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HIGH GRAPHITE RECOVERY AND PURITY OBTAINED FROM METALLURGICAL TEST WORK - GOLDEN GATE GRAPHITE PROJECT

- **Floatation test work undertaken by Brisbane Met Labs on a nominal 56 micron composite drill core sample has achieved a 96% recovery of graphite into a floatation concentrate.**
- **A 2-stage caustic bake on the concentrate successfully removed gangue minerals to achieve a very encouraging total carbon grade of 98.9%.**
- **Further test work is to be focused on maximisation of graphite grain size and purity.**

Crater Gold Mining Limited (ASX:CGN) ("Crater Gold" or the "Company") is pleased to announce the results of preliminary metallurgical test work undertaken by Brisbane Met Labs, (BML) on graphite recovery from graphite mineralised drill core from the Golden Gate Graphite Project in Queensland.

As previously announced (ASX Announcement dated 7 February 2018 "*Thick Intervals Graphite Mineralisation Intersected at Golden Gate Project, Qld*") two diamond drill holes have returned the following results;

- **GGDDH 1701: 62.7m (29.3 to 92.0m) @ 6.79% GC* at a cut-off of 3.4% GC***
- **GGDDH 1702: 53.9m (69.1 to 123.0m) @ 6.79% GC* at a cut-off of 3.1% GC***

GC = graphitic carbon*

Petrological examination on samples of the graphite mineralisation from both holes (as announced to ASX on 12 April 2018: "Jumbo and Large Flake Graphite Identified at Golden Gate") identified the presence of significant graphite flake sizes of 0.05 to 0.50mm, with an average of around 0.25mm. While this was encouraging, it is noted that the petrological work was undertaken on small core samples mainly selected to investigate specific textural features and minerals present and as such these are not necessarily overall representative of the graphite mineralisation.

In view of this, it was decided to undertake metallurgical test work on the graphite mineralisation to determine if high recovery of graphite into a floatation concentrate could be achieved which could then be economically upgraded to a graphite product of >95% GC*.

For the test work, a composite sample (minus 3.35mm grain size), grading 8.2% total carbon from 29.3 to 45.0m depth in hole GGDDH 1701, was prepared. This represents the top 15.7m of the graphite intersection in that hole, which would perhaps approximate the first two to three benches of an open cut mining operation.

The test work was contracted out to Brisbane Met Labs (BML). As total carbon assays in this style of mineralisation closely approximate graphitic carbon assays (essentially within normally expected assay error levels), only total carbon assays have been determined in the test work to minimise laboratory costs that are significantly higher for determining graphitic carbon values. Bench scale graphite concentration floatation test work was undertaken using standard floatation reagents (kerosene and MIBC) on pulverised splits of the composite sample at various grain sizes.

The following table summarises the work conducted and the results obtained and the ensuing discussion is a summary extracted from BML's report.

FLOAT TEST ID	GRIND SIZE	PURPOSE
Float 1	As received minus 3.35mm	Assess coarse graphite float
Float 2	80% passing 300 microns	Assess a less coarse grind
Float 3	80% passing 106 microns	Assess medium grind size
Float 4	80% passing <20 microns	Assess ultra fine grind size
Float 5	80% passing 56 microns	Assess intermediate size
Float 6	80% passing 56 microns	Provide feed to cleaner test
Float 7	80% passing 56 microns	Provide feed for caustic bake

Encouragement was generated from flotation of a 58 micron sample (Float 6) from which a graphite recovery of 94% was reported into a rougher concentrate. Another nominal 56 micron grain size (P80/56) sample was prepared from the composite sample and subjected to floatation testing. This resulted in recovery of 96% of the graphite to a rougher concentrate at a total carbon grade of 16.9%, with 56% of the sample mass rejected as gangue. When the rougher concentrate was subjected to a two-stage caustic bake, a very encouraging total carbon product grade of 98.9% was achieved. This indicates that the caustic bake has been successful in removing the gangue contaminants (mainly phyllosilicates and other silicates).

Based on the objectives of the Company and the results as outlined in the BML report, recommendations for follow-up test work are as follows:

- Optimisation of the floatation work – trying varying concentrations of the floatation reagents used (kerosene and MIBC) or introducing sodium silicate or some other dispersant to improve the rejection of gangue.
- Optimisation of grind size for achieving maximum graphite flake size.
- Optimisation of the caustic bake purification step

Managing Director Russ Parker stated:

"The test work has clearly demonstrated the ability to produce a high purity graphite concentrate. With the knowledge that a high purity graphite product can be produced, further testwork will now focus on the maximisation of graphite grain size and purity".

For further information contact:

Mr Russ Parker
Managing Director

Competent Person Statement:

The information contained in this report that relates to Exploration Results at the Golden Gate Graphite Project near Croydon, Queensland, is based on information compiled by Ken Chapple, who is an Associate Member of The Australasian Institute of Mining and Metallurgy and a Fellow of the Australian Institute of Geoscientists. Mr Chapple has been assisting the Company as a technical consultant relating to his areas of expertise and was on site overseeing the program. Mr Chapple has sufficient experience relevant to the style of mineralisation and type of deposit involved to qualify as a Competent Person as defined in the 2012 JORC Code. Mr Chapple is an independent principal geological consultant with KCICD Pty Ltd and consents to the inclusion in the report of matters based on his information in the form and context in which it appears.

Mr Chapple has also relied on independent consultants Brisbane Met Labs Pty Ltd (BML) who specialise in metallurgical test work and who have submitted to the company a report on results obtained. Chris Bucknell, laboratory manager of BML, has consented to the inclusion of this information in the form and in the context in which it appears in this announcement.

Forward Looking Statements:

This Announcement contains certain forward looking statements. The words 'anticipate', 'believe', 'expect', "optimism", 'project', 'forecast', 'estimate', 'likely', 'intend', 'should', 'could', 'may', 'target', 'plan' and other similar expressions are intended to identify forward looking statements. Forward-looking statements are subject to risk factors associated with the Company's business, many of which are beyond the control of the Company. It is believed that the expectations reflected in these statements are reasonable at the time made but they may be affected later by a variety of variables and changes in underlying assumptions which could cause actual results or trends to differ materially from those expressed or implied in such statements. There can be no assurance that actual outcomes will not differ materially from these statements. You should therefore not place undue reliance on forward-looking statements.

Section 2 Reporting of Exploration Results

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	• *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.* • *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.*	• For more detail refer to the Table 1's attached to previous ASX Announcements as follows; 7 February 2018 – Graphite Mineralisation Intersected at Golden Gate Project (as part retracted and re-issued 12 April 2018). 10 April 2018 – Jumbo and Large Flake Graphite Identified at Golden Gate (as part retracted and re-issued 12 February 2018). Information provided here specifically describes the metallurgical test work undertaken and results obtained. Tenure is held under EPM 18616 which is in good standing and current to 18 June 2020.
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• Central Coast Exploration has previously undertaken drilling to assess the graphite resources of the Gold Gate area. They drilled numerous holes and reported a resource which is non-compliant with the current JORC criteria. • Crater Gold's 2017 drilling program was designed to validate three of their drill holes to determine the graphite mineralisation intersections and grade with two holes some 95m apart
Geology	• *Deposit type, geological setting and style of mineralisation.*	• From previous experience in the Croydon area and during the initial stages of the drilling and core logging at the Golden Gate Project the graphite mineralization was considered to be have formed from local granitic intrusion into carbonaceous sediments resulting in the development of graphitic mineralization within xenolithic fragments. However, after closer examination by the Competent Person overseeing the drilling program, it was noted that the xenoliths were dominated by granitic rock with sedimentary rock rarely seen. In subsequent examination of polished sections of the graphite and its host by Pterosaur Petrology of Townsville, restite rock was identified and found to be common throughout. It is now thought that the host granite, an S-type granite, formed from the migmatisation (or in situ melting) of sediment which from the evidence of the graphite

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		mineralisation must have been carbonaceous. Restite is interpreted to represent sediment that did not completely melt during formation to form the granite body. The area has then been subjected to later alteration (moderate to strong) and low temperature hydrothermal activity.
Drill hole information	• *A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:* ○ *easting and northing of the drill hole collar* ○ *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar* ○ *dip and azimuth of the hole* ○ *down hole length and interception depth* ○ *hole length.* • *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.*	• This information was previously provided in the announcement 12 April 2018 referred to above.
Data aggregation methods	• *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.* • *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.*	• This information was previously provided in the announcement 12 April 2018 referred to above.
Relationship between mineralisation widths and intercept lengths	• *These relationships are particularly important in the reporting of Exploration Results.* • *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 be a clear statement to this effect (eg 'down hole length, true width not known').*	• As the geometry of the mineralisation with respect to the vertical drill holes is not definitely known, all intersections must be considered as down hole lengths and not as true depths or thicknesses. • However, as the holes are both vertical and the engineering measurements indicate that most fractures in the graphite zone are near horizontal, the down hole lengths could, as a reasonable approximation, be considered close to the true depths or thicknesses.
Diagrams	• *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.*	• This information together with plans and sectional views of the drill collars was previously provided in the announcement 12 April 2018 referred to above.

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Balanced reporting	• *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.*	• Graphitic carbon assays for all intervals sampled (as previously reported 7 February 2018) have been tabulated in the main body of that report. In addition, Au assays for all intervals and Cu for selected intervals are also included.
Other substantive exploration data	• *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 dominant activity undertaken in the period covered by this announcement was metallurgical test work aimed at achieving high graphite recovery by flotation followed by gangue removal to obtain a >95% graphite product. This work was undertaken on a composite sample prepared from the 15.7m interval from 29.3 to 45.0m in Hole GGDDH 1701. This represents the top of the graphite mineralized zone which would perhaps approximate the first two or three benches of an open-cut development. The sample was delivered to metallurgical experts Brisbane Met Labs (BML) who conducted the test work. • BML prepared the composite sample and split it into 1kg sub-samples. A total of 7 of these samples at varying grain sizes were subjected to standard flotation tests using a 2.5L Agitair style flotation cell. Kerosene and MIBC were the only reagents used for rougher or rougher/cleaner test work. Resulting flotation concentrates and tails were dried and sub-sampled before pulverizing and being sent for total carbon assay. • It was decided appropriate to test for total carbon only as it was considered reasonable that the results would closely match the graphite carbon values and provide a lower overall cost. • For Stage 1 of the caustic bake, the flotation concentrates were mixed with sodium hydroxide (6:1 weight wise), heated to 350 degrees C for 1 hour before filtering and rinsing the graphite sample in Brisbane water. The sample was then placed in a beaker of 100ml conc HCl and boiled for 1 hour before being again being filtered and washed with water. This procedure was followed for Stage 2. • The caustic bake achieved a graphite product of 98.8% purity – this is considered to be a very encouraging result as it indicates that most of the gangue can be chemically removed.
Further work	• *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,*	• It is intended that further work will include the following; • Optimisation of the flotation procedure – increased removal of the gangue minerals would reduce the amount of reagents required in the purification process. The use of sodium silicate or some other

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	provided this information is not commercially sensitive.	dispersants to be investigated. • More chemical analysis or scanning electron microscope work to check for any remaining contaminants. • Optimisation of the caustic bake procedure aimed at reducing the number of stages or reducing the amount of reagents required.