

# **Positioned for Growth & Success**

**Copper-gold exploration in the world-class Mt Isa district, North Queensland** 

**Dan Thomas, Managing Director I May 2022** 

**ASX: HMX** 





# **Disclaimer and Competent Persons Statement**

The announcement of this presentation on the ASX platform has been authorized by Daniel Thomas, Managing Director, Hammer Metals Limited

#### **Disclaimer**

This presentation by its nature contains summarised information. See Hammer's other periodic and continuous disclosure announcements lodged with the Australian Securities Exchange, which are available at <a href="https://www.asx.com.au">www.asx.com.au</a> for more information.

Within this presentation there may be certain forward-looking statements, opinions and estimates. These are based on assumptions and contingencies which are subject to change without notice and are not guarantees of future performance. Hammer assumes no obligation to update such information. Recipients of this document are cautioned to not place undue reliance on such forward-looking statements.

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#### **Competent Persons Statements**

Certain exploration drilling results relating to the Mount Isa Project were first disclosed under JORC code 2004 and have not been updated since to comply with the JORC Code 2012 on the basis that the information has not materially changed.

#### **Resource Estimates**

Where the Company refers to Mineral Resource Estimates for the following projects:

- the Kalman Deposit (refer ASX 27 Sept 2016);
- the Overlander North and South Deposit (refer ASX 26 Aug 2015); and
- the Jubilee Deposit (refer ASX 21 December 2018).

It confirms that it is not aware of any new information or data that materially affects the information included in those announcements and all material assumptions and technical parameters underpinning the resource estimates with those announcements continue to apply and have not materially changed.

The Minerals Resource Estimates shown for Mt Philp and Elaine were prepared and disclosed by previous owners refer to attached Mineral Resource Estimate Appendices

The information in this presentation that relates to Exploration Results or Mineral Resources is based on information compiled by Mark Whittle who is a fellow of the Australian Institute of Mining and Metallurgy and an employee of Hammer Metals Limited. Mr Whittle has sufficient experience which is relevant to the style of mineralisation 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" (The JORC Code). Mr Whittle consents to the inclusion in the presentation of the matters based on their information in the form and context in which it appears.

Mr Whittle has an interest in Hammer Metals Limited shares and options.

The information in this report that relates to previous exploration results was prepared and first disclosed under a pre-2012 edition of the JORC code.

The data has been compiled and validated. It is the opinion of Hammer Metals that the exploration data is reliable. Nothing has come to the attention of Hammer Metals that causes it to question the accuracy or reliability of the historic exploration results.

In the case of the pre-2012 JORC Code exploration results, they have not been updated to comply with 2012 JORC Code on the basis that the information has not materially changed since it was last reported.

# Positioned in two of the world's great metal provinces

1

Quality copper and gold exploration portfolio

2

Building copper inventory: >400kt of copper equivalent JORC Resources

3

Recent copper discoveries in Queensland

4

Team that has made world class mineral discoveries

5

Dominant position in Mt Isa – one of Australia's most prospective copper provinces (~2,600sqkm)

6

Fully funded for upcoming exploration programs

#### **MOUNT ISA PROVINCE**

One of the world's largest base metals provinces



YANDAL GOLD PROVINCE 24Moz of gold produced



# **Corporate Snapshot | ASX:HMX**

#### **BOARD AND MANAGEMENT WITH A TRACK RECORD OF SUCCESS**

+30 years resources experience

# Russell Davis Chairman BSc (Hons) MBA, MAusIMM, AICD Daniel Thomas Managing Director BSc, MBA

+20 years business development experience Industrial Chemist with corporate development experience Previously Business Development Manager Sandfire Resources

Geologist with exploration and development experience

Founding Director and NED of Gold Road Resources

#### **Ziggy Lubieniecki** Non-Executive Director BSc, MAIG

+30 years resources experience Geologist with exploration and mine management experience Credited with the discovery of Gruyere Gold Deposit (+6.5Moz) AMEC Prospector of the Year 2015

# David Church Non-Executive Director B.Comm, MA, CA

+20 years experience in Mergers and Acquisitions Lawyer with international experience in corporate transactions Consultant providing general counsel and M&A services to Regent Pacific Group

# Mark Whittle Chief Operating Officer BSc (Hons), MSc, FAusIMM

+30 years resources experience Geologist with 10 years experience in the Mount Isa Region Previously Exploration Manager of Syndicated Metals

#### Mark Pitts Company Secretary B.Bus, FCA, GAICD

+30 years corporate experience Accountant with commercial, corporate finance and public practice experience in Australia and overseas. Partner in corporate advisory firm, Endeavour Corporate

# 815M \$82M \$6.4M **Market Cap** Shares on issue Cash At \$0.10 (29 April 2022) As at 31 Mar 2021 26.9 M \$76M **Unlisted Options Enterprise Value** Debt Av. Ex Price \$0.043; brings in M As at 31 Mar 2021 **CAPITAL BREAKDOWN** Directors ■ Other Top 20 Shareholders 39% ■ Others Closing Price **HMX TRADING**

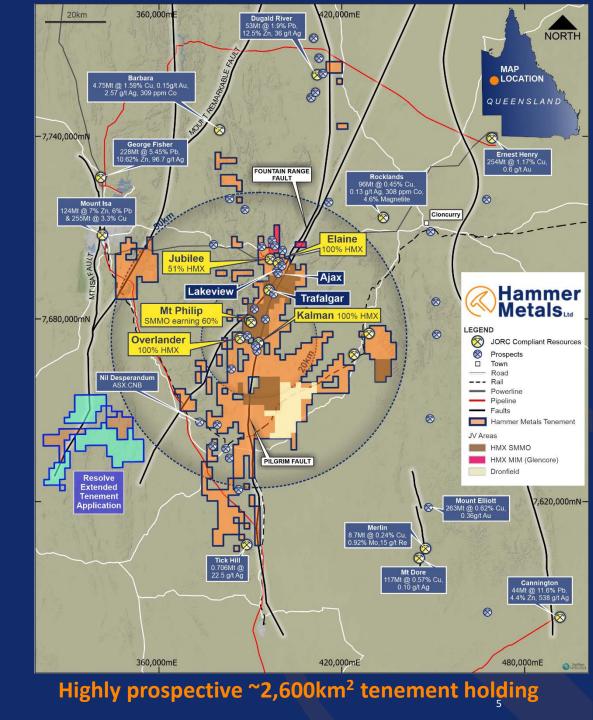
# Mt Isa Projects

### Queensland

# Hammer is committed to increasing its inventory of >400,000 tonnes of copper equivalent metal (JORC 2012 Compliant Resource)

- Dual-track strategy to become a copper developer:
  - Discover additional copper and gold inventory near existing JORC Resources
  - Explore standalone large-scale Iron Oxide Copper Gold (IOCG) deposits
- Recent extensions to Kalman deposit plus multiple Cu-Au discoveries at Ajax, Lakeview, Neptune and Trafalgar (Mt Isa East JV)
- Joint Venture with major copper producer, Sumitomo Metal Mining ("SMM") over ~290km² area (\$6m expenditure to earn 60%)
- Dominant land holding (~2,600sqkm) in one of Australia's most exciting copper explorations provinces

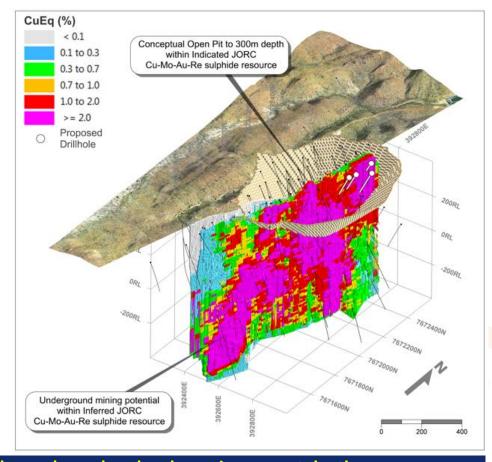
Deposit	Tonnes Mt	CuEq %	Cu %	Au g/t	Co %	Mo %	Re g/t	Fe %	Comment
Kalman	20.0	1.80	0.61	0.34	-	0.14	3.7	-	0.75% Cu Eq cut-off
Jubilee (51% HMX)	1.4	-	1.41	0.62	-	-	-	-	0.5% Cu cut-off
Elaine	9.3	0.95	0.82	0.19	-	-	-	-	0.7% Cu Eq cut-off
Overlander	1.8	-	1.20	-	0.05	-	-	-	0.7% Cu cut-off
Mount Philp	30.5	-	-	-	-	-	-	39	



# Kalman – Our cornerstone asset

#### **100% HMX - 360kt of Copper Equivalent Metal**

- In ground value of JORC resources based on current metal prices in excess of A\$6 billion
- Indicated and Inferred Mineral Resource Estimate of 20Mt @ 0.61% Cu, 0.34g/t Au, 0.14% Mo, 3.7g/t Re
- Recent exploration results highlight potential to increase the JORC resource
- Asset's economics have dramatically changed with the recent commodity price increases – requires re-examination of potential development options at Kalman.
- Broad mineralised system includes a rich manganese ridge to the east and a broad lead zinc gold anomaly to the west lightly explored in the project surrounds.
- IP survey to be completed in May with future drilling plans evolving to further test for further shallow norther extensions of the deposit.
- Kalman is the world's 3<sup>rd</sup> highest grade undeveloped Molybdenum deposit\*





# **High Grade Copper/Gold at depth – underexplored and remains open at depth** K106A:

- 7.6m at **23.4% Cu**, 0.5g/t Au & 20g/t Ag from 581.65m; and
- 77m at **1.4% Cu** & 1.3g/t Au from 700m

#### K106C:

• 53m at **2.1% Cu** and .52g/t Au including 25m at **3.8% Cu** & 0.94g/t Au from 712m \*Refer ASX Announcement 27 September 2016

# Kalman Cu/Au/Mo/Re Deposit

# New drilling has intercepted shallow Cu/Au/Mo/Re mineralisation to the north of the existing JORC Resource at Kalman

- 50m\*at 0.63% Cu, 0.01% Mo, 0.49g/t Au, 0.53g/t Ag, and 0.08g/t Re
   (0.79% CuEq†) from 20m in K-144, including:
  - > 16m\* at 1.38% Cu, 0.01% Mo, 0.84g/t Au, 0.62g/t Ag, and 0.04g/t Re (1.59% CuEq†) from 43m
- 64m\* at 0.23% Cu, 0.12% Mo, 0.10g/t Au, 2.97g/t Ag, and 2.64g/t Re (0.75% CuEq†) from 67m in K-143
- 22m\* at 0.82% Cu, 0.03% Mo, 0.37g/t Au, 0.80g/t Ag, and 0.63g/t Re
   (1.0% CuEq†) from 99m in K-145
- Additional zones identified to further add to the existing JORC Resource
- Remains open along strike to the north and in a high grade zone at depth to the south
- Current high copper (US\$9,600/tonne) and molybdenum (US\$46,000/tonne) prices present an opportunity to further assess:
  - > potential opportunities related to ore sorting and metallurgical recoveries; and
  - > potential mining scenario prices and costs

<sup>-----</sup>Cross Section Line Block Model CuEq (%) 393,000 mE

<sup>\*</sup> True thicknesses are interpreted to be approximately 55-75% of the down-hole thicknesses

<sup>† &</sup>quot;Recovered Copper Equivalent" – includes metallurgical recovery factors for each metal. Refer to the detailed explanation of the assumptions and price underpinning the copper equivalent calculations at the end of this document.

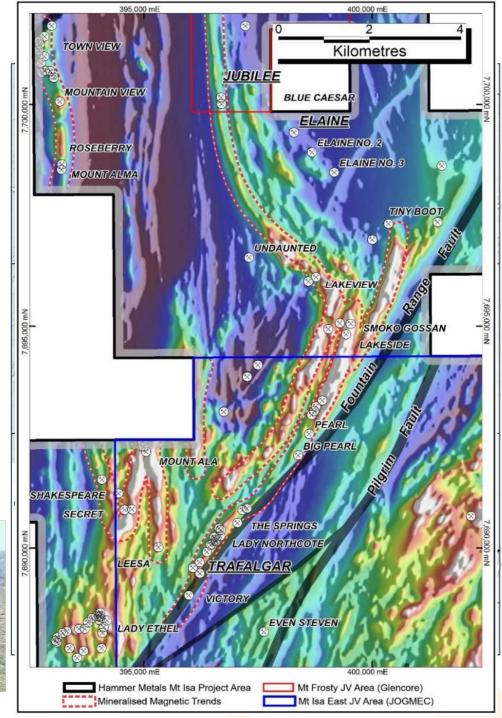
# **Northern Minerals Hub**

# High impact exploration along underexplored copper trend with multiple undrilled exploration targets

- Building a critical mass of copper and gold Resources within a 20km radius of Trafalgar
- Existing JORC resources at Kalman (100% HMX), Elaine (100% HMX), Overlander (100% HMX) and Jubilee (51% HMX)
- Recent exploration success at Ajax, Neptune, Lakeview and Trafalgar (Mt Isa East JV)
- Ideally located in close proximity to infrastructure power and highway traverse northern tenements, rail network connects with Townsville Port
- Upcoming drilling to focus on adding further mineralisation and new resources to progress the hub development concept



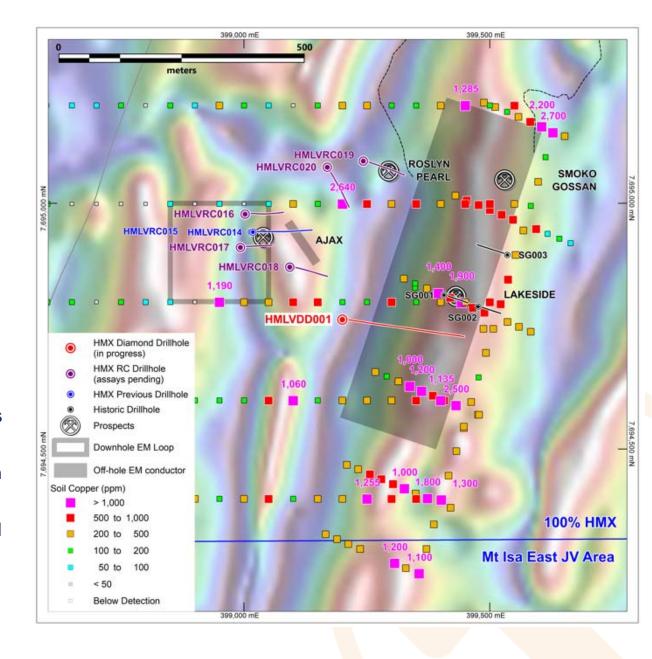
<sup>\*</sup> Refer ASX Announcement 9 March 2021.



# Ajax – High Grade Cu-Au

### 11m at 5% Cu and 2.5g/t Au from 24m\*

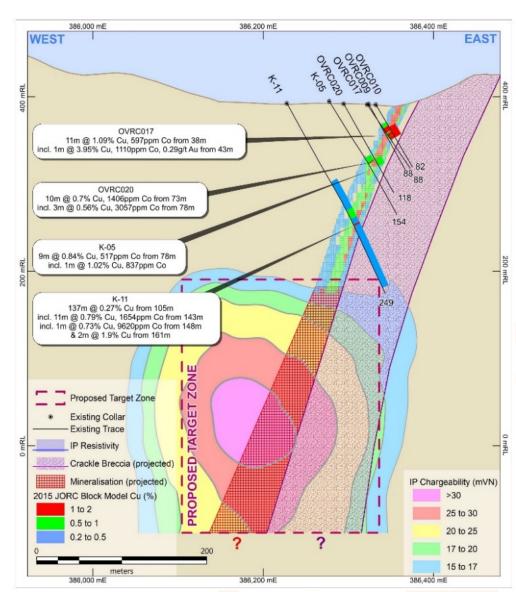
- Plus, significant EM Conductor Defined
- Situated along the highly-prospective Trafalgar-to-Elaine trend, which extends over 13km and is littered with Cu/Au prospects
- First drill hole returned an intercept of:
  - 11m at 5% Cu and 2.5g/t Au from 24m in HMLVRC014, within a broader interval of 16m at 3.5% Cu and 1.8g/t Au from 22m
- High-priority EM conductor identified ~350m east of Ajax
- Modelled conductor has an interpreted strike length of 500m with a depth profile of 500m and a conductance of 3,000 Siemens
- Conductor is interpreted to dip to the west and sits approximately 100m below the highly anomalous copper-gold soil response between the Smoko Gossan and Lakeside prospects
- A series of holes has been completed to test different orientations and potential plunges of the high-grade copper intercept – assays awaited
- Diamond drilling of EM conductor commenced 22nd April



# **IOCG Targets – Overlander Copper System**

# Significant new drill targets defined on IP anomaly at Overlander South

- Overlander is a large mineralised system with a strike of +6km numerous significant copper intercepts
- High-priority IP (Induced Polarisation) anomaly defined at Overlander South
- Interpreted IP anomaly is situated 200m below the existing Overlander South copper-cobalt JORC Resource (649,000t @ 1.0% Cu and 500ppm Co¹)
- IP successfully used by Carnaby Resources (ASX: CNB) to define copper mineralisation at the nearby Nil Desperandum discovery
- Trial two-dimensional IP survey planned in coming weeks to examine the chargeable response of mineralisation at Trafalgar and along the Shadow trend
- Results will guide future IP surveys over prospective trends, with detailed IP surveys planned for April

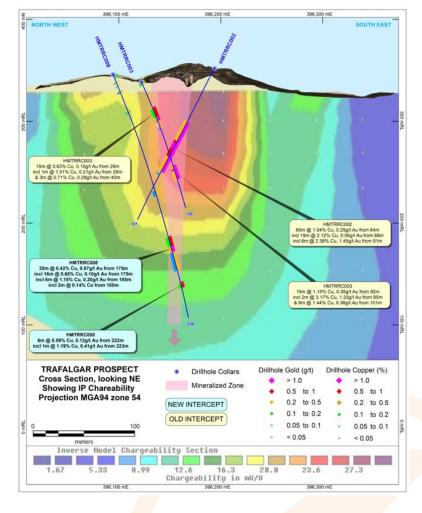


# **Mount Isa East Joint Venture**

### Sumitomo Metal Mining is earning a 60% interest in the JV areas

- JV has focused on exploring targets along the Trafalgar trend
- Multiple targets defined from detailed mapping, fixed Loop EM and downhole EM surveys and historical copper workings
- Sixteen holes now drilled along Trafalgar trend with all intersecting copper and gold mineralisation





- Recent completion of diamond drillholes at Trafalgar and Mount Philp.
- Trial IP surveys positively align with known mineralization at Trafalgar effective targeting tool with extensive program commencing in May
- DHEM and FLEM programs in progress across Mt Philp, Springs Extended and Pearl
- Joint Venture moves into fourth earn-in year with a minimum expenditure commitment of \$1.5m.

# **Upcoming Activities**

What's next?

Multiple exploration programs progressing across Hammer's 100%-owned and JV interests

#### Hammer's 100%-owned Mount Isa activities

- Diamond drilling at new copper prospect Ajax East
- Results from recent drilling at Ajax, Smoko Gossan, Overlander South IP anomaly, Orion, Neptune, and Sunset
- Results from DHEM/FLEM surveys underway Overlander, Neptune, Hardway, Tourist Zone
- New drilling being planned for Kalman
- Review of historical exploration activities in tenure surrounding Carnaby's Nil Desperandum discovery – targets emerging at Mascotte, Revenue and St Mungo

#### **Sumitomo Metal Mining Joint Venture**

- Diamond drilling results from Trafalgar and Mount Philp CEI diamond programs
- DHEM/FLEM surveys at Mt Philp, Trafalgar, Springs Extended and Pearl.
- Geochemical soil surveys to be completed at Malbon and south Trafalgar
- New targets defined for field review at Dronfield, Prince of Wales and Shadow North
- IP surveys of Trafalgar trend expected to commence in May
- Advancement of targets at Jimmy Creek, Shadow South and Prince of Wales for potential drilling in 2022



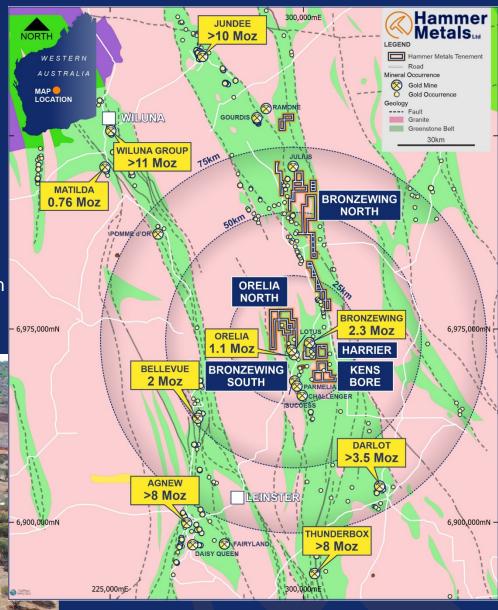
# **Yandal Gold Projects**

### **Western Australia**

#### Highly prospective, underexplored land package in the heart of the Yandal

- 260km² tenement position in the highly prospective Yandal Gold Belt
- Proximal to existing multi-million-ounce resources including the 4Moz Bronzewing<sup>1</sup> gold mine & 1.1Moz Orelia gold deposits
- Numerous zones of highly anomalous gold identified at both Bronzewing South and North Orelia in drilling to date
- Drilling programs at North Orelia, Harrier and Bower planned for second half 2022 with potential to define JORC resource at Target 1, North Orelia





# **Aggressive Exploration | Ongoing and Results Driven**

### **News & Milestones**

### Parallel workstreams to provide consistent news flow

#### Mt Isa (QLD)

Diamond drilling program (Ajax East, Mount Philip IOCG Target, Trafalgar)

SMMO JV Program – DHEM, FLEM, IP, Geochemistry soil surveys

RC/DD drilling program – Ajax Follow Up, SMMO JV Drilling, Kalman, Neptune, Others (potentially including St Mungo, Mount Hope, Overlander, Tourist Zone?)

Mapping, Geophysical, Geochemical Surveys to further define drill targets

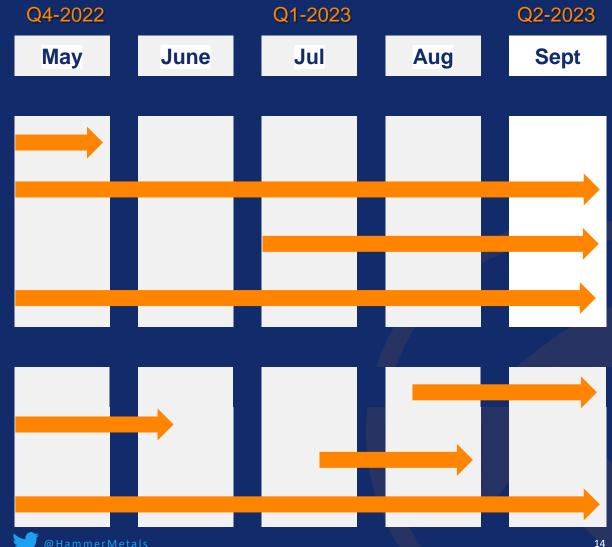
#### Yandal (WA)

RC drilling – (Target 1 North Orelia)

Soil Surveys Results

Aircore drilling (Harrier/Bower/North Orelia/North Yandal)

**Target Generation** 



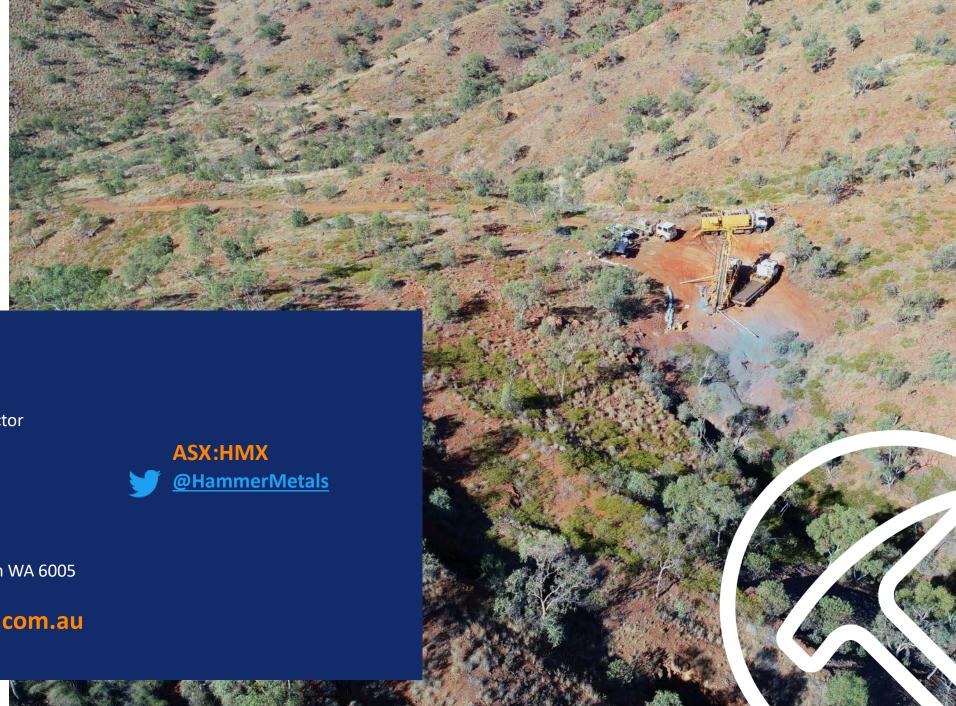




# Contact

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# **Appendix**

# **Elaine Deposit - Copper-Gold**

100% HMX owned and located 5km east from Hammer's 51% controlled Jubilee project

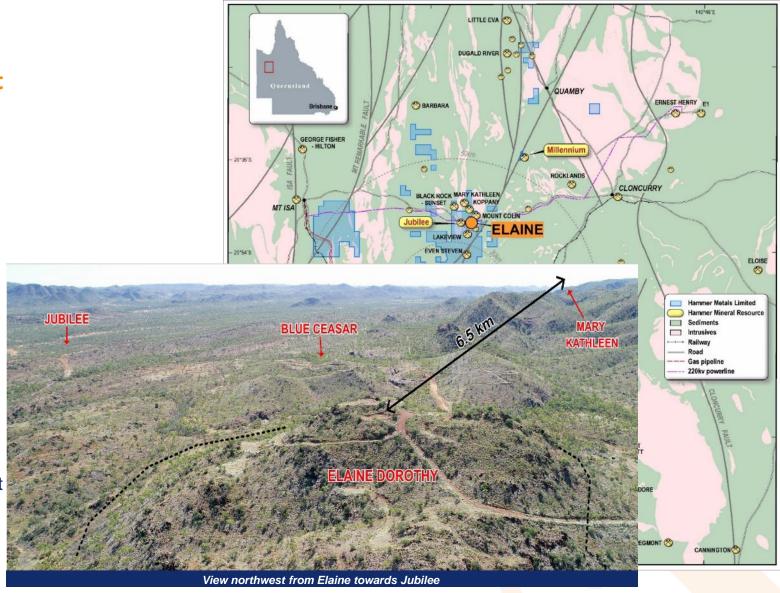
Inferred Mineral Resource Estimate of 9.3Mt @ 0.82% Cu & 0.19g/t Au

Drilling has identified broad copper mineralisation, highlighted by up to 206m @ 0.53% Cu & 159m @ 0.50% Cu from 503m

High-grade gold mineralisation is evident within the broader Elaine deposit, with drilling intersecting up to 30m @ 6.73g/t Au from 508m & 26m @ 1.7g/t Au from 160m\*

Preliminary metallurgical results of 90% copper recovery to cleaner concentrate\*\*

Multiple targets identified along strike from the current resource - Elaine 2, Elaine 3 & Blue Caesar



<sup>\*</sup> Refer ASX HMX Announcement 15 December 2016, ASX AKN Announcements dated 7 Novembe 2011 and 13 June 2012 and the Competent Persons Statement

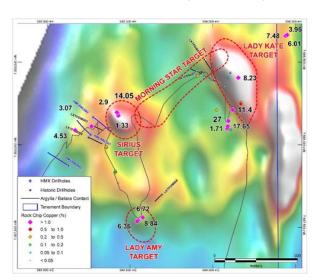
<sup>\*\*</sup> Refer ASX AKN Announcement 23 July 2013 and the Competent Persons Statement

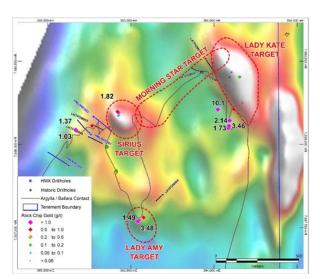
# **Appendix**

## **Neptune: Multiple Targets/Multiple Historical Workings**

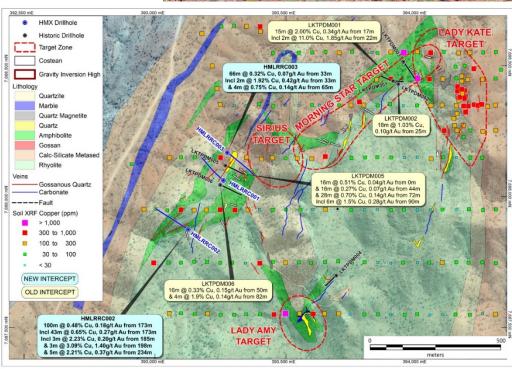
### **IOCG target 2km west of Trafalgar | 100% HMX**

- Three holes drilled at Lady Rose intersected copper and gold mineralisation. Significant Hammer intercepts include:
  - 100m at 0.48% Cu and 0.18g/t Au from 173m<sup>1</sup>
  - 66m at 0.32% Cu and 0.07g/t Au from 33m²
- Mineralisation is associated with magnetite alteration, displaying strong similarities with other IOCG systems in the Mt Isa region
- Four discrete targets within the Neptune zone are being tested in the current drilling program
- Additional drill targets being tested at Ajax, Orion and Sunset







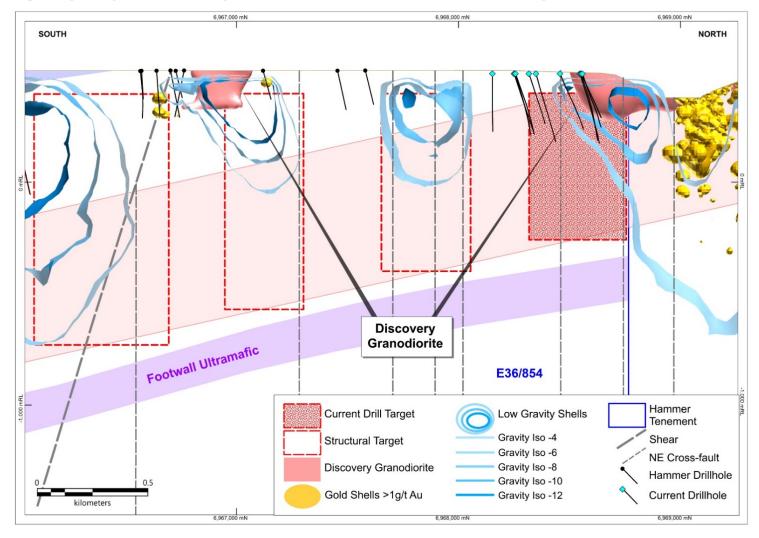


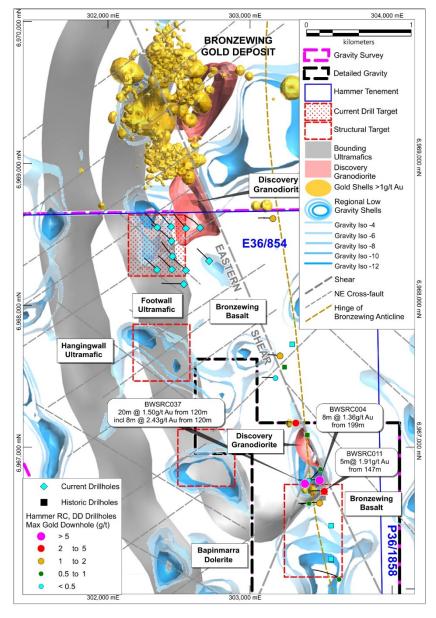
1,2 Refer ASX Announcement 26 July 2021 www.hammermetals.com.au 17

# **Bronzewing South – A New Perspective**

# **Yandal Gold Project**

### Lightly explored, adjacent to world-class orebody



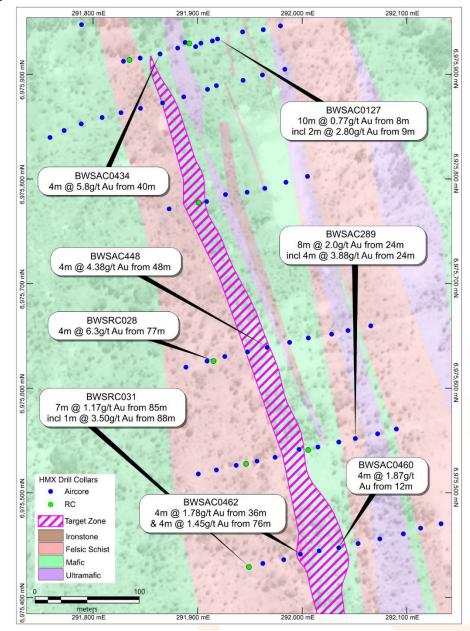


# North Orelia - Successful drilling to date

### **Yandal Gold Project**

#### Mineralisation over a 2km strike length within multiple structures

- Drilling at Orelia North Target 1 provided prospective shallow gold results including¹:
  - 8m at 4.2g/t Au from 20m in BWSRC0025 including:
    - > 1m at 27.1g/t Au from 26m
  - 5m at 3.5g/t Au from 25m in BWSRC0026 including:
  - > 1m at 16.6g/t from 25m
  - 4m at 6.3g/t Au from 77m in BWSRC0028
  - 7m at 1.2g/t Au from 85m in BWSRC0031 including:
    - > 1m at 3.5g/t Au from 88m; and
  - 14m at 1.80g/t Au from 12m including;
  - > 3m at 5.57g/t Au from 21m
  - 4m @ 5.79g/t Au from 40m
  - 4m @ 4.38g/t Au from 48m
- Intercepts in the central zone at Target 1 and in the weathered regolith provide an opportunity for the definition of a shallow oxide gold resource
- Gold intercept of 4m at 6.3g/t Au from 77m (BWSRC0282) remains open at depth and along strike to the north, representing the most significant result in fresh rock. Follow-up of this drilling is planned in 2022.



<sup>&</sup>lt;sup>1</sup> Refer ASX Announcements 3 August 2020 and 9 November 2020

<sup>&</sup>lt;sup>2</sup> Refer ASX Announcement 9 November 2020 www.hammermetals.com.au

# Kalman Resource Estimate & Notes on Copper Equivalence Calculation and Metallurgical Recoveries

The Kalman Mineral Resource Estimate was updated in August 2016 in accordance with the JORC Code (2012 Edition). (Refer to the ASX Release dated 27th September 2016 for full details of the Resource Estimate.)

The company is not aware of any new information or data that materially affects the information in the HMX ASX announcement dated September 27<sup>th</sup>, 2016. All material assumptions and technical parameters underpinning the mineral resource estimate continue to apply and have not materially changed.

#### **Kalman Deposit Mineral Resource Estimate**

(Reported at 0.75% CuEq cut-off above 100m RL and 1.4% CuEq cut-off below 100m RL)

Classification	Mining Method	CuEq Cut-Off	Mt	Cu Eq %	Cu %	Mo %	Au g/t	Ag g/t	Re g/t
Indicated	Open Pit	0.75%	7.1	1.5	0.48	0.12	0.27	1.4	2.9
Inferred	Open Pit	0.75%	6.2	1.6	0.44	0.15	0.24	1.5	3.9
Inferred	Underground	1.40%	7.0	2.4	0.89	0.16	0.5	2.9	4.5
	Total		20.0	1.8	0.61	0.14	0.34	1.9	3.7

•Note: (1) Numbers rounded to two significant figures

Note: (2) Totals may differ due to rounding

•Note: (3) CuEq = Cu + (0.864268 \* Au) + (0.011063 \* Ag) +

(4.741128 \* Mo) + (0.064516 \* Re)

The CuEq calculation is based solely on commodity prices without assumptions about recovery or payability of the different metals. Prices agreed to by Hammer were a reflection of the market as at 27/09/2016 and forward looking forecasts provided by consensus analysis. Metal prices provided are: Cu: US\$4,650/t, Au: US\$1,250/oz, Ag: US\$16/oz, Mo: US\$10/lb

The forward looking price for Rhenium was estimated using available historical and current prices - Re: US\$3,000/kg

The CuEq equation is CuEq = Cu + (0.864268\*Au) + (0.011063\*Aq) + (4.741128\*Mo) + (0.064516\*Re) and was applied to the respective elements estimated within the resource block model.

#### **Assumed Metallurgical Recoveries**

Based on the testing completed and the current understanding of the material characteristics it has been assumed that the Kalman material can be processed using a "typical" concentrator process flowsheet. The mass balance and stage metallurgical recovery of the four major elements were based on the metallurgical test results from the molybdenum zone sample and benchmarks. The final overall recovery (Table 3) was established from the mass balance and benchmarked against other operations and projects.

Process Stage		Copper	Molybdenum	Gold	Rhenium	Silver <sup>(1)</sup>
Bulk Rougher	% Rec'y	95	95	82	86	82
Overall	% Rec'y	86	86	74	77	74

(1) No data available for Silver recoveries so they have been assumed similar to Gold Recoveries

It is the company's opinion that the metals used in the metal equivalent equation have reasonable potential for recovery and sale based on metallurgical recoveries in flotation test work undertaken to date. There are a number of well-established processing routes for copper molybdenum deposits and the sale of resulting copper and molybdenum concentrates.

#### Kalman Exploration Results – Recovered Copper Equivalent Calculation (Slide 8)

Copper equivalent (CuEq) grades were calculated from downhole assays for Cu, Au, Ag, Mo and Re. The CuEq calculation is based on commodity process and metallurgical recovery assumptions as detailed in this release. Prices agreed to by Hammer reflected the market as of early February 2022 and forward-looking forecasts provided by consensus analysis, these prices have not varied significantly. Metal prices provided are: CuEq Price Assumptions are: Cu: US\$9,578/t; Au: US\$1800/oz; Ag: US\$22.88/oz; Mo: US\$2.030/lb; and Re: US\$1,600/kg

The recovered CuEq equation is:  $CuEq = (Cu^*0.86) + (0.6042118^*Au^*0.74) + (0.0076808^*Ag^*0.74) + (4.671895^*Mo^*0.86) + (0.01670^*Re^*0.77)$ 

### **Overlander Mineral Resource Estimate**

The 100%-owned Overlander Project is situated 60 kilometres to the southeast of the mining centre of Mount Isa in North West Queensland and 6 kilometres to the west of Hammer's Kalman copper-gold-molybdenum-rhenium deposit. It is a high-priority target area for both shear-hosted copper and IOCG copper mineralisation. The Overlander North and South copper Deposits are situated approximately one kilometre apart within a common shear zone.

Drilling in the Overlander North deposit extends to a vertical depth of approximately 430m and the mineralisation was modelled from surface to a depth of approximately 420m below surface. Drilling in the Overlander South deposit extends to a vertical depth of approximately 215m and the mineralisation was modelled from surface to a depth of approximately 180m below surface. The resource estimates are based on good quality RC and diamond drilling data. Drill hole spacing is predominantly on a 40m by 20m spacing with additional drill holes between sections targeted at the higher grade cores of the deposits.

Following additional drilling in 2014 and 2015, The Mineral Resource Estimates for the Overlander North and South shear-hosted copper Deposits were revised by Haren Consulting and reported in accordance with the guidelines of the JORC Code (2012 Edition). They contain combined resources of 1,772,000 tonnes at 1.2% copper in the indicated and inferred categories (Refer to the ASX release dated August 26<sup>th</sup> 2015). The company is not aware of any new information or data that materially affects the information in the HMX ASX announcement. All material assumptions and technical parameters underpinning the mineral resource estimate continue to apply and have not materially changed.

#### **Overlander North and South Mineral Resource Estimate**

(Reported at 0.7% Cu cut-off)

Overlander North Resource								
Classification	Tonnes	Cu %	Co (ppm)	Cu t	Cot			
Indicated	253,000	1.4	254	3,414	64			
Inferred	870,000	1.3	456	11,350	396			
Total	1,123,000	1.3	410	14,764	461			
Overlander South Resource								
Classification	Tonnes	Cu %	Co (ppm)	Cu t	Co t			
Indicated	-	-	-	-	-			
Inferred	649,000	1	500	6,352	327			
Total	649,000	1	500	6,352	327			
	Overlander Com	bined Min	eral Resource					
Classification	Tonnes	Cu %	Co (ppm)	Cu t	Co t			
Indicated	253,000	1.4	254	3,414	64			
Inferred	1,518,000	1.2	476	17,700	723			
Total	1,772,000	1.2	445	21,112	788			

Note: (1) Numbers rounded to two significant figures to reflect appropriate levels of confidence

### **Jubilee Mineral Resource Estimate**

The 51%-owned Jubilee Deposit is situated 50 kilometres west of Mount Isa in North West Queensland.

It is a high-priority target area for shear-hosted copper mineralisation.

Mineralisation was modelled from surface to a depth of approximately 325m below surface.

The resource estimates are based on good quality RC and diamond drilling data. Drill hole spacing is predominantly on a 50m by 40m spacing with additional drill holes between sections targeted at the higher grade cores of the deposits.

The Mineral Resource Estimate was conducted by H&S consultants Pty Ltd and reported in accordance with the guidelines of the JORC Code (2012 Edition). They contain combined resources of 1.41Mt at 1.41% copper and 0.62g/t Au in the inferred category (Refer to the ASX release dated December 20<sup>th</sup>, 2018). The company is not aware of any new information or data that materially affects the information in the HMX ASX announcement. All material assumptions and technical parameters underpinning the mineral resource estimate continue to apply and have not materially changed.

#### **Jubilee Inferred Mineral Resource Estimate**

(Reported at 0.5% Cu cut-offs)

Category	Domain	Mt	Cu %	Cu (t)	Au g/t (Cut)	Au oz (Cut)
Inferred	Mod-Slightly Weathered	0.07	1.51	1,000	0.55	1,200
Inferred	Fresh	1.34	1.41	19,000	0.63	27,100
Inferred	Total	1.41	1.41	20,000	0.62	28,300

<sup>•</sup>Note: (1) Totals may differ due to rounding

<sup>•</sup>Note: (1) Totals may differ due to rounding

# Elaine Project Mineral Resource Estimate & Notes Copper Eqv Calculation & Metallurgical Recoveries

# Mt. Philp Mineral Resource Estimate

The 100%-owned Elaine Cu-Au deposit is situated on granted exploration licence 14022, approximately 50km east of Mount Isa in North West Queensland.

A resource estimate was first completed and reported to ASX by previous owners (Chinalco Yunnan Copper Resources Limited, now AUKing Limited) on 18<sup>th</sup> October 2012. The resource was conducted by Mine Development Associates. The company is not aware of any new information or data that materially affects the information in the AKN ASX announcement. All material assumptions and technical parameters underpinning the mineral resource estimate continue to apply and have not materially changed.

A review of the Resource Estimate was completed for the purpose of compiling this statement and the principles and methodology of the resource estimation procedure and the resource classification procedure are considered to comply. The Elaine Project Mineral Resource Estimate is based on approximately 30 holes to a depth of 450 metres below surface. The current resource totals 9.3 million tonnes (Mt) grading 0.82% Cu and 0.19g/t Au and is classified as being all in the Inferred category. The resource is tabulated below at a variety of CuEq % cut-offs.

CuEq cut-off %	Mt	CuEq %	Cu %	Au g/t
0.10	64.34	0.34	0.31	0.05
0.20	32.77	0.54	0.49	0.08
0.25	26.10	0.62	0.56	0.09
0.30	22.81	0.67	0.60	0.10
0.40	17.81	0.76	0.68	0.12
0.50	15.05	0.82	0.73	0.13
0.60	12.47	0.88	0.77	0.15
0.70	9.31	0.95	0.82	0.19
0.80	6.46	1.04	0.87	0.25

Elaine Inferred Mineral Resource Estimate Metal Equivalent Information - The Copper Equivalent (CuEq) equation has been calculated to reflect current and forecast pricing.

CuEq grades were calculated using estimated block grades for Cu and Au. Metal prices used were:

- Cu: US\$5,400/t;
- Au: US\$1,300/oz;

The copper equivalent equation is: CuEq % = Cu % + (Au ppm \* 0.70216)

Cut-offs of 0.7% have been applied for reporting Mineral Resources.

Metallurgical test-work indicated that acceptable copper-cobalt sulphide concentrates could be produced via conventional processing methods. Based on the test-work conducted, it is the company's opinion that all metals used in the metal equivalent calculation have a reasonable potential to be recovered.

	April 2013 Elaine Metallurgical Testwork							
Test No.	Donatoral		Cu	Au				
	Product	%	% Rec'y	ppm	% Rec'y			
Test 11	Final cleaner concentrate	29.9	92.2	2.73	31.7			
Test II	Rougher concentrate	8.1	96.0	1.22	54.4			
Test 13	Final cleaner concentrate	22.9	77.1	0.88	23.9			
165(15	Rougher concentrate	11.6	91.6	0.67	42.3			

The Mineral Resource Estimate is based on 48 diamond and reverse circulation (RC) drillholes completed in 2011 for a total of 3,801 metres (m). Drilling comprises fans located on a nominal 100 m pattern along the strike length of the ironstone. The Mineral Resource was estimated and reported in-house by Cerro Resource NL.

The current resource totals 19.1 million tonnes (Mt) grading 41.4% iron and 37.9% silica (Table 1-1) in the Indicated category and 11.4 million tonnes (Mt) grading 33.8% iron and 47.4% silica in the Inferred category. This resource is open at depth.

A resource estimate was first completed and reported to ASX by previous owners on 28<sup>th</sup> September 2012. The company is not aware of any new information or data that materially affects the information in the ASX announcement. All material assumptions and technical parameters underpinning the mineral resource estimate continue to apply and have not materially changed.

#### **Mt Philp Deposit Mineral Resource Estimate**

Mt Philp Mineral Resource								
Classification	Mt	Fe %	P %	SiO <sub>2</sub> %	Al <sub>2</sub> O <sub>3</sub> %	LOI %		
Indicated	19.11	41	0.02	38	1.2	0.29		
Inferred	11.40	34	0.02	48	2.0	0.31		
Total	30.51	39	0.02	42	1.6	0.30		

• Note: (1) Numbers rounded to two significant figures to reflect appropriate levels of confidence

•Note: (1) Totals may differ due to rounding