enriched).

Potential titano-magnetite product contains 56.4% Fe, 15.1% TiO_2, 1.4% SiO_2, 1.9% Al_2O_3 and 0.8% V_2O_5 and represents ~32% by mass of the produced heavy mineral concentrate. This product is comparable to other titano-magnetite products and has the potential to have additional TiO_2 credits associated with it.

Potential ilmenite product, which represent ~ 36% by mass of the heavy mineral concentrate contains low levels of contaminants such as SiO_2 (1.0%), Al_2O_3 (1.0%), U+Th (<15ppm), but as expected elevated levels of Cr_2O_3 at 1.3%. This product is currently undergoing roasting trials and associated magnetic separation to remove the chromite and produce an upgraded potential ilmenite product with a potential TiO_2 content of 46-50% TiO_2.

Overall TiO_2 recoveries, excluding semi-processed streams and any optimisation, into the potential titano-magnetite plus ilmenite products (before roasting) is calculated at 78.8%.

Produced potential non-magnetic concentrate, representing <5.0% by mass of the heavy mineral concentrate, contains 18.5% ZrO_2 and 13.6% TiO_2.

Overall TiO_2 and ZrO_2 recoveries, excluding semi-processed streams and any optimisation, into the potential non-magnetic concentrate is calculated at 2.1% and 75.6% respectively.

Given the low level of non-magnetic concentrate to be produced, it is likely that MRG will pursue the option of producing a non-magnetic concentrate for sale and processing into potential final products by others. Notwithstanding the above further processing completed on the non-magnetic concentrate confirmed that a potential zircon product and rutile/HiTi product could be produced, with the potential zircon containing acceptable levels of U+TH and the rutile/HiTi acceptable levels of SiO_2.

Further more detail test work to better ascertain the potential product qualities should be completed during the next phase of metallurgical test work using a larger bulk sample.

Conclusion

Based on the scoping metallurgical test work completed, it can be concluded that the ore material derived from the Koko Masava mineral sands project to be amenable to typical mineral sands process methodologies and conventional equipment, facilitating the development of a simple process.

Produced titano-magnetite product containing 56.4% Fe, 0.8% V_2O_5 and non-magnetic concentrate containing 18.5% ZrO_2 and 13.6% TiO_2 is of acceptable quality and believed to be readily marketable.

Produced ilmenite product although containing low levels of contaminants, require further processing by roasting to remove chromite and produce a product containing acceptable levels of Cr_2O_3.

Overall recoveries for TiO_2 and ZrO_2 is deemed appropriate for this level of study.