

Tuesday, 23 February 2021

KANMANTOO UNDERGROUND EXPLORATION TARGET UPDATE

The Board of Hillgrove Resources Ltd (the “Company” or “Hillgrove”) is pleased to announce that they have updated the magnitude of the opportunity for near-mine growth in the down dip continuation of the copper orebodies that have been drilled over the past three years, currently being drilled, and/or were previously mined in the open pit operation (**Exploration Target**¹).

Highlights

- Hillgrove has approximated an Exploration Target at the Kanmantoo Copper Mine of between eight and sixteen million tonnes with a target grade of between 1.0% and 2.0% Cu and 0.2 g/t to 0.4 g/t Au
 - The Exploration Target suggests the potential for significant growth of the underground resource as announced to the ASX on 7th December 2020 at Kanmantoo
 - The Exploration Target suggests that a significant increase in mine life may be possible at Kanmantoo
 - The Exploration Target is based on nine higher grade copper-gold ore zones that have already been mined in the open pit, or intersected by diamond drilling undertaken by Hillgrove, and projecting these zones to, on average, 250m below the pit depth or below the Company’s Mineral Resource Estimates.
 - The Exploration Target will benefit from the existing copper-gold processing plant and Tailings Storage Facility at Kanmantoo.
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In 2017 and in 2019 Hillgrove identified several underground (“UG”) opportunities it intended to assess as part of its organic growth strategy. Please refer to ASX releases of 25 May 2017 and 27 September 2019 respectively for a description and tabulation of the Exploration Targets for these UG growth opportunities.

In 2020, Hillgrove released a Mineral Resource Estimate (“MRE”) for part of three of the nine zones that comprise the Exploration Target (ASX: 7 December 2020). The Exploration Target tabulated in this release combines the two previous Exploration Target releases and accounts for the drilling results of the past three years and the 2020 Mineral Resource Estimate.

Hillgrove has approximated an Exploration Target at the Kanmantoo Copper Mine (Table 1 and Figures 1 and 2) of between eight and sixteen million tonnes with a target grade of between 1.0% and 2.0% Cu and 0.2g/t to 0.4g/t Au, containing approximately 90,000 tonnes to 300,000 tonnes of copper metal and 55,000 ozs to 250,000 ozs gold.

¹ The Exploration Target is conceptual in nature as there has been insufficient exploration to define a Mineral Resource. It is uncertain if further exploration will result in the determination of a Mineral Resource under the “Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves, the JORC Code” (JORC 2012). The Exploration Target is not being reported as part of any Mineral Resource or Ore Reserve.

Table 1 Summary of the Exploration Target by zone

	Max RL depth	Tonnage Range (Mt)	Grade Range Cu%	Grade Range Au g/t
Coopers	600	0.1 - 0.3	1.5 - 2.0	0.4 - 0.8
North Kavanagh	600	0.1 - 0.7	1.5 - 2.0	0.4 - 0.8
Kavanagh	400	2.0 - 3.5	1.0 - 2.0	0.2 - 0.4
West Kavanagh	400	1.0 - 2.0	0.8 - 1.5	0.02 - 0.05
South West Kavanagh	600	0.8 - 1.0	1.8 - 2.2	0.1 - 0.4
Spitfire	600	0.4 - 0.7	1.5 - 2.0	1.5 - 3.0
Nugent	600	1.5 - 2.5	0.8 - 1.5	0.2 - 0.6
Paringa	900	0.5 - 1.5	1.1 - 2.2	0.1 - 0.2
Emily Star	900	2.0 - 4.5	1.2 - 2.2	0.1 - 0.3
Totals		8 - 16	1.0 - 2.0	0.2 - 0.4

Figure 1 Longitudinal section the Exploration Target by zone

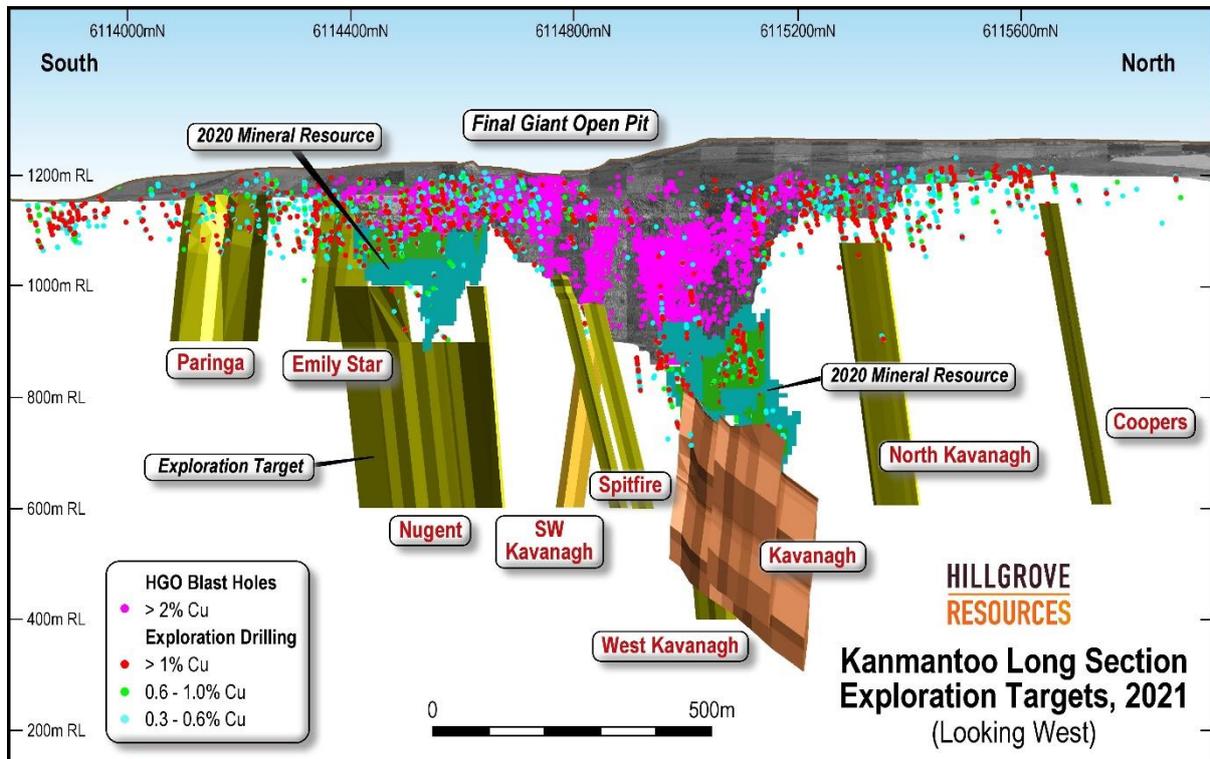
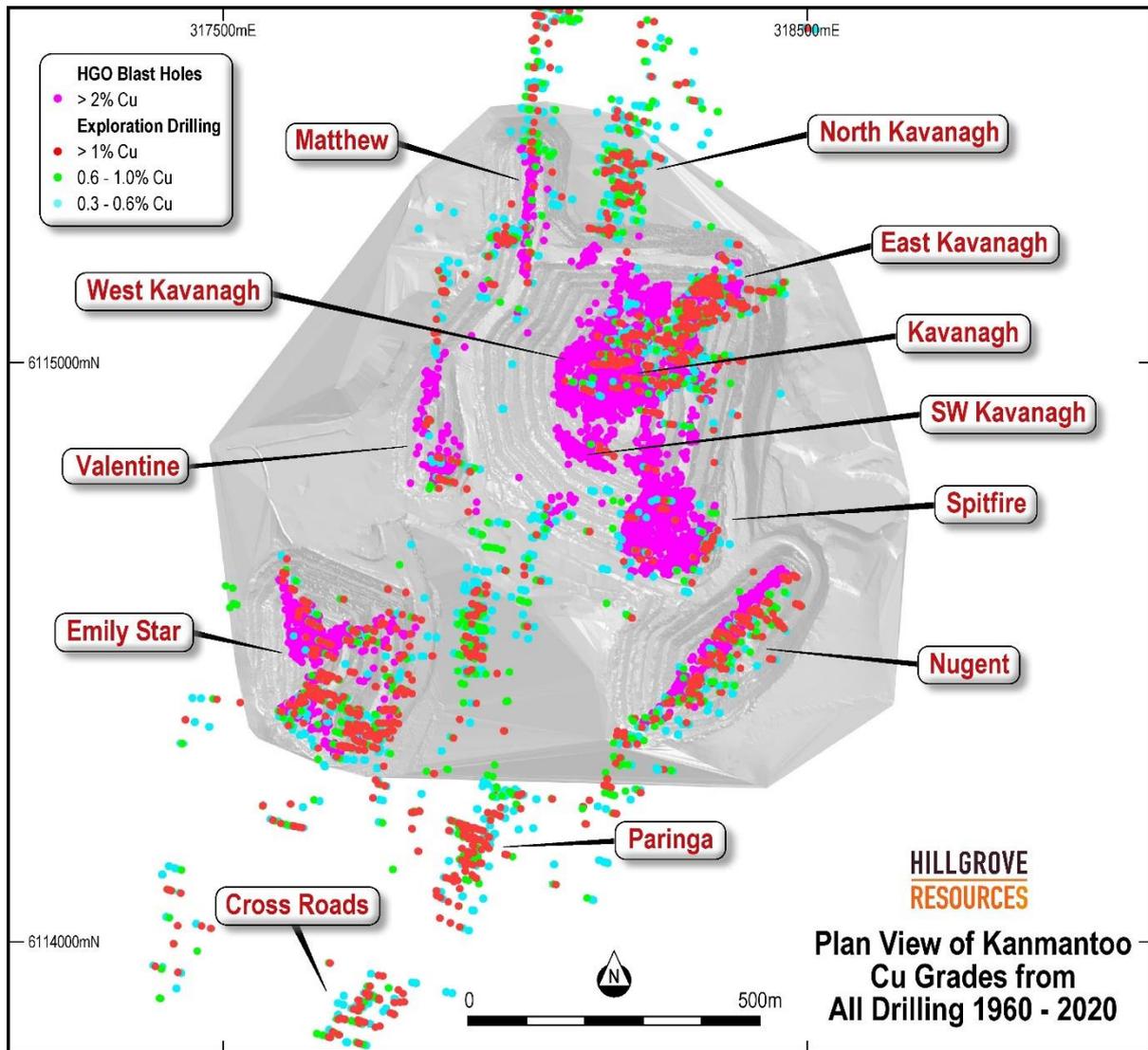


Figure 2 Plan view of location of target zones



Method of Assessment

Over the region of the Kanmantoo Copper Mine that falls outside of the current final pit design, nine potential higher-grade Cu-Au target zones have been identified which will be the focus for future exploration efforts. The identification and location of the target zones is predominantly based upon depth and strike extensions of copper-gold zones that have been mined within the open pit or intersected by diamond drilling undertaken by Hillgrove.

An analysis of the large drill hole database of the Company, in conjunction with the open pit production data and geologic knowledge gained from mining of over 300 vertical metres of the main orebodies at Kanmantoo, and the diamond drilling undertaken by Hillgrove over the past three years shows that several higher-grade copper-gold zones do extend to depth beneath or along strike from the Giant open pit. The analysis of the drill hole database also shows the lack of drilling below the open pit to assess these higher grade zones (Figure 1).

The areal extent of most of the target zones is based on a 0.8% Cu contour of the grade control copper grades in plan view, or the wireframe shape interpreted in the 2020 MRE. The depth extent of the Exploration Target is approximately 250 metres below the deepest depth of the final open pit or below the Company’s Mineral Resource Estimates (the pit design extends to approx. 350m below surface).

The 0.8% Cu contour has been assessed to be a reasonable underground ore cutoff grade. A minimum horizontal width of the >0.8% Cu material of 5 metres has been applied to the grade control and/or exploration drill hole data sets. A minimum vertical continuity of 100 metres of the >0.8% Cu material demonstrated from blast hole or drill hole data.

The copper and gold grade profiles for the Exploration Target have been defined based upon average grades of exploration diamond drilling within the target copper-gold zones, or the average grade of the appropriate MRE for the relevant zone.

The Coopers, North Kavanagh, South-West Kavanagh, and Spitfire targets have not changed from the 25 May 2017 Exploration Target release. The Paringa and Emily Star targets have not changed from the 27 September 2019 Exploration Target release.

The Nugent, West Kavanagh targets have been updated to account for the recent Hillgrove drilling (ASX release 3 September 2020) and 2020 MRE. The North-East Kavanagh, East Kavanagh, Central Kavanagh have been combined as “Kavanagh” and updated to include the recent drilling and MRE results.

Invested Infrastructure

The importance of the existing infrastructure at the Kanmantoo Copper Mine cannot be over-emphasised in assessing the economic materiality of this Exploration Target. In particular:

- The existing copper-gold processing plant at Kanmantoo,
- The risks associated with understanding copper and gold recovery and processing costs have been largely mitigated through the past 8 years of operation on the same ore types,
- The in-pit haul road that extends from surface to over 350 metres below surface enables access to a majority of the Exploration Target without the need for extensive capital and time invested in underground decline advance and ventilation costs,
- The extensive geotechnical database resulting from open pit mining since 2011,
- The existing fully constructed and permitted Tailings Storage Facility, and
- The existing granted Mining Lease and Environmental Permits

Exploration Activities

Drill testing of the Exploration Target is in progress (ASX release 2 February 2021). The initial objective of the drilling will be to continue to confirm the depth continuity of the Kavanagh zones, and convert to Mineral Resources.

ABOUT HILLGROVE

Hillgrove is an Australian mining company listed on the Australian Securities Exchange (ASX: HGO) focused on the operation of the Kanmantoo Copper Mine in South Australia. The Kanmantoo Copper Mine is located less than 55 kilometres from Adelaide in South Australia.

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Competent Person's Statement

The information in this report that relates to Exploration Target and Exploration Results is based on and fairly represents information and supporting documentation compiled by Peter Rolley, a Competent Person, a full time employee of Hillgrove Resources Limited, and a member of the Australian Institute of Geoscientists. Mr Rolley 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 'Australian Code for Reporting Exploration Results, Mineral Resources and Ore Reserves'. Mr Rolley consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

Further information on the Kanmantoo UG Mineral Resources was released to the ASX on 7 December 2020, which is also available on the Hillgrove Resources website at www.hillgroveresources.com.au

Hillgrove Resources confirms that it is not aware of any new information or data that materially affects the information included in that market announcement and, in the case of estimates of Mineral Resources and Ore Reserves that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed. Hillgrove Resources confirms that the form and context in which the findings of the Competent Persons (Peter Rolley in relation to the Exploration Target and to the Mineral Resource Estimates and Lachlan Wallace in relation to the Ore Reserve Estimates) are presented, have not been materially modified from the original market announcement.

APPENDIX A – JORC Table 1

Section 1 Sampling Techniques and Data

Criteria	Commentary
<i>Sampling techniques</i>	<ul style="list-style-type: none"> • Reverse circulation (RC) and diamond drill hole (DD) samples collected by Hillgrove Resources personnel have been used for the geological interpretation and estimation. • Drill hole sampling was conducted as per the Hillgrove Resources procedures and QAQC protocols. <p>RC Drilling:</p> <ul style="list-style-type: none"> • 2004 to 2007 drilling: <ul style="list-style-type: none"> • A rig mounted 75/25 splitter was used to collect a bulk sample and smaller split sample (3-4kg) directly off the drill rig at 1m intervals. The split sample was then split down manually if required using a cone or riffle splitter to generate a sample of ~3kg. • 1m intervals were assayed with samples being prepared by Genalysis Laboratories in Adelaide. Each sample was pulverised to ~95% passing - 75µm and the remaining pulp shipped to Genalysis Perth for analysis. • 2011 – 2012 drilling: <ul style="list-style-type: none"> • 1m bulk samples were collected during drilling with smaller split samples (3-4kg) for assay being collected primarily using a cone or riffle splitter directly off the rig. • Specific target intervals and/or samples exhibiting visible mineralisation were assayed at 1m intervals. All other sample intervals were composited (using spear sampling) to 4m intervals for assaying. On return of assay results, the 4m composite results were examined and any 4m composites returning an economic copper grade (>0.2%) were re-assayed using the original 1m samples (collected from original bulk sample using spear sampling to produce a representative 1.5kg to 3kg sample). • Samples were prepared by ALS Adelaide with each sample being riffle split to a maximum size of 3kg then pulverised split to 85% passing 75µm or better and then shipped to ALS Perth for assay. <p>Diamond core</p> <p>2004 – 2010 drilling:</p> <ul style="list-style-type: none"> • Core samples were sawn in half using a diamond core saw. A small percentage of core samples were sawn in quarters. Sampling was undertaken at 1m intervals or to geological boundaries as determined by the supervising geologist. Half or quarter core samples were sent for assay and the remaining core kept in core trays for future reference. • Samples were prepared by Genalysis Laboratories in Adelaide using a jaw crusher to ~2mm. Each sample was then pulverised to ~95% passing - 75 µm and the remaining pulp shipped to Genalysis Perth for assaying.

Criteria	Commentary																								
<i>Drilling techniques</i>	Drillhole Type	Drill Date	Bit Size	% Oriented	Orientation Method																				
	Diamond	All	HQ from surface to fresh, then NQ to end of hole	97%	Spear																				
	RC	2004 & 2007	5.75"	NA	NA																				
		2011 & 2012	4.5"	NA	NA																				
<p>Diamond core 2017 - 2020 drilling:</p> <ul style="list-style-type: none"> Core samples were sawn in half using a diamond core saw. A small percentage of core samples were sawn in quarters. Sampling was undertaken at 1m intervals or to geological boundaries as determined by the supervising geologist. Half or quarter core samples were sent for assay and the remaining core kept in core trays for future reference. Samples were prepared by ALS Laboratories in Adelaide using a jaw crusher to ~2mm. Each sample was then pulverised to ~95% passing -75 µm and the remaining pulp shipped to ALS Perth for 4-acid digest ICP-MS assaying. 																									
<table border="1"> <thead> <tr> <th>Drillhole Type</th> <th>Drill Date</th> <th>Bit Size</th> <th>% Oriented</th> <th>Orientation Method</th> </tr> </thead> <tbody> <tr> <td>Diamond</td> <td>2017 - 2020</td> <td>HQ pre-collar from surface to 200m depth</td> <td>97%</td> <td>ACE Tool</td> </tr> <tr> <td></td> <td></td> <td>NQ from pre-collar to EOH</td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td>Up to 12 wedges per parent hole</td> <td></td> <td></td> </tr> </tbody> </table>						Drillhole Type	Drill Date	Bit Size	% Oriented	Orientation Method	Diamond	2017 - 2020	HQ pre-collar from surface to 200m depth	97%	ACE Tool			NQ from pre-collar to EOH					Up to 12 wedges per parent hole		
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<i>Drill sample recovery</i>	<p>RC Drilling:</p> <ul style="list-style-type: none"> Sample recovery or the occurrence of wet samples is not recorded in the drill hole database although communications with Exploration Personnel and field observations indicate that sample recovery or wet samples were rarely a problem. <p>Diamond Core:</p> <ul style="list-style-type: none"> Diamond core recovery is recorded by Hillgrove Field Technicians during metre marking and orientation of all holes. Results demonstrate good recoveries with an average recovery rate of 99%. Core loss generally occurs in the upper sections of holes throughout the oxidised and transitional material. Core loss at depth is generally associated with a low Rock Quality Designation (RQD) value, suggesting the interval represents a shear or fault zone. 																								
<i>Logging</i>	<ul style="list-style-type: none"> All RC chips and diamond core were logged for lithology, alteration, weathering and mineralisation by Hillgrove Geologists in accordance with Hillgrove's Core Logging Procedure. Colour and any additional qualitative comments were also recorded. 99% of all diamond holes have been geotechnically logged and the majority also have magnetic susceptibility readings at 1m intervals. All diamond core trays were photographed before sampling and these photographs are stored on the Hillgrove server. Both drill core and RC chip trays are stored on site in a core yard facility. All geological logging and magnetic susceptibility readings are recorded in the field manually using a paper-based system and then manually entered into Excel spread sheet templates and visually validated before being imported into the Hillgrove drill hole database. Additional validation is conducted automatically on import. 																								

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Criteria	Commentary
<i>Sub-sampling techniques and sample preparation</i>	<p>RC holes</p> <ul style="list-style-type: none"> Sub-sampling as described in the “<i>Sampling Techniques</i>” section above. <p>Diamond holes</p> <ul style="list-style-type: none"> Sub-sampling as described in the “<i>Sampling Techniques</i>” section above. <ul style="list-style-type: none"> Field Duplicates were collected via manual splitting of the bulk sample with a riffle or cone splitter if available or by spear sampling. All field duplicates for drilling from 2011 onwards were collected using spear sampling. Analysis of the field duplicate results indicates that this method of duplicate sample collection is satisfactory. Hillgrove have detailed sampling and QAQC procedures in place to ensure sample collection is carried out to maximise representivity of the samples and minimise contamination.
<i>Quality of assay data and laboratory tests</i>	<ul style="list-style-type: none"> Pre 2011, all samples were submitted to Genalysis for analysis. Gold was determined by fire assay by flame AAS (FA50) and copper analysed via a mixed acid digest (method AT) with determination by Optical Emission Spectrometry (OES). If the copper result was greater than 1%, the analysis was repeated using a slightly modified mixed acid digestion technique (method AX). Post 2011 samples were submitted to ALS Perth for assaying by four acid digest with Atomic Absorption Spectroscopy (AAS) and gold was analysed via fire assay and Atomic Absorption Spectroscopy (AAS). Approximately 20% of the total samples used for this estimation were assayed using a double acid aqua regia digest with an ICPOES finish (a method which does not guarantee complete dissolution of sample). A re-assay program was undertaken in 2011 which detected no bias between the results of the double acid aqua regia digest and the mixed acid digestion results. The QAQC of sample preparation and analysis processes were via the following samples: <ul style="list-style-type: none"> Certified reference materials (CRMS) inserted into the sample sequence at a frequency of one in 20. Field duplicates inserted at a rate of one in every 20 samples. Blanks inserted at a rate of one in every 20 samples. Laboratory QAQC samples were inserted with a minimum of two standards and one blank for every batch of 40 samples. Hillgrove’s Quality policy is that at a minimum of 5% of all samples are CRM’s, 5% of samples submitted are blanks and 5% of samples submitted are field duplicates thus ensuring that as a minimum, 15% of all samples submitted for analysis are QAQC samples. Results from all returned QAQC samples provide reasonable confidence as to the accuracy of the assay results used in the estimation. Field duplicates show a good correlation with original sample results and in general most CRM results fall within the expected ranges.
<i>Verification of sampling and assaying</i>	<ul style="list-style-type: none"> Umpire laboratory checks were undertaken during 2008 and 2011 with no significant issues identified. There have been no twinned holes drilled for the Kanmantoo Copper Mineral Resource. Primary sample data is captured in the field onto paper templates and then entered electronically into Excel templates and stored on the Hillgrove server. The Excel templates were then imported into the SQL database using data entry procedures and database import tools. Data was visually checked by the Geologist prior to import and additional validation was carried out by the database upon import. Copper results were reported in ppm units from the laboratories and then converted to a % value within the database.

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Criteria	Commentary
<i>Location of data points</i>	<ul style="list-style-type: none"> • The map projection of Map Grid of Australia 1994 - Zone 54, (MGA94-54) was used all work undertaken for this Mineral Resource. • Hillgrove drilling was planned and set-out using the local Kanmantoo Mine Grid and then transformed to MGA94-54 for the Resource estimation. The Kanmantoo local grid is oriented at +10° to MGA94_Zone 54 – (i.e. local grid North equates to 010° MGA94_Zone 54). • Within the database the relative level (RL) has been calculated as RL+1000m to ensure no negative RL values within the dataset. • The topographic surfaces used in the estimation have accuracy in the z direction of approximately +/-1m for the majority of the block model area due to the use of lower resolution contours outside the direct mine areas. The source of the contours used outside of the Mining area was sourced from a mix of 2008 flyover data and other Surveys performed prior to Nov 2008. The Kanmantoo Mine area and immediate surrounds have +/-20mm accuracy as this area is updated by the Hillgrove Surveyors regularly using a DGPS (Trimble R8 GNSS Model 3 using kinematic option). • Pre-2011, all drill hole collars were surveyed by Engineering Surveys Pty Ltd (Adelaide) using DGPS. All pick-ups were reported in MGA94-54 coordinate system and converted to local grid. • Post-2011, all drill hole collars surveyed using DGPS (Trimble R8 GNSS Model 3 - kinematic option) by onsite Hillgrove Surveyors. The accuracy of this instrument is 10mm in the horizontal plane and 20mm in the vertical. All pick-ups were reported in MGA94-54 coordinate system and converted to local grid. • Downhole surveys were determined using a variety of methods including Gyro tool, Camteq, Digital downhole cameras, Eastman single shot camera and Compass Clinometers. For all pre-2010 holes initial surveys were completed with either a conventional Eastman single shot camera or digital down hole survey tools and then the majority of drill holes were re-surveyed using a Gyro tool. All holes post-2010 are surveyed by electronic gyro at 12 m intervals. • All downhole survey methods have a priority assigned to them in the drill hole database and therefore holes with data from multiple methods have had their survey values allocated according to this priority.
<i>Data spacing and distribution</i>	<ul style="list-style-type: none"> • Drilling was completed throughout the deposit on a variable section spacing of between 15 m to 40m and an on-section collar spacing of between 10 m and 50m. • The variable drill spacing both along strike and on-section was considered during resource classification; mineralisation estimated on broader spaced drilling was given a lower confidence classification than mineralisation estimated using tighter spaced drilling. • All samples were composited to 2m lengths prior to geostatistical analysis and Mineral Resource estimation.
<i>Orientation of data in relation to geological structure</i>	<ul style="list-style-type: none"> • The majority of holes are angled drill holes (dipping between -55° and -75°) drilled from east to west. Predominantly the main mineralised lenses dip steeply to local grid east, therefore east-west orientated drill holes and section provide as close to practicable “true width”, representative intersections of lithology and mineralisation. • Whilst some mineralised lenses, most notably the Nugent Zone are somewhat oblique to the general 010° strike of the mineralised zones, these lenses still generally exhibit a steep easterly dip and their orientation is not considered to have introduced any sampling bias material to the Resource estimation.
<i>Sample security</i>	<ul style="list-style-type: none"> • RC samples – A Hillgrove employee is present for the collection of samples off the rig and is also responsible for collecting and organising the samples ready for assay. Hillgrove has a detailed sample collection/submission procedure in place to ensure sample security. • Assay samples are collected from the rig at the end of each day by Hillgrove Field Technicians, sealed in large plastic bags and placed at the

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Criteria	Commentary
	<p>Exploration office ready for pick up by courier. Check sheets detailing all samples for a specific batch are generated prior to the samples leaving site.</p> <ul style="list-style-type: none">• DD samples – A Hillgrove employee is responsible for picking up the completed core from the rig at the end of each day and moving it to the core yard ready for processing. Hillgrove Field Technicians and geologists are then responsible for all core movements through to sampling and preparing for transport to the preparation facility. <p>Sample transport is by dedicated road transport to the sample preparation facility. All samples are transported in sealed plastic bags and are accompanied by (either paper form or by email) a detailed sample submission form generated by the Field Technician.</p> <ul style="list-style-type: none">• On receiving a batch of samples, the receiving laboratory checks received samples against a sample dispatch sheet supplied by Hillgrove personnel. On completion of this check a sample reconciliation report is provided for each batch received.
<i>Audits or reviews</i>	<ul style="list-style-type: none">• Core logging and sampling methods were reviewed by Runge in 2008 and were considered to be of a very high standard (report: Mineral Resource Estimate Kanmantoo Copper Deposit South Australia, Feb 2008).

Section 2 Reporting of Exploration Results

Criteria	Commentary
<i>Mineral tenement and land tenure status</i>	<ul style="list-style-type: none"> The Kanmantoo Copper Deposit is situated 55kms south-east of Adelaide on Mining Lease (ML) 6345 and is owned 100% by Hillgrove Resources Limited (HGO). The Mining Lease overlies freehold land also held by Hillgrove Resources. There are no Native Title interests, nor are there any historical or environmental issues considered material to this Mineral Resource.
<i>Exploration done by other parties</i>	<ul style="list-style-type: none"> The Kanmantoo Copper Deposit has a long history of exploration and mining dating back to the mid-19th century. In 1962, Mines Exploration Pty Ltd discovered a number of strong geophysical anomalies which were quickly followed up by a large diamond drilling program of 15,800m. The results of this program led to a decision to begin mining in 1968. Hillgrove Resources commenced exploration drilling in 2004 and since then have completed a number of exploration drill campaigns which have resulted in extensions and additions to the known deposit. Open pit mining commenced in early 2011 and processing of open pit ore was completed in 2020. Blast hole sampling was used to delineate the Cu zones for open pit mining and reconciliation of the mined and milled material shows excellent correlation.
<i>Geology</i>	<ul style="list-style-type: none"> Mineralisation occurs as a complex system of structurally controlled veins, with mineralisation typically forming pipe-like bodies and lenses of chalcopyrite, pyrrhotite, +/- pyrite, +/- magnetite, within a quartz + biotite + andalusite + garnet + chlorite schist host rock. Structural studies suggest the main controls on the mineralisation are north-south striking shear zones and north-north-east/north-east striking cross-shears and tension veins.
<i>Drill hole Information</i>	<ul style="list-style-type: none"> No drill holes are quoted in this release.
<i>Data aggregation methods</i>	<ul style="list-style-type: none"> No data aggregation or equivalent calculations
<i>Mineralisation widths and intercept lengths</i>	<ul style="list-style-type: none"> None reported in this release.
<i>Diagrams</i>	<ul style="list-style-type: none"> Diagrams that are relevant to this release have been included in the body of the release.
<i>Balanced reporting</i>	<ul style="list-style-type: none"> All zones comprising the Exploration Target have been reported in this release.
<i>Other exploration data</i>	<ul style="list-style-type: none"> There is no other exploration data used in approximating the Exploration Target.
<i>Further work</i>	<ul style="list-style-type: none"> The Company is undertaking a drilling program to continue testing the Exploration Target.