

31 March 2017

ASX ANNOUNCEMENT

## EPANKO MINERAL RESOURCE UPGRADE

### 40% increase in contained graphite plus high value extensional targets identified

Kibaran Resources (ASX:KNL) is pleased to report an upgraded Mineral Resource estimate for its Epanko Graphite Project in Tanzania. The upgraded Mineral Resource delivers a significant 40% increase over the Mineral Resource estimate previously announced in 2015.

The upgraded Mineral Resource estimate incorporates infill and extensional drilling completed in 2016 and geo-technical inputs generated as part of the updated base case Bankable Feasibility Study ('BFS') of 40,000 tonnes per annum over a 25 year LOM including a 60,000 tonnes per annum scenario.

The updated BFS is being completed to meet Equator Principles and the IFC Environmental and Social Performance Standards and currently subject to an independent technical review for Kibaran's funding partners (KfW IPEX-Bank and Nedbank) advanced due diligence.

The Mineral Resource is a significant increase from the previously announced Mineral Resource estimate in 2015.

#### Key Highlights

- 40% increase on the previous Mineral Resource to 30.7Mt at 9.9% Total Graphitic Grade ('TGC') for 3.05Mt contained graphite compared to the June 2015 estimate using a 8% TGC cut-off grade (consistent with the previous Mineral Resource of 23.3Mt at 9.4% TGC grade reported in June 2015)
- The increased Mineral Resource positions Kibaran to be a major baseload supplier of high value graphite products to traditional and emerging markets
- The upgraded Mineral Resource will support both a longer mine life and an expanded production case
- Of the 4km strike identified by the recent VTEM survey, only 1.13km has been drilled on the Western Deposit which remains open at depth with the deepest reported graphite intersection at 200m

The Mineral Resource estimate was carried out by CSA Global Pty Ltd ('CSA Global') and has been classified in accordance with the JORC (2012) Code and is shown in Table 1.

A revised mine plan and Ore Reserve for both the 40,000tpa and 60,000tpa concentrate scenarios will be completed and incorporated in the updated BFS in April.

**Table 1: March 2017 - Mineral Resource Estimate for Epanko Deposit > 8% TGC**

JORC Classification	Tonnage (Mt)	Grade (% TGC)	Contained Graphite (t)
Measured	7.5	9.8	738,900
Indicated	12.8	10.0	1,280,000
Inferred	10.4	9.9	1,030,600
<b>Total</b>	<b>30.7</b>	<b>9.9</b>	<b>3,049,500</b>

Notes for Table 1: Tonnage figures contained within Table 1 have been rounded to nearest 100,000. % TGC grades are rounded to 1 decimal figure. Abbreviations used: Mt = 1,000,000 tonnes. Rounding errors may occur in tables.

A substantial amount of graphite mineralisation exists within the reported Mineral Resource at lower TGC cut-off grade at 5% TGC as follows:

- 113.3Mt at 7.2 %TGC for 8.1Mt of contained graphite

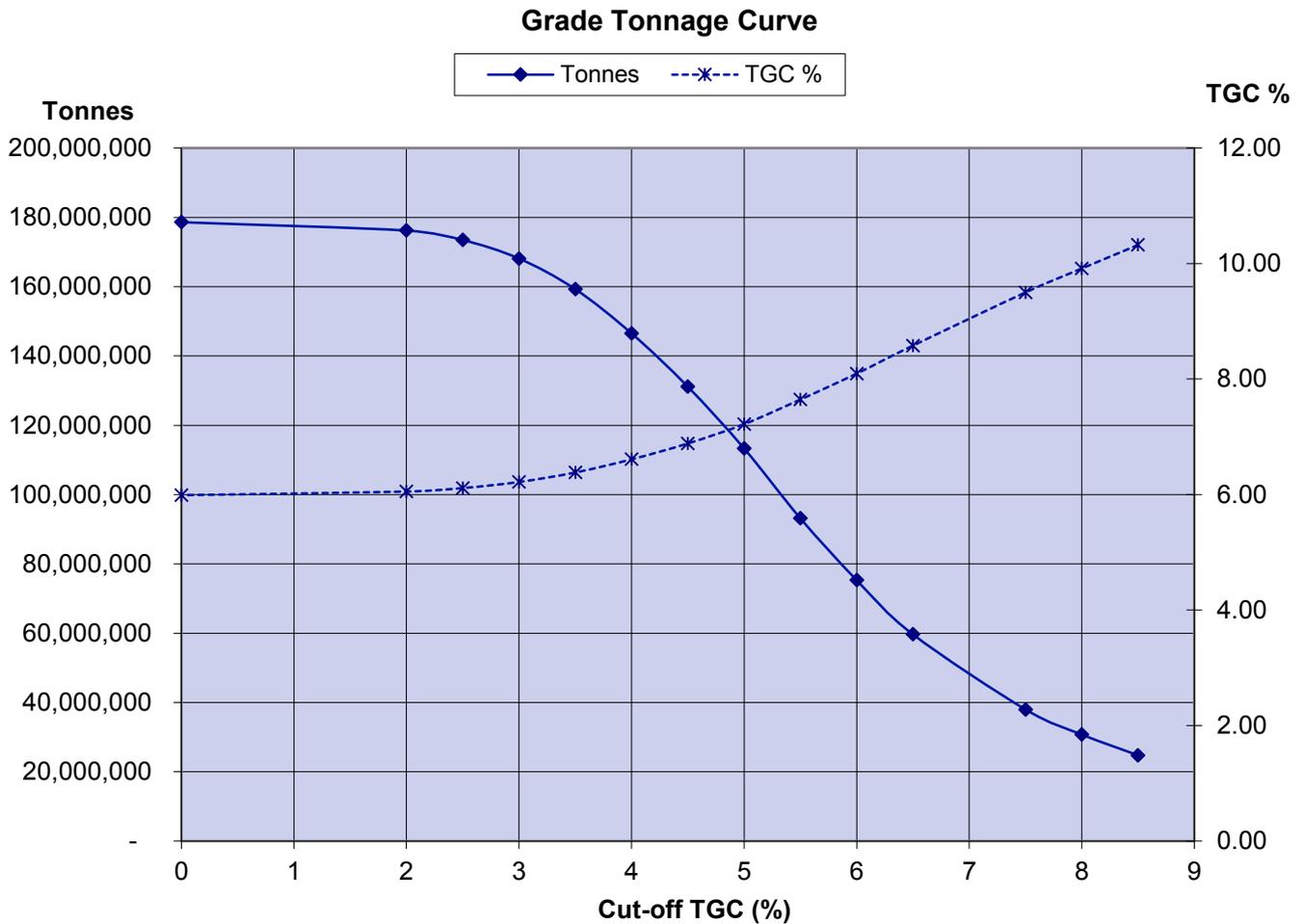


The Mineral Resource upgrade is based on the increased confidence in the geological model gained from results of extensive infill and extensional drilling and associated technical work as part of the upgraded and expanded BFS.

The Mineral Resource is wholly contained within a graphitic schist unit, with barren gneissic rock units in the hanging wall and footwall to the graphitic schist unit.

The grade-tonnage curve for the Mineral Resource estimate (Measured, Indicated and Inferred) is provided in Figure 1.

**Figure 1: Grade Tonnage Curve – Measured, Indicated and Inferred**



The geo-technical work included the benefits of recently completed geophysical surveys (VTEM and Magnetic) and detailed review of the Epanko mineralogy.

The 7,734m drilling campaign completed in 2016 confirmed both the continuity of graphitic mineralisation within the June 2015 resource envelope and allowed the new resource envelope to be extended 500m to the south in the Western Zone (refer to Figure 2).

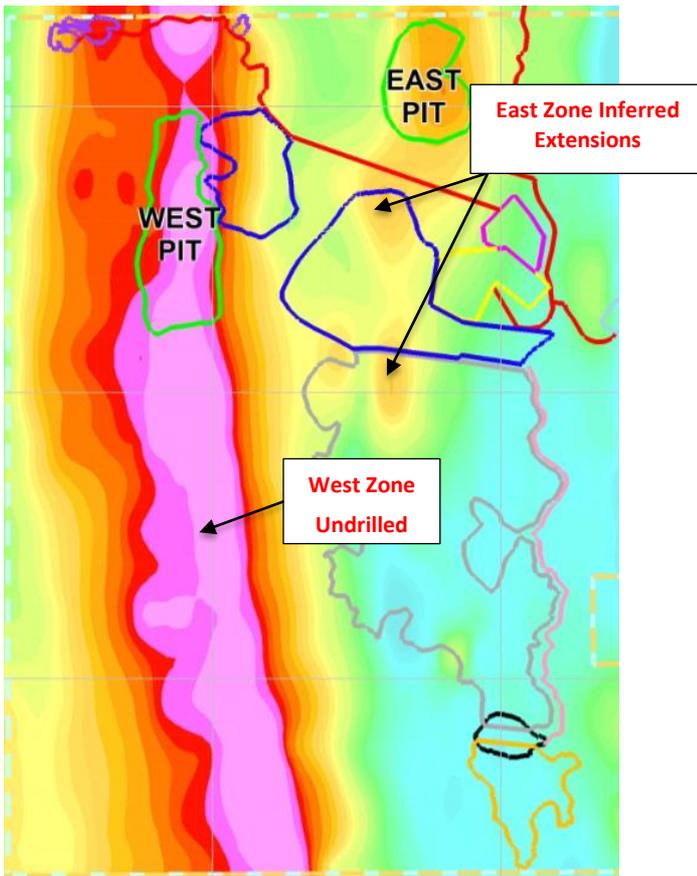
All results from the 2016 infill and extension drilling campaign have been incorporated within the updated Mineral Resource estimate. A summary of significant assay intersections from the remaining 23 holes are given in Table 1 based on using an 8% TGC cut-off, a minimum interval length of 2m and allowing up to 2m of internal waste.

Of the 4km strike identified at the Western Zone by the VTEM survey, only 1.13km has been drilled on the Western Deposit which remains open at depth with the deepest reported graphite intersection at 200m.

The high conductivity identified in the VTEM survey highlighting the potential for the delineation of additional mineral resources along strike and at depth in the Western Zone and along strike in the Eastern Zone.

The Western Zone currently accounts for approximately 55% of the current mineral resource but has potential to supply significant tonnages of additional graphite mineralisation if required.

**Figure 2:** Central Conductive High over the Western Zone with subtle conductivity over Extensions to Epanko East



**Figure 3:** Porphyroblastic Scapolite “Cheetah” Rock



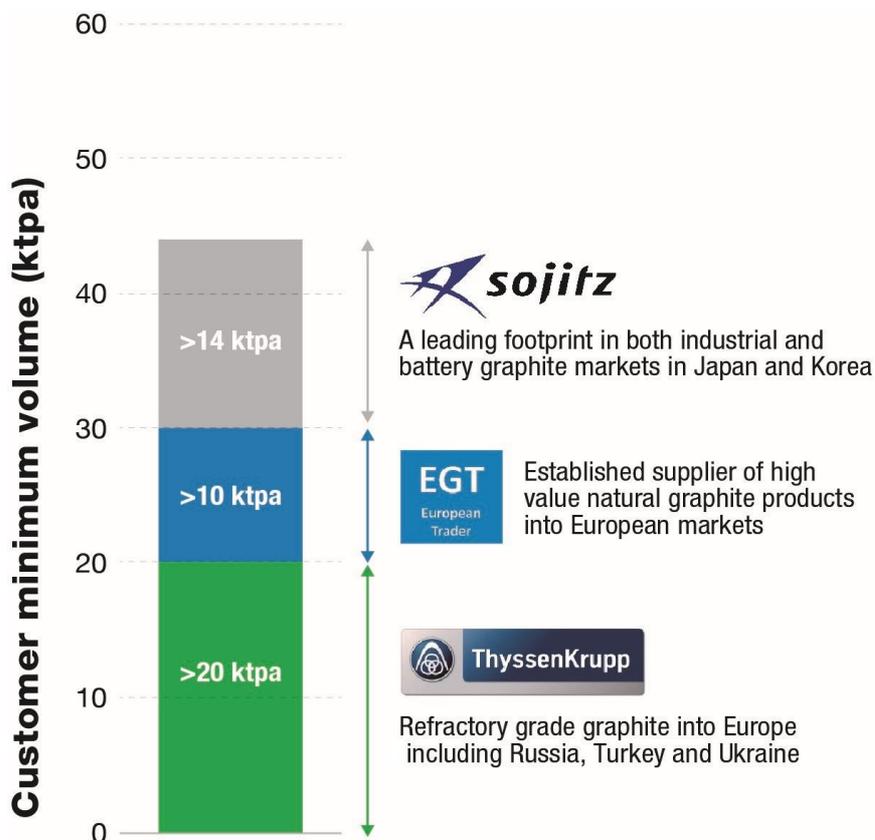
### Clause 49, JORC Code Consideration

In accordance with Clause 49 of the JORC Code (2012), the product specifications and general product marketability were considered to support the Mineral Resource estimate for Industrial Minerals by CSA Global.

The graphite concentrate is amenable to standard metallurgical recovery processes and metallurgical characteristics are considered to provide Epanko with significant competitive and commercial advantages (refer announcement 23 July 2015). Recent testwork reported has confirmed the graphite mineralisation is suitable for the 'expanded' and 'spherical' battery market.

Kibaran has secured binding offtake and sales agreements for 100% of its base case production with three leading graphite market participants across traditional and emerging battery markets. Figure 4 summarises the agreements.

**Figure 4: Sales and Offtake Agreements secured by Kibaran**



## MINERAL RESOURCE ESTIMATE

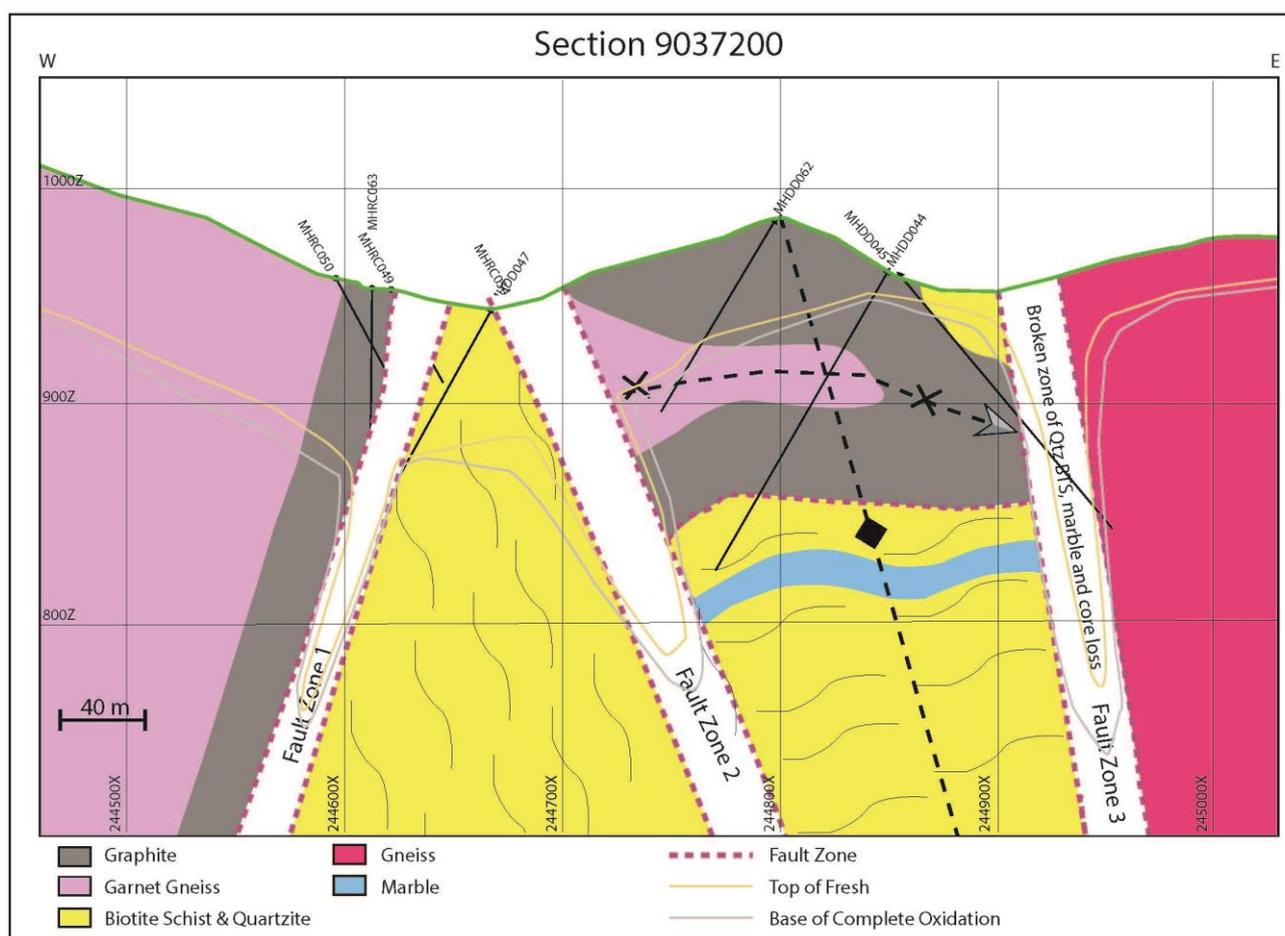
### Epanko Geological Background and Interpretation

The Epanko Deposit is located within neoproterozoic high grade mafic and felsic granulites, gneiss and migmatites, interlayered with amphibolites, marble quartzite, schist and mylonite. Epanko host rocks consist of biotite-carbonate-graphite schists, with gneiss, marble and late quartz-feldspar-carbonate veining forming the footwall and hanging wall to the graphitic schist unit. The gneiss is the dominant unit within the prospect, consisting of amphibole, biotite and carbonate with trace graphite in places.

A dolomitic marble is located in the footwall of the mineralisation, to the east of the Eastern Zone. The footwall of the mineralisation-bearing host rock is a biotite-carbonate-graphite schist, occasionally containing significant quantities of graphite. The mineralisation is hosted within a graphitic schist, which is dominantly light grey, and in places porphyroblastic (Cheetah rock), strongly brecciated and dark coloured. Coarse flake graphite has been observed within the graphitic schist. The host rocks generally strike in a northerly direction, with varying east and west dips.

A geological fact map was used to control the strike and dip of the mineralisation interpretations. The Western Zone is interpreted to have a northerly strike and in part is overturned with steep westerly and easterly dips. The Eastern Zone is interpreted as a recumbent fold which has been refolded and has a moderate plunge to the south west (Figure 5). In section the flat limbs of the fold have a shallow dip to the west. The mineralisation domains were modelled using the orientation of the host stratigraphy to guide the geological interpretation.

**Figure 5: Cross Section 9037200N through the Epanko East Deposit**



The TGC interpretations were based upon a lower cut-off of 5% TGC, geological interpretations of mineralised outcrop and trenches, and logging of diamond drill core and RC chips. The TGC domain is coincident with the graphitic schist domain. The Mineral Resource model consists of three zones of TGC mineralisation, with a single zone in the Western Lode and two zones in the Eastern Lode (the recumbent fold and a separate sub-vertical zone). Mineralisation domains were encapsulated by means of 3D wireframed envelopes. Domains were extrapolated along strike to half a section spacing or if a barren hole cut the plunge extension before this limit.

### Mineralogy and Metamorphism

A detailed mineralogical study of the Epanko rocks in order to determine the timing of mineralisation and key metamorphic events was completed by CSIRO (Perth).

CSIRO has confirmed the graphitic rock has undergone extreme metamorphism with the mineralogy consisting predominantly of calc silicates. At Epanko scapolite (a calc silicate mineral) forms porphyroblastic aggregates which give the rocks a “cheetah” like texture as shown in Figure 3.

The commercial benefit of this favourable mineralogy is an easily liberated graphite concentrate from a low cost simple process that is saleable graphite without further processing steps. Other key benefits include:

- High percentage of large flake and higher carbon grade
- Low levels of in-situ deleterious elements

The degree of metamorphism determines the graphite crystallinity and it is important to recognise this provides its physical and industrial properties.

A favourable mineralogy ultimately determines recovery and quality which drives strong project economics.



## **Drilling Techniques**

The Mineral Resource estimate is based upon results derived from diamond drilling (triple tubed HQ diameter core), RC drilling and trenching.

## **Sampling and Sub-sampling Techniques**

Diamond core (if competent) was cut using a core saw. Where the material was too soft it was left in the tray and a knife was used to quarter the core for sampling. Trenches were sampled at 0.5m intervals, these intervals were speared and submitted for analysis. RC samples were collected by a riffle splitter using a face sampling hammer with a diameter of approximately 140mm. All samples were bagged and ticketed with unique sample numbers.

Drill samples were sent to the SGS Laboratory at Mwanza (Tanzania) for sample preparation, with the pulps sent to SGS Johannesburg for assaying. All samples were crushed using an LM2 mill to -4mm and pulverised to a nominal 80% passing -75  $\mu\text{m}$ .

## **Sample Analysis**

Total carbon is measured using LECO technique. The sample is combusted in the oxygen atmosphere and IR used to measure the amount of  $\text{CO}_2$  produced. Calibration of the LECO instrument is completed by using certified reference materials.

For the analysis of TGC, a 0.3g sample is weighed and roasted at 550°C to remove any organic carbon. The sample is then heated with diluted hydrochloric acid to remove carbonates. After cooling the sample is filtered and the residue rinsed and dried at 75°C prior to analysis by the LECO instrument. LECO analysis are completed by total combustion of sample in the oxygen atmosphere and using IR absorption from the resulting  $\text{CO}_2$  produced.

## **Estimation Methodology**

A block model with parent cell sizes of 10m (Easting) by 25m (Northing) by 20m (vertical) was constructed, compared to the typical drill spacing of 20m x 50m within the Measured and Indicated volumes.

Grade estimation was by ordinary kriging with inverse distance squared estimation run concurrently as a check estimate. A minimum of 4 and maximum of 12 composited samples were used in any one block estimate. A maximum of 5 composited samples per drill hole were used in any one block estimate. Cell Discretisation of 5 by 5 by 5 was used. Grade interpolation was run with hard boundaries between the individual mineralisation domains (for Epanko East), and with the Base of Complete Oxidation surface acting as a hard grade interpolation boundary within the domains.

All drill hole data (RC and diamond) and trench assays were utilised in the grade interpolation. A Quality Assurance study of the RC drilling coupled with a due diligence and twin drilling (diamond core) programme confirmed the RC drill holes could be used with the diamond core samples as part of the grade interpolation. A statistical study of the trench assay data demonstrated a slightly higher grade TGC population to the conventional drilling sample assay results, and a decision was made to limit the influence of the trench sample data to the Oxide weathering zone.

Density values of 1.92  $\text{t/m}^3$ , 2.33  $\text{t/m}^3$  and 2.84  $\text{t/m}^3$  were applied to the oxide, transitional and fresh weathering domains respectively for the Mineral Resource located in the Western Zone. Density values of 1.76  $\text{t/m}^3$ , 2.43  $\text{t/m}^3$  and 2.79  $\text{t/m}^3$  were applied to the oxide, transitional and fresh weathering domains respectively for the graphitic schist domain in the Eastern Zone.

## **Mineral Resource Classification**

Classification of the Mineral Resource estimates was carried out taking into account the geological understanding of the deposit, quality of the sample data, quality of the local block estimates, quality of density data, and drill hole spacing. Metallurgical results related to flake size and sample purity, as well as marketing agreements in place supported the classification, as per Clause 49 (JORC 2012).



Figure 5: Long Section through the Western Zone showing the Measured, Indicated and Inferred Resource Blocks

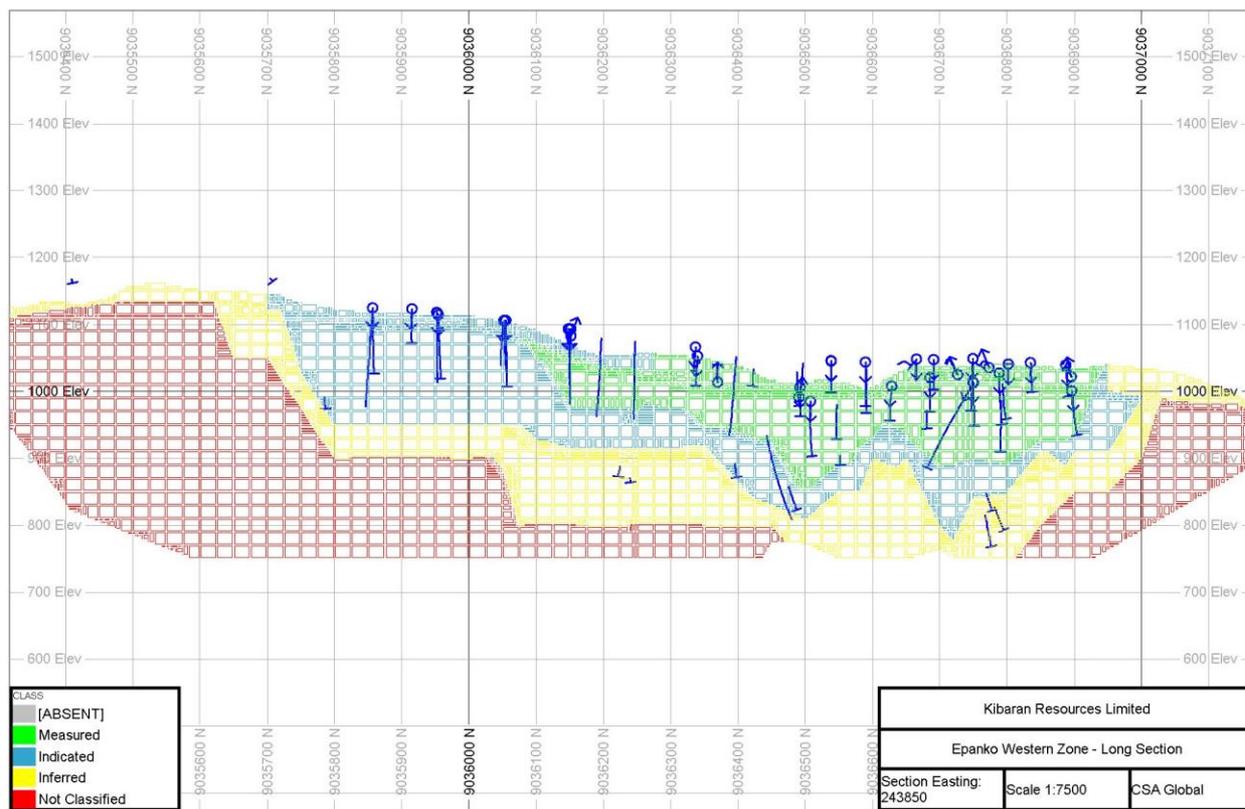
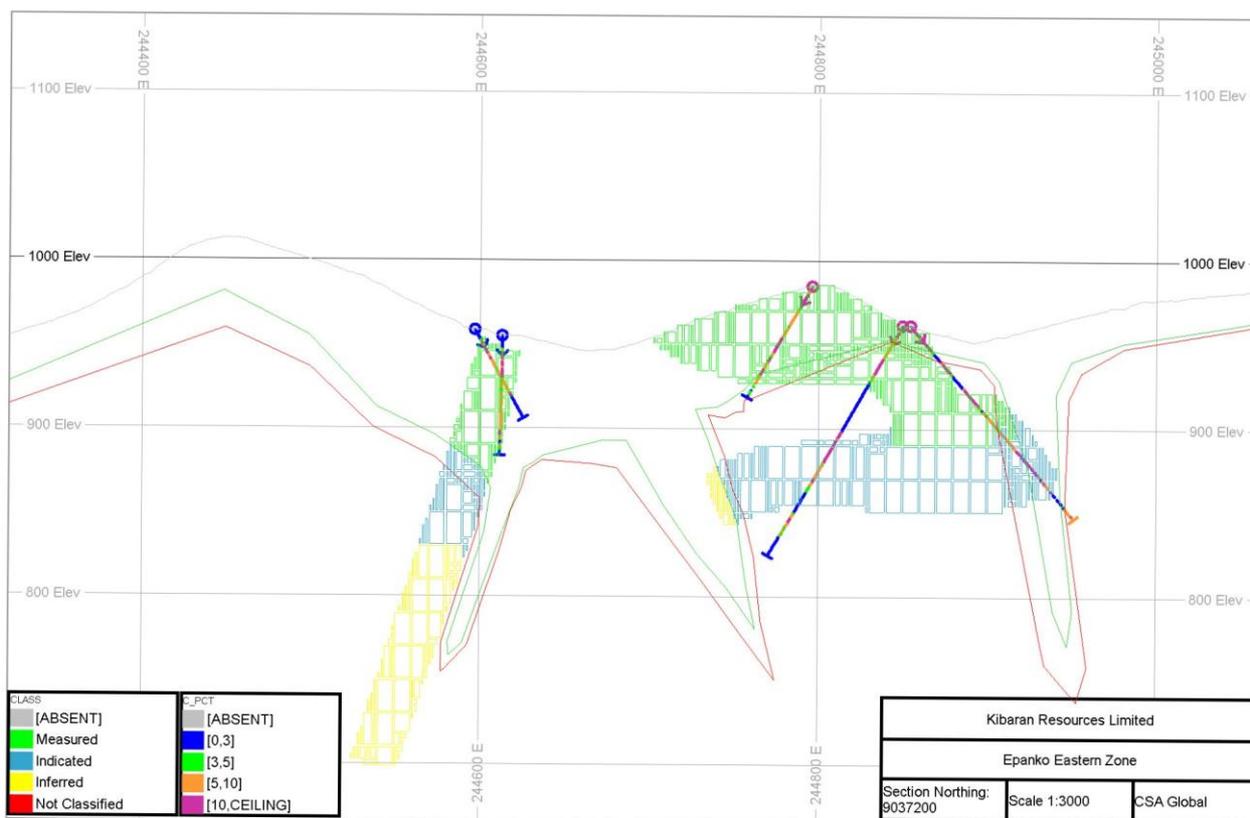


Figure 6: Cross section 9036500 through the Western Deposit showing Measured, Indicated and Inferred Resource Blocks





**Figure 7:** Cross section 9037200 through the East Deposit showing Measured, Indicated and Inferred Resource Blocks



The Mineral Resource is classified as Measured, Indicated and Inferred, with geological evidence sufficient to confirm geological and grade (and quality) continuity within the Measured volumes, between points of observation where data and samples are gathered. The Indicated classification level was applied to the volumes where geological evidence is sufficient to assume geological, grade and quality continuity. The Inferred classification level was applied to the volumes where geological evidence is sufficient to imply but not verify geological, grade and quality continuity.

Mineral Resource classification was carried out by stepping through both the West and East models, and creating 3D wireframe surfaces constraining the resource classification levels (Western Zone) or by applying northing and easting limits (Eastern Zone). Weathering profiles also controlled the classification, with the oxide weathering zone generally classified at the same or higher level to the adjacent blocks in transitional and fresh zones, due to high confidence in the geological continuity of graphitic schist as observed in outcrop and from trench data.

A reporting cut-off grade of 8% TGC was previously used to report the Mineral Resource.

The Competent Person (Mineral Resources) and Kibaran are of the opinion that there are reasonable prospects for eventual economic extraction for the Epanko Graphite Project.

The project is now at an advanced stage of study, with mining approvals, environmental studies, landholder agreements (in negotiation) all supporting the eventual extraction of ore from the project. The deposit outcrops at surface on two hills providing low strip ratios which enhance the project economics. Metallurgical studies have confirmed that Epanko graphite is of high purity and >75% of the product is >150microns (100mesh) with large flake constituting >50% of the product.

Due to the excellent metallurgical characteristics offtake agreements have been established with major, blue-chip graphite consumers and suppliers.

Ore will be transported by road to Dar es Salaam for shipment to European and Asian markets. A new road bridge has been completed across the Kilombero River in Tanzania with approach roads scheduled for completion in the near future. This bridge will significantly decrease the haulage time and costs to Dar es Salaam port.



**Table 2: Summary of Significant Drill Intersection completed during the quarter on Western and Eastern Zones showing significant total graphitic carbon (“TGC”) intervals\*.**

WESTERN										
Hole Type	Hole ID	Easting	Northing	Azimuth	Dip	From (m)	To (m)	Interval	TGC%	
DD	MHDD042	243839.189	9036052.821	90	-50	54.87	62.45	7.58	10.3	
							145.7	162	16.3	12.3
							165	167.57	2.57	10.4
							175.4	185	9.6	9.9
							189.39	195.8	6.41	9.2
							204.2	207.68	3.48	11.4
							209.75	212	2.25	10.2
	MHDD045	243862.626	9035952.611	270	-60	6.85	9	2.15	9.6	
							59.58	62	2.42	10.0
							74.53	93.7	19.17	9.9
	MHDD046	243864.609	9035953.098	90	-50	3.8	6.4	2.6	10.1	
							15.8	20.3	4.5	14.3
							99	161.38	62.38	11.9
							192	197.3	5.3	9.6
							200.08	203	2.92	9.6
	MHDD048	243887.448	9035857.213	90	-50	27	29	2	9.5	
							29.3	33.2	3.9	11.0
							33.8	45	11.2	9.7
							137.9	153.84	15.94	9.7
							161.66	164.48	2.82	9.5
	MHDD051	243886.309	9035857.254	270	-60	11.3	17	5.7	9.7	
							17.3	21.25	3.95	13.0
							21.55	27.6	6.05	11.3
							105.47	108.33	2.86	8.1
							116	123.39	7.39	8.5
							134	138.84	4.84	9.6
							141.72	153.72	12	9.5
	MHDD053	243886.854	9035857.309	270	-80	36.49	52.8	16.31	9.5	
							63	77	14	10.8
	MHDD054	243839.229	9036055.017	270	-80	5.4	8.2	2.8	9.5	
							61	73.08	12.08	13.0
							92.25	99	6.75	11.4
	MHDD056	243840.472	9036051.837	45	-60	1	4.5	3.5	9.4	
					35.5	37.5	2	8.2		
					102.3	106.15	3.85	10.7		
					122.77	132.5	9.73	10.7		



	MHDD057	243863.525	9035954.577	270	80	6	10	4	8.9
						79	82	3	9.3
						97	100.05	3.05	12.2
	MHDD058	243801.559	9036152.193	270	80	0	2.7	2.7	12.1
						3	5.2	2.2	16.2
						36.73	44.48	7.75	9.1
	MHDD059	243794.577	9036195.321	270	80	3.9	9.6	5.7	11.3
						11.4	15.3	3.9	15.5
						22.82	26.85	4.03	8.1
	MHDD060	243897.153	9036750.683	225	50	6.9	9.6	2.7	13.8
						9.9	12.5	2.6	13.8
						18.9	21.6	2.7	9.7
						32.08	48.69	16.61	9.6
						50.75	55.97	5.22	8.8
						77.29	79.44	2.15	8.0
						106.39	108.9	2.51	9.4
	MHDD061	243794.957	9036246.294	270	80	2.4	5.1	2.7	12.9
						6.9	9.4	2.5	13.2
						15	18	3	8.1
						20.8	27.17	6.37	10.4
				29	35.47	6.47	11.2		
				35.9	44.42	8.52	8.7		
				44.58	51	6.42	9.6		
				54	56	2	8.7		



EASTERN									
Hole Type	Hole ID	Easting	Northing	Azimuth	Dip	From (m)	To (m)	Interval	TGC%
DD	MHDD038	244895.55	9037284.456	90	-50	1.5	7	5.5	8.0
						17	20	3	8.3
	MHDD039	244816.466	9037152.955	90	-50	18	26.87	8.87	11.3
						40.1	45.43	5.33	10.0
						45.71	48	2.29	8.5
						63.46	172	108.54	12.1
						199.65	202.4	2.75	8.4
					202.85	212.4	9.55	9.6	
	MHDD044	244850.057	9037203.187	270	-60	3.8	8	4.2	11.6
						9.8	35	25.2	11.3
						73	84.41	11.41	12.1
						84.68	97	12.32	10.8
						102.56	104.94	2.38	8.8
						105.25	109	3.75	9.9
					132	136.77	4.77	10.7	
	MHDD062	244796.601	9037203.151	270	-60	1.8	15.34	13.54	14.8
						36.3	39	2.7	11.7
	MHDD065	244713.084	9037082.126	270	-60	7.8	10.1	2.3	14.8
						15.3	17.5	2.2	13.5
						28.8	30.8	2	10.3
	MHDD066	244589.638	9037137.806	90	-80	31.8	34.5	2.7	11.7
						39.3	46.6	7.3	16.6
						51.3	54.3	3	12.2
						60	63.35	3.35	14.7
				64.5	69.05	4.55	9.0		
MHDD067	244873.2	9037232.85	90	-50	1.18	33.27	32.09	12.2	
					54.55	56.55	2	13.2	
RC	MHRC079	244859.791	9037278.113	270	-60	2	9	7	9.7
						13	37	24	9.4
						41	64	23	8.9
						72	74	2	8.9
					88	107	19	9.2	
	MHRC080	244821.781	9037230.589	90	-50	2	18	16	11.8
						21	46	25	10.9
						50	70	20	9.3
					74	80	6	8.5	
	MHWB006	244722.597	9037086.218	0	-90	5	16	11	9.7

\* Based on using an 8%TGC cut off, a minimum interval length of 2m and allowing up to 2m of internal waste.



### **Competent Person Statement**

The information in this report that relates to Exploration Results, Mineral Resources or Ore Reserves is based on information compiled by Mr Andrew Spinks, who is a Member of The Australasian Institute of Mining and Metallurgy included in a list promulgated by the ASX from time to time. Andrew Spinks is a director of Kibaran Resources Limited and has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which 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”. Andrew Spinks consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

The information in this Report that relates to Mineral Resources is based on information compiled by Mr David Williams, a Competent Person, who is a Member of The Australasian Institute of Mining and Metallurgy. Mr Williams is employed by CSA Global Pty Ltd, an independent consulting company. Mr Williams has sufficient experience, which is relevant to the style of mineralisation and type of deposit under consideration, and to the activity 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 Williams consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.



## 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
<b>Sampling techniques</b>	<ul style="list-style-type: none"> <li>• 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.</li> <li>• Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> <li>• Aspects of the determination of mineralisation that are Material to the Public Report.</li> <li>• 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.</li> </ul>	<p>The Epanko deposit was sampled by reverse circulation (RC) holes, diamond core drilling and trenching.</p> <p>Sampling is guided by Kibaran's protocols and quality assurance procedures. RC samples are collected by a riffle splitter using a face sampling hammer diameter approximately 140 mm.</p> <p>Diamond core (if competent) is cut using a core saw. Where the material is too soft it is left in the tray and a knife is used to quarter the core for sampling. ¼ core was collected over nominal 1 metre intervals, but with +/- variation to fit to lithological boundaries.</p> <p>Trenches were sampled at 1 m intervals. These intervals were speared and submitted for analyses.</p> <p>All samples were sent to Bureau Veritas laboratory in Rustenburg for preparation and LECO analyses. All samples are crushed using LM2 mill to -4 mm and pulverised to nominal 80% passing -75 µm.</p>
<b>Drilling techniques</b>	<ul style="list-style-type: none"> <li>• 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).</li> </ul>	<p>RC drilling holes were complete at a diameter of 5 ¼" using a face sampling hammer. All RC samples were collected dry and riffle split after passing through the cyclone.</p> <p>Diamond hole were drilled at PQ3 diameter for the broken, weathered zones, before reducing to HQ3 for the fresh, more competent. Where possible diamond core was orientated using a Ezi-Ori tool allowing orientated structural measurements to be taken</p> <p>Where terrain allowed, holes we designed to hit mineralisation orthogonally.</p>
<b>Drill sample recovery</b>	<ul style="list-style-type: none"> <li>• Method of recording and assessing core and chip sample recoveries and results assessed.</li> <li>• Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <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>	<p>The RC rig sampling systems are routinely cleaned to minimize the potential for contamination. Drilling methods are focused on sample quality. Diamond drilling (triple Tubed HQ diameter core) was used to maximise sample recovery when used.</p> <p>The selection of RC drilling company, having a water drilling background enables far greater control on any water present in the system; ensuring wet samples were kept to a minimum.</p> <p>RC and Diamond holes were all assessed for the quality of samples. This data was recorded for each interval in the logging template. Sample techniques were chosen to ensure the all remained highly representative of the parent interval, for example by using a 3-tier riffle splitter.</p> <p>Sample quality and recovery was recorded for all intervals. No relationship exists between sample recovery and grade.</p>
<b>Logging</b>	<ul style="list-style-type: none"> <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> <li>• Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</li> </ul>	<p>All RC holes were geologically logged using the detailed company template, based on industry standards. All diamond holes were geological and structurally logged using the same template in addition to geotechnical logging using a separate industry standard template. Logged data is both qualitative and quantitative depending on field being logged.</p>



Criteria	JORC Code explanation	Commentary
	<ul style="list-style-type: none"> <li>The total length and percentage of the relevant intersections logged.</li> </ul>	<p>Core photography was also captured for every tray of diamond core.</p>
<p><b>Sub-sampling techniques and sample preparation</b></p>	<ul style="list-style-type: none"> <li>If core, whether cut or sawn and whether quarter, half or all core taken.</li> <li>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</li> <li>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> <li>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</li> <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> <li>Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	<p>All RC holes were geologically logged using the detail company template, based on industry standards. All diamond holes were geological and structurally logged using the same template in addition to geotechnical logging using a separate industry standard template. Logged data is both qualitative and quantitative depending on field being logged.</p> <p>Core photography was also captured for every tray of diamond core. Trench samples were representatively collected across each 1m interval by 3-tier riffle splitter in a dry environment where ground conditions allowed. Diamond samples were cut to ¼ core using a core saw. The same ¼ for each interval was samples throughout the length of all holes.</p> <p>All samples were submitted for assay.</p> <p>Sample preparation at the Bureau Veritas laboratory involves the original sample being dried at 80° for up to 24 hours and weighed on submission to laboratory. Crushing to nominal –4 mm. Sample is split to less than 2 kg through linear splitter and excess retained. Sample splits are weighed at a frequency of 1/20 and entered into the job results file. Pulverising is completed using LM2 mill to 90% passing –75 µm.</p> <p>QAQC protocols were followed, including the use of field duplicate samples to test the primary sampling step for the RC drilling along with certified reference material and blanks.</p> <p>Sample sizes are considered appropriate with regard to the grain size of the sampled material.</p>
<p><b>Quality of assay data and laboratory tests</b></p>	<ul style="list-style-type: none"> <li>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> <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> <li>Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.</li> </ul>	<p>Drill samples were sent to Bureau Veritas Rustenburg (South Africa) for preparation and assaying. The following methodology is used by Bureau Veritas for Total Graphitic Carbon (TGC) analyses.</p> <p>Total carbon is measured using LECO technique. The sample is combusted in the oxygen atmosphere and the IR used to measure the amount of CO<sub>2</sub> produced. The calibration of the LECO instrument is done by using certified reference materials.</p> <p>For the analysis of Graphitic Carbon, a 0.3g sample is weighed and roasted at 550°C to remove any organic carbon. The sample is then heated with diluted hydrochloric acid to remove carbonates. After cooling the sample is filtered and the residue rinsed and dried at 75°C prior to analysis by the LECO instrument. The analyses by LECO are done by total combustion of sample in the oxygen atmosphere and using IR absorption from the resulting CO<sub>2</sub> produced.</p> <p>Laboratory certificates were sent via email from the assay laboratory to Kibaran. The assay data was provided to CSA Global in the form of Microsoft Excel files and assay laboratory certificates. The files were imported into Datamine.</p> <p>QAQC samples are inserted at 10% frequency with Standards, Blanks and Field Duplicates evenly comprising that 10%.</p>



Criteria	JORC Code explanation	Commentary
<b>Verification of sampling and assaying</b>	<ul style="list-style-type: none"> <li>The verification of significant intersections by either independent or alternative company personnel.</li> <li>The use of twinned holes.</li> <li>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> <li>Discuss any adjustment to assay data.</li> </ul>	<p>Senior Kibaran geological personnel supervised the sampling, and alternative personnel verified the sampling locations.</p> <p>Five RC holes were twinned with diamond drill holes.</p> <p>Primary data are captured on paper in the field and then re-entered into spreadsheet format by the supervising geologist, to then be loaded into the company's database. All digital logging templates contain in-built data QAQC functionality to prevent incorrect data entry.</p> <p>No adjustments are made to any assay data.</p>
<b>Location of data points</b>	<ul style="list-style-type: none"> <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> <li>Specification of the grid system used.</li> <li>Quality and adequacy of topographic control.</li> </ul>	<p>Drill hole collar locations surveyed using a licensed surveyor with Differential GPS equipment.</p> <p>UTM Zone 37 South was the grid system used.</p> <p>No coordinate transformation was applied to the data.</p> <p>Downhole surveys were completed using Reflex Ezi-Shot tool. Data was collected via multi-shot for diamond holes and single-shot for RC.</p> <p>Topographic DTM was from a LIDAR survey flown in 2015.</p>
<b>Data spacing and distribution</b>	<ul style="list-style-type: none"> <li>Data spacing for reporting of Exploration Results.</li> <li>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.</li> <li>Whether sample compositing has been applied.</li> </ul>	<p>Spacing's are sufficient for estimation and reporting of a Mineral Resource.</p> <p>Drill hole locations are at a nominal 50 m (Y) by 25 m (X) spacing's. Drill lines were completed on an East-West basis.</p> <p>Data spacing and distribution are sufficient to establish the degree of geological and grade continuity.</p> <p>No compositing has been applied to exploration data.</p>
<b>Orientation of data in relation to geological structure</b>	<ul style="list-style-type: none"> <li>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> <li>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.</li> </ul>	<p>Most holes have been orientated towards an azimuth so as to be able intersect the graphitic mineralisation in a perpendicular manner. Drill pad accessibility has required an adjustment to drill hole orientation to a few holes.</p> <p>Holes were drilled at dips ranging from -50 to -90 degrees, to best intercept the targeted geology given constraints of topography and access. Varying orientation of drill holes was taken into consideration when interpreting the results.</p>
<b>Sample security</b>	<ul style="list-style-type: none"> <li>The measures taken to ensure sample security.</li> </ul>	<p>Samples were stored at the company's secure field camp prior to dispatch to Bureau Veritas Dar es Salaam by a privately contracted transport company, who maintained security of the samples.</p>
<b>Audits or reviews</b>	<ul style="list-style-type: none"> <li>The results of any audits or reviews of sampling techniques and data.</li> </ul>	<p>Sampling procedures were independently reviewed by CSA Global as part of the preparation of the Mineral Resource estimate. Kibaran senior geological personnel reviewed sampling procedures on a regular basis.</p> <p>All drill hole results were collated and stored within a Microsoft Access database. A random selection of assays from the database was cross referenced against the laboratory certificates.</p>



**Section 2 Reporting of Exploration Results (Criteria listed in the preceding section also apply to this section.)**

Criteria	JORC Code explanation	Commentary
<b>Mineral tenement and land tenure status</b>	<ul style="list-style-type: none"> <li>• <i>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.</i></li> <li>• <i>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.</i></li> </ul>	<p>The tenement is 100% owned by Kibaran’s wholly owned subsidiary TanzGraphite (TZ) Limited</p> <p>The Epanko deposit lies within granted mining license ML548/2015.</p>
<b>Exploration done by other parties</b>	<ul style="list-style-type: none"> <li>• <i>Acknowledgment and appraisal of exploration by other parties.</i></li> </ul>	<p>Historical reports exist for the project area as the region was first recognised for graphite potential in 1914 and 1959. No more recent information exists.</p>
<b>Geology</b>	<ul style="list-style-type: none"> <li>• <i>Deposit type, geological setting and style of mineralisation.</i></li> </ul>	<p>The Mahenge Project is hosted within a quartz–feldspar graphitic schist, part of a Neoproterozoic metasediment package, including marble and gneissic units. Two zones of graphitic schist have been mapped, named the Eastern Zone and the Western Zone. Mineralisation is believed to be the product of pre-existing carbonaceous sediments subjected to regional metamorphism induced by a north-south regional thrusting event. The graphitic schists contain between 3% and 25% Total Graphitic Carbon.</p>
<b>Drill hole Information</b>	<ul style="list-style-type: none"> <li>• <i>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:</i> <ul style="list-style-type: none"> <li>○ <i>easting and northing of the drill hole collar</i></li> <li>○ <i>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</i></li> <li>○ <i>dip and azimuth of the hole</i></li> <li>○ <i>down hole length and interception depth</i></li> <li>○ <i>hole length.</i></li> </ul> </li> <li>• <i>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.</i></li> </ul>	<p>Sample and drill hole coordinates are provided in market announcement dated 1<sup>st</sup> February in addition to this announcement.</p>
<b>Data aggregation methods</b>	<ul style="list-style-type: none"> <li>• <i>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.</i></li> <li>• <i>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.</i></li> <li>• <i>The assumptions used for any reporting of metal equivalent values should be clearly stated.</i></li> </ul>	<p>No high-grade cuts were considered necessary.</p> <p>Aggregating was made for intervals that reported over 1% TGC (Total graphitic carbon). The purpose of this is to report intervals that may be significant to future metallurgical work.</p> <p>There is no implication about economic significance. Intervals reporting above 8% TGC are intended to highlight a significant higher grade component of graphite; there is no implication of economic significance.</p> <p>No equivalents were used because they are not relevant to graphite Mineral Resource estimates.</p>
<b>Relationship between</b>	<ul style="list-style-type: none"> <li>• <i>These relationships are particularly important in the reporting of Exploration Results.</i></li> <li>• <i>If the geometry of the mineralisation with respect to the drill hole angle is known, its</i></li> </ul>	<p>All drill holes have been orientated towards an azimuth so as to be able intersect the graphitic mineralisation orthogonally, where possible. Terrain constraint restricted this</p>



Criteria	JORC Code explanation	Commentary
<b>mineralisation widths and intercept lengths</b>	<p><i>nature should be reported.</i></p> <ul style="list-style-type: none"> <li><i>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').</i></li> </ul>	<p>on occasion. All interpretation considers the orientation of the drill hole and the intercepted units. Given dip variations are mapped down hole length are reported, true width not known from the exploration results.</p>
<b>Diagrams</b>	<ul style="list-style-type: none"> <li><i>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.</i></li> </ul>	<p>See main body of report.</p>
<b>Balanced reporting</b>	<ul style="list-style-type: none"> <li><i>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.</i></li> </ul>	<p>Results are presented in the body of this report.</p>
<b>Other substantive exploration data</b>	<ul style="list-style-type: none"> <li><i>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.</i></li> </ul>	<p>Field mapping was conducted early in the geological assessment of the license area to define the geological boundaries of the graphitic schist with other geological formations. Geological mapping of trenches cut across the strike of the host geological units provided important information used to compile the Mineral Resource estimate. Details of metallurgical test work are detailed in the body of this report, and in Section 3 of this Table.</p>
<b>Further work</b>	<ul style="list-style-type: none"> <li><i>The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).</i></li> <li><i>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</i></li> </ul>	<p>No further drilling is planned at present although geological fieldwork will continue during the next field season.</p>



**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
<b>Database integrity</b>	<ul style="list-style-type: none"> <li>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.</li> <li>Data validation procedures used.</li> </ul>	<p>Data used in the Mineral Resource estimate is sourced from an MS Access database, maintained by Kibaran. The data has been normalised and referential integrity between tables has been set through table relationships and key fields to ensure unique identifiers, which are consistent throughout. Relevant tables from the data base were exported to MS Excel format and converted to csv format for import into Datamine Studio RM software for use in the Mineral Resource estimate.</p> <p>The Kibaran database was validated by CSA Global and the database was found to be fit for purpose to support the Mineral Resource estimate. Validation of the data import include checks for overlapping intervals, missing survey data, missing assay data, missing lithological data, and missing collars. The Total Graphitic Carbon (TGC) grade was cross checked against the Total Carbon (C) grade to ensure <math>TGC \leq C</math>.</p>
<b>Site visits</b>	<ul style="list-style-type: none"> <li>Comment on any site visits undertaken by the Competent Person and the outcome of those visits.</li> <li>If no site visits have been undertaken indicate why this is the case.</li> </ul>	<p>The Competent Person (Mineral Resources) visited site in March 2014. The RC drilling rig was in operation and the CP was able to review drilling and sampling procedures. Outcrop showing mineralisation was examined and geologically assessed. Planned drill sites were examined and assessed with respect to strike and dip of the interpreted geological model. Trenches were examined and a re-enactment of sampling procedures was presented by the Kibaran geological staff. Sample storage facilities were inspected. There were no negative outcomes from any of the above items, and all samples and geological data were deemed fit for use in the preparation of the Mineral Resource estimate.</p>
<b>Geological interpretation</b>	<ul style="list-style-type: none"> <li>Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.</li> <li>Nature of the data used and of any assumptions made.</li> <li>The effect, if any, of alternative interpretations on Mineral Resource estimation.</li> <li>The use of geology in guiding and controlling Mineral Resource estimation.</li> <li>The factors affecting continuity both of grade and geology.</li> </ul>	<p>There is a high level of confidence in the geological interpretation, based upon lithological and structural logging of diamond drill core, and lithological logging of RC chips. Trenches cut orthogonal to the strike of the geology demonstrated the geometry of the deposit, and clearly showed graphitic mineralisation. Deposit scale geological mapping provide a geological framework for the interpretation. Geophysical models (VTEM) support the geological interpretation.</p> <p>Drill hole intercept logging and assay results (RC and diamond core), structural interpretations from drill core and geological logs of trenches have formed the basis for the geological interpretation. Assumptions were made on depth and strike extension of the graphitic schists, using drill hole and trench sample assays as anchor points at depth and at intervals along strike. Geological mapping also support the geological interpretation which supports the Mineral Resource estimate.</p> <p>No alternative interpretations were considered because the exposed geology in outcrop supports the current interpretation.</p> <p>Graphitic mineralisation is hosted within graphitic schist, which is mapped along its strike within the license area. Total graphitic carbon is assumed to be likewise continuous with the host rock unit. Metallurgical characteristics, principally flake size, has been observed to be of a consistent nature when observed in outcrop, trench</p>



Criteria	JORC Code explanation	Commentary
		<p>exposure and diamond drill core at numerous locations within the license area. The graphitic schist is open along strike and down dip in Epanko West. The Epanko East deposit is interpreted to be a recumbent fold, open along strike to the north and south. A sub-vertical shear zone offsets the stratigraphy down dip along the lower fold limb. The TGC mineralisation domains are contained within the graphitic schist lithological domain.</p> <p>Weathering domains representing oxide, transitional and fresh were modelled and were used during grade interpolation to constrain grade interpolation, and were allocated different density values.</p> <p>Lithological domains representing schists, gneisses and marble were interpreted and modelled.</p> <p>Major structural features, mainly sub-vertical shears and faults, were modelled and used to assess drill data during preparation of the Mineral Resource estimate.</p>
<b>Dimensions</b>	<ul style="list-style-type: none"> <li>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.</li> </ul>	<p>The Epanko West Mineral Resource estimate is approximately 2,150 m in strike, 250 m in plan width and reaches 450 m depth below surface. The Epanko East Mineral Resource is approximately 320 m in strike, 400 m in plan width and reaches 160 m depth below surface.</p>
<b>Estimation and modelling techniques</b>	<ul style="list-style-type: none"> <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 distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.</li> <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> <li>The assumptions made regarding recovery of by-products.</li> <li>Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).</li> <li>In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.</li> <li>Any assumptions behind modelling of selective mining units.</li> <li>Any assumptions about correlation between variables.</li> <li>Description of how the geological interpretation was used to control the resource estimates.</li> <li>Discussion of basis for using or not using grade cutting or capping.</li> <li>The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.</li> </ul>	<p>The geological models were interpreted and prepared by Kibaran using Surpac software. Datamine Studio RM software was used for block modelling, grade interpolation, mineral resource classification and reporting. GeoAccess Professional and Snowden Supervisor were used for geostatistical analyses of data.</p> <p>The TGC domain is coincident with the graphitic schist lithological domain, and is based upon a nominal 3% lower TGC cut-off grade.</p> <p>The graphitic schist interpretations were based upon geological interpretations of mineralised outcrop and trenches and logging of diamond drill core and RC chips. The Mineral Resource model consists of 3 domains of TGC mineralisation, with 1 domain in the Western Zone and 2 zones in the Eastern Zone.</p> <p>Mineralisation domains were encapsulated by means of 3D wireframed envelopes. Domains were extrapolated along strike or down plunge to half section spacing or if a barren hole cut the plunge extension before this limit. Top cuts were not used to constrain extreme grade values because the TGC grade distribution did not warrant their use. All samples were composited to 1 m intervals, following a review of sample length distribution that most sample lengths were 1m. All drill hole data (RC and Diamond) and trench assays were utilised in the grade interpolation. A twin drilling programme confirmed the RC drill holes could be used with the diamond core samples as part of the grade interpolation. A statistical study of the trench assay data demonstrated a slightly higher grade TGC population to the conventional drilling sample assay results, and a decision was made to limit the influence of the trench sample data to the Oxide weathering zone.</p> <p>Two block models were prepared, for the Epanko West and Epanko East zones, with parent cell sizes 10 m E x 25 m N x 20 m RL for each, compared to typical drill spacing of</p>



Criteria	JORC Code explanation	Commentary
		<p>25 m x 50 m in the well drilled areas.</p> <p>Grade estimation was by Ordinary Kriging (OK), and Inverse Distance Squared (IDS) estimation was concurrently run as a check estimate.</p> <p>The composited drill sample data were statistically analysed, examining the relationship between TGC and weathering profiles, hole types, and structural domains. A variography study was also carried out examining the influence of structural domains (principally the impact of the D2 faults in the Western Zone). Within the oxide domain there was a population difference noted, but no discernible population differences were noted in the fresh rock domain. Variogram models present a very low relative nugget effect (&lt;15%) for the Western and Eastern zones, with ranges typically between 90m and 170m. Short ranges at the first sill were also modelled.</p> <p>Due to the low nugget effect, a low number of samples were required for grade interpolation, with a minimum of 4 and maximum of 12 composited samples were used in any one block estimate for the Western and Eastern Zones. A maximum of 5 composited samples per drill hole were used in any one block estimate. Cell Discretisation of 5 x 5 x 5 was used. Grade interpolation was run within the individual mineralisation domains (Epanko East), acting as hard boundaries. The Base of Complete Oxidation acted as a hard boundary for both Western and Eastern deposits.</p> <p>The current Mineral Resource was checked against the previously reported Mineral Resource (June 2015) and showed an increase in global tonnage, with a 41% increase in Measured and Indicated tonnes, but with negligible change in TGC % grade. The stability of the TGC grade following more drilling demonstrates the low variability of TGC within the host units.</p> <p>No depletion of the Mineral Resource due to mining activity was required due to no mining having occurred historically. The Mineral Resource was truncated at Northing 9,037,320 m N (UTM37S), this being the northern boundary of the license area.</p> <p>No by products were modelled.</p> <p>No selective mining units were assumed in this model.</p> <p>The grade model was validated by 1) creating slices of the model and comparing to drill holes on the same slice; 2) swath plots comparing average block grades with average sample grades on nominated easting, northing and RL slices; and 3) mean grades per domain for estimated blocks and flagged drill hole samples. Each validation step complemented the others. The Mineral Resource estimation process was peer reviewed within CSA Global.</p> <p>Kibaran reported (13 April 2016) the results from 200 tonne bulk samples from the Western and Eastern Zones, with both samples reconciling favourably with the local estimated block grades.</p>
<b>Moisture</b>	<ul style="list-style-type: none"><li>• <i>Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.</i></li></ul>	Tonnages are estimated on a dry basis.



Criteria	JORC Code explanation	Commentary
<b>Cut-off parameters</b>	<ul style="list-style-type: none"> <li>The basis of the adopted cut-off grade(s) or quality parameters applied.</li> </ul>	<p>A reporting cut-off grade of 8% TGC is used to report the Mineral Resource. A series of grade tonnage reports were prepared for Kibaran and an example presented in the body of this announcement.</p>
<b>Mining factors or assumptions</b>	<ul style="list-style-type: none"> <li>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.</li> </ul>	<p>It is assumed the deposit, if mined, will be developed using open pit mining methods. Geotechnical drilling, logging and rock strength and shear strength analyses have completed.</p> <p>Preliminary wall angles have been recommended for use in the pit optimisations. Wall angles will be review by the Mining and geotechnical consultants prior to the mine planning and scheduling stages.</p>
<b>Metallurgical factors or assumptions</b>	<ul style="list-style-type: none"> <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>	<ul style="list-style-type: none"> <li>During 2016-2017 a series of comminution and flotation tests have been conducted on composite samples selected from the oxide, transition and primary zones of both deposits. These have been done at a range of grades between 5%TGC and 8.9%TGC to determine whether there is any variability of recovery to concentrate in the weathering zones of each deposit. In addition two locked cycle tests are in progress to determine ultimate recoveries from the East and West fresh material.</li> <li>Batch variability flotation testwork shows recoveries of 83-95% in the various ore types and grades tested producing a 96%TGC concentrate.</li> <li>The recovered flake graphite is clean, with no visible natural mineral impurities.</li> <li>The graphite concentrate is amenable to standard metallurgical recovery processes. The recovered product is considered marketable, with a binding offtake and partnership agreements with several European and Japanese graphite trader.</li> </ul>
<b>Environmental factors or assumptions</b>	<ul style="list-style-type: none"> <li>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.</li> </ul>	<p>Preliminary designs for a valley fill tails dam and waste dumps with a life of up to 25years have been produced</p> <p>The deposit is located within and surrounding the area of the Epanko village farming area, and Kibaran are holding ongoing discussions with local landholders and community groups to keep them well informed of the status and future planned directions of the project.</p> <p>Relocation discussions for the families directly impacted by the project are well advanced.</p> <p>Epanko is located in a sub-equatorial region of Tanzania and is subject to heavy seasonal rainfall, with rapid growth of vegetation in season.</p> <p>A strategy for both subsurface, surface water and decant water management has been prepared for the BFS study.</p>



Criteria	JORC Code explanation	Commentary
<p><b>Bulk density</b></p>	<ul style="list-style-type: none"> <li>• <i>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.</i></li> <li>• <i>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.</i></li> <li>• <i>Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.</i></li> </ul>	<p>Density was calculated using wet immersion techniques, conducted both by analytical laboratories and by Kibaran field staff. Significant additional testwork has been conducted since the previous Mineral Resource estimate was announced. Particularly in the Eastern Zone fresh material which was previously not identified.</p> <p>The Epanko West density database is based upon 267 diamond core samples, and Epanko East based upon 25 diamond core samples, with samples wax coated prior to immersion in a water bath.</p> <p>Density samples were loaded into Datamine drill hole files and flagged against lithological, mineralisation, weathering and structural domains. A statistical study resulted in assignment of mean density values according to lithology and weathering.</p> <p>Density values of 1.92 t/m<sup>3</sup>, 2.33 t/m<sup>3</sup> and 2.84 t/m<sup>3</sup> were applied to the oxide, transitional and fresh weathering domains respectively for the Mineral Resource located in the Western Zone. Density values of 1.76 t/m<sup>3</sup>, 2.43 t/m<sup>3</sup> and 2.79 t/m<sup>3</sup> were applied to the oxide, transitional and fresh weathering domains respectively for the graphitic schist domain in the Eastern Zone.</p>
<p><b>Classification</b></p>	<ul style="list-style-type: none"> <li>• <i>The basis for the classification of the Mineral Resources into varying confidence categories.</i></li> <li>• <i>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).</i></li> <li>• <i>Whether the result appropriately reflects the Competent Person's view of the deposit.</i></li> </ul>	<p>Classification of the Mineral Resource estimates was carried out taking into account the geological understanding of the deposit, quality of the sample data, quality of the local block estimates, quality of density data, and drill hole spacing. Metallurgical results related to flake size and sample purity, as well as marketing agreements in place supported the classification, as per Clause 49 (JORC 2012).</p> <p>The Mineral Resource is classified as Measured, Indicated and Inferred, with geological evidence sufficient to confirm geological and grade (and quality) continuity within the Measured volumes, between points of observation where data and samples are gathered. The Indicated classification level was applied to the volumes where geological evidence is sufficient to assume geological, grade and quality continuity.</p> <p>The Inferred classification level was applied to the volumes where geological evidence is sufficient to imply but not verify geological, grade and quality continuity.</p> <p>Mineral Resource classification was carried out by stepping through both the West and East models, and creating 3D wireframe surfaces constraining the resource classification levels (Western Zone) or by applying northing and easting limits (Eastern Zone).</p> <p>Weathering profiles also controlled the classification, with the oxide weathering zone generally classified at the same or higher level to the adjacent blocks in transitional and fresh zones, due to high confidence in the geological continuity of graphitic schist as observed in outcrop and from trench data.</p> <p>All available data was assessed and the competent person's relative confidence in the data was used to assist in the classification of the Mineral Resource.</p> <p>The current classification assignment appropriately reflects the Competent Person's</p>



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<b>Audits or reviews</b>	<ul style="list-style-type: none"> <li><i>The results of any audits or reviews of Mineral Resource estimates.</i></li> </ul>	<p>view of the deposit.</p> <p>An independent due diligence review of the current Mineral Resource is being undertaken at the time of preparation of this announcement.</p>
<b>Discussion of relative accuracy/confidence</b>	<ul style="list-style-type: none"> <li><i>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.</i></li> <li><i>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.</i></li> <li><i>These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.</i></li> </ul>	<p>An inverse distance estimation algorithm was used in parallel with the ordinary kriging interpolation. Results were very similar between the methods.</p> <p>No other estimation method or geostatistical analysis has been performed.</p> <p>The Mineral Resource is a local estimate, whereby the drill hole data was geologically domained, resulting in fewer drill hole samples to interpolate the block model than the complete drill hole dataset, which would comprise a global estimate.</p> <p>Relevant tonnages and grade above nominated cut-off grades for TGC are provided in the body of this report. Tonnages were calculated by filtering all blocks above the cut-off grade and sub-setting the resultant data into bins by mineralisation domain. The volumes of all the collated blocks were multiplied by the dry density value to derive the tonnages. The graphite metal values (g) for each block were calculated by multiplying the TGC grades (%) by the block tonnage. The total sum of all metal for the deposit for the filtered blocks was divided by 100 to derive the reportable tonnages of graphite metal.</p> <p>No production data is available to reconcile results with, apart from bulk sample results discussed earlier.</p>