# Hammer Metals Limited ABN. 87 095 092 158

## Presentation

**November 2016**

# CORPORATE SUMMARY (November 2016)

**Russell Davis**
Chairman
*Technical*

**Alex Hewlett**
Executive Director
*Commercial*

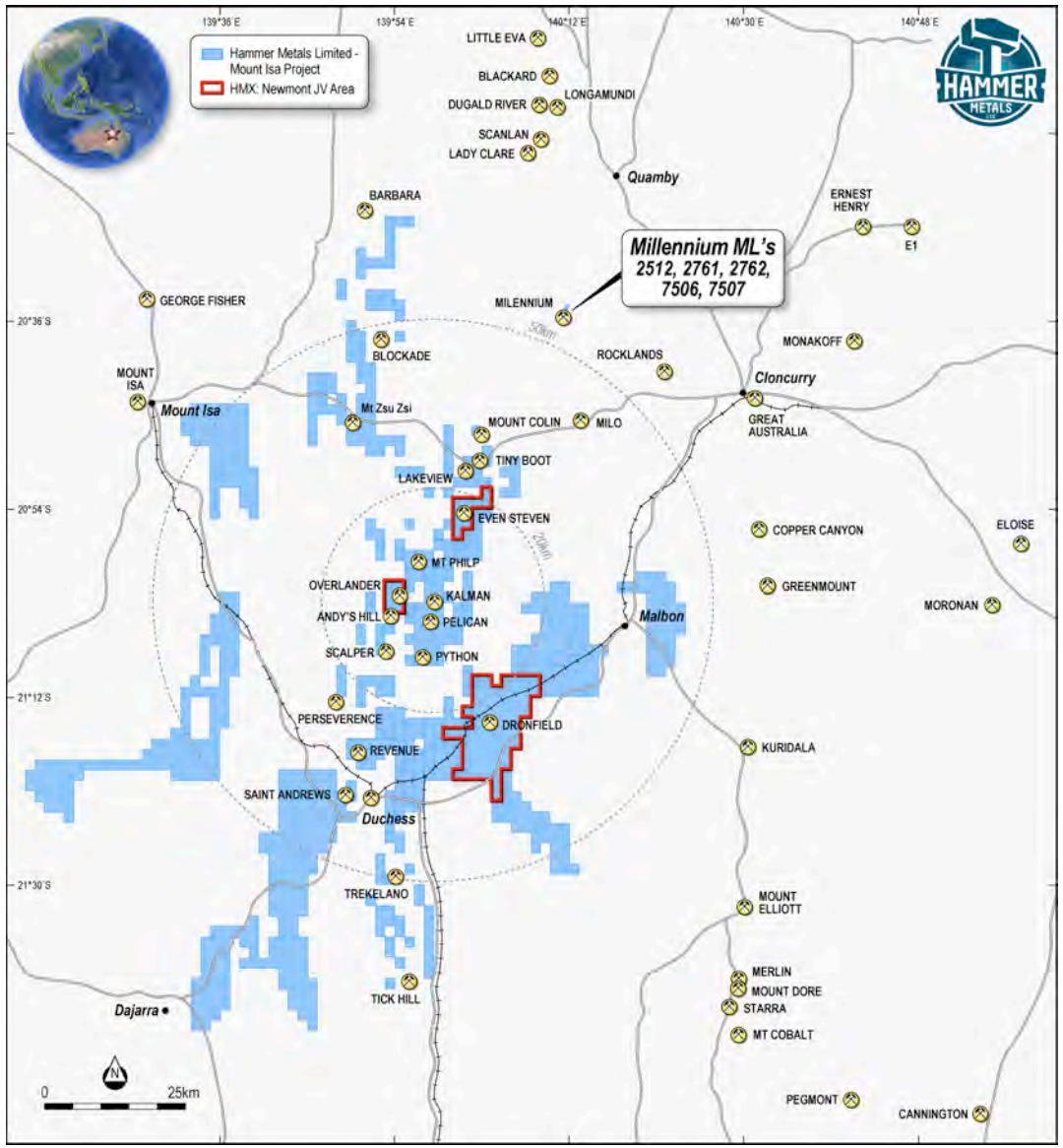
**Nader El-Sayed**
Director
*Finance*

**Simon Bodensteiner**
Director
*Mining*

| Corporate Snap Shot | |
|---|---|
| ASX Code | HMX |
| Ordinary Shares | 197,059,674 |
| Market Cap | $11M @ 5.5c |
| Cash (September Qtr) | $4.1M |

| Significant Shareholders |
|---|
| Deutsche Rohstoff ≈ 17.8% |
| Resource Capital Fund VI ≈ 12.7% |
| Ziggy Lubieniecki ≈ 5.5% |
| Russell Davis ≈ 4.1% |
| |

# MOUNT ISA PROJECT OVERVIEW




Major land position (2600km$^2$) located in the Mount Isa province "sandwiched" between several major players;

- Glencore (Mount Isa, E1, George Fisher, Ernest Henry).
- South 32 (Cannington).
- Chinova Resources (Osborne, Merlin, Mt Elliott, Starra).
- CopperChem (Mt Colin, Cloncurry). Cudeco (Rocklands).

# STRATEGY

## Corporate Strategy:

- To make large copper-gold discoveries in the Mount Isa mineral province

## How:

- Through sustained and systematic exploration over a known major copper province
- By drilling holes!
- Hammer is well funded to explore with $4.1 M cash in the bank as at the end of September Quarter and additional spend to be incurred through the existing Newmont Farmin and JV

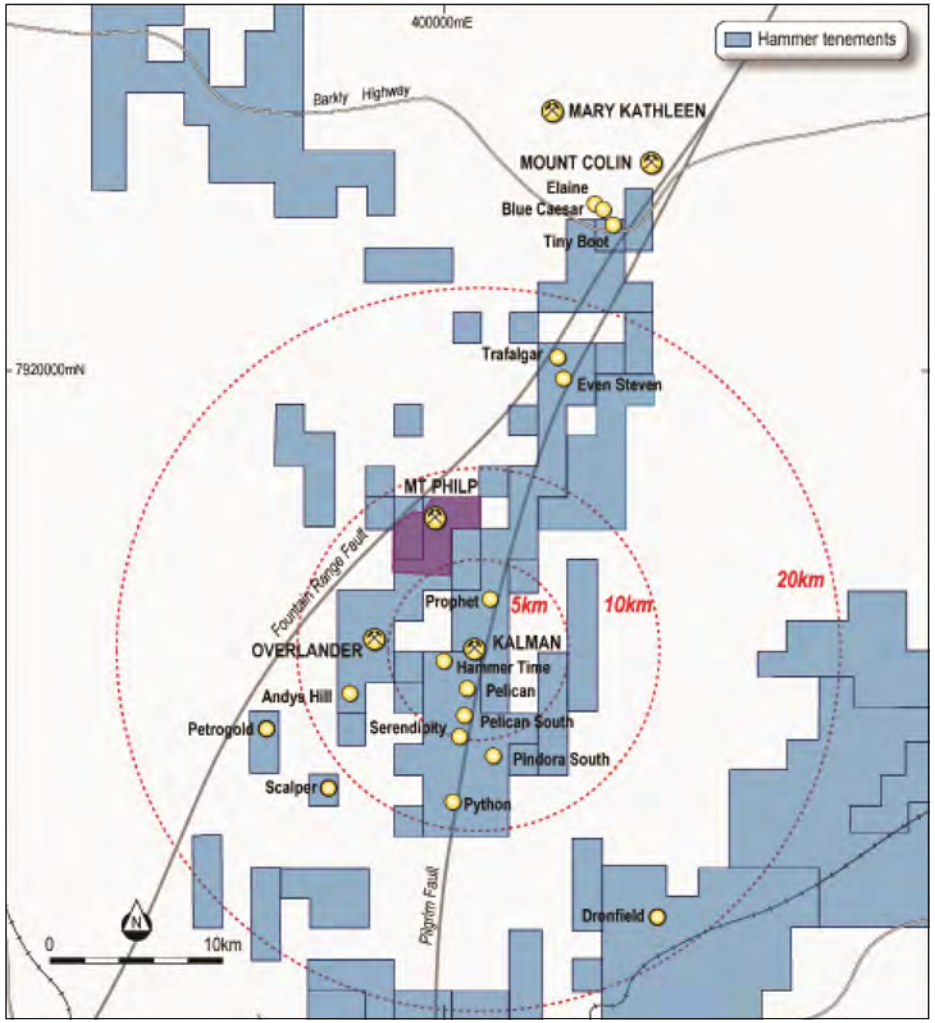
# MT ISA DISTRICT HUB

**Objective:** To define as many copper gold resources as possible near Kalman

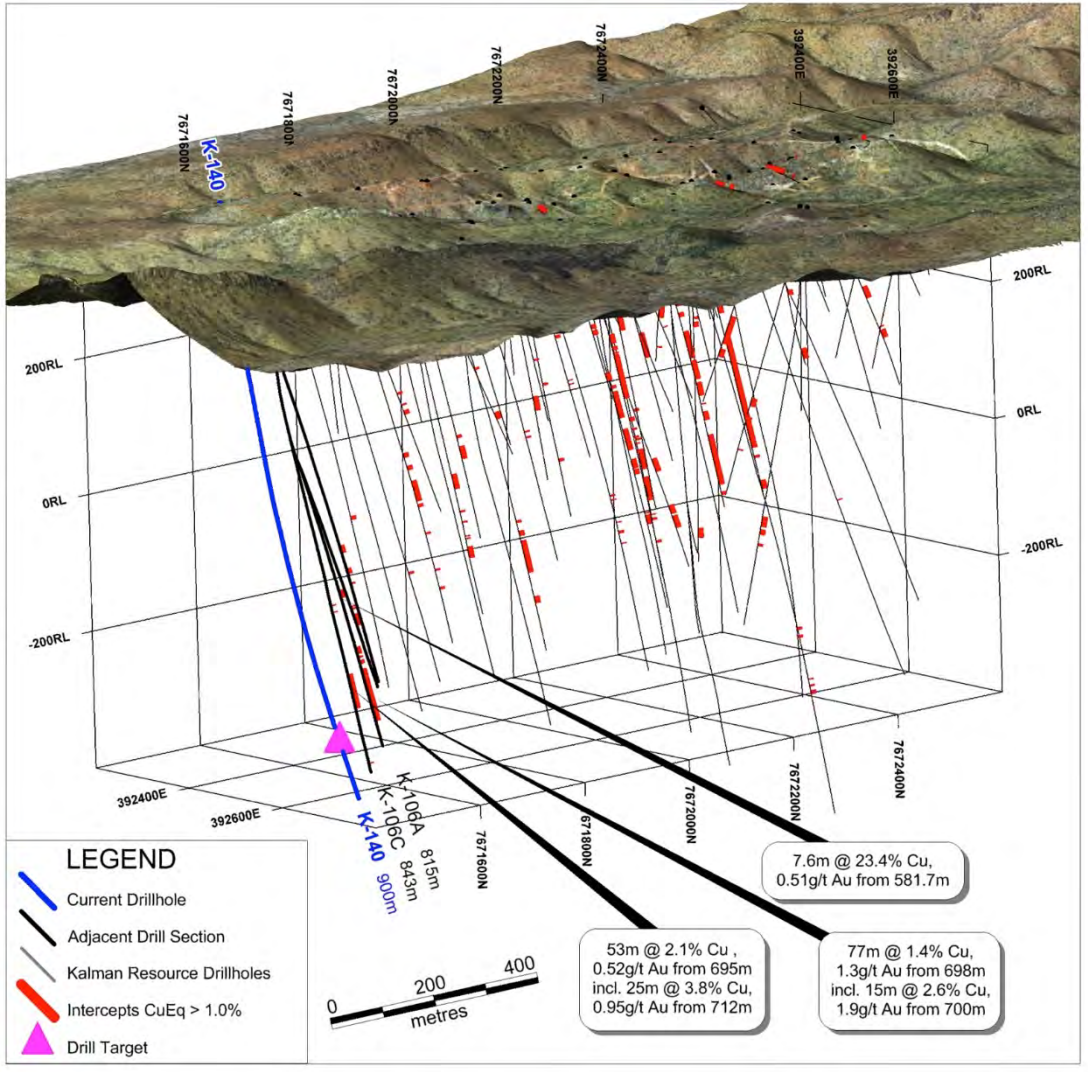
**How:** Fast track exploration targets through to thorough drill testing.

## Priority Targets:

- Kalman Extensions
- Overlander
- Millennium
- Pelican
- Western IOCG Corridor
- Serendipity
- Python
- Pindora South
- Tiny Boot
- Dronfield
- Scalper
- Hammer Time



# KALMAN DRILLING



# KALMAN HIGH GRADE COPPER

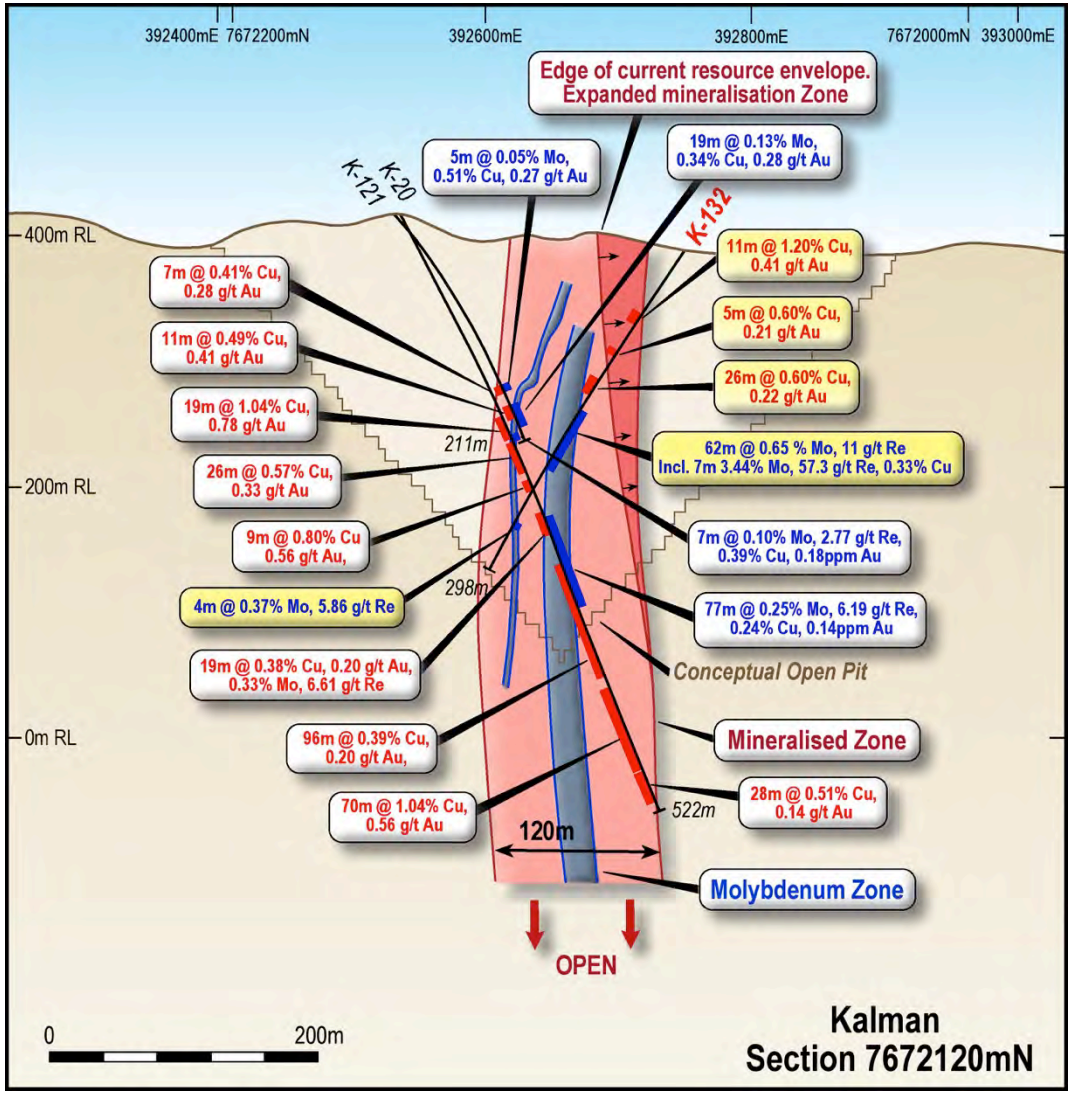
- High grade copper-gold:
  - 7.6m at **23.4% Cu**, 0.5g/t Au & 20g/t Ag from 581.65m in K106A
  - 77m at **1.4% Cu** & 1.3g/t Au from 700m in K106A
  - 53m at 2.1% **Cu** and .52g/t Au including 25m at **3.8% Cu** & 0.94g/t Au from 712m in K106C

# KALMAN - HIGH GRADE MO-RE

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

- High grade molybdenum & rhenium intersections:
  - **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

*Refer to appendix for notes on CuEq calculation



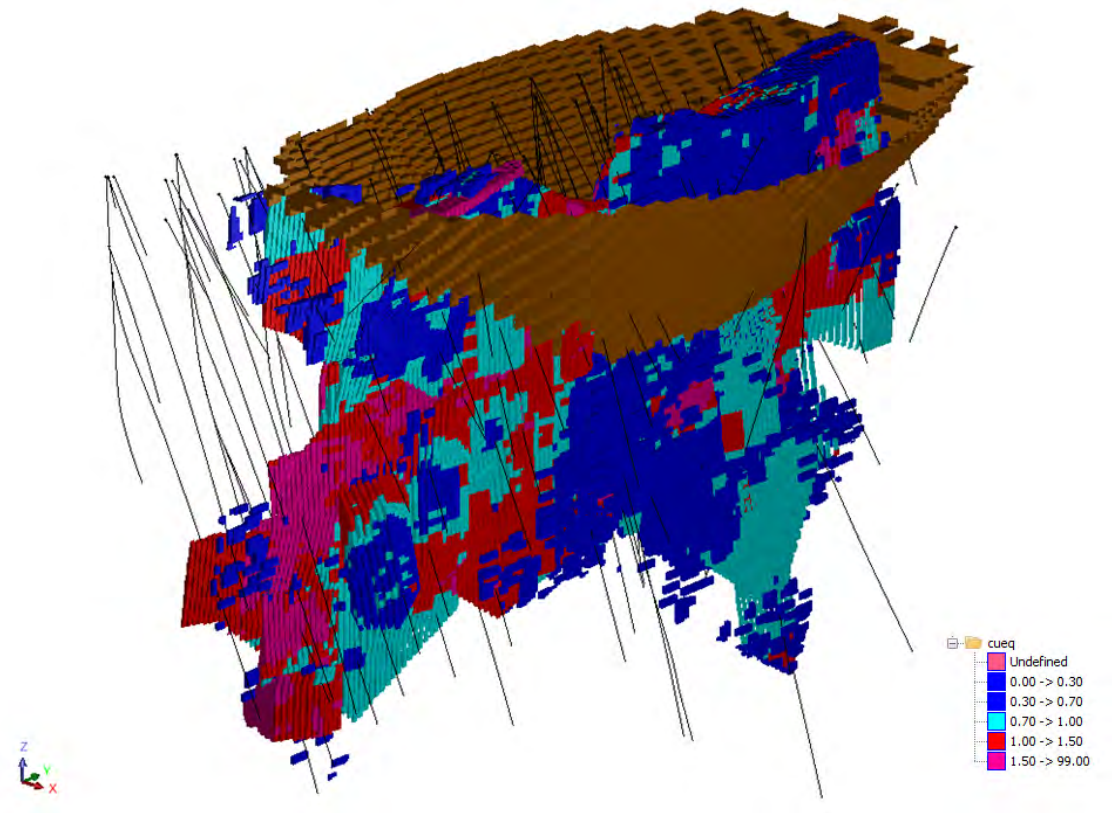
# NEW KALMAN RESOURCE

## Kalman Deposit Mineral Resource Estimate

(Reported at 0.3% CuEq cut-off above 100m RL and 1.0% CuEq cut-off below 100m RL)
Refer to ASX release dated 27/9/16 for details

| Classification | Mining Method | Tonnes (t) | CuEq (%) |
|---|---|---|---|
| Indicated | Open Pit | 7,100,000 | 1.5 |
| Inferred | Open Pit | 6,200,000 | 1.6 |
| Inferred | Underground | 7,000,000 | 2.4 |
| **TOTAL** | | **20,000,000** | **1.8** |

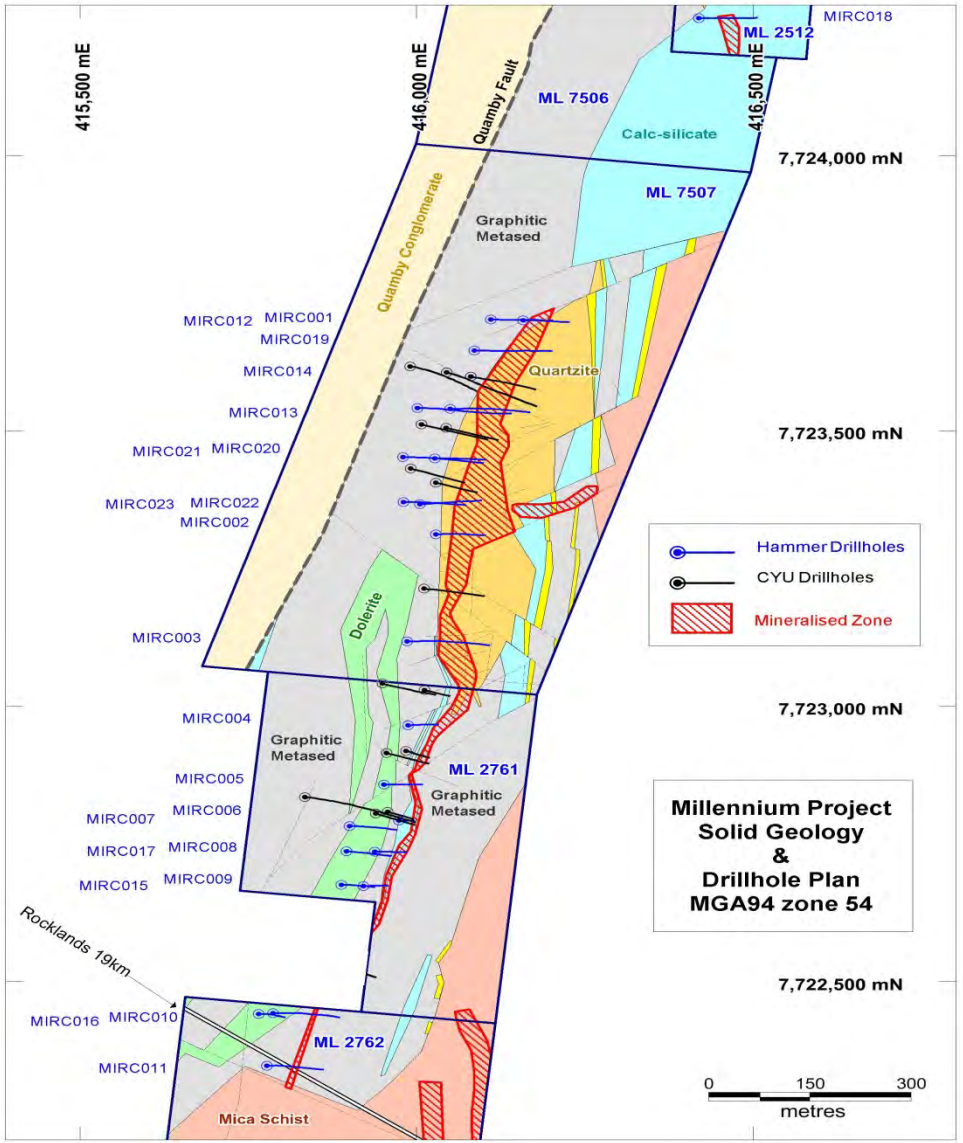
*-Note: (1) Numbers rounded to two significant figures*
*-Note: (2) Totals may differ due to rounding*
*-Note: (3) (CuEq = Cu + 0.594464Au + 0.010051Ag + 4.953866Mo + 0.074375Re)*
*[Refer to Appendix for notes on CuEq grade calculation]*



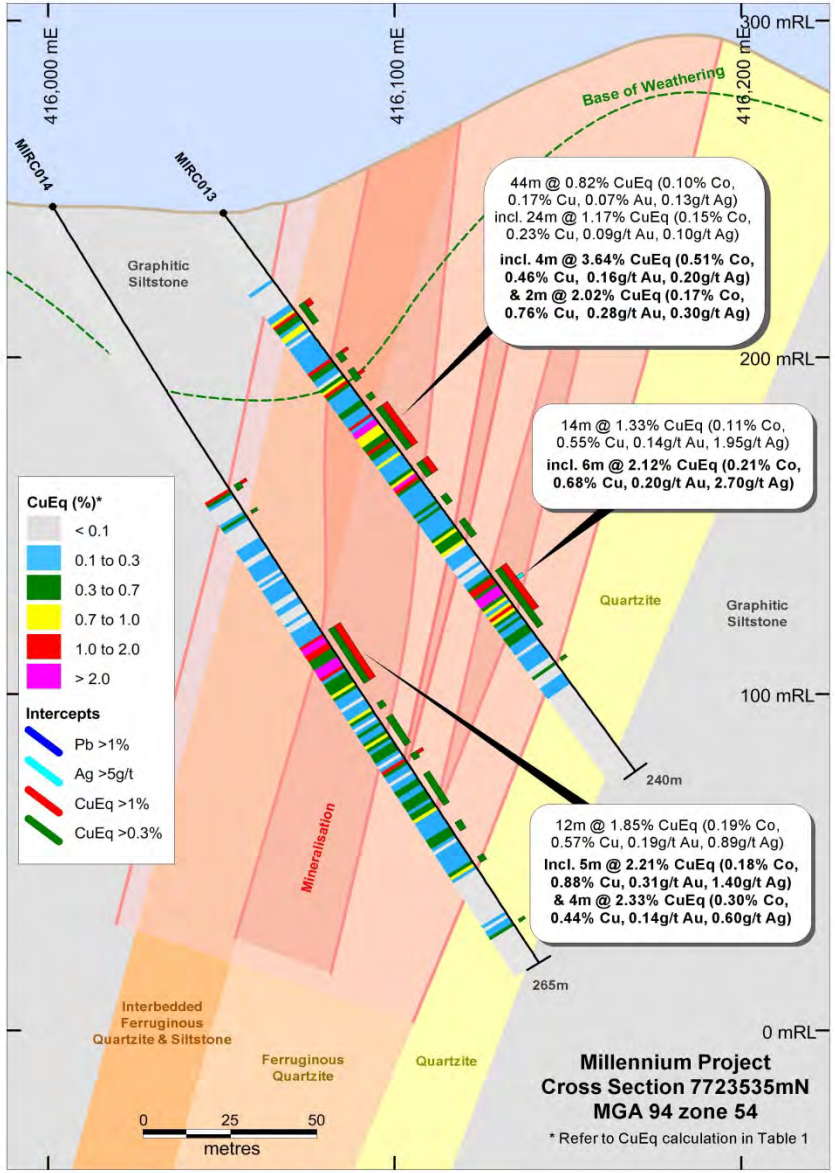

Perspective of Kalman Conceptual Optimised Pit Shell showing drill traces - looking North West.

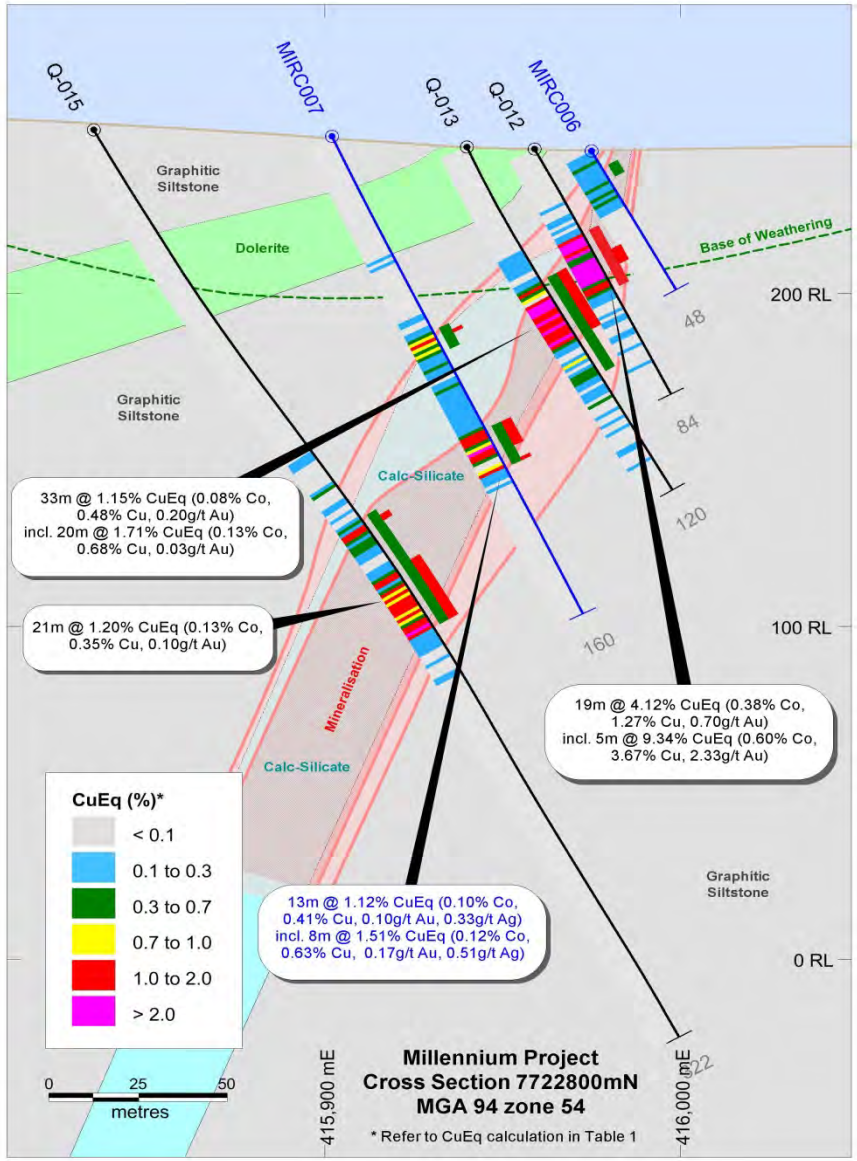
# MILLENNIUM- A NEW COBALT DEPOSIT

- 23 new RC holes to deliver a new cobalt copper gold resource Q4 2016
- 1.5km of strike tested with another 1.5km yet to be tested.
- Situated on the Pilgrim Fault.
- High grade cobalt intersected.



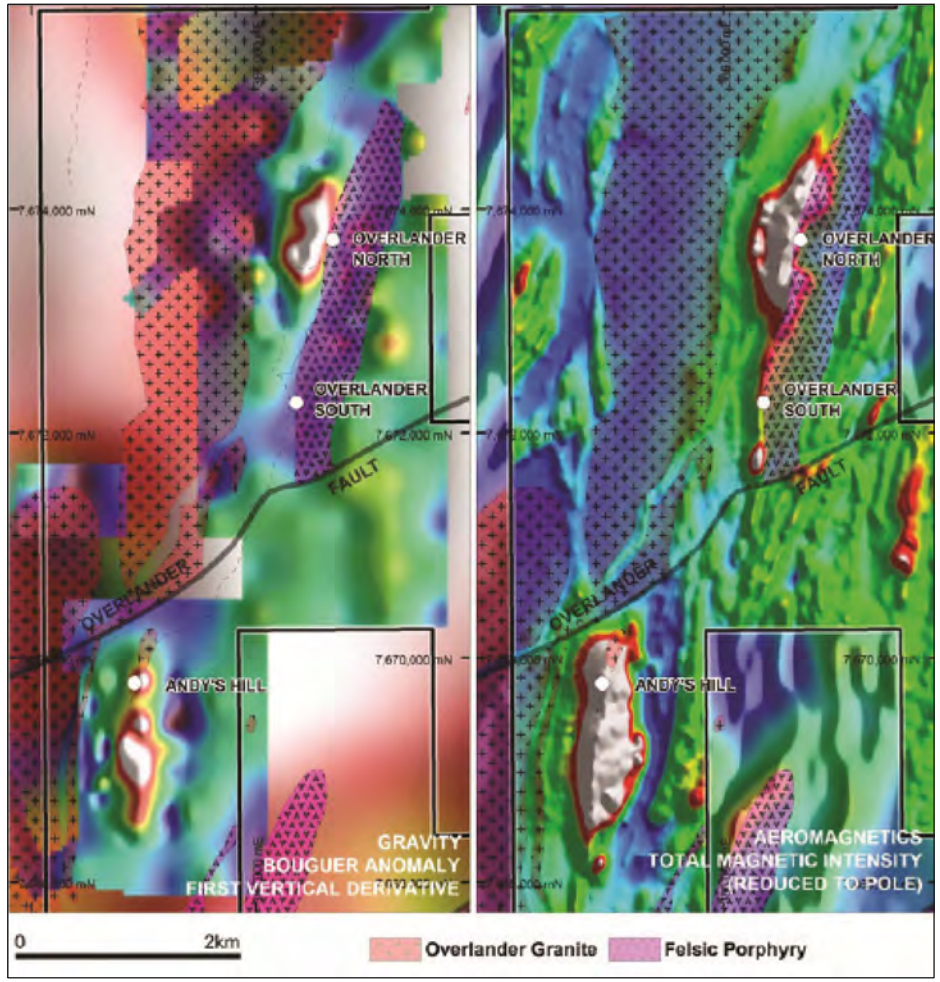
# MILLENNIUM- A NEW COBALT DEPOSIT



# 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 diamond drill hole OVD001.



# OVERLANDER NORTH DEPOSIT

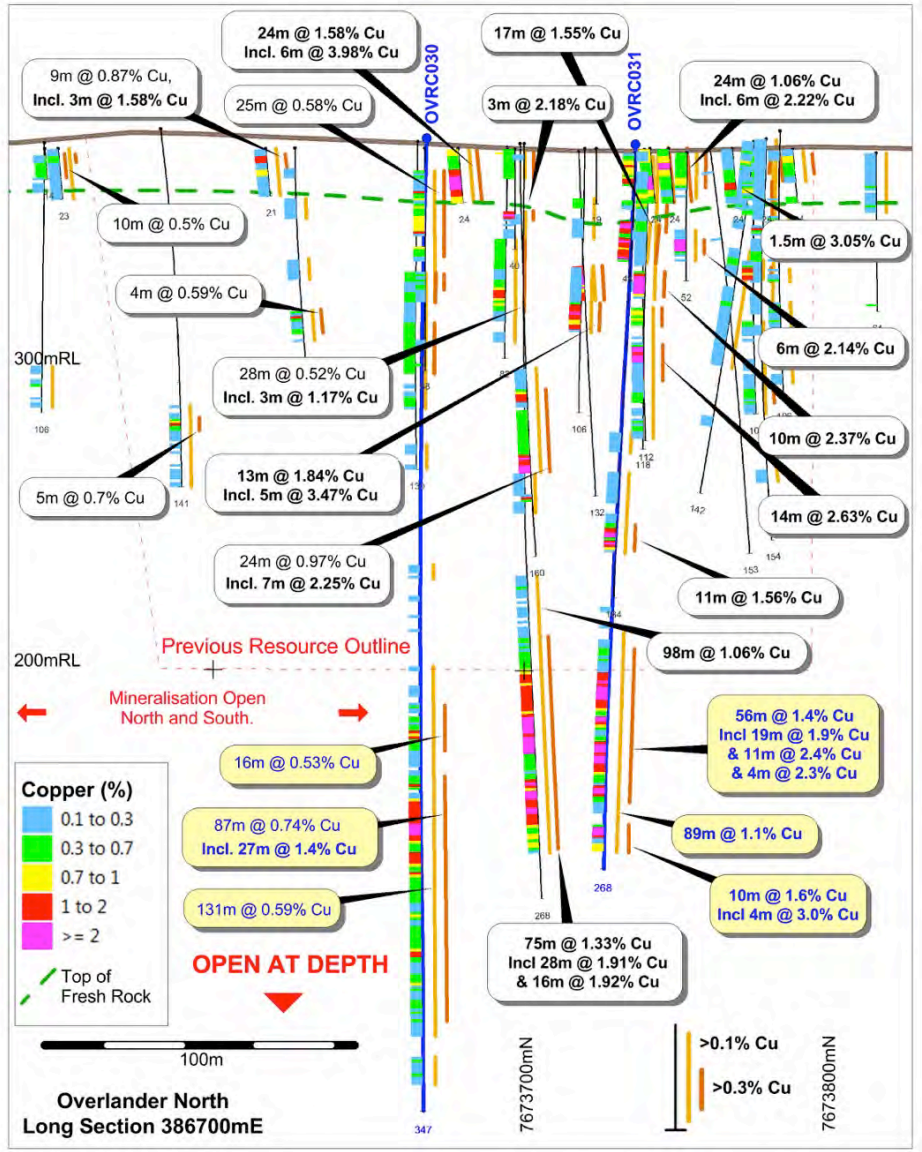
- Last 3 RC holes intersected:

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 1**0m** at **1.6% Cu**

- Open to the North and South as well as at depth.

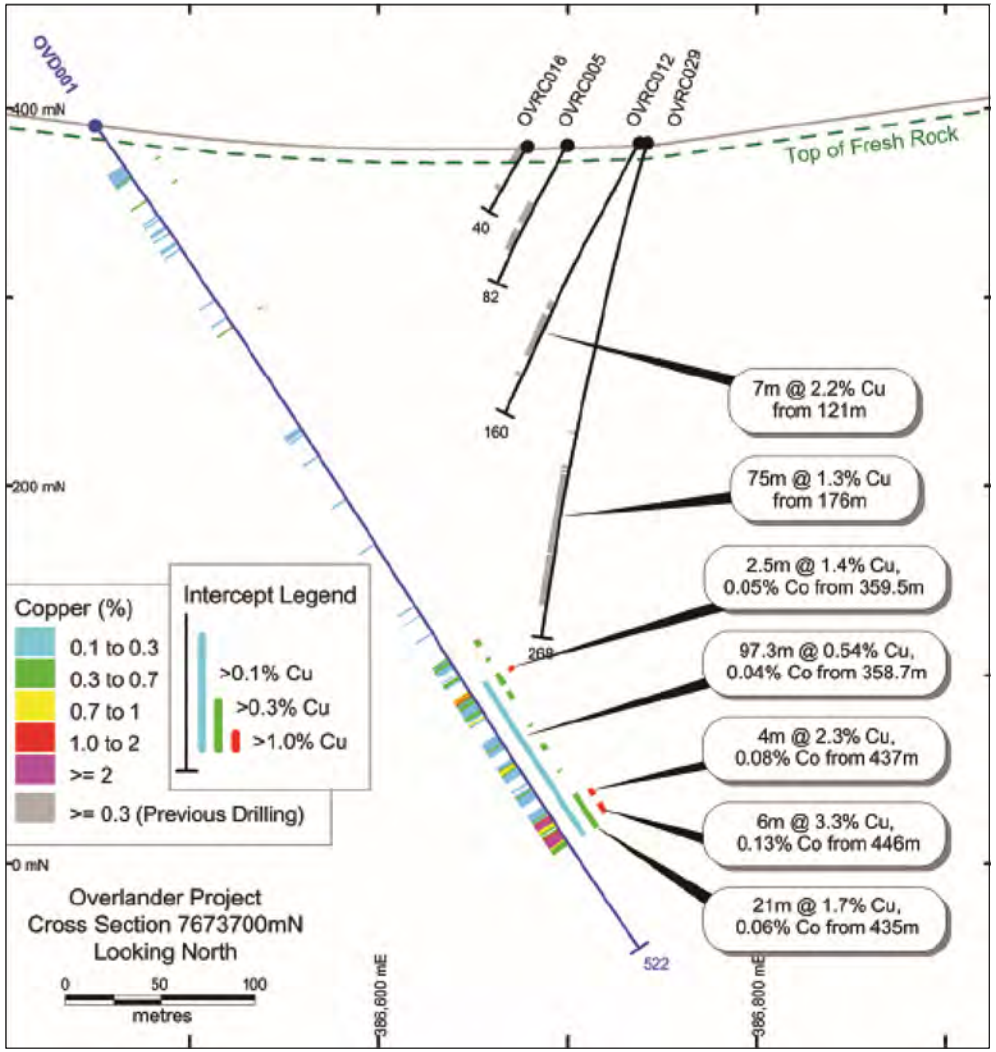


# OVERLANDER NORTH DEPOSIT

First diamond hole drilled in May, two additional holes just completed:

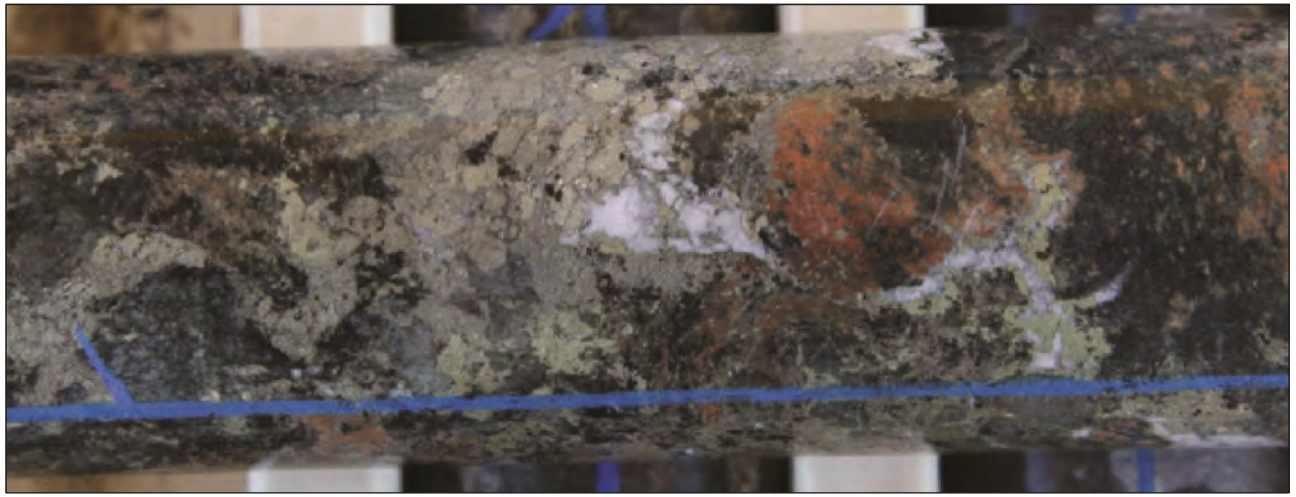
OVD001

- **Intersects IOCG target**
- **21m @ 1.7% Cu from 435m**
- **97.3m @ .54 Cu from 359.5m**



# OVERLANDER DIAMOND HOLE

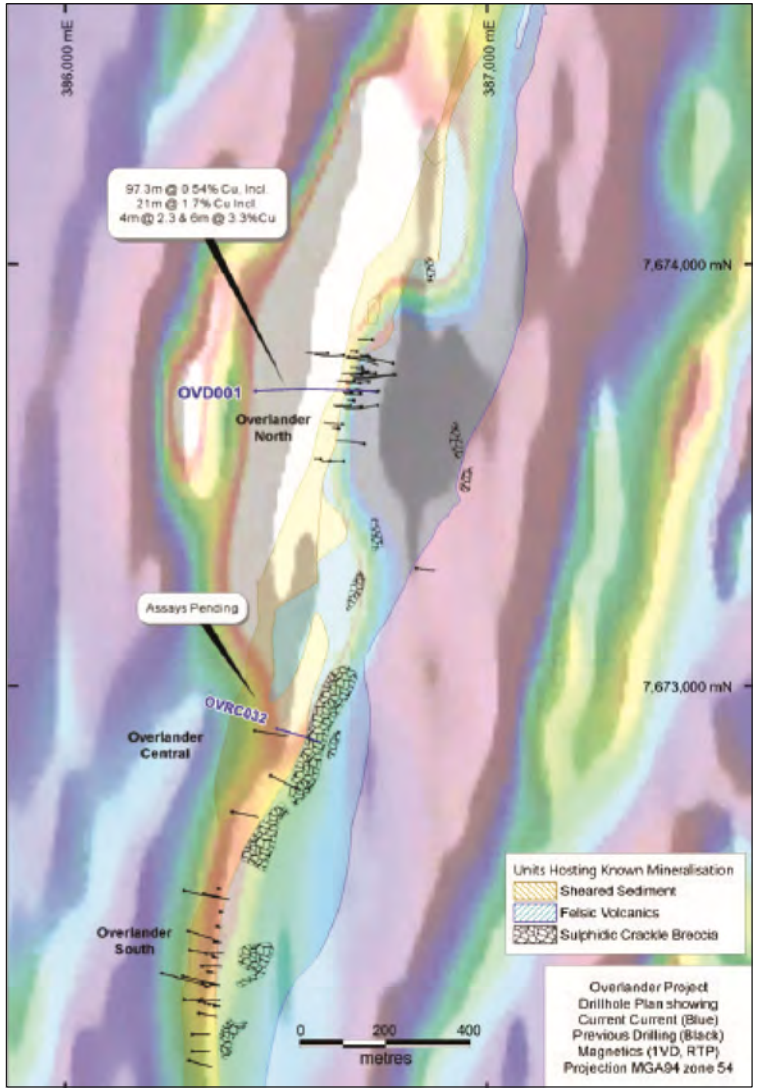
OVD001 - Magnetite, Albite, Chalcopyrite, Pyrite Rock



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

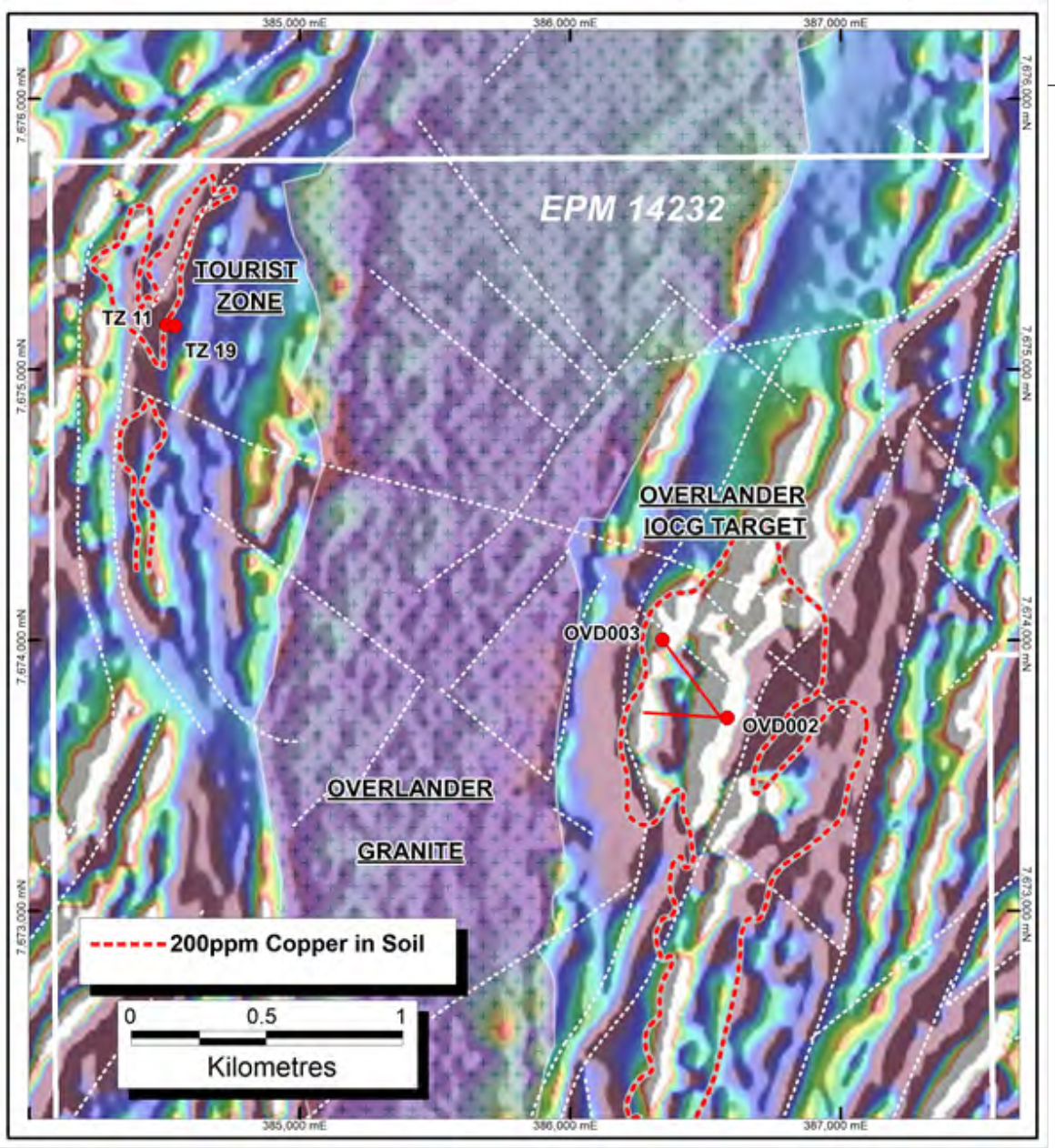
# LARGER SCALE TARGETS AT OVERLANDER

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



# TOURIST ZONE

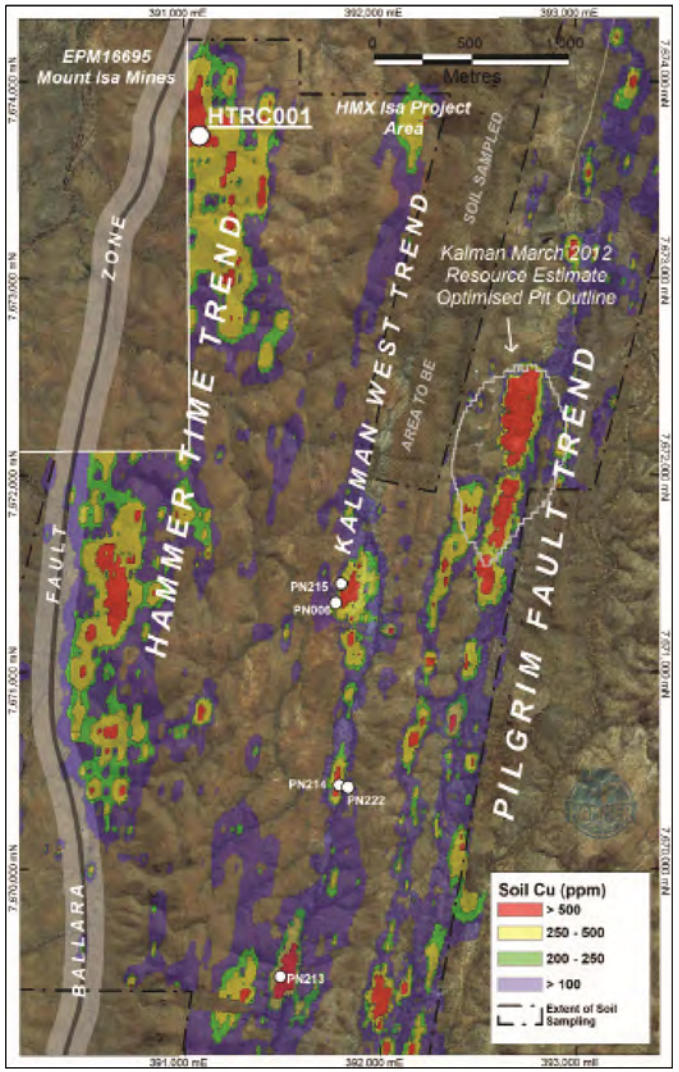
- Similar geological position to Overlander and 2km to west
- Mineralised breccias, silicification and ‘red rock’ alteration
- Previous drilling returned:
  - 26m at 1.04% Cu and 0.24g/t Au in TRC-11 and
  - 35m at 1% Cu and 0.18g/t Au in TRC-19



# HAMMER TIME

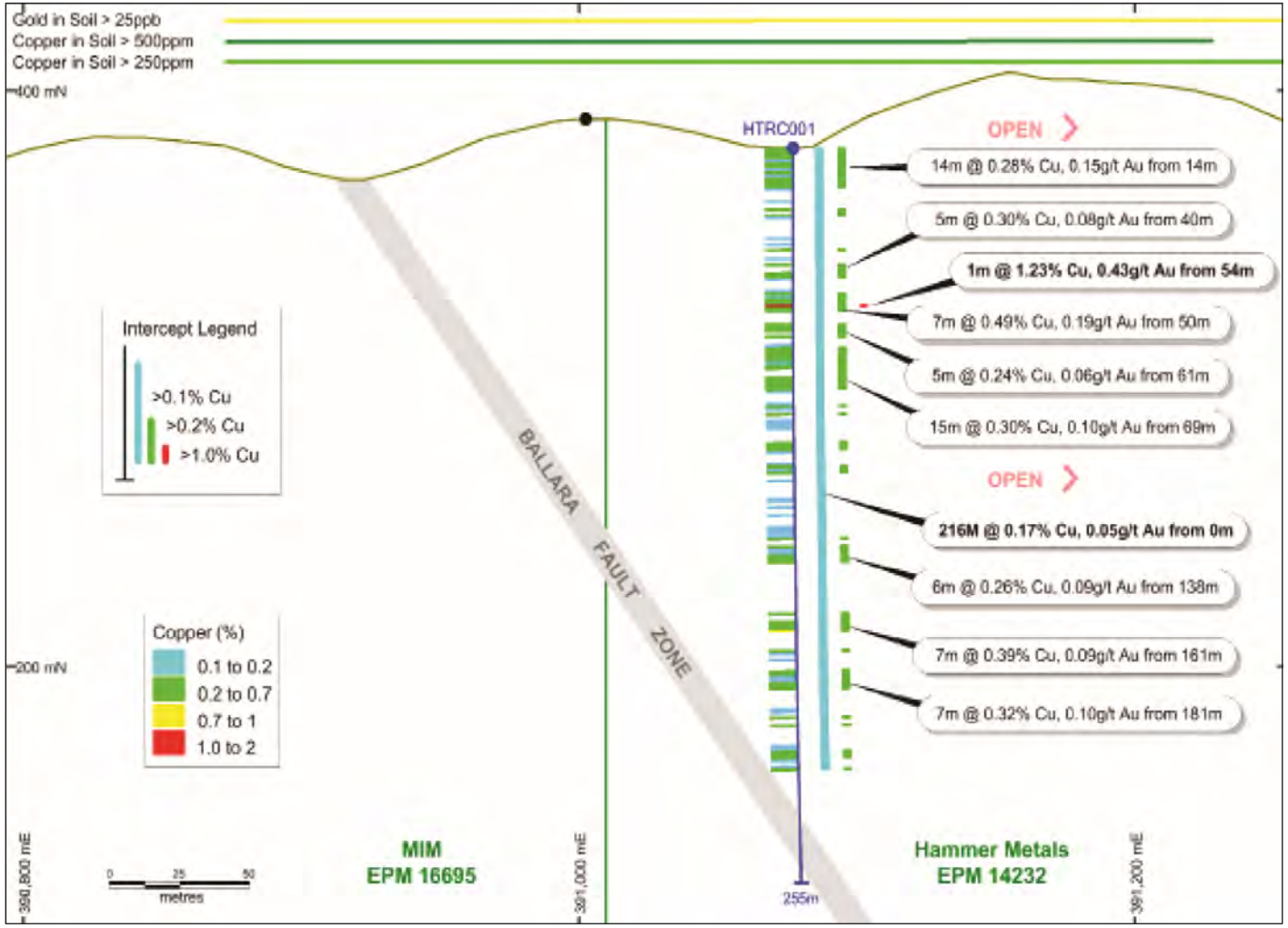
- Coincident soil geochemistry (Cu and Au) and IP anomaly.
- 3.4km in length and 1km in width.
- Prospect crosses the tenement boundary with Glencore Copper.

*[Refer to the Appendix for notes on CuEq grade calculation]*



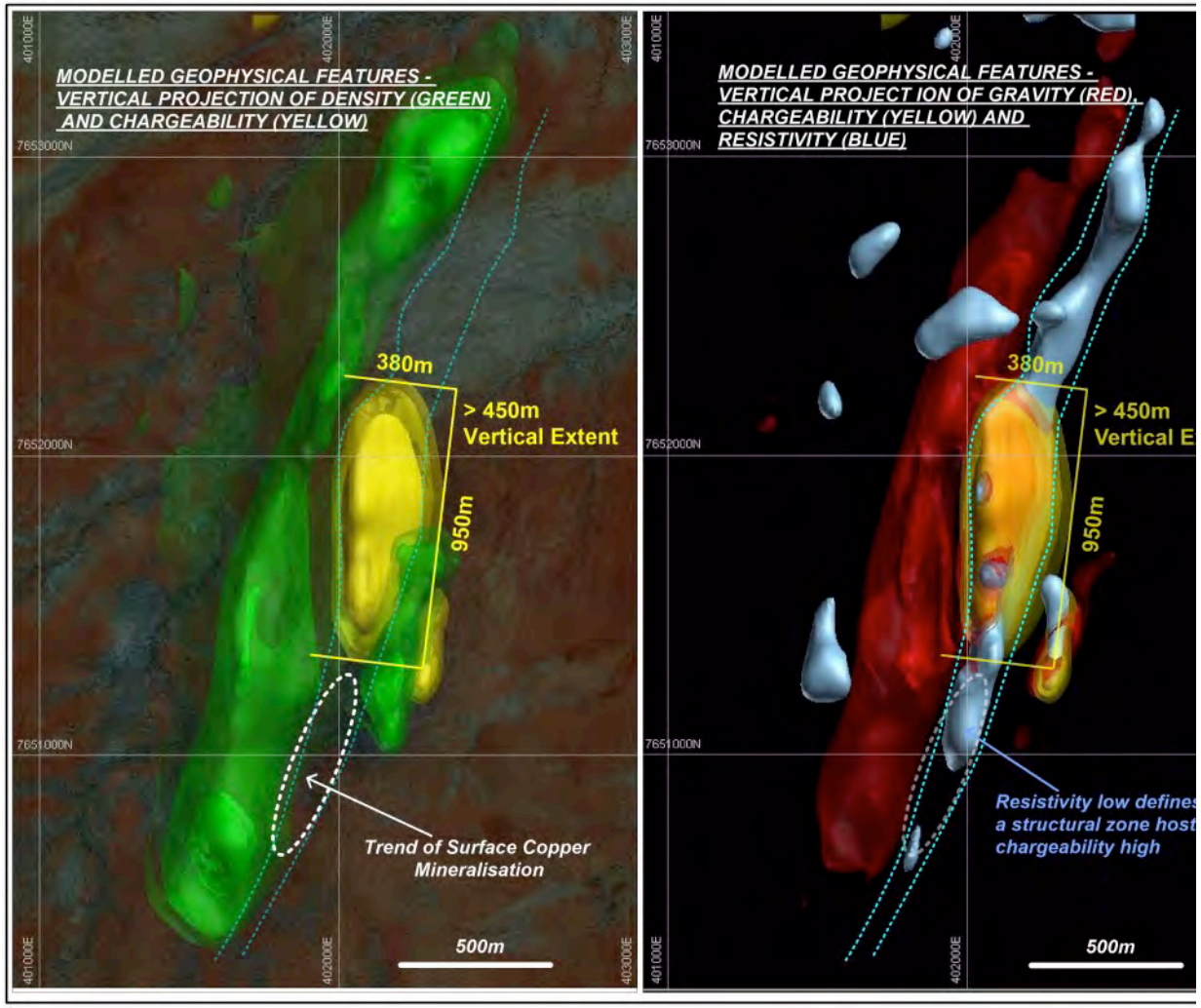
# HAMMER TIME

- Intersected in first RC hole
  - 216m @ 0.17 Cu and 0.05g/tAu



# DRONFIELD

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




***Western Anomaly – Summary of the modelled geophysical features from the NEWDAS survey and the subsequent Joint geophysical inversion***

# 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 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.

To the extent permitted by law, Hammer and its officers, employees, related bodies corporate and agents disclaim all liability, direct, indirect or consequential for any loss or damage suffered by a recipient or other persons arising out of, or in connection with, any use or reliance on this presentation or information.

**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 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.

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 27th September 2016), 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 26 August 2015), 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 September 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.)

**Kalman Deposit Indicated and Inferred 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 | Tonnes kt | CuEq % | Cu % | Au ppm | Ag ppm | Mo % | Re ppm |
|---|---|---|---|---|---|---|---|---|
| Indicated | Open Pit | 7,100 | 1.5 | 0.48 | 0.27 | 1.4 | 0.12 | 2.9 |
| Inferred | Open Pit | 6,200 | 1.6 | 0.44 | 0.24 | 1.5 | 0.15 | 3.9 |
| Inferred | Underground | 7,000 | 2.4 | 0.89 | 0.50 | 2.9 | 0.16 | 4.5 |
| **Total** | | **20,000** | **1.8** | **0.61** | **0.34** | **1.9** | **0.14** | **3.7** |

- *Note: (1) Numbers rounded to two significant figures*
- *Note: (2) Totals may differ due to rounding*
- *Note: (3) (CuEq = Cu + 0.864268Au + 0.011063Ag + 4.741128Mo + 0.064516Re)*

Copper equivalent (CuEq) grades were calculated using estimated block grades for Cu, Au, Ag, 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 14/05/2016 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
- Re: US$3,000/kg

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 + 0.864268Au + 0.011063Ag + 4.741128Mo + 0.064516Re 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[(1)] 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.