

Asiamet Resources Limited Listed on AIM: ARS

25 March 2019

# **Asiamet Updates Beutong Copper-Gold Resource**

Asiamet Resources Limited ("Asiamet", "ARS", or the "Company") is pleased to announce an updated Mineral Resource Estimate ("MRE") for the Beutong Copper-Gold Project ("Beutong") located in Nagan Raya Regency, Aceh, Indonesia. Asiamet holds an 80% interest in Beutong through its local operating subsidiary PT Emas Mineral Murni ("EMM"). The Statement of Mineral Resources in Table 1 completed by Hackman & Associates ("Hackman") is reported in accordance with the requirements of the 2012 JORC Code.

# **Highlights:**

- Beutong is a large high-quality copper, gold, silver, molybdenum deposit outcropping at surface and remaining open laterally and at depth.
- Beutong 2019 Mineral Resources (JORC 2012) at a 0.3% Cu cut-off grade (on a 100% basis) comprise:
  - o 34Mt @ 0.67% Cu, 0.13g/t Au, 1.68g/t Ag and 90ppm Mo in the Measured category
  - o 56Mt @ 0.58% Cu, 0.12g/t Au, 2.07/t Ag and 104ppm Mo in the Indicated category
  - o 419Mt @ 0.45% Cu, 0.13g/t Au, 1.14/t Ag and 125ppm Mo in the Inferred category
  - o Total Resources 509Mt @ 0.48% Cu, 0.13g/t, 1.28g/t Ag and 120ppm Mo
- Contained metal in Resource on a 100% basis comprises 2.43Mt (5.3Blb) copper, 2.11Moz gold and 20.9Moz silver (1.95Mt (4.30Blb) copper, 1.69Moz gold and 16.73Moz silver on an 80% attributable basis)
- The Beutong porphyry and skarn system(s) remains open to the east, west and at depth. The deepest drilling completed to date has intersected porphyry mineralisation to around 800 metres below surface and approximately 200-300 metres below the depth of Resource delineation drilling completed to date.
- Strong copper, gold and molybdenum grades and the presence of highly mineralised chalcopyrite-bornite-magnetite bearing breccia clasts proximal to a large magnetic body modelled at depth below current drilling highlight excellent potential for the discovery of a high grade core similar to that seen in world class porphyry systems such as Wafi Golpu, PNG (Newcrest) and Cascabel, Ecuador (Solgold).

A total of 167 diamond drill holes have been drilled over the life of the project in and around the Beutong deposit. The Resource has been delineated by 113 of these drill holes totalling 33,325 metres, and which form the basis of the Beutong 2019 Resource Estimate in accordance with JORC (2012).

The Beutong project represents a rare advanced development stage copper opportunity given its location close to the coast, proximity to excellent infrastructure and production licence tenure.

The 2018 infill drilling programme has further improved our geological understanding for this deposit and this new MRE confirms the integrity, size and scale of the asset with the significant upside potential that remains to be evaluated. Further drilling campaigns will be directed to growing the deposit well beyond the current Resource envelope, testing the potential for a high grade core at depth, and exploring early stage development options for the project.

The Company also continues to build on the strong working relationships it has nurtured with local communities, stakeholders and the government.

As copper demand driven by industrialisation-urbanisation in Asia and the rapid take up of EV and Green Energy solutions continues to increase, new supply remains constrained. In a recent report (January 2019), Wood Mackenzie, a leading independent commodity analysis forecasts the copper price to average \$3.28/lb in 2019 and \$3.85/lb in 2020 from a weighted average of \$2.96/lb in 2018.

# **Peter Bird, Asiamet's Chief Executive Officer commented:**

"Junior companies with large, well located development stage copper inventories such as Asiamet are rare and extremely well positioned to benefit from widely forecast stronger copper prices. Beutong is a large high-quality copper-gold deposit well served with existing nearby infrastructure on a granted production licence. The 2018 drilling program has improved our geological understanding of the deposit and this updated Mineral Resource Estimate in accordance with JORC 2012 provides strong support for the integrity, size, scale and upside potential of the project. Future drilling campaigns will be directed to expanding the Resource, testing the potential for a high grade core at depth, and exploring early stage development options for the project"

# **About Beutong**

The Beutong project covers 10,000 hectares and is located in Nagan Raya Regency, Aceh, Indonesia in close proximity to existing infrastructure and only 60 kilometres from a large power station and seaport. In January 2018, the Beutong project was granted an Izin Usaha Pertambangan Operasi Produksi "IUP-OP", the production licence required to advance Beutong to the development stage. The IUP-OP provides for an initial 20 years of licence tenure which may be extended twice, each for a period of 10 years, totalling 40 years. The Beutong license is held by PT Emas Mineral Murni ("EMM"), in which Asiamet hold an 80% interest through its Singaporean registered subsidiary Beutong Resources Pte. Limited.

# **Beutong Mineral Resource Estimate 2019 (JORC 2012)**

The January 2019 Resource Estimate prepared in accordance with JORC 2012 guidelines is an update of the November 2014 Resource Estimate prepared under NI43-101 for the porphyry and skarn mineralisation on the Beutong project and includes additional data and information from seven holes drilled in 2018 into the porphyry mineralisation. The skarn mineralisation estimate at Beutong is unchanged from the November 2014 Resource Estimate. The 2019 Resource model covers the 1,500 metre strike extent of the mineralisation at Beutong and the 200 to 500 metres width of the porphyry system. Porphyry mineralisation is open to the east, west and at depth. The 600 metres by 50 metres skarn body to the north of the porphyry is included in the MRE and is open to the east, west and at depth.

The January 2019 Resource model is underpinned by data from 113 Diamond Drill holes (33,325m) containing 16,493 logged and assayed, mainly 2 metres and 3 metres, interval samples. Sample data was composited to 3m intervals and flagged by the domains defined in the geological interpretation. Three passes of Ordinary Kriging were employed to interpolate copper, gold, silver, molybdenum,

and arsenic grades within domains into a sub-blocked model (arsenic not reported with Resource figures). High grade cuts and restrictions were applied. The MRE has been classified based on data density, data quality, confidence in the geological interpretation and confidence in the copper grade interpolation.

The 2019 Beutong Cu-Au-Ag-Mo MRE was undertaken in accordance with the guidelines set out in the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code 2012). The Beutong Resource was, in 2014 originally reported under the auspices of the Canadian National Instrument 43-101 (Standards of Disclosure for Mineral Projects (NI 43-101)) by Kalimantan Gold Corporation Limited and Tigers Realm Metals Pty. Ltd. and this document is available on the ARS website and in the Canadian Public Securities Documents and Information Database (SEDAR). The explanatory notes for the 2019 MRE follow the reporting guidelines set out in the JORC table 1 checklist of the JORC Code (2012) and are filed on the ARS website. EMM has compiled this document to satisfy disclosure requirements for the public reporting of Resources according to the JORC Code (2012 Edition).

This MRE is based on historical geological databases as at 31st December 2018 and the geological, clay and oxidation interpretations by Stephen Hughes, an advisor to Asiamet. The data analysis, triangulation, domaining, block modelling and grade interpolation was undertaken by Duncan Hackman of Hackman and Associates Pty. Ltd. and the geostatistical analysis and kriging strategy was undertaken by Trent Strickland of Quantitative Group Pty. Ltd.

**Table 1. Beutong Mineral Resource Estimate, January 2019 (100% Basis)** 

	Beutong 2019 Reso	ource Est	imate	- Report a	it 0.3% Ci	ı Lower	Cut - 100	% basis		
Classification	Mineralisation	Tonnes		Gı	rade		Metal			
JORC 2012		(Mt)	Cu%	Au (ppm)	Ag (ppm)	Mo (ppm)	Cu (Kt)	Au (koz)	Ag (Koz)	Mo (Kt)
Measured	East Porphyry	34	0.67	0.13	1.68	90	226	142	1,830	3
Indicated	East Porphyry	50	0.57	0.1	1.56	116	281	159	2,485	6
	Skarn	7	0.71	0.28	5.89	8	46	59	1,244	0.1
Inferred	East Porphyry	83	0.54	0.13	2.32	147	450	347	6,191	12
	West Porphyry	321	0.43	0.13	0.78	121	1,366	1,340	8,042	39
	Outer East Porphyry	6	0.36	0.06	1.12	157	20	11	198	1
	Outer West Porphyry	5	0.36	0.1	0.84	54	18	16	133	0.3
	Skarn	5	0.67	0.24	5.1	10	32	37	794	0
Measured	Total	34	0.67	0.13	1.68	90	226	142	1,830	3
Indicated	Total	56	0.58	0.12	2.07	104	327	218	3,729	6
Inferred	Total	419	0.45	0.13	1.14	125	1,886	1,751	15,358	52
	Total	509	0.48	0.13	1.28	120	2,439	2,111	20,917	61

	Beutong 2019 Reso	ource Est	timate	- Report a	at 0.5% C	u Lower	Cut - 100	% basis			
Classification	Mineralisation	Tonnes		Grade				Metal			
JORC 2012		(Mt)	Cu%	Au (ppm)	Ag (ppm)	Mo (ppm)	Cu (Kt)	Au (koz)	Ag (Koz)	Mo (Kt)	
Measured	East Porphyry	28	0.72	0.13	1.74	92	200	116	1,551	3	
Indicated	East Porphyry	33	0.64	0.1	1.66	119	210	105	1,750	4	
	Skarn	4	0.84	0.34	6.51	7	38	49	936	0.03	
Inferred	East Porphyry	46	0.63	0.14	2.49	164	292	208	3,692	8	
	West Porphyry	45	0.57	0.11	0.88	142	259	161	1,284	6	
	Outer East Porphyry	0.2	0.55	0.09	1.22	226	1	1	8	0.04	
	Outer West Porphyry	0.2	0.57	0.08	1.84	51	1	0.6	14	0.012	
	Skarn	3	0.80	0.27	5.68	8	27	30	623	0.03	
Measured	Total	28	0.72	0.13	1.74	92	200	116	1,551	3	
Indicated	Total	37	0.66	0.13	2.24	105	248	154	2,686	4	
Inferred	Total	95	0.61	0.13	1.83	148	580	399	5,621	14	
	Total	160	0.64	0.13	1.91	128	1,028	669	9,858	21	

#### **Notes**

- 1. Duncan Hackman B.App,Sc, MSc, MAIG from Hackman Associates, is responsible for this Mineral Resource Estimate and is a Competent Person within the meaning of JORC (2012) and for the purposes of the AIM Rules for Companies.
- 2. The Mineral Resource is reported using a cut-off grade of 0.3% and 0.5% copper
- 3. The Mineral Resource is considered to have reasonable potential for eventual economic extraction by open pit and underground mining
- 4. Mineral Resources are not Ore Reserves and do not have demonstrated economic viability
- 5. This statement uses terminology, definitions and guidelines given in the JORC Code (2012 Edition)
- 6. The Mineral Resource is reported on a 100% basis

# **Beutong Mineral Resource Estimate, January 2019 (80% Basis)**

	Beutong 2019 Res	ource Es	timate	- Report	at 0.3% C	u Lower	Cut - 80	% basis		
Classification	Mineralisation	Tonnes		Grade				Meta	ıl	
JORC 2012		(Mt)	Cu%	Au (ppm)	Ag (ppm)	Mo (ppm)	Cu (Kt)	Au (koz)	Ag (Koz)	Mo (Kt)
Measured	East Porphyry	27	0.67	0.13	1.68	90	181	114	1,464	2
Indicated	East Porphyry	40	0.57	0.1	1.56	116	225	127	1,988	5
	Skarn	6	0.71	0.28	5.89	8	37	47	995	0.1
Inferred	East Porphyry	66	0.54	0.13	2.32	147	360	278	4,953	10
	West Porphyry	257	0.43	0.13	0.78	121	1,093	1,072	6,434	31
	Outer East Porphyry	5	0.36	0.06	1.12	157	16	9	158	0.80
	Outer West Porphyry	4	0.36	0.1	0.84	54	14	13	106	0.240
	Skarn	4	0.67	0.24	5.1	10	26	30	635	0
Measured	Total	27	0.67	0.13	1.68	90	181	114	1,464	2
Indicated	Total	46	0.58	0.12	2.07	104	262	174	2,983	5
Inferred	Total	336	0.45	0.13	1.14	125	1,509	1,401	12,286	42
	Total	409	0.48	0.13	1.28	120	1,951	1,689	16,734	49

	Beutong 2019 Res	ource Es	timate	- Report	at 0.5% C	Cu Lower	Cut - 80	% basis			
Classification	Mineralisation	Tonnes		Grade				Metal			
				Au	Ag	Мо		Au	Ag	Мо	
JORC 2012		(Mt)	Cu%	(ppm)	(ppm)	(ppm)	Cu (Kt)	(koz)	(Koz)	(Kt)	
Measured	East Porphyry	22	0.72	0.13	1.74	92	160	93	1,241	2	
Indicated	East Porphyry	26	0.64	0.1	1.66	119	168	84	1,400	3	
	Skarn	3	0.84	0.34	6.51	7	30	39	749	0.02	
Inferred	East Porphyry	37	0.63	0.14	2.49	164	234	166	2,954	6	
	West Porphyry	36	0.57	0.11	0.88	142	207	129	1,027	5	
	Outer East Porphyry	0	0.55	0.09	1.22	226	1	1	6	0.03	
	Outer West Porphyry	0	0.57	0.08	1.84	51	1	0.5	11	0.01	
	Skarn	2	0.8	0.27	5.68	8	22	24	498	0.02	
Measured	Total	22	0.72	0.13	1.74	92	160	93	1,241	2	
Indicated	Total	30	0.66	0.13	2.24	105	198	123	2,149	3	
Inferred	Total	76	0.61	0.13	1.83	148	464	320	4,497	11	
	Total	128	0.64	0.13	1.91	128	822	536	7,886	17	

#### Notes

- 1. Duncan Hackman B.App,Sc, MSc, MAIG from Hackman Associates, is responsible for this Mineral Resource Estimate and is a Competent Person within the meaning of JORC (2012) and for the purposes of the AIM Rules for Companies.
- 2. The Mineral Resource is reported using a cut-off grade of 0.3% and 0.5% copper
- 3. The Mineral Resource is considered to have reasonable potential for eventual economic extraction by open pit and underground mining
- 4. Mineral Resources are not Ore Reserves and do not have demonstrated economic viability
- 5. This statement uses terminology, definitions and guidelines given in the JORC Code (2012 Edition)
- 6. The Mineral Resource is reported on an 80% basis

#### **Qualified Person**

Data disclosed in this press release have been reviewed and verified by Asiamet's qualified person, Stephen Hughes, P. Geo, an advisor to the Company and a Competent Person within the meaning of JORC and for the purposes of the AIM Rules for Companies.

The information in this report that relates to exploration results, data collection and geological interpretation is based on information compiled by Stephen Hughes BSc (Hons). Mr Hughes is registered with the Association of Professional Geoscientists of Nova Scotia and with the Australian Institute of Geoscientists. Mr Hughes has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity that is being undertaken to qualify as Competent Person as defined in the 2012 edition of the 'Australasian Code for Reporting of Exploration Results, Minerals Resources and Ore Reserves' (JORC Code). Mr Hughes consents to the inclusion in the report of the matters based on their information in the form and context in which it appears.

The information in this statement referring to Mineral Resources is based on information compiled by Duncan Hackman B.App.Sc., MSc. of Hackman & Associates, a Competent Person who is a Member of the Australian Institute of Geoscientists. Duncan Hackman is an independent resource consultant and 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 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Duncan Hackman consents to the inclusion in the statement of the matters based on his information in the form and context in which it appears.

### ON BEHALF OF THE BOARD OF DIRECTORS

Peter Bird, Deputy Chairman and CEO

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This news release contains forward-looking statements that are based on the Company's current expectations and estimates. Forward-looking statements are frequently characterised by words such as "plan", "expect", "project", "intend", "believe", "anticipate", "estimate", "suggest", "indicate" and other similar words or statements that certain events or conditions "may" or "will" occur. Such forward-looking statements involve known and unknown risks, uncertainties and other factors that could cause actual events or results to differ materially from estimated or anticipated events or results implied or expressed in such forward-looking statements. Such factors include, among others: the actual results of current exploration activities; conclusions of economic evaluations; changes in project parameters as plans continue to be refined; possible variations in ore grade or recovery rates; accidents, labour disputes and other risks of the mining industry; delays in obtaining governmental approvals or financing; and fluctuations in metal prices. There may be other factors that cause actions, events or results not to be as anticipated, estimated or intended. Any forward-looking statement speaks only as of the date on which it is made and, except as may be required by applicable securities laws, the Company disclaims any intent or obligation to update any forward-looking statement, whether as a result of new information, future events or results or otherwise. Forward-looking statements are not guarantees of future performance and accordingly undue reliance should not be put on such statements due to the inherent uncertainty therein.

This announcement contains inside information as stipulated under the Market Abuse Regulations (EU) no. 596/2014 ("MAR").

# **Appendix 1**

The Executive Summary section of the Resource Estimate Explanatory notes follow. The complete notes presented according to the JORC TABLE 1 checklist of the JORC Code (2012 Edition) are available at www.asiametresources.com

Explanatory Notes: Beutong Copper-Gold-Silver-Molybdenum 2019 Resource Estimate procedures, observations and outcomes; presented according to the JORC TABLE 1 checklist of the JORC Code (2012 Edition). Compiled by Hackman and Associates Pty. Ltd., January 2019.

This technical explanation of the Beutong Cu-Au-Ag-Mo 2019 Resource Estimate follows the format of Table 1 in the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (The JORC Code, 2012 Edition). It outlines activities undertaken by Hackman & Associates Pty Ltd ("H&A") in generating the estimate and presents outcomes and observations material to the understanding of the mineralisation and risks associated with the resource estimate.

The Beutong 2019 Resource Estimate deals with the copper-gold-silver-molybdenum mineralisation for the Beutong prospect located 60 kilometres north of Suka Makmue on Aceh's west coast (Figure 1).

The Beutong project area is subject to a 10,000 hectare IUP Production license held 100% by PT Emas Mineral Murni (EMM, license no. 66 /1/IUP/PMA/2017 "the Beutong IUP"). EMM has two shareholders. It is 80% owned by the Singaporean domiciled Beutong Resources Pte. Ltd. (BRPL) and 20% by the Indonesian domiciled PT Media Mining Resources (MMR). BRPL is in turn 100% owned by Tigers Copper Singapore No 1 Pte. Ltd. (TCS) which in turn is 100% owned by Asiamet Resources Limited (ARS).

The Beutong IUP is currently within its second year of a 20 year initial tenure period which, if kept in good standing, may be extended for a further 2 x 10 years, taking the ultimate expiry date to the 18th December 2057.



Figure 1: Beutong Prospect Location Map (base maps from public open source images)

The 2019 Beutong Cu-Au-Ag-Mo Resource Estimate was undertaken in accordance with the guidelines set out in the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code 2012). The Beutong Resource was, in 2014, originally reported under the auspices of the Canadian National Instrument 43-101 (Standards of Disclosure for Mineral Projects (NI 43-101)) by Kalimantan Gold Corporation Limited and Tigers Realm Metals Pty. Ltd. and this document is available on the ARS website and in the Canadian Public Securities Documents and Information Database (SEDAR). These explanatory notes follow the reporting guidelines set out in the JORC TABLE 1 checklist of the JORC Code (2012) and are filed on the ARS website. EMM has compiled this document to satisfy disclosure requirements for the public reporting of Resources according to the JORC Code (2012 Edition).

This MRE is based on the EMM and historical geological databases as at 31st December 2018 and the geological, clay and oxidation interpretations by Steve Hughes of PT Tigers Realm Consultants Indonesia (an associated company to ARS). The data analysis, triangulation, domaining, block modelling and grade interpolation was undertaken by Duncan Hackman of Hackman and Associates Pty. Ltd. and the geostatistical analysis and kriging strategy was undertaken by Trent Strickland of Quantitative Group Pty. Ltd.

The January 2019 Resource Estimate is an update of the November 2014 Resource Estimate for the porphyry and skarn mineralisation on the project and includes additional data and information from seven holes drilled in 2018 into the porphyry mineralisation. The skarn mineralisation estimate at Beutong is unchanged from the November 2014 Resource Estimate. The 2019 Resource model covers the 1,500 metres strike extent of the mineralisation at Beutong and the 200 to 500m width the porphyry system. Porphyry mineralisation is open to the east, west and at depth. The 600m by 50m skarn body to the north of the porphyry is included in the Resource estimate and is open to the east, west and at depth.

The January 2019 Resource Estimate is materially the same as the November 2014 Resource Estimate.

The 2019 Resource model is underpinned by data from 113 Diamond Drill holes (33,325m) containing 16,493 logged and assayed, mainly 2m and 3m intervals. Sample data was composited to 3m intervals and flagged by the domains defined in the geological interpretation. Three passes of Ordinary Kriging were employed to interpolate copper, gold, silver, molybdenum, and arsenic grades within domains into a sub-blocked model (arsenic not reported with resource figures). High grade cuts and restrictions were applied. The Resource estimate has been classified based on data density, data quality, confidence in the geological interpretation and confidence in the copper grade interpolation.

The Beutong 2019 Resource Estimate is reported at 0.3% and 0.5% Copper cuts in line with the reporting cuts of other porphyry projects in the Southeast Asia Region (e.g. Batu Hijau, Indonesia and Tampakan, Philippines).

**Table 1. Beutong Mineral Resource Estimate, January 2019 (100% Basis)** 

	Beutong 2019 Reso	urce Est	imate	- Report a	at 0.3% Cu	ı Lower	Cut - 100	% basis		
Classification	Mineralisation	Tonnes		G	rade		Metal			
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	Outer West Porphyry	0.2	0.57	0.08	1.84	51	1	0.6	14	0.012	
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	Total	160	0.64	0.13	1.91	128	1,028	669	9,858	21	

Mineral Resources for the Beutong mineralisation have been estimated in conformity with the JORC (2012) guidelines. In the opinion of Duncan Hackman, the block model resource estimate and resource classification reported herein are a reasonable representation of the copper-gold-silver-molybdenum mineral Resources found in the defined area of the Beutong mineralisation. Mineral Resources are not Ore Reserves and do not have demonstrated economic viability. The Resources reported at 0.3% Cu cut represent the base case estimate as they present the extent of the mineralisation that has reasonable prospect of economic extraction. There is no certainty that all or any part of the Mineral Resource will be converted into Ore Reserves.

Computational discrepancies in the table are the result of rounding.

# **Beutong Mineral Resource Estimate, January 2019 (80% Basis)**

	Beutong 2019 Resource Estimate - Report at 0.3% Cu Lower Cut - 80% basis										
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JORC 2012		(Mt)	Cu%	Au (ppm)	Ag (ppm)	Mo (ppm)	Cu (Kt)	Au (koz)	Ag (Koz)	Mo (Kt)	
Measured	East Porphyry	27	0.67	0.13	1.68	90	181	114	1,464	2	
Indicated	East Porphyry	40	0.57	0.1	1.56	116	225	127	1,988	5	
	Skarn	6	0.71	0.28	5.89	8	37	47	995	0.1	
Inferred	East Porphyry	66	0.54	0.13	2.32	147	360	278	4,953	10	
	West Porphyry	257	0.43	0.13	0.78	121	1,093	1,072	6,434	31	
	Outer East Porphyry	5	0.36	0.06	1.12	157	16	9	158	0.80	
	Outer West Porphyry	4	0.36	0.1	0.84	54	14	13	106	0.24	
	Skarn	4	0.67	0.24	5.1	10	26	30	635	0	
Measured	Total	27	0.67	0.13	1.68	90	181	114	1,464	2	
Indicated	Total	46	0.58	0.12	2.07	104	262	174	2,983	5	
Inferred	Total	336	0.45	0.13	1.14	125	1,509	1,401	12,286	42	
	Total	409	0.48	0.13	1.28	120	1,951	1,689	16,734	49	

	Beutong 2019 Resource Estimate - Report at 0.5% Cu Lower Cut - 80% basis										
Classification	Mineralisation	Tonnes		Gı	rade		Metal				
JORC 2012		(Mt)	Cu%	Au (ppm)	Ag (ppm)	Mo (ppm)	Cu (Kt)	Au (koz)	Ag (Koz)	Mo (Kt)	
Measured	East Porphyry	22	0.72	0.13	1.74	92	160	93	1,241	2	
Indicated	East Porphyry	26	0.64	0.1	1.66	119	168	84	1,400	3	
	Skarn	3	0.84	0.34	6.51	7	30	39	749	0.02	
Inferred	East Porphyry	37	0.63	0.14	2.49	164	234	166	2,954	6	
	West Porphyry	36	0.57	0.11	0.88	142	207	129	1,027	5	
	Outer East Porphyry	0	0.55	0.09	1.22	226	1	1	6	0.03	
	Outer West Porphyry	0	0.57	0.08	1.84	51	1	0.5	11	0.01	
	Skarn	2	0.8	0.27	5.68	8	22	24	498	0.02	
Measured	Total	22	0.72	0.13	1.74	92	160	93	1,241	2	
Indicated	Total	30	0.66	0.13	2.24	105	198	123	2,149	3	
Inferred	Total	76	0.61	0.13	1.83	148	464	320	4,497	11	
	Total	128	0.64	0.13	1.91	128	822	536	7,886	17	

Mineral Resources for the Beutong mineralisation have been estimated in conformity with the JORC (2012) guidelines. In the opinion of Duncan Hackman, the block model resource estimate and resource classification reported herein are a reasonable representation of the copper-gold-silver-molybdenum mineral Resources found in the defined area of the Beutong mineralisation. Mineral Resources are not Ore Reserves and do not have demonstrated economic viability. The Resources reported at 0.3% Cu cut represent the base case estimate as they present the extent of the mineralisation that has reasonable prospect of economic extraction. There is no certainty that all or any part of the Mineral Resource will be converted into Ore Reserves.

 $\label{lem:computational} \textit{Computational discrepancies in the table are the result of rounding.}$ 

# Key points relating to the Beutong 2019 Copper-Gold-Silver-Molybdenum Resource Estimate

• The Resource estimate applies to outcropping porphyry and skarn hosted copper-gold-silver-molybdenum mineralisation centred on 229900E, 495400N (WGS84, UTM Zone 47N). The mineralisation has been delineated as three bodies over a strike length of 1500m (towards 080°), across a total width of 700m and to a depth of 600m below surface. The deepest drilling intercepts the porphyry mineralisation at 800m below surface, indicating that the mineralisation persists below the current depth of delineation drilling. Mineralisation is open to the east, west and at depth.

- Porphyry style copper, gold, silver and molybdenum mineralisation is hosted in a fractured and brecciated diorite known locally as the Beutong Porphyry. This porphyry forms the majority of the 3km by 1.5km Beutong Intrusive Complex (Figure 2 and Figure 3). Mineralisation is cut by dioritic and dacitic post mineralisation dykes and a persistent un-mineralised footwall breccia complex that expands across to the hanging wall location in the eastern-most drill hole. Well-developed porphyry mineralisation is located in the eastern half of the deposit. Mineralisation is less-well developed and patchy, both peripheral to the eastern porphyry core and in the western half of the deposit. Skarn mineralisation has been delineated to the north of the porphyry mineralisation at the steeply dipping contact between the Beutong Intrusive Complex and a thick limestone unit.
- 167 diamond drill holes have been drilled at Beutong. The deposit is delineated by 113 of these holes, totalling 33,325m. This drilling was undertaken in four programmes by four separate companies; Highlands Gold Indonesia (HG), Freeport McMoRan Copper & Gold Inc. (FPT), Tigers Copper Singapore No 1 Pte. Ltd. and Emas Mineral Murni (EMM). The eastern porphyry and skarn bodies are mostly delineated by steeply angled holes clustered to form fan-like configurations drilled from multi-use pads along 100m spaced section lines. The western porphyry is sparsely drilled, with the majority of the mineralisation loosely defined by holes drilled radially from six drill pads. There is one set of twin holes within the high-grade volume of the eastern porphyry which shows good continuity of grade at close ranges.
- Sampling of mineralisation is at nominal 2m and 3m lengths. Copper and multi-element assays from 16,493 half-PQ3, half-HQ3 and half-NQ3 diamond core samples populate the Beutong Resource Database. Copper grades are higher for the TCS and EMM samples than the HG and FPT samples, partly due to TCS and EMM targeting the core of the mineralisation and partly due to more appropriate drilling and sampling protocols designed to preserve the integrity of friable mineralised core. Appropriate laboratory sample reduction and analytical protocols were utilised and the analytical quality control programme results confirm that the copper, gold and molybdenum assay values are of acceptable quality to underpin Measured Resources at Beutong (following JORC Guidelines). The lower detection limits for both the HG silver analyses (1ppm) and majority of FPT silver analyses (5ppm) are inappropriately high for the Beutong mineralisation and accordingly, the HG silver assays and the FPT 3 acid digest volumetric determination silver assays were excluded when generating the resource estimate.
- Copper grade is estimated by Ordinary Kriging interpolation methods. Interpolation is guided and constrained by solid TIN (triangulated) boundaries. 6,977 copper, gold and molybdenum and 4,493 silver, three metre composites inform the grade interpolation within domains. Parent cell estimates (25mE x 25mN x 10mRL) were written to a sub-blocked model. High grade values were restricted from informing block grades at greater than 50m (E and N) and 30m (RL) distance from sample locations. 122 copper composites are affected by this treatment. Thirty-four gold values (two domains) and twenty molybdenum values (one domain) were cut in the estimate. Tonnage factors of 2.37g/cc (low clay altered material) and 2.25g/cc (moderate clay altered material) were utilised, based on 678 dry bulk density measurements taken from mineralised drill core intercepts.
- The Beutong Mineral Resource Estimate was classified utilising the definitions of Resources as described in the JORC Code (2012 Edition). The estimate is assigned a Measured Mineral Resource classification where there is high confidence in the 2019 geological interpretation (geological continuity), where drilling is concentrated and comprises of mostly TCS and EMM holes and where the copper grade is estimated from the more locally focused, first interpolation pass. An Indicated Mineral Resource classification is assigned to a volume surrounding the

Measured Resource classification in the porphyry where confidence in the geological continuity is high, however the confidence in the grade interpolation is reduced due to the lower drilling density in this volume (wrt Measured Resources). An Indicated Mineral Resource classification has been assigned to part of the skarn mineralisation based on drill density and confidence in the grade interpolation. Volumes of the Resource that do not meet the Measured and Indicated criteria are assigned an Inferred Mineral Resource classification. All Resources within the surface oxide zone are assigned an Inferred Mineral Resource classification. Drilling or data density and geological and grade continuity are the key risk inputs in determining the Resource classification.

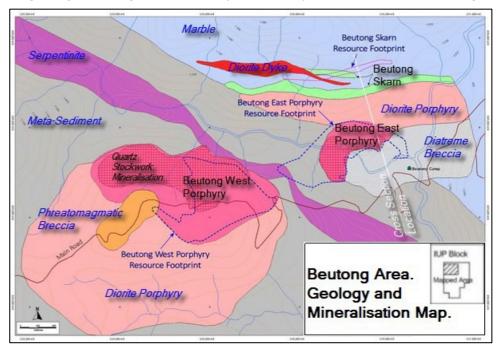


Figure 2: Geological interpretation map of the Beutong Deposit, showing mapped BEP, BWP and Beutong Skarn

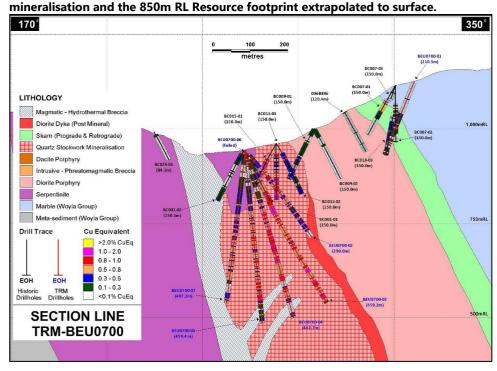


Figure 3: Cross section (BEU0700) through the BEP, showing strong copper-gold-molybdenum mineralization from surface. Note the injection breccias at depth, branching off the magmatic hydrothermal breccia. [CuEq = Cu% + (Mo ppm/10000 \* 3.8883) + (Au g/t \* 0.5089) + (Ag g/t \* 0.0063)].

# **Contributing experts:**

Expert Person/Company	Area of Expertise and Contribution of Expert
Duncan Hackman B.App.Sc. MSc. MAIG.	Exploration and Resource Geologist – 33yrs experience.
Hackman and Associates Pty. Ltd.	Data validation and quality analysis, resource domaining, block modelling, grade interpolation, resource classification.
Stephen Hughes BSc.(Hons),	Copper Gold Exploration Geologist – 20yrs experience.
PT Tigers Realm Consultants Indonesia.	Geological interpretation and data validation.
Trent Strickland BSc. (Hons) AusIMM.	Exploration, Mining and Resource Geologist – 14yrs experience.
Quantitative Group Pty. Ltd.	Kriging neighbourhood analysis and grade interpolation design.

# Compliance with the JORC code assessment criteria and Competent Persons Consent

This Mineral Resource has been compiled in accordance with the guidelines defined in the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (The JORC Code, 2012 Edition).

Duncan Hackman of Hackman & Associates (H&A) is a member of the Australian Institute of Geoscientists and has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity undertaken 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 (The JORC Code, 2012 Edition). Neither Duncan Hackman nor H&A have any material present or contingent interest in the outcomes of the Beutong Cu-Au-Ag-Mo Project Resource Estimate, nor do they have any pecuniary or other interest that could be reasonably regarded as being capable of affecting their independence. H&A's fee for completing this Resource Estimate is based on its normal professional daily rates plus reimbursement of incidental expenses. The payment of the professional fee is not contingent upon the outcome of the estimate.

The opinions and recommendations provided by Duncan Hackman are in response to requests of technical basis by PT Emas Mineral Murni and based on data and information provided by PT Emas Mineral Murni or their agents. Duncan Hackman and H&A therefore accept no liability for commercial decisions or actions resulting from any opinions or recommendations offered within.

Duncan Hackman

B.App.Sc., MSc, MAIG Consulting Geologist

Hackman & Associates Pty. Ltd.



# **Glossary of Technical Terms**

"anomaly or anomalous"	something in mineral exploration that geologists interpret as deviating from what is standard, normal, or expected.
"assay"	The laboratory test conducted to determine the proportion of a mineral within a rock or other material. For copper, usually reported as percentage which is equivalent to percentage of the mineral (i.e. copper) per tonne of rock.
"azimuth"	the "compass direction" refers to a geographic bearing or azimuth as measured by a magnetic compass, in true or magnetic north.
"bornite"	Bornite, also known as peacock ore, is a copper sulphide mineral with the formula Cu5FeS4.
"breccia"	Breccia is a rock classification, comprises millimetre to metre-scale rock fragments cemented together in a matrix, there are many sub-classifications of breccias.
"chalcocite"	Chalcocite is a copper sulphide mineral with the formula Cu2S and is an important copper ore mineral. It is opaque and dark-gray to black with a metallic luster.
"chalcopyrite"	Chalcopyrite is a copper sulphide mineral with formula CuFeS2. It has a brassy to golden yellow colour.
"channel sample"	Samples collected across a mineralised rock exposure. The channel is typically orientated such that samples are collected perpendicular to the mineralised structure, if possible.
"chargeability"	Chargeability is a physical property related to conductivity. Chargeability is used to characterise the formation and strength of the induced polarisation within a rock, under the influence of an electric field, suggesting sulphide mineralisation at depth.
"CIM"	The reporting standard adopted for the reporting of the Mineral Resources is that defined by the terms and definitions given in the terminology, definitions and guidelines given in the Canadian Institute of Mining, Metallurgy and Petroleum (CIM) Standards on Mineral Resources and Mineral Reserves (December 2005) as required by NI 43-101. The CIM Code is an internationally recognised reporting code as defined by the Combined Reserves International Reporting Standards Committee.
"covellite"	Covellite is a copper sulphide mineral with the formula CuS. This indigo blue mineral is ubiquitous in some copper ores.
"diamond drilling"	A drilling method in which penetration is achieved through abrasive cutting by rotation of a diamond encrusted drill bit. This drilling method enables collection of tubes of intact rock (core) and when successful gives the best possible quality samples for description, sampling and analysis of an ore body or mineralised structure.
"digenite"	Digenite is a copper sulfide mineral with formula Cu9S5. Digenite is a black to dark blue opaque mineral.
"dip"	A line directed down the steepest axis of a planar structure including a planar ore body or zone of mineralisation. The dip has a measurable direction and inclination from horizontal.
"galena"	Galena is the natural mineral form of lead (II) sulphide, with formula PbS. It is the most important ore of lead and an important source of silver. It has a silver colour.
"grab sample"	are samples of rock material collected from a small area, often just a few pieces or even a single piece of rock "grabbed" from a face, dump or outcrop or roughly 2-5kg. These are common types of rock samples collected when conducting mineral exploration. The sample usually consists of material that is taken to be representative of a specific type of rock or mineralisation.
"grade"	The proportion of a mineral within a rock or other material. For copper mineralisation this is usually reported as % of copper per tonne of rock (g/t).
"g/t"	grams per tonne; equivalent to parts per million ('ppm')
"hematite"	Hematite is the mineral form of iron(III) oxide (Fe2O3), one of several iron oxides. Magnetite alteration is also typically associate with porphyry copper systems, at or close to the central core.
"hypogene"	Hypogene ore processes occur deep below the earth's surface, and form deposits of primary minerals, such as chalcopyrite and bornite.
"Indicated Resource"	An 'Indicated Mineral Resource' is that part of a Mineral Resource for which quantity, grade (or quality),
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	densities, shape and physical characteristics are estimated with sufficient confidence to allow the application of Modifying Factors in sufficient detail to support mine planning and evaluation of the economic viability of the deposit.
	Geological evidence is derived from adequately detailed and reliable exploration, sampling and testing gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes, and is sufficient to assume geological and grade (or quality) continuity between points of observation where data and samples are gathered.
	An Indicated Mineral Resource has a lower level of confidence than that applying to a Measured Mineral Resource and may only be converted to a Probable Ore Reserve.
"Inferred Resource"	An 'Inferred Mineral Resource' is that part of a Mineral Resource for which quantity and grade (or quality) are estimated on the basis of limited geological evidence and sampling. Geological evidence is sufficient to imply but not verify geological and grade (or quality) continuity. It is based on exploration, sampling and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes.
	An Inferred Mineral Resource has a lower level of confidence than that applying to an Indicated Mineral Resource and must not be converted to an Ore Reserve. It is reasonably expected that the majority of Inferred Mineral Resources could be upgraded to Indicated Mineral Resources with continued exploration.
"Induced Polarisation Geophysics"	Induced polarisation (IP) is a geophysical survey used to identify the electrical chargeability of subsurface materials, such as sulphides. The survey involves an electric current that is transmitted into the subsurface through two electrodes, and voltage is monitored through two other electrodes.
"intercept"	Refers to a sample or sequence of samples taken across the entire width or an ore body or mineralised zone. The intercept is described by the entire thickness and the average grade of mineralisation.
JORC	The Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves ('the JORC Code') is a professional code of practice that sets minimum standards for Public Reporting of minerals Exploration Results, Mineral Resources and Ore Reserves. The JORC Code provides a mandatory system for the classification of minerals Exploration Results, Mineral Resources and Ore Reserves according to the levels of confidence in geological knowledge and technical and economic considerations in Public Reports.
"lbs"	Pounds (measure of weight)
"Mlbs"	Million pounds (measure of weight)
"magnetite"	Magnetite is main iron ore mineral, with chemical formula Fe3O4. Magnetite is ferromagnetic, and it is attracted to a magnet and can be magnetised to become a permanent magnet itself.
"massive"	In a geological sense, refers to a zone of mineralisation that is dominated by sulphide minerals. The sulphide-mineral-rich material can occur in centimetre-scale, metre-scale or in tens of metres wide veins, lenses or sheet-like bodies containing sphalerite, galena, and / or chalcopyrite etc.
"Measured Resource"	A 'Measured Mineral Resource' is that part of a Mineral Resource for which quantity, grade (or quality), densities, shape, and physical characteristics are estimated with confidence sufficient to allow the application of Modifying Factors to support detailed mine planning and final evaluation of the economic viability of the deposit.
	Geological evidence is derived from detailed and reliable exploration, sampling and testing gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes, and is sufficient to confirm geological and grade (or quality) continuity between points of observation where data and samples are gathered.
	A Measured Mineral Resource has a higher level of confidence than that applying to either an Indicated Mineral Resource or an Inferred Mineral Resource. It may be converted to a Proved Ore Reserve or under certain circumstances to a Probable Ore Reserve.
"Mineral Resource"	A "Mineral Resource" is a concentration or occurrence of diamonds, natural solid inorganic material, or natural solid fossilised organic material including base and precious metals, coal, and industrial minerals in or on the Earth's crust in such form and quantity and of such a grade or quality that it has reasonable prospects for economic extraction. The location, quantity, grade, geological characteristics and continuity of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge.



"mineralisation"	In geology, mineralisation is the deposition of economically important metals (copper, gold, lead, zinc
	etc) that in some cases can be in sufficient quantity to form mineral ore bodies.
"open pit mining"	A method of extracting minerals from the earth by excavating downwards from the surface such that the ore is extracted in the open air (as opposed to underground mining).
"outcrop"	A section of a rock formation or mineral vein that appears at the surface of the earth. Geologists take direct observations and samples from outcrops, used in geologic analysis and creating geologic maps. In situ (in place) measurements are critical for proper analysis of the geology and mineralisation of the area under investigation.
"polymetallic"	three or more metals that may occur in magmatic, volcanogenic, or hydrothermal environments; common base and precious metals include copper, lead, zinc, silver and gold.
"polymict"	A geology term, often applied to breccias or conglomerates, which identifies the composition as consisting of fragments of several different rock types.
"porphyry"	Porphyry copper deposits are copper +- gold +- molybdenum orebodies that are formed from hydrothermal fluids that originate from a voluminous magma chamber below the deposit itself.
"Preliminary Economic Assessment"	NI 43-101 defines a PEA as "a study, other than a pre-feasibility study or feasibility study, which includes an economic analysis of the potential viability of mineral Resources".
"propylitic alteration"	Propylitic alteration is the chemical alteration of minerals within a rock, caused by hydrothermal fluids. This style of alteration typically results in epidote–chlorite+–albite alteration and veining or fracture filling, commonly altering biotite or amphibole minerals within the rock groundmass. It typically occurs along with pyrite.
"sediments"	Sedimentary rocks formed by the accumulation of sediments. There are three types, Clastic, Chemical and Organic sedimentary rocks.
"sequential assays"	Sequential copper analysis is a technique to semi-quantitatively define the zonations associated with some copper deposits. The method is based on the partial dissolution behaviour displayed by the prevalent copper minerals to solutions containing sulphuric acid and sodium cyanide. Results from sequential analyses can theoretically determine the amounts of leachable oxide minerals, leachable secondary sulphide minerals, and primary copper minerals, respectively.
"sphalerite"	Sphalerite is a zinc sulphide in crystalline form but almost always contains variable iron, with formula (Zn,Fe)S. It can have a yellowish to honey brown or black colour.
"supergene"	Supergene ore processes occur near surface, and form deposits of secondary minerals, such as malachite, azurite, chalcocite, covellite, digenite, etc.
"surface rock chip samples"	Rock chip samples approximately 2kg in size that are typically collected from surface outcrops exposed along rivers and mountain ridgelines.
"veins"	A vein is a sheet-like or anastomosing fracture that has been infilled with mineral ore (chalcopyrite, covellite etc) or mineral gangue (quartz, calcite etc) material, within a rock. Veins form when minerals carried by an aqueous solution within the rock mass are deposited through precipitation and infill or coat the fracture faces.
"volcanics"	Volcanic rock such as andesite or basalt that is formed from magma erupted from a volcano, or hot clastic material that erupts from a volcano and is deposited as volcaniclastic or pyroclastics.