

## Outstanding Graphite Purification Results

- 99.97% TGC exceeds industry benchmark for use in EV battery anode manufacture.
- No impurities of concern.
- Prior micronisation and spheronisation processes also successfully completed.
- Major milestone achieved confirming Kambale's natural fine flake graphite as a credible material to participate in emerging critical mineral supply chains.
- Another 100 million light EVs forecast to be sold by 2030, each requiring 35kg - 75kg of battery anode material ("BAM").
- A looming supply deficit forecast specifically for natural fine flake graphite used to manufacture BAM<sup>1</sup>.
- Over reliance on Chinese graphite concentrates, BAM and anodes and recent China export curbs has left non-China downstream producers severely constrained.
- USA has just introduced tight controls on access by "countries of concern" to its multi-billion dollar in-country EV industry stimulus to encourage establishment of secure, reliable, quality, independent supply chains.
- Multi-faceted study commencing to identify optimal development strategy.

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Castle Managing Director, Stephen Stone said *"Increasing the purity of in-situ graphite mineralisation from <10% TGC to 99.97% TGC is a fantastic achievement and a great start to 2024. With no impurities of concern this exceeds the stringent specification benchmark set by off-takers who manufacture lithium-ion battery anodes used in electric vehicle, stationary power storage units and consumer electronics.*

*Kambale mineralisation is now confirmed as a bona-fide source of natural fine flake graphite which is the exact form of graphite forecast to move into a substantial supply deficit as the rapid take up of EVs continues.*

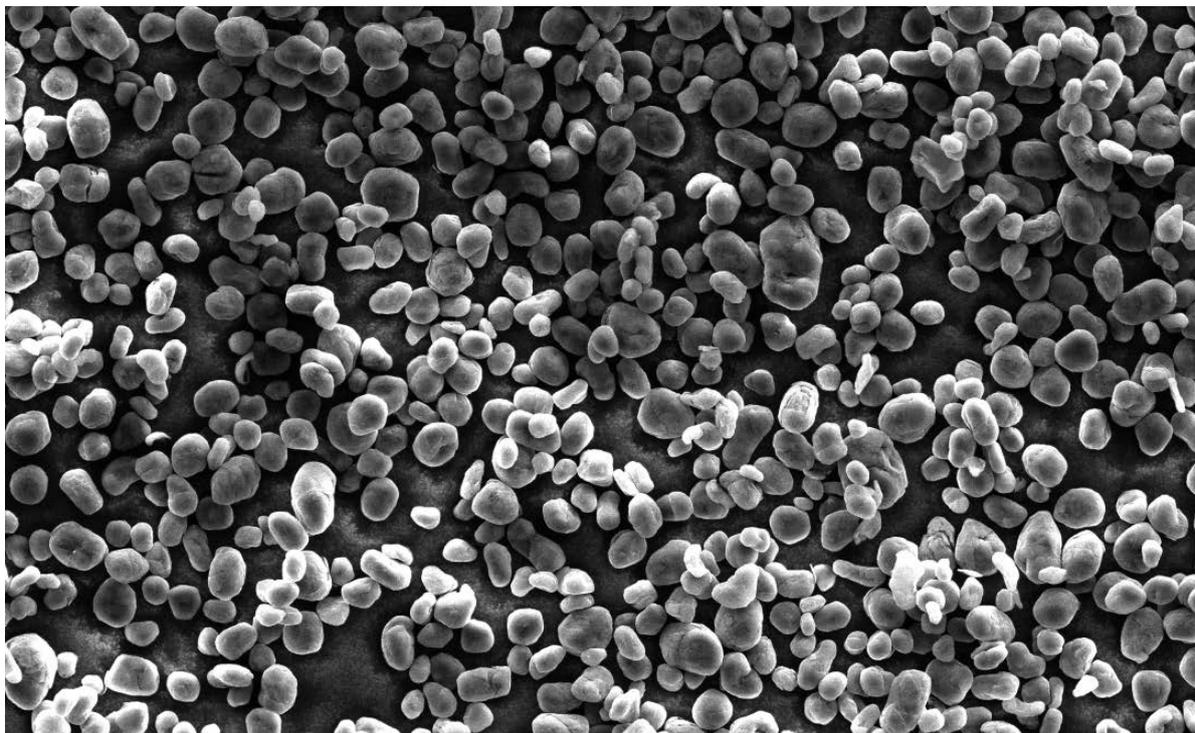
*The billions of dollars that the USA and EU are directing to establishing and securing reliable non-China dependent supply lines of critical minerals like graphite means that Kambale is well placed to participate in this paradigm shift in market structure.*

*Kambale is already large enough and at 8.6% TGC is of excellent grade to underpin a long life operation in Ghana, one of the most favourable mining jurisdictions on the African continent as exemplified by the number of Tier-1 gold miners having operated there for decades.*

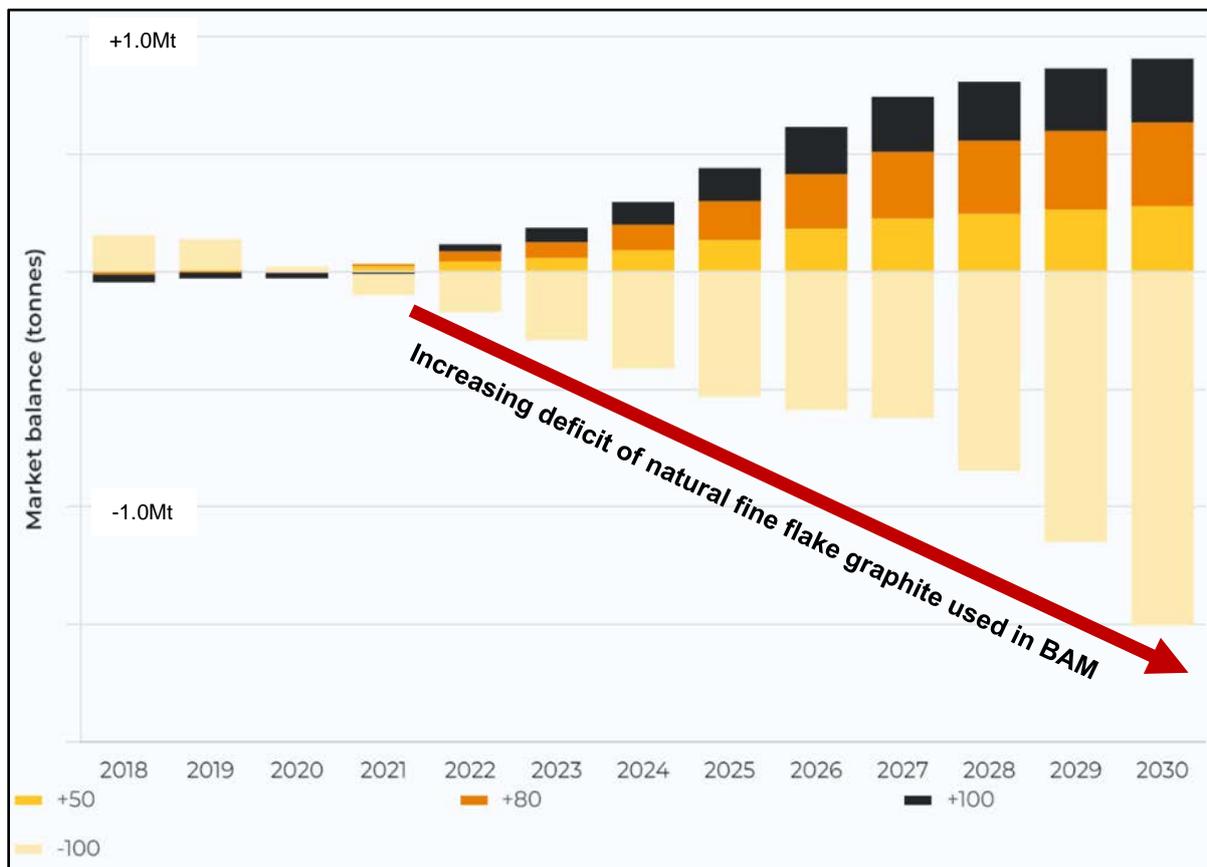
*We are just commencing a multi-disciplinary study to identify the optimal low-entry start-up capital approach to development which at this stage looks to be a phased, modularised, graphite concentration operation with an integrated, value-adding spheronisation facility. Once this is completed along with parallel activities Castle will be in a position to commence discussions with product off-takers, development and financing partners.*

*The junior resource sector is challenging right now and graphite has yet to emerge from under lithium's shadow but we are confident that both will turn in Castle's favour and the substantial fundamental value of Kambale will be fully recognised in due course."*

**Photo 1: SEM image of micronised and spheronised Kambale graphite concentrate. Note the excellent homogenous distribution of relatively uniform particles and their well-rounded shape.**



**Graph 1: -100 mesh natural fine flake graphite deficit forecast to grow**  
**<sup>1</sup>Source: Benchmark Intelligence Natural Graphite Forecast Q2 2023**



### WHY GRAPHITE, WHY KAMBALE?

- Electric vehicle (“EV”) lithium-ion batteries contain an anode (-ve) and a cathode (+ve).
- The anode comprises +95% graphite with 35kg-75kg of graphite in a typical EV battery pack and 10x -15x more graphite (by weight) than lithium (in the cathode).
- Battery anode material (“BAM”) is made from a fine flake form (-100 mesh) of natural graphite or synthetically produced graphite.
- Synthetic graphite is made from petroleum or coal refinery residue requiring high-temperature processing and orders of magnitude higher levels of CO<sub>2</sub> emissions.
- Mined and concentrated natural graphite is micronised, spheronised, purified (“SPG”) and then coated to become BAM.
- In most cases ~30% of the original graphite concentrate becomes BAM.
- There are forecasts for an additional 100 million light EV sales to 2030 alone and a major supply deficit of natural fine flake natural graphite is forecast.
- China produces ~95% of the world’s BAM with non-China anode, Li-ion battery with EV manufacturers critically dependent upon China supplies.
- China has insufficient natural fine flake graphite to meet internal demand and is importing concentrates via offtake contracts with many of the world’s new or proposed graphite mines.
- China wants to grow and protect its battery and EV business and in December 2023 introduced ‘temporary’ export licence controls on graphite, anodes and EV batteries.
- The USA Inflation Reduction Act is a multi-billion dollar initiative to stimulate in-country manufacturing of batteries and EVs via reliable, independent supply chains of quality, sustainable critical minerals, including graphite.
- The USA has also introduced more stringent controls on how enterprises can access IRA funding. This includes exclusions where material levels of enterprise ownership or product inputs are from “countries of concern”.
- The EU is introducing a similar supply chain stimulus initiative (“Critical Raw Materials Act”) with several other countries likely to follow suit.
- The Kambale Graphite Project is strategically well located and well timed to participate as an uncommitted source of natural fine flake graphite in the new critical mineral supply chains being established by the USA, EU and other countries.
- Ghana is a highly regarded, safe, politically stable, modern and fast-growing West African jurisdiction with a long history of mining by international Tier-1 companies. It has a highly skilled workforce, excellent infrastructure, well established contracting and supply sectors plus international ports and access to global markets.

Castle Minerals Limited (ASX: CDT) (“Castle” or the “Company”) advises of another major achievement at its Kambale Graphite Project, Ghana, where a concentrate of a representative sample of mineralisation has been purified using conventional processes to an outstanding 99.97% Total Graphitic Carbon (“TGC”) which exceeds the high-level benchmark required by the manufacturers of lithium-ion battery anodes (“Project”)(Table A)(Appendix JORC Code 2012 Table 1).

Test work was undertaken by Germany-based, ProGraphite GmbH (“ProGraphite”) on 10kg of bulk fine flake graphite concentrate grading 95.1% TGC. The concentrate was produced from flotation test work on a composite sample of Kambale diamond core samples grading ~10% TGC. This test work was performed by Perth-based, Metallurgy Pty Ltd, under the supervision of Independent Metallurgical Operations Pty Ltd (“IMO”).

The 99.97% purity achieved has been confirmed by an independent laboratory and, most importantly, with no impurities of concern noted.

Prior to the actual purification process, the concentrate underwent various pre-treatments and analyses to obtain a comprehensive characterisation of the material. It was then **micronised** using an impact mill to generate a relatively uniform particle size range ahead of the spheronisation process where the fine graphite flakes are moulded in a special mill into sphere-shaped masses (“uSPG”). This is to increase carbon density, packing density and to maximise battery charge capacity.

**Spheronisation** achieved a commendable uniform particle shape and size distribution (Photo 1).

**Purification** of the spheronised material was achieved using a conventional alkaline, caustic soda based process. Importantly, it did not require the application of hydrofluoric acid (HF) which can introduce major handling and other safety considerations.

The final process in the production of BAM (also referred to as Active Anode Material) is to apply a special **coating** to the purified, spheronised material. This process is highly specialised and often proprietary so at this stage is not being contemplated at Kambale.

### **Excellent first-pass results**

The concentrate test work, whilst very successful, was a first-pass assessment of a representative sample of fresh, unweathered graphitic material. Likewise the ProGraphite test work was also a first-pass un-optimised process. This leaves open several opportunities in additional test work to optimise graphite recoveries and the overall process flowsheet design with commensurate efficiencies in operating and capital intensity costs.

### **Achievements**

The recent successful purification test work marks another major achievement in the evaluation of the Project in the past 12 months which also include the:

- Completion of a RC drilling campaign that extended, deepened and infilled a large proportion of the deposit;
- Increase in JORC Code (2012) Mineral Resource Estimate (“MRE”) to 22.4Mt at 8.6% TGC containing 1.9Mt of graphite and increase in higher confidence Indicated Mineral Resource to 43% of the MRE;
- Highlighting by geophysics of several possible distal occurrences of graphite; and
- Production of a commercial grade 95.1% TGC bulk fine flake graphite concentrate from a representative composited diamond core sample of in-situ mineralisation.

### **Development concept**

Having extensively examined the natural fine flake graphite business in the specific context of Kambale’s ultimate likely production capacity, location, available infrastructure, logistics and jurisdictional environment as well as likely community impact, a strategy for development at Kambale is now taking shape.

Development is likely to take the form of a low entry capital cost, initially campaign-mined and scalable, modularised operation producing a commercially saleable bulk natural fine flake graphite concentrate

on site. This will then be micronised and spheronised in an integrated facility. An Options Study will assess the technical and commercial merits of including a purification unit.

Castle is comfortable with the present size, grade and other characteristics of the Kambale deposit and its ability to underpin a long-life, open-pit mining operation. It does not plan to undertake further resource focused drilling until the Feasibility Study stage but may undertake some drilling for geotechnical and metallurgical purposes.

### **Next Steps**

ProGraphite has initiated a series of electrochemical and charge-cycle tests on the Kambale uSPG material to assess its charging and other performance characteristics. This work will take several weeks to complete.

Castle has engaged a team of specialist mining, processing and study engineers and a market specialist to undertake a high-level assessment of the technical and commercial merits of establishing a mining and processing operation at Kambale and identifying a preferred approach to doing so.

In parallel and critical to establishing any operation at Kambale, Castle has commissioned and commenced an independent Stakeholder Engagement Programme which was scoped following an independent Stakeholder Identification and Assessment Study. These are being conducted consistent with standards, policies and guidelines of the World Bank, International Finance Corporation, International Labour Organisation and other relevant authorities.

## **ABOUT THE KAMBALE GRAPHITE PROJECT**

### **Ghana**

Ghana has a well-established mining industry including several Tier-1 gold mining operations. It is now Africa's largest gold producer and the World's sixth largest. Accordingly, it has a well-trained and very capable workforce supported by an excellent mining services and supply sector. It is a safe and politically stable jurisdiction based on the democratic Westminster system of government.

### **Logistics, infrastructure and licencing**

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.

The Wa region has an excellent infrastructure including a commercial airport only a few kilometres from the Project, numerous well maintained sealed and unsealed roads, plenty of potable water and reliable grid power largely fed with electricity generated by the 400MWh Bui hydroelectric dam. These will all combine to represent a large saving in Project establishment capital costs.

The 149km<sup>2</sup> Kambale Graphite Project licence is held by 100% owned Ghanaian subsidiary, Kambale Graphite Limited ("KGL"). The Government of Ghana has the right to a 10% free carried interest in all licences and is entitled to a 5% Gross Royalty on production.

### **Geology**

The genesis of the flake graphite in Kambale is believed to be the result of high-grade metamorphism (amphibolite-granulite facies) which has converted trapped amorphous carbon into characteristic fine crystalline layers.

The Kambale graphite deposit was identified in the 1960s by Russian geologists prospecting for manganese. They undertook a limited programme of trenching and shallow drilling.

### **2012 drilling**

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). This work confirmed several zones of moderately to steeply dipping, north-east trending graphitic schists hoisted mainly in granodiorites. A JORC Code 2006 MRE was also undertaken.

Castle also undertook a very limited programme of bench-scale test work on RC chips. Thereafter, little work was undertaken until the more recent improvement in graphite prices prompted a re-evaluation of the Project in early-2021.

### **Phase 1 metallurgical test work**

In September 2021 Castle reported that preliminary bench-scale test work by Independent Metallurgical Operations Pty Ltd (IMO), Perth, on sub-optimal near-surface, weathered graphitic schists sourced from trenches yielded encouraging fine flake graphite concentrate grades of up to 96.4% and recoveries of up to 88%. A conventional multiple grind and flotation concentration flowsheet was used. The three composited samples provided for the test work graded 12.56%, 16.09% and 17.16% TGC.

### **Ground geophysics and follow-up drilling**

In March 2022, a ground horizontal loop electromagnetic (HLEM) survey demonstrated a strong correlation between already drill confirmed graphite mineralisation and zones of high conductivity. Several high conductivity zones also extended well outside of drilled areas.

In late 2022, a 52-hole 5,353m RC programme was undertaken to test the interpreted steep dipping, shallow conductive plates derived from the HLEM survey. The results confirmed that the majority of the plates were associated with graphite mineralisation and that the graphite continued to depths of at least 100m.

### **Maiden MRE**

In early-March 2023 Castle reported that robust lenses of graphitic mineralisation containing high-grade zones with excellent continuity had been delineated by a 30-hole, 2,622m RC infill and 4-hole, 365.2m diamond core drilling campaign.

In April 2023 a maiden JORC Code (2012) Mineral Resource Estimate (“MRE”) of 15.6Mt at 9.0% TGC containing 1.41Mt of graphite was provided by independent consultants, Palaris (Australia) Pty Ltd.

The MRE is hosted by sub-parallel, steep to moderately dipping graphitic schist zones. These were delineated using data from the several phases of trenching and drilling which comprised 386-holes for a combined 16,018m of RAB, aircore, RC and diamond core drilling. Of this database, 85 RC and 4 diamond core holes for a total of 8,644m were used in the actual estimation.

Mineralisation commences at or close to surface and has been drill proven to at least 120m depth and most likely even deeper. The MRE excluded any mineralisation below the 200mRL, or approximately 100m below the topographic surface. A substantial proportion of mineralisation intersected by drilling, in particular that new mineralisation highlighted by the HLEM survey, did not qualify for inclusion in the MRE.

### **Phase 2 test work**

A 300kg sample of fresh, unweathered graphitic schist, sourced from the four diamond drill core holes drilled into various representative areas of the deposit, was delivered to IMO in late December 2022. Bench-scale and then pilot plant scale test work used 215kg of the original sample. A commercial specification bulk fine flake concentrate grade of 95.1% TGC was achieved with a recovery of 79% of the graphite to the concentrate.

### **Micronisation, spheronisation and purification test work.**

The bulk fine flake concentrate has successfully undergone micronisation, spheronisation and purification test work at ProGraphite GmbH, Germany. This produced a 99.97% TGC product. This material is now undergoing electrochemical test work to confirm its ability to be used in the manufacture of precursor and Battery Anode Material (BAM).

### Loupe EM survey

A Loupe EM ground geophysical survey completed in June 2023 identified a series of targets on the boarder Kambale licence that require evaluation for the presence of additional graphitic schist mineralisation separate from the main Kambale deposit.

### MRE Update

An increased JORC Code (2012) Mineral Resource Estimate (“MRE”) of 22.4Mt grading 8.6% TGC containing 1.94Mt of graphite was reported in October 2023. This included 43% in the higher confidence Indicated Mineral Resource category.

Classification	Tonnes (kt)	Contained TGC (kt)	TGC (%)
Indicated	9,556	843	8.8%
Inferred	12,872	1,096	8.5%
<b>Total</b>	<b>22,438</b>	<b>1,939</b>	<b>8.6%</b>

*5% TGC Cut-Off. TGC = Total Graphitic Carbon*

The MRE update included 43 RC holes drilled in August 2023. Mineralisation has been delineated over 2.3km north-south within a corridor up to 0.5km wide by several phases of trenching and a combined 424-holes for 21,569m of RAB, Aircore, RC and diamond core drilling campaigns. It has also been confirmed to at least 150m below surface where it still remains open.

### ESG and Social licence

KGL’s key management has some 16 years of successfully operating in Ghana and in particular its Upper West region. It has established a good reputation for its pro-active commitment to community engagement, local employment and training and aims to apply best practise ESG standards.

KGL has ensured that its activities meet the highest expectations in regard to environmental, social and governance (“ESG”) standards. Resources have been directed to ensuring that all activities are undertaken with the prior, free and fully informed consent of impacted communities.

In parallel and critical to establishing any operation at Kambale, Castle has commissioned and commenced an independent Stakeholder Engagement Programme which was scoped following an independent Stakeholder Identification and Assessment Study. These are being conducted consistent with standards, policies and guidelines of the World Bank, International Finance Corporation, International Labour Organisation and other relevant authorities.

Compensation for access and any disruptions caused is provided in close consultation with landowners, Government and other stakeholders. All site disturbances are rehabilitated immediately after use.

KGL will continue to contribute to the improvement of the well-being of its communities. It has already, at the request of the communities, installed fresh water well, pump and storage facilities and is planning to continue with other critical health improvement initiatives.

The Company’s Ghana-based team is 100% Ghanaian. A key aim is to maximise local employment and include where possible 100% of locally sourced content in all aspects of its operations.

### Graphite market

The graphite market is diverse across industrial, metallurgical, chemical and specialised areas with each sector requiring reliable long term supplies of graphite concentrates with very specific qualities. Deposit type, size and geometry, flake size, flake shape, grade, impurities, capital and operating costs,

ability to be refined, 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. This is driven in particular by the use in the fast-growing EV battery and stationary power storage sectors of the natural fine flake form of graphite. Kambale graphite is primarily of this type. At present, there is no viable, high-volume substitute for graphite whether that be natural flake or its synthetically manufactured form which involves a considerably more costly and higher CO<sub>2</sub> generating process. Given the wide variety of uses and required specifications and volumes, the market and pricing for graphite is very opaque.

The reader is directed to numerous recent publications, conference proceedings, market research papers and corporate websites of companies engaged in graphite exploration, project development or production for informed commentary and analysis of the graphite market.

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

**Stephen Stone**

Managing Director

stone@castleminerals.com

+61 (0)418 804 564

### 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
Castle Boost Kambale Graphite resource to 22.4Mt	23 October 2023
Kambale Graphite Project Delivers More High-Grade Drill Intercepts	21 September 2023
Commercial Grade Graphite Concentrate Produced At Kambale	18 September 2023
Castle Appoints International Mining Executive	6 September 2023
Additional High Grade Intercepts at Kambale Graphite project	14 August 2023
Additional Graphite Targets at Kambale	1 August 2023
Kambale Drilling, Geophysics and Metallurgical Test Work Update	27 June 2023
Castle Commences Geophysical Survey to Locate Additional Graphite Occurrences	22 May 2023
Castle Commences Resource Upgrade Drilling at Kambale	16 May 2023
Castle's Kambale Project Exceeds 1.4Mt Contained Graphite	12 April 2023
Excellent High-Grade Continuity Confirmed at Kambale Graphite Project	13 March 2023
Kambale Graphite Project RC Drilling Completed	4 January 2023
Kambale Graphite Diamond Core Drilling Completed (Amended)	23 December 2022
Kambale Graphite Diamond Core Drilling Completed	20 December 2022
Independent Exploration Target Estimate Highlights Kambale as a Large-Scale Graphite Deposit	28 November 2022
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 Programme 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

Headline	Date
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

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

In Ghana, West Africa, the emerging flagship **Kambale Graphite Project** owned by 100% Ghanaian subsidiary, Kambale Graphite Limited, is progressing through technical and commercial evaluation for the production of battery grade material to be used in lithium-ion battery manufacture.

Castle’s 100% owned Ghanaian subsidiary, **Carlie Mining Ltd**, holds a 2,686km<sup>2</sup> tenure position in the same Upper West region. This 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. It has delineated several advanced gold exploration targets including at **Kpali, Bundi** and **Kandia**. It also retains a **4% net smelter precious metal royalty** over the **Julie West** licence, a key component of Azumah Resources Limited’s nearby Black Volta gold project.

In Western Australia, The **Eraheedy Basin** project comprises the **Withnell** and **Terra Rossa** sub-projects. The Withnell licence is strategically located adjacent to the evolving World-Class 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 have additional prospectivity for copper.



The **Beasley Creek** project is prospective for gold and lithium and lies on the northern flanks of the Rocklea Dome in the southern Pilbara.

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 and possibly base metals whilst the **Wanganui** project is prospective for down-plunge high-grade gold shoots. Both have been farmed-out to Great Boulder Resources Limited (ASX: GBR)

The **Wilgee** Springs project, along strike from and within the same metamorphic belt as the world-class Greenbushes lithium mine 25km to the south, is prospective for spodumene bearing pegmatites as is the Woodcutters project, 25km south east of the Bald Hill lithium mine and 25km north west of the Buldania lithium deposit. The **Woomba Well** project is similarly prospective for lithium bearing pegmatites.

## 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 programmes 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 Statements

The scientific and technical information in this release 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 release that relates to the geology of the deposits and exploration.

Information in this release that relates to the geological interpretation and Mineral Resources is based on information compiled by Jamie Logan, a full time employee of Palaris Australia Pty Ltd, under the direction and supervision of Dr Allan John Parker. Dr Parker is a Member of the Australasian Institute of Geoscientists, an employee of Palaris Australia Pty Ltd, Director of Geosurveys Australia Pty Ltd, a Non-Executive Director of Centrex Limited and was formerly Managing Director of Lincoln Minerals Limited. Dr Parker has sufficient experience relevant to the styles of mineralisation and to the activities which are being presented to qualify as a Competent Person as defined by the JORC code, 2012. Dr Parker consents to the release of the information compiled in this release in the form and context in which it appears.

Information in this release that relates to metallurgical test work managed by Independent Metallurgical Operations Pty Ltd (“IMO”) is based on, and fairly represents, information and supporting documentation compiled and/or reviewed by Mr Peter Adamini BSc (Mineral Science and Chemistry) who is a member of The Australasian Institute of Mining and Metallurgy (AusIMM). Mr Adamini is a full-time employee of IMO who has been engaged by Castle Minerals Ltd to provide metallurgical consulting services. Mr Adamini consents to the inclusion in this release of the matters based on his information in the form and context in which it appears. Mr Adamini advises that information in this release that relates to metallurgical test work undertaken by ProGraphite GmbH is based on, and fairly represents, information and supporting documentation provided by ProGraphite GmbH.

**KAMBALE BATTERY ANODE METALLURGICAL TEST WORK RESULTS – JANUARY 2024**  
**Appendix: JORC Code 2012 Edition – Table 1**  
**Section 1: Sampling Techniques and Data**

Criteria	JORC Code explanation	Certified Person Commentary
<b>Sampling techniques</b>	Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.	10kg of concentrate grading 95.1% TGC graphite was used for the battery anode test work. The concentrate was produced from diamond drill core from the Kambale Graphite Deposit by Metallurgy Pty Ltd under the supervision of Independent Metallurgical Operations Pty Ltd (IMO) Perth. Refer ASX announcement 18 September 2023.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.	Metallurgy Pty Ltd technicians provided two 5kg bags of concentrate from the 18kg of graphite produced from the test work and forwarded this to ProGraphite GmbH for the battery anode test work.
	Aspects of the determination of mineralisation that are Material to the Public Report.	Refer to ASX announcements 23 October 2023 and 18 September 2023 for details.
	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 (e.g. submarine nodules) may warrant disclosure of detailed information.	Refer to ASX announcement 18 September 2023 for details for the concentrate test work program.
<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).	Not applicable as no drilling is being reported.
<b>Drill sample recovery</b>	Method of recording and assessing core and chip sample recoveries and results assessed.  Measures taken to maximise sample recovery and ensure representative nature of the samples.  Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.	Not applicable no drilling is being reported.

Criteria	JORC Code explanation	Certified Person Commentary
<b>Logging</b>	<p>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.</p> <p>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</p> <p>The total length and percentage of the relevant intersections logged.</p>	Not applicable no drilling is being reported.
<b>Sub-sampling techniques and sample preparation</b>	<p>If core, whether cut or sawn and whether quarter, half or all core taken.</p> <p>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</p> <p>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</p> <p>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</p> <p>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.</p> <p>Whether sample sizes are appropriate to the grain size of the material being sampled.</p>	The entire 10kg of concentrate sample was used for the battery anode test work.
<b>Quality of assay data and laboratory tests</b>	<p>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</p> <p>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.</p> <p>Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.</p>	<p>The battery anode test work was completed by ProGraphite GmbH in Germany.</p> <p>The concentrate underwent various pre-treatments to obtain a thorough characterisation of the material. It was then micronised using an impact mill to generate a relatively uniform particle size range ahead of the spheronisation process where the fine graphite flakes are moulded in a special mill into rough sphere-shaped masses (“SPG”). This is to increase carbon density, packing density and to maximise battery charge capacity.</p> <p>ProGraphite used a alkaline, caustic soda based purification process</p>
<b>Verification of sampling and assaying</b>	<p>The verification of significant intersections by either independent or alternative company personnel.</p> <p>The use of twinned holes.</p> <p>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</p> <p>Discuss any adjustment to assay data.</p>	Not applicable no drilling is being reported
	Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches,	Not applicable no drilling is being reported

Criteria	JORC Code explanation	Certified Person Commentary
<b>Location of data points</b>	mine workings and other locations used in Mineral Resource estimation.	
	Specification of the grid system used.	WGS1984 Complex UTM Zone 30N
	Quality and adequacy of topographic control.	Not applicable no drilling is being reported
<b>Data spacing and distribution</b>	Data spacing for reporting of Exploration Results. Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied. Whether sample compositing has been applied.	The core holes from which the concentrate was prepared were drilled within the shell of the resource model. Holes were spaced throughout the deposit so as to give a representative sample.
<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. 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.	Not relevant as results of metallurgical test work on a concentrate sample are being reported. The concentrate sample was prepared from drill core samples representative of the deposit
<b>Sample security</b>	The measures taken to ensure sample security.	The concentrate sample was prepared and placed into two plastic bags labeled “Cleaner Conc 10” by Metallurgy Pty Ltd in Welshpool, Perth and air freighted to ProGraphite GmbH in Germany. ProGraphite did not report any issues with the packaging or material when it was delivered to their laboratory.
<b>Audits or reviews</b>	The results of any audits or reviews of sampling techniques and data.	No reviews or audits of the sampling for the concentrate sample, or technical results were undertaken.

## Section 2: Reporting of Exploration Results

Criteria	JORC Code explanation	Certified Person Commentary
<b>Mineral tenement and land tenure status</b>	<ul style="list-style-type: none"> <li>Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.</li> </ul>	<p>Work was completed on PL 10/47 which is held 100% by Kambale Graphite Limited, a Ghanaian registered company 100% owned by Castle Minerals Limited. The licence contract has been issued by MINCOM, executed by KGL, all statutory payments made and executed by the Minister who administers Ghana’s Mining Act.</p> <p>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.</p> <p>The project is on traditional lands on the outskirts of the provincial city of Wa. Much of the project area is under cultivation by subsistence farmers. Prior to undertaking works the Company negotiated suitable compensation arrangements with traditional owners and farmers for any disturbances created by the</p>

Criteria	JORC Code explanation	Certified Person Commentary
		Company and upon completion rehabilitated the holes, drill sites and access ways.
	The security of the tenure held at the time of reporting along with any known impediments to obtaining a license to operate in the area.	The licence is considered to be secure and in good standing (refer above).
<b>Exploration done by other parties</b>	Acknowledgment and appraisal of exploration by other parties.	<p>Graphite mineralisation on the licence was initially discovered by geologists in the 1960's exploring for manganese. Work was restricted to trenching. In 2012 Castle Minerals completed air core and RC drilling programmes specifically testing the graphite occurrences on the licence and completed preliminary metallurgical test work on the ores. A maiden resource was released on the 24/07/2012 based on 54 air core and 3 RC drill holes.</p> <p>Due to increased interest in graphite the Company commenced re-evaluating exploration on the project in 2021. A programme of trenching and bulk sampling was completed, and detailed metallurgical test work completed, the results of which were announced on 05/08/2021.</p> <p>The Company completed a HLEM ground geophysical survey in 2022. An initial RC programme of 52 drill holes was completed in July 2022 targeting conductor plates identified by the HLEM survey was completed.</p> <p>A further programme of 4 diamond drilling and 30 infill RC holes were completed in December 2022.</p> <p>Core from the diamond drill programme was sampled and used for test work to produce a bulk fine flake graphite concentrate.</p> <p>A Mineral Resource Estimate based on the RC and diamond drilling, completed in December 2022, was finalised in April 2023.</p> <p>A further 43 RC drill holes for 5,335m was completed infilling gaps and extending the resource model which was finalised in June 2023.</p> <p>An upgraded Mineral Resource Estimate incorporating the June 2023 drilling was finalised in October 2023.</p>
<b>Geology</b>	<ul style="list-style-type: none"> <li>Deposit type, geological setting, and style of mineralisation.</li> </ul>	<p>The Kambale project lies within Paleoproterozoic supercrustal and intrusive rocks of the Birimian Supergroup (ca 2195-2135Ma). The licence area is underlain by metamorphosed volcanic, pyroclastic and sediments of the Upper Suite of the Middle Birimian suite. Granitoids of the Cape Coast Suite have intruded metasediment sequences. Close to the contact the metamorphic grade is amphibolite dropping to upper greenschist away from the contact.</p> <p>The precursor rocks to the graphite schist are believed to be carbonaceous shales of the Middle Suite that have been metamorphosed due to the intrusion of the granitoid.</p>

Criteria	JORC Code explanation	Certified Person Commentary
<b>Drill hole Information</b>	<ul style="list-style-type: none"> <li>• 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: <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> </li> <li>• 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.</li> </ul>	<p>No drill assay results are being reported in this release.</p> <p>All drill collar information has been released including holes that did not encounter graphite mineralisation.</p>
<b>Data aggregation methods</b>	<ul style="list-style-type: none"> <li>• In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated</li> <li>• Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.</li> <li>• The assumptions used for any reporting of metal equivalent values should be clearly stated.</li> </ul>	<p>No drill assay results are being reported in this release.</p>
<b>Relationship between mineralisation widths and intercept lengths</b>	<ul style="list-style-type: none"> <li>• These relationships are particularly important in the reporting of Exploration Results.</li> <li>• If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</li> <li>• 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’).</li> </ul>	<p>No drill assay results are being reported in this release.</p>
<b>Diagrams</b>	<ul style="list-style-type: none"> <li>• 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.</li> </ul>	<p>Diagrams not relevant to this release.</p>
<b>Balanced reporting</b>	<ul style="list-style-type: none"> <li>• 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.</li> </ul>	<p>No drill or exploration results are being reported</p>
<b>Other substantive exploration data</b>	<ul style="list-style-type: none"> <li>• 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;</li> </ul>	<p>The Company has previously undertaken preliminary metallurgical test work on sub-surface oxidised graphite material which indicated a suitable grade concentrate can be achieved. It also examined flake size, gangue inclusions and other physical properties not measured by TGC assays that can have a significant bearing on economic value of graphite.</p>

Criteria	JORC Code explanation	Certified Person Commentary
	potential deleterious or contaminating substances.	
<b>Further work</b>	<ul style="list-style-type: none"> <li>• The nature and scale of planned further work (e.g., tests for lateral extensions or depth extensions or large-scale step-out drilling).</li> <li>• Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</li> </ul>	The Company has commenced a study to identify a preferred and optimal development option to enable, all things considered, commercialisation of the Project. This will also include a gaps analysis which will underpin a seamless transition into a higher confidence development assessment.