

South Australia's Second Largest Copper Producer

Presentation to Analysts 29 April 2025

**Bob Fulker**Managing Director



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#### **Competent Person's Statement**

As an Australian company with securities listed on the Australian Securities Exchange (ASX), Hillgrove is subject to Australian disclosure requirements and standards, including the requirements of the Corporations Act and the ASX. Investors should note that it is a requirement of the ASX listing rules that the reporting of ore reserves and mineral resources in Australia comply with the 2012 edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (the JORC Code).

The information in this report that relates to the 2024 Kanmantoo Mineral Resource Estimate and the 2024 Ore Reserve is extracted from ASX release titled 'Maiden Kanmantoo Underground Ore Reserve and 96% Increase in Copper Mineral Resource Endowment' dated 18 October 2024 and is available to view at www.hillgroveresources.com.au. The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcement and that all material assumptions and technical parameters underpinning the Mineral Resource Estimate and Ore Reserve in the relevant market announcement continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcements.

The information in this report that relates to the 2022 Mineral Resource Estimate for Nugent and Kavanagh was extracted from the ASX release titled Updated Nugent Underground Mineral Resource Estimate on the 26 July 2022 and is available to view at www.hillgroveresources.com.au. The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcement and that all material assumptions and technical parameters underpinning the Mineral Resource Estimate in the relevant market announcement continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcements.

The information in this report that relates to previously reported exploration drilling results were extracted from the ASX releases titled 'Quarterly Report and Appendix 5B for 31 December 2024' released on 21 January 2025, 'New High-grade Copper-gold Intersections Extend Mineralisation At Nugent' released on 24 March 2025, "Extensional Drilling Identifies New Mineralisation' released on 22 April 2025 and 'Kanappa Cu-Au Drilling Results' previously released on the 30 January 2019 these are available to view at www.hillgroveresources.com.au. The company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcements and that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed. The company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcement.

The information in this release that relates to the Exploration Targets is based upon information compiled by Caitlin Rowett, who is a Member of The Australasian Institute of Mining and Metallurgy. Caitlin Rowett is a full-time employee and holds equity in Hillgrove Resources Limited and has sufficient experience relevant to the styles of mineralisation and type of deposit under consideration to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code)'. Caitlin Rowett has consented to the inclusion in the release of the matters based on their information in the form and context in which it appears.

# **Corporate snapshot**

# An Australian copper producer

Market Statistics	
Share price <sup>1</sup> Shares on issue Market capitalisation Debt Cash <sup>2</sup> Enterprise value	\$0.037 2,537M \$94M Nil \$15M \$79M
Income tax losses <sup>3</sup> Franking credits	\$285M \$18M

# Major Shareholders Freepoint Metals & Concentrates 20.0% Ariadne Australia 10.3%

#### Board & Management

Derek Carter	Chair
Bob Fulker	CEO & MD
Murray Boyte	Non-Exec. Director
Roger Higgins	Non-Exec. Director
Joe Sutanto	CFO & Co. Sec.

- Hillgrove owns the Kanmantoo Copper Gold Mine
- Robust Resource of 19.3Mt at 0.77% Cu and 0.14g/t Au<sup>4</sup>
- Historical production (2010 2020): 135kt copper and 55koz gold
- Generating cash: ramp up commenced in Jan-24, Commercial Production declared in Jul-24, \$21 million of Operating Cash Flow generated in 2024
- Opportunity to fast-track Nugent development to grow copper production and reduce unit costs in 2026
- Appointment of highly regarded executive, Bob Fulker (ex-Evolution Mining and OZ Minerals)

Note: Currency is in Australian dollars unless otherwise stated

- 1. Closing share price on 24 April 2025
- 2. Cash balance as at 31 March 2025
- 3. Carried forward as of 31 December 2024 (estimated, prepared but unsubmitted tax return)
- Refer to ASX release on 18 October 2024 entitled "Maiden Kanmantoo underground Ore Reserve and 96% increase in copper Mineral Resource endowment"

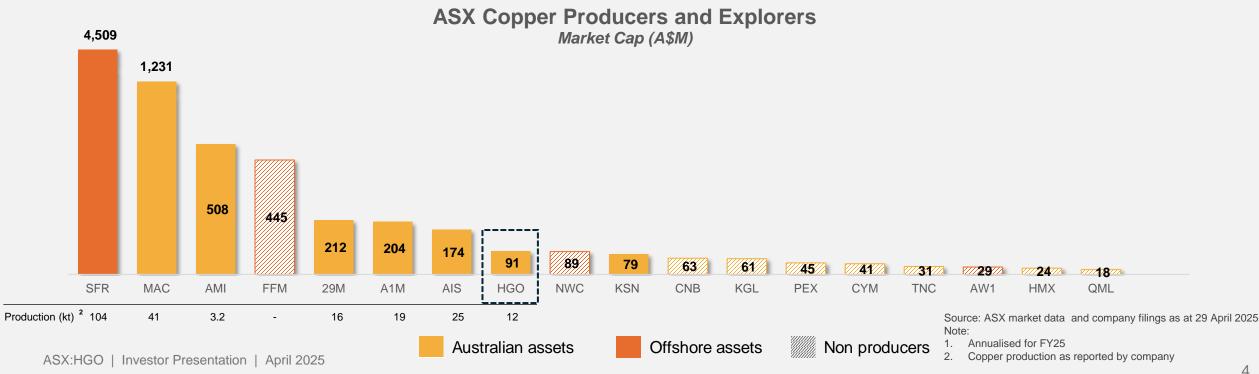


# **ASX** copper landscape



# Scarcity of Copper pureplay Australian producers

- There is a large liquidity gap in the Australian Market, investment opportunity
- Small-cap copper producers are well positioned to capitalise on investor interest in copper
- Significant potential for industry consolidation allowing smaller producers to enhance market relevance





# **Delivering our Strategy**

HILLGROVE RESOURCES

To be a mid-tier Australian, multi asset, copper producer - unlocking value for a sustainable future

Priority

# Delivering the Business

#### 2024

- Achieved Commercial Production
- Improved Mineral Resource
- Maiden UG Ore Reserve
- Stabilised costs

#### 2025

- Announced cost and production guidance
- Achieve 1.4 million tonne rate
- Expanding the mining footprint
- 12% improvement in monthly development rates

# Priority 2

# **Growing the Business**

# **Kanmantoo Organic Growth**

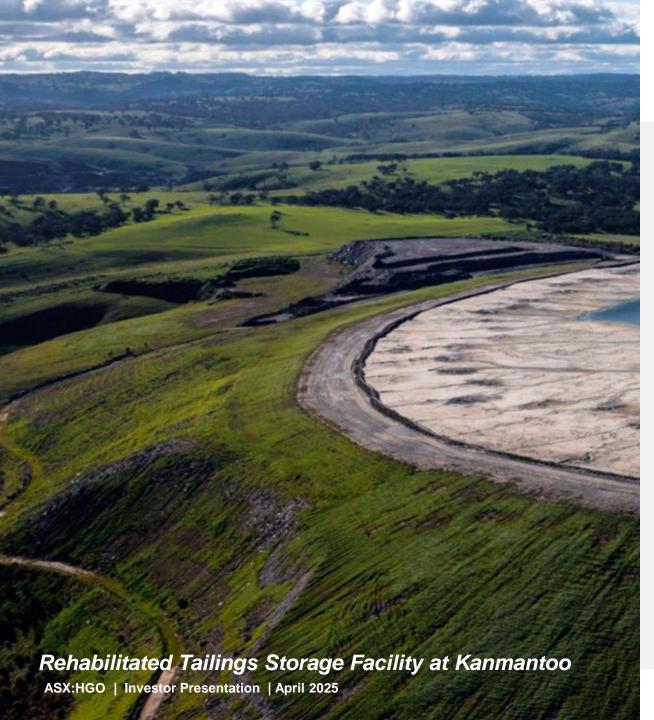
- Acceleration of Nugent decline
- 25% increase in mined tonnages
- 40km Resource definition drilling
- 20km Resource extension Drilling
- Target near mine known mineralisation

# Hillgrove Inorganic Growth

- Greenfield exploration in SA
- Status quo is not aligned with superior Shareholder return in the mid term

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# **Kanmantoo operations**

HILLGROVE RESOURCES

Supplying critical minerals for a sustainable future

- Long legacy of environmental stewardship and positive stakeholder engagement
- Supporting the local community with a residential workforce
  - 54% within 25kms
  - 95% within 125km
- Underground bulk mining (stoping)
- Well capitalised infrastructure
  - Plant capacity: 3.6Mtpa
  - Tailings Storage Facility permitted for 6.0Mt
  - Power and water supply secured
  - Concentrate trucked 75km to Port Adelaide
- Life of mine offtake with Freepoint Commodities
- Maiden Copper Ore Reserve
  - 2.8Mt at 0.91% for 26kt Copper<sup>1</sup>
- Copper Mineral Resource
  - 19.3Mt at 0.77% for 150kt Copper<sup>1</sup>
- Near mine exploration Targets of 25 to 40 million tonnes at 0.7 1.4%²

Refer to ASX announcement 18 October 2024 titled 'Maiden Kanmantoo underground Ore Reserve and 96% increase in copper Mineral Resource endowment'

<sup>2.</sup> Refer to ASX announcement 13 February 2025

## **Kanmantoo March 2025 results**



# Record Operational delivery & improved financial results

Kanmantoo Production and Cost Metrics (Unaudited)	Units	Mar 25' Qtr (Sold)	Dec 24' Qtr (Produced)
Mining Physicals			
Total Development	М	1,817	1,621
Inventory Mined	Kt	338	311
Grade Mined	%	0.96	0.85
Processing Physicals			
Tonnes Processed	kt	316	329
Grade Processed	%	0.99	0.86
Recoveries	%	94.2	93.5
Production			
Copper Produced	t	2,952	2,637
Gold Produced	oz	730	490
Silver Produced	OZ	24,897	21,854
Copper Sold			
Payable Copper Sold	t	2,909	2,599
Average Realised Price	A\$/t	14,137	13,963
Cost Summary			
C1 Costs	A\$/lb	4.19	4.40
C1 Costs	US\$/lb	2.68	2.81

#### **Improved Financial Delivery**

- 92% increase in Mine Operating Cash Flow to \$12.7 million
- Strengthened balance sheet to execute our growth plans
  - \$7.6m from SPP and Tranche 2 Placement in June quarter
- C1 of US\$2.68/lb <sup>0.64</sup>

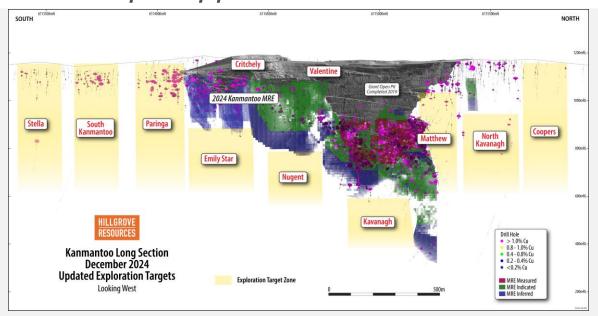
#### **Improved Operational Delivery**

- 12% increase in copper production for the quarter, 2,952 tonnes
  - 12% increase in development metres
  - 9% increase in ore mined
  - 94.2% copper recovery
- Driven by continuous improvement
  - Through systems and processes
  - Delivering consistency and replicability
  - Setting up for a 1.8Mtpa operation and beyond

# On lease growth opportunities



## Multiple opportunities to increase our Resource and Reserve



- 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.
- Over the Kanmantoo Copper Mine Region the areas that fall outside of the current mine plan and existing mine voids (pit and underground) have been reviewed and eleven potential higher-grade copper-gold target zones have been identified as the focus for future exploration efforts. The identification and location of the target zones is predominantly based upon reviewing depth, width and strike extensions of known copper gold zones that have been mined within the open pit or been intersected by drilling undertaken by Hillgrove.
- In 2025 19,000 metres of drilling has been planned to expand existing mineral resources and potentially adding new mineralisation. The first drilling campaign for Valentines has been completed with results reported 22 April 2025 in 'Extensional Drilling Identifies New Mineralisation'. Underground diamond drilling targeting Kavanagh, Nugent, Emily Star and Critchley is planned for 2025

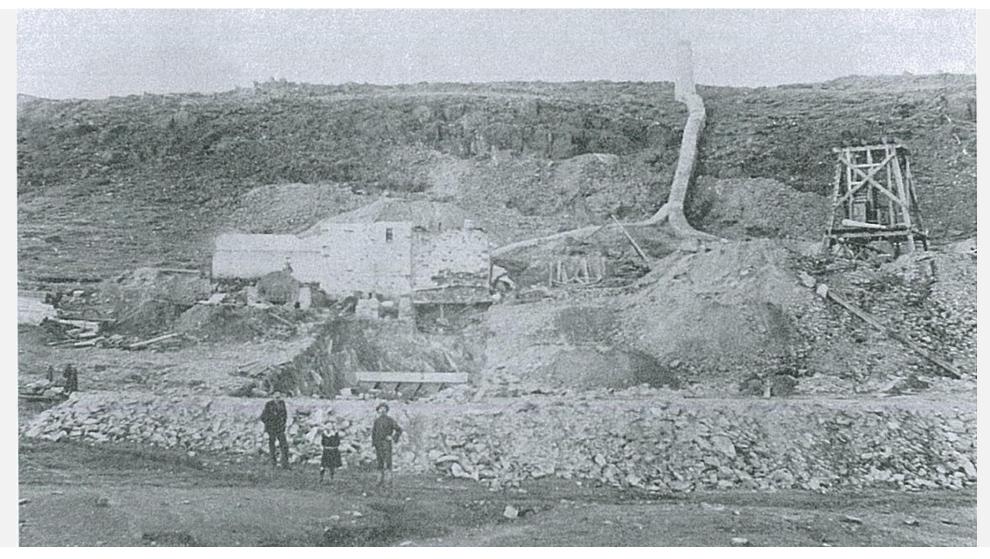
Kanmantoo Region Exploration Target							
Donosit	Tonnage Range	Grade Range	Grade Range				
Deposit	(Mt)	(Cu%)	(Au g/t)				
Targe	ets Below 2024 Mineral I	Resource					
Kavanagh	4.5-7.0	0.7-1.4	0.05-0.2				
Nugent	2.8-3.4	0.7-1.3	0.3-0.5				
Emily Star	3.3-5.0	0.7-1.1	0.05-0.2				
North Kavanagh	1.9-2.8	0.7-1.1	0.1-0.3				
Targets v	with No Adjacent Resou	rce Estimate					
Matthew	3.1-4.7	0.7-1.1	0.1-0.3				
Valentines	1.9-2.8	0.7-1.2	0.05-0.2				
Paringa	1.2-1.9	0.7-1.0	0.05-0.2				
Critchley	1.2-1.9	0.7-1.1	0.05-0.2				
Coopers	1.0-2.0	0.7-1.2	0.1-0.3				
Targets within 500m of Mine Lease (on EL 6526)							
South Kanmantoo (EL 6526)	2.0-4.0	0.7-1.2	0.1-0.3				
Stella (EL 6526)	2.0-4.0	0.7-1.2	0.1-0.3				
Total	25.0-40.0	0.7-1.4	0.05-0.5				

Table 1 included as appendix

# Paringa Mine Circa 1870's



Remnant building, flue and stack are visible today



# On lease growth opportunities

#### HILLGROVE RESOURCES

2024 Mineral

Resource estimate

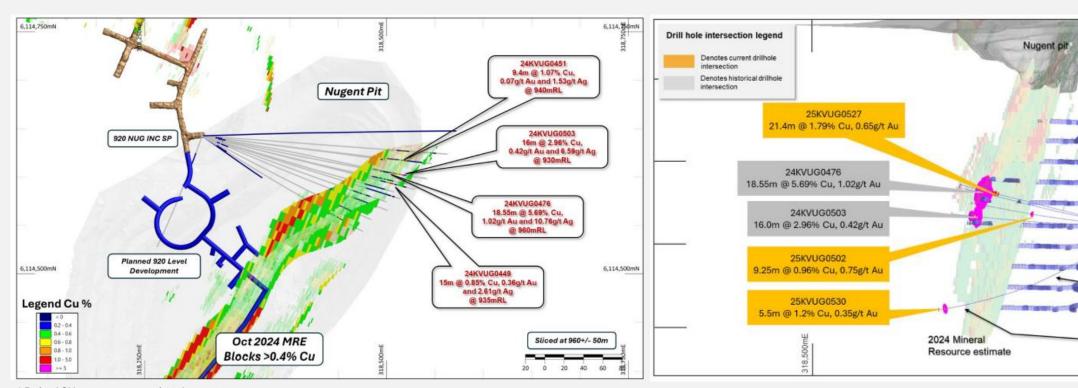
Nugent planned

1.000mRL

900mRL

Nugent incline

# Nugent extension



<sup>\*</sup> Refer ASX announcement of 21 January 2025

\* Refer ASX announcement of 24 March 2025

#### Extension of Nugent mineralisation was the first to be tested

- Unexpected as we were only testing the extremities of the mineralisation
- Additional to existing mine plans
- Visible gold sighted

# **Group Summary**

#### HILLGROVE RESOURCES

# Improved liquidity position

Kanmantoo Cost Metrics (Unaudited)	Units	Mar 25' Qtr (Sold)	Mar 25' Qtr (Produced)	Dec 24' Qtr (Produced)	Sep 24' Qtr (Produced)	Jun 24' Qtr (Produced)
Cost Summary						
Mining	A\$/lb	3.04	3.00	3.21	2.31	1.76
Processing	A\$/lb	0.79	0.78	0.90	0.91	0.88
Site G&A	A\$/lb	0.23	0.22	0.18	0.28	0.22
Transport and Offtake Charges	A\$/lb	0.59	0.58	0.63	0.59	0.53
Inventory Movements	A\$/lb	0.07	0.07	(0.09)	0.09	0.19
By-Product Credits	A\$/lb	(0.53)	(0.53)	(0.43)	(0.48)	(0.37)
C1 Costs	A\$/lb	4.19	4.12	4.40	3.70	3.21
Government Royalties	A\$/lb	0.32	0.31	0.28	0.28	0.25
Sustaining Capital	A\$/lb	0.74	0.73	0.70	0.96	0.001
Corporate G&A <sup>2</sup>	A\$/lb	0.22	0.22	N/A	N/A	N/A
All-in Sustaining Cost	A\$/lb	5.47	5.38	5.38	4.94	3.46
Major Capital	A\$/lb	0.45	0.45	0.55	0.60	2.09 <sup>2</sup>
All-in Cost	A\$/lb	5.92	5.83	5.93	5.54	5.55
All-in Cost <sup>3</sup>	US\$/Ib	3.79	3.73	3.97	3.71	3.73
Depreciation and Amortisation	A\$M	4.8	4.8	10.1	10.2	13.7
Other Costs not in AIC <sup>3</sup>	A\$M	1.1	1.1	N/A	N/A	N/A

Unaudited (A\$M)	Mar 2025 Quarter	Dec 2024 Quarter
Cash (Pre Capital Raising Proceeds)	5.1	3.3
Receivables	3.4	2.9
Unsold Concentrate	2.3	3.5
TOTAL (PRE CAPITAL RAISING)	10.8	9.7
Net Tranche 1 Placement Proceeds	9.7	-
TOTAL	20.5	9.7

- 6% decrease in C1 costs
- 6% decrease in AIC Costs
- Improved liquidity
- Improved Operating Mine Cashflow
- Strengthened balance sheet to execute our growth plans
- 7,850 tonnes of hedging at average of \$14,375 per tonne

# Focus for next quarter

#### HILLGROVE RESOURCES

# Deliver and grow the business

#### Maintain focus on our two key priorities

To be a mid-tier, multi-asset Australian copper producer unlocking value for a sustainable future

#### Delivering the business

- June quarter copper production greater than March quarter
- Deliver both production tonnes and cost within 2025 guidance

#### Organic growth opportunities pursued

- Fast track of the Nugent development via the Nugent Acceleration Project
- Continued diamond drilling targeting Kavanagh and Nugent depth extensions

#### Maintain strong balance sheet

Prudent cost control and commodity price risk management

# HILLGROVE RESOURCES

# **Kanmantoo Mineral Resource**



Mine Area	JORC Classification	Tonnage (kt)	Cu (%)	Au (g/t)	Ag (g/t)	Bi (ppm)	Cu Metal (kt)	Au Metal (koz)
	Measured	3,200	0.94	0.04	2.9	190	30	4
Kavanagh (including	Indicated	3,400	0.77	0.10	2.4	97	26	11
Spitfire)	Inferred	6,300	0.70	0.11	2.4	110	44	22
	Sub-Total	13,000	0.78	0.09	2.5	130	100	37
	Measured	-	-	-	-	-	-	-
Novile Massacra	Indicated	230	0.78	0.17	3.0	140	2	1
North Kavanagh	Inferred	110	0.77	0.21	3.3	130	1	1
	Sub-Total	340	0.78	0.18	3.1	140	3	2
	Measured	-	-	-	-	-	-	-
November	Indicated	2,300	0.74	0.36	1.7	66	17	26
Nugent	Inferred	1,100	0.71	0.35	1.6	40	8	13
	Sub-Total	3,400	0.73	0.36	1.6	57	25	39
	Measured	-	-	-	-	-	-	-
Emily Star	Indicated	-	=	-	-	-	-	-
Emily Star	Inferred	2,600	0.77	0.08	1.6	110	20	7
	Sub-Total	2,600	0.77	0.08	1.6	110	20	7
TOTAL		19,300	0.77	0.14	2.2	110	150	82

#### Notes:

- Due to effects of rounding, total numbers may not sum.
- Tonnage and metal are rounded to the nearest 1,000 tonnes, grades are rounded to 2 significant figures.
- Mineral Resource is Reported at a 0.4% Cu Cut Off Grade for all Mine Areas.
- Mineral Resource is depleted for mining as at 30 June 2024.
- Mine depletion refers to current Kavanagh UG operation, and historical Giant Pit, Nugent and Emily Star open pits

The information is extracted from the report entitled 'Maiden Kanmantoo Underground Ore Reserve and 96% Increase in Copper Mineral Resource Endowment' released on 18 October 2024 and is available to view on the Hillgrove Website

https://www.hillgroveresources.com.au/announcements. The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcement and that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcement.

#### **Kanmantoo Ore Reserve**



Mine Area	JORC Classification	Tonnes (kt)	Cu (%)	Au (ppm)	Ag (ppm)	Bi(ppm)	Cu Metal (kt)	Au Metal (koz)
	Proved	1,100	1.01	0.04	2.82	220	12	1
Kavanagh	Probable	1,000	0.88	0.15	2.70	140	9	5
	Proved + Probable Kavanagh Total	2,100	0.95	0.09	2.76	180	21	6
	Proved	-	-	-	-	-	-	-
Nugent	Probable	670	0.76	0.33	1.44	79	5	7
	Proved + Probable Nugent Total	670	0.76	0.33	1.44	79	5	7
	Proved	1,200	1.01	0.04	2.82	220	12	1
Total Ore Reserve (Kavanagh + Nugent)	Probable	1,700	0.83	0.22	2.21	110	14	12
, 5 0 /	Proved + Probable	2,800	0.91	0.15	2.45	160	26	14

#### Notes:

- 1. Dry metric tonnes.
- 2. 0.6% Copper (Cu) design cut-off grade.
- 3. No Probable Ore Reserve was derived from Measured Mineral Resource.
- 4. Minimum stope mining width 5.0m apparent.
- 5. Grades are rounded to two decimal places. Tonnages are rounded to two significant figures.
- 6. Any minor apparent discrepancies for sums in the table are related to rounding.
- 7. The period for economic extraction is from Sept 2024 until April 2027.
- 8. Ore Reserve converted from Mineral Resource is based on the October 2024 Mineral Resource report by Caitlin Rowett (Hillgrove Resources Limited) and Sonia Konopa (ERM) titled "Kavanagh, Nugent & North Kavanagh Underground Mineral Resource Estimate", as at 30th September 2024.
- 9. Competent Person: Tom Bailey MAusIMM (#206304).
- 10. Mining has commenced and observed ground conditions have been very good. Further geotechnical investigation is required to increase confidence in the stable mining spans.

The information is extracted from the report entitled 'Maiden Kanmantoo Underground Ore Reserve and 96% Increase in Copper Mineral Resource Endowment' released on 18 October 2024 and is available to view on the Hillgrove Website https://www.hillgroveresources.com.au/announcements. The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcement and that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcement.



#### **Section 1** Sampling Techniques and Data

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# Sampling techniques

#### Commentary

- 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.

#### RC Drilling:

- 2004 to 2007 drilling:
- 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:
- 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.

#### Diamond core

#### 2004 - 2010 drilling:

- 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.

#### Diamond core

#### 2017 - 2023 drilling:

- 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.

#### Diamond core

#### **Underground Diamond Drilling:**

- The UG Diamond Drill Hole (DDH) sampling was conducted as per the Hillgrove Resources procedures and QAQC protocols.
- Sample intervals from 1.25m to 0.25m as determined by geology through visibly mineralised zones.
- Where samples are despatched to ALS the sample intervals are split from the drill core, with the drill core sawn in half with a diamond core saw and half-core sample crushed to 75% < 2mm by ALS's Boyd Crusher</li>
- Where samples are assayed by the on-site XRF, the whole interval of drill core is crushed to 75% < 2m by Hillgrove's Orbis OM100 Crusher</li>

#### **Section 1** Sampling Techniques and Data



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Criteria

Commentary								
<b>Drillhole Type</b>	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				
KC.	2011 & 2012	4.5"	NA	NA				

<b>Drillhole Type</b>	Drill Date	Bit Size	% Oriented	Orientation Method
Diamond	2017 - 2024	HQ pre-collar from surface to 200m depth	97%	ACE Tool
		NQ from pre-collar to EOH		
		Up to 12 wedges per parent hole		
Diamond (UG)	2021+	NQ Drilled from UG		

#### Drill sample recovery

#### RC Drilling:

• 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.

#### Diamond Core:

• 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.

#### **Section 1** Sampling Techniques and Data



Criteria	Commentary
Logging	<ul> <li>All drill core was logged for lithology, alteration, weathering and mineralisation by Hillgrove geologists in accordance with Hillgrove's Core Logging Procedure. Colour and any additional qualitative comments are also recorded.</li> </ul>
	<ul> <li>All diamond core trays were photographed before sampling and these photographs are stored on the Hillgrove server.</li> </ul>
	Both drill core and RC chip trays are stored on site in a core yard facility.
	<ul> <li>All geological logging is recorded into Geobank (a database product from Micromine) templates and visually validated before being imported into the Hillgrove drill hole database. Additional validation is conducted automatically on import.</li> </ul>
	<ul> <li>In addition, a geotechnical log of all drill core is recorded utilising standard geotechnical logging indexes. RQD is 98-100%. UG drill core is not oriented.</li> <li>Where required, orientation of structure relative to the dominant S2 foliation is recorded.</li> </ul>
	Selected Holes also have magnetic susceptibility readings at 1m intervals.
Sub-sampling	RC holes
techniques and sample	Sub-sampling as described in the "Sampling Techniques" section above.
preparation	Diamond holes
	Sub-sampling as described in the "Sampling Techniques" section above.
	• 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.
	<ul> <li>Hillgrove have detailed sampling and QAQC procedures in place to ensure sample collection is carried out to maximise representivity of the samples, minimise contamination and to maintain sample numbering integrity.</li> </ul>

#### Section 1 Sa

#### **Sampling Techniques and Data**



#### Criteria

#### Commentary

# Quality of assay data and laboratory tests

- 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 agua regia digest and the mixed acid digestion results.
- The QAQC of sample preparation and analysis processes were via the following samples:
  - OCertified reference materials (CRMS) inserted into the sample sequence at a frequency of one in 20.
  - OField duplicates inserted at a rate of one in every 20 samples.
  - OBlanks inserted at a rate of one in every 20 samples.
  - OLaboratory 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.
- For the samples submitted to the Hillgrove on-site laboratory, the pelletised fines samples are presented to the Olympus XRF instrument and energised for 40 sec. The results are automatically recorded to a database.
- The QAQC of sample preparation and analysis processes were via the following samples:
  - Certified reference materials (CRM's) inserted by HGO into the sample sequence at a frequency of one in 20. OREAS standard 506 has been used to provide a CRM Standard grade of 0.444% Cu, and 0.365 g/t Au which are relevant for the expected cutoff grades used for resource estimates across the Kanmantoo deposit.
  - Results from all returned QAQC samples provide reasonable confidence as to the accuracy of the assay results used in the estimation. >90% of assays fall within 2SD of the expected CRM mean grade for Cu and Au.
  - Laboratory inserted QAQC samples were inserted with a minimum of two standards and one blank for every batch of 40 samples.
- Quartz flushes with <60ppm Cu are introduced to the crushers and bowl pulverisers within every high sulphide interval. These are monitored and where Cu contamination of the quartz flush occurs the batch is repeated. For the holes reported there are no examples of sulphides contaminating successive samples via sample preparation processes.
- Quartz washes are also utilised through the OM100 crusher where high sulphides are present and identified by the logging geologist.
- Hillgrove's quality policy is that at a minimum of 5% of all samples are CRM's, and 5% of samples submitted are blanks thus ensuring that as a minimum, 10% of all samples submitted for analysis are Hillgrove QAQC samples.

#### **Section 1** Sampling Techniques and Data



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Criteria	Commentary
Verification of	<ul> <li>Umpire laboratory checks were undertaken during 2008 and 2011 with no significant issues identified.</li> </ul>
sampling and assaying	• Primary sample data is captured in the field into 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
Location of data points	• 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 Kanmanto 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 syste 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.
	<ul> <li>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.</li> </ul>
	• 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 the survey values allocated according to this priority.
Data spacing and distribution	<ul> <li>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.</li> </ul>
	• 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.
	<ul> <li>All samples were composited to 2m lengths prior to geostatistical analysis and Mineral Resource estimation.</li> </ul>

#### **Section 1** Sampling Techniques and Data



Commentary
• 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 st generally exhibit a steep easterly dip and their orientation is not considered to have introduced any sampling bias material to the Resource estimation.
• 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 fo assay. Hillgrove has a detailed sample collection/submission procedure in place to ensure sample security.
<ul> <li>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 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.</li> </ul>
<ul> <li>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.</li> <li>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.</li> </ul>
<ul> <li>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.</li> </ul>
<ul> <li>Previous audits of the Hillgrove sampling methods were reviewed by independent consultant and were considered to be of a very high standard.</li> </ul>



#### **Section 2** Reporting of Exploration Results

Criteria	Commentary
Mineral tenement and land tenure status	<ul> <li>The Kanmantoo Cu-Au mine is situated on Mining Lease ML6345 and is owned 100% by Hillgrove Resources Limited (HGO).</li> </ul>
	<ul> <li>HGO owns the land covered by the Mining Lease. The Mine Lease is encompassed on all sides by EL6526 also owned 100% by Hillgrove Resources. All drill holes were drilled on land owned or rented by Hillgrove Resources.</li> </ul>
Exploration done by other parties	<ul> <li>Hillgrove Resources commenced exploration drilling in 2004 and since then has completed a number of exploration sampling and mapping campaigns which have resulted in defining the exploration targets.</li> </ul>
Geology	<ul> <li>Mineralisation occurs as an epigenetic system of structurally controlled veins and disseminations of chalcopyrite, pyrrhotite, pyrite, magnetite, within a quartz + biotite + andalusite ± garnet ± chlorite +/- staurolite schist host rock. Structural studies suggest the mineralisation is within brittle structures that have been re-activated.</li> </ul>
Drill hole Information	No new drill holes are reported in this release
Data aggregation methods	No new drill holes are reported in this release
Mineralisation widths	No new drill holes are reported in this release.
Diagrams	Diagrams that are relevant to this release have been included in the body of the release.
Balanced reporting	All zones comprising the Exploration Target have been reported in this release.
Other exploration data	<ul> <li>No Other exploration data has been used in approximating the Exploration Target.</li> </ul>
Further work	The company is undertaking a drilling program to continue testing the exploration target.