



Hillgrove Resources Limited (ASX: HGO) report for the quarter ended 31 December 2018

# **HIGHLIGHTS**

**Operations –** a strong quarter with:

- Sustained improvement in safety, the total recordable injury frequency rate (TRIFR) fell to 8.2 per million man hours from 20.3 over the last year, November's 8.1 was the lowest level on record;
- Quarterly copper production of 5,366 tonnes, contributing to the highest annual production since operations began of 22,584 tonnes for CY 2018;
- Quarterly gold production of 885 ounces (6,003 ounces for 2018); and
- The low strip ratio<sup>1</sup> of 1.4:1 continued the build-up of ore stockpiles to 2.9M tonnes, equivalent to 10 months of processing.

**Rockfall** – a significant failure occurred on the western wall of the Giant pit on 19 December 2018, restricting activity in the immediate area until 17 January 2019 and thereby reducing mine productivity and stockpiling of ore while adding to costs. Initial estimates are that 2,000 tonnes of copper metal will be lost by the modified pit design to reduce the risk of a similar event.

**Cash Flow** – the sustained higher levels of production allowed the Company to continue to improve its balance sheet, with creditors and debt reduced leaving a cash balance of \$2.5m at quarter end.

**Fixed Pricing** – continued prudent management of fixed pricing contracts, with pricing fixed for 10,225 tonnes of copper (approximately 60% of future payable production) at an average of \$8,860 per tonne at quarter end (compared to the spot price of \$8,439 at quarter end).

**Pumped Hydro** – final offers have been received and negotiations are continuing but remain incomplete.

**Exploration** – the diamond drilling at Kanappa has identified a large potassic-sericite-chlorite alteration system with copper-gold mineralisation. Further assessment of the drilling results is being undertaken.

2018 Guidance – annual production and C1 costs were all within or slightly better than 2018 guidance.

#### LOOKING FORWARD

**Pumped Hydro** – progress negotiations with the preferred bidder.

**Growth Opportunities** – work on the growth opportunities will continue, including:

- Underground further work to be undertaken to evaluate an alternate design to recover the tonnes lost from the change in pit design following the December 2018 rockfall; and
- Exploration further exploration at the Stella and North-West Kanmantoo projects will be undertaken in the March 2019 quarter and the Kanappa drilling assessment continues.

**Cashflow** – forecast strong copper production, cessation of mining by mid-year (thereby reducing costs), combined with the fixed pricing contracts should allow the Company to build a healthy cash balance in the first half of the year. The Company intends to pay a fully franked dividend before 30 June 2019.

<sup>&</sup>lt;sup>1</sup> Strip ratio: (tonnes of waste) / (tonnes of ore) above cut-off grade of 0.2%Cu

# MANAGING DIRECTOR'S STATEMENT

The emphasis on reducing safety incidents has pleasingly led to a significant and sustained reduction in the total recordable injury frequency. This has resulted in a 60% reduction over calendar year 2018, to the lowest level since operations commenced in 2011.

Copper, gold and C1 costs were all within or slightly better than guidance, despite a slower than forecast mining rate during 2018. The slower mining rate was the result of reduced equipment availability and the increasingly tight working area as the pit deepened. The impact of the reducing floor area exacerbates the amount of time spent on final wall management and installation of geotechnical controls. This was further impacted by several areas requiring intensive treatment (particularly in the area of the December 2018 rockfall).

Despite these challenges, 2018 was a record year for copper production (22,584 tonnes). Free cashflow generation was significant and this resulted in debt reduction of \$8.5M and reduction in the creditors balance by \$21.7M, with creditors now back on industry terms.



Copper sales have been assisted by prudent fixed pricing, with 10,225 tonnes at \$8,860 per tonne remaining at 31 December 2018. This structure of the fixed pricing arrangement also provides some flexibility for a varying proportion of tonnes on a ship by ship basis to be delivered into the spot market when A\$ prices are relatively high or otherwise apply more fixed pricing when prices are relatively weak.

The lower strip ratios have enabled mining of ore to keep the processing plant at full capacity and continue to accumulate stockpiles. The higher grade ore is fed directly to the plant and the low to mid grade ore is stockpiled for processing at a later date.

For the months of October and November, less of the Cu metal was recovered than the historical average, but December saw a return to recovering 100% of the Cu metal. This culminated in the orebody performing well during 2018, realising 97% of the Mineral Resource Estimate copper metal within the Giant pit.

The implications of the rockfall were outlined in the ASX notification of January 17, 2019. Whilst there was no material impact in the guarter on copper production, it did impact mining progress, requiring significant rectification work. Further work is being undertaken to evaluate the cost, benefit and financial investment risk of an alternate design of the final stage of the pit and/or a short-term underground potential to recover the lost 2,000 tonnes.

The Pumped Hydro Energy Storage final binding bid process was completed and a preferred bidder selected. Negotiations have progressed well but are incomplete. If this transaction were to proceed, the inferred resource and the exploration target that sit directly below the final pit footprint would be sterilised, meaning that mining of this resource would not be possible.

The intent remains to maximise the value from the existing pit (including progressive rehabilitation), progress the sale of the Pumped Hydro site and build an exploration platform that has the potential to be self sustaining over a prolonged period. Surplus cashflow generated from these activities will be returned to shareholders in the form of dividends, with a fully franked dividend planned prior to 30 June 2019.

# KANMANTOO COPPER MINE, SOUTH AUSTRALIA

Mining Lease 6345 (Hillgrove 100%)

#### Safety

The Company has continued the improved safety performance, with the 12 month moving average TRIFR decreasing from 20.3 to 8.2 over the 12 months to 31 December 2018. November's 8.1 was the lowest since operations commenced in 2011. Please refer to Figure 1 below.

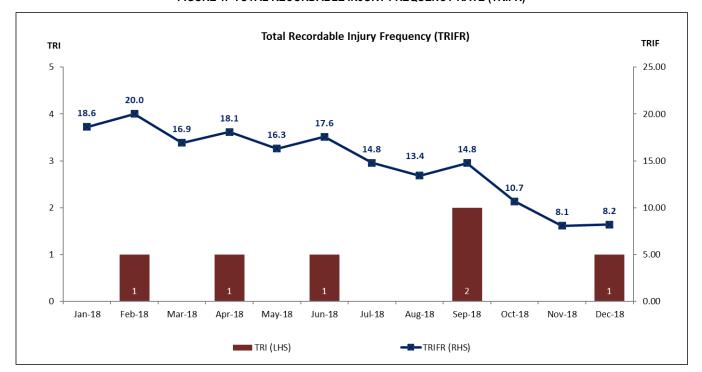


FIGURE 1. TOTAL RECORDABLE INJURY FREQUENCY RATE (TRIFR)

Note to Figure 1: TRIFR is calculated per million man hour

#### **Operations Overview**

Mining production was 824k BCM in the quarter, down 9% on the prior quarter (refer Figure 2). The slower mining rate was expected due to the increasingly tight working area, but was exacerbated by the rock fall which occurred on 19 December. This interrupted the planned mining sequence as the Company had to remediate the wall prior to work recommencing in this area of the pit.

Mining efficiency will continue to reduce as the pit progresses deeper, as the work area eventually becomes too small to manage load/haul and drill/blast activities concurrently. The Company has taken the opportunity to accelerate the earthworks associated with the rehabilitation obligations prior to the completion of mining in the June 2019 quarter. Progressive rehabilitation using idle equipment is the most cost effective method to complete the rehabilitation obligations and will progressively reduce the Company's environmental liability. Note that approximately 50kBCM of material was rehandled for rehabilitation during the quarter which is not reflected in Figure 2.

Ore stockpiling was disrupted by the December 2018 rockfall. Nonetheless, with the strip ratio remaining low at 1.4:1, ore stockpiles were increased from 2.6M tonnes at the end of the previous quarter to 2.9M tonnes at the close of the December 2018 quarter. The ore inventory stockpile increases business resilience by allowing stockpiles to be processed if there are any unplanned mining interruptions, and copper production to be optimised by enabling high grade ore to be preferentially processed.

**Quarterly Mining Performance** Total kBCM 2,100 2,000 1,843 1,800 1,636 1,800 1,600 1.500 1,400 1,216 1,200 1,064 1,040 1,200 1,000 900 800 600 600 400 300 200 1,511 1,129 1,518 1,361 1,208 1.765 906 824 Mar 2017 Jun 2018 Jun 2017 Sep 2017 Dec 2017 Mar 2018 Sep 2018 Dec 2018 Q1 CY17 Q2 CY17 Q3 CY17 Q4 CY17 Q1 CY18 Q2 CY18 Q3 CY18 Q4 CY18 Total BCM Movements (LHS) ■ Total Ore Tonnes (RHS)

FIGURE 2. KANMANTOO QUARTERLY MINING PEFORMANCE

Mill throughput for the quarter was 830k tonnes at a run time of 89.4% (refer Figure 3), with the copper recovery rate for the quarter of 91.7%.

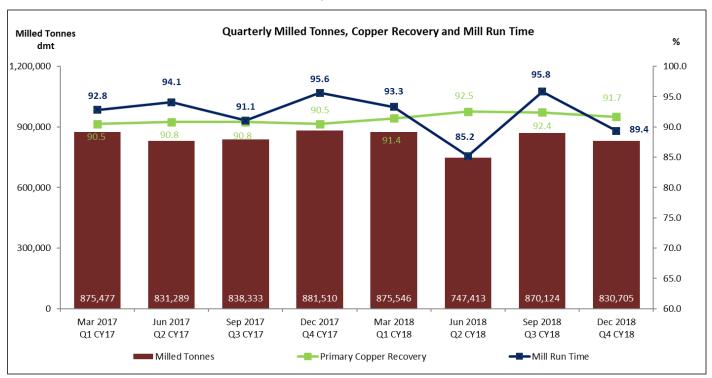


FIGURE 3. KANMANTOO QUARTERLY PROCESSING PERFORMANCE

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Total production for the quarter was 22,981 DMT of concentrate, containing 5,366 tonnes of copper metal and 885 ounces of gold. Copper and gold grades as well as recoveries were lower than the past two quarters but in line with expectations from the lodes mined in the quarter.

TABLE 1. KANMANTOO COPPER MINE PRODUCTION STATISTICS

		MAR-18 QTR	JUN-18 QTR	SEP-18 QTR	DEC-18 QTR	CY18	CY17
		3 MTHS	3 MTHS	3 MTHS	3 MTHS	12 MTHS	12 MTHS
Ore to ROM from Pit	kt	1,636	1,843	1,184	1,064	5,728	3,915
Mined Waste	kt	2,571	1,889	1,614	1,483	7,557	14,388
Total Tonnes Mined	kt	4,207	3,733	2,799	2,547	13,285	18,303
Strip Ratio	W:O	1.6:1	1.0:1	1.4:1	1.4:1	1.3:1	3.7:1
Closing Ore Stocks	kt	1,257	2,331	2,643	2,893	2,893	524
Mining Grade	%	0.47	0.54	0.62	0.52	0.53	0.48
Ore Milled	kt	876	747	870	831	3,324	3,427
Milled Grade - Cu	%	0.64	0.82	0.80	0.70	0.74	0.48
- Au	g/t	0.12	0.15	0.08	0.06	0.10	0.12
Recovery - Cu	%	91.4	92.5	92.4	91.7	92.0	90.6
- Au	%	54.3	55.5	58.5	54.4	55.6	51.8
Cu Concentrate Produced	Dry mt	21,653	24,023	26,794	22,106	94,576	67,265
Concentrate Grade - Cu	%	23.7	23.5	24.1	24.3	23.9	22.0
- Au	g/t	2.5	2.6	1.5	1.2	2.0	3.1
Contained Metal in Con Cu	t	5,122	5,642	6,454	5,366	22,584	14,802
- Au	oz	1,770	2,042	1,306	885	6,003	6,785
- Ag	oz	36,996	40,139	45,247	39,211	161,592	110,551
Total Concentrate Sold	Dry mt	23,395	23,335	26,391	22,981	96,102	65,161

#### Costs

Mining unit cost at \$21.41 was in line with the prior quarter (refer Figure 4). This has remained high as mining becomes more difficult and was in line with expectations.

Mining Unit Cost \$/BCM 22.00 21.41 20.00 20.98 18.00 16.00 16.94 15.77 15.45 14.00 13.38 12.00 12.18 10.00 8.00 4.00 2.00 0.00 Jun 2017 Dec 2017 Jun 2018 Dec 2018 Mar 2017 Sep 2017 Mar 2018 Sep 2018 Q3 CY18 Q1 CY17 Q2 CY17 Q3 CY17 Q4 CY17 Q1 CY18 Q2 CY18 Q4 CY18 ■ Mining Unit Costs

FIGURE 4. KANMANTOO QUARTERLY MINING UNIT COSTS

Processing unit cost of \$8.67 per tonne (refer Figure 5) was higher than the prior quarter as a result of additional costs and lower throughput following damage to the mill motor during the quarter. However, this is expected to revert back to levels previously experienced.

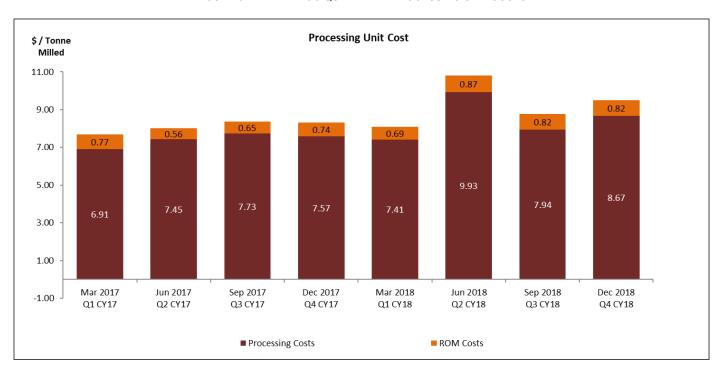


FIGURE 5. KANMANTOO QUARTERLY PROCESSING UNIT COSTS

C1 unit cost for the December 2018 quarter was US\$2.13/lb, with the total C1 cost for the year of US\$2.09/lb (refer Table 2).

TABLE 2. KANMANTOO COPPER MINE COSTS (USC/lb at AUD/USD of 0.748)

US cents per lb	MAR-18 QTR	JUN-18 QTR	SEP-18 QTR	DEC-18 QTR	CY18	CY17
	3 MTHS	3 MTHS	3 MTHS	3 MTHS	12 MTHS	12 MTHS
Total Mining Cost	165	138	109	119	131	195
Deferred Mining	6	42	31	39	30	-36
Pre-strip	-	-	-	-	-	-3
Ore Inventory Adjustment	-66	-45	-13	-30	-34	-13
Mining Costs	105	135	127	128	127	143
Processing Costs	47	47	37	46	44	62
Other Direct Cash Costs	9	9	6	9	8	12
Total Onsite Costs	161	191	170	183	179	217
Transport & Shipping	13	15	13	13	14	13
Treatment, Refining & Smelter Charges	37	39	35	30	35	34
Total Offsite Costs	50	54	48	43	49	47
Precious Metals Credits	-25	-25	-15	-13	-19	-31
Total Direct Operating Costs (C1 Costs)	186	220	203	213	209	233
Royalties	15	13	13	13	13	11
D&A	26	26	26	26	26	32
TOTAL COSTS	227	259	242	252	248	276

#### **NOTES TO TABLE 2:**

**Deferred Mining:** Within each pit, the cost of higher waste benches, proportional to the copper contained in the ore, is normalised for the impact of strip ratios and copper grades over the life of specific pits.

**Pre-Strip:** Upper levels of pits where the strip ratio is greater than 10:1 (waste:ore) are capitalised and amortised over the life of the mine based on metal.

Ore Inventory Adjustment: Mining costs per tonne of ore added to (-'ve) or processed from (+'ve) long term stockpiles.

# Revenue

Revenue for the quarter (including precious metals credits) was \$47.3 million, with the average realised price for copper metal sold being \$8,782 per tonne.

# **GROWTH OPPORTUNITIES**

# **Kanmantoo Underground Copper Mine**

As a result of the December pit wall failure and the resultant modified pit design, the Company is investigating various underground (UG) mining scenarios to profitably and expediently access the copper mineralisation no longer accessible by open pit mining.

This additional UG evaluation is in addition to the previous work evaluating underground operations on the Nugent lode system.

# **Near Mine (Kanmantoo Surrounds)**

The previously announced results of the magneto-telluric (MT) survey around the Kanmantoo mine extensions indicate a deep-seated conductivity zone south of the Giant Pit. This zone is coincident with a magnetic high, and with a significant induced polarity (IP) chargeability anomaly. An infill MT survey is scheduled to commence in February 2019 to better locate and characterise the target prior to considering drilling.

# Kanappa

The drilling at Kanappa was terminated after three holes due to excessively broken ground, which resulted in the drill holes not being able to reach planned depth, low penetration rates, high water consumption and higher costs.

All assays from the diamond drilling of the three holes at Kanappa have now been received. For the full report see the ASX release of 30 January 2019. Figure 6 shows an example of the copper mineralisation intersected in KPDD002.

The drill holes intersected a wide sequence of potassic, chlorite and sericite altered and veined sediments, monzonites and diorites that is at least 250m wide and open to the east. Petrology work by internationally respected alteration petrologist, Dr Roger Taylor, on a suite of samples from the first hole (KPDD002) is summarised below. Further work is in progress to confirm these observations and their implication for the next drilling program.

"the paragenesis records a classic magmatic related down temperature sequence, often recorded in porphyry copper gold systems and in several iron oxide copper gold systems."

These drill results confirm the Company's view that the Kanappa area is prospective for large scale magmatic related copper-gold mineral deposits.

Results from all holes are as follows:

#### KPDD002

- 7m @ 0.4% Cu, from 230.5 downhole
- 2m @ 1.3g/t Au from 358m downhole

#### KPDD003

- 45m @ 0.2% Cu, from 47m downhole, including two higher grade zones
  - 5.5m @ 0.47% Cu from 69.5m downhole, and
  - 4.5m @ 0.65% Cu from 85.0m downhole.

# KPDD004

1.0m @ 0.2% Cu, from 100m downhole

# FIGURE 6. DRILL CORE FROM KPDD002 (LHS) FIGURE 7. GENERAL BROKEN GROUND ENCOUNTERED (RHS)





#### Mt Rhine

No further work was undertaken at Mt Rhine this quarter.

# **South East South Australia**

This area is prospective for significant copper-gold mineralisation as evidenced by past iron, copper and molybdenum discoveries within the Hillgrove tenements. Data discovery and compilation is continuing.

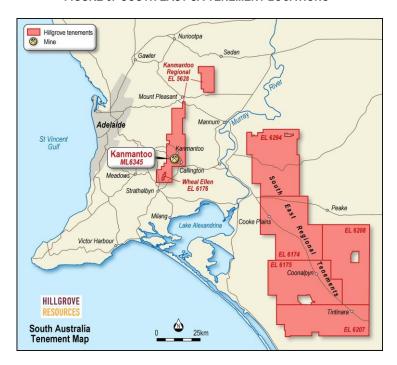


FIGURE 8. SOUTH EAST SA TENEMENT LOCATIONS



The end of mine Kanmantoo Pit presents a potential Pumped Hydro Energy Storage (PHES) opportunity due to the difference in elevation between the base of the pit and the upper reservoir (>400m), proximity to the South Australian Electricity Grid, water availability, land holding on surrounding properties and the South Australian electricity market requirements. PHES helps address the SA challenges emanating from reliance on renewable energy by adding system stability and storage and also by providing opportunities for associated projects, such as solar.

The formal process to realise the value inherent in the PHES project progressed during the quarter. A number of binding offers were received late in the quarter and Hillgrove is currently progressing negotiations with a preferred bidder.

#### HILLGROVE CORPORATE

#### Guidance

The Company's actual performance against its 2018 guidance is summarised in the table below

**TABLE 3. 2018 GUIDANCE** 

CY18	Guidance	Actuals		
Copper produced	22,000 to 24,000 tonnes	22,584 tonnes		
Gold produced	5,500 to 6,000 ounces	6,003 ounces		
C1 costs	US\$2.00 to US\$2.25 (at 0.78 exchange rate)	US\$2.09		
Exploration capex	\$1.8 to \$2.5 million	\$1.7 million		
Capital projects	\$2.6 to \$3.0 million	\$3.8 million		

Copper and gold production were in line or slightly above 2018 guidance, while expenditure on Capital Projects was \$0.8 million above the top end of guidance principally due to the capitalisation of PHES costs.

The 2019 guidance will be provided in February 2019 along with the release of the 2018 full year results.

# **Fixed Pricing**

The Company continues to actively manage its Australian Dollar copper price exposure through fixed pricing contracts. As at the end of the quarter, it had 10,225 tonnes of future sales priced at an average copper price of \$8,860 per tonne.

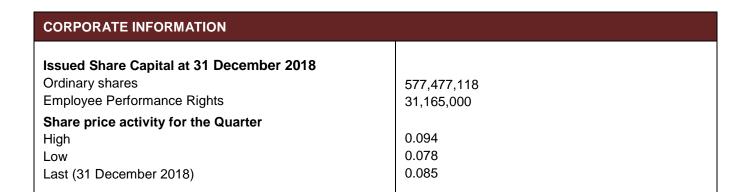
#### **Cash Flow**

With the higher levels of production during the December 2018 quarter, working capital levels have further improved, leading to a stronger balance sheet at quarter end. The \$4.0 million Freepoint Copper Prepay Facility has been fully repaid.

# INDONESIAN GOLD AND GOLD/COPPER ASSETS

The Company is continuing to progress its withdrawal from Indonesia.

The Indonesian projects have been on care and maintenance since 2013 and the carrying value of both projects were fully impaired in 2015.



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Mine	JORC 2012 Classification	Tonnage (Mt)	Cu (%)	Au (g/t)	Ag (g/t)	Cu Metal (kt)
Kanmantoo	Measured	9.5	0.6	0.1	1.2	59
Copper Mine, All Deposits	Indicated Inferred	10.1 12.3	0.6	0.1 0.1	1.5 1.0	62 67
	Total	31.8	0.6	0.1	1.2	188

Mineral Resource Estimate for All Deposits at 31 December 2017

# Mineral Resource Estimate for Giant Pit Only at 31 December 2017

Mine	JORC 2012	Tonnage	Cu	Au	Ag	Cu Metal
	Classification	(Mt)	(%)	(g/t)	(g/t)	(kt)
Kanmantoo	Measured	7.5	0.6	0.1	1.2	44
Copper Mine,	Indicated	4.5	0.5	0.1	1.0	23
Giant Pit Only	Inferred	9.6	0.6	0.1	0.9	53
	Total	21.6	0.6	0.1	1.0	120

# Ore Reserve Estimate at 31 December 2017

Mine	JORC 2012	Tonnage	Cu	Au	Ag	Cu Metal
	Classification	(Mt)	(%)	(g/t)	(g/t)	(kt)
Kanmantoo	Proved	4.9	0.6	0.1	1.2	31
Copper Mine	Probable	1.1	0.5	0.1	0.9	6
	Total	6.1	0.6	0.1	1.1	37

# **Competent Person's Statement**

The Ore Reserve and Mineral Resource estimates were prepared by Competent Persons in accordance with the JORC Code 2012. Further information on the Kanmantoo Mineral Resources and Ore Reserves is available in the Hillgrove Updated Mineral Resource and Ore Reserve Estimate released to the ASX on 18 October 2016, 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 Exploration Results and 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. Mr Rolley (MAIG) and Mr Wallace (MAUSIMM) are employees of Hillgrove Resources.

#### For more information contact:

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