

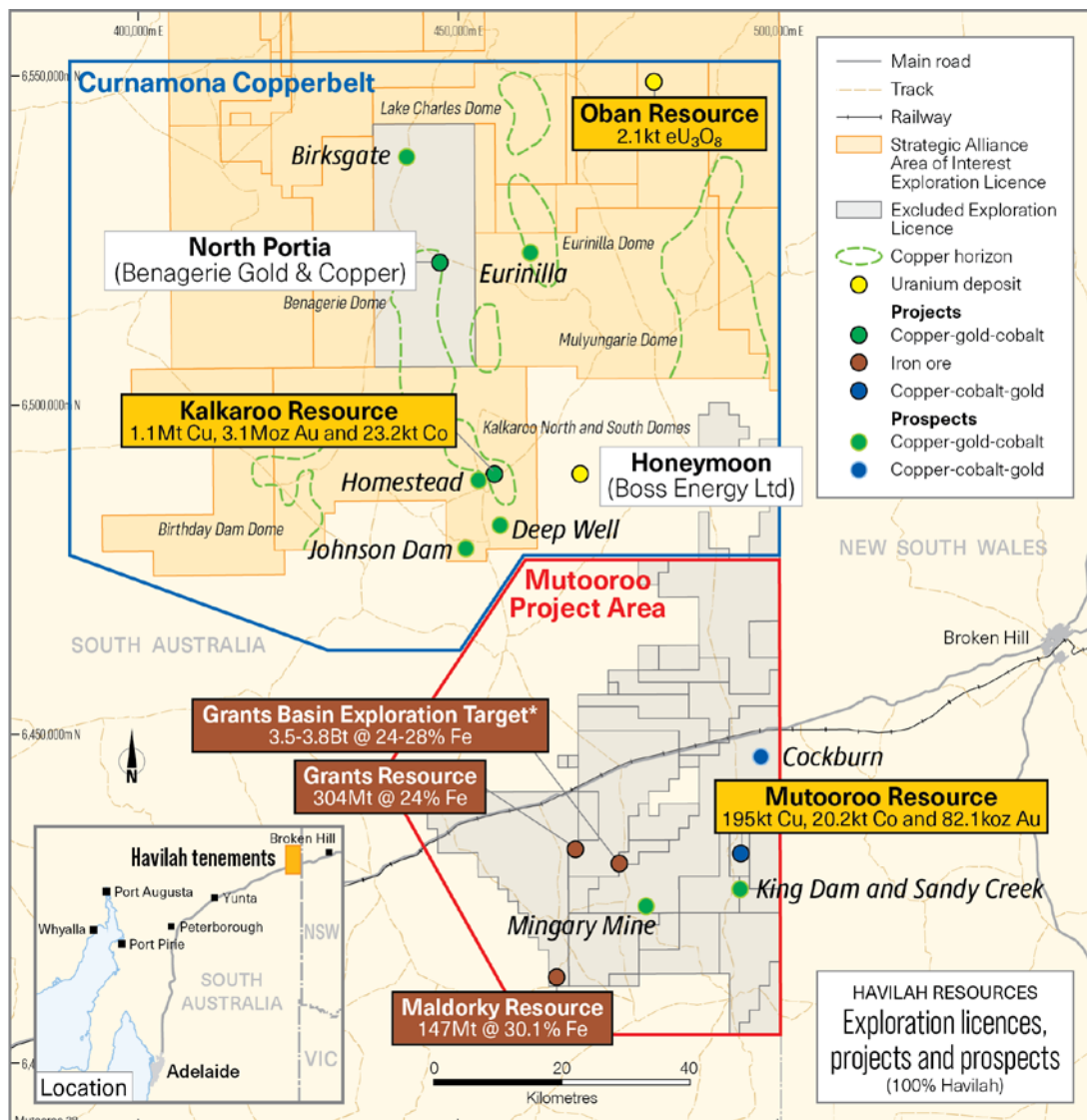
5 January 2024

## THICK GRAPHITE DISCOVERY AT BIRKSGATE PROSPECT

### HIGHLIGHTS

- 21 metres of 4.9% total graphitic carbon (TGC) intersected in drilling of an airborne electromagnetic (AEM) anomaly at the Birksgate prospect.
- Shallow cover, geometry and likely areal extent bodes well for favourable open pit bulk mining potential.
- Exploration model is applicable to many other similar geological settings in the K4 hangingwall unit within Havilah’s tenements, with potential for discovery of higher grade and better located graphite occurrences.

Havilah Resources Limited (**Havilah** or the **Company**) (**ASX: HAV**) is pleased to report the discovery of **graphite** at its **Birksgate prospect** in the Curnamona Province of northeastern South Australia, located approximately 50 km north-northwest of Karkaroo (Figure 1).

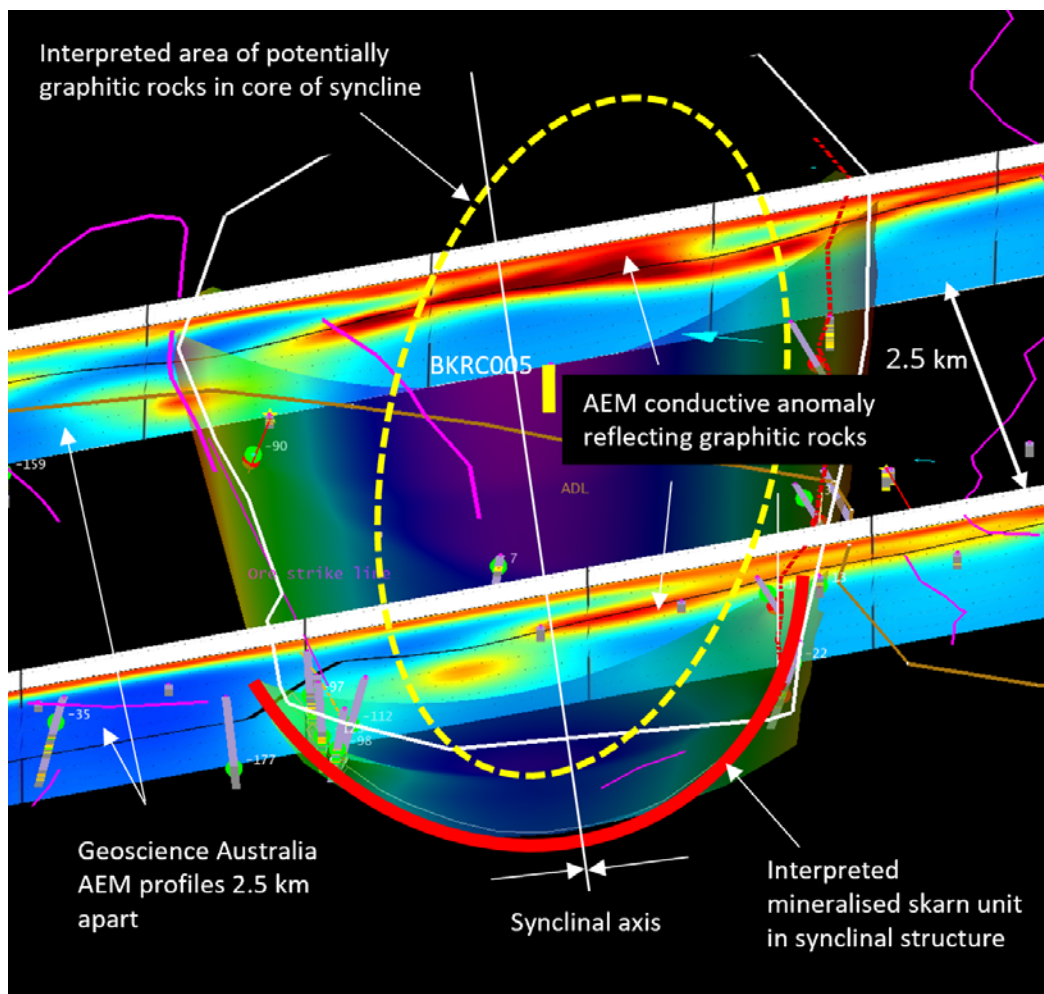


**Figure 1** Havilah’s project and prospect locations and tenement holding in the Curnamona Province in northeastern South Australia. The Birksgate prospect lies in the northern part of the Curnamona Copperbelt.

*\*Note that the potential quantity and grade of the Exploration Target is conceptual in nature, there has been insufficient exploration to estimate a Mineral Resource and it is uncertain if further exploration will result in the estimation of a Mineral Resource (refer to ASX announcement of 5 April 2019).*

While the primary target of recent reverse circulation (RC) drilling at Birksgate was stratabound copper-gold skarn mineralisation, one drillhole, namely BKRC005, was intentionally sited on a regional airborne electromagnetic (AEM) anomaly from Geoscience Australia’s AEM regional surveying. Bedrock AEM responses in this region are generally masked by highly conductive near surface saline groundwater, but in this case possible bedrock conductive responses were noted on two AEM lines 2.5 km apart in the core of an interpreted regional syncline (Figure 2).

Drillhole BKRC005 intersected strongly graphitic fine-grained metasedimentary rocks (pelites) containing **2.5% TGC over a 178 metre** interval from 32 metres to the end of the hole (210 metres), with a best interval of **21 metres of 4.9% TGC from 36 metres**. The interpreted shallow dips in this area suggest the intervals may approximate true widths, although further drilling is required to establish this with certainty.



**Figure 2** Birksgate prospect area showing two AEM profiles 2.5km apart, with conductive anomalies (red) that are caused by more graphite rich zones in the K4 hangingwall pelite sequence. The synclinal structure and extent of the AEM conductive anomaly suggests a potentially large target area of graphitic rocks.

Given the structural position in the core of a syncline, and also the extent of the AEM conductive anomalies, the graphitic rocks are likely to be areally extensive and therefore potentially amenable to large scale open pit bulk mining.

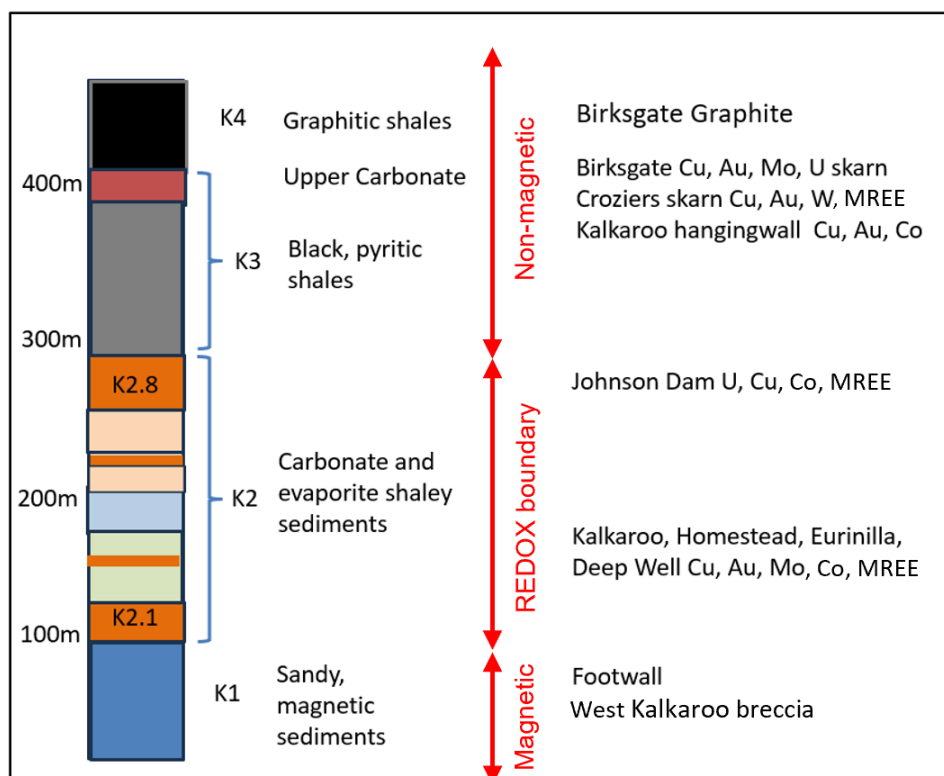
The host hangingwall pelitic metasediments, identified as the K4 unit in the regional stratigraphic sequence (Figure 3), are known to be graphitic, but this is the first time Havilah has specifically drilled an AEM conductive anomaly in these rocks and assayed them for their total graphitic carbon content. Similar strong AEM anomalies have been identified in several other areas closer to Kalkaroo at the same stratigraphic position. Based on the results reported here, it is likely that other AEM anomalies are reflecting similar

graphite enriched concentrations within the K4 hangingwall unit. In most cases the AEM anomalies are observed on two or three AEM lines 2.5 km apart, indicating a potentially large areal extent.

Subject to an approved budget, follow up work during 2024 is expected to include:

1. Laboratory testing to determine the suitability of the fine-grained graphite intersected in BKRC005 as potential feedstock for processed spherical graphite for use in the high growth lithium-ion battery market and/or in other modern applications.
2. Further strategic drilling to locate similar concentrations of graphite, potentially of higher grade, amenable to open pit bulk mining and located closer to Kalkaroo and infrastructure.

The viability of any graphite discoveries on Havilah’s tenements is ultimately dependent on the physical characteristics of the graphite product such as particle size and shape and its composition and level of impurities, plus the mining development, processing and transport costs. These key factors are yet to be determined.



**Figure 3** Regional stratigraphic column showing the position of the K4 hangingwall pelite sequence (originally organic carbonaceous shales) that lies approximately 100 to 200 metres stratigraphically above the Kalkaroo copper-gold K2 prospective horizon. These stratigraphic relationships are observed over a large area of the Curnamona Copperbelt (see Figure 1).

**Commenting on the new graphite discovery, Havilah’s Technical Director, Dr Chris Giles said:**

“The Birksgate prospect area has seen previous exploration primarily for base metals, but with no active graphite exploration.

“It is now apparent from the BKRC005 drill intersection that the observed AEM anomaly is caused by widespread electrically conductive graphite in the K4 hangingwall unit position.

“Other similar favourable geological settings with associated AEM anomalies are known in the area that could be readily tested with a few strategically placed drillholes.

“The attractiveness of this K4 hangingwall unit hosted target style is the potential for discovery of large scale, near surface bulk mining graphite deposits.

“Laboratory test work is required to determine whether the natural flake graphite discovered within Havilah’s tenements is of a suitable quality as a feedstock for processed graphite in modern applications.”

## Graphite

Graphite in various forms is a vital component of many modern technologies, most notably its use in lithium-ion battery anodes. China dominates world supply for anodes, mostly through customised synthetic graphite production, which is a highly energy intensive non-ESG friendly process largely driven by fossil fuel energy sources. Conversion of natural flake graphite to the pure spherical graphite form required for anodes is less energy intensive, but is a multi-step process, where again China dominates. Natural flake graphite is not rare, but finding suitable low impurity, fine-grained flake graphite suitable for lithium-ion batteries with favourable low cost bulk mining geometry is the technical challenge faced by explorers.

In a recent development that will materially affect market dynamics, China's General Administration of Customs (**GACC**) and Ministry of Commerce (**MOFCOM**) jointly issued a notice imposing export controls on certain kinds of highly sensitive processed graphite products. Effective from 1 December 2023, China now requires exporters to apply for permits to certain highly sensitive graphite products (including natural graphite and spherical graphite as used in electric vehicle battery anodes).

China is currently the world's largest producer and exporter of graphite, highlighting the need for new ex-China supply sources of ESG-friendly natural flake graphite and the requisite processing technologies. As a consequence graphite is on Australia's [critical minerals list](#).

This announcement has been authorised on behalf of the Havilah Board by Mr Simon Gray.

For further information visit [www.havilah-resources.com.au](http://www.havilah-resources.com.au)

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### Cautionary Statement

This announcement contains certain statements which may constitute 'forward-looking statements'. Such statements are only predictions and are subject to inherent risks and uncertainties which could cause actual values, performance or achievements to differ materially from those expressed, implied, or projected in any forward-looking statements. Investors are cautioned that forward-looking statements are not guarantees of future performance and investors are cautioned not to put undue reliance on forward-looking statements due to the inherent uncertainty therein.

### Competent Person's Statements

The information in this announcement that relates to Exploration Results is based on data and information compiled by geologist Dr Chris Giles, a Competent Person who is a member of The Australian Institute of Geoscientists. Dr Giles is Technical Director of the Company, a full-time employee and is a substantial shareholder. Dr Giles has sufficient experience, which is relevant to the style of mineralisation and type of deposit under consideration and to the activities being undertaken to qualify as a Competent Person as defined in the 2012 Edition of 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Dr Giles consents to the inclusion in the announcement of the matters based on his information in the form and context in which it appears.

## Appendix 1

Sections 1 and 2 below provide a description of the sampling and assaying techniques in accordance with Table 1 of The Australasian Code for Reporting of Exploration Results.

### Details for drillhole BKRC005 cited in the text and in Figure 2

Hole Number	Easting m	Northing m	RL m	Grid azimuth	Dip degrees	EOH depth metres
BKRC005	441074	6537528	47	120	-70	210
Datum: AGD66 Zone 54 Note: All azimuths and dips are as measured at surface; deviations from this typically occur at depth.						

### Section 1 Sampling Techniques and Data

Criteria	JORC Code explanation	Commentary
<b>Sampling techniques</b>	<ul style="list-style-type: none"> <li>Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.</li> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> <li>Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (eg '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 (eg submarine nodules) may warrant disclosure of detailed information.</li> </ul>	<ul style="list-style-type: none"> <li>Sample data was derived from reverse circulation (RC) drillholes as documented in the table above.</li> <li>RC samples were collected at 1 metre intervals and laid out in rows.</li> <li>RC assay samples averaging 2-3kg were split at 1m intervals into pre-numbered calico bags, using a riffle splitter mounted on the cyclone of the drill rig.</li> <li>The calico bags were packed into polyweave bags by Havilah staff for shipment to the assay lab in Adelaide.</li> </ul>
<b>Drilling techniques</b>	<ul style="list-style-type: none"> <li>Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast,</li> </ul>	<ul style="list-style-type: none"> <li>All RC holes were drilled with a face sampling hammer bit. All samples</li> </ul>

Criteria	JORC Code explanation	Commentary
	<p><i>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).</i></p>	<p>were collected via riffle splitting directly from the cyclone.</p>
<p><b>Drill sample recovery</b></p>	<ul style="list-style-type: none"> <li>• <i>Method of recording and assessing core and chip sample recoveries and results assessed.</i></li> <li>• <i>Measures taken to maximise sample recovery and ensure representative nature of the samples.</i></li> <li>• <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></li> </ul>	<ul style="list-style-type: none"> <li>• The sample yield and quality of the RC samples was routinely recorded in drill logs.</li> <li>• The site geologist and Competent Person consider that overall the results are acceptable for interpretation purposes.</li> <li>• No evidence of significant sample bias due to preferential concentration or depletion of fine or coarse material was observed.</li> <li>• No evidence of significant down hole or inter-sample contamination was observed.</li> <li>• Sample recoveries were continuously monitored by the geologist on site and adjustments to drilling methodology were made in an effort to optimise sample recovery and quality where necessary.</li> </ul>
<p><b>Logging</b></p>	<ul style="list-style-type: none"> <li>• <i>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.</i></li> <li>• <i>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</i></li> <li>• <i>The total length and percentage of the relevant intersections logged.</i></li> </ul>	<ul style="list-style-type: none"> <li>• All RC samples were logged by an experienced exploration geologist using in-house software on a tough field tablet. The logs were then approved and uploaded to a remote Excel database.</li> <li>• All RC chip sample trays and some representative samples are stored on site.</li> <li>• Logging is semi-quantitative and 100% of reported intersections have been logged.</li> <li>• Logging is of a sufficiently high standard to support any subsequent interpretations, resource estimations and mining and metallurgical studies.</li> </ul>
<p><b>Sub-sampling techniques</b></p>	<ul style="list-style-type: none"> <li>• <i>If core, whether cut or sawn and whether quarter, half or all core taken.</i></li> </ul>	<ul style="list-style-type: none"> <li>• RC drill chips were received directly from the drilling rig via a cyclone and were riffle split on 1 metre intervals to</li> </ul>

Criteria	JORC Code explanation	Commentary
<b>and sample preparation</b>	<ul style="list-style-type: none"> <li>• <i>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</i></li> <li>• <i>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</i></li> <li>• <i>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</i></li> <li>• <i>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.</i></li> <li>• <i>Whether sample sizes are appropriate to the grain size of the material being sampled.</i></li> </ul>	<p>obtain 2-3 kg samples.</p> <ul style="list-style-type: none"> <li>• Sampling size is considered to be appropriate for the style of mineralisation observed. Assay repeatability for copper, gold and other metals has not proven to be an issue in the past and is checked with regular duplicates.</li> <li>• All Havilah samples were collected in numbered calico bags that were sent to BV assay lab in Adelaide.</li> <li>• At BV assay lab the samples are crushed in a jaw crusher to a nominal 10mm (method PR102) from which a 3kg split is obtained using a riffle splitter. The split is pulverized in an LM5 to minimum 85% passing 75 microns (method PR303). These pulps are stored in paper bags.</li> <li>• All samples were analysed for gold by 40g fire assay, with AAS finish using BV method FA001 and a range of other metals by BV methods MA101 and 102 (not reported here).</li> <li>• Total graphitic carbon (TGC) was determined by BV method TC005.</li> <li>• All sample pulps are retained by Havilah so that check or other elements may be assayed using these pulps in the future.</li> </ul>
<b>Quality of assay data and laboratory tests</b>	<ul style="list-style-type: none"> <li>• <i>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</i></li> <li>• <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></li> <li>• <i>Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Fire assay method FA001 is a total gold analysis.</li> <li>• Assay data accuracy and precision was continuously checked through submission of field and laboratory standards, blanks and repeats which were inserted at a nominal rate of approximately 1 per 25 drill samples.</li> <li>• Assay data for laboratory standards and repeats have been previously statistically analysed and no material issues were noted.</li> </ul>

Criteria	JORC Code explanation	Commentary
<b>Verification of sampling and assaying</b>	<ul style="list-style-type: none"> <li>The verification of significant intersections by either independent or alternative company personnel. The use of twinned holes. Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> <li>Discuss any adjustment to assay data.</li> </ul>	<ul style="list-style-type: none"> <li>Rigorous internal QC procedures are followed to check all assay results.</li> <li>All data entry is under control of the responsible geologist, who is responsible for data management, storage and security.</li> </ul>
<b>Location of data points</b>	<ul style="list-style-type: none"> <li>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.</li> <li>Specification of the grid system used.</li> <li>Quality and adequacy of topographic control.</li> </ul>	<ul style="list-style-type: none"> <li>The holes were not surveyed using an electronic downhole camera.</li> <li>Present drillhole collar coordinates were surveyed in UTM coordinates using a GPS system with an x:y:z accuracy of &lt;5m and are quoted in AGD66 Zone 54 datum.</li> </ul>
<b>Data spacing and distribution</b>	<ul style="list-style-type: none"> <li>Data spacing for reporting of Exploration Results.</li> <li>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.</li> <li>Whether sample compositing has been applied.</li> </ul>	<ul style="list-style-type: none"> <li>The RC drillholes were positioned at appropriate spacing to test down dip of the surface expression of mineralisation.</li> <li>Sample compositing was not used.</li> </ul>
<b>Orientation of data in relation to geological structure</b>	<ul style="list-style-type: none"> <li>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>The drillhole azimuth and dip was chosen to intersect the interpreted mineralised zones as nearly as possible to right angles and at the desired positions to maximise the value of the drilling data.</li> <li>At this stage, no material sampling bias is known to have been introduced by the drilling direction.</li> </ul>
<b>Sample security</b>	<ul style="list-style-type: none"> <li>The measures taken to ensure sample security.</li> </ul>	<ul style="list-style-type: none"> <li>RC chip samples are directly collected from the riffle splitter on the cyclone in numbered calico bags.</li> <li>Several calico bags are placed in each polyweave bag which are then sealed with cable ties. The samples are transported to the assay lab by a</li> </ul>



Criteria	JORC Code explanation	Commentary
		<p>reputable local carrier at regular intervals.</p> <ul style="list-style-type: none"> <li>There is minimal opportunity for systematic tampering with the samples as they are not out of the control of Havilah personnel on site and the carrier is very reputable. The samples are transported to the lab within one or two days, limiting time for any interference.</li> <li>This is considered to be a secure and practical procedure and no known instances of tampering with samples has ever occurred.</li> </ul>
<b>Audits or reviews</b>	<ul style="list-style-type: none"> <li><i>The results of any audits or reviews of sampling techniques and data.</i></li> </ul>	<ul style="list-style-type: none"> <li>Ongoing internal auditing of sampling techniques and assay data has not revealed any material issues.</li> </ul>

## Section 2 Reporting of Exploration Results

Criteria	JORC Code explanation	Commentary
<b>Mineral tenement and land tenure status</b>	<ul style="list-style-type: none"> <li><i>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.</i></li> <li><i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>Security of tenure is via current exploration licence (EL) 5873 owned 100% by Havilah that is in good standing.</li> <li>Exploration drilling reported was undertaken on EL 5873.</li> <li>A Native Title Exploration Agreement is in place for EL 5873. The agreement was executed between Havilah and ATLA, the representative claimant organisation.</li> </ul>
<b>Exploration done by other parties</b>	<ul style="list-style-type: none"> <li><i>Acknowledgment and appraisal of exploration by other parties.</i></li> </ul>	<ul style="list-style-type: none"> <li>Much of the area has been explored by a number of groups in the past including Pasminco and MMG.</li> <li>This has included shallow aircore drilling, reverse circulation drilling and diamond drilling.</li> <li>All previous exploration data has been integrated into Havilah's databases.</li> </ul>
<b>Geology</b>	<ul style="list-style-type: none"> <li><i>Deposit type, geological setting and style of mineralisation.</i></li> </ul>	<ul style="list-style-type: none"> <li>The graphite mineralisation style is generally classified as sedimentary stratabound.</li> </ul>

Criteria	JORC Code explanation	Commentary
		<ul style="list-style-type: none"> <li>The Cu-Au mineralisation is structurally controlled, stratabound replacement. Sometimes it has skarn style affinities.</li> </ul>
<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>	<ul style="list-style-type: none"> <li>This information is provided in the accompanying table for the relevant drillholes.</li> </ul>
<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>	<ul style="list-style-type: none"> <li>Not applicable as not reporting mineral resources.</li> </ul>
<b>Relationship between mineralisation widths and</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</li> </ul>	<ul style="list-style-type: none"> <li>Downhole lengths are reported. Drillholes are typically oriented with the objective of intersecting mineralisation as near as possible to</li> </ul>

Criteria	JORC Code explanation	Commentary
<b>intercept lengths</b>	<p><i>with respect to the drill hole angle is known, its nature should be reported.</i></p> <ul style="list-style-type: none"> <li><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></li> </ul>	<p>right angles, and hence downhole intersections in general are as near as possible to true width.</p> <ul style="list-style-type: none"> <li>For the purposes of the geological interpretations and resource calculations the true widths are always used.</li> </ul>
<b>Diagrams</b>	<ul style="list-style-type: none"> <li><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></li> </ul>	<ul style="list-style-type: none"> <li>This information is provided.</li> </ul>
<b>Balanced Reporting</b>	<ul style="list-style-type: none"> <li><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></li> <li><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 of Exploration Results.</i></li> </ul>	<ul style="list-style-type: none"> <li>Not applicable as not reporting mineral resources.</li> </ul>
<b>Other substantive exploration data</b>	<ul style="list-style-type: none"> <li><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></li> </ul>	<ul style="list-style-type: none"> <li>Relevant geological observations are reported.</li> </ul>
<b>Further work</b>	<ul style="list-style-type: none"> <li><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></li> <li><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></li> </ul>	<ul style="list-style-type: none"> <li>Additional drilling may be carried out in the future to explore strike and depth extensions and for resource delineation.</li> </ul>

