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10 December 2018

ASX Announcement

Definitive Metallurgical Test Work Confirms High-Grade, Large Flake Concentrate

Highlights

- **A total graphitic carbon (TGC) grade of >95% TGC was obtained across the full concentrate particle (flake) size distribution and is free of deleterious materials**
- **50% of the graphite concentrate is represented by a flake size over 180µm, which should enable the product to be sold into premium market segments attracting higher prices**
- **20% of the product falls within the Jumbo / Super Jumbo range (>300µm)**
- **Comminution results indicate low to moderate ore hardness which may potentially reduce processing costs**

BlackEarth Minerals NL (ASX: BEM) ("**BlackEarth"**, the "**Company"**) is pleased to provide the outcomes on the comprehensive metallurgical test work program completed on bulk samples from the Razafy Resource. The Razafy Resource sits within the Company's broader Maniry Graphite Project which, covers a total of 142 km^2 in southern Madagascar.

The bulk composite sample was sent to ALS Laboratory in Perth in late August 2018. The sample based on earlier laboratory and mineralogical results was deemed representative of the Razafy Resource by the Company's Competent Person (Metallurgy), Mr David Pass from BatteryLimits. The results, shown below, reaffirm the Company's earlier positive preliminary results announced on 16 October 2018.

Flake Size	(microns)	Mesh	Master Composite	
			Mass (%)	TGC (%)
Super Jumbo	> 500	38	2.8	95.8
Jumbo	300 – 500	50	17.3	96.1
Large	180 – 300	30	29.8	95.6
Medium	150 – 180	20	9.1	95.0
Small	-75	100	23.6	96.8
Fine	< 75	-100	17.4	96.1

Table 1: Concentrate Grade and Size Distribution

The results from this test work program will be used to finalise the Maniry Graphite Project's process flow sheet and current Scoping Study, ahead of the commencement of the bankable feasibility study which is due to commence in Q1 2019.

Managing Director, Tom Revy commented:
"The quality and consistency in these results further strengthens the Board's decision to commence the feasibility study in early 2019. I look forward to providing further detail on the Maniry Graphite Project in line with our expected release on Scoping Study outcomes, shortly".

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Metallurgical Test Work:

1.1 Introduction

A diamond core drill program was conducted in early 2018 to generate samples for metallurgical testwork. From these drill programs, sampling and compositing was undertaken to generate representative samples to assess the ore's amenability to beneficiation by froth flotation, and also to identify the nature, flake size and occurrence of the graphite in a selection of drill core samples and flotation products. The metallurgical testwork program was managed by BatteryLimits and was undertaken at ALS Laboratory (ALS) in Perth.

An initial optimisation program was conducted on a Master Composite, with a variability program following afterwards. A 50 kg Master Composite sample underwent testwork to produce graphite concentrate for marketing purposes.

1.2 Samples Details.

Selected interval samples of cut diamond drill core, from twenty drill holes, were used to generate ten composite samples. The drill holes used for the metallurgical testwork program are summarised in Table 2. Approximately 800 kg in total was sent to ALS.

Drill Hole ID	Depth (m)	
	Initial	Final
MNDD019	11	33
MNDD020	36	64
MNDD022	7	36
MNDD023	42	54
MNDD024	75	97
MNDD025	24	38
MNDD026	54	63
MNDD027	23	39
MNDD029	61	71
MNDD030	46	63
MNDD031	19	24
MNDD035	60	72
MNDD036	46	55
MNDD037	35.5	44.85
MNDD044	10.05	21
MNDD045	51	65
MNDD046	44	57
MNDD047	8	30
MNDD049	68	84
MNDD051	4	24

Table 2: Metallurgical Drill Hole Details

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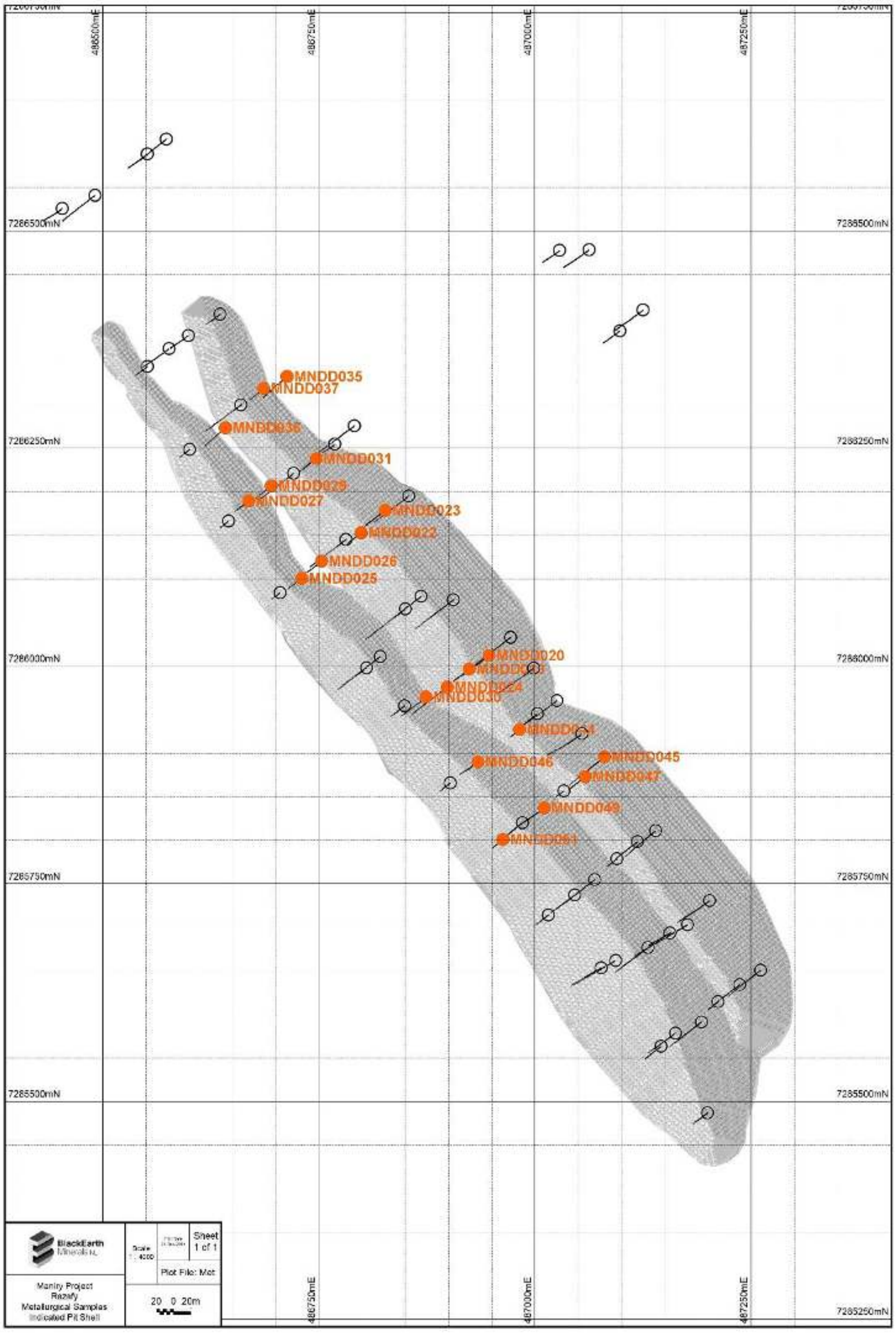
Metallurgical drill hole locations are shown below with respect to the East/West veins.

Figure 1 Razafy Drill Hole Locations



1.3 Composite Details and Assay

The composites were formed based on grades, mineralisation, spatial locations over the two east/west veins. The Upper composites consisted of intervals with a RL number of over 260 while Lower composites have RL numbers under 260. The Master Composite was formed by proportionally combining all clusters.

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A summary of head assays results for the composite samples is shown in Table 3.

Table 3: Head assay

Composite ID	Number of Intervals	C(t) (%)	TGC (%)	SiO2 (%)	S(t) (%)
Cluster 2	6	11.6	9.39	51.0	0.04
Cluster 7	5	8.10	8.04	51.6	1.16
Cluster 4	25	9.21	9.12	59.4	1.18
Cluster 3 Upper West	19	8.01	7.92	59.8	0.72
Cluster 3 Lower West	27	8.85	8.58	63.8	0.92
Cluster 3 Upper East	50	8.73	8.37	55.8	0.70
Cluster 3 Lower East	26	9.18	9.00	68.4	1.76
Upper Zone	C3 Upper and C4 Upper	8.67	8.70	62.0	1.30
Lower Zone	C3 Lower and C4 Lower	8.43	8.22	63.2	0.98
Master Composite	All Clusters	9.00	9.00	60.4	1.08

1.4 Comminution Test Results

Bond Rod, Bond Abrasion and SMC (SAG Mill Comminution) tests were conducted on both the Upper and Lower Composites. From the comminution test data, the Razafy material would be considered soft and not abrasive. A summary of results is shown in the tables below.

Table 4: Summary of Bond Rod Mill Work Index Results

Sample	Bulk Density (t/m3)	Size P80 (µm) (1)		BRWi (kWh/t)
		Feed	Product	
Upper Composite	1.60	8,308	799	9.3
Lower Composite	1.55	8,353	821	9.3

1. Closing screen 1,180 µm

Table 5: Summary of Bond Abrasion Work Index Results

Sample	Bond Abrasion Index (Ai)
Upper Composite	0.0398
Lower Composite	0.0340

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Table 6: Summary of SMC Testwork Results

Sample	DWi kWh/m^3	SG	Derived Values			Mi Parameters (kWh/t)		
			A	b	ta	Mia	Mih	Mic
Upper Composite	1.5	2.31	74.7	2.06	1.73	6.9	3.8	1.9
Lower Composite	1.2	2.25	74.6	2.57	2.21	5.8	3.0	1.6

1.5 Flotation Test Results

The preliminary flotation tests were planned with the intent to maintain the graphite flakes as coarse as possible, while achieving high recovery to concentrate. As a general rule, notwithstanding liberation effects, the larger the graphite flake size, the higher the carbon content in the concentrates. The general flotation objectives were to:

- Produce graphite concentrates >95% TGC
- Produce coarse flake size
- Recover >90% of the graphite to a concentrate.

An optimisation program was initially conducted on the Master Composite where the results indicated:

- The coarse flakes needed grinding to liberate the gangue material.
- In order to retain coarse flakes and achieve acceptable recovery the coarse rougher flotation tails had to be reground before running through a scavenger circuit.
- Good recovery and upgrade were achieved at coarse particle size with typical concentrate PSD in the size range of P80 300 µm
- Screening out the +150µm earlier allowed for the finer material to be reground with more intensity to achieve TGC grades +96% TGC.
- General trend observed increased overall concentrate grade with increased regrind time and increased graphite liberation
- Flotation using site water was conducted with no detrimental effects observed.

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The optimal run that achieved the better results consisted of a primary grind comprised of stage rod milling. The rougher tails was then stage ground before running through a scavenger circuit. The rougher and scavenger concentrates were combined before a polishing regrind and cleaner stage. This was followed by stirred milling/cleaning before being screened. The finer material was then sent for further stages of stirred milling/cleaning.

The flotation reagent scheme consisted of a conventional collector, and frother. Tests were performed with a 1 kg sample, using a Denver float machine. Rougher, scavenger and first cleaner tests were performed in a 4L cell with the remaining cleaners being conducted in a 2L cell.

A total of 25 flotation tests were run with varying conditions to arrive at a flowsheet involving up to 6 stages of cleaning and regrinding.

Tests BF1379 and BF1380 were run using optimised conditions with the results obtained summarised in Table 7. The product size distribution and assays are shown in Table 8. Test BF1396 was conducted using a similar regime except for further grinding, to investigate if the graphite grades could be further increased.

Table 7: Final Master Composite Flotation Results

Test Number	Combined Cleaner Concentrate (1)						
	Final PSD P_{80} (µm)	Overall TGC		TGC +150 µm		TGC-150 µm	
		% Grade	% Rec.	% Grade	% Dist'n.	% Grade	% Dist'n
BF1379/80(1)	303	96.0	93.2	95.7	59.0	96.5	41.0
BF1396	195	98.1	86.8	97.9	32.1	98.2	67.9

(1) Results averaged from 2 tests (BF1379 and BF1380).

Table 8: Cleaner Concentrate Grade and Size Distribution

Flake Size	(microns)	Mesh	Master Composite			
			Test BF1379/80		Test BF1396	
			Mass (%)	TGC (%)	Mass (%)	TGC (%)
Super Jumbo	> 500	38	2.8	95.8	0.45	98.5
Jumbo	300 – 500	50	17.3	96.1	4.48	98.1
Large	180 – 300	+80 -50	29.8	95.6	17.2	98.0
Medium	150 – 180	+100 -80	9.1	95.0	10.0	97.6
Small	-150+75	+200-100	23.6	96.8	32.4	98.5
Fine	< 75	-100	17.4	96.1	35.5	97.9

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1.6 Variability Program

Currently a variability program is being conducted on the various Cluster Composites using the optimised flotation scheme. This program is expected to be completed shortly, the results of which will be included into the final Maniry flow sheet.

1.7 Bulk Sample

A further bulk sample is planned to be treated in early 2019 to produce graphite concentrate for marketing purposes.

1.8 Summary and Conclusions

Cleaner flotation testwork used multiple stage cleaning with polishing rod and/or stirred attrition mill prior to each cleaner step. This produced final graphite concentrates at the target grade of TGC>95% and >90% graphite recovery and whilst maintaining a favourable coarse PSD.

Initial optimisation testwork has demonstrated high graphite recovery to high grade coarse concentrates can be achieved using separate coarse and fine flotation streams.

Further samples are now being planned to allow additional testwork for downstream testwork including:

- Purification and expandability testwork
- Thickener tests on concentrates and tails
- Filtration on concentrates
- Tailings for Geochemistry and Geotech.

1.9 Process Description

The basic process flowsheet proposed to treat the Maniry ore will include:

- 2 – Stage crushing
- Primary Rod mill to feed the rougher flotation cells with rougher tails being reground in a ball mill prior to a scavenging circuit
- Coarse and fine flotation with the screening of coarse material followed by inter-stage re-grind milling of the undersize to improve liberation and product purity
- Concentrate dewatering by thickening, filtration and drying
- Screening and bagging plant to produce the final products.

A summary flow sheet is shown in Figure 2.

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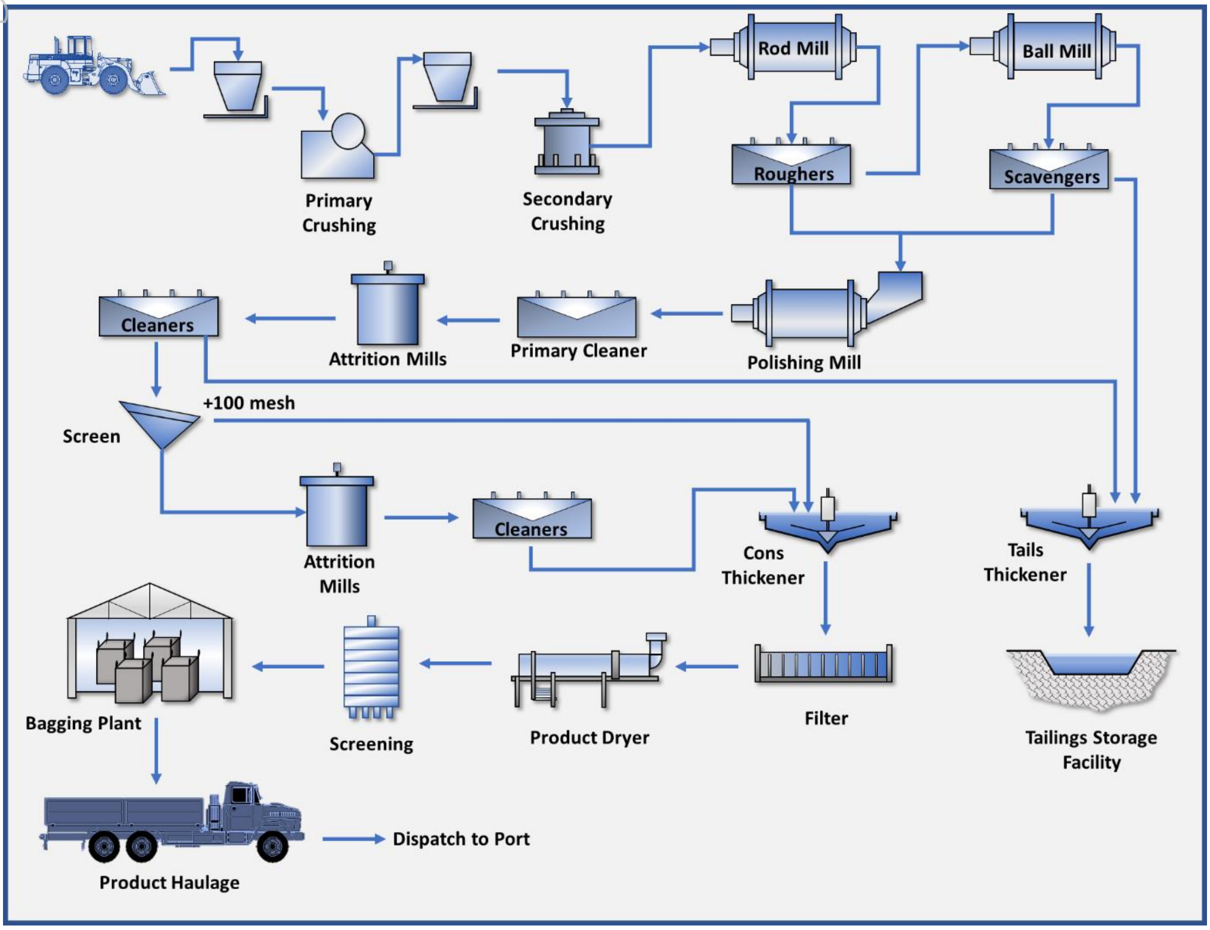
Figure 2: Maniry Process Flow Diagram



CONTACTS

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BlackEarth encourages investors to update their contact details to stay up to date with Company news and announcements here: http://www.blackearthminerals.com.au/update-details/

Competent Person's Statement

The information in this document that relates to metallurgical test work results is based on information compiled and reviewed by Mr David Pass, who is a Member of the Australasian Institute of Mining and Metallurgy. Mr Pass is an employee of BatteryLimits. Mr Pass has sufficient experience relevant to the mineralogy and type of deposit under consideration and the typical beneficiation thereof to qualify as a Competent Person as defined by the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (the JORC Code, 2012 Edition). Mr Pass consents to the inclusion in the report of the matters based on the reviewed information in the form and context in which it appears.

For more information – www.blackearthminerals.com.au

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About BlackEarth Minerals NL (www.blackearthminerals.com.au **)**

BlackEarth Minerals NL (ASX: BEM) is an ASX listed company focused primarily on the exploration and development of its 100% owned Madagascan graphite projects.

The location of the Company's primary graphite projects: Madagascar (Maniry & Ianapera - above)

The Company's Madagascan projects consist of two primary exploration areas: the Maniry Project (**Maniry**) in the south, and the Ianapera Project (**Ianapera**) in the north. Maniry is highly prospective for large-scale, high-quality graphite deposits and is currently at an advanced evaluation stage. The Razafy indicated and inferred resource, comprising of **11.2Mt @ 7.10% Total Graphitic Carbon** (**TGC**) is summarised in Table below. The vast majority of the resource has been classified with a high degree of confidence at an 'Indicated' classification, with the remainder classified as 'Inferred'. The Mineral Resource is reported at a 6% TGC cut-off grade.

The higher confidence classification of the majority of the resource was supported by detailed petrological assessments (ASX Announcements dated 16 February 2018 and 5 July 2018) and has now been fully validated through this current program of metallurgical test work.

The Mineral Resource was estimated within constraining wireframe solids defined at a nominal 3% TGC cut-off grade.

Classification	Tonnes (Mt)	TGC Grade (%)	Contained Tonnes (t)
Razafy Indicated	8.0	7.22	577,600
Razafy Inferred	3.2	6.80	217,600
Total Resources	**11.2**	**7.10**	**795,200**

Mineral Resource Estimates for Maniry Project

Results, from recent diamond drilling have confirmed that the Razafy Prospect (contained within the Maniry Project area) consists of high grade, thick outcropping graphitic mineralisation contained within distinct lenses which remain not only open along strike but also at depth. Recent identification of further lenses to the east also highlights the prospectivity of the immediate area which, based on mapping and previous exploration represents only 5% of the current Maniry Project area.

Ianapera is located approximately 50km north of Maniry. It consists of a series of high-grade outcrops, up to 800m long and 30m wide, of graphite mineralisation within a broader graphite trend. Identified as a large conductive body, potential exists for the presence of a large graphitic mineralised system.