# HAMMER METALS LIMITED ABN. 87 095 092 158

### MOUNT ISA PROJECT

October 2014



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# **CORPORATE SUMMARY** (OCTOBER 2014)



**Russell Davis** Chairman

Technical



**Alex Hewlett Executive Director** Commercial



**Nader El-Sayed** Director

Finance



**Patrick Corr** Director Legal

	August 2014
Ordinary Shares	82,147,815
Preference Shares	4,052,586
Unlisted Options @ \$0.20	16,300,000
Unlisted Options @ \$0.30	2,416,674
Market Cap (Including Preference Shares)	\$12.5M @ 14.5c
30 June Cash Balance	\$800,000

Shareholders with greater than 5% of shares on issue				
Santana Minerals Ltd 19.9%				
Mr Russell Davis ≈ 6%				
Mr Alex Hewlett ≈ 6%				
National Health Recovery Agents Pty Ltd ≈ 4.6%				

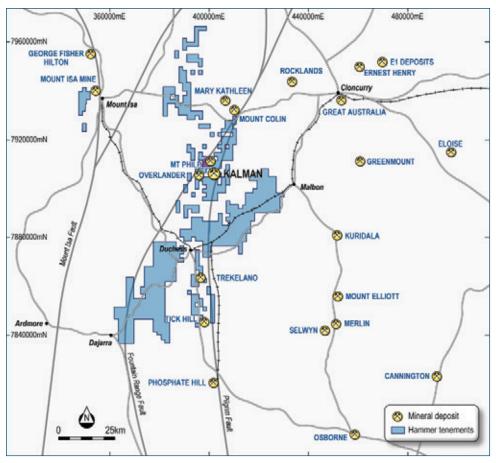
### **QUEENSLAND PORTFOLIO SUMMARY**

#### COPPER + GOLD + MOLYBDENUM

#### Queensland, Australia



#### **MOUNT ISA PROJECT OVERVIEW**



All tenements 100% owned - except EPM18084

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.

#### **KALMAN DISTRICT HUB**

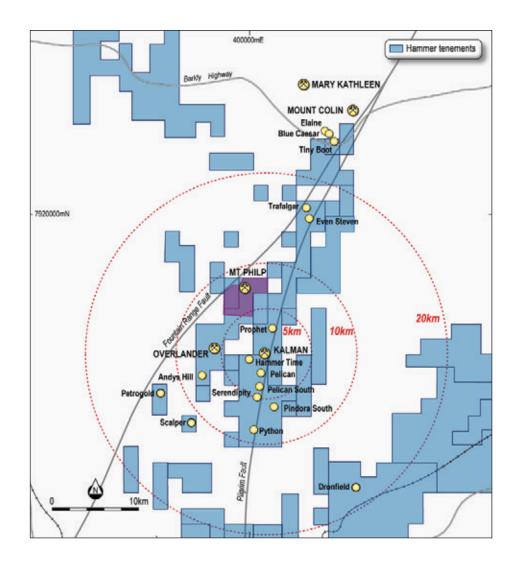
**Objective:** To create a mining hub centred on the Kalman deposit.

**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

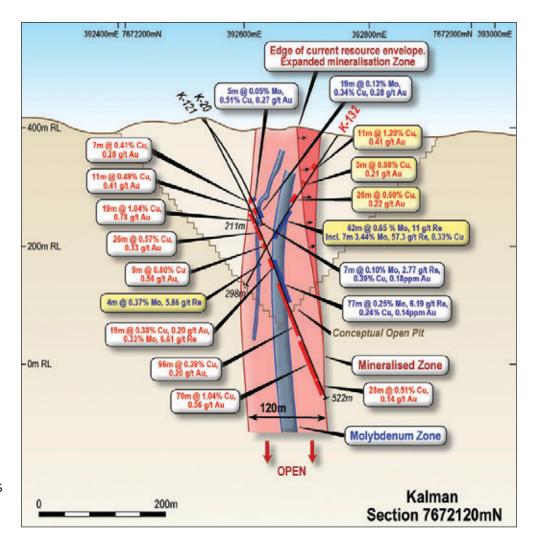
- Serendipity
- Python
- Pindora South
- Tiny Boot
- Dronfield
- Scalper



# 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 0.22q/t Au from 112 metres



# **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)

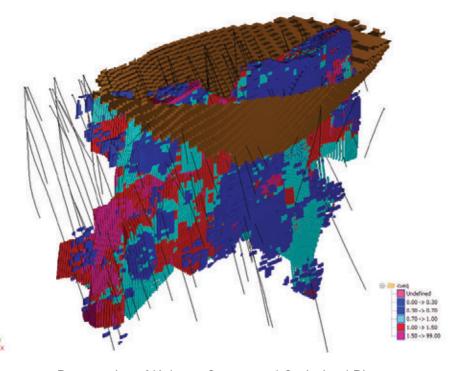
Classification	Mining Method	Tonnes (t)	CuEq (%)
Inferred	Open Pit	22,000,000	1.1
Inferred	Underground	8,300,000	1.9
TOTAL		30,000,000	1.3

<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.

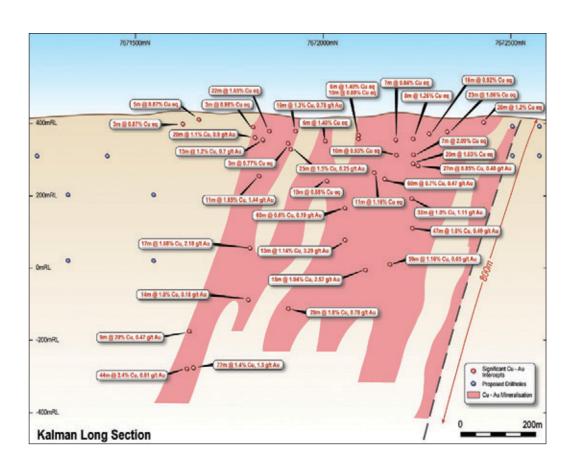
<sup>-</sup> Note: (2) Totals may differ due to rounding

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

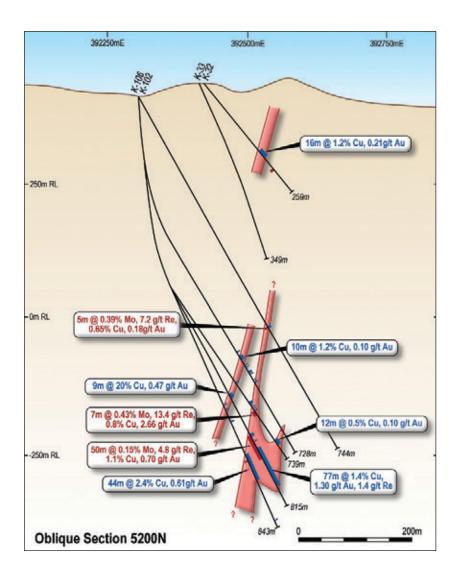
#### KALMAN UPSIDE

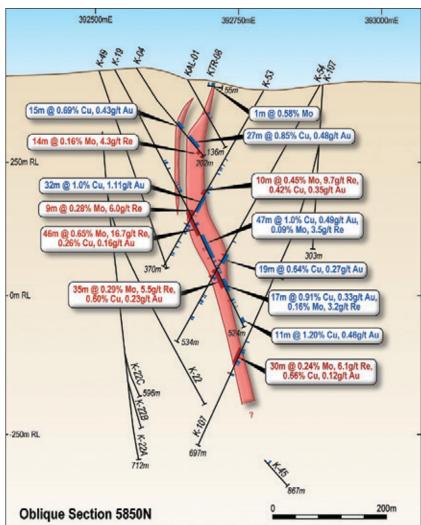
Multiple areas for the current resource to be extended, key areas include;

- 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 DEPOSIT**





#### 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

#### **OVERLANDER RESOURCES**

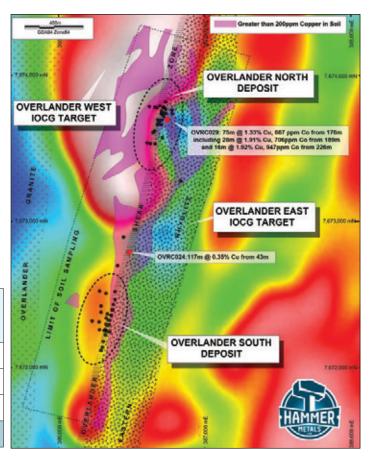
- Preliminary RC Drilling has identified zones of high grade Cu with Co from surface.
- 6km of strike.
- 6km West of Kalman.
- Large IOCG potential.

#### Overlander North + South (Combined)

July 2014 Mineral Resource Estimate (0.7% Cu Cut-off)

Classification	Tonnes t	Cu %	Co ppm	Cu Tonnes t	Co Tonnes t
Measured	-	-	-	-	-
Indicated	247,000	1.3	230	3,201	56
Inferred	910,000	1.1	430	10,140	392
TOTAL	1,157,000	1.2	390	13,341	448

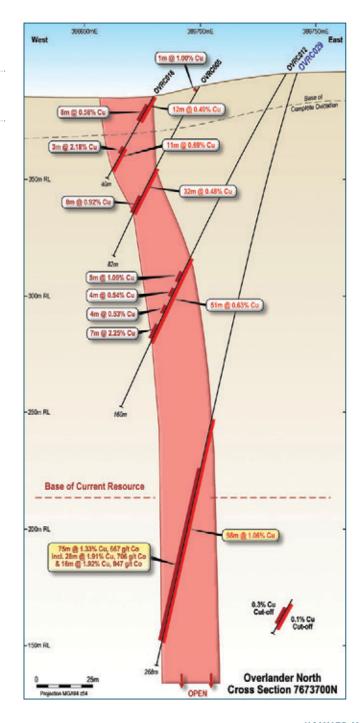
Refer to ASX Announcement 24/07/14. Note: Totals may differ due to rounding.



#### **OVERLANDER DEPOSIT**

#### Better drillhole intercepts include:

- **75m @ 1.33% Cu** from 176m in OVRC029
- 14m @ 2.62% Cu from 76m in OVRC003
- 10m @ 1.45% Cu from 63m in OVRC001
- 9m @ 2.58% Cu from 49m in OVRC004
- 7m @ 2.24% Cu from 121m in OVRC012
- 12m @ 1.2% Cu from 31m in OVRC010
- 8m @ 1.41% Cu from 38m in OVRC017
- 7m @ 1.55% Cu from 25m in OVRC018
- 15m @ 1.26% Cu from 26m in OVRC022
- 117m @ 0.35% Cu from 43m in OVRC024



# **EXPLORATION OBJECTIVE**

Make a new large near-surface, copper-gold discovery.



Glencore's Ernest Henry Mine

#### **IDENTIFYING PRIORITY PROSPECTS**

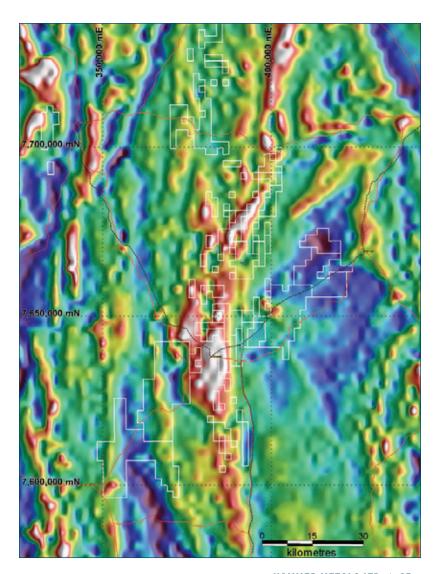
Many exposed copper-gold occurrences present. New deposits may not be obvious - buried under younger barren cover or within a more extensive alteration zone. Therefore how to effectively identify and rank prospects a key objective:

- 1. Combined conceptual and empirical approach leading to a focussed effort on priority targets.
- 2. Understanding of the key elements of IOCG ore systems
- Compilation of regional-scale geophysical, geological and geochemical datasets.
- 4. Prepare and continuously improve the regional geological and structural interpretation to be used as a base for exploration targeting.
- 5. Infill data collection to better define the regional targeting elements.
- 6. Detailed prospect and target reviews using previous exploration data and field reconnaissance along with geophysics to better define targets before drill testing.



#### **AVAILABLE DIGITAL DATASETS**

- Regional gravity defines regional controlling structures and lineaments.
- Regional airborne magnetics and radiometrics (200m line spacing) – defines structures, major rock units, sites of greater magnetite concentration, uranium concentrations
- Local airborne GEO-TEM surveys (200m line spacing) defines conductive bodies, stratigraphic units.
- Satellite imagery alteration zones.
- HyMap hyperspectral imagery alteration zones.
- Mineral occurrence data.
- Regional Geology (DNRM).
- Local LIDAR DTM's.
- Geochemistry soil, stream, rock chip, drill hole.



# **GROUND SELECTION & TARGETING**

- **Economic target deposits are present** in district  $\checkmark$
- **Evidence of target mineralisation** within tenement holding  $\checkmark$
- **Essential criteria present** for economic IOCG's and/or shear hosted copper-gold deposits.
  - Large alteration zones associated with radiogenic intrusives ✓
  - Proximal to crustal-scale faults Pilgrim and Fountain Range Faults 🗸
  - Subsidiary district scale faults providing fluid pathways between fluid source and ore accumulation sites 🗸
  - Mineralising intrusives Wonga and Williams Granite suites 🗸
  - Presence of U, Ag, REE's, Mo & iron enrichment ✓
- 4. Large tenement holding allowing:
  - Coherent regional scale approach to exploration room to explore 🗸
  - Range of prospective targets 🗸
  - Exploration flexibility



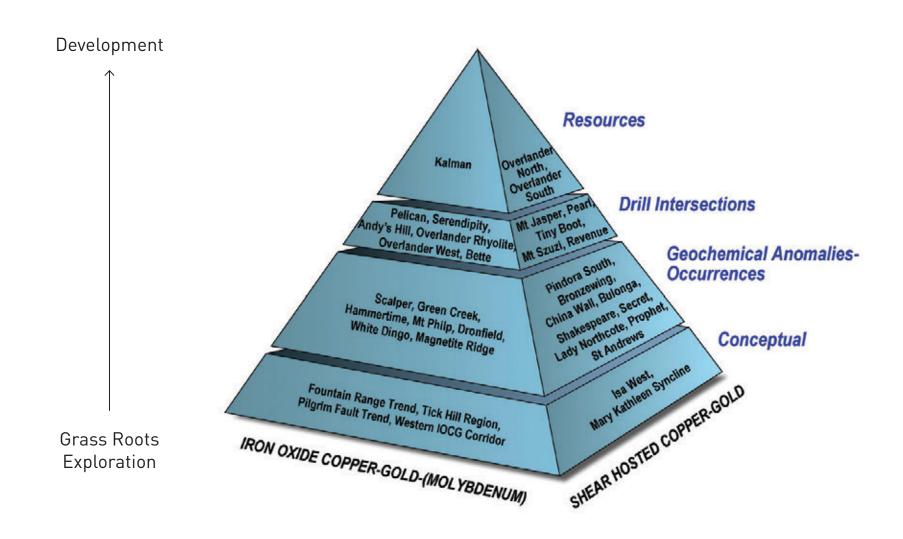
### **EXPLORATION APPROACH**

- Prospect areas defined and prioritised on basis of existing exploration information.
- Ground and/or detailed airborne geophysics to identify and define drilling targets

  - Gravity
  - Magnetics
- Mapping of alteration and geology.
- Geochemical sampling.
- Drilling.

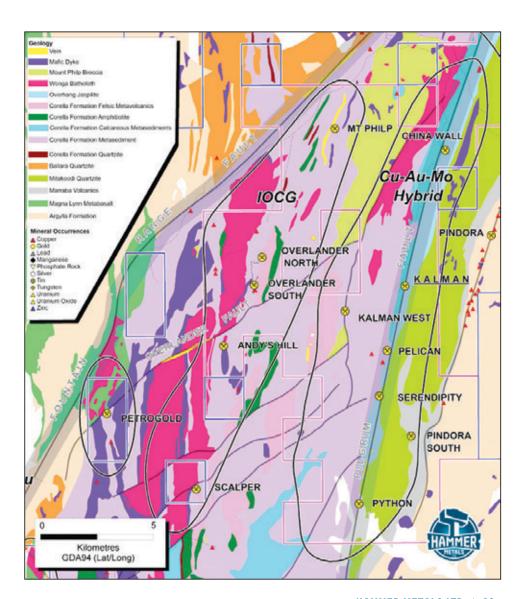


# **TARGET PYRAMID**

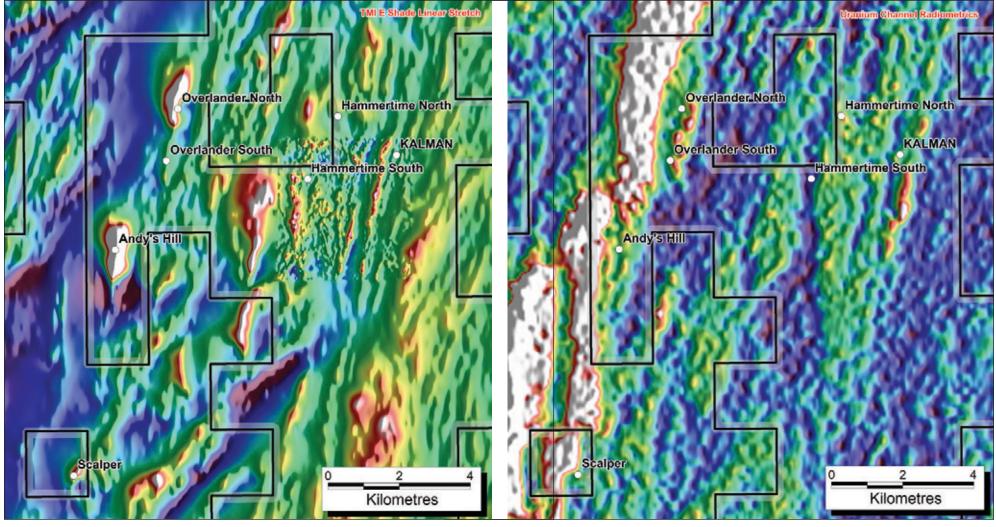


### **WESTERN IOCG CORRIDOR**

- Large IOCG System extending from Mt Philp in the North through Overlander and Andy's Hill to Scalper in the South.
- Significant Cu, Au and Rare Earth mineralisation in drilling (refer to IOCG ASX announcement 20/05/2014).
- Next step in exploration to best define drill targets will be IP, Magnetic and Gravity Surveys.
- 116m @ 0.34% Cu from 44m in OVRC024 at Overlander.
- 298m at 0.1% Cu from 119m and 47m at 0.28% La + Ce from 290m in AHD001 at Andy's Hill.



# **IOCG TARGETING**

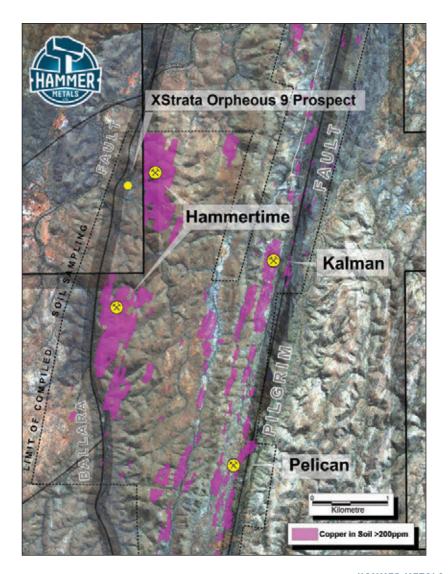


Radiometrics (U channel) Aeromagnetics

### **HAMMERTIME**

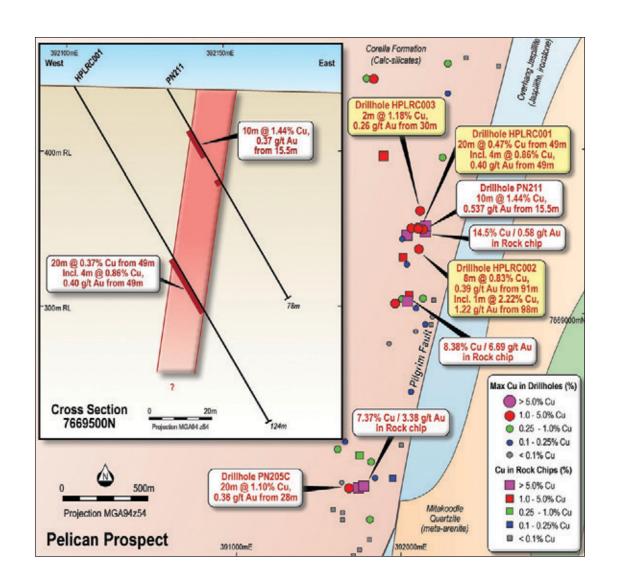
- Coincident soil geochemistry (Cu and Au) and IP anomaly.
- 3.4km in length and 1km in width.
- Prospect crosses the tenement boundary with Glencore Copper.
- Glencore actively exploring.





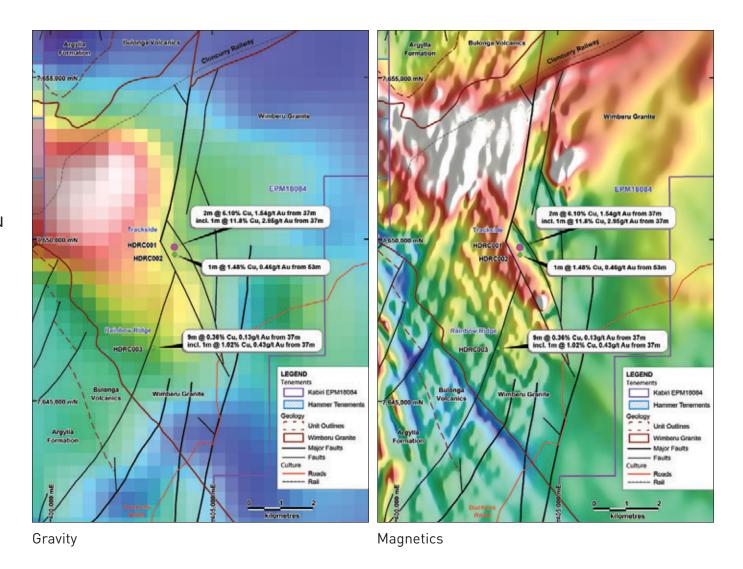
#### **PELICAN**

- 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



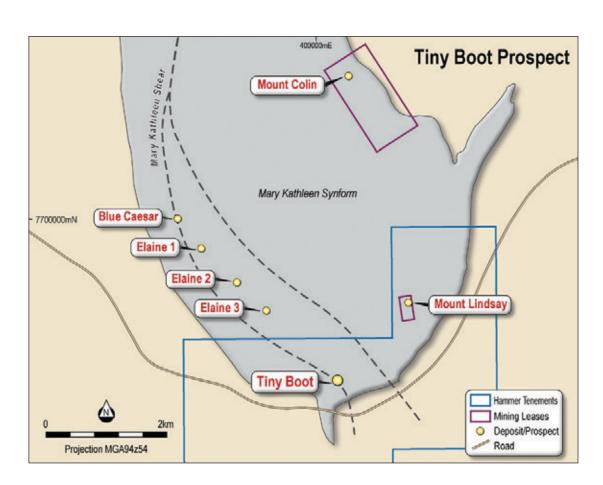
### **DRONFIELD**

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



# **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.

Within this presentation there may be certain forwardlooking 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**

#### 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 and Golden Peaks Project and the Mineral Resource estimates for Leonora and West Pilbara 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.

#### 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.

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# **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	Мо %	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

# 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 copper-molybdenum deposits and the sale of resulting copper and molybdenum concentrates.