



ASX RELEASE
22 JANUARY 2016

METALLURGICAL TEST WORK UNDERWAY ON ESMERALDA GRAPHITE

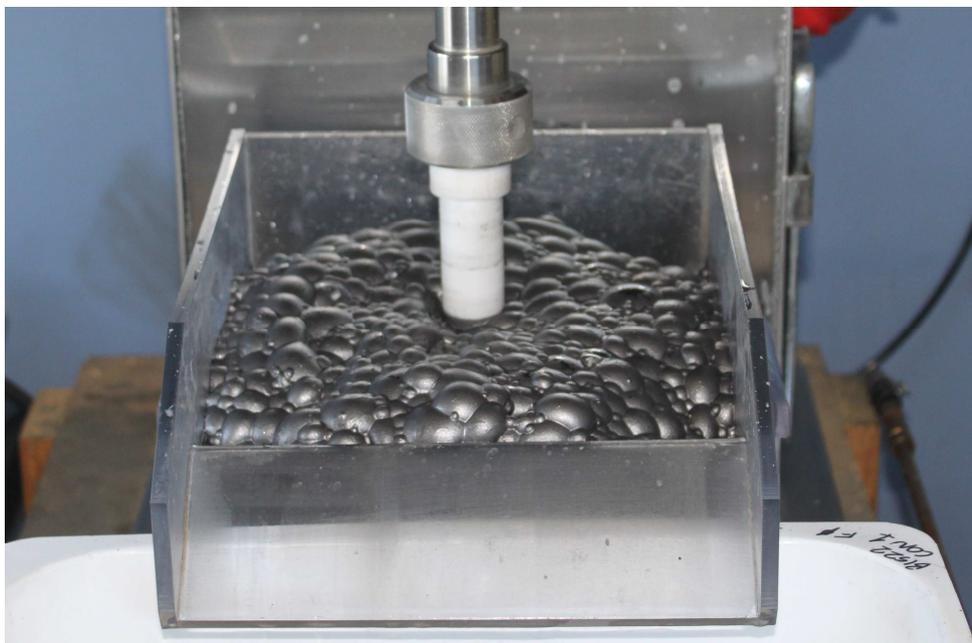
Metallica Minerals Limited ("Metallica") (ASX:MLM) is pleased to advise that metallurgical test work has commenced on the company's unique Esmeralda graphite project in north Queensland.

The test work is being conducted by Nagrom Brisbane Labs. Nagrom is a highly regarded, independent and accredited laboratory, experienced in graphite recovery processing technologies. The test work program is designed to determine the expected purity and flake size range of the recovered graphite product, both of which are key drivers of the project. Results of the test work are expected in late February.

Two composite samples were prepared for the test work, one from each of the exploration holes completed in the November 2015 Esmeralda drilling program. These holes, reported by Metallica in December 2015¹, intersected significant broad graphite mineralisation with continuous intercepts of:

WD001 – 95.0 m @ 6.5% Cg from 71 m

WD002 – 29.1 m @ 7.8% Cg from 71.9 m, including 7.1 m @ 12.9% Cg



Float test showing large stable graphite bubbles

¹ ASX Release 10 December 2015 "Assays strongly support potential for large graphite deposit", available <www.asx.com.au>



Metallica's CEO, Mr Simon Slesarewich:

"Preliminary results from the test work show that the graphite mineralisation responded well to standard float tests, which is a good indicator that a high graphite recovery is achievable. We look forward to receiving final results in late February, which we hope will confirm that the Esmeralda deposit is capable of producing a high purity product."

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Competent Person's statement

The technical information contained in this report has been compiled and/or supervised by Mr Andrew Gillies B.Sci (Geology) M.AusIMM (Director of Metallica Minerals Ltd) who is a Competent Person and a Member of the Australasian Institute of Mining and Metallurgy (MAusIMM). Mr Gillies has relevant experience in the exploration for this style of mineralisation and exploration results being reported on to qualify as Competent Person as defined in the 2012 edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr Gillies consents to the inclusion of this information in the form and context in which it appears in this release.

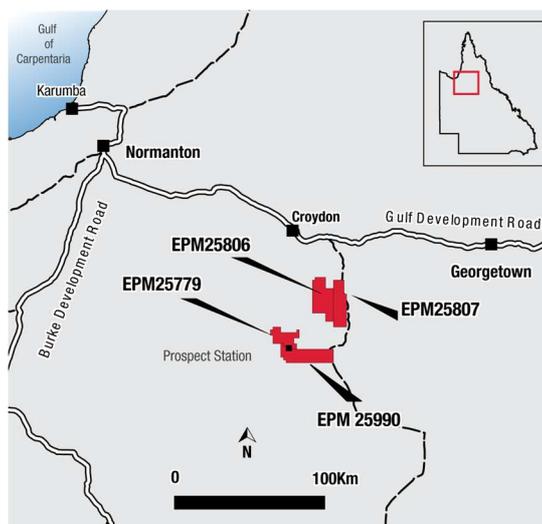
Caution regarding forward-looking statements

Certain statements made in this announcement contain or comprise certain forward-looking statements. Although Metallica believes that the visual interpretation and other estimates and expectations reflected in such forward-looking statements are reasonable, no assurance can be given that such expectations will prove to have been correct. Accordingly, results could differ materially from those set out in the forward-looking statements in this release.

Background on the Esmeralda Graphite Project

In July 2015, Metallica Minerals Ltd (“Metallica”) was granted Exploration Permits for Minerals (EPMs) 25779, 25806, 25807 and 25990, which make up the Esmeralda Graphite Project. The project, located near Croydon in north Queensland, covers a combined area of over 750 km² and is held 100% by Metallica’s subsidiary, Touchstone Resources Pty Ltd.

Metallica has identified significant graphite occurrences within the Esmeralda Granites in the project area. These occurrences were first identified in 2006 by Metallica during a drilling program that targeted well-defined airborne and ground-defined intense electromagnetic (EM) anomalies. At the time, the drilling focused on base metal and gold-bearing massive sulfide mineralisation. Instead of sulfides, Metallica discovered significant graphite mineralisation. The discovery was unexpected because graphite is rarely associated with igneous rocks, such as granite.



Subsequently, a review of graphite occurrences in the Esmeralda Granites and Croydon Volcanics indicated large suites of potentially graphite-bearing igneous rocks. Metallica has identified targets where it is interpreted that hydrothermal processes and/or magmatic differentiation or structural controls could concentrate graphite into significantly higher percentages. Previous percussion drilling, including the 2006 Metallica program, recorded significant zones of observable graphite mineralisation (~10% graphite visually) while exploring for metals and other types of mineralisation.

Igneous or hydrothermal-style graphite deposits, such as Esmeralda, are rare. The more common metamorphic-style graphite deposits make up about 95% of the world’s known graphite deposits. Hydrothermal-style graphite deposits are typically of high purity graphite in either flake or crystalline form. Examples of this style of mineralisation include the high-grade, narrow-vein Sri Lankan deposits and the granite hosted Albany graphite deposit in Canada. The carbon source is non-organic and the carbon is thought to be from deep carbon dioxide (CO₂) or methane (CH₄) gaseous injection and/or carbonaceous rocks incorporated into the magma chamber, which later crystallises out as pure or near-pure carbon (graphite) crystals and or hydrothermally reactivated graphite associated with remnant graphite.

Unusually, the graphite within the Esmeralda altered granite host rock appears to have at least two origins: as assimilated xenoliths of carbonaceous meta-sediments, and as abundant clots and grains from hydrothermal-structural impacts, including hydrothermal veining, producing secondary or reactivated enrichment of the graphite.

Metallica has developed a hydrothermal mineralisation model for the Esmeralda granite based on work completed by the Bureau of Mineral Resources (BMR) in 1988 and the recent (2013) discovery of the Albany graphite deposit.

The graphitic granite breccia at Esmeralda is initially interpreted to be part of the Proterozoic Esmeralda Supersuite. Within EPM 25779, the target granite unit is covered by Jurassic or younger sediments of the Carpentaria Basin which are not considered prospective for graphite mineralisation.