



## Independent Exploration Target Estimate Highlights Kambale as a Large-Scale Graphite Deposit Diamond core drilling underway to obtain test work samples

- Independent JORC 2012 Exploration Target estimate delivered<sup>(1)</sup>.
- Highlights Kambale as a large-scale deposit that remains open to the north, south and to depth.
- Underpins plans to assess Kambale as a producer of a fine flake graphite concentrate to be assessed for possible application in the production of electric vehicle battery anode material.
- 4-hole diamond drill core program underway (one hole completed) with core to be used in Phase 2 test work.
- 31-hole, 2,460m RC follow-on infill drilling program designed to better define higher grade zones and facilitate a maiden JORC 2012 Mineral Resource estimate around end-Q1 2023
- Fine flake graphite prices continue to firm on forecasts for a looming supply deficit<sup>2</sup>.

**Table A: Kambale 2022 Exploration Target Estimate Summary<sup>(1)</sup>**

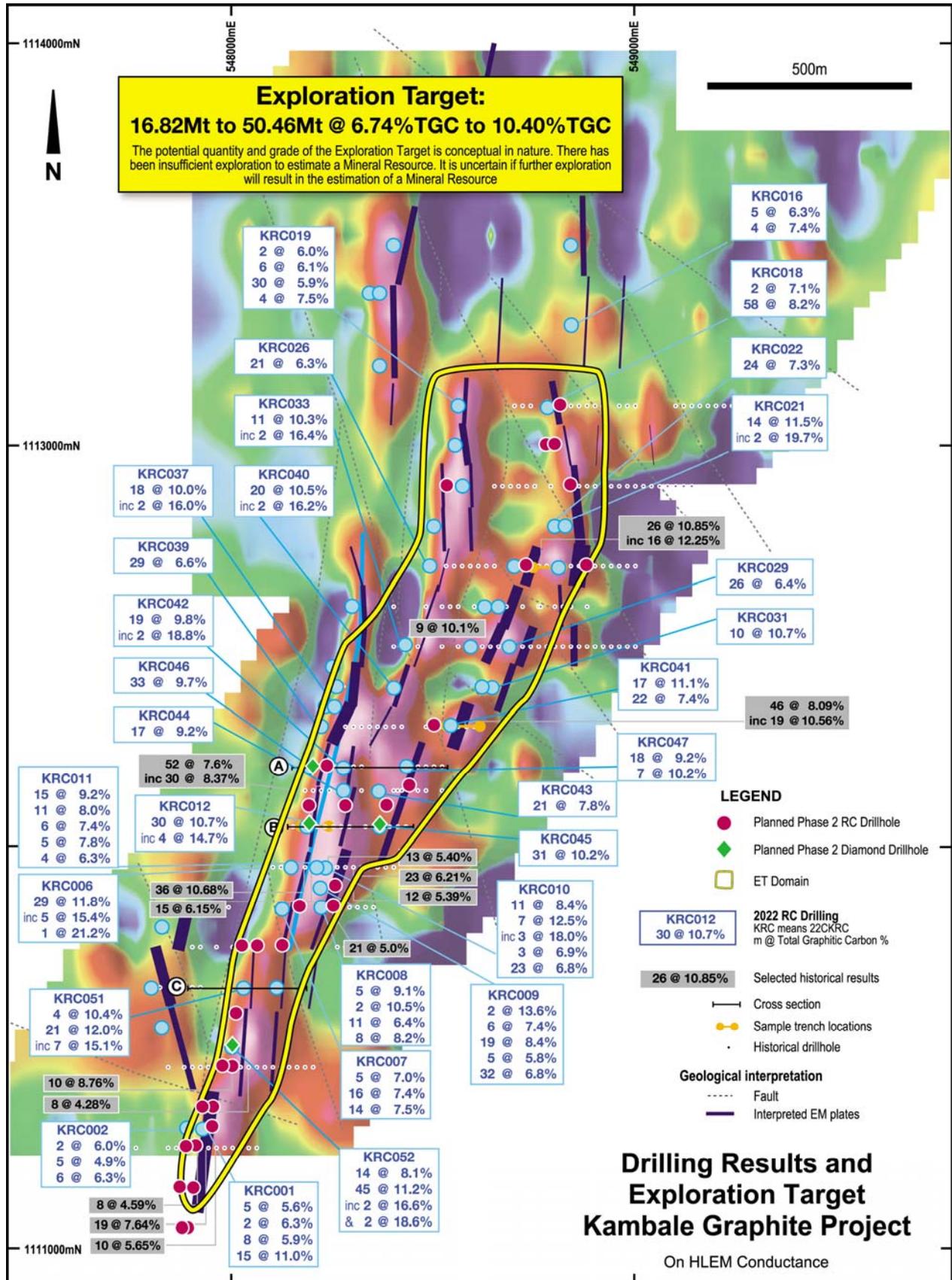
Domain	Min Tonnage (Mt)	Max Tonnage (Mt)	Min Grade (%TGC)	Max. Grade (%TGC)
D1	16.82	50.46	6.74	10.40

### **<sup>(1)</sup>Cautionary Statement**

The Exploration Target has been prepared and reported in accordance with the 2012 edition of the JORC Code. The potential quantity and grade of the Exploration Target is conceptual in nature. There has been insufficient exploration to estimate a Mineral Resource. It is uncertain if further exploration will result in the estimation of a Mineral Resource.

<sup>2</sup>FastMarkets: NewGen Long Term Forecast – 27.10.2022

**Fig 1: Plan showing historical and recent drill results, Exploration Target estimate outline and locations of Phase 2 diamond core holes (now underway) and planned follow-on RC drill holes.**

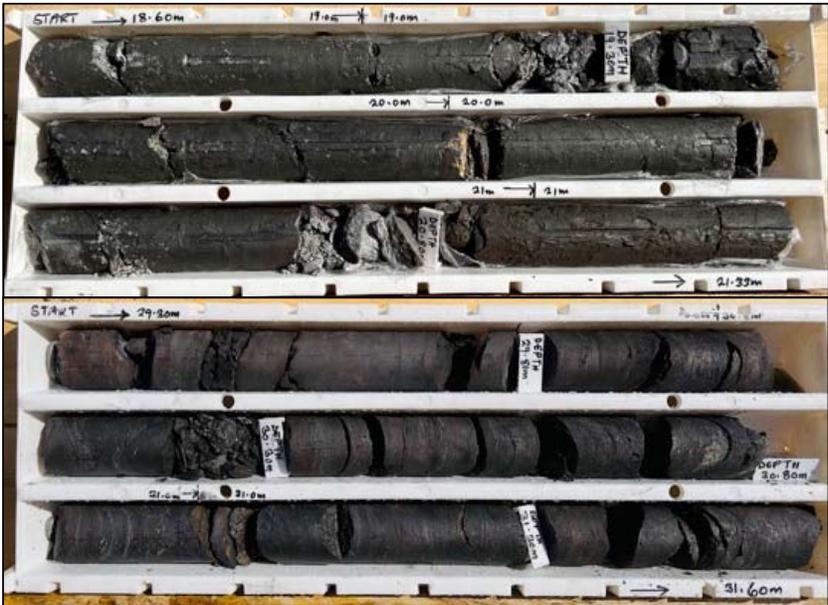


Castle Managing Director, Stephen Stone commented ***“The independently estimated Exploration Target of 16.82 to 50.46 million tonnes at a grade range between 6.74% and 10.40%TGC indicates the Kambale Graphite project has a possible scale and grade to warrant progression to the next phase of assessment.***

***Phase 2 test work using samples obtained from the now underway diamond core drilling will assess if a commercial grade concentrate can be produced which would then be evaluated for possible use in the manufacture of electric vehicle battery anodes.***

***A follow-on infill RC drilling program will primarily focus on defining recently confirmed multiple higher grade graphitic zones and will also facilitate a maiden JORC 2012 Mineral Resource for delivery around end-Q1 2023.***

***In addition to the large amount of news flow in coming months from the Kambale Graphite Project there will also be a steady stream of updates from Castle’s battery and future metals projects in Western Australia.”***



**Core trays from drill hole 22CKDD001 (18.6m to 21.3m and 29.3m to 36.1m) showing intercepts of graphitic schist (The core has not be fully logged or assayed yet).**

**Exploration Target Estimate**

Junior explorer and project incubator, Castle Minerals Limited (ASX: CDT) (“Castle” or the “Company”), advises that an Exploration Target of 16.82 million tonnes to 50.46 million tonnes at a grade between 6.74%TGC and 10.40%TGC (Total Graphitic Carbon) has been independently estimated for the Kambale graphite project, Ghana (“Kambale” or “Project”)(Figures 1 to 4. Tables A and Appendix: Table 1).

The estimate was limited to a vertical depth of 100m below surface and highlights that Kambale may have the scale, grade and other attributes to justify its continuing evaluation as a possible producer of a fine flake graphite concentrate that could then be processed for application in the manufacture of electric vehicle battery anodes.

A series of sub-parallel lodes over a 2.7km north-south strike and within an up to 500m-wide corridor has been outlined at Kambale with mineralisation remaining open to the north, south and also to depth.

Further details on the estimate and the assumptions used are set out below.

### **Planned Mineral Resource estimate**

Minimal drill density, rock density and other information determined that a JORC 2012 Mineral Resource estimate could not be undertaken at this stage.

A 4-hole diamond core drilling program is underway to provide core samples for Phase 2 test work. This will also provide bulk density and structural information.

A follow-on 31-hole, 2,460m RC drilling program will increase drill density, especially within the higher grade graphitic zones. Combined, these two programs will facilitate a Mineral Resource estimate planned to be delivered around end-Q1 2023, subject to a number of factors including assay turnaround times.

### **Diamond core drilling and planned metallurgical test work**

Phase 1 test work was conducted on near-surface, trench excavated material where weathering of the graphite and gangue material will have impacted the mineralogy and subsequent bench-scale concentration process. Whilst this 'orientation' test work went relatively well (refer ASX release 21 September 2021), the weathering profile is observed to extend to a depth of 30-40m below surface and therefore is only partially representative of the deposit.

The diamond drill core will be obtained from four locations providing a broader representation of the graphitic schist material and its variability, especially below the weathering profile.

Phase 2 test work will comprise a series of beneficiation, flotation and grinding cycles on composited core aimed at producing a quantity of as near-to commercial grade fine flake graphite concentrate as possible. This concentrate will then be assessed for its ability to be upgraded (micronised, purified, spheronised, coated) into a battery-grade fine flake concentrate for possible application in electric vehicle battery anode manufacture.

A development Scoping Study will be considered once the Phase 2 test work, Mineral Resource estimate and other studies, including a market analysis, are available.

### **ESTIMATE DETAILS**

The Exploration Target estimate has been prepared and reported in accordance with the 2012 edition of the JORC Code. It was undertaken by an independent Competent Person ("CP")(Refer Competent Person Statement and Appendix: Table 1.) who is an employee of Sahara Natural Resources.

The CP visited the Kambale site on two occasions during the recently completed RC drilling program for the purpose of ensuring that all site exploration procedures were compliant with best practise. The CP also visited the fully accredited Intertek (Ghana) Limited assaying laboratory, Tarkwa, Ghana, to observe sample preparation procedures ahead of their transport to Intertek's Perth facility for assaying.

Assays were recorded for Total Carbon (all carbon sources including any organic carbon present), Total Graphitic Carbon (only the mineral phase of carbon) and sulphur.

The estimate utilised historical geophysical data, drilling datasets and recently obtained topographical and hole collar survey information.

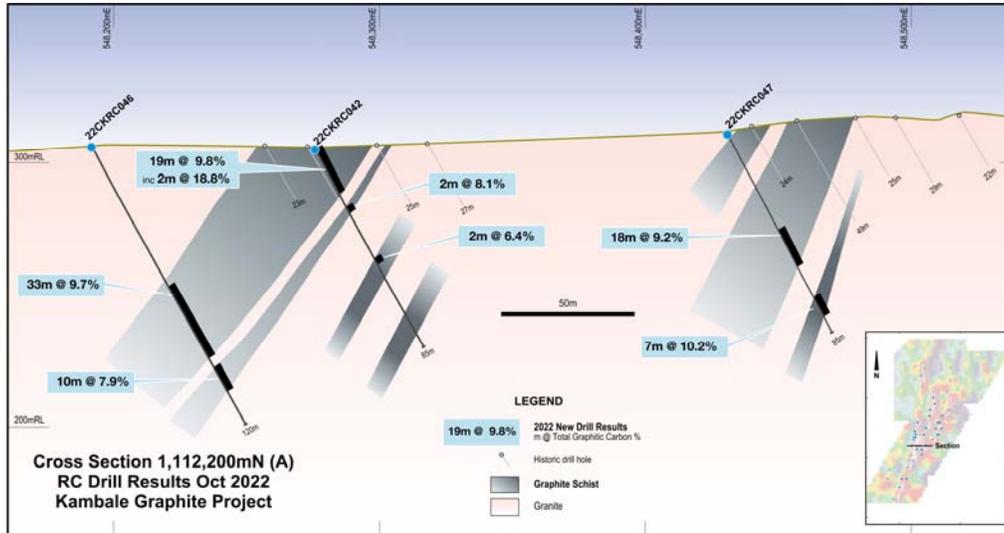
The Kambale drill database comprises a combined 352 RC, aircore and RAB holes for a total of 13,044m undertaken between 2012 and 2022. It includes the results of the recently reported 52-hole, 5,353m RC drill program that was guided by conductor anomaly targets defined by a March 2022 ground HLEM survey. The HLEM survey was undertaken by SAGAX Afrique SA and data processing and interpretation was conducted by Terra Resources Pty Limited.

Recent RC drilling encountered multiple intercepts of sub-parallel graphitic schist zones that extend approximately 2.7km along a generally north-south trend.

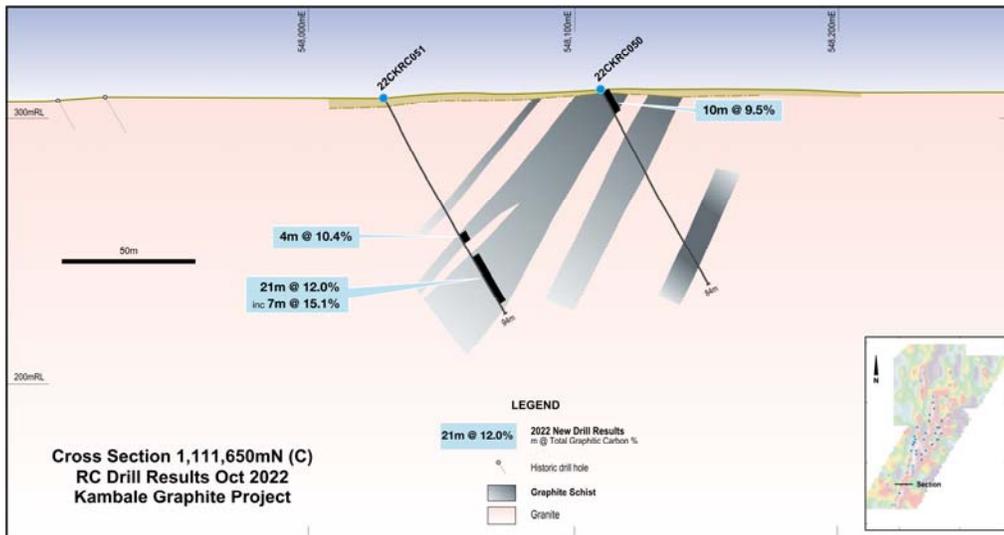
Figures 2, 3 and 4 (repeated from ASX release 3 November 2022) provide a preliminary interpretation of the geometry and nature of the Kambale graphite mineralisation. The cross-section locations are indicated on Figure 1.

3D software was used to review combined drilling and other geological datasets and to estimate geological and mineralisation concept models to assist in the definition of the Exploration Target.

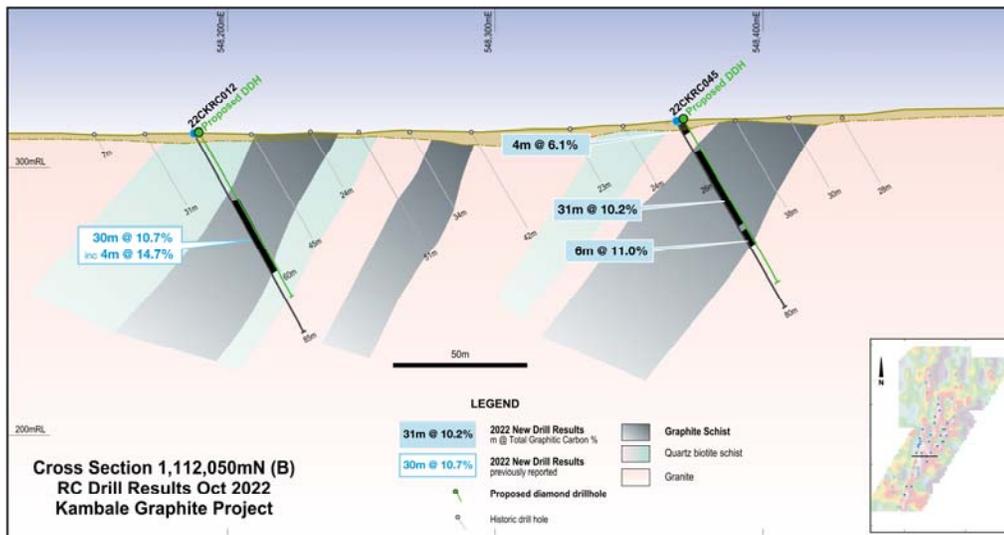
**Fig 2: Section A; 1,112,200mN**



**Fig 3: Section B: 1,112,050mN**



**Fig 4: Section C: 1,111,650mN**



The tonnage and grade ranges estimated for the Exploration Target are based on the recently completed 52-hole RC drilling to a nominal 100m depth. It was noted that given the style of mineralisation, drilling and geophysical support it is reasonable to assume that mineralisation will extend below a vertical depth of 100m.

Hole collar coordinates, graphitic schist intercepts and grades for the most recent RC drilling program were reported in detail in ASX release 3 November 2022 “Kambale Graphite Deposit Extended.”

The interpreted HLEM conductor plates were used to guide the strike of mineralisation, supported by the RC drilling. Variations in potential width along strike and down dip were estimated.

The grade ranges used for the Exploration Target estimate were based upon drilling intercepts above a nominal 5%TGC cut-off grade. The density applied to the Exploration Target estimation was 2.2kg/m<sup>3</sup>. Refer Appendix: Table 1 for further information.

## PROJECT BACKGROUND

The Kambale graphite deposit was identified in the 1960s by Russian geologists prospecting for manganese. They undertook a program of trenching and drilled 25 holes to a maximum depth of 25m. A subsequent report noted “two main zones of graphitic schists averaging around 10% to 15% graphite within which there were higher grade zones and that the graphite is the flaky variety with fine crystals (usually less than 0.25mm).” (Report on the Geology and Minerals of the South Western Part of the Wa Field Sheet, Pobedash, I.D. 1991).

The mineralisation consists of north-east trending, sub-parallel zones of graphitic schists found within the Lower Proterozoic Birimian (~2.2Ma) Wa-Lawra Greenstone belt. The schists generally trend north-easterly and dip between 50° and 75° to the north west. They are hosted mainly in granodiorite to the north and biotite and quartz mica schists in the south.

The genesis of the flake graphite in Kambale is believed to be associated with high-grade metamorphism (amphibolite-granulite facies) where metamorphic derived CO<sub>2</sub> rich hydrothermal fluids have infilled shear related dilational zones and formed the graphite during the extreme metamorphic event.

Castle has reviewed this historical work and a wide-spaced, regional-scale electromagnetic survey dataset inherited from previous licence holder, Newmont Limited. This outlined a roughly elongate, north-south orientated, ~10km-long region considered prospective for graphitic schist horizons which may host multiple lenses of graphite mineralisation, similar to what is already outlined from drilling and trenching at Kambale. These lenses or horizons can vary in length and be up to 50m wide, creating substantial deposits of graphite.

Encouraged by firm graphite prices in 2012, Castle undertook three consecutive phases of drilling comprising RAB (251 holes, 5,621m), aircore (89 holes, 2,808m) and reverse circulation (3 holes, 303m). Mapping noted occasional outcrops of manganese and graphitic schist as well as graphite in termite mounds.

In 2012 Castle undertook a very limited program of bench-scale test work on RC chips which was not an ideal sample. The work returned mixed results. Thereafter, little work was undertaken until the more recent improvement in graphite prices prompted a re-evaluation of the Project in early 2021.

In September 2021 Castle reported that preliminary test work on sub-optimal, trench excavated near-surface, weathered graphitic schists yielded very encouraging fine flake graphite concentrate grades of up to 96.4% and recoveries of 88% using a conventional multiple grind and flotation concentration flowsheet. Three excavated and composited samples provided for the test work graded 12.56%, 16.09% and 17.16% total carbon.

In March 2022, a ground electromagnetic (HLEM) survey demonstrated a strong correlation between drill confirmed graphite mineralisation and zones of high conductivity. Several high conductivity zones extending well outside of the existing Inferred Resource boundary were highlighted indicating the possibility of extensions of the known graphitic schists into sparsely or undrilled areas.

In July 2022 Castle completed and subsequently reported in November 2022 the results of a 52-hole, 5,353m RC drill program which, amongst other positive developments, confirmed multiple, subparallel graphitic schist zones to extend for at least 2.5km north-south and a strong correlation between interpreted conductor plates and mineralisation.

## **Logistics**

The Project is located 6km west of the Upper West region capital of Wa which is 400km north, via good sealed roads, of Kumasi. From Kumasi it is approximately 240km south east by rail or road to the international port of Tema, 30km west of the capital Accra, which provides direct access to global export markets. An alternative international port at Sekondi - Takoradi is located approximately 230km west of Accra.

The Wa region has an excellent infrastructure comprising a commercial airport with daily flights, reliable grid power supplied from the Bui hydroelectric dam, river (Black Volta River) and artesian water and many other services. The landscape is generally flat to rolling savannah vegetation with seasonal rains followed by a dry season (Harmattan).

Ghana is an established, safe and political stable mining jurisdiction. It has a well-trained and very capable minerals industry workforce. Its mining services and supply sectors are well established.

## **ESG**

Castle management has spent over 14 years successfully operating in Ghana and in particular its Upper West region. The Company's management has established an excellent reputation for its pro-active commitment to community engagement, local employment and training, the promotion of youth and women's development, maintaining the highest environmental operating standards and overall operating ethically and sustainably whilst carefully managing community expectations.

Prior to embarking on any specific exploration program the Company's Ghanaian team conducts comprehensive discussions with all stakeholders to fully inform them as to the Company's activities and to identify sites of cultural, religious, social and economic sensitivity and to appropriately mitigate any matters of concern. Compensation for access and any disruptions caused is provided at a minimum as per Ghana Mining Act guidelines.

## **Graphite market**

The graphite market is diverse across industrial, metallurgical, chemical and specialised areas with each sector requiring graphite concentrates with specific qualities. Deposit type, size and geometry, flake size, flake shape, grade, impurities, capital and operating costs, proximity to specific markets, supply logistics, jurisdiction, fiscal regime and many other factors all combine to determine the commercial viability of a particular deposit.

The current medium to long term outlook for the broader graphite concentrates market is one of escalating demand and a looming supply deficit driven in particular by its un-substitutional use in the fast-growing electric vehicle and stationary power storage sectors. Hence, prices for fine flake graphite concentrates have shown a steady upward trend in the past year which several commodity forecasters say appears likely to continue for some time to come

The reader is directed to numerous recent publications, conference proceedings, specialist commodity research houses and corporate websites of companies engaged in graphite exploration and/or production for informed commentary and analysis of the graphite business and markets.

Authorised for release to ASX by the Board of Castle Minerals Limited:

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## PREVIOUSLY REPORTED INFORMATION RELATING TO THIS RELEASE

Additional details, where applicable, can be found in the releases referenced in this Report and/or in the following releases lodged by the Company with the ASX:

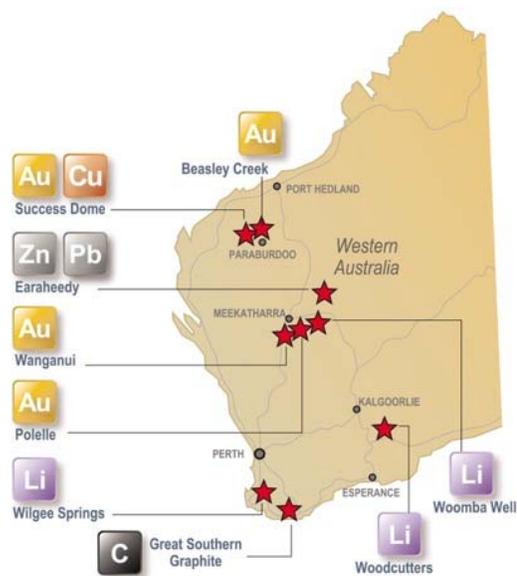
Headline	Date
Kambale Core Drilling Underway	10 November 2022
Kambale Graphite Deposit Extended	3 November 2022
Encouraging Kambale Graphite project Interim Drill Results	29 September 2022
Kambale Graphite RC Drilling Program Completed	24 August 2022
More Graphite Zones at Kambale	11 July 2022
Drilling Campaign Launched at Kambale Graphite Project	14 June 2022
Kambale Graphite EM Survey Increases Size Expectations	31 March 2022
EM Survey Commences at Kambale Graphite Project Ghana	14 March 2022
Encouraging Graphite Test Work Results	21 September 2021
Kambale Graphite Test Work Update	5 August 2021
Graphite Test Work Underway	3 June 2021
Castle to Reappraise Kambale Graphite Project, Ghana	15 March 2021
Drilling Doubles Strike length of Kambale Graphite Deposit	17 September 2012
Metallurgy Test Work Confirms Commercial Potential of Kambale Graphite Deposit	3 September 2012
High Grade Graphite intercepts Extend Kambale Deposit	24 August 2012
Maiden Resource Confirms Kambale as One of World's Largest Graphite Deposits	24 July 2012
Large High Grade Deposit Confirmed at Kambale	6 July 2012
Extensive Zones of High Grade Graphite Intersected	9 May 2012

### About Castle Minerals Limited

Castle Minerals Limited is an Australian Securities Exchange (ASX: CDT) listed and Perth, Western Australia headquartered company with interests in several projects in Western Australia and Ghana that are prospective for battery metals (lithium and graphite), base metals and gold.

The **Earaheedy Basin** project encompasses terrane prospective for base and precious metals in the Earraheedy and Yerrida basins base metals provinces. The project comprises the **Withnell, Terra Rossa** and **Tableland** sub-projects. The Withnell licence is adjacent to the evolving Chinook-Magazine zinc-lead project of Rumble Resources Ltd (ASX: RTR) and north of the Strickland Metals Limited (ASX: STK) Iroquois prospect. The Terra Rossa licences are east of the Thaduna copper deposit.

The **Beasley Creek** project lies on the northern flanks of the Rocklea Dome in the southern Pilbara where



orogenic-style, structurally controlled gold targets within the various Archean sequences are being targeted. Unexpected lithium anomalism is also being followed-up.

The **Success Dome** project lies in the Ashburton structural corridor and is located midway between the Paulsen's and Ashburton gold deposits. It is prospective for gold and base metals.

The **Polelle** project, 7km southeast of the operating Bluebird gold mine near Meekatharra, hosts a mainly obscured and minimally explored greenstone belt prospective for gold.

The **Wanganui** project, 15km south-west of the operating Bluebird gold mine, presents an opportunity to test for down-plunge and along strike extensions to the existing Main Lode North and South deposits and similar targets.

The **Wilgee Springs** project, along strike from and within the same metamorphic belt as the world-class Greenbushes lithium mine 25km to the south, provides an opportunity to explore for spodumene bearing pegmatites beneath a lateritic cover that has previously hampered exploration.

The **Woodcutters** project, is prospective for lithium bearing pegmatites, 25km southeast of the Bald Hill lithium mine and 25km northwest of the Buldania lithium deposit.

The **Woomba Well** project will be evaluated for lithium bearing pegmatites.

The **Great Southern Graphite** project comprises two granted licences encompassing the historical **Kendenup** graphite workings and the adjacent **Martagallup** graphite occurrences and one application covering a graphite occurrence at **Mt. Barrow**.

In **Ghana, West Africa**, Castle's substantial and contiguous tenure position in the country's Upper West region encompasses large tracts of highly prospective Birimian geological terrane, the host to many of West Africa's and Ghana's multi-million-ounce gold mines.

The emerging **Kambale** graphite project also lies on the Ghana tenure. Drilling and test work to date have indicated that it is a sizable open-ended deposit with several favourable attributes to warrant its advance.

Castle retains a **4% net smelter precious metal royalty** over the Julie West licence, a key component of Azumah Resources Limited's Wa Gold Project, Upper West region, Ghana.

## STATEMENTS

### Cautionary Statement

All of Castle's projects in Australia are considered to be of grass roots or of relatively early-stage exploration status. There has been insufficient exploration to define a Mineral Resource. No Competent Person has done sufficient work in accordance with JORC Code 2012 to conclusively determine or to estimate in what quantities gold or other minerals are present. It is possible that following further evaluation and/or exploration work that the confidence in the information used to identify areas of interest may be reduced when reported under JORC Code 2012.

### Forward Looking Statement

Statements regarding Castle's plans, forecasts and projections with respect to its mineral properties and programs are forward-looking statements. There can be no assurance that Castle's plans for development of its mineral properties will proceed. There can be no assurance that Castle will be able to confirm the presence of Mineral Resources or Ore Reserves, that any mineralisation will prove to be economic or that a mine will be successfully developed on any of Castle's mineral properties. The performance of Castle may be influenced by a number of factors which are outside the control of the Company, its Directors, staff or contractors.



## Competent Persons Statement

The scientific and technical information in this Report that relates to the geology of the deposits and exploration results is based on information compiled by Mr Stephen Stone, who is Managing Director of Castle Minerals Limited. Mr Stone is a Member of the Australian Institute of Mining and Metallurgy 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'. Mr Stone is the Qualified Person overseeing Castle's exploration projects and has reviewed and approved the disclosure of all scientific or technical information contained in this announcement that relates to the geology of the deposits and exploration.

The scientific and technical information in this Report that relates to the Exploration Target estimate is based on information compiled by Mr Michael Cantey, a Competent Person who is a member of the Australian Institute of Geoscientists (MAIG #4643). Mr Cantey is employed as a Principal Consultant at Sahara Natural Resources which provides consultancy services to Castle Minerals Limited. Mr Cantey has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken 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 Cantey consents to the inclusion in this report of the matters based on his information in the form and context in which it appears.

## Kambale Graphite Project (Wa) Ghana – Exploration Target estimate

### Appendix: JORC Code 2012 Edition – Table 1

#### Section 1: Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections)

Criteria	JORC Code Explanation	Commentary
Sampling techniques	Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.	A total of 52 Reverse Circulation (RC) drill holes were completed for 5,353m of drilling. Exploration was managed by Terrex Limited on behalf of Castle Minerals Limited. All samples received from the cyclone were split through a 3-tier riffle splitter to obtain approximately 2kg representative samples for storage. All potentially mineralised zones for graphite were further split on a 1m basis to obtain 2kg samples that are assigned unique sample numbers and bagged, ready to be dispatched for sample preparation and analysis.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.	All moist samples were sun-dried before being riffle split.
	Aspects of the determination of mineralisation that are Material to the Public Report.	All samples for analysis were shipped to the Intertek (Ghana) Limited laboratory in Tarkwa, Ghana for sample preparation and later shipped to Intertek Genalysis in Perth, Australia for total carbon analysis (CSA03, CS7/CSA).

Criteria	JORC Code Explanation	Commentary
	In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1m samples from which 3kg was pulverised to produce a 30g 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.	
<b>Drilling techniques</b>	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.).	All holes are RC holes and each one was completed to a depth ranging between 72m to 156m.
		Holes are typically inclined at 60 degrees with an azimuth of 90 degrees. A digital reflex instrument was used to survey the holes from 12m depth, then at 30m depth intervals until the end of each hole.
		RC drilling was undertaken with 4" and 4.5" face sampling bits (resulting in a minimum drill-hole diameter of 4").
<b>Drill sample recovery</b>	Method of recording and assessing core and chip sample recoveries and results assessed.	RC drilling recovery was recorded by visual estimation of recovered sample bags from the primary 1m sample collected through the cyclone and weights recorded for each 1m interval. Sample recovery was generally of good quality.
	Measures taken to maximise sample recovery and ensure representative nature of the samples.	
	Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.	
<b>Logging</b>	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.	All drill-holes were geologically logged in full by Terrex geologists.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.	All data is initially captured on pre-formatted Excel tables and subsequently loaded into the project specific drill-hole database by the database administrator.
	The total length and percentage of the relevant intersections logged.	All logs are checked and validated by an external geologist. Logging is of sufficient quality for the current level of work.
<b>Sub-sampling techniques and sample preparation</b>	If core, whether cut or sawn and whether quarter, half or all core taken samples.	RC Samples were split using a 3-tier riffle splitter into 1m samples. All primary samples and RC spoils were weighed and the results recorded. All moist samples were sub-dried before being riffle split.

Criteria	JORC Code Explanation	Commentary
	If non-core, whether riffled, tube sampled, rotary split etc and whether sampled wet or dry.	The quality control protocols implemented comprised the utilisation of field duplicates (FD), certified reference material (CRM) and blank samples (BK) in the following proportions: 5% FD, 5% CRM, and 2% Blanks.
	For all sample types, the nature quality and appropriateness of the sample preparation technique.	
	Quality control procedures adopted for all sub-sampling stages to maximise representativity of samples.	All sampling was carefully supervised. Ticket books were used with pre-numbered tickets placed in the sample bag and double checked against the ticket stubs and field sample sheet to guard against sample mix ups.
	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.	Individual samples were stored and sealed in clearly labelled plastic bags for transport.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	Sample sizes were appropriate for the material being tested.
<b>Quality of assay data and laboratory tests</b>	The nature, quality and appropriateness of the assay and laboratory procedures used and whether the technique is considered partial or total.	All samples were analysed by Intertek Genalysis in Perth, Australia, after samples were dried, crushed and pulverised at the Intertek Laboratory in Tarkwa, Ghana.
	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.	For analysis, all samples were analysed for Total Carbon and Sulphur by CS analyser, (CSA03), then a weak acid digestion, 420°C roast/CS analyser, (C73/CSA).
	Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.	QC measures include field duplicate samples, (1:20), certified standards (1:20) and blanks (1:50), as well as all the internal quality controls employed at the analytical laboratory.
		Due to the systematic, robust and intensive nature of quality control procedures adopted, the authors are confident that the assay results are accurate and precise and that no bias has been introduced.
<b>Verification of sampling and assay</b>	The verification of significant intersections by either independent or alternative company personnel.	An external geological consultant conducted two site visits in June and July 2022 during the drilling program to observe all drilling and sampling procedures. All procedures were considered industry standard, well supervised and well implemented.
	The use of twinned holes.	All data are initially captured on pre-formatted Excel tables and subsequently loaded into the project specific drill-hole database. All original data are kept both on-site and by the offsite technical project supervisors. Routine checks are performed regularly on the data. Procedures have been formalise with written copies in English.

Criteria	JORC Code Explanation	Commentary
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	Assay data are provided in digital format by the laboratory and imported directly into the project-specific database. Routine checks are made against the laboratory certificates.
	Discuss any adjustment to assay data.	
<b>Location of data points</b>	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.	Collar positions were surveyed using a total station and/or DGPS to within reported accuracy of 5cm. The surveys were undertaken and reported using Universal Transverse Mercator Zone 30 North (UTMN30).
	Specification of the grid system used.	The topographic control is considered to be of high quality and adequate for the current level of work.
	Quality and adequacy of topographic control.	
<b>Data spacing and Distribution</b>	Data specific for reporting of Exploration Results.	The drilling was completed on a non-uniform grid spacing, as it was designed to test a couple of prior completed electromagnetic survey targets. The data spacing and distribution is considered appropriate for the Exploration Target estimation procedures and classification applied.
	Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Minerals Resource and Ore Reserve estimation procedures(s) and classifications applied.	
	Whether sample compositing has been applied.	
<b>Orientation of data in relation to geological structure</b>	Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.	Drill-holes were oriented to intersect the lithology/mineralisation at right angles or as close as possible to right angles, and as such no material sampling bias has been introduced.
	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.	
<b>Sample Security</b>	The measures taken to ensure sample security.	Samples were sealed in plastic bags and placed in clearly marked Polyweave sacks (approximately 10 per bag) they were also sealed immediately. The samples were stored securely on-site before being transported via the Intertek Laboratory's sample collection truck from the project site to the Tarkwa laboratory for sample preparation.

Criteria	JORC Code Explanation	Commentary
<b>Audits or reviews</b>	The results of any audits or reviews of sampling techniques and data.	Independent geological consultant and Competent Person, Michael Cantey (Sahara Natural Resources) conducted site visits in June and July 2022 during the drilling program to observe all drilling and sampling procedures. All procedures were considered industry standard, well implemented, and supervised.

## 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>	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.	Work was completed on PL 10/47 which is held 100% by Kambale Graphite Limited, a Ghanaian registered company wholly owned by Castle Minerals Limited. The licence was issued by MINCOM the agency authorised by the Government of Ghana to administer the country's Mining Act.
	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.	The Government of Ghana has the right to acquire a 10% free carried interest in all licences and is entitled to a 5% gross profit royalty on mineral production. There are no other encumbrances on the title.  The prospect is on traditional lands on the outskirts of the Upper West region provincial city of Wa. Much of the prospect area is under cultivation by subsistence and market gardeners. Prior to undertaking works the company meets with, outlines its planned operations to and then negotiates suitable compensation arrangements with traditional owners and farmers for any disturbances created by the company.
<b>Exploration done by other parties</b>	Acknowledgment and appraisal of exploration by other parties.	Graphite mineralisation on the licence was initially discovered by Russian geologists in the 1960's exploring for manganese. Work was restricted to trenching. In 2012 Castle Minerals completed programs of aircore and RC drilling specifically testing the graphite occurrences on the licence and completed preliminary bench-scale metallurgical test work on the ores. A maiden inferred mineral resource was estimated on 24.07.2012 and discarded in November 2022 in accordance with JORC Code 2012.  Due to increased interest in graphite for the electric vehicle and storage battery industry the company commenced re-evaluating the deposit in 2021. A program of trenching and bulk sampling was completed, and detailed metallurgical test work completed, the results of which were announced on the 05/08/2021.  The company completed a HLEM ground geophysical survey earlier in 2022. Results of this survey were released to ASX on 31/03/2022.
<b>Geology</b>	Deposit type, geological setting and style of mineralisation.	Covered in the main body text of this ASX release.

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<b>Drill Hole Information</b>	<p>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:</p> <ul style="list-style-type: none"> <li>• easting and northing of the drill hole collar</li> <li>• elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</li> <li>• dip and azimuth of the hole</li> <li>• down hole length and interception depth</li> <li>• hole length.</li> </ul> <p>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.</p>	Covered in the main body text of this ASX release.
<b>Data aggregation methods</b>	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.	A lower cut-off of 5% TGC was applied and up to 2m of consecutive assays below 5% TGC could be included in reported results.
	Where aggregate intercepts incorporate short lengths of high-grade results and longer lengths of low-grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.	
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	
<b>Relationship between mineralisation widths intercept lengths</b>	These relationships are particularly important in the report of Exploration Results.	Down hole intersections are reported as downhole intersected width. Not true width.
	If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported	
	If it is not known and only the down hole lengths are reported, there should a clear statement to this effect (eg “down hole length, true width not known”)	
<b>Diagrams</b>	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.	Appropriate maps are provided in the body of this ASX release..

Criteria	JORC Code explanation	Commentary
<b>Balanced reporting</b>	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.	Material above a lower cut-off grade has been reported. The drilling intersected significant thickness of lower grade material which has not been reported as at this point the company is of the opinion that the low-grade material is likely to be uneconomic.
<b>Other substantive exploration data</b>	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.	The company has undertaken a program of petrological studies on a suite on graphite chips from the drilling to better understand the distribution of flake size and presence or absence of gangue inclusions in the ores. A program of diamond drilling has commenced to provide core for Phase 2 test work. Following completion of the core drilling infill RC drilling will be undertaken.
<b>Further work</b>	The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).	
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	