# WMN to acquire Grafindo Nusantara with eight million tonnes of JORC graphite resource

# **Company announces Board, Management and adviser appointments to support capital raising**

- HoA signed to acquire PT Grafindo Nusantara (GFN), Indonesia's leading private graphite company with 8 million tonnes ore of JORC resources in West Kalimantan
- Gordon Lewis, ex-Rio Tinto appointed as Executive Board Member
- David Putnam of Arung Capital joins as Interim CEO
- Azura Mangunhardjono of APAC Advisory Group to lead funding initiative
- Significant expansion of resource base, strengthening of Board and management sets the stage for next phase of development

## Terms of Grafindo Nusantara Acquisition

- WMN will acquire 100% of GFN from existing shareholders in return for issuance of twenty five million newly issued shares
- No cash consideration
- Parties have committed to complete the transaction within 60 days from signing
- Transaction is subject to negotiation and signing of definitive legal documentation and relevant WMN approvals
- Entire management and operations team will join WMN

## **Overview of Grafindo Nusantara Assets**

- GFN holds two major tenements, one of which is primed for development already having a JORC Resource and a Mining Licence, valid until July, 2023
- The ore delineated hosts a large proportion of flake graphite, the raw material required by battery manufacturers
- Extensive work has been completed on the mineralogy and a portion of the ore zones mined for bulk sampling purposes
- Work on the adjacent exploration property has defined 10 more graphite prospects
- Excellent logistics, which includes a mostly paved road to the Provincial capital of Pontianak

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#### BOARD OF DIRECTORS

Christopher Clower Executive Chairman

Budi Santoso Executive Directo

Roger Pooley

Melly Sah Bandar Non-Executive Director

## **Introduction to PT Grafindo Nusantara**



## Figure 1 Trial Mining Pit at Balai Sebut

WMN is pleased to announce that an MOU has been signed to acquire PT Graphindo Nusantara which owns two graphite tenements in Jangkang district West Kalimantan, one held by PT Trans Sulawesi Tenggara (TST), which consists of 80.5 hectares of land for mining and the second by PT Trans Sulawesi Sejahtera (TSS), consisting of 10,000 hectares of exploration ground. An additional 25 hectares of land has been acquired at the TSS property to accommodate a camp site, processing plant, road and tailings facility.

This opportunity adds to the portfolio of graphite mining assets the company is acquiring to build an integrated carbon business with its South Korean partners. In combination with the Tamboli asset in Central Sulawesi, it strengthens the company's long term plan to use Indonesian graphite to feed into a larger downstream business in Asia. WMN directors believe that now is the time to lay the foundations for the upcoming boom in carbon products, especially those associated with the battery market and the new wonder product, graphene.

Several years of extensive research has been done on the TST project, leading to a high level of confidence in the quality of product that can be produced. PT GFN has developed a strategic alliance with several leading universities in Indonesia and has funded several research projects on graphite based technologies and graphene applications. The company also has an experienced mining and geological team in place, with the capability of moving the project into the development phase and beyond.

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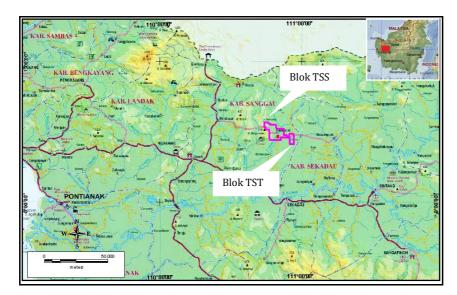
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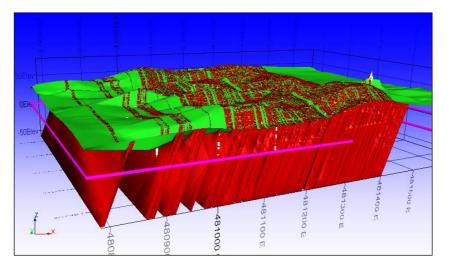
Melly Sah Bandar Non-Executive Director

The projects are located in the Jangkang district of West Kalimantan Province. Ready access can be made to the site via the Provincial capital, Pontianak, followed by travel along a mostly asphalt road over a distance of 215 kilometres.



## Figure 2 Location Map for TST and TSS

The TST concession is located in the eastern part of what is known as the Northwest Kalimantan Domain (NKD). The geology of the area comprises a combination of igneous, metamorphic and deformed sedimentary sequences, with common occurrences of slate, mudstone, siltstone, sandstone, shale, quartzite, phyllite and schist. These rocks are interspersed and in places dominated by thin, black carbonaceous units containing high grade graphite. The sequence is underlain by marine, calcareous sediments and volcanic rocks have been deformed and metamorphosed to produce the heat and pressure required for graphite formation.



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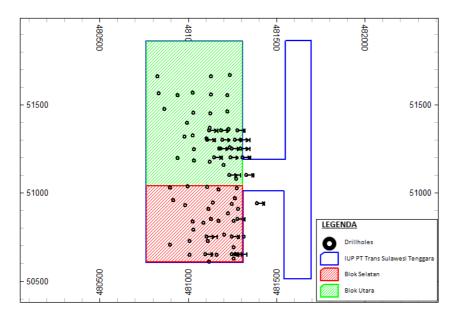
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## Figure 3 Geological Model showing graphite lodes (in red)

SRK Consultants completed a JORC resource estimation for the Balai Sebut deposit in November, 2013. Their estimate is based on an 89 diamond hole program, resulting in 4,720 metres of drilling over an area initially defined by geophysics.



## **Figure 4 Diamond Drilling Plan**

SRK released the following resource statement related to this work.

Balai Sebut Mineral Resource Statement - November 2013

Category	Tonnage (kt)	Mean TGC (%)	TGC (kt)
Inferred	7,968	12.7	1,009

This estimate is based on a cut-off grade of 4% TGC, using a bulk density value of 2.31 g/cm3. TGC estimates are based on XRD analysis only, from a total of 901 samples.

In contrast to the Tamboli deposit in Central Sulawesi, the Balai Sebut deposit hosts mostly flake graphite, which open up new downstream markets for the mine products.

A Mining Licence for graphite has been granted for this project by the Indonesian government, which is valid for 20 years commencing July, 2013. Preliminary mine studies have confirmed a low strip ratio open pit mine can be developed at Balai Sebut.

Early work on the metallurgical aspects of the project suggest a conventional grinding and flotation plant can be used to extract the ore and produce high value products to suit the carbon downstream market.

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## **Board, Management and Advisory Appointments**

#### **Gordon Lewis**

Mr Lewis has over 40 years of mine management experience including management of both junior and major company mining operations. He has worked extensively within Australia, South East Asia, Central Asia and South America. He has held senior management positions at the Bougainville Copper mine in Papua New Guinea, was the founding Mining Manager at Rio Tinto's Kelian Gold Project in Indonesia and has led the development of new projects in central Malaysia, North Sulawesi, northern Argentina and at Gedabek in Azerbaijan. Since 2001, Mr Lewis was filled the positions of Country Manager, Chief Operating Officer, Chief Executive and Managing Director within the junior mining sector. Mr Lewis will lend his considerable experience to the oversight and development of all of the Company's field operations working with the Company's existing senior operating team.

## **David Putnam**

Mr Putnam has been working in Asia for more than two decades advising Asian and international companies on a range of corporate issues and transactions. His clients have included early stage and smaller listed resources and technology companies in markets including Indonesia, China, Australia and Mongolia. Mr Putnam has been brought on board specifically to further develop the Company's corporate finance and capital markets strategy and lead the Company through its next major round of capital raising. During his tenure as Interim CEO Mr Putnam will also work with the Board of WMN to recruit a long term leader for the business. Mr Putnam started his career in Asia with the British foreign service, spent 10 years at Citi Investment Bank and most recently established and ran the Asian business of Houlihan Lokey a boutique investment bank specialising in special situations and mid-cap company corporate finance.

#### Azura Mangunhardjono, APAC Advisory Group

An Indonesian national with a global network of individual and institutional investors, Ms Mangunhardjono specialises in connecting sophisticated global capital with non-traditional, developmental or environmentally linked investment opportunities. A specific focus for APAC's efforts will be to connect the Company with individual investors and family offices wishing to participate in investments which in addition to generating strong financial returns also promote sustainable global development through the use of resource efficient or environmentally friendly new technologies and materials.

## **Chairman and Incoming Director and CEO Comment**

In commenting on these developments, Executive Chairman of WMN, Christopher Clower stated that "This is an exciting day for the company. The acquisition of GFN dramatically expands our resource base with the additional of eight million tonnes of JORC certified graphite ore. It also adds a second location as well as significant management and operations



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capacity and expertise positioning us superbly for the next phase of development. Having Gordon and David then similarly strengthens our corporate team. These changes and the recent acquisition of CarbonNano fundamentally remake the Company by building capacity at all levels and across all parts of the value chain. We are confident that the resulting investment thesis and our alliance with Ms Mangunhardjono and APAC Advisory Group better positions us to attract greater participation by longterm institutional and family office investors which is the next phase in our capital markets strategy. Today marks a major milestone for WMN in its development as a vertically integrated Carbon Company."

David Putnam, incoming Interim CEO commented "I am very pleased to have the opportunity to work with the management and shareholders of WMN. Graphite is only just beginning to get the recognition it deserves as an important contributor to emerging technologies across a wide range of sectors and exciting new applications for natural carbon are emerging all the time. WMN's unique position as the pioneer of the Indonesian graphite industry represents a key strategic advantage as some of the world's largest users of graphite concentrate are nearby and are seeking to diversify suppliers to ensure access to sufficient volume of concentrate. As demand for natural graphite grows, WMN is perfectly positioned to become one of the world's largest carbon companies."

Gordon Lewis, incoming Executive Director added "Developing a new graphite industry in Indonesia is an exciting prospect. I am grateful for the opportunity offered by WMN to fast-track the mining and beneficiation side of the business. As an early reliable supplier of graphite into the Asian market, the company will then be well positioned to move forward into carbon manufacturing in the region".

On behalf of the board of directors,

#### **Chris Clower**

**Executive Chairman** 

For further information visit our website at www.westernmining.net or email info@westernmining.net

#### COMPETENT PERSON STATEMENT

The information in the report which relates to Exploration Results, Mineral Resources or Ore Reserves is based on Information compiled by Mr. Budi Santoso, who is a competent person, Executive Director and Chief Technical Officer at Western Mining Network Limited. Mr. Santoso has over 26 years of experience in the mining industry, ranging from green field exploration to mine development and operation.

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## **APPENDIX**

## JORC Code, 2012 Edition – Table 1 report template

Section 1 Sampling Techniques and Data

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul> <li>Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as downhole gamma sondes, or handheld XRF instruments, etc.). These examples should not be taken as limiting the broad meaning of sampling.</li> </ul>	Between 2012 – 20 June 2013 the deposit was sampled in two phases for both south and north blocks. The south block was drilled for diamond core (DD) using a Jacro-240 drill-rig, replacing the older YBM type, for a total of 89 holes or 4,720 m. 14 holes as part of the second drilling phase were inclined giving a total of 906 m. The south area covers 0.2 km <sup>2</sup> with east-west 50 m drill fences spaced approximately 60 m along strike.
		There are some costeans and excavation grab sampling undertaken to June 2013. These were not used in the resource estimation
	<ul> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> </ul>	Selective samples were taken mostly during the first phase of drilling. These tended to be areas of rich graphite. Whereas, for the second phase of drillingHalf core sampling was conducted for all samples to obtain ~2.5 – 3 kg weight for assaying.
		The QA/QC samples protocols proposed by SRK had not been implemented, but 88 samples were selected by GFN for LOI analysis at an external lab. Additionally, 60 samples were selected by SRK for internal and external laboratory testing for XRD and DLOI. Half core and coarse splits remain securely stored on site for reference if required.
	<ul> <li>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 (e.g. '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 (e.g. submarine nodules) may warrant disclosure of detailed information.</li> </ul>	Uniform sampling procedures for each stage of drilling for DD holes were used in the resource estimation. The initial phase used selective sampling while in the second phase 1 m intervals were systematically sampled, both have same sampling procedures. A~2.5 kg half core was collected. A duplicate 1 kg library samples was collected by riffle splitter and storage in site facility.
Drilling techniques	<ul> <li>Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g. 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.).</li> </ul>	The deposit was sampled using Diamond Drilled NQ tubes with HQ pre-collars. No core orientation has been applied and no downhole camera survey for the inclined holes. Drillholes are mostly vertical, while the inclined holes are predominantly inclined at collars of 50 <sup>6</sup> toward the east.
Drill sample recovery	Method of recording and assessing core and chip sample	Core recoveries were measured and recorded in a hard copy ledger. There is significant core loss issues while the old drilling machine (YBM-KOKEN).

Criteria	JORC Code explanation	Commentary
	recoveries and results assessed.	Therefore, this was changed to the Jarco-240 rig and core recoveries significantly increased. However, there does not seem to have been systematic measurements of recovery.
	<ul> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> </ul>	The low-grade metamorphic unit is naturally friable and shears in places. The igneous lithology has mostly altered clays while marble and limestone are very competent. The standard diamond tube core barrels used were adequate for the material sampled.
	<ul> <li>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.</li> </ul>	Some material bias was encountered while using the old drilling machine. The sample recovery of the new drilling (Jacro-240) is generally considered high (see Figure 4-4).
Logging	<ul> <li>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.</li> </ul>	Entire core sample from each diamond drill hole was initially geologically logged in semi-detail for Lithology type, weathering, colour, hue, shade, grainsize, texture, foliation, alteration, and Pyrite.
	<ul> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.</li> </ul>	Logging the diamond core and RC cutting is qualitative in nature. Records are digitised from paper sheet. Photographic record of the drill core after cut (wet and dry) is maintained.
	The total length and percentage of the relevant intersections logged.	All drill holes are logged for their entire length.
Sub-sampling techniques and sample preparation	<ul> <li>If core, whether cut or sawn and whether quarter, half or all core taken.</li> </ul>	A diamond core saw was used to obtain the half core samples.
	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	The excavated costean samples were collected by using a scoop. No significant issues were recorded regarding wet samples.
	<ul> <li>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> </ul>	The Diamond core preparation was conducted on site with QAQC by Inspectorate laboratory. The analysis was conducted by Unpad-BATAN Bandung, BATAN Jakarta, and Inspectorate laboratory. The site preparation for DD core samples was drying before preliminary coarse crushing (4mm) and riffle splitting into equal halves; ~1 kg pulverised by Grinding Ball Mill HEM to 200 Mesh then sieving for 5 – 10 gram for analysis.
	<ul> <li>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</li> </ul>	A limited QAQC control procedure was applied to this project. No Blanks or Certified Reference Material was used. However, duplicate analysis was carried out.
	<ul> <li>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.</li> </ul>	88 samples were selected by GFN for LOI comparison with XRD. A further 60 samples were selected by SRK for duplicate analysis. The samples were analysed both internally and externally by XRD, DLOI, and LOI in BATAN

Criteria	JORC Code explanation	Commentary
		Jakarta, Unpad-BATAN Bandung, and Inspectorate laboratory.
	<ul> <li>Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	The graphite flaky size across the type of mineralisation was observed generally under 50 micron in size. 1 m sampling interval from diamond core is considered appropriate for the general nature of the TGC mineralisation.
Quality of assay data and laboratory tests	<ul> <li>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> </ul>	All samples were analysed by standard XRD and using software analysis "Material Analysis Using Diffraction" (MAUD) and mineral references from American Mineralogist Crystal Structure Database (AMCSD). DLOI was
	<ul> <li>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.</li> </ul>	conducted using the guidelines of KHD Humbolt Wedag method.
	<ul> <li>Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.</li> </ul>	
	<ul> <li>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.</li> </ul>	Groundmagnetic and Dipole-dipole resistivity surveys were carried out across the concession PT.TST between September – November 2012. Energy-dispersive X-ray Spectroscopy was used to qualitatively identify TGC mineralisation
	<ul> <li>Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.</li> </ul>	No systematic quality control procedure has been applied, but the repeat test on 60 samples resulted in poor precision by the Internal laboratory. Therefore, the levels of accuracy and precision are not deemed acceptable and have been taken in to account for classification purposes
Verification of sampling and	The verification of significant intersections by either independent or alternative company personnel.	Graphite type and style of mineralisation has been reviewed by Dr Louis Bucci, a Competent Person and Director of SRK.
assaying	The use of twinned holes.	Twinned drill holes have not been used as a sample validation method to date.
	<ul> <li>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> </ul>	There are some preliminary data regarding preliminary drilling, outcrops record and some geophysical documentation, but no protocol nor SOP's.
	Discuss any adjustment to assay data.	No adjustments have been made to assay data.
Location of data points	<ul> <li>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.</li> </ul>	Drillhole collar location determined by total station. No random check survey validation or audit was conducted. No downhole survey conducted for inclined drill holes.
	Specification of the grid system used.	Drill holes collars are recorded in WGS 1984 UTM Zone 49 Northern

Criteria		JORC Code explanation	Commentary
			Hemisphere coordinates.
	<ul> <li>Quality a</li> </ul>	and adequacy of topographic control.	The deposit is located in hilly terrain. Initial topography derived from collars with the closest land national surveyor benchmark point of Balai Sebut village. A further 960 topographic survey points were also obtained
Data spacing and distribution	Data spa	acing for reporting of Exploration Results.	The deposit was drilled in fence spacing of 50 m with distance of about 60 m along strike. Downhole sampling was undertaken mainly at 1 m interval. The data spacing is deemed reasonable.
	the degr Mineral I classifica	the data spacing and distribution is sufficient to establish ee of geological and grade continuity appropriate for the Resource and Ore Reserve estimation procedure(s) and ations applied. sample compositing has been applied.	The data spacing and distribution is sufficient to establish geology and grade continuity to a degree appropriate for estimation procedures used for an Inferred classification. Some doubts remain regarding very thin 0.2m samples of high grade creating some bias in the final estimation. Sample compositing at 1m was applied.
Orientation of data in relation to geological structure	possible	the orientation of sampling achieves unbiased sampling of structures and the extent to which this is known, ing the deposit type.	Drillholes predominantly dip 50° to the east. The dominant style of mineralisation within the deposit is dipping westward. The dip of layers is steepest within least competent lithologies. This change in dip may result in non-optimum drill angle to mineralisation dip and giving an apparent thickness greater than true thickness.
	orientatio	ationship between the drilling orientation and the on of key mineralised structures is considered to have ed a sampling bias, this should be assessed and reported if	Given the current understanding of mineral orientation within the deposit, it is unlikely the drill hole orientation has introduced any significant sample bias.
Sample security	The mea	sures taken to ensure sample security.	Field samples were delivered by GFN personnel to the city of Pontianak then on by courier to the company's Jakarta office for further delivery to the laboratory.
Audits or reviews	The results of any audits or reviews of sampling techniques and data.		An induction to sampling techniques was conducting during the site visit in March 2013, and in May 2013 for the second visit to ensure implementation. Sample data was reviewed and sampling procedure were found to be appropriate for the style of mineralisation and of industry standard.
Section 2 Repo	rting of Exp	loration Results	
Criteria		JORC Code explanation	Commentary
Mineral tenement and status	land tenure	<ul> <li>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</li> </ul>	The Balai Sebut Prospect is contained entirely within the Exploitation Business Permit No. 412/2013 of Sanggau District authority.

Criteria	JORC Code explanation	Commentary
	settings.	
	<ul> <li>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.</li> </ul>	The tenement appears to be in good standing with no known impediments.
Exploration done by other parties	<ul> <li>Acknowledgment and appraisal of exploration by other parties.</li> </ul>	No previous exploration, materially relevant to the current Mineral Resource Estimation, has been conducted within permit No. 412/2013
Geology	<ul> <li>Deposit type, geological setting and style of mineralisation.</li> </ul>	Mineralisation at the Balai Sebut deposit is of graphite, and is associated with low-medium metamorphism and some local volcanic intrusion of dyke and sills. Mineralisation occurs within a series of turbiditic sedimentary sequences that has been titled and faulted. 3D modelling of drilling to date indicates the mineralisation occurs within 450 m by 500 m (South Block tenement) with potential extension to the north of the tenement by approximate equal dimension.
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 drillholes:     easting and northing of the drillhole collar     elevation or RL (Reduced Level – elevation above sea level in metres) of the drillhole collar     dip and azimuth of the hole     downhole length and interception depth     hole length.	Summary data for all drill hole collars are listed in Appendix B. The drilling consists of 14 inclined (50 <sup>9</sup> ) holes toward the east, the rest being vertical.
	<ul> <li>If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not defract from the understanding of the report, the Competent Person should clearly explain why this is the case.</li> </ul>	No information was excluded.
Data aggregation methods	<ul> <li>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.</li> <li>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</li> </ul>	Top cuts were applied due to some isolated very high values having an unreasonable impact on the total resource (i.e. both ID2 and Kriging block estimates were producing block means much higher than the original composites. Also, it was creating a number of very high block estimates. Therefore a top cut of 38% and 35% were applied to both South and North domains at a distance greater than 10m.

Criteria	JORC Code explanation	Commentary
	aggregations should be shown in detail.	
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	
Relationship between mineralisation widths and intercept	<ul> <li>These relationships are particularly important in the reporting of Exploration Results.</li> </ul>	The mineralisation had a general north strike with moderate to very steep dips to the west, depending on the competence of the lithology.
lengths	If the geometry of the mineralisation with respect to the drillhole angle is known, its nature should be	The drilling of vertical holes was inappropriate to the dip of mineralisation, and was ceased immediately on our recommendation
	reported.	Due to the variability of dip, true thickness is not known. Calculating a true thickness with a dip of 55° was conducted, but deemed too general for stating
	<ul> <li>If it is not known and only the downhole lengths are reported, there should be a clear statement to this</li> </ul>	true thickness.
	effect (e.g. 'down hole length, true width not known').	Reported intercepts are down hole length.
Diagrams	Appropriate maps and sections (with scales) and     the definition of the scale of the scal	See:
	tabulations of intercepts should be included for any significant discovery being reported These should	Section 4 – Quantity and Quality of Data; and, Section 5 – Geological and Mineralisation Modelling
	include, but not be limited to a plan view of drillhole collar locations and appropriate sectional views.	
Balanced reporting	Where comprehensive reporting of all Exploration	All exploration drilling results have been reported.
	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.	
Other substantive exploration data	<ul> <li>Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results;</li> </ul>	Geological mapping has recorded all observations including trenching. Geological logging of drillholes indicates mineralisation commences from the collar and downward.
	geochemical survey results; bulk samples - size and	Groundmagnetic and dipole-dipole resistivity surveys were carried out across
	method of treatment; metallurgical test results; bulk density, groundwater, geolechnical and rock characteristics; potential deleterious or contaminating substances.	the concession PT.TST between September – November 2012
Further work	<ul> <li>The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).</li> </ul>	There is no further drilling planned.
	<ul> <li>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</li> </ul>	

Criteria	JORC Code explanation	Commentary		
interpretation	interpretation of the mineral deposit.	and consensus between the reviewers is good, providing a confidence of overall rock types and mineralisation.		
	Nature of the data used and of any assumptions made.	Geological interpretation of the deposit is based on combined information from the outcrops, drilling, images processing of ground magnetics, 3D resistivity modelling, and petrological examination of diamond drill core. The high magnetic signature is interpreted as correspondent to volcanic rock and the high resistivity is interpreted as graphite rich lithologies.		
	The effect, if any, of alternative interpretations on Mineral Resource estimation.	The graphite rich lode was originally interpreted as being associated with phyllite sequences. However, based on the XRD results, this was widened to also include schist and slate.		
	The use of geology in guiding and controlling Mineral Resource estimation.	The main geological units were interpreted from the lithology logs including faults and igneous intrusions. The main units are then assigned as "Ore" bearing or "Waste" in GEMS software. These main domains represent hard boundaries.		
		Grade was then also used to further sub-domain the main graphite rich layers within the sequence, and the boundaries are also considered to be hard. See Section 5.1 – Geology Model.		
	The factors affecting continuity both of grade and geology.	Graphite flake size is an obvious factor that controls continuity of the grade, but this was not systematically logged. The geology is structurally complex and this disruption by folding, faulting and pre-intrusion are most likely the biggest factors affecting the continuity of grade.		
Dimensions	The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below	The minimum and maximum extents of the Mineral Resource are given below:		
	surface to the upper and lower limits of the Mineral Resource.	Min Max		
		x 480850 50580		
		Y 50580 51230		
		Z -35 90		
		Expressing the dimensions in terms of thickness, strike length and dip extent is predominantly nearly north-south strike direction and dip direction toward the west.		
Estimation and modelling techniques	<ul> <li>The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum</li> </ul>	Graphite was estimated within sub-domains of the host lithologies. Domain modelling was done using GEMS software. A major fault runs across the area from west to east, and the graphitic		

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	distance of extrapolation from data points. If a computer assisted estimation method was chosen, include a description of computer software and parameters used.	lodes north of this structure display a 5 to 15° clockwise swing. Therefore, the sub-domains were grouped and assigned to spatial domains: North and South of the fault structure.
		The sampled intervals varied in length so a "best-fit" option in GEMS was selected to composite the lengths to 1m.
		The wireframes were constrained to no more than 50m from nearest drillhole intercept, and limited at depth to -50m RL.
		The data was then imported in to the Isatis software package for variogram modelling and geostatistical estimation. Block grades for TGC were estimated by Ordinary Kriging from the 1m composites.
	<ul> <li>The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.</li> </ul>	ID2 interpolation was carried out in order to check the kriged estimates
	The assumptions made regarding recovery of by-products.	No assumptions made.
	<ul> <li>Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation).</li> </ul>	No estimation of deleterious elements were made at this stage. But for the next stage, sulphur needs to be accounted for due to issues of acid mine drainage as observed during site visit.
	<ul> <li>In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.</li> </ul>	The drill spacing typically ranges from 50 to 60m. A block size of 5m (east) by 20m (north) by 10m (depth), and limited to -30m RL, was utilised. In each estimation domain, the orientation of the search ellipsoid was set to match the overall geometry of the domain. A number of search neighbourhoods were tested based on the geology, the direction of greatest, intermediate and minimum grade continuity, and on Slope of Regression and number of samples used for each block estimation.
		The final estimation was carried out by two search passes.
		The first pass has the following parameters: Length in principal direction of grade continuity: 100m
		Length in intermediate direction of grade continuity: 50m
		Length of least direction of grade continuity: 20m
		The second estimation to capture those blocks missed by the first pass has the following parameters:
		Length in principal direction of grade continuity: 350
		Length in intermediate direction of grade continuity: 200m
		Length of least direction of grade continuity: 60m
		For both passes, the ellipses consists of 4 sectors with minimum 2 samples

Criteria	JORC Code explanation	Commentary
		and optimum samples per sector of 16.
	Any assumptions behind modelling of selective mining units.	Two different directions were used: 290° and 270° at dip of 60° for the
		North and South domains respectively.
	Any assumptions about correlation between variables.	No assumptions of SMU are made at this stage
	<ul> <li>Description of how the geological interpretation was used to control the resource estimates.</li> </ul>	No assumptions made about correlation between variables
	<ul> <li>Discussion of basis for using or not using grade cutting or capping.</li> </ul>	Blocks that intersected the sub-domain boundaries were used for the interpolation only.
	The process of validation, the checking process used, the	Grade capping and restrictions on the influence of extreme values were based on detailed examination of the high grade tails of the TGC histogram plots. Top cuts were applied at 38 and 35% for the North and South domains respectively
	comparison of model data to drillhole data, and use of reconciliation data if available.	The model was validated by visual and statistical checks of the estimated blocks against the drill hole data. The statistical checks included for each domain, comparisons of mean block grades against mean declustered composite grades. Swath plots showing block and composite mean grades within northing and elevation slices were also prepared during the validation process.
		A Global Change of Support was also conducted to measure the smoothing effect.
		For comparison purposes, an Inverse Distance Powered Squared interpolation was also done using the same parameters as Ordinary Knging.
		No reconciliation data is available.
Moisture	<ul> <li>Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.</li> </ul>	The tonnages are estimated on a dry basis. No determination of moisture content has been made.
Cut-off parameters	The basis of the adopted cut-off grade(s) or quality parameters applied.	An arbitrary cutoff grade of 4% was used for converting grade to tonnage for resource estimation. This is based on similar deposits in Canada (NI 43-101 Instrument).
Mining factors or	Assumptions made regarding possible mining methods, minimum	Given the grade and form of the deposit, open pit mining is the expected

Criteria	JORC Code explanation	Commentary
assumptions	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.	method. No further assumptions have been made about the details of the mining methods.
Metallurgical factors or assumptions	<ul> <li>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.</li> </ul>	At present, no metallurgical details have been provided and no assumptions made.
Environmental 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 have not been considered this should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	No assumptions have been made.
Bulk density	<ul> <li>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.</li> </ul>	The measured density was determined by using the immersion method for the DD samples. Measurements of various lithologies were obtained from 7 holes. This number was considered insufficient for representation of all the main rock types. Therefore, a mean density for the host lithologies was assumed (2.31 g/m <sup>3</sup> ).
	<ul> <li>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.</li> </ul>	The immersion method was used to measure the density, by considering the inherent voids.
	<ul> <li>Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.</li> </ul>	Not applicable, bulk density was not estimated as a variable.

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Classification	<ul> <li>The basis for the classification of the Mineral Resources into varying confidence categories.</li> </ul>	The Mineral Resource is classified as Inferred. The low confidence is due to lack of proper QAQC programme, and the poor precision of the XRD duplicates conducted by the primary laboratory. the repeatability of the assays is poor, implying a low level of confidence in the results
	<ul> <li>Whether appropriate account has been taken of all relevant factors (i.e. 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).</li> </ul>	Appropriate account has been taken of all relevant factors.
	Whether the result appropriately reflects the Competent Person's view of the deposit.	The result appropriately reflect the Competent Person's view of the deposit.
Audits or reviews	<ul> <li>The results of any audits or reviews of Mineral Resource estimates.</li> </ul>	No audits or reviews have been done of this Mineral Resource Estimate.
Discussion of relative accuracy/ confidence	<ul> <li>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.</li> </ul>	The Inferred classification assigned to the estimation is considered sufficient to represent the relative accuracy/confidence. No quantitative analysis of confidence limits has been undertaken.
	<ul> <li>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.</li> </ul>	The statement relates to global estimates.
	<ul> <li>These statements of relative accuracy and confidence of the estimate should be compared with production data, where available</li> </ul>	No production data are available