



**ASX:RDM**

**Sybella REO Discovery  
An Emerging Giant  
Heap Leach Play  
Mount Isa Region**

**14 NOVEMBER 2024**

# Sybella Discovery

## Corporate Snapshot



### ASX Code

RDM

### Shares on Issue

359,656,578

### Share Price 14 November 2024

11 cents

### Market Cap

\$40M

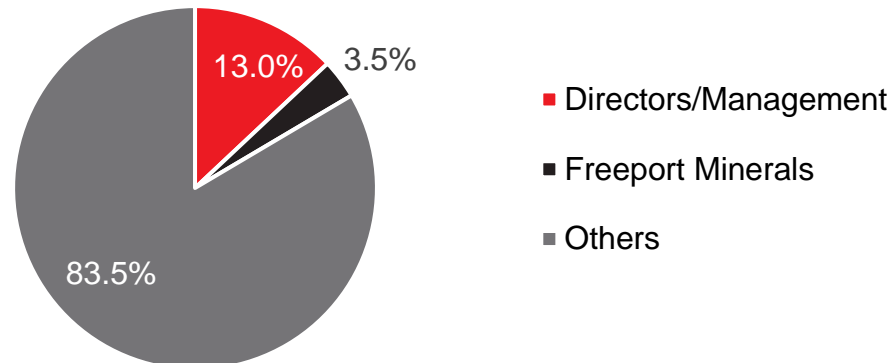
### Cash (Current)

\$6.5M

### Board Of Directors & Senior Management

Rob Rutherford	Managing Director
Russell Barwick	Chairman (non exec)
Joshua Pitt	Director (non exec)
Kim Grey	Exploration Manager
Patrick Flint	Company Secretary

### Substantial Shareholders



### Share Price & Trade Volume: 7/11/2022 – 7/11/2024



**2025**

# Near-Term News Flow



Project		Q1 25	Q2 25	Q3 25	Comments
<b>Sybella</b>	New REO Discovery	Ongoing met test work Mining study initiated Infill drilling assays	Additional infill drilling Indicated Resource	Mining study results	Mount Isa QLD
<b>Gulf</b>	Copper-Gold			Drilling	Ernest Henry types
<b>Yarrie</b>	Copper-Gold	Heritage	Initiate Drilling		Winu/Havieron types
<b>Pardoo</b>	Gold/Lithium			Drilling	Hemi types

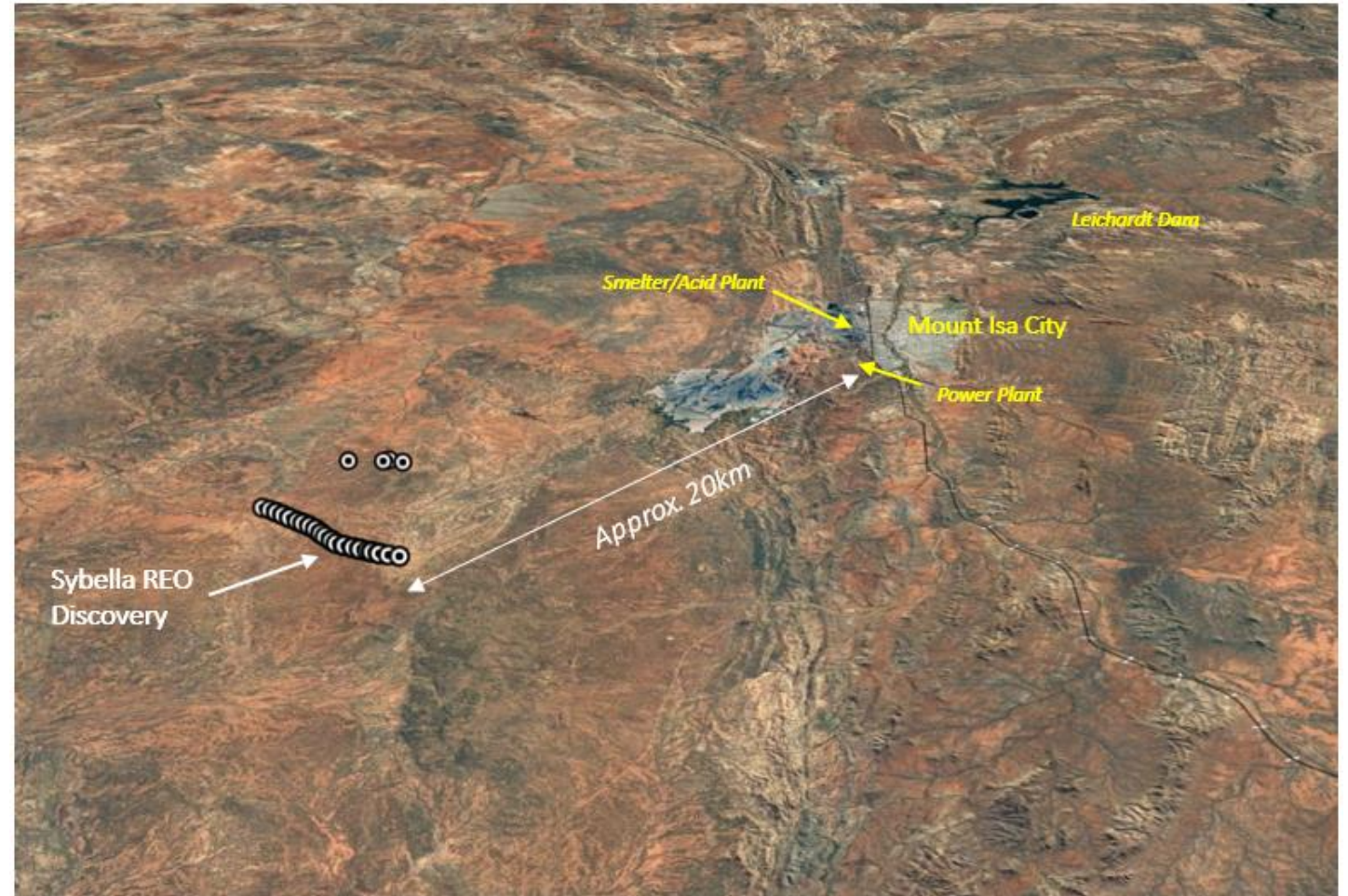
Asset	44% Equity	Q1	Q2	Q3	Comments
<b>Maronan ASX: MMA</b>	Advanced Silver-Lead Copper-Gold	Finalise Indicated Resource Drilling on Stater Zone	Resource Review on Starter Zone	Advanced Mining Study	Two 30Mt ore bodies 100m from surface

# Sybella Discovery

A 'World First' in Northwest Queensland

## New REO Deposit Style

- Just 20 kilometres southwest of Mount Isa with excellent infrastructure options





## Globally Two General REO Project Types Emerging

Complex High Temperature	Simple Low Temperature Leachable
<ul style="list-style-type: none"><li>• Monazite/Apatite Carbonatites</li><li>• Monazite Heavy Mineral Sands</li></ul>	<ul style="list-style-type: none"><li>• Clay-Hosted Ionic</li><li>• Clay-Hosted Non-Ionic</li><li>• Granite-Hosted “Sybella Discovery”</li></ul>
<ul style="list-style-type: none"><li>• High Capital Cost</li></ul>	<ul style="list-style-type: none"><li>• Potential Low Capital Cost</li><li>• Potential Low Operating Cost</li></ul>

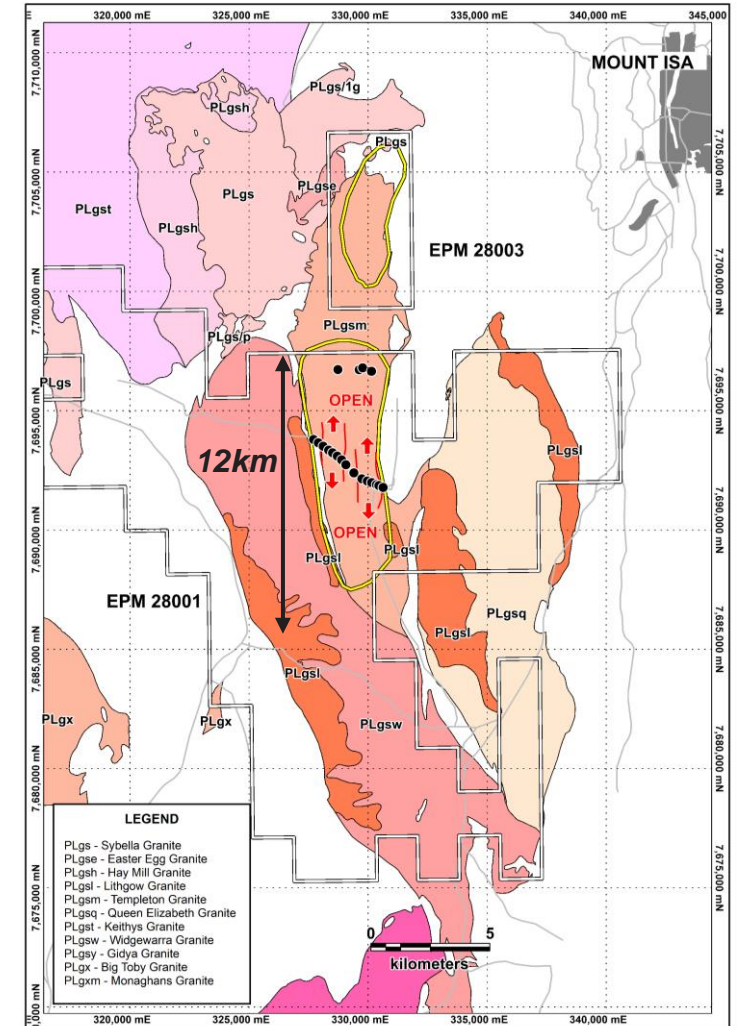
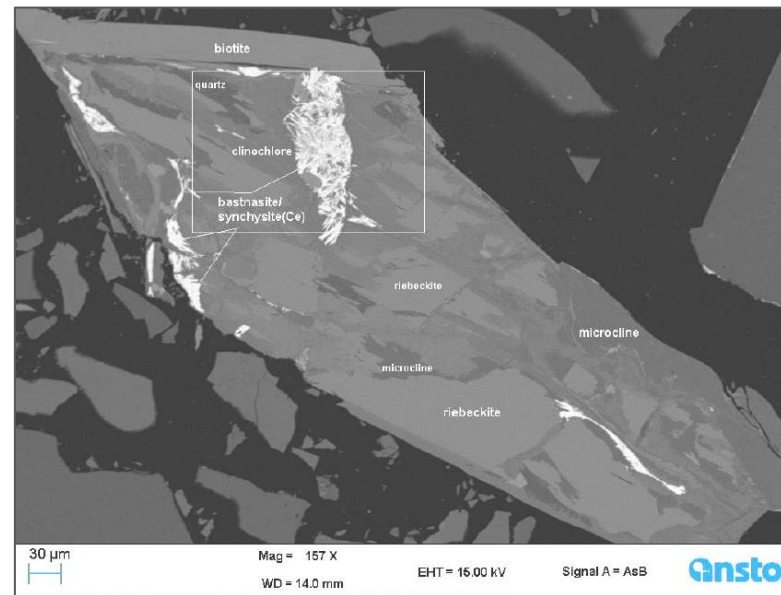
# Sybella Discovery

## A 'World First' in Northwest Queensland



### New REO Deposit Style

- Hosted in REO-enriched granite
- 12km long x 3km wide
- Bulk of REE's in soluble fluoro-carbonate minerals
- Soluble ore mineral in low acid consuming granite rock
- Amenable to heap leach processing



“*Metallurgical Nirvana*”





Weathered Granite  
Base Lower Saprolite

Metallurgical  
Boundary

Transitional - Part Weathered  
& Part Fresh Granite

Fresh Granite



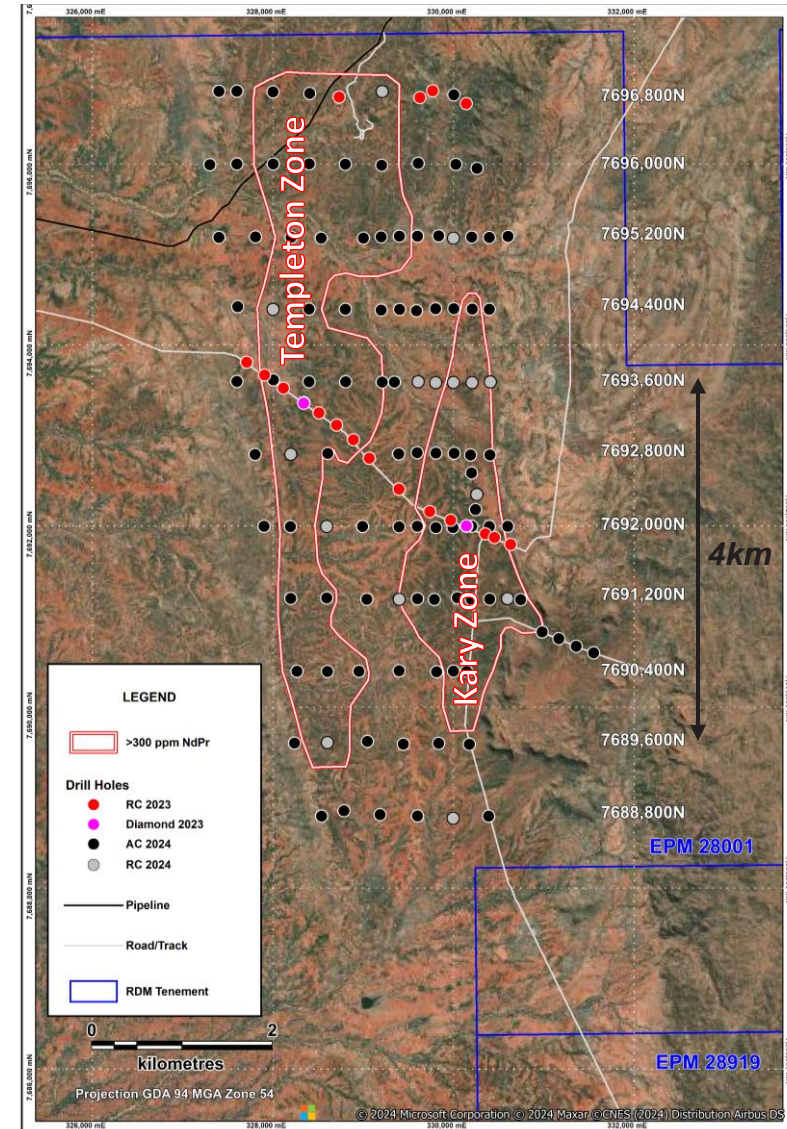
# Sybella Discovery

## Step-Out Drilling Recently Completed



### Regular Coverage

- 8.4km x 3km area of the granite
- 800m x 200m and 800m x 400m hole spacing
- Set depth 60m holes, some locally drilled deeper to 120m and 240m
- Designed to outline the tonnage potential and grade variations and obtain metallurgical samples for further research



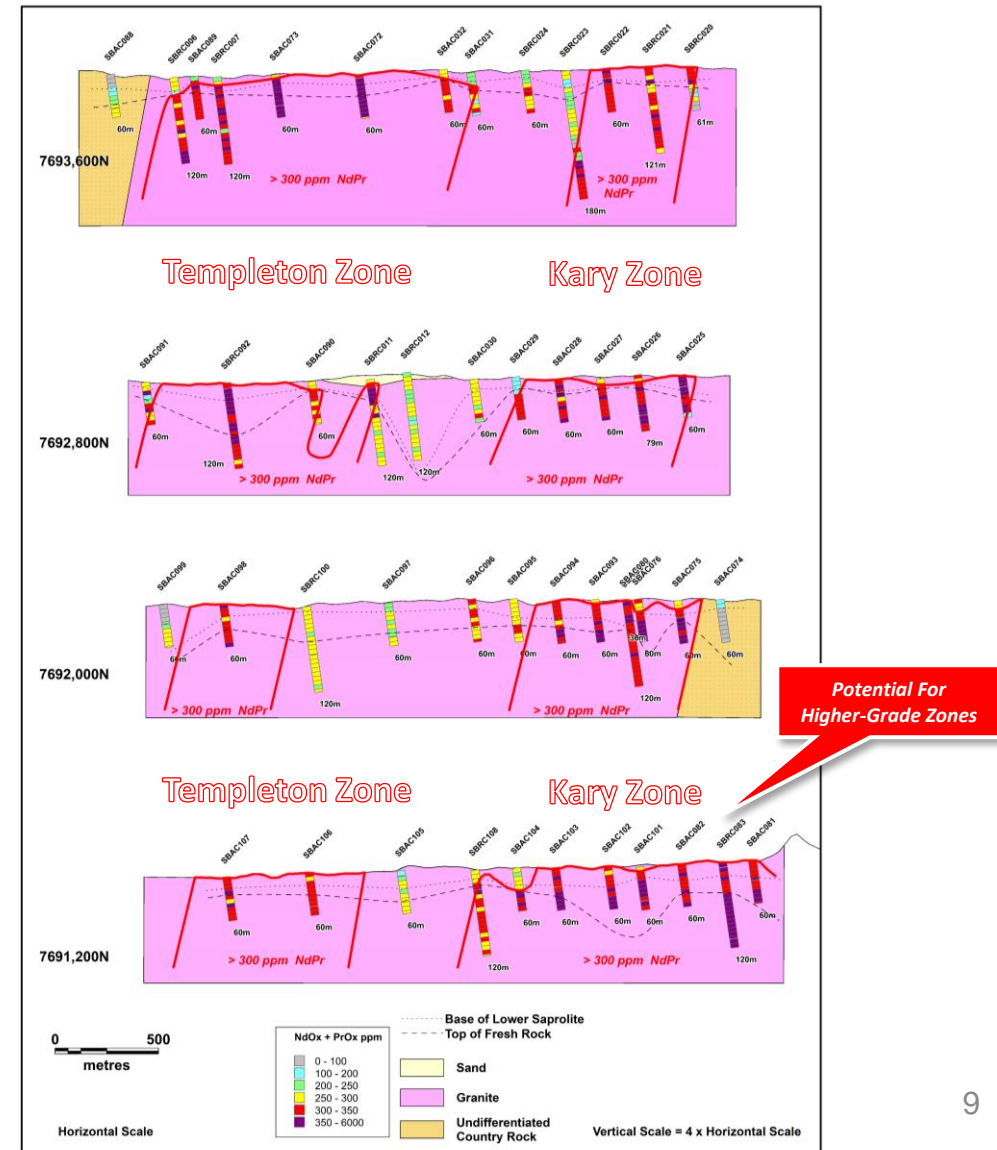


# Sybella Discovery

## Step-Out Drilling Results

### Confirms Vast Tonnage Potential

- NdPr > 300ppm - two separate zones
- Kary Zone (East)
  - 4.8km long, up to 1.5km wide
- Templeton Zone (West)
  - 7.2 km long, 400m-1.6km wide

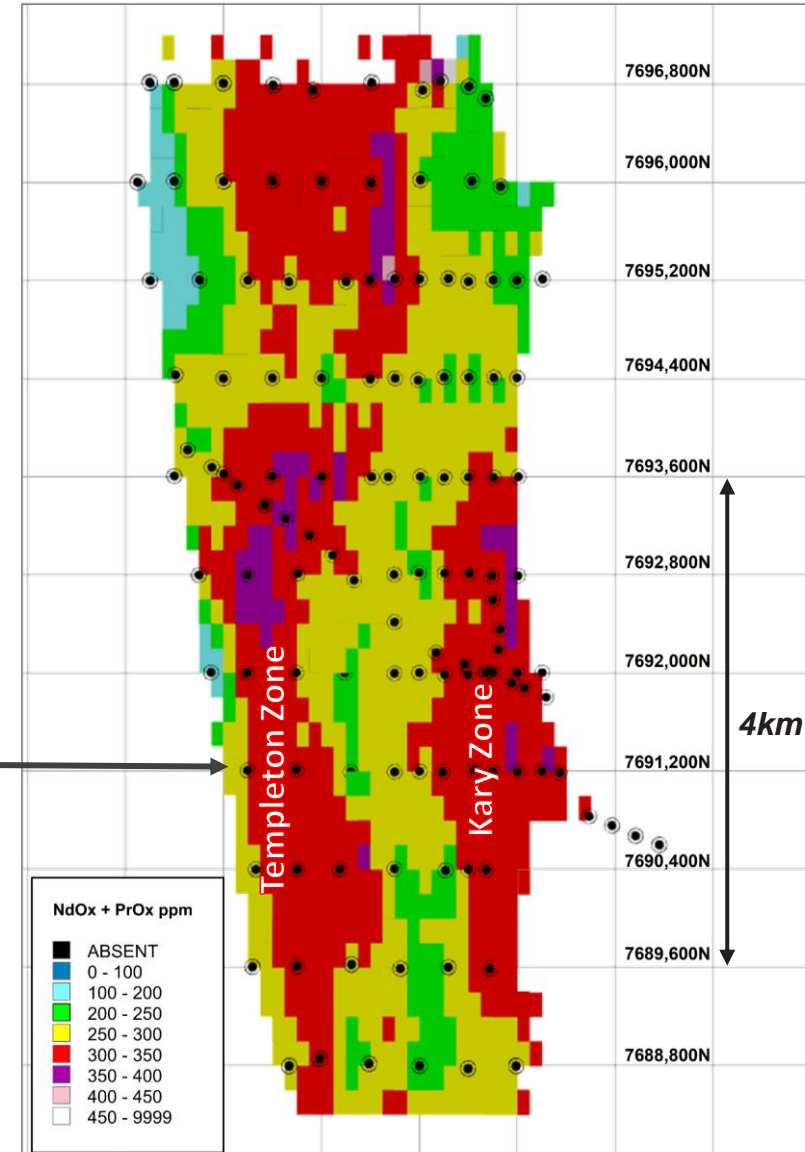
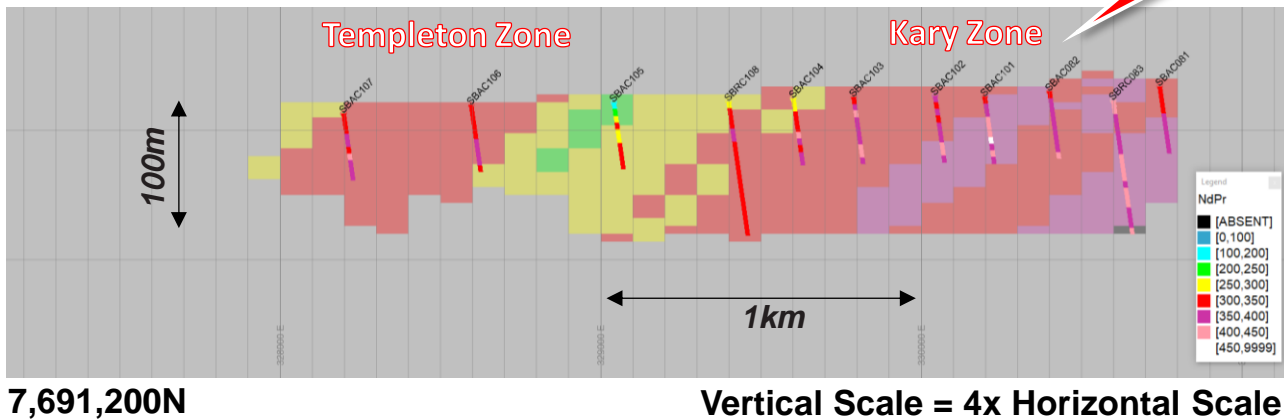


# Sybella Discovery

## Inferred Mineral Resource Estimate

### Confirms Giant Status

- Block model 100m x 200m x 6m
- 8.4km long x 2.7km wide



# Sybella Discovery

## Inferred Mineral Resource Estimate



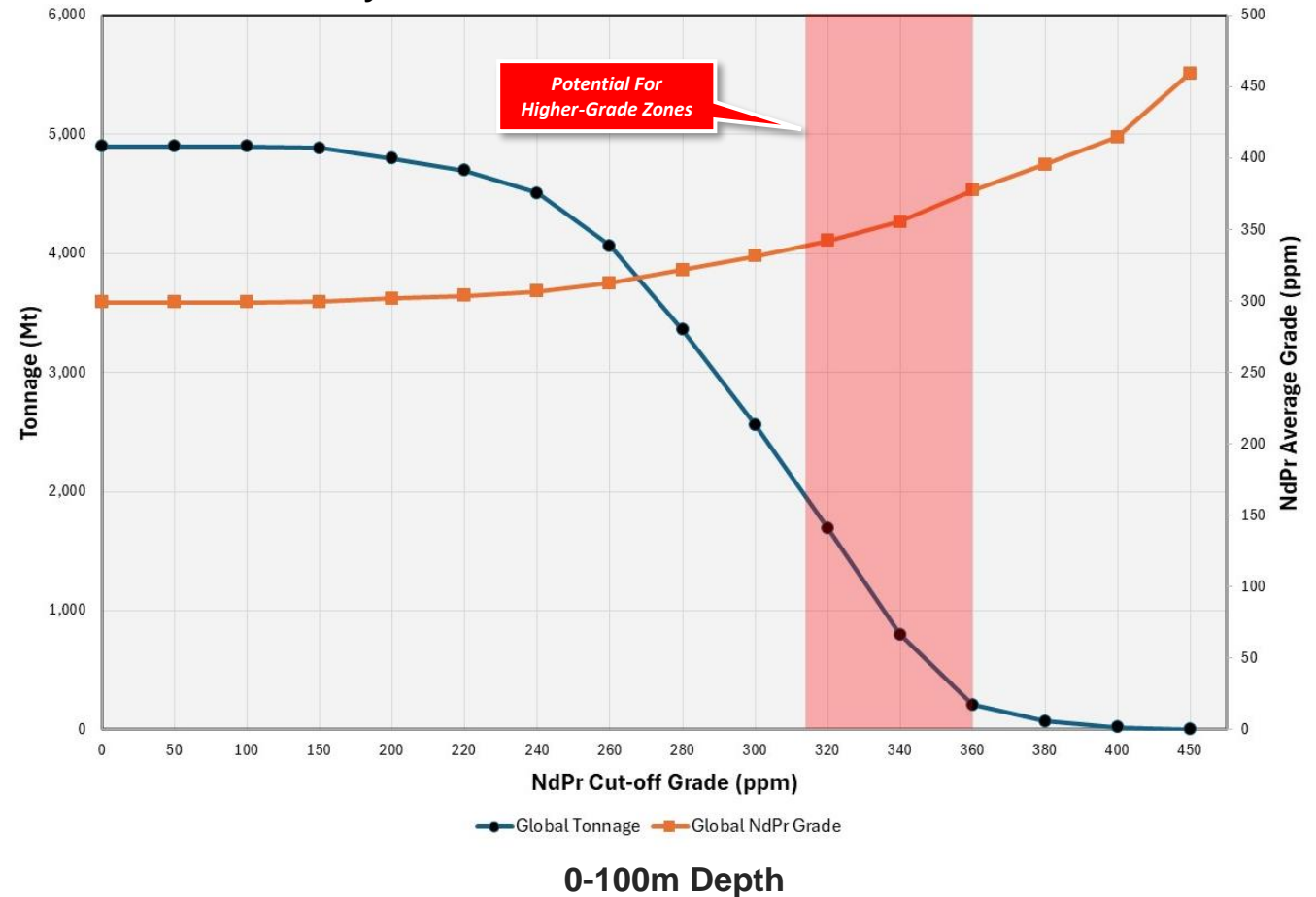
### Confirms Giant Status

- **4.795 Bt** at 302 ppm NdPr, 28 ppm DyTb (200 ppm NdPr cut-off grade)
- **2.558 Bt** at 331 ppm NdPr, 31 ppm DyTb (300 ppm NdPr cut-off grade)
- **801 Mt** at 356 ppm NdPr, 33 ppm DyTb (340 ppm NdPr cut-off grade)
- **209 Mt** at 377 ppm NdPr, 34 ppm DyTb (360 ppm NdPr cut-off grade)

### DyTb

- 21% MREO basket value
- Adding to NdPr equivalent grade

Sybella Total Global Inferred Mineral Resource





# Sybella Discovery

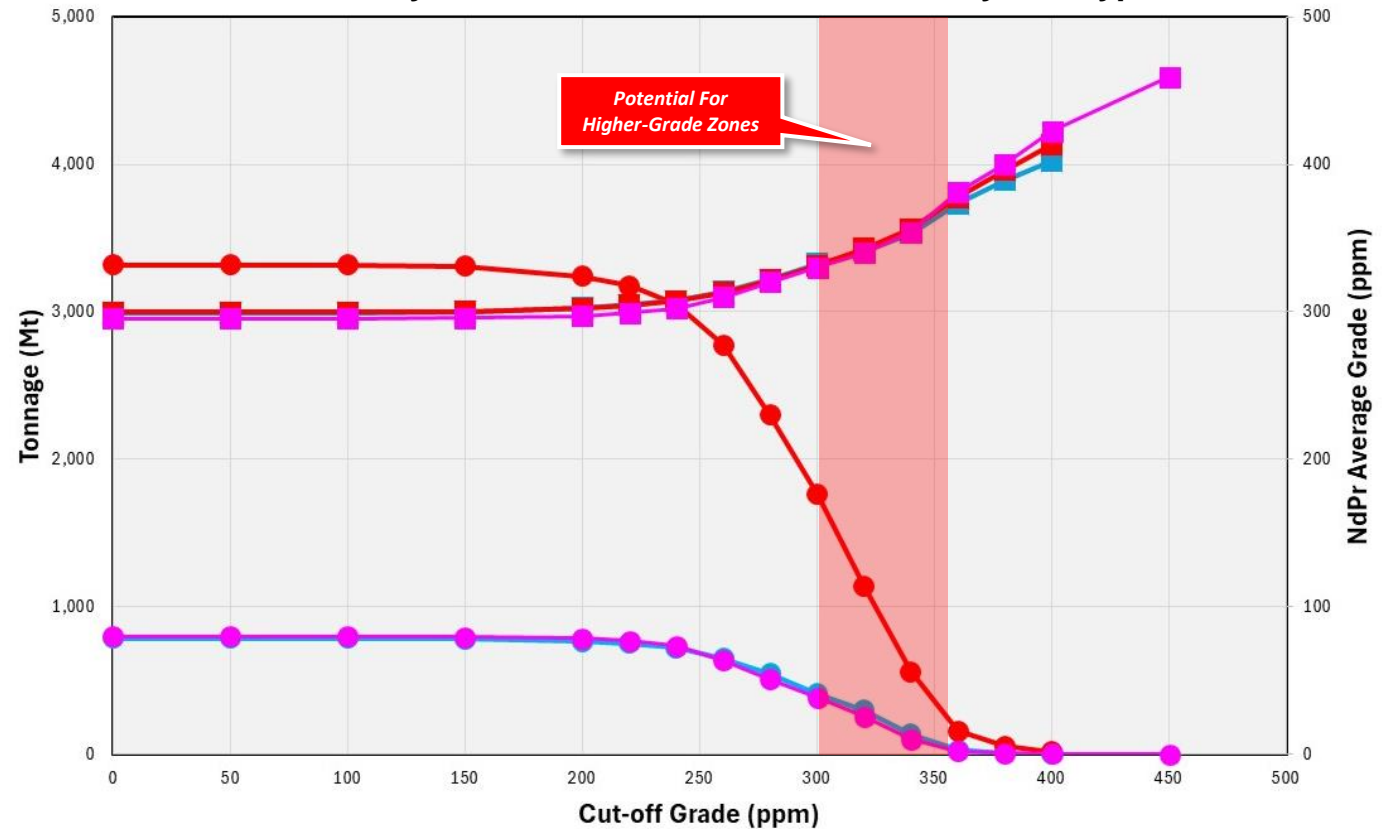
## Inferred Mineral Resource Estimate



### Weathered Granite

- **788 Mt** at 297 ppm NdPr, 28 ppm DyTb (200 ppm NdPr cut-off grade)
- **384 Mt** at 330 ppm NdPr, 30 ppm DyTb (300 ppm NdPr cut-off grade)
- **103 Mt** at 354 ppm NdPr, 33 ppm DyTb (340 ppm NdPr cut-off grade)

Sybella Inferred Mineral Resource By Ore Types



● Million Tonnes Weathered Granite    ● Million Tonnes Transitional Granite    ● Million Tonnes Fresh Granite  
 ■ NdPr Grade Weathered    ■ NdPr Grade Transitional Granite    ■ NdPr Grade Fresh Granite

# Sybella Discovery

## Two Heap Leach Options Emerging



### Weathered Granite

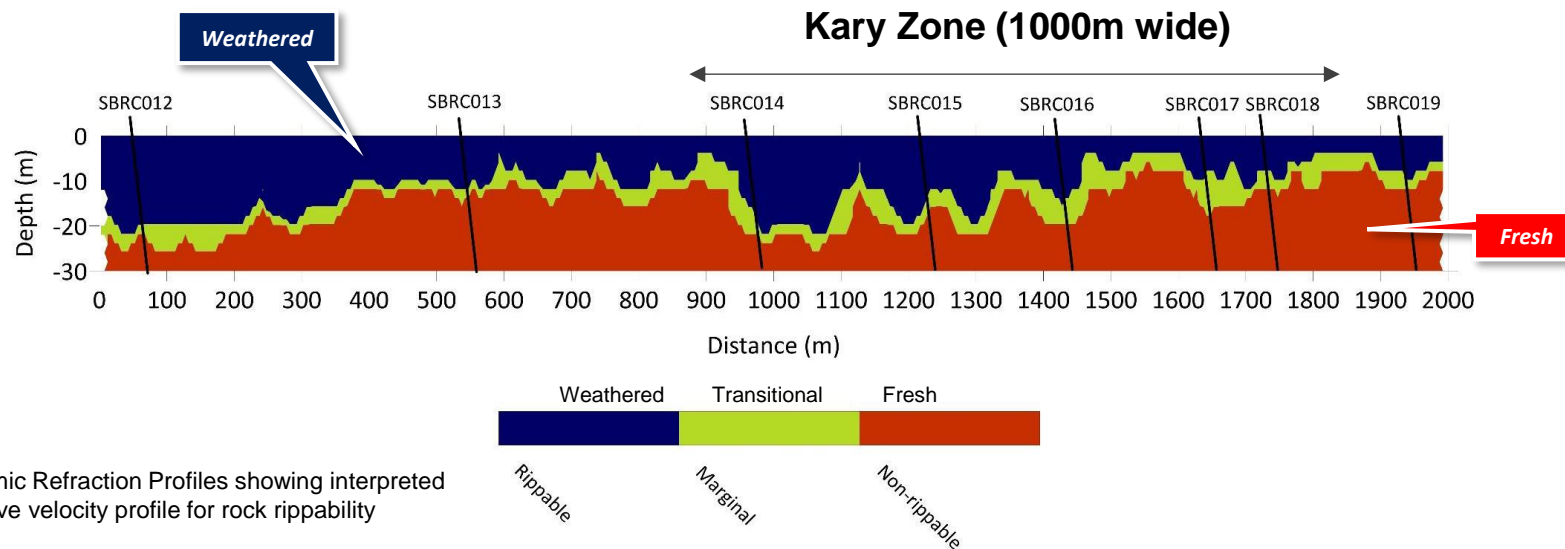
- Sulphuric acid pH 1.3-2
- ~70-90% REO extraction
- Manageable Fe and Al extraction
- Soft broken ore
- Premium MREC precipitated

### Fresh Granite

- Sulphuric acid pH 2-3.0
- Testing higher pH and increased residence times to lower Fe and Al extraction
- Optimisation in progress



Maiden MREC Product



+15mm Crushed Fresh Granite

# Sybella Discovery

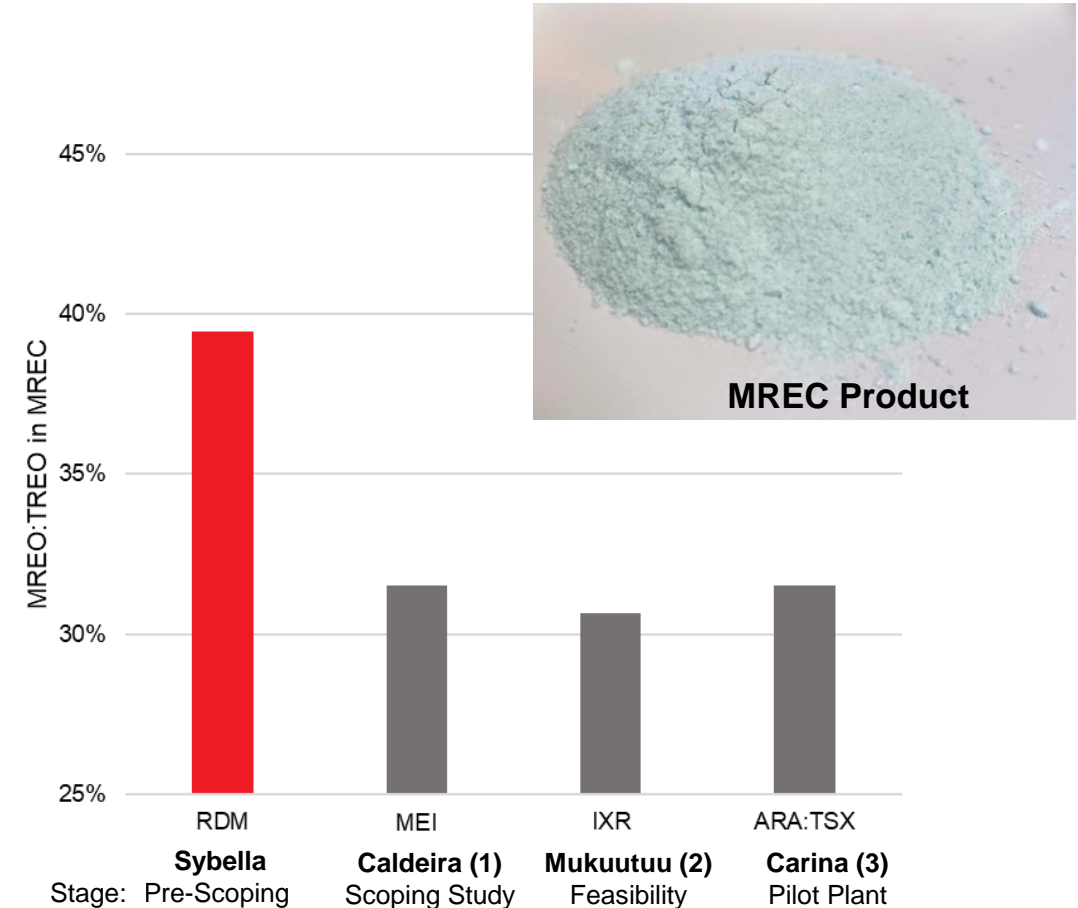
## Maiden Mix Rare Earth Carbonate (MREC)



### Innovative Impurity Removal

- pH1.3 -1.7 leachate from weathered granite (high in Fe and Al)
- 48.7% TREO
- 39.5% of TREO as magnetic minerals (Nd, Pr, Dy, Tb)
- Potential for premium product
- DyTb 21% MREO basket value

- 1) Meteoric Resources Limited. (29 February 2024). *First Mixed Rare Earth Carbonate (MREC) Produced for Caldeira REE Project*. [ASX Announcement]
- 2) Ionic Rare Earths Ltd. (20 March 2023). *MAKUUTU STAGE 1 DFS CONFIRMS TECHNICAL AND FINANCIAL VIABILITY FOR SUSTAINABLE, LONG-LIFE SUPPLY OF MAGNET AND HEAVY RARE EARTHS, MAIDEN ORE RESERVE ESTIMATE*. [ASX Release].
- 3) GE21 Consultoria Mineral Ltda. (22 January 2024). *Preliminary Economic Assessment CARINA RARE EARTH ELEMENT PROJECT*. [NI 43-101 Technical Report].



Peer comparison showing MREO content as percent of TREO content in the final product



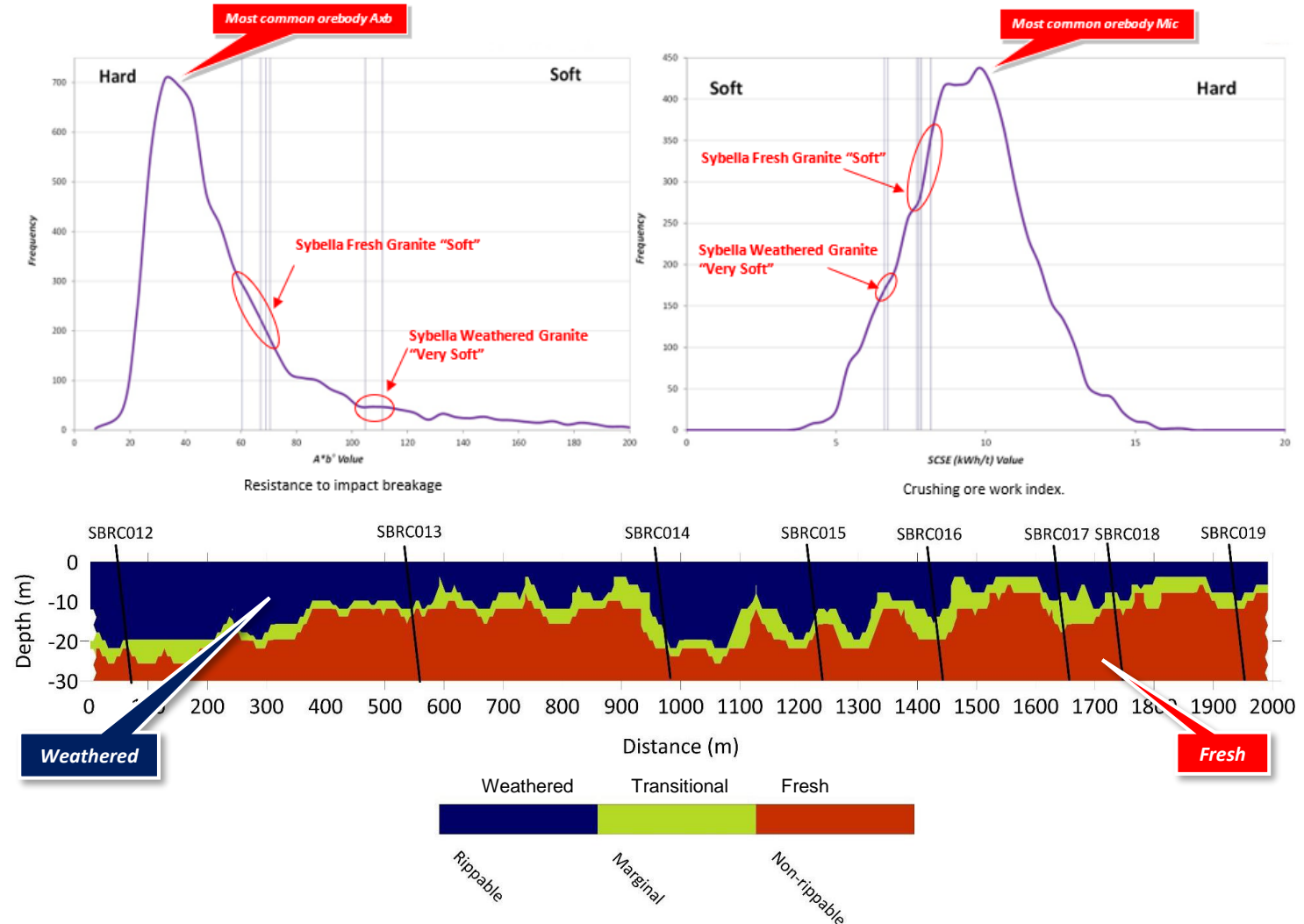
# Sybella Discovery

## Weathered or Fresh Granite Easy to Crush



### Comminution SMC Tests

- -10mm crushed rock is “Very Soft” when weathered and “Soft” when fresh
- Suitable for simple low energy crushing circuit involving gyratory, jaw and/or cone crushers
- Should translate into low crushing and mining costs



Seismic Refraction Profiles showing interpreted P-wave velocity profile for rock rippability

### Sybella Aspiration

- Heap leach
- 10-30Mtpa processing throughput
- Weathered and Fresh
- 300-400 ppm NdPr Equ.
- 60%-90% NdPr Recovery
- P80 10-20mm
- Residence time >100 days
- Leach pH 1.3-3.0

Operating Parameters From Two Current Copper Heap Leach Producers

Parameter	Freeport-McMoRan Morenci Crushed Heap Leach		BHP Escondida Oxide Heap Leach	
	Value	Ref.	Value	Ref.
Throughput (mtpa)	26	1	20	4
Head grade (wt% Cu)	0.36	2	0.55	5
Cu Recovery (%)	82	2	62	5
Crush Size (P <sub>80</sub> mm)	40	3	19	5
Heap Residence Time (days)	-		150	5
Leach pH	-		1.3	6

1 - Freeport-McMoRan. *North America Morenci*. [https://www.fcx.com/operations/north-america#morenci\\_link](https://www.fcx.com/operations/north-america#morenci_link)

2 - Freeport-McMoRan. (2024). *Technical Report Summary of Mineral Reserves and Mineral Resources for Morenci Mine*. <https://www.fcx.com/sites/fcx/files/documents/operations/TRS-morenci.pdf>

3 - Dresher, W.H. (2001). *Phelps Dodge Morenci Has Converted All Copper Production to Mine-for-Leach*. <https://www.copper.org/publications/newsletters/innovations/2001/08/phelpsdodge.html>

4 - Ausenco. *Escondida Copper Mine: Oxide leach expansion project*. <https://ausenco.com/projects/escondida-copper-mine-oxide-leach-expansion-project/>

5 - BHP. (2022). Title: Technical Report Summary – Minera Escondida Limitada SEC S-K 229.1300 Technical Report Summary. <https://minedocs.com/23/Escondida-TR-6302022.pdf>

6 -Galleguillos Pérez, P. (2011). *Biodiversity and stress response to extremophilic prokaryotes isolated from the Escondida Copper Mine, Chile*. <https://research.bangor.ac.uk/portal/files/20575516/null>

# Sybella Discovery

## Accelerated Exploration Programs



### Localised Indicated Resource Drilling

- Initiated infill drilling on Kary Zone (Q4 2024)
- Addition infill drilling (Q2 2025)

### Metallurgical Test Work - Weathered Granite

- Bottle roll optimisation (Initiate Q4 2024)
- Bottle roll variability Kary Zone (Q1/Q2 2025)
- Expand variability test work (Q2 2025)

### Metallurgical Test Work on Drill Core – Fresh Granite

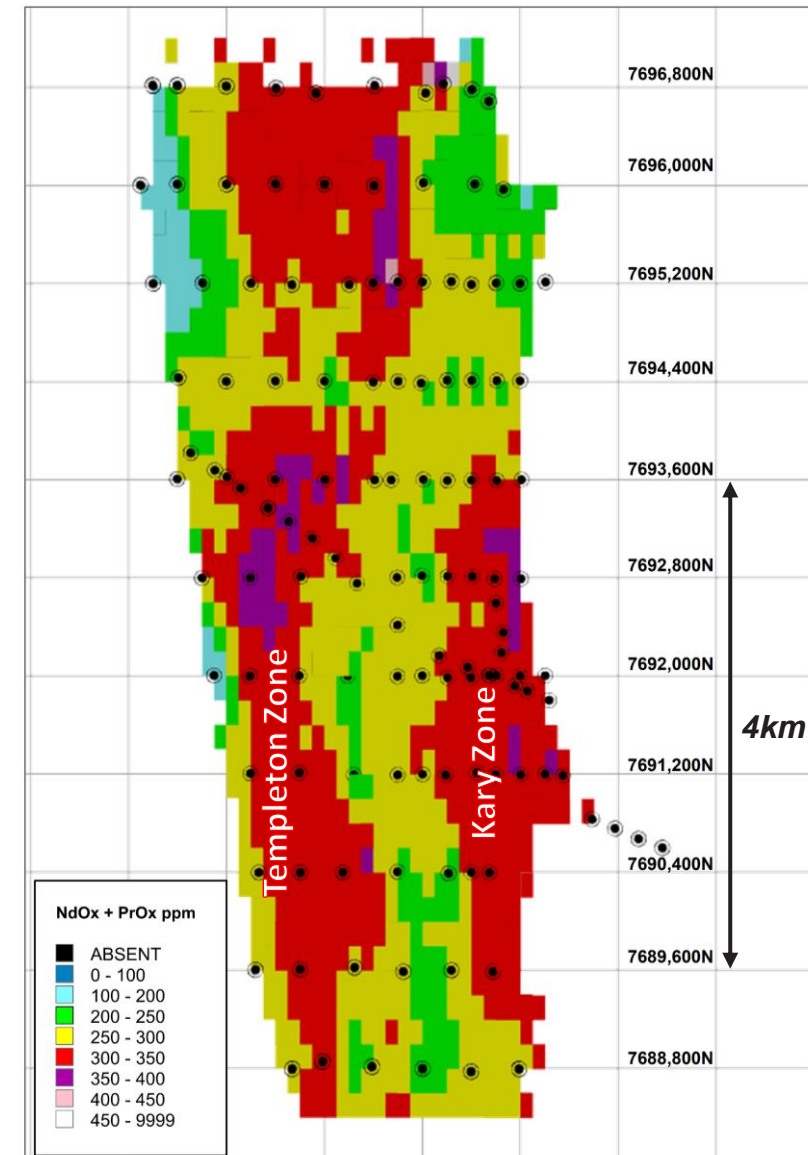
- Initial weak acid column tests (In Progress)

### Mining Study

- Initiate mining study (Results Q3 2025)

### Seek Alternative Funding

- State/Federal Government grants
- End users





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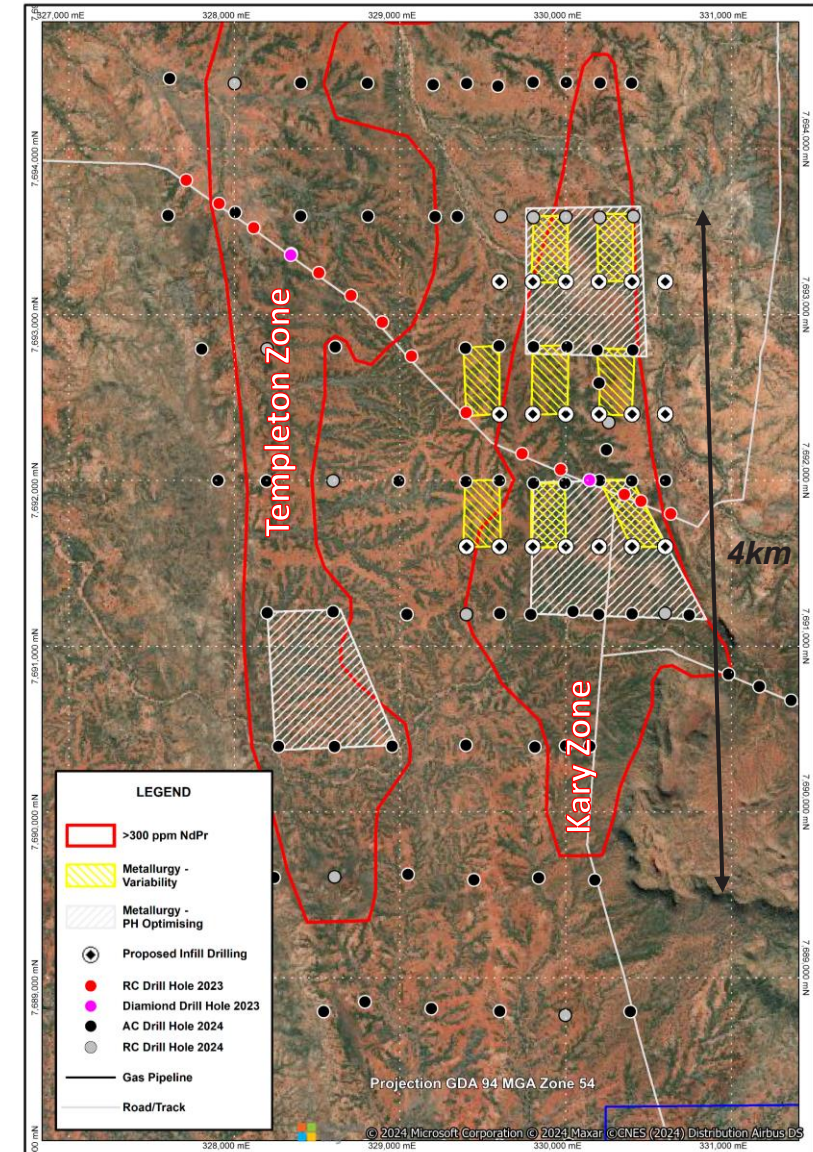
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## **This Presentation was Authorised by the Board of Red Metal.**

### **Caution Regarding Forward-Looking Statements.**

This Presentation contains forward-looking statements which are identified by words such as 'may', 'could', 'potential for', 'scope for', 'opportunity for', 'believes', 'expects', or 'intends' and other similar words that involve risks and uncertainties.

These statements are expressed in good faith and believed to have a reasonable basis, and are based on a number of assumptions regarding future events and actions that, as at the date of this Presentation, are expected to take place.

Such forward-looking statements are not guarantees of future performance and involve known and unknown risks, uncertainties, assumptions and other important factors, many of which are beyond the control of the Company, the Directors and the Company's management.

The Company cannot and does not give any assurance that the results, performance or achievements expressed or implied by the forward-looking statements contained in this Presentation will actually occur and investors are cautioned not to place undue reliance on these forward-looking statements.

The Company has no intention to update or revise forward-looking statements, or to publish prospective financial information in the future, regardless of whether new information, future events or any other factors affect the information contained in this Presentation, except where required by law.

These forward-looking statements are subject to various risk factors that could cause the Company's actual results to differ materially from the results expressed or anticipated in these statements.

## Competent Persons Statement

The information in this report that relates to Exploration Results is based on and fairly represents information and supporting documentation compiled by Mr Robert Rutherford, who is a member of the Australian Institute of Geoscientists (AIG). Mr Rutherford is the Managing Director of the Company. Mr Rutherford 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” (the JORC Code). Mr Rutherford consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

The information in this report that relates to Exploration Results and estimates of Mineral Resources for the Sybella Project was previously reported by the Company in compliance with JORC 2012 in various market releases with the last one being dated 21 October 2024. The Company confirms that it is not aware of any new information or data that materially affects the information included in those earlier market announcements and, in the case of the estimate of Mineral Resources all material assumptions and technical parameters underpinning the estimates continue to apply and have not materially changed.

The information in this report that relates to Exploration Results and estimates of Mineral Resources for the Maronan Project was previously reported by the Company and its controlled entity Maronan Metals Limited in compliance with JORC 2012 in various market releases with the last one being dated 7 August 2024. The Company confirms that it is not aware of any new information or data that materially affects the information included in those earlier market announcements and, in the case of the estimate of Mineral Resources all material assumptions and technical parameters underpinning the estimates continue to apply and have not materially changed.





## Red Metal Limited

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