JORC TECHNICAL REPORT ON THE S3 GRAPHITE DEPOSIT, CROYDON, NORTHWEST QUEENSLAND, AUSTRALIA

Prepared For:	Crater Gold Mining Limited
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1 SUMMARY

1.1 Introduction

Finrank Pty Ltd (Finrank) was engaged by Crater Gold Mining Limited (Crater) in May, 2024 to prepare this technical report to comply with JORC Standards of Reporting for Mineral Projects in Australia for the S3 property (the Property) located in north-west Queensland (QLD) in Australia.

1.2 Report Details

This Technical Report presents the results of exploration completed at the property during the period from May to December, 2023 together with a mineral resource estimate.

This Technical Report has been prepared by Garry Edser who is a Competent Person in accordance with JORC 2012.

The effective date of the exploration results and the resource estimates presented in this report is 4 July, 2024. All values in this report are in Australian dollars (AUD) unless otherwise stated.

1.3 Location and Ownership

The property is located at approximately Latitude -18.14 degrees south and Longitude 142.22 degrees east in the north-west corner in the State of Queensland, Australia. It is an Exploration Permit for Minerals (EPM 18616) that covers an area of approximately 58.75 square kilometres (18 sub-blocks). Crater is the holder of the tenement which was granted on 19 June, 2013 for 5 years and has since been renewed with the renewal commencing on 19 June 2023 with an expiry date of 18 June, 2028.

EPM 18616 is located approximately 1,500 kilometres north-west of the State Capital of Brisbane. The tenement commences immediately from the northern margin of Croydon township and extends to the north-west for 18km.

1.4 Geology and Mineralisation

The property is located within the Esmeralda Granite of the Georgetown Inlier (Etheridge Province). Post-orogenic magmatism (S-type) is represented in the western part of the Inlier by the subaerial felsic ignimbrite of the Croydon Volcanic Group and related sub-volcanic granitoids. The Croydon Caldera which hosts the Croydon Volcanic Group is a large volcanic structure located in north-west Queensland. The Caldera comprises the Croydon volcanics and the Esmeralda granite.

The Croydon Volcanic Group consists dominantly of dacitic to rhyolitic ignimbrites. A conspicuous feature of these rocks ubiquitous presence of abundant graphite, mostly as rounded or ellipsoidal “pellets” up to 1-5 cm long commonly amounting to over 1% of the rock. The volcanics are intruded by bodies of generally coarse-grained biotite granite which were probably emplaced to within 1 to 2 kilometres of the surface. Isotopic Rb-Sr geochronology has given an age of 1399+- 75 Ma for the volcanics and 1381 Ma for the granite. Ma refers to millions of years in the past.

The largest pluton (900 square kilometres) is the Esmeralda Granite, whose upper contact is broadly conformable with the gentle regional dips in the volcanics. Parts of the granite are extremely rich in sub-rounded graphite nodules. In the Croydon Goldfield (in which the S3 graphite deposit occurs) variably sheared, tabular zones up to 120 metres in down-hole lengths and several kilometres long, generally sub-parallel to the granite/volcanics contact, are packed with graphitic enclaves and masses of graphite set in a matrix of intensely hydrothermally altered granite. It appears possible that the nodules represent hydrothermal fluids that became immiscible in the granite host as the granitization process cooled. Some of these zones are at the granite/volcanics contact while others can be up to 150 metres below it.

The S3 graphite deposit at its base contains shallow dipping quartz veins belonging to the historic Croydon Queen gold mine workings. These auriferous quartz veins are commonly shallow dipping, anastomosing and strike parallel to the gently dipping graphitic zones. Where the quartz veins intersect the graphitic zones they anastomose further and increase in gold grade. The gold is associated with arsenopyrite and minor pyrite, galena and sphalerite. Native silver is present in places near the granite/volcanics contact. The source document from which this geological summary has been summarised is the BMR Research Newsletter, No. 8, April, 1988.

1.5 Exploration

Exploration in the local district has been undertaken by numerous tenement holders from the 1960's mainly focused on gold within shallow dipping quartz veins (quartz reefs). In more recent times the graphitic granite has been the target of critical mineral exploration activities by a limited range of companies since the 1980's. Exploration activities at the S3 deposit have included:

- Surface ground geophysics
- Geological mapping
- Drilling

Exploration conducted by Crater in 2023 was focused on drilling out the S3 graphite mineralisation within EPM 18616.

1.6 Mineral Resource

The process used by Finrank to prepare the 2023 S3 Resource Estimate comprised the following steps:

1. Digital and hard copy drill hole data were loaded into a master database which is the Geobase software product produced by a commercial mining resource software company SGS Geostats Pty Ltd. This software is based on a Microsoft Access software engine.

2. Digital topographic survey data of high accuracy was collected from each of the drill collars in October and December 2023 and imported into the Geobase database software package. The accuracy of this data is sub-metre and therefore supports as a minimum a JORC Indicated Resource. Hand held GPS equipment which was used to site the drill holes in May 2023 is normally adequate for supporting a JORC Inferred Resource. The surveying equipment used by Finrank was a Hemisphere Differential High Accuracy GPS unit. Further technical details of this equipment can be found in Appendix 6 to this report in a separate pdf file.

3. Data validation checks were completed and focused on drill hole collar co-ordinates, sampling/analysis data and lithological data. For lithology, geotechnical and assay data strip logs were made for each drill hole and these plots can be found in Appendix 1 to this report. Various manual and statistical comparisons of the assay data exported from ALS Webtrieve versus the same data after it had been imported into the database. The comparisons found no error. ALS maintain some sample number difference which have no effect on the resource. Upon receipt of the physical core samples in their calico sample bags at the ALS laboratory on rare occasions the information written on the bags (depth from and to) was found to be in error. Most of these errors were found and fixed after checking by consultant supervising geologist Ken Chapple and the ALS supervising chemist. Inevitably within over 2,400 samples two of these errors remained in Webtrieve. Finrank corrected these in the database. For the core samples the actual sample number which uniquely identifies each core sample is a text string which is made up of the drill hole number and the sample interval. The practice of putting a numbered ticket in the calico bag to de-identify the sample (so the laboratory doesn't know exactly where the sample came from) which some companies use, was not followed in this case to avoid latter errors that might result from having to match allocated number with actual down-hole depth intervals.

4. Two-dimensional interpretations of the lithology were created in MapInfo software based on drill hole logs and assays. A variety of contour maps were also created in MapInfo for the variables derived from the graphitic granite "seam" (think of a thin planar coal seam and you have a good geometric analogue for the S3 +graphitic granite ore body host). These variables were thickness, average grade (for different cut-off grades) and accumulation (grade time thickness). It should be noted that the ore shapes use true widths corrected from apparent widths (also known as lengths). This is because the average dip of the graphitic granite zone is 25 degrees from the horizontal when a vertical drill hole intersects such a "bed" the intercept is not a true width. True widths can be derived trigonometrically from the drilled lengths (apparent widths). This data transform was conducted prior to any volume calculations being performed and the data recorded in the mineral resource spreadsheet.

5. Statistical analysis of drill hole assay data and density data was completed and used to establish the optimum sample length and the creation of mineralisation domains for estimation based on lithology.

6. Drill hole composites were not used in this study owing to the consistent sample length based on drill core sampling which was sent to the ALS Commercial Analytical Laboratories. Statistical analysis shows that over 95% of the core-based sample intervals were 1 metre in length.

7. Two dimensional cross sections were created in MapInfo from which the resource estimate was derived.

8. Assignment of the Mineral Resource Classification was completed considering the confidence in the geological interpretation of the mineralisation, drill hole spacing, sample density, and assessments of the integrity and robustness of the sample database.

9. A grade-tonnes distribution was produced to illustrate the sensitivity of the estimate to different cut-off criteria.

10. The criteria to support the reasonable prospects for eventual economic extraction were assessed as required by the JORC Code.

The relevant Competent Person has reviewed and assessed the data inputs, estimation parameters, and reporting criterion for S3 and a report of the mineral resource using the 2012 JORC Standards at an effective date of 4 July, 2024 (Table 1 – 1).

Figure 1.1

Hemisphere GPS Equipment In Use Surveying Drill Collars

The surveying signal receiver shown above automatically adjusts for the height of the base plate.

Based on the 2023 drilling conducted by Crater, the S3 deposit has an “indicated” mineral resource at a cut-off grade of 2.5% graphite of 11.58 Mt at an average grade of 4.91% graphite for a contained graphite resource of 569,426 tonnes. There is an “inferred” mineral resource of at a cut-off grade of 2.5% graphite of 18.4 Mt at an average grade of 5.13% graphite for a contained graphite resource of 944,573 tonnes, reported in accordance with the JORC Definition Standards. There is a combined (inferred + indicated) mineral resource of 29.98 Mt at an average grade of 5.04% graphite for a contained graphite resource of 1,514,000 tonnes.

Table 1.1

S3 Mineral Resource as at 4 July 2024 Reported Using Various Cut-Off Criteria

S3 Graphite Resource Estimate: June 2024				
Mineral Resource Classification	Cut-Off Grade (% Cg)	Tonnage (Million Tonnes)	Graphite Grade (% Cg)	Contained Graphite (Tonnes)
Inferred	1	28.28	4.30	1,223,155
	2	20.49	4.97	1,022,382
	2.5	18.40	5.13	944,573
	5	6.31	6.44	406,046
Indicated	1	18.30	3.88	712,472
	2	11.85	4.88	578,961
	2.5	11.58	4.91	569,426
	5	5.59	6.14	343,050
Indicated + Inferred	1	46.58	4.14	1,935,627
	2	32.34	4.94	1,601,343
	2.5	29.98	5.04	1,514,000
	5	11.90	6.30	749,096

It should be noted that the ore shapes use true widths corrected from apparent widths (also known as lengths). This is because the average dip of the graphitic granite is 25 degrees from the horizontal when a vertical drill hole intersects such a "bed" the intercept is not a true width. True widths can be derived trigonometrically from the drilled lengths (apparent widths). This data transform was conducted prior to any volume calculations being performed and the data recorded in the mineral resource spreadsheet. The average dip of the graphitic granite was determined following analysis of all drill sections. The tonnage and grade figures in the above table have been rounded up to two decimal places. The contained graphite figure is the product of tonnage and graphite values stored at greater levels of precision i.e. more decimal places. The effect of using tonnage and grade figures of low precision (two decimal places) to produce a contained graphite value will result in an incorrect contained graphite figure. Many published resource figures from international graphite deposits such as the Graphite One Project in Canada have a format identical to that of the table above. In the inferred mineral resource classification for Graphite One the tonnage is quoted to two decimal places as 91.89 Mt. The graphite grade is quoted to one decimal place as 8.0%. If these two figures are multiplied a contained graphite figure of 7.3512 Mt is obtained which is different from their published figure of 7.342883 Mt. The average dip of 25 degrees was calculated as the arithmetic average of the dips from the 11 drill sections which in order from north to south were 21,32,27,23,21,32,22,23,24,26,23 for a sample standard deviation of 3.96 and a standard error of 1.19.

1.7 Interpretation and Conclusions

Exploration to date at the property has demonstrated the presence of granite-hosted graphite mineralisation at the property, first identified in the 1980's by Pancontinental Mining Ltd. The most recent exploration has been undertaken over the last 10 years by Crater Gold.

The graphite mineralisation has been modelled over a strike length of 1.5 kilometres. The graphitic granite sequence hosting the graphite dips on average at approximately 25 degrees to the east north east parallel to the geological contact between the Croydon volcanics and the Esmeralda granite. Drill testing to date has tested a depth extent of approximately 200 metres below surface.

The northern and southern – most drill sections at S3 contain graphite mineralisation which is unconfined in both directions within EPM 18616. The Competent Person considers that there is also potential to extend the mineral resource down dip.

The sectional method of resource estimation uses a "half distance rule". This rule limits the extension of sectional tonnage (area times width) to one half of the distance to the nearest neighboring section. Based on the 2023 drilling conducted by Crater, the S3 deposit has an "indicated" mineral resource at a cut-off grade of 2.5% graphite of 11.58 Mt at an average grade of 4.91% graphite for a contained graphite resource of 569,426 tonnes. There is an "inferred" mineral resource of at a cut-off grade of 2.5% graphite of 18.4 Mt at an average grade of 5.13% graphite for a contained graphite resource of 944,573 tonnes, reported in accordance with the JORC Definition Standards. There is a combined (inferred + indicated) mineral resource of 29.98 Mt at an average grade of 5.04% graphite for a contained graphite resource of 1,514,000 tonnes.

There is an "indicated" mineral resource at a cut-off grade of 1.0% graphite of 18.30 Mt at an average grade of 3.88% graphite for a contained graphite resource of 712,472 tonnes. There is also an "inferred" mineral resource of at a cut-off grade of 1.0 % graphite of 28.28 Mt at an average grade of 4.30% graphite for a contained graphite resource of 1,223,155 tonnes.

Access from Mt Isa and Townsville to the project is by public sealed roads and then by various unsealed station tracks. The property is adjacent to the Croydon township which hosts excellent local infrastructure.

The relevant Competent Person has identified the key risks associated with the property as follows :

- There is financial risk if technical studies evaluate the economic viability of establishing a mining and on site beneficiation operation at the property are not positive.
- There is potential to extend the graphite down dip of the currently defined resource limits, however there are no deeper drillholes down dip of the current resource.

Finrank has evaluated the current exploration completed over the property and considers that an open pit / underground decline mining development and possible onsite beneficiation may be technically, environmentally and economically viable. The relevant Competent Person supports this preliminary assessment but notes that significant further work needs to be undertaken.

1.8 Recommendations

Crater is in the early stages of planning for the application of a Mining Lease over the southern section of the EPM which covers the extent of the S3 graphite deposit as defined by diamond drilling in 2023 covering the 1.5 kilometre strike length of the deposit.