

16 August 2023

## BULK TEST NOW RUNNING WITH IMPROVED FLOTATION METRICS

Sarytogan Graphite Limited (ASX: SGA, "the Company" or "Sarytogan") is pleased to provide an update on metallurgical test work for the Sarytogan Graphite Deposit in Central Kazakhstan.

### Highlights

- Bulk flotation test relocated from Germany to IMO laboratory in Perth, Australia where it is currently running and will continue for the remainder of the current quarter as planned.
- Bulk flotation test is running on a composite sample from 8 diamond drill holes from the northern and central graphite zones at a representative head-grade of **32.5% TGC**.
- A bench scale test on this sample achieved a concentrate grade of **85.1% TGC** at 76.6% recovery, an improvement on previous even higher head-grade samples.
- Significant operational improvements realised including the use of readily available diesel as a collector and the halving of the number of regrinding and cleaner stages applied.
- Downstream purification, spheroidization and battery testing ordered with multiple labs worldwide, each set to receive 3-5kg each of bulk flotation concentrate.



Figure 1 – Rougher stage of bulk flotation test on Sarytogan Graphite underway at IMO in Perth, Australia, August 2023.

Sarytogan Managing Director, Sean Gregory commented:

*"We are pleased to report that the critical step in Sarytogan's metallurgical test work program is on track with the bulk flotation test now running in Perth that will continue for the rest of this quarter as planned. Lab partners across the globe are ready to receive their allocation of the concentrate for further purification, spheroidization and battery testing."*

Our Australian laboratory partners Independent Metallurgical Operations Pty Ltd (IMO) is progressing metallurgical test work at Metallurgy Pty Ltd mineral processing laboratory in Perth, Western Australia.

A composite sample was blended from 8 diamond drill holes, 5 from the northern graphite Zone (NGZ) and 5 from the Central Graphite Zone (CGZ) at an average head-grade of **32.5%** TGC. Preliminary mining studies indicate that this is a representative head-grade for the early years of the mining schedule.

A bench scale test on this sample achieved a concentrate grade of **85.1%** Total Graphitic Carbon (TGC) at 76.6% recovery, the highest-grade concentrate achieved at this stage. Previous tests achieved lower concentrate grades, even from higher head-grade samples. For example, the test reported on the ASX on 12 October 2022, started with a higher head grade of **41.8%** TGC for a concentrate grade of **81.3%** (TGC) with 87.9% recovery.

IMO have demonstrated themselves to be the experts in graphite flotation, outperforming other labs on identical samples at this step. Their availability for bulk scale work earlier this year necessitated the unsuccessful trialling of another lab.

The bench scale result is remarkable because it incorporates significant operational improvements developed over the last 6 months including the use of low-cost and readily available diesel as a collector and the halving of the number of regrinding and cleaner stages applied.

The bulk scale test will run for the remainder of the quarter as planned. 60kg of feed is to be processed, expected to yield 15-20kg of concentrate.

Downstream purification, spheroidization and battery testing has been ordered with multiple labs worldwide. Each lab is set to receive 3-5kg each of bulk flotation concentrate for testing.

Meanwhile the Pre-Feasibility Study is progressing, to be updated with test work results as they become available.

**This announcement is authorised by the Board of Directors of the Company.**

**Sean Gregory**

**Managing Director**



## About Sarytogan

Sarytogan's namesake project is the Sarytogan Graphite Deposit, located in the Karaganda region of Central Kazakhstan. It is 190km by highway from the industrial city of Karaganda, the 4<sup>th</sup> largest city in Kazakhstan (Figure 3).

Sarytogan is also exploring the Kenesar Graphite Exploration Project in Akmola province Northern Kazakhstan, 40km from the city of Kokshetau (Figure 3).



Figure 3 - Sarytogan and Kenesar Graphite Project locations

The Sarytogan Graphite Deposit was first explored during the Soviet era in the 1980s with sampling by trenching and diamond drilling. Sarytogan's 100% owned subsidiary Ushtogan LLP resumed exploration in 2018. An Indicated and Inferred Mineral Resource has recently been estimated for the project by AMC Consultants totalling **229Mt @ 28.9% TGC** (Table 1). Sarytogan has upgraded the mineralisation to **99.87%** purity by flotation, alkali roasting, and chemical purification (refer ASX Announcement 6 December 2022) and is pursuing a strategy to supply high-quality anode material for the rapidly growing electric vehicle battery market. A Pre-Feasibility Study is underway.

Table 1 - Sarytogan Graphite Deposit Mineral Resource (> 15% TGC). Refer ASX announcement 27 March 2023.

Zone	Classification (JORC Code)	In-Situ Tonnage (Mt)	Total Graphitic Carbon (TGC %)	Contained Graphite (Mt)
<b>North</b>	Indicated	87	29.1	25
	Inferred	81	29.6	24
	Total	168	29.3	49
<b>Central</b>	Indicated	39	28.1	11
	Inferred	21	26.9	6
	Total	60	27.7	17
<b>Total</b>	Indicated	126	28.8	36
	Inferred	103	29.1	30
	Total	229	28.9	66

## Compliance Statement

The information in this report that relates to Exploration Results is based on information compiled by Dr Waldemar Mueller, a Competent Person who is a Member of The Australasian Institute of Mining and Metallurgy. Dr Mueller is a full-time employee of the Company and 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'. Dr Mueller 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 document that relates to metallurgical test work is based on, and fairly represents, information and supporting documentation 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 Independent Metallurgical Operations Pty Ltd, who has been engaged by Sarytogan Graphite Ltd to provide metallurgical consulting services. Mr Adamini has approved and consented to the inclusion in this document of the matters based on his information in the form and context in which it appears.

The information in this report that relates to previous Exploration Results is cross referenced to the relevant announcements in the text. These reports are available at [www.asx.com.au](http://www.asx.com.au). The information in this report that relates to Sarytogan Mineral Resources was first reported in ASX announcement dated 27 March 2023.

The Company confirms that it is not aware of any new information or data that materially affects the information included in relevant market announcements and, in the case of estimates of Mineral Resources, that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Persons' findings are presented have not been materially modified from the original market announcements.

## 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	<p><i>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.</i></p> <p><i>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</i></p> <p><i>Aspects of the determination of mineralisation that are Material to the Public Report.</i></p> <p><i>In cases where 'industry standard' work has been done this would be relatively simple (e.g., 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g., submarine nodules) may warrant disclosure of detailed information.</i></p>	<p>Quarter HQ diamond core was sampled for metallurgical testing. 40kg was sampled from holes ST-9, 12, 41, 45, and 46 from the NGZ and combined with 30kg sampled from holes St5, 60 and 63 from the CGZ within the initial mining area. Sample lengths of these metallurgy samples were of 5-10m downhole length at a variety of depths from 8m to 130m below surface. The sample is considered representative of the first 20 years of mining.</p>
Drilling techniques	<p><i>Drill type (e.g., core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (e.g., core diameter, triple or standard tube, depth of diamond tails, face-sampling bit, or other type, whether core is oriented and if so, by what method, etc).</i></p>	<p>Core drilling was completed by an XY-44T drill rig mounted on wheel-based mobile trailed platforms and equipped with a smooth-bore drill with a detachable core receiver of the Boart Longyear system equipped with double core tubes.</p> <p>Pre-drilling is completed with carbide crowns with a diameter of 112-132 mm to a depth of 2-4 m, followed by</p>

Criteria	JORC Code explanation	Commentary
		<p>casing. Drilling is carried out using a removable core receiver and HQ diamond crowns (diameter 96 mm), in rare cases, in complex geological conditions, diameter was reduced to NQ size (diameter 76 mm). Water was used as a washing liquid, and polymer solutions were used at absorption sites.</p> <p>All drill holes are vertical. At the completion of a drill hole, downhole survey is carried using a MIR-36 inclinometer with measurements every 20 m.</p>
Drill sample recovery	<p><i>Method of recording and assessing core and chip sample recoveries and results assessed.</i></p> <p><i>Measures taken to maximise sample recovery and ensure representative nature of the samples.</i></p> <p><i>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.</i></p>	<p>To maximise core recovery, double tube HQ and NQ core drilling was used, with the drilling utilising drillers experienced in drilling difficult ground conditions. Drill penetration rates and water pressure were closely monitored to maximise recovery.</p> <p>During the diamond drilling the length of each drill run and the length of sample recovered was recorded by the driller (driller's recovery). The recovered sample length was cross checked by the geologists logging the drill core and recorded as the final recovery.</p> <p>Average core recoveries are greater than 98%.</p> <p>At present, no relationships between sample recovery and grade bias due to loss/gain of fines or washing away of clay material has been identified. It is assumed that the grade of lost material is similar to the grade of the recovered core.</p>
Logging	<p><i>Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation,</i></p>	<p>All logging is completed on paper and later transferred to a digital media.</p> <p>The core documentation includes information on the length of the drill</p>

Criteria	JORC Code explanation	Commentary
	<p>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>	<p>runs, drilling diameter, core recovery and sampling intervals. Special attention was paid to the zones of graphitised rocks, lithology, alteration and mineralisation, the orientation of quartz veins and veinlets were studied in detail.</p> <p>All drill core is digitally photographed and completed in separate room using a specially designed stand that provides a fixed angle. The camera positioned at the same distance from the stand. The core is photographed in 2 stages before sawing and then after sawing. The most interesting samples are photographed at close distances.</p> <p>A collection of representative samples is used during logging to provide consistency with descriptions</p>
Sub-sampling techniques and sample preparation	<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>	<p>Quarter HQ diamond drill core was sampled for metallurgical testing.</p> <p>Most core was cut using an electric diamond saw and some more friable intervals were split manually. All core for sampling was pre-marked with the cut line, and only one side of the core was sent for assay to maintain consistency.</p> <p>The quality of sampling is checked by comparing geological documentation and samples.</p>
Quality of assay data	The nature, quality and appropriateness of the assaying and laboratory	The metallurgical test work was conducted at Metallurgy Pty Ltd



Criteria	JORC Code explanation	Commentary
and laboratory tests	<p><i>procedures used and whether the technique is considered partial or total.</i></p> <p><i>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.</i></p> <p><i>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.</i></p>	<p>(Metallurgy) laboratory in Welshpool Western Australia. A master composite sample was blended from stage crushed (&lt;3.35 mm) samples collected from quartered HQ diamond drill core across the Northern Graphite Zone (Holes ST-3,4,12,15,23, and 30). Samples of approximately 0.5 kg were subjected to multiple grinding and flotation stages. The TGC grades achieved are measured by the difference between the LOI 1000-degree result and LOI 425-degree result. All assays have been conducted by Intertek Group plc.</p>
Verification of sampling and assaying	<p><i>The verification of significant intersections by either independent or alternative company personnel.</i></p> <p><i>The use of twinned holes.</i></p> <p><i>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</i></p> <p><i>Discuss any adjustment to assay data.</i></p>	<p>Visual validation of mineralisation against assay results was undertaken for several holes.</p> <p>All diamond drill core samples were checked, measured, and marked up before logging in a high level of detail.</p> <p>The diamond drilling, sampling and geological data were recorded on paper into standardised templates and transferred to Microsoft Excel by the logging/sampling geologists. Geological logs and associated data were cross checked by the supervising Project Geologist.</p> <p>Laboratory assay results were individually reviewed by sample batch and the QC results checked before uploading. All geological and assay data were uploaded into Excel. This data was then validated for integrity visually and by running systematic checks for any errors in sample intervals, out of range values and other important variations.</p> <p>All drill core was photographed with corrected depth measurements before</p>



Criteria	JORC Code explanation	Commentary
		<p>sampling.</p> <p>Mineralisation observed was entirely compatible with reported assays in both drill core.</p> <p>No specific twin holes were drilled; however, some recent drill holes were placed and drilled close to the historical holes. Similar grades and distribution were observed in the recent drill holes.</p>
Location of data points	<p><i>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.</i></p> <p><i>Specification of the grid system used.</i></p> <p><i>Quality and adequacy of topographic control.</i></p>	<p>Topographic and geodetic works were carried out using modern, high-precision, satellite geodetic equipment — a single-frequency 12-channel GPS Sokia GRX1, represented by a base station and mobile receiver with a GPS antenna. The device at the measurement time has valid calibration certificates.</p> <p>For this report the holes were set out using the Sokia instrument and have been picked up by handheld GPS in the interim.</p> <p>The grid system used at the deposit is the WGS84 UTM Zone 43 coordinate system, Baltic elevation system.</p> <p>Downhole survey was carried out with a gyro instrument. Measurements of the angle and azimuth are carried out every 20 m.</p> <p>Control measurements have not revealed any inconsistencies and errors.</p> <p>The accuracy of the Sokia GRX1 results in deviations of no more than 10 cm.</p>
Data spacing and distribution	<p><i>Data spacing for reporting of Exploration Results.</i></p> <p><i>Whether the data spacing, and distribution is sufficient to establish the degree of geological and grade</i></p>	<p>The density of the drill holes within the estimated limits of the proposed open pit mining area is 40-100 m between the drill holes on each section. The distances between the sections is 250</p>

Criteria	JORC Code explanation	Commentary
	<p>continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.</p> <p>Whether sample compositing has been applied.</p>	<p>m, and the depths of the drill holes varies between 60 and 300 m.</p> <p>The grid is sufficient to trace mineralisation zones.</p>
Orientation of data in relation to geological structure	<p>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</p> <p>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.</p>	<p>The spatial position of the graphite zones is confined structurally to the western and southwestern limbs of the Shiyozeck fold, complicated by the large curved Sarytoganbai syncline which trends in northeast and east directions.</p> <p>The North zone has a strike length of 2,300 m, a width of between 110 and 500 m, and a depth up to 190 m. The weighted average TGC for drill holes is 32.42% (for 20% cut-off). The average depth is 100 m.</p> <p>The Central zone has a strike length of 2,900 m, a width of between 86 and 114 m on the flanks up to 450 m in the centre, and a depth up to 80 m, with an average of 40 m. The weighted average graphite carbon content is 28.12% (for 20% cut-off).</p>
Sample security	The measures taken to ensure sample security.	Control over the security of samples is carried out throughout the entire process. Each sample is assigned a unique number. The core samples selected after logging are transferred (with the corresponding orders and sample registers) to the sample preparation facilities, which is located in the Ekibastuz city. In the sample preparation laboratory, each sample underwent the entire processing cycle in compliance with all necessary requirements for the preservation of samples and the prevention of their contamination.
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	A desktop review of the 2019 sampling techniques and data was carried out

Criteria	JORC Code explanation	Commentary
		<p>by CSA Global. The Competent Person from CSA Global also visited the site and sample preparation laboratory during August 2022. The results of this audit are pending and will be applied to the ongoing drilling and for the planned Mineral Resource upgrade.</p> <p>Visual validation of the drill hole and mineralised intersections was undertaken against hard copy drill sections and provided core photographs.</p>

## Section 2 Reporting of Exploration Results

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

Criteria	JORC Code explanation	Commentary
<i>Mineral tenement and land tenure status</i>	<p>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.</p> <p>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.</p>	<p>The exploration licence 1139-R-TPI (1139-P-ТПИ) was issued to Ushtogan LLP on 14/08/2018 and confirmed by 5406-TPI (5406-ТПИ) contract on 26/10/2018. The contract was extended in June 2022 for a further 3 years to June 2025. The exploration concession covers 70 km<sup>2</sup>.</p> <p>There are no other mineral deposits and protected natural areas within the concession area.</p>
<i>Exploration done by other parties</i>	<i>Acknowledgment and appraisal of exploration by other parties.</i>	<p>In the period from 1985 to 1987, geological exploration was carried out by the Graphite party of the Karaganda State Regional geological expedition.</p> <p>Since 2019, exploration drilling is being carried out by Ushtogan LLP a 100% owned subsidiary of Sarytogan Graphite Limited.</p>
<i>Geology</i>	<i>Deposit type, geological setting, and style of mineralisation.</i>	<p>Structurally, the Sarytogan site is confined to the western and southwestern wing of the Shiyozek fold, complicated by a large curved Sarytoganbai syncline which trends in</p>

Criteria	JORC Code explanation	Commentary
		<p>northeast and east directions.</p> <p>In general, the Sarytogan site is a large, over-intrusive zone; the volcanic and sedimentary rocks developed here have undergone extensive contact metamorphism; volcanogenic and terrigenous rocks are transformed into quartz-biotite, quartz-sericite hornfels; carbonaceous rocks are either altered into hornfels, or underwent significant graphitisation, and along contacts with intrusive granite domes, quartz-tourmaline and tourmaline hydrothermal rocks of the greisen type are developed.</p> <p>The deposit belongs to the black shale regional-metamorphic type and represents a carbon-bearing conglomerate sequence with a greisen zone with a thickness of more than 80 m in the over-intrusive zone of the granite massif that compose the Sarytoganbai syncline. Host rocks include graphite siltstone and graphite shale.</p>
Drill hole Information	<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>o easting and northing of the drill hole collar</li> <li>o elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</li> <li>o dip and azimuth of the hole</li> <li>o down hole length and interception depth</li> <li>o 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</p>	<p>Refer to the Prospectus dated 23 February and published on the ASX on 14 July 2022 and subsequent relevant ASX announcements for details of the specific drill holes.</p>



Criteria	JORC Code explanation	Commentary
	<i>detract from the understanding of the report, the Competent Person should clearly explain why this is the case.</i>	
Data aggregation methods	<p><i>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.</i></p> <p><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></p> <p><i>The assumptions used for any reporting of metal equivalent values should be clearly stated.</i></p>	<p>Intervals are reported at a 10% TGC cut-off with up to 2m internal dilution. Higher-grade 'inc' zones are reported at a 35% cut-off at a minimum thickness of 4m and with up to 6m internal dilution.</p>
Relationship between mineralisation widths and intercept lengths	<p><i>These relationships are particularly important in the reporting of Exploration Results.</i></p> <p><i>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</i></p> <p><i>If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g., 'down hole length, true width not known').</i></p>	<p>The deposit is hosted in folded meta-sediments that vary in dip angle. The relationship between the drillholes and the meta-sediment dip is shown in the cross sections. Vertical holes are considered appropriate to define the mineralisation envelope at this stage.</p>
Diagrams	<p><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></p>	<p>Refer to diagrams in body of text and the drilling results announcements.</p>
Balanced reporting	<p><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</i></p>	<p>The metallurgical testwork program has been exploratory in nature, testing several different pathways. The results of the preferred pathway is presented here.</p>

Criteria	JORC Code explanation	Commentary
	<i>of Exploration Results.</i>	
<i>Other substantive exploration data</i>	<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>	<p>In 2019, drilling, analytical, metallurgical studies of small bulk samples and petrographic studies have been carried out at the deposit.</p> <p>The Prospectus dated 23 February 2022 available at <a href="http://asx.com.au">asx.com.au</a> also details historical metallurgical tests on the Sarytogan Graphite Deposit.</p> <p>Further metallurgical test work is underway and ongoing.</p>
<i>Further work</i>	<p><i>The nature and scale of planned further work (e.g., tests for lateral extensions or depth extensions or large-scale step-out drilling).</i></p> <p><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></p>	Metallurgical testwork is ongoing in Australia and at other labs worldwide.