ASX MEDIA RELEASE

Havilah Resources
A New Mining Force in South Australia

6 July 2020

# GOLD IN FRACTURED ZONES AT KALKAROO

## HIGHLIGHTS

- Previous drilling results, including **82 metres of 1.14 g/t gold**, highlight the prospectivity for fracture-controlled saprolite gold mineralisation near the intersection of two major faults at Kalkaroo.
- A recent follow up drillhole returned **16 metres of 2.04 g/t gold** in quartz-veined saprolite adjacent to a north-northeast trending fault.
- The demonstrated potential for widespread fracture vein and breccia style copper-gold mineralisation will be the target of further follow up exploration drilling in this area.

**Havilah Resources Limited** (**Havilah** or **Company**) reports that the drilling program within the confines of a conceptual starter open pit at West Kalkaroo has largely achieved its objectives, with only a few infill holes remaining to be drilled to complete the program. Attention is turning to new gold exploration leads in areas further to the east, especially outside of the current JORC Mineral Resource. A favoured area is near the intersection of two major faults, which are thought to have formed part of the structural architecture that focused the Kalkaroo copper-gold mineralisation (Figures 1 and 2).

Analysis of earlier drillholes in this area in Vulcan 3D software identified long gold runs in deeply weathered bedrock (termed 'saprolite') that lies above the main copper-gold mineralised prospective horizon, as also observed at West Kalkaroo. For example, Havilah reverse circulation drillhole KKRC0047 dating from 2004 returned an intersection of **82 metres of 1.14 g/t gold** (and 26 metres of 1.08% copper) in quartz-veined host rocks adjacent to a north-northeast trending fault. Fifty metres to the south, near the same fault, Newcrest Mining Limited (**Newcrest**) aircore drillhole NKAC0171 drilled during June 1997 intersected **45 metres of 0.9 g/t gold** (and 6 metres of 2% copper) in similar veined and brecciated host rocks (Figure 2).

These drilling results, and the proximity of known mineralised faults, indicates high discovery potential for fracture vein and breccia style copper-gold mineralisation in this area (see Figures 1 and 2). As an initial test, Havilah drilled two new aircore drillholes that were sited approximately 15 metres either side of KKRC0047 with favourable results as reported below:

**KKAC0542**: 8 metres of 1.0 g/t gold from 99-107 metres (15 metres south of KKRC0047).
**KKAC0543**: 16 metres of 2.04 g/t gold from 105-121 metres (15 metres north of KKRC0047).
**KKRC0047**: 82 metres of 1.14 g/t gold from 72-154 metres,
that included 34 metres of 2.02 g/t gold from 92-126 metres and
26 metres of 1.08% copper from 115-141 metres (2004 Havilah reverse circulation drillhole).
**NKAC0171**: 45 metres of 0.90 g/t gold from 90-135 metres and 6 metres of 2% copper from 123-129 metres (June 1997 Newcrest aircore drillhole lying 50 metres south of KKRC0047 and ended in gold mineralisation).

Quartz veining, which is normally associated with faulting in this area, was logged in both holes. Drillhole KKAC0543 returned an intersection of **16 metres of 2.04 g/t gold** and ended in mineralisation at bit refusal. It is planned to carry out additional follow up drilling to determine the extent of this style of fracture-controlled gold mineralisation, which in general is of higher grade than the more typical Kalkaroo stratabound replacement style copper-gold mineralisation, based on drilling results from West Kalkaroo.

**Commenting on the drilling results Havilah's Technical Director, Dr Chris Giles, said:**

"The logging and assays suggest that the saprolite gold mineralisation here is largely related to fracturing and quartz veining of the host rocks caused by the crushing effect near the intersection of two major faults.

"We think this fault intersection area has excellent potential for discovery of a new fracture vein and breccia copper-gold mineralised zone and we will be testing this with additional drilling over coming weeks.

"In the meantime our Senior Mine Planning Engineer, Mr Richard Buckley, continues to work on the optimum design for the gold-only start up open pit and our other Adelaide-based technical staff are preparing additional documentation for mining approvals," he said.

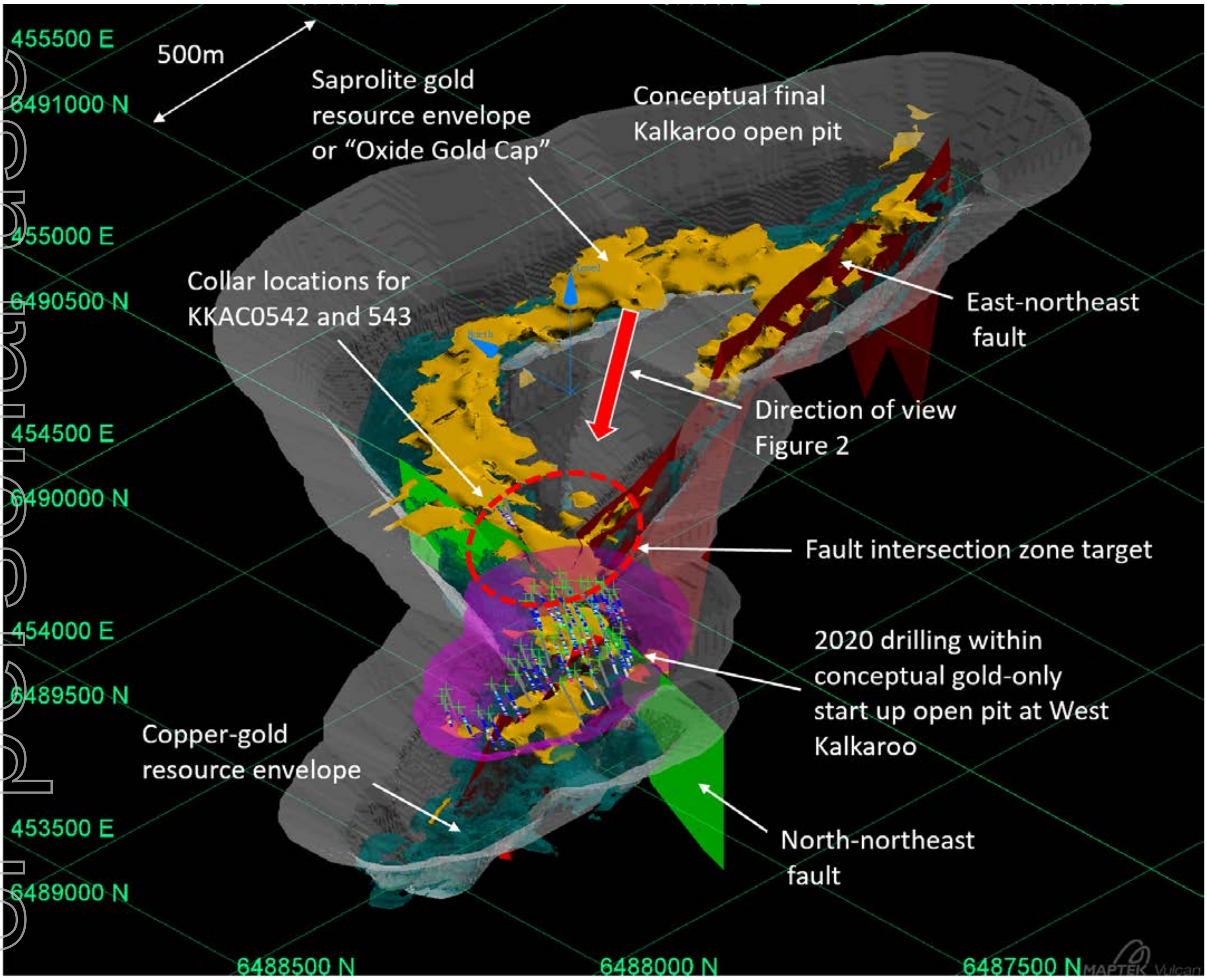


**Figure 1** Target fault intersection zone (within red dashed area) at the intersection of a north-northeast trending fault (green) and the east-northeast trending Kalkaroo fault (red). This area is considered to be prospective for higher grade fracture vein and breccia style copper-gold mineralisation (see Figure 3). Havilah aircore holes drilled during 2020 within the conceptual gold-only start up open pit (pink) are shown.

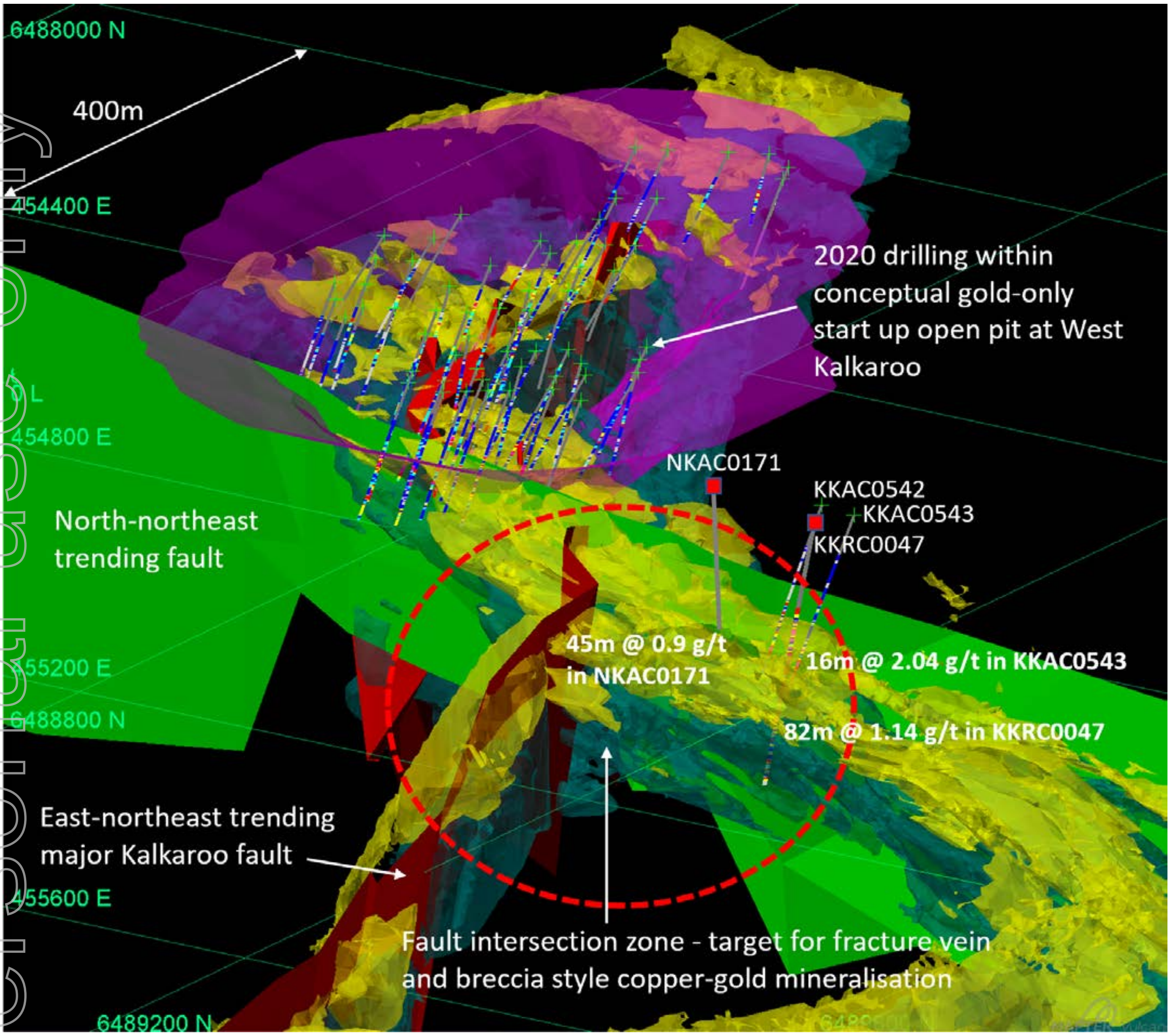


**Figure 2** Oblique view of the target fault intersection zone within the dashed red outline. Recent aircore drillholes KKAC0542 and KKAC0543 whose gold results are reported in this announcement were drilled either side of the earlier Havilah drillhole (KKRC0047) that intersected 82 metres of 1.14 g/t gold and 26 metres of 1.08% copper. Newcrest aircore drillhole (NKAC0171) that lies 50 metres to the south intersected 45 metres of 0.9 g/t gold and 6 metres of 2% copper.

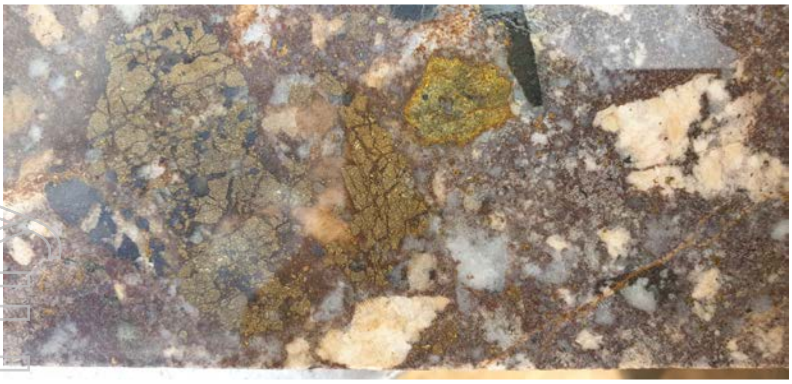

**Figure 3** Breccia style copper-gold mineralisation from the Kalkaroo fault, marked by broken pieces of white vein quartz and fragments of copper sulphide (brassy appearance). This higher grade mineralisation has infilled the fault zone and subsequently been fractured and disrupted by movement along the fault, producing the broken rock or 'breccia'.

This release has been authorised on behalf of the Havilah Resources Limited Board by Mr Simon Gray.

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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 Targets, Exploration Results, Mineral Resources and Ore Reserves 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 drillholes cited in the text**

| Hole Number | Easting m | Northing m | RL m | Grid azimuth | Dip degrees | EOH depth metres |
|---|---|---|---|---|---|---|
| KKAC0542 (Havilah 2020) | 454985 | 6489190 | 119 | 101 | -60 | 119 |
| KKAC0543 (Havilah 2020) | 454900 | 6489219 | 119 | 101 | -60 | 128 |
| KKRC0047 (Havilah 2004) | 454919 | 6489201 | 119 | 102 | -75 | 183 |
| NKAC0171 (Newcrest 1997) | 454907 | 6489152 | 119 | 0 | vertical | 135 |
| Datum: AGD66 Zone 54 | | | | | | |

**Section 1 Sampling Techniques and Data**

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| ***Sampling techniques*** | • *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.*<br>• *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.*<br>• *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.* | • Sample data was derived from Havilah aircore ('AC') drillholes as documented in the table above.<br>• AC assay samples averaging 2-3kg were riffle split at 1 metre intervals.<br>• All AC drill samples were collected into pre-numbered calico bags and packed into polyweave bags by Havilah staff for shipment to the assay lab in Adelaide. |
| ***Drilling techniques*** | • *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).* | • All AC holes were drilled using a 121mm blade bit. All samples were collected via riffle splitting directly from the cyclone. |

| Criteria | JORC Code explanation | Commentary |
| --- | --- | --- |
| ***Drill sample recovery*** | • *Method of recording and assessing core and chip sample recoveries and results assessed.*<br>• *Measures taken to maximise sample recovery and ensure representative nature of the samples.*<br>• *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.* | • Overall, AC sample recoveries were considered to be quite acceptable for interpretation and modelling purposes.<br>• The sample yield and wetness of the AC samples was routinely recorded in drill logs. Very few samples were too wet to split. No evidence of sample bias due to preferential concentration of fine or coarse material was observed.<br>• Sample recoveries were continuously monitored by the geologist on site and adjustments to drilling methodology were made to optimise sample recovery and quality where necessary. |
| ***Logging*** | • *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.*<br>• *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.*<br>• *The total length and percentage of the relevant intersections logged.* | • All AC samples were logged by an experienced geologist directly into a digital logging system with data uploaded directly into an Excel spreadsheet and transferred to a laptop computer.<br>• All AC chip sample trays and some back-up samples are stored on site at Kalkaroo.<br>• Logging is semi-quantitative and 100% of reported intersections have been logged.<br>• Logging is of a sufficiently high standard to support any subsequent interpretations, resource estimations and mining and metallurgical studies. |
| ***Sub-sampling techniques and sample preparation*** | • *If core, whether cut or sawn and whether quarter, half or all core taken.*<br>• *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.*<br>• *For all sample types, the nature, quality and appropriateness of the sample preparation technique.*<br>• *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.*<br>• *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.*<br>• *Whether sample sizes are appropriate to the grain size of the material being sampled.* | • AC drill chips were received directly from the drilling rig via a cyclone and were riffle split on 1 metre intervals to obtain 2-3 kg samples.<br>• Sampling size is considered to be appropriate for the style of mineralisation observed. Assay repeatability for gold and other metals has not proven to be an issue in the past and is checked with regular duplicates.<br>• All Havilah samples were collected in numbered calico bags that were sent to ALS assay lab in Adelaide.<br>• At ALS assay lab the samples are crushed in a jaw crusher to a nominal 6mm (method CRU-21) from which a 3kg split is obtained using a riffle splitter. The split is pulverized in an LM5 to 85% passing 75 microns (method PUL-23). These pulps are stored in paper bags.<br>• All samples were analysed for gold by 50g fire assay, with AAS finish using ALS method Au-AA26.<br>• All sample pulps are retained by Havilah and other elements (such as copper and rare-earth elements) will be assayed using these pulps as required in the future. |

| Criteria | JORC Code explanation | Commentary |
| --- | --- | --- |
| ***Quality of assay data and laboratory tests*** | • *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.*<br>• *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.*<br>• *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.* | • Fire assay method Au-AA26 is a total gold analysis.<br>• 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.<br>• Assay data for laboratory standards and repeats for Kalkaroo were previously statistically analysed and no material issues were noted. |
| ***Verification of sampling and assaying*** | • *The verification of significant intersections by either independent or alternative company personnel.*<br>*The use of twinned holes.*<br>*Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.*<br>• *Discuss any adjustment to assay data.* | • Checking of the new Au assays against Au assays from adjacent earlier drillholes indicated good overall correlation.<br>• Rigorous internal QC procedures are followed to check all assay results.<br>• All data entry is under control of the responsible geologist, who is responsible for data management, storage and security. |
| ***Location of data points*** | • *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.*<br>• *Specification of the grid system used.*<br>• *Quality and adequacy of topographic control.* | • The holes were surveyed using an electronic downhole camera in a stainless steel rod and inner tube.<br>• Present drillhole collar coordinates were surveyed in UTM coordinates using a differential GPS system with an x:y:z accuracy of 20cm:20cm:40cm and are quoted in AGD66 Zone 54 datum. |
| ***Data spacing and distribution*** | • *Data spacing for reporting of Exploration Results.*<br>• *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.*<br>• *Whether sample compositing has been applied.* | • The two exploratory aircore holes reported here were drilled either side of a previous Havilah drillhole (KKRC0047) that had a significant gold intersection. Both were drilled in a similar orientation to the original hole with the objective of determining the geometry, direction and controls on mineralisation in this area.<br>• Sample compositing was not used. |
| ***Orientation of data in relation to geological structure*** | • *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.*<br>• *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.* | • The drillhole azimuth and dip was chosen to intersect the mineralised zones as nearly as possible to right angles and at the desired positions to maximise the value of the drilling data.<br>• At this stage, no material sampling bias is known to have been introduced by the drilling direction. |
| ***Sample*** | • *The measures taken to ensure sample security.* | • AC chip samples are directly collected from the riffle splitter in numbered calico bags. |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| ***security*** | | • 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 Havilah personnel at the end of each field stint.<br>• There is minimal opportunity for systematic tampering with the samples as they are not out of the control of Havilah personnel until they are delivered to the assay lab.<br>• This is considered to be a secure and reasonable procedure and no known instances of tampering with samples occurred during the drilling programs. |
| ***Audits or reviews*** | • *The results of any audits or reviews of sampling techniques and data.* | • Ongoing internal auditing of sampling techniques and assay data has not revealed any material issues.<br>• Robert Dennis who was formerly employed by consulting firm RPM Global Asia Limited ('RPM') visited Kalkaroo during November 2016 and found field procedures to be of acceptable industry standard.<br>• Wanbao Mining and RPM completed independent re-sampling and assaying for Kalkaroo and found results to be reliable. |

## 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.*<br>• *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.* | • Security of tenure is via current mining leases over Kalkaroo, owned 100% by Havilah.<br>• Exploration drilling is currently being undertaken on Kalkaroo Mining Lease ML 6498.<br>• A Native Tile Mining Agreement is in place for Kalkaroo. The agreement was executed between Havilah and the Ngadjuri Adnyamathanha Wilyakali Native Title Aboriginal Corporation.<br>• Havilah owns the Kalkaroo Station pastoral lease on which the drilling is being conducted. |
| ***Exploration done by other parties*** | • *Acknowledgment and appraisal of exploration by other parties.* | • Kalkaroo was explored by a number of major mining groups in the past including Placer Pacific Limited, Newcrest Mining Limited and MIM Exploration Pty Ltd, who completed more than 45,000m of drilling in the region.<br>• All previous exploration data has been integrated into Havilah's databases. |
| ***Geology*** | • *Deposit type, geological setting and style of mineralisation.* | • In general the mineralisation style is stratabound replacement and vein style copper-gold mineralisation within Willyama Supergroup rocks of the Curnamona Craton.<br>• At Kalkaroo, the stratabound mineralisation is uniformly distributed along more than 3 km of strike that follows an arc around the 35 |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| | | degree dipping northern nose of the Kalkaroo south dome. It is hosted by an 80m-120m thick mineralised horizon that is sandwiched between psammitic footwall rocks and a thick pelitic hangingwall sequence.<br>• In part, the mineralisation is associated with near-vertical, mineralised quartz vein breccia fracture/fault fillings, which probably formed channel ways for the mineralising fluids. Interference folding resulted in dome structures which probably acted as structural traps for the rising mineralising fluids carried by these vertical structures.<br>• The mineralising events were associated with iron-rich and sodium-rich alteration fronts, which are manifest as widespread fine-grained magnetite in the lower sandy formations and as pervasive albite alteration, overprinted by later potassic veining and alteration.<br>• Erosion in the Mesozoic and Tertiary period exposed the region to prolonged and deep weathering. Consequently, the original sulphide mineralisation shows typical supergene enrichment features in its upper part, caused by oxidation of the primary sulphides in the weathering zone, forming a soft clay rich rock called saprolite. This is manifest in a sub-horizontal stratification of the ore minerals from top to bottom:<br>1. Supergene free gold in saprolite, with generally minor copper, recoverable by gravity and cyanide leaching methods.<br>2. Native copper and gold in saprolite, largely recoverable by gravity methods.<br>3. Chalcocite dominant with gold, recoverable by conventional flotation.<br>4. Chalcopyrite dominant with gold and locally rich molybdenum, recoverable by conventional flotation. |
| ***Drill hole information*** | • *A summary of all information material to the under-standing of the exploration results including a tabulation of the following information for all Material drill holes:*<br>o *easting and northing of the drill hole collar*<br>o *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar*<br>o *dip and azimuth of the hole*<br>o *down hole length and interception depth* | • This information is provided in the accompanying table for the relevant drillholes. |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| | o *hole length*<br>• *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.* | |
| ***Data aggregation methods*** | • *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.*<br>• *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.*<br>• *The assumptions used for any reporting of metal equivalent values should be clearly stated.* | • Not applicable as not reporting mineral resources. |
| ***Relationship between mineralisation widths and intercept lengths*** | • *These relationships are particularly important in the reporting of Exploration Results.*<br>• *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.*<br>• *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').* | • Downhole lengths are reported. Drillholes are typically oriented with the objective of intersecting mineralisation as near as possible to right angles, and hence downhole intersections in general are as near as possible to true width.<br>• For the purposes of the geological interpretations and resource calculations the true widths are always used. |
| ***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.* | • Not applicable as not reporting a mineral discovery. |
| ***Balanced Reporting*** | • *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.*<br>• *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.* | • Not applicable as not reporting mineral resources. |
| ***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.* | • Relevant geological observations are reported. |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| ***Further work*** | • *The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large- scale step-out drilling).*<br>• *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.* | • Additional drilling may be carried out in the future to explore strike and depth extensions and for resource delineation. |