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ASX Announcement

Addendum - 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".

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.

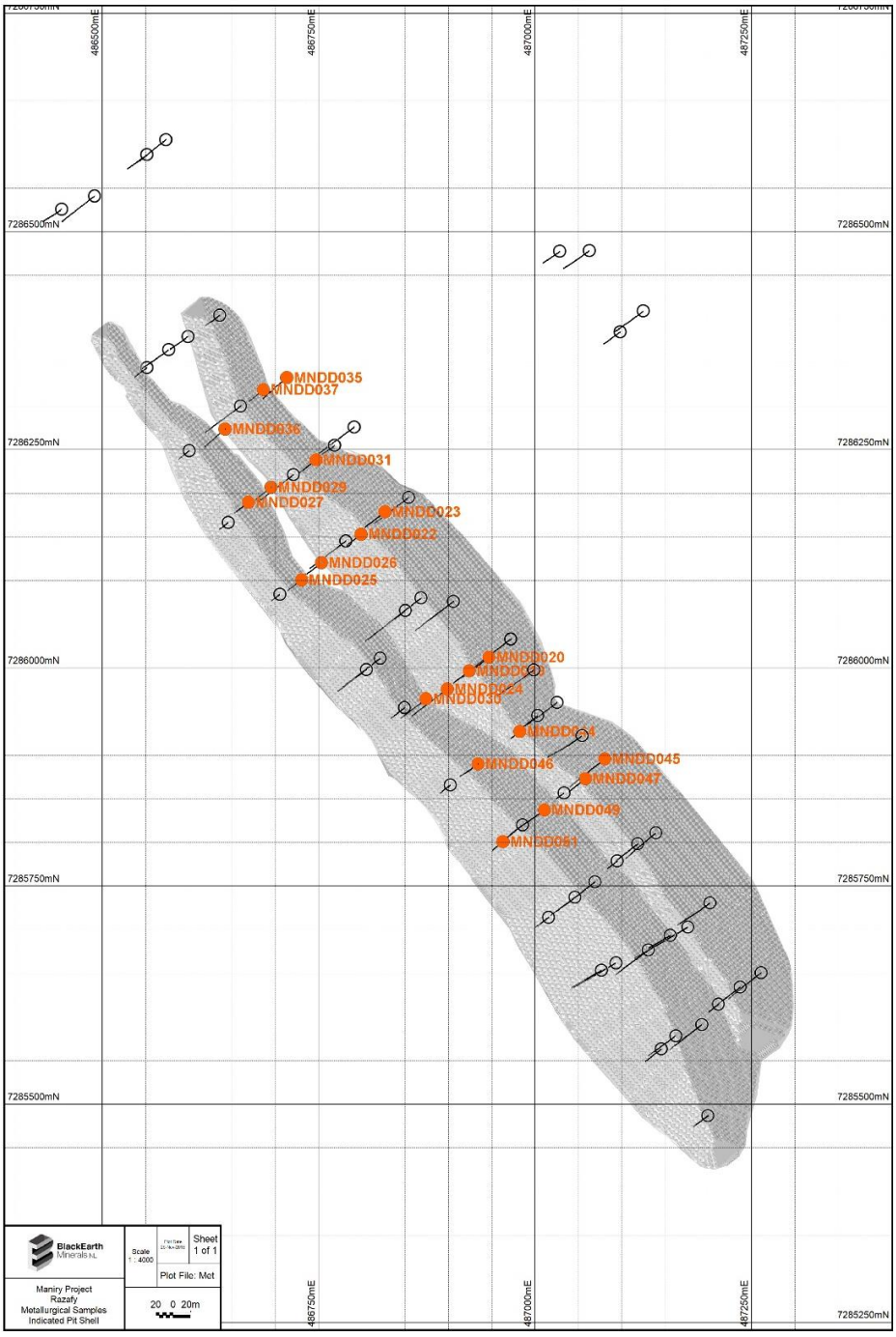
Selected interval samples of cut diamond drill core, from twenty drill holes, were used to generate ten composite samples. The drill holes used for the metallurgical testwork program are summarised in Table 2. Approximately 800 kg in total was sent to ALS.

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

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. Geochemistry characteristics were used to separate the chosen composites into groups or clusters-with homogeneous geochemical signature for variability testing. 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.

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

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.

The optimal run that achieved the better results consisted of a primary grind comprised of stage rod milling. The rougher tails were 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

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.

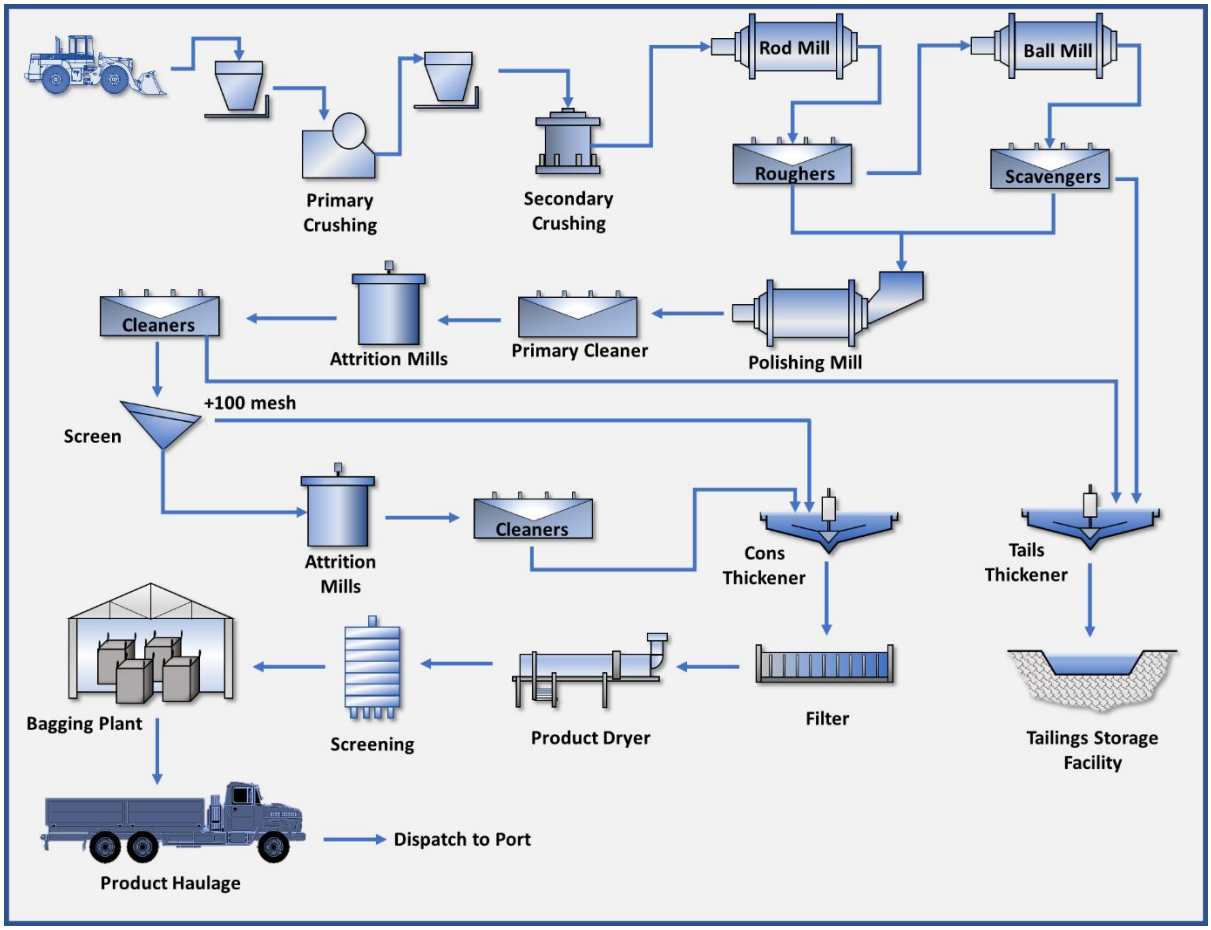
1.9 Process Description

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.

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 contained in this report that relates to Exploration Results and Mineral Resources is based on information compiled by Mr. Peter Langworthy, a member of The Australasian Institute of Mining and Metallurgy. Mr. Langworthy is an employee of OmniGeoX Pty Ltd which is a consultant to BlackEarth. Mr. Langworthy has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity that 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. Langworthy consents to the inclusion in this report of the matters based on the information in the form and context in which it appears.

The information in this report that relates to the Exploration Target for the Maniry Graphite Project is extracted from the report entitled "Exploration Target Update" dated 14 August 2018 and is available to view on the Company's website (www.blackearthminerals.com.au). The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcement and that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcement.

The information in this report that relates to the Maiden Resource Estimation for Razafy at the Maniry Graphite Project is extracted from the report entitled "Update – Maiden Resource Estimation for Razafy at the Maniry Graphite Project" dated 14 August 2018 and is available to view on the Company's website (www.blackearthminerals.com.au). The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcement and that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcement.

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

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.



JORC Code, 2012 Edition – Table 1

Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections.)

Criteria	JORC Code explanation	Commentary
Sampling techniques	· *Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc.). These examples should not be taken as limiting the broad meaning of sampling.* · *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* · *Aspects of the determination of mineralisation that are Material to the Public Report.* · *In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.*	Diamond drilling program - Sampling will consist of 2m composite samples of quarter core - typical 3-5Kg. Samples will be cut using a diamond blade core saw. Duplicate samples will be collected every 20th sample for QAQC purposes. CRM's will be inserted every 20th Sample for QAQC purposes. Sampling is considered to be comprehensive and representative. Remaining core was retained as a permeant reference. Total Graphitic Carbon content is measured at a laboratory using a CS analyser (Intertek Genalysis (Perth). Metallurgical samples were obtained from diamond drilling, ½ core . A split of crushed sample was used for head grade analysis , the remainder retained for metallurgical test work.
Drilling techniques	· *Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).*	Diamond drilling. Core size is HQ and NQ typically in 0.5-1.5m runs. Core from a select number of holes will be orientated.
Drill sample recovery	· *Method of recording and assessing core and chip sample recoveries and results assessed.* · *Measures taken to maximise sample recovery and ensure representative nature of the samples.* · *Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.*	Core recovery is routinely recorded every metre by a trained geologist. No bias or relationship is observed at this point between recovery and grade. Recovery is typically +80% within weathered rock, and +95% in fresh rock in nearly all instances.
Logging	· *Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.* · *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.* · *The total length and percentage of the relevant intersections logged.*	All holes are logged by a qualified and experienced geologist. All logging included descriptions of geotechnical, mineralisation, structural and lithological aspects of the core and was digitally recorded using an industry standard code system. Core is formally photographed. Data collected offers sufficient detail for the purpose of interpretation and further studies.
Sub-sampling techniques and sample preparation	· *If core, whether cut or sawn and whether quarter, half or all core taken.* · *If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.* · *For all sample types, the nature, quality and appropriateness of the sample preparation technique.* · *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.* · *Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.* · *Whether sample sizes are appropriate to the grain size of the material being sampled.*	Quarter core will be cut using a diamond core saw and collected for assay. 2 metre composite sampling are deemed to be comprehensive and representative for the style/type of mineralisation under investigation. Duplicate samples are taken (remaining quarter core) every 20th sample for QAQC purposes
Quality of assay data and laboratory tests	· *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.* · *For geophysical tools, spectrometers, handheld XRF instruments, etc., the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.* · *Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.*	Assaying is undertaken by Intertek Genalysis in Perth (Aus). Samples are pulverised to 75 micron, roasted to 420deg and digested with a weak acid. Final analysis is undertaken by CS analyser (Code: C73/CSA). This method is considered total. Standards and duplicates are routinely inserted every 20th sample by the BEM technical team as well as internal QAQC from the laboratory. No issues been observed with QAQC. Metallurgical work was undertaken by ALS Metallurgy Perth, managed by BatteryLimits Pty Ltd.
Verification of sampling and assaying	· *The verification of significant intersections by either independent or alternative company personnel.* · *The use of twinned holes.* · *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* · *Discuss any adjustment to assay data.*	Significant intersections have been verified by alternative company personnel. No twin holes have been undertaken. All date is recorded digitally using a standard logging system and files are stored in a industry standard database.
Location of data points	· *Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.* · *Specification of the grid system used.* · *Quality and adequacy of topographic control.*	All collars have been loacted using a DGPS (acuartee to 1cm) Projection and grid systems used: UTM (WGS84 Z38S). The down hole azimuth and dip is recoded using a Magshot down hole instrument (Accurate to 1deg)
Data spacing and distribution	· *Data spacing for reporting of Exploration Results.* · *Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.* · *Whether sample compositing has been applied.*	Sample intervals are typically between 0.5-2.0m taken consistently through all ore zones. This spacing and distribution is considered sufficient for mineral resource estimations.
Orientation of data in relation to geological structure	· *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.* · *If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.*	The orientation of the drilling is not expected to introduce sampling bias. Most drill holes have intersected the mineralisation at a sufficint angle to the strike and dip of the mineralised units.
Sample security	· *The measures taken to ensure sample security.*	Samples are cut and sampled on site before being transported to the company sample preparation facility in Antananarivo for preparation. Samples will then be freighted by DHL to Intertek Genalysis in Perth (Aus) for assay. It is reasoned that the samples will be under sufficient security.
Audits or reviews	· *The results of any audits or reviews of sampling techniques and data.*	Sampling procedures has been reviewed by an external auditors Sigma Blue Pty. Ltd. and OMNI GeoX Pty. Ltd. plus site visits at the beginning of the program.

Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	· *Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.* · *The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.*	Work was undertaken upon permits 5394 & 39751 • The tenements are located within the inland South West of Madagascar approximately centred on the township of Ampanihy. • Tenements are held 100% by Mada-Aust SARL Ultimately a wholly owned subsidiary of BlackEarth Minerals NL. through Madagascar Graphite Ltd. • No overriding royalties are in place • There is no native title agreement required • Tenure does not coincide with any historical sites or national parkland • Semi-arid, thinly vegetated, relatively flat to low lying hills with sub-cropping rock. • Tenements are currently secure and in good standing.
Exploration done by other parties	· *Acknowledgment and appraisal of exploration by other parties.*	Regional mapping by BRGM, Historical diamond drilling and trenching by Malagasy Minerals. Ltd. (2014-2016)
Geology	· *Deposit type, geological setting and style of mineralisation.*	The project overlies a prominent 20km wide zone consisting of a folded assemblage of graphite and quartz-feldspar schists (<60% graphite), quartzite and marble units, with lesser intercalated amphibolite and leucogneiss. This zone, termed the Ampanihy Belt is a core component of the Neoproterozoic Graphite System. The belt is interpreted as a ductile shear zone accreted from rocks of volcanic and sedimentary origins.
Drill hole Information	· *A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:* o *easting and northing of the drill hole collar* o *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar* o *dip and azimuth of the hole* o *down hole length and interception depth* o *hole length.* · *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.*	Metallurgical testwork was undertaken on the drill hole samples referred to in the announcement.
Data aggregation methods	· *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.* · *Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.* · *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	Metallurgical samples were composited across sample intervals interpreted to be geological units.A master composite was compiled from sub composites for further metallurgical testwork representative of the modelled orebody
Relationship between mineralisation widths and intercept lengths	· *These relationships are particularly important in the reporting of Exploration Results.* · *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* · *If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').*	Drilling has intersected the mineralised units at near perpeniculat to strike and dip. True widths can be observed through the multiple holes drilled on sections.
Diagrams	· *Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.*	Refer to figures within text
Balanced reporting	· *Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	All significant results reported
Other substantive exploration data	· *Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.*	Refer to BEM Prospectus.
Further work	· *The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).* · *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	Further exploration proximally to Razafy. Further metallurgical testwork planned

Section 3 Estimation and Reporting of Mineral Resources

(Criteria listed in section 1, and where relevant in section 2, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Database integrity	• *Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.*	All data sets have been automatically loaded into an industry standard database. All files have been automatically validated at point of loading and routienly throughout the program.
	• *Data validation procedures used.*	
Site visits	• *Comment on any site visits undertaken by the Competent Person and the outcome of those visits.*	Annick Manfrino, Competent Person for the resource estimate visited the site in March-April 2018
	• *If no site visits have been undertaken indicate why this is the case.*	All drilling, sampling and sample preparation procedures were considered of industry standard, well supervised and carried out
Geological interpretation	• *Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.*	The confidence of the geological interpretation of the graphitic lenses is considered robust for the purpose of estimating and reporting Indicated and Inferred resources.
	• *Nature of the data used and of any assumptions made.*	Graphite is hosted within graphitic schists and gneiss
	• *The effect, if any, of alternative interpretations on Mineral Resource estimation.*	The complete extent of the two main lenses outcrop and can be followed by mapping at surface.
	• *The use of geology in guiding and controlling Mineral Resource estimation.*	Trenches have been used with success in early exploration stages to confirm the strike continuity
	• *The factors affecting continuity both of grade and geology.*	No major faulting or other structural disruption has been mapped in the project area and the location of the drilling intercepts of the graphitic mineralisation confirms the anticipated position of the lenses
		The boundary between graphitic schists and gneiss and the surrounding material is usually sharp with TGC grades below 0.5% in background material changing to +3% grades in the graphitic lenses, leaving few options to shift the boundaries position.
		Mineralisation envelopes were interpreted on section using a nominal +3% TGC cut-off grade.
		Only rare occurrences of non-mineralised material are included in the two main lenses
		Logged graphitic rich zones correlate extremely well with TGC assay results
		No alternative interpretation has been considered at present
		The weathered horizon (oxide) can easily be interpreted from the sulphur depletion observed in the assay data. The oxide horizon is approximately 20m thick. The transition zone is usually of very limited thickness when present
Dimensions	• *The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.*	The Mineral Resource encompasses the Razafy deposit and a new prospect named East Razafy
		The Razafy deposit comprises two major lenses -East Main and West Main lenses-, and four minor graphitic lenses adjacent to the main zones,
		The solids interpreting the two main lenses are 1450m long with a maximum plan width of 65m for the East main lens and 60m for West main lens in the south part of the deposit. The two main lenses extend 155m depth below surface and define the lowest depth below surface at which a resource has been estimated
		The Razafy block model extents 1 625m along strike, 900m across strike and 200m depth to cover the East Razafy prospect area
Estimation and modelling techniques	• *The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.*	Total graphitic carbon and sulphur have been estimated by ordinary kriging using a 140m across strike by 50m down dip by 12m across strike search ellipse which defines the outmost distances to which blocks can be extrapolated from drillholes
	• *The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.*	Drill section are spaced regularly at 100m (with the exception of the first northern section which is 200m away from the second section) with drillholes spaced at 30m across sections
	• *The assumptions made regarding recovery of by-products.*	Kriging parameters for both TGC and sulphur were obtained from modelling the directional variograms (normal variograms) for the two main lenses.
	• *Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).*	Nugget values are 20% of the total sill for both elements
	• *In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.*	The grade estimation was completed using GEMS mining software with partial blocks to honour the volume of the grade envelope solids
	• *Any assumptions behind modelling of selective mining units.*	The block model is based on 25m along strike by 5m across strike by 5m Z, which is considered adequate given the current drill spacing of 100m section lines by 30m spacing
	• *Any assumptions about correlation between variables.*	Mineralisation envelopes were used as hard boundaries during the interpolation
	• *Description of how the geological interpretation was used to control the resource estimates.*	The base of oxide surface was used as a hard boundary for the sulphur estimation but as a soft boundary for the total graphitic carbon estimation
	• *Discussion of basis for using or not using grade cutting or capping.*	No top-cut measure was used as there is no evidence of outliers. The maximum total graphitic carbon value for the 2m sample assays is 15%
	• *The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.*	The grade estimates were validated visually and statistically to ensure that they honour spatially and statistically the input data.
		No previous estimate exists for this deposit
Moisture	• *Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	The Resource is reported on a dry tonnage basis
Cut-off parameters	• *The basis of the adopted cut-off grade(s) or quality parameters applied.*	Mineralisation envelopes have been wireframed to an approximate 3% TGC cut-off grade which corresponds to a natural break between background material, which usually presents TGC grades below 0.5%, and the graphitic schists and gneiss with TGC grades greater than 3%.

Mining factors or assumptions	• *Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.*	Based on the orientations, thicknesses and depths to which the graphitic lenses have been modelled and their estimated TGC, the potential mining method is considered to be open pit mining
Metallurgical factors or assumptions	• *The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.*	Metallurgical testwork program has been undertaken on drill core samples taken from a drill program completed in 2018. A total of 20 diamond drill holes were sampled totalling 800kg of material, to create representative composite samples. Testwork was undertaken by ALS Metallurgy in Perth WA , managed by BatteryLimits. The test work primarily focussed on flotation to recover high grade graphite concentrates. The flotation tests typically inVoved , a 1kg sub-sample stage ground in a rod mill to 100% passing 1mm. The samples underwent rougher flotation. The rougher concentrate underwent multiple stages of cleaning (up to 6), with recleaning and intermediate screening of coarse material in some tests. The results indicated that high grade (95% TGC) concentrates can be produced at a recovery of 93%. Some comminution testwork has also been undertaken with the results indicating the material is soft to moderate hardness . No deleterious elements in the concentrates have been identified to date.
Environmen-tal factors or assumptions	• *Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.*	It is assumed that the processing of ore will have a minimal environmental impact. This is based upon other graphite processing operations and basic assumptions on how graaphite ore will be processed at Maniry.
Bulk density	• *Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.*	The bulk density used to report the Mineral Resource is based on 19 measurements made by water displacement method by the Intertek Perth laboratory
	• *The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.*	A 2.07 t/m^3 value was used for the oxide material and 2.17 t/m^3 for the fresh material
	• *Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.*	
Classification	• *The basis for the classification of the Mineral Resources into varying confidence categories.*	The two main lenses are continuous over the strike of the deposit.
	• *Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).*	They can be followed on surface by mapping without interruption and are not disrupted by faulting
	• *Whether the result appropriately reflects the Competent Person's view of the deposit.*	Trenches completed during the early exploration stages, but not used in the resource estimate, confirm the location at surface of the thickness of the mineralisation estimated by the model
		With a 100m drill section spacing, and search ellipses of 140mx50mx12m, extrapolation of blocks is limited
		All minor lenses, including the East Razafy prospect have been classified as Inferred material
		For the East and West Main lenses, the kriging slope of regression obtained for the total graphitic carbon estimate was used to separate Indicated from Inferred resource at depth. Blocks with a slope of regression greater than 0.5 were classified as Indicated, the other blocks were classified as Inferred
		The classification is based on a high degree of geological understanding of the mineralisation occurrence and spatial distribution, correlated by systematic drilling information with limited extrapolation
		The Mineral Resource estimate appropriately reflects the view of the Competent Persons
Audits or reviews	• *The results of any audits or reviews of Mineral Resource estimates.*	No audit nor review were undertaken for this Mineral Resource Estimate
Discussion of relative accuracy/ confidence	• *Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.*	The relative accuracy of the Mineral Resource estimate is reflected in the reporting of the Mineral Resource as per the guidelines of the JORC Code (2012 Edition).
	• *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.*	The mineral resource is a global estimate of tonnes and grade.
	• *These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	Relative tonnages and grade above the nominated cut-off grades for TGC are provided in the body of this report.
		The contained graphite values were calculated by multiplying the TGC grades (%) by the estimated tonnage on a block by block basis.
		No production data is available to reconcile results with.