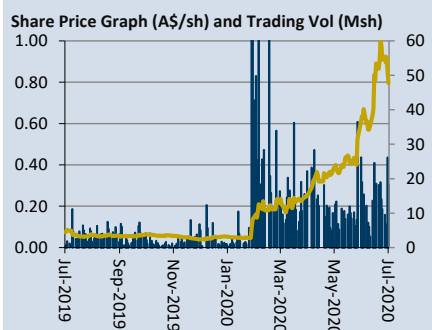


SPEC BUY

Current Price	\$0.80
Valuation	\$1.45
Target Price	\$1.16

Ticker:	DEG	
Sector:	Metals & Mining	
Shares on Issue (m):	1,173	
Market Cap (\$m):	932.6	
Cash (\$m):	27.7	
Enterprise Value (\$m):	904.9	
52 wk High/Low:	\$1.00	\$0.04
12m Av Daily Vol (m):	8.7	
Projects	Stage	
Mallina Project	Defined Resource	
Hemi Discovery	Exploration	
Resource Status		
Mallina Gold Project	2.2Moz	
Cashflows	2018	2019
Operating Cashflow	-7.1	-9.4
Investing Cashflow	-2.5	-0.9
Financing Cashflow	9.7	10.5
Cash Balance	1.1	1.3
Directors:		
Simon Lill	Chairman	
Glenn Jardine	Managing Director	
Andy Beckwith	Executive Technical Director	
Peter Hood	Non-Executive Director	
Eduard Eshuys	Non-Executive Director	
Bruce Parncutt AO	Non-Executive Director	
Major Shareholders (%)		
DGO Gold Limited	16.4%	
Northwest Nonferrous	5.7%	



Please refer to important disclosures at end of the report (from page 7)

Monday, 13 July 2020

De Grey Mining (DEG)

Initial Metallurgical Testwork

Analysts: Matthew Keane | Michael Eidne

Quick Read

DEG has released initial metallurgical testwork for the Brolga Zone, within the Hemi discovery, part of the Mallina Project in the Pilbara of Western Australia. Tests achieved 93.0% recoveries for oxide mineralisation using carbon in leach (CIL) and 96.3% for fresh mineralisation using sulphide flotation, pressure oxidation (POX) and CIL. Given the known partly refractory nature of other deposits within the Mallina Project, it was anticipated that Hemi would require further processing to unlock gold in sulphide mineralisation. While preliminary in nature, Argonaut regards these results to be a positive outcome and better than our previous modelled recoveries of 89-93% from POX and CIL. DEG is actively expanding the Hemi deposit with six drill rigs operating in the region. Further drill results released recently have extended the Brolga Zone to the south and southwest.

Event & Impact: Metallurgy and drilling update - Positive

Brolga highly amenable to POX: Metallurgical testwork based on four holes into the Brolga Zone have returned 93.0% recoveries for oxide mineralisation using 24hr bottle roll cyanide extraction (CIL simulation) and 96.3% for fresh mineralisation using sulphide flotation, POX and CIL. Significantly, 92-93% of gold was recovered in >10% of the initial mass from flotation of fresh ore. This would substantially reduce the scale of POX plant under a development scenario (assuming POX is the preferred method for sulphide oxidation). As a comparative, Alacer Gold's (AQQ) Çöpler sulphide ore is less amenable to flotation and applies whole ore POX. POX is a commonly utilised oxidation process used in profitable mines such as Porgera and Lihir, as well as Carlin deposits in Nevada, USA.

Hemi continues to grow: Ongoing drilling continues to grow the extents of Hemi. Aircore (AC) drilling has shown the potential to extend the Brolga Zone by 160m further west with an intercept of 16m @ 1.9g/t from 48m. The newly discovered southern extension to Brolga is being tested with RC drilling with shallow intercepts including 15m @ 1.1g/t from 223m and 5m @ 1.1g/t from 59m. We highlight that Hemi is still in the rapid expansion phase and remains open in nearly every direction. Based on drill intercepts to date, Argonaut estimates the current endowment could be ~3.6Moz @ ~1.6g/t.

Looking for Hemi repeats: AC drilling has commenced at the Antwerp and Scooby prospects. Both have historic gold intercepts and contain intrusive geology similar to Hemi. An aeromagnetic survey over the Mallina Project has identified >20 new magnetic features with the potential to be mineralised intrusions similar to Hemi. Beyond the Hemi discovery, Mallina has significant exploration upside over its 150km of prospective strike.

Recommendation

Argonaut's revised valuation for DEG is 1.45ps (from \$0.65ps) primarily driven by a change to a DCF based valuation (previously EV/Resource based). We apply a 20% discount to NAV to account for development risks to achieve a \$1.16ps target price. See Page 2 for more detail. Speculative Buy recommendation maintained.

Valuation

Argonaut has revised its valuation method...

Shifting from an EV/Resource to DCF basis

Argonaut has previously valued Hemi on an EV/Resource basis, applying A\$150/oz to Argonaut's estimated endowment of 3.6Moz. We now move to a DCF based valuation using Gold Road Resources, Gold Fields (50:50 JV) 7.5Mtpa Gruyere Project as a basis for some of our assumptions. Gruyere is the last large-scale open pit gold development constructed in Western Australia. We assume a 15-year mine life with a declining grade profile averaging 1.3g/t gold (see [Previous Research](#) for further detail). Key DCF assumptions are tabled below. Changes to our previous DCF model include higher recoveries (from 89% to 94%) and the construction of a POX plant upfront (previously deferred to Year 3 after three years of oxide treatment).

Our DCF valuation assumes a 7.5Mtpa plant, a similar scale to the Gruyere Project

Table 1. Argonaut Hemi DCF assumptions

Metric	Measure	Value
Mine Life	Yrs	15
Throughput	Mtpa	7.5
Ave. Head Grade	g/t	1.3
Stage 1 Grade	g/t	2.0
Stage 2 Grade	g/t	1.2
Stage 3 Grade	g/t	0.8
Ave. Recovery	%	94%
Ave. Gold Production	ktpa	290
Preproduction Capex	A\$m	450
Sustaining Capex	A\$mpa	6
POX Capital	A\$m	150
Ave. AISC	A\$/oz	969
Average Gold Price	US\$/oz	1,500
FX	AUD/USD	0.70
Post Tax NPV ₈	A\$b	1.5

Source: Argonaut

Argonaut's new valuation is \$1.45ps...

Argonaut continues to value the existing resources on the Mallina Project on an EV/Resources basis (A\$85/oz), however we acknowledge that they would likely be processed through a central mill at Hemi. A further \$50m is allocated to exploration upside, largely based on the prospectivity of potential Hemi repeats in areas such as Scooby, Shaggy and Antwerp. We apply a 20% discount to our \$1.45ps NAV to account for the pre-resource nature of Hemi and risks associated with development (permitting and financing) to achieve a \$1.16ps target price.

...to which we apply a 20% risk discount to achieve a \$1.16ps target price

Table 2. Argonaut's sum of parts valuation for DEG

Sum of Parts	Valuation Methodology	Value (A\$m)	Value ps (A\$ps)
Hemi	DCF	1486	1.27
Existing Mallina Resources	A\$85 per Resource Ounce	184	0.16
Exploration Upside	Est. Transactional value of Tenure	50	0.04
Corporate Overheads	15 year DCF	-48	-0.04
Cash	Reported cash at 30 June	27.7	0.02
Debt	Reported debt at 30 June	0	0.00
Total		1699	1.45
	Discount		20%
Target Price			1.16

Source: Argonaut

Positive Initial Metallurgical Testwork

Initial metallurgical testwork has returned 93% recoveries for oxide mineralisation...

Metallurgical testwork based on four holed into the Brolga Zone have returned 93.0% recoveries for oxide mineralisation using 24hr bottle roll cyanide extraction and 96.3% for fresh mineralisation using sulphide flotation, POX and CIL.

...and 96.3% recovery for sulphide mineralisation using POX treatment

Table 3. Gold Recovery into Flotation Concentrate and of Flotation Tails (by CIL)

Composite Number	Description	Head Grade (g/t Au)	Gold Recovery into Flotation Concentrate (%)	Concentrate Mass Pull (%)	Gold Recovery of Flotation Tail (%)	Overall Recovery prior to POX (%)	Gold Recovery prior to POX (%)
1	Transition*	1.45	83.0	8.8	80.7	96.7	
2	Fresh	3.11	93.0	9.4	59.7	97.2	
3	Fresh	2.68	92.2	8.5	62.1	97.0	
4	Fresh ^A	2.62	92.5	7.5	66.9	97.5	

*comprises oxide, partially oxidized and fresh mineralisation
^Ausing 10kg bulk flotation test; all other composite samples are from 1kg flotation test.

Source: DEG

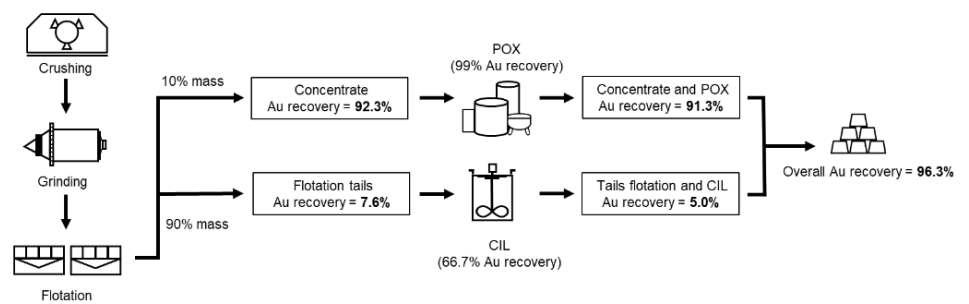
Significantly, 92-93% of gold was recovered in >10% of the initial mass from floatation of fresh ore. This would substantially reduce the scale of POX plant under a development scenario. As a comparative, Alacer Gold's (AQG) Çöpler sulphide ore is less amenable to flotation and applies whole ore POX. POX is a commonly utilised oxidation process used in profitable mines such as Porgera and Lihir, as well as Carlin deposits in Nevada USA.

Detailed metallurgical tests are ongoing...

While additional capital would be required for POX processing, we highlight that the Mallina Project will have the scale to absorb any additional capital intensity. As all deposits within the Mallina project are expected to be amenable to POX (as shown by historic testwork), a processing plant based at Hemi could act as a central mill for regional resources (currently 2.2Moz @ 1.8g/t). It is important to note that these test results are preliminary and unoptimized leaving scope for improvement. In addition, they are based only upon the Brolga Zone. DEG is undertaking more comprehensive metallurgical tests which will feed into detailed flowsheet design.

...with will lead into the process flowsheet design

Figure 1. Proposed flowsheet for fresh sulphide or from the Mallina Project



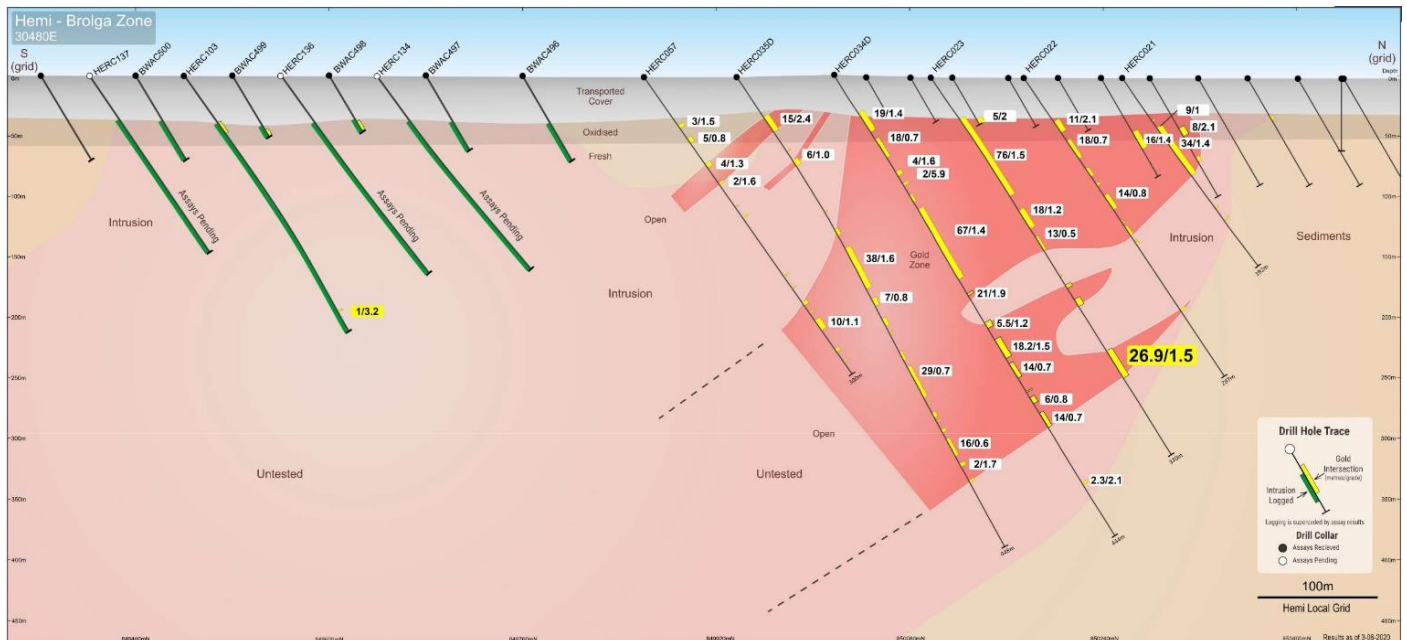
Source: DEG

Hemi still growing

Ongoing drilling continues to grow the extents of Hemi. Recent AC and RC drilling at Brolga has shown that this zone has potential for extensions to the south and southwest. Currently, Brolga covers an area of >640m long by 300m wide and is mineralised to +300m below surface. Recent drill results from up-dip and down-dip extension from infill RC drilling on a circa 80m x 80m spacing included:

- 26.9m @ 1.5g/t Au from 269m in HERC23D
- 19m @ 2.7g/t Au from 203m in HERC032D incl 3m @ 14.7g/t Au from 203m
- 16.3m @ 1.1g/t Au from 214m in HERC056D
- 16m @ 1.2g/t Au from 202m in HERC055D

Figure 2. Cross section through section line 304,800E showing recent drill intercepts



Source: DEG

Step out AC drilling and follow up RC drilling show that the mineralised Brolga intrusion is extending to the south and southeast, incorporating:

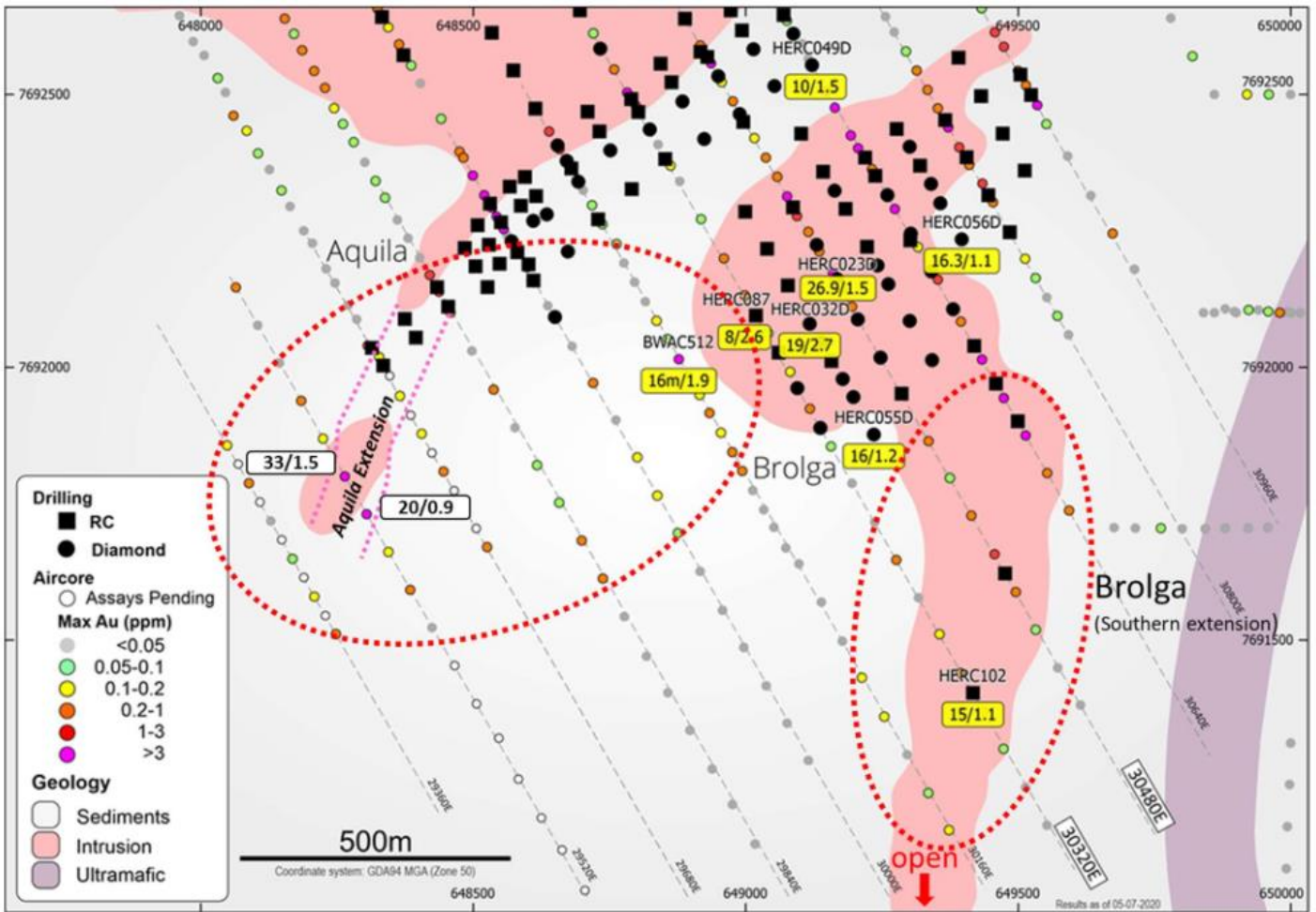
Initial RC drilling in the newly discovered Brolga south zone currently being drilling on an 80m x 80m pattern:

- 5m @ 1.1g/t Au from 59m in HERC102
- 15m @ 1.1g/t Au from 223m in HERC102

New shallow AC intercept 160m west of the main Brolga Zone:

- 16m @ 1.9g/t Au from 48m in BWAC512

Figure 2. Recent Hemi drill results in plan view, showing potential extensions to the south and southwest



Source: DEG

Strategy for growth

DEG has a three-tiered strategy to add value to the Mallina Project. This incorporates:

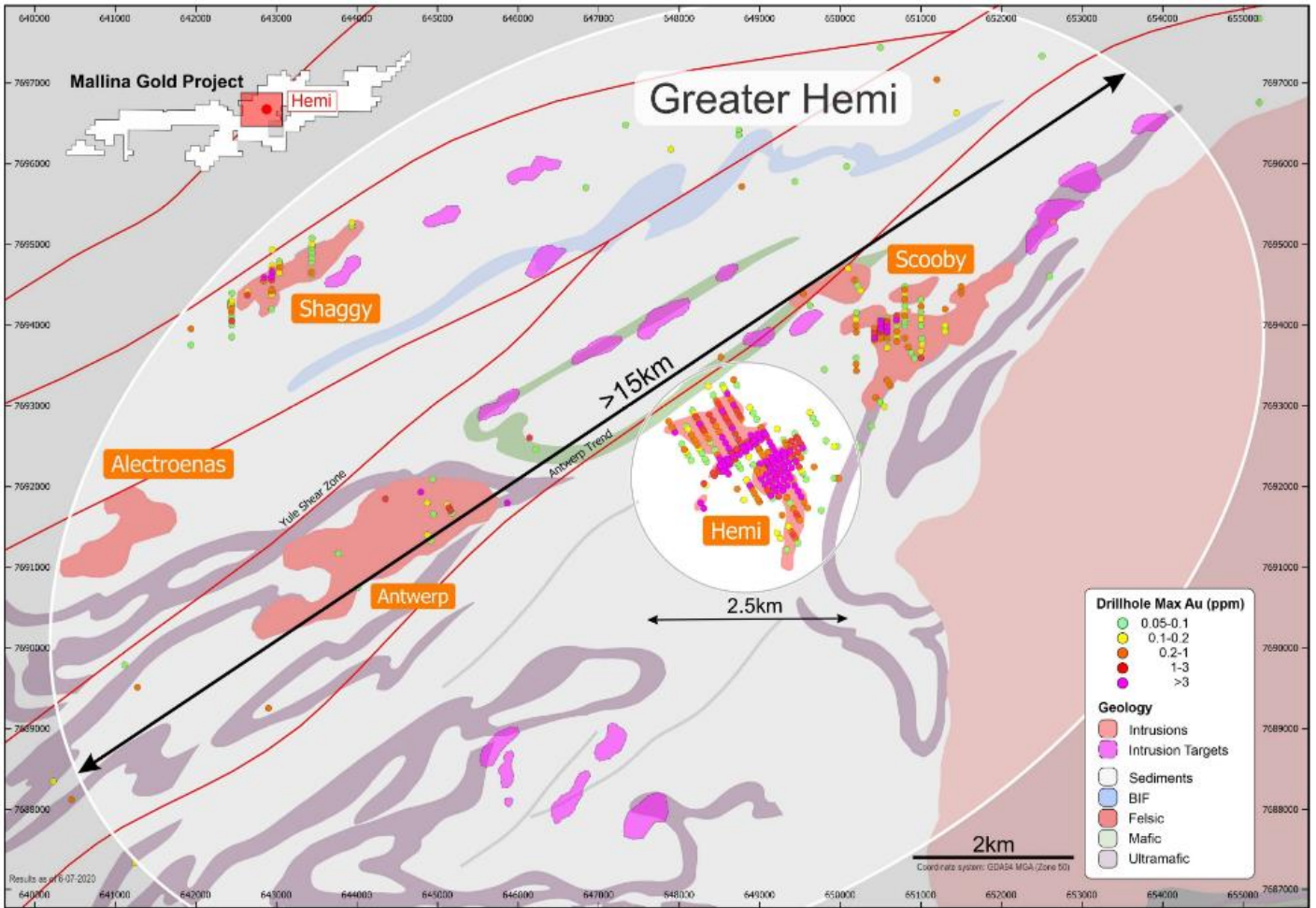
1. Grow Hemi to +5Moz

DEG has a corporate goal to define a +5.0Moz resource at Hemi, with the majority in the Indicated category. Due to the wide mineralisation, this should be achievable on ~40m x 40m drill spacing. Argonaut believes +5Moz is highly plausible given that broad mineralisation remains unconstrained from drilling to date. Intrusive systems like Hemi are commonly deep seated which should lead to significant depth potential.

2. Find another Hemi

AC drilling has commenced at the Antwerp and Scooby prospects. Both have historic gold intercepts and contain intrusive geology similar to Hemi. In the Hemi region there are currently five identified intrusions, four of which have proven gold mineralisation from drilling. A recent aeromagnetic survey has shown several more clusters and small features interpreted to be intrusive bodies around Hemi. Over the greater Mallina Project, this survey identified greater than 20 new magnetic features, also with potential to be Hemi like mineralised intrusions.

Figure 3. Potential mineralised intrusive bodies (pink) identified from a recent aeromagnetic survey



Source: DEG

3. Build on existing resources

The five deposits which make up the existing 2.2Moz gold Resource remain open. DEG has the opportunity to grow these resources and make further non-intrusive related discoveries to incrementally add to the Mallina gold inventory. It is conceivable that known deposits could surpass 3Moz, which when combined with the 5Moz corporate target for Hemi would equate to +8Moz for the Mallina Project, excluding the potential for more Hemi-like discoveries.

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Argonaut acted as Joint Lead Manager in respect of the Placement that raised \$31.2M in April 2020 and received fees commensurate with this service.

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