# HAMMER METALS LIMITED ABN. 87 095 092 158

## PRESENTATION

**July 2015** 



# **CORPORATE SUMMARY (JULY 2015)**



**Russell Davis** Chairman

Technical



**Alex Hewlett Executive Director** Commercial



**Nader El-Sayed** Director

Finance



**Patrick Corr** Director Legal

Corporate Snap Shot					
ASX Code	НМХ				
Ordinary Shares	101,825,401				
Market Cap	\$8M @ 8c				

Shareholders with greater than 5% of shares on issue					
Deutsche Rohstoff ≈17%					
Santana Minerals Ltd ≈16%					
Mr Russell Davis ≈6%					
Mr Alex Hewlett ≈5%					

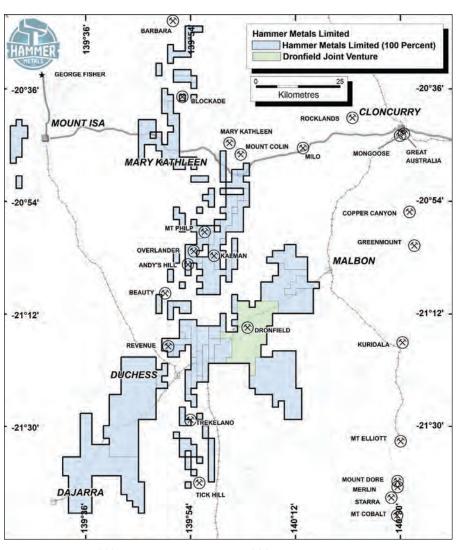
## **QUEENSLAND PORTFOLIO SUMMARY**

## COPPER + GOLD + MOLYBDENUM

### Queensland, Australia



### **MOUNT ISA PROJECT OVERVIEW**



Major land position (2000km²) located in the Mount Isa province "sandwiched" between several major players including;

- Glencore (Mount Isa, E1, George Fisher, Ernest Henry).
- BHP Billiton (Cannington).
- Chinova Resources (Osborne, Merlin, Mt Elliott, Starra).
- CopperChem (Mt Colin, Cloncurry).
- Cudeco (Rocklands).

# **STRATEGY**

### **Corporate Strategy:**

- Focus on base and precious metals in the globally significant Mount Isa mining district:
- Define resources within a truckable distance of Kalman:
- Develop a mining hub centred on Kalman;
- Make a new, large near-surface, copper-gold discovery; and
- Pursue further consolidation, focussing on the central trend between Glencore/ Xstrata (to the West) and BHP Billiton/Chinova (to the East).

#### How:

- Corporate Acquisition of strategic interests;
- Project Acquisition and development of advanced projects; and
- Exploration Focus on priority targets within the exploration portfolio.

### MT ISA DISTRICT HUB

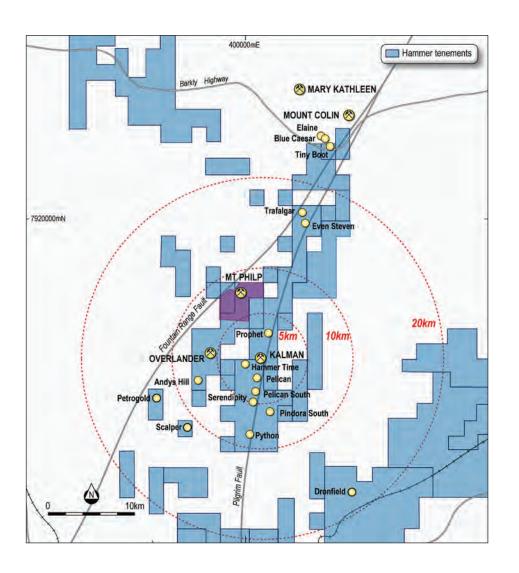
**Objective:** To create a mining hub centred on the Kalman deposit.

**How:** To define a number of resources within close trucking distance of Kalman.

### **Priority Targets**

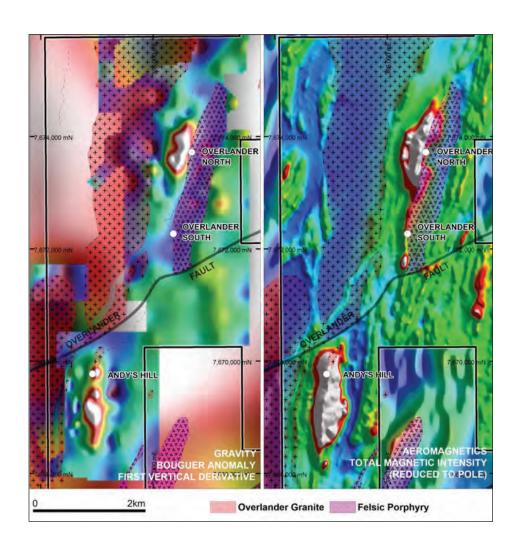
- Kalman Extensions
- Overlander
- Andy's Hill
- Pelican
- Western IOCG Corridor

- Serendipity
- Python
- Pindora South
- Tiny Boot
- Dronfield
- Scalper
- Hammer Time



## **OVERLANDER - A NEW IOCG DISCOVERY**

- Preliminary RC and Diamond Drilling has identified zones of high grade Cu with Co from surface.
- 6km of strike.
- 6km West of Kalman.
- Large IOCG system intersected in latest diamond drill hole OVD001.



### **OVERLANDER NORTH DEPOSIT**

Last 3 RC holes intersected:

#### OVRC29

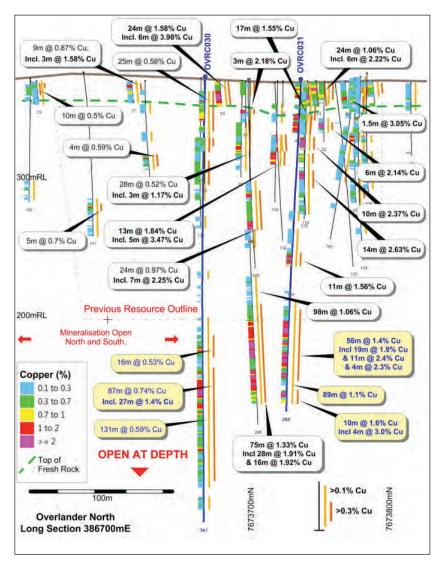
75m at 1.33% Cu including 28m at 1.91% Cu and 16m at 1.92% Cu

#### OVRC30

 87m at 0.74% Cu including 27m at 1.4% Cu

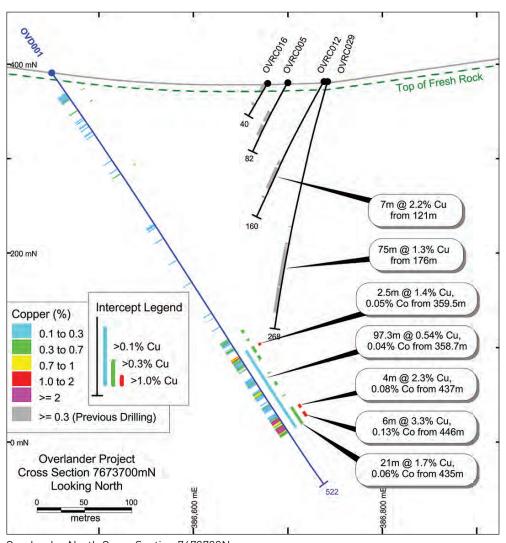
#### OVRC31

- 89m at 1.1% Cu including 56m at 1.4% Cu and 11m at 2.4% Cu and 10m at 1.6% Cu
- Open to the North and South as well as at depth.



## **OVERLANDER NORTH DEPOSIT**

- First diamond hole drilled in May: OVD001
  - Intersects IOCG target
  - 21m @ 1.7% Cu from 435m
  - 97.3m @ .54 Cu from 359.5m



Overlander North Cross Section 7673700N

# **OVERLANDER DIAMOND HOLE**



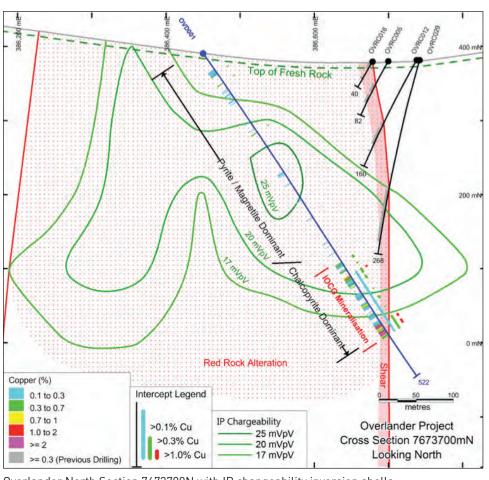
OVD001 - Magnetite, Albite, Chalcopyrite, Pyrite Rock



OVD001 - Chlorite, Biotite, Albite, Chalcopyrite, Pyrite Breccia

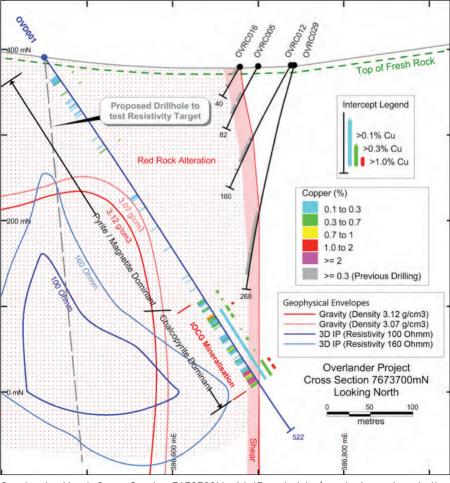
## **OVERLANDER IOCG TARGETS - THE UPSIDE**

### IP



#### Overlander North Section 7673700N with IP changeability inversion shells

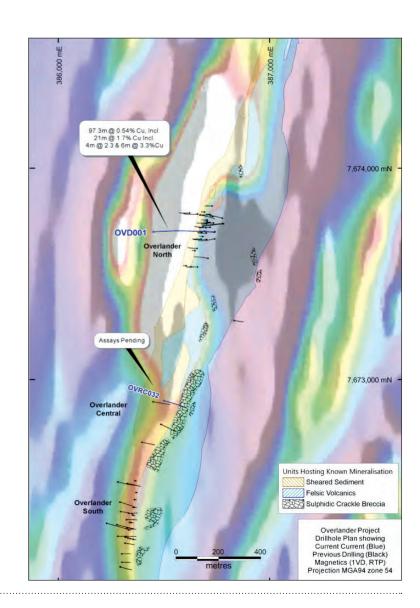
### **Resistivity Target**



Overlander North Cross Section 7673700N with IP resistivity/gravity inversion shells

## LARGER SCALE TARGETS AT OVERLANDER

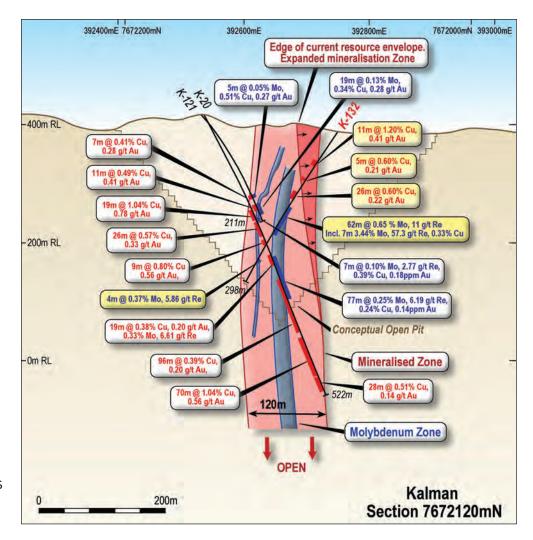
- Large IOCG target over magnetic high
- Extensive mineralised rhyolitic breccia



# KALMAN, NEW HIGH GRADE MO-RE

### **Extensions of high-grade** molybdenum and copper-gold zones enhance open pit mining potential

- Thickest and highest grade molybdenumrhenium intersection yet:
  - **62** metres at **0.65% Mo**, **11.4g/t Re**, 0.16% Cu, 0.07g/t Au and 1.5g/t Ag (62 m at 4.3% CuEq\*) from 152 metres.
  - including **7 metres at 3.44% Mo**, **57g/t Re**, 0.33% Cu, 0.16g/t Au and 5.5g/t Ag (7 m at 21.8% CuEq\*) from 206 metres
- New near-surface copper-gold zone outside current resource model in same hole:
  - 11 metres at 1.20% Cu and 0.41g/t Au from 55 metres
  - 26 metres at 0.60% Cu and 0.22g/t Au from 112 metres



### KALMAN HIGH GRADE ZONES

#### High grade copper-gold:

- 7.6m at 23.4% Cu, 0.5g/t Au & 20g/t Ag from 581.65m in K106A
- 77m at 1.4% Cu & 1.3g/t Au from 700m in K106A
- 25m at 3.8% Cu & 0.94g/t Au from 712m in K106C

#### High grade molybdenum-rhenium:

- 62m at 0.65% Mo & 11.4g/t Re from 152m in K132
- 51m at 0.58% Mo & 15.1g/t Re from 294m in K19
- 72m at 0.2% Mo, 4.4g/t Re, 0.5% Cu & 0.7g/t Au from 273m in K23
- 33m at 0.32% Mo & 10g/t Re from 212m in K52
- 51m at 0.38% Mo & 8.3g/t Re from 256m in K58



High Grade Core from Copper-Gold Zone

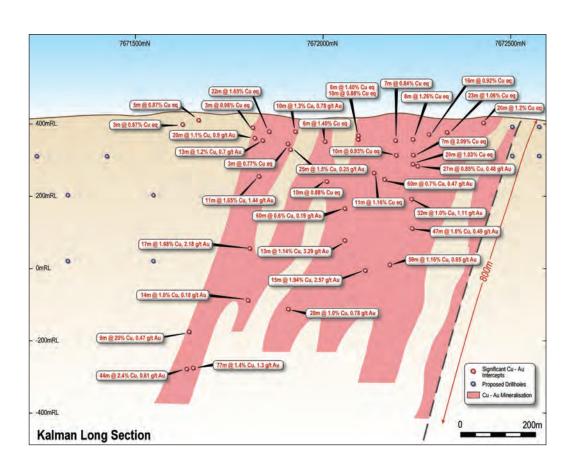


High Grade Core from Molybdenum Zone

### KALMAN UPSIDE

Multiple areas for the current resource to be extended, key areas include;

- Northern Fault offset target.
- High grade Cu open at depth and to South (including 9m @ 20% Cu, 0.47g/tAu from 581m).
- High grade Mo open at depth and to south.
- Anomalous Cu and Mo geochemistry extending to Python [12km to the south].



# **KALMAN RESOURCE**

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

(Reported at 0.3% CuEq cut-off above 100m RL and 1.0% CuEq cut-off below 100m RL)

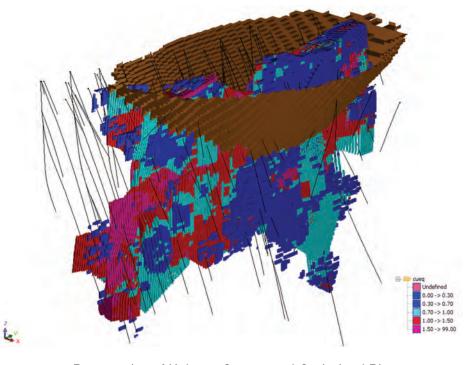
Classification	Mining Method	Tonnes (t)	CuEq (%)
Inferred	Open Pit	22,000,000	1.1
Inferred	Underground	8,300,000	1.9
TOTAL		30,000,000	1.3

<sup>-</sup> Note: (1) Numbers rounded to two significant figures

[Refer to Appendix for notes on CuEq grade calculation]

#### Contained Metal:

- 165k tonnes of Cu
- 25k tonnes of Mo
- 274k ounces of Au
- 2.1M ounces of Re



Perspective of Kalman Conceptual Optimised Pit Shell showing drill traces - looking North West.

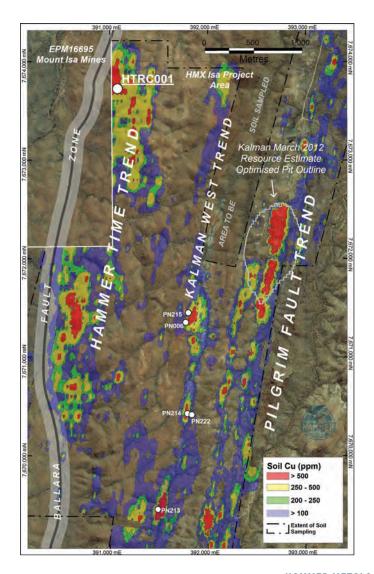
<sup>-</sup> Note: (2) Totals may differ due to rounding

<sup>-</sup> Note: (3) (CuEq = Cu + 0.594464Au + 0.010051Ag + 4.953866Mo + 0.074375Re)

# **HAMMER TIME**

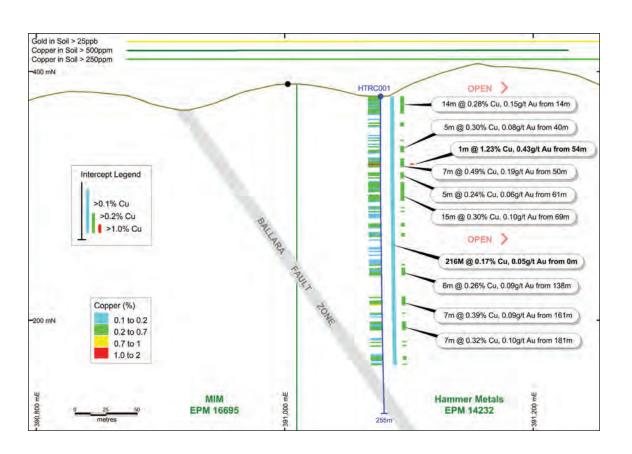
- Coincident soil geochemistry (Cu and Au) and IP anomaly.
- 3.4km in length and 1km in width.
- Prospect crosses the tenement boundary with Glencore Copper.
- Glencore actively exploring.





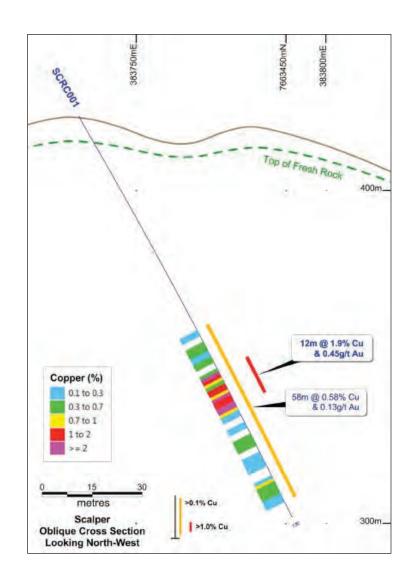
## **HAMMER TIME**

- Intersected in first RC hole
  - 216m @ .17 Cu and .05g/tAu



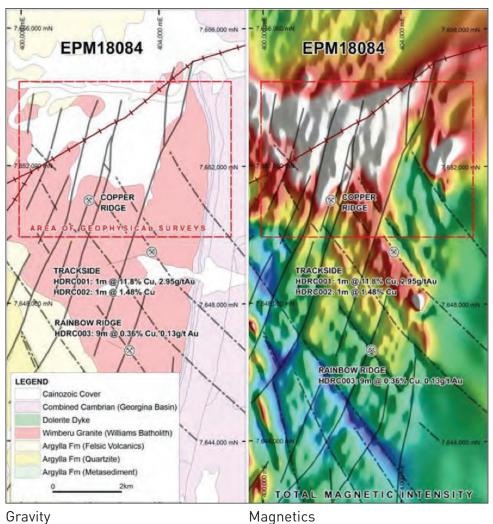
## **SCALPER**

- Southern end of Overlander / Andy's Hill IOCG trend.
- Strong magnetic anomaly and coincident 'red rock' alteration.
- 23m at 1.1% Cu and 0.27g/t Au from 77m including 12m at 1.9% Cu and 0.45g/t Au from 87m.



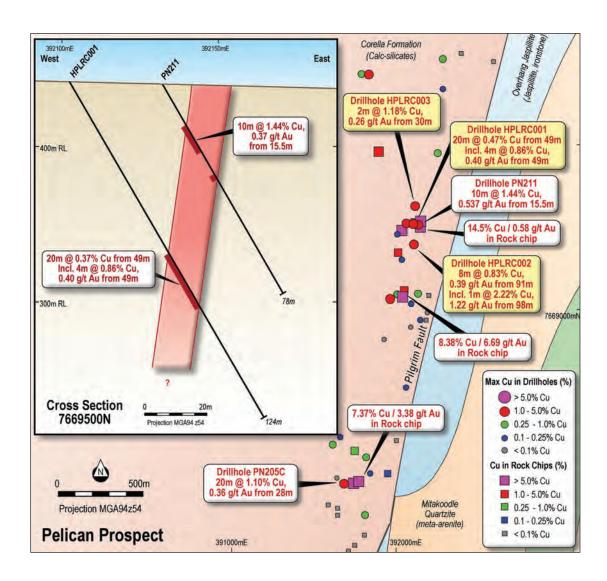
## **DRONFIELD**

- Williams granite suite.
- Coincident gravity magnetic anomalies.
- Copper gold anomalism.
- 2m @ 6.1% Cu + 1.54g/t Au from 37m in HDRC001



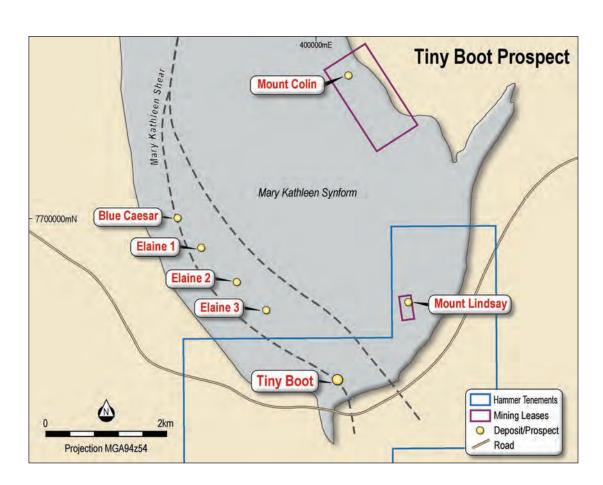
### **PELICAN**

- Kalman style copper-gold in previous drilling.
- 3km South of and directly along strike from Kalman.
- Open-pit potential.
- RC drill results include:
  - 10m at 1.44% Cu + .37g/t Au from 15.5 in PN211
  - 20m at 1.1% Cu & .36g/t Au from 28m in PN250C



# **TINY BOOT**

- 250m copper gossan at surface.
- 1.6Km along strike from Chinalco Ltd's new discovery "Elaine no 3".
- 5km south of CopperChem Ltd's Mount Colin.
- 25Km North from Kalman.
- VTEM survey planned.



# **DISCLAIMER & COMPETENT PERSON STATEMENTS**

#### 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 www.asx.com.au for more information.

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#### **Competent Persons Statements**

Historic Exploration Results

The information in this presentation as it relates to exploration results and geology first reported prior to 1 December 2013 was reviewed by Mr John Downing, who is a Member of the Australian Institute of Geoscientists and a Consultant to the Company. Mr Downing has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2004 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'.

Mr Downing consents to the inclusion in the report of the matters based on the information in the form and context in which it appears.

Certain exploration drilling results relating to the Mount Isa Project 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.

#### Exploration Results - Overlander

The information in this presentation as it relates to exploration results and geology for Overlander was compiled by Mr John Downing, who is a Member of the Australian Institute of Geoscientists and a Consultant to the Company. Mr Downing has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking 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'. Mr Downing consents to the inclusion in the report of the matters based on the information in the form and context in which it appears.

#### Kalman Resource Estimate

Where the Company refers to the Kalman Project and the revised mineral resource estimate in this presentation (referencing the release made to the ASX on 19 March 2014). it confirms that it is not aware of any new information or data that materially affects the information included in that announcement and all material assumptions and technical parameters underpinning the resource estimate with that announcement continue to apply and have not materially changed.

#### Overlander North + South Resource Estimate

Where the Company refers to the Overlander North + South Mineral Resource Estimate in this presentation (referencing the release made to the ASX on 24 July 2014), it confirms that it is not aware of any new information or data that materially affects the information included in that announcement and all material assumptions and technical parameters underpinning the resource estimate with that announcement continue to apply and have not materially changed.

The information in this presentation that relates to Exploration Results or Mineral Resources is based on information compiled by Russell Davis who is a member of the Australasian Institute of Mining and Metallurgy. Mr Davis is a Director, shareholder and option holder of Hammer Metals Limited. Mr Davis 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 Davis consents to the inclusion in the presentation of the matters based on their information in the form and context in which it appears.

The information in this presentation that relates to Exploration Results or Mineral Resources was reviewed by Mark Whittle who is a member of the Australian Institute of Mining and Metallurgy and a Consultant to 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.

# **KALMAN RESOURCE ESTIMATE &** NOTES ON COPPER EQUIVALENCE CALCULATION

The Kalman Mineral Resource Estimate was updated in March 2014 in accordance with the JORC Code (2012 Edition). (Refer to the ASX Release dated 19th March 2014 for full details of the Resource Estimate.)

#### Kalman Deposit Inferred Mineral Resource Estimate

(Reported at 0.3% CuEq cut-off above 100m RL and 1.0% CuEq cut-off below 100m RL)

Classification	Mining Method	Tonnes kt	CuEq %	Cu %	Au ppm	Ag ppm	Mo %	Re ppm
Inferred	Open Pit	22,000	1.1	0.42	0.22	1.1	0.07	1.9
Inferred	Underground	8,300	1.9	0.87	0.42	2.0	0.11	2.9
Total		30,000	1.3	0.54	0.28	1.3	0.08	2.2

- Note: (1) Numbers rounded to two significant figures
- Note: (2) Totals may differ due to rounding
- Note: (3) [CuEq = Cu + 0.594464Au + 0.010051Aq + 4.953866Mo + 0.074375Re]

Copper equivalent (CuEq) grades were calculated using estimated block grades for Cu, Au, Aq, Mo and Re.

The CuEq calculation is based on commodity prices and metallurgical recovery assumptions as detailed in this release. Prices agreed to by Hammer were a reflection of the market as at 14/02/2014 and forward looking forecasts provided by consensus analysis. Metal prices provided are:

• Aq: US\$22.40/oz • Cu: US\$7.165/t • Au: US\$1,324.80/oz Mo: US\$16.10/lb

The forward looking price for Rhenium was estimated using available historical and current prices.

• Re: US\$5,329/kg

The CuEq equation is CuEq = Cu + 0.594464Au + 0.010051Aq + 4.953866Mo + 0.074375Re and was applied to the respective elements estimated within the resource block model.

# **KALMAN RESOURCE ESTIMATE &** NOTES ON COPPER EQUIVALENCE CALCULATION

#### **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.

Table 3: Assumed Metallurgical Recoveries

Process Stage	Molybdenum Recovery (%)	Rhenium Recovery (%)	Copper Recovery (%)	Gold Recovery (%)	Silver <sup>(1)</sup> Recovery (%)
Bulk Rougher	95	86	95	82	82
Overall	86	77	86	74	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 coppermolybdenum deposits and the sale of resulting copper and molybdenum concentrates.