



ASX:RDM

**New Sybella REO Discovery
Mount Isa Region**

Breakthrough Metallurgical Results
Favours Low-CAPEX, Low-COST
Heap Leach Processing

February 2024

Sybella Discovery Corporate Snapshot

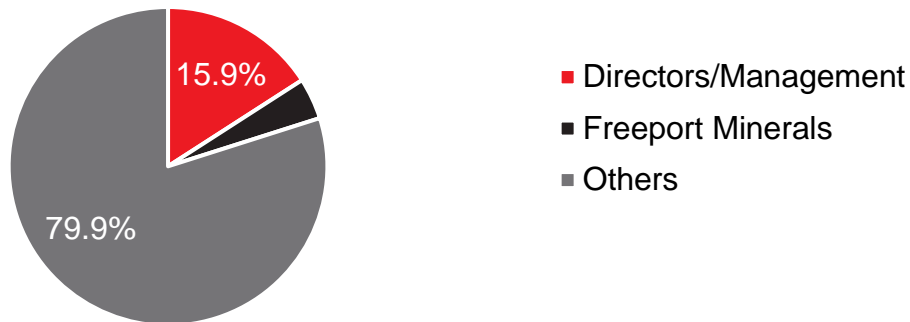


ASX Code	Shares on Issue	Share Price (Date)	Market Cap	Cash (at 31 Dec 2023)
RDM	298,353,338	18	\$54M	\$3.4M

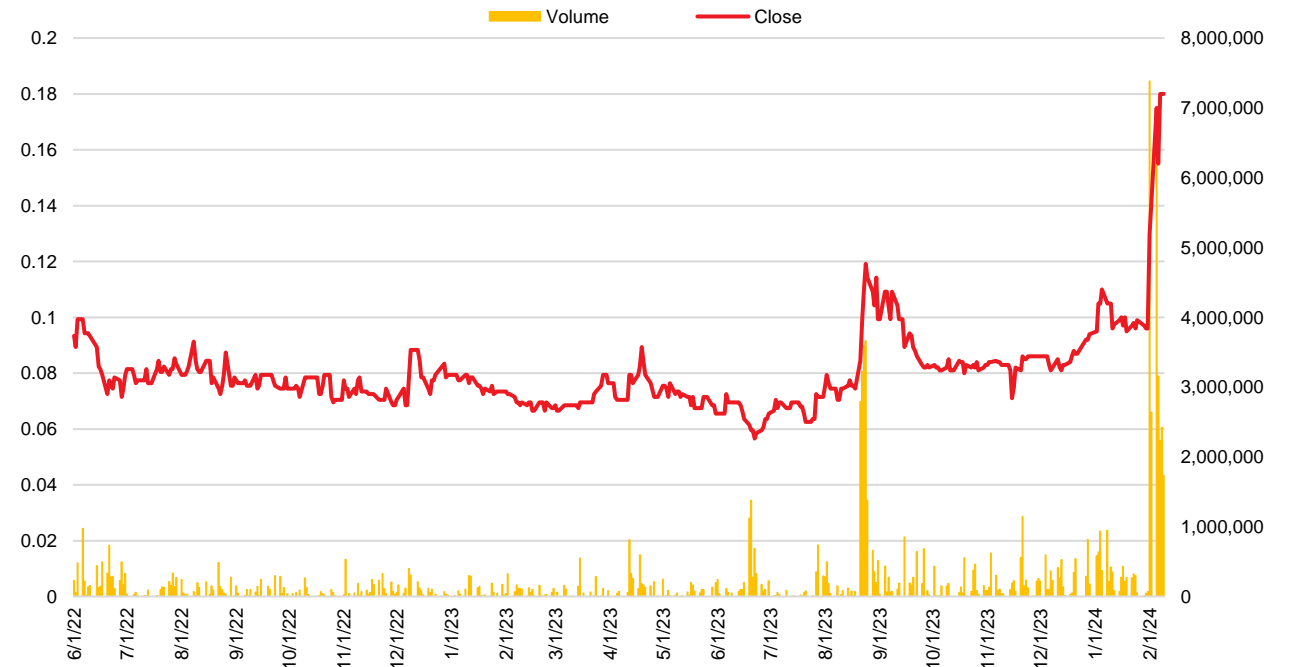
Board Of Directors & Senior Management

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

Substantial Shareholders



Share Price & Trade Volume: 01/06/2022 – 09/02/2024



Two General REO Project Types Emerging

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

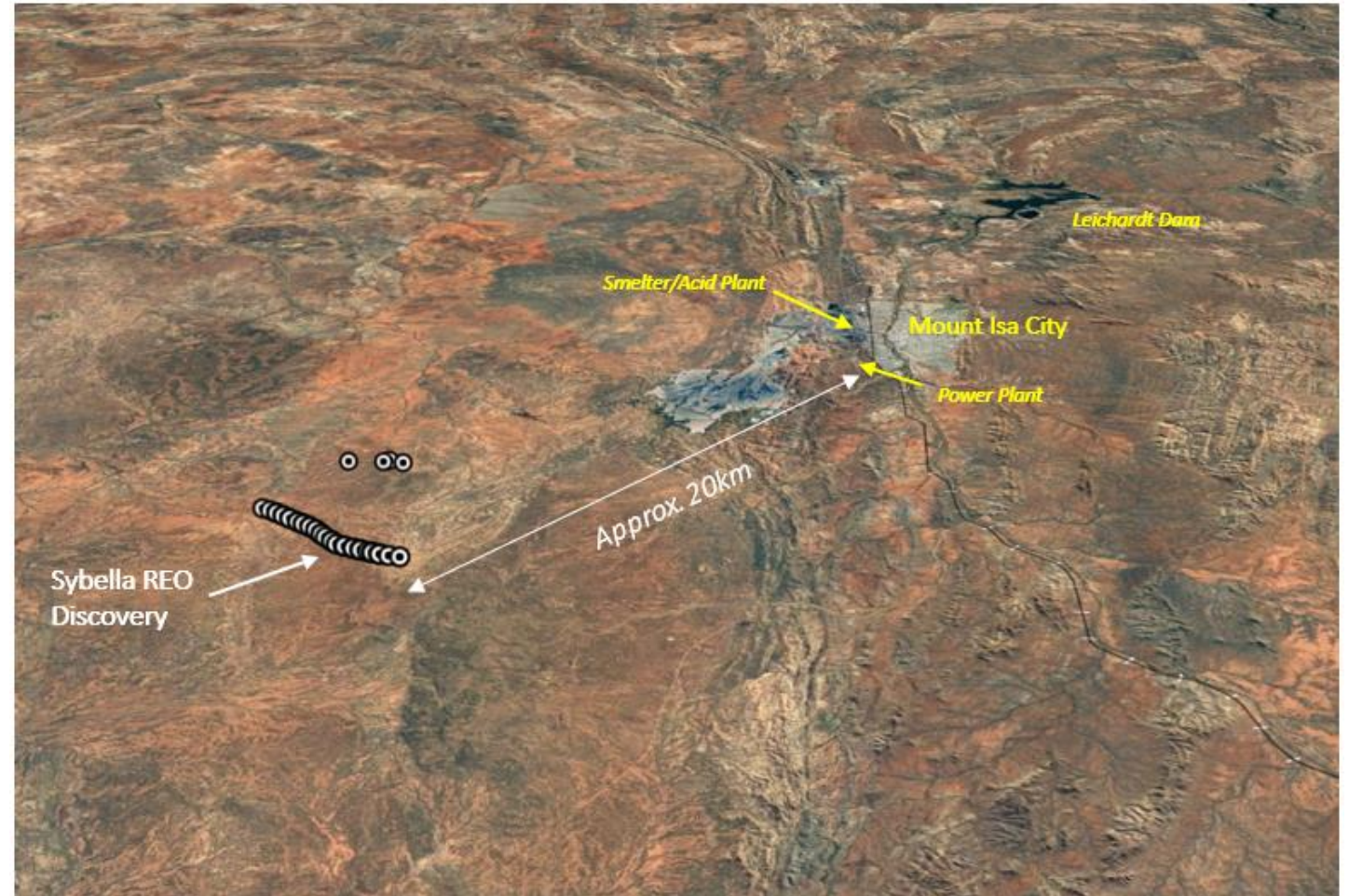
Sybella Discovery

A 'World First' in Northwest Queensland



New REO deposit style

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

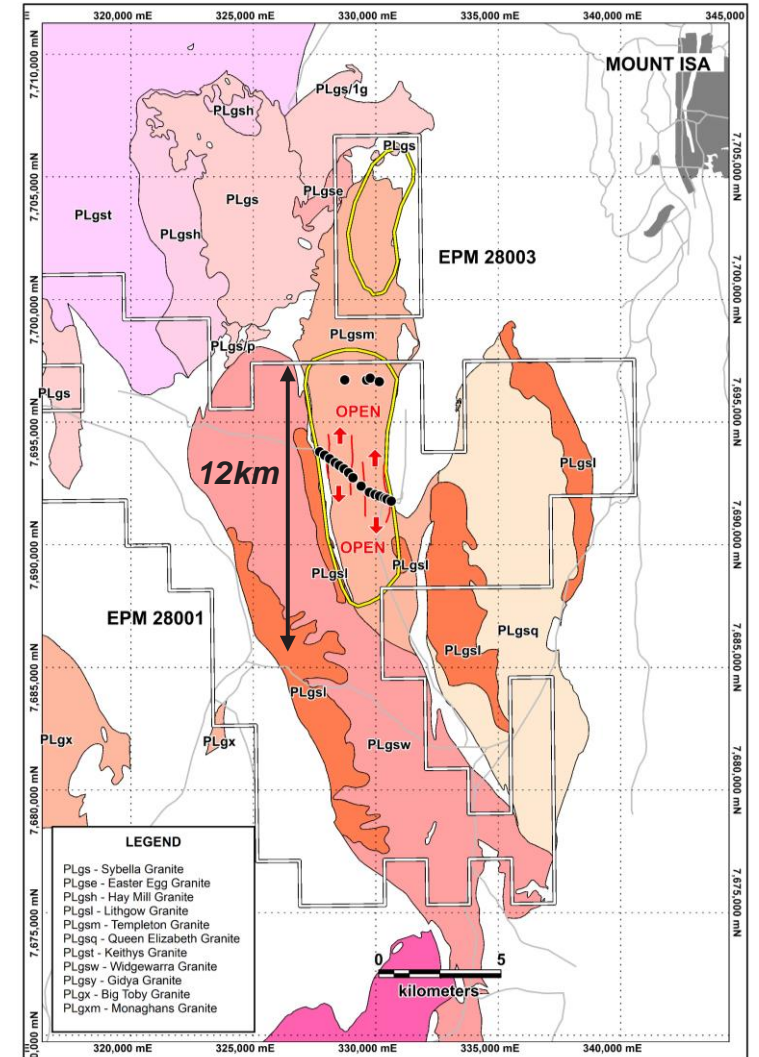
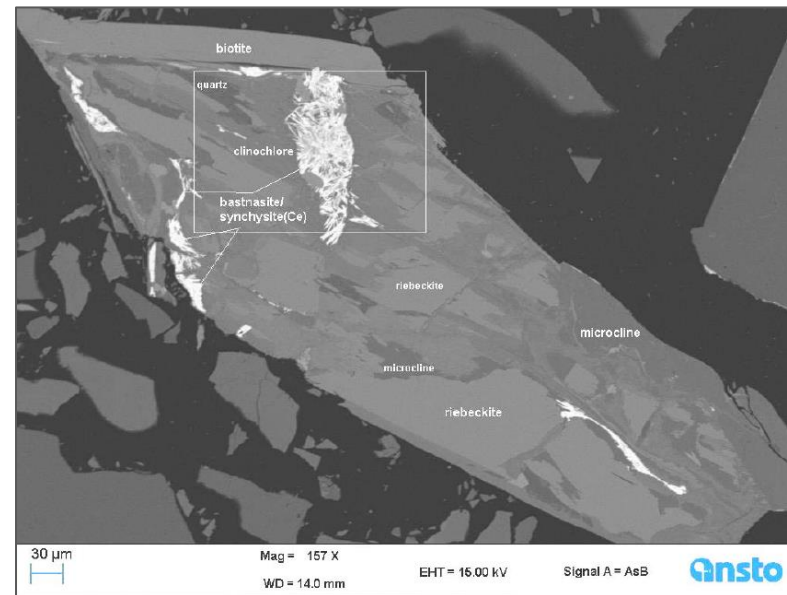


Sybella Discovery

A 'World First' in Northwest Queensland

New REO deposit style

- Hosted in REO-enriched granite (a low-acid consuming rock)
- 12km long x 3km wide
- Bulk of REE's in soluble fluoro-carbonate minerals



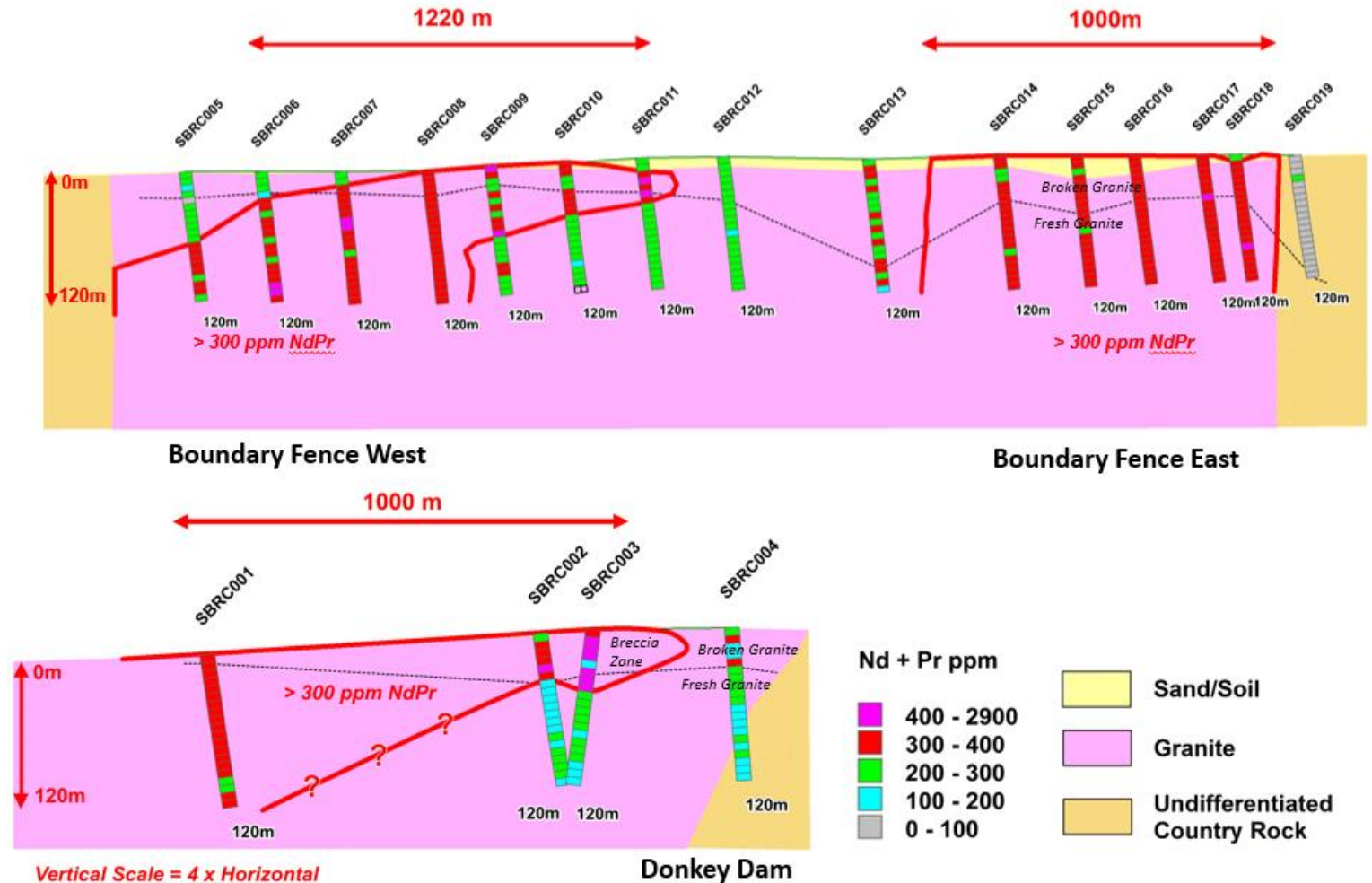
Sybella Discovery

A 'World First' in Northwest Queensland



New REO deposit style

- Proof-of-concept RC drilling reveals two higher grade REO zones, each about 1km wide



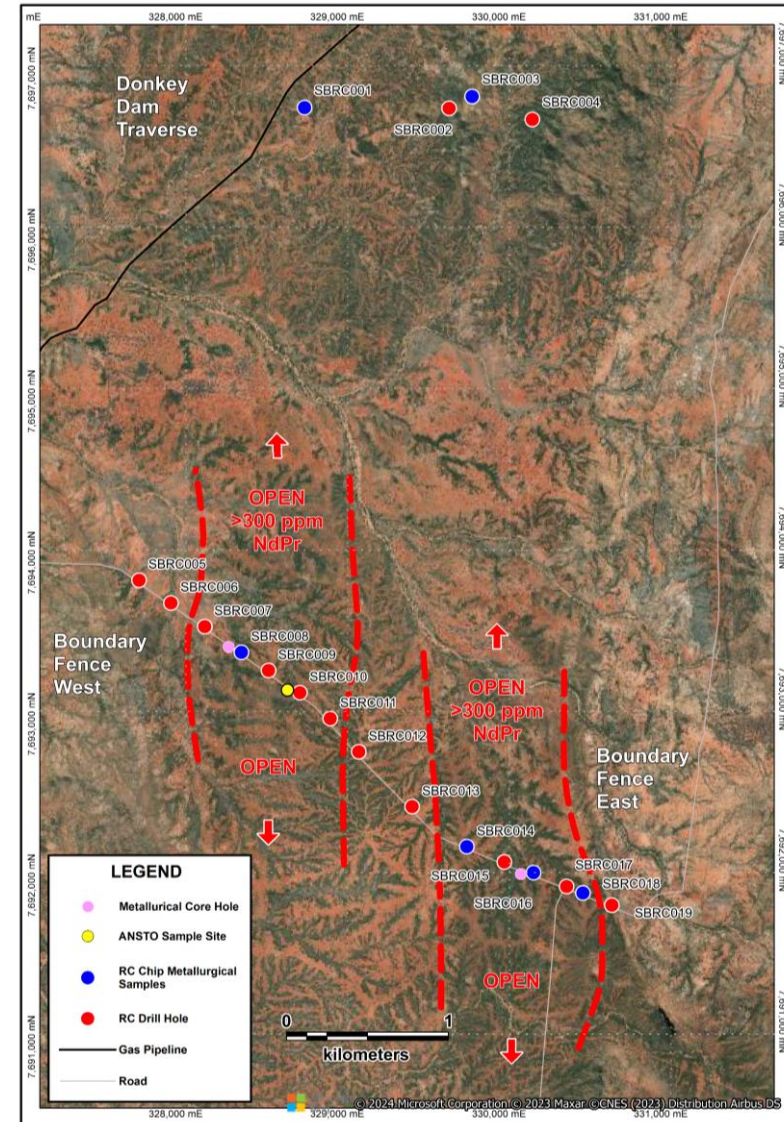
Sybella Discovery

A 'World First' in Northwest Queensland



New REO deposit style

- Zones open north and south and at depth offering vast tonnage potential



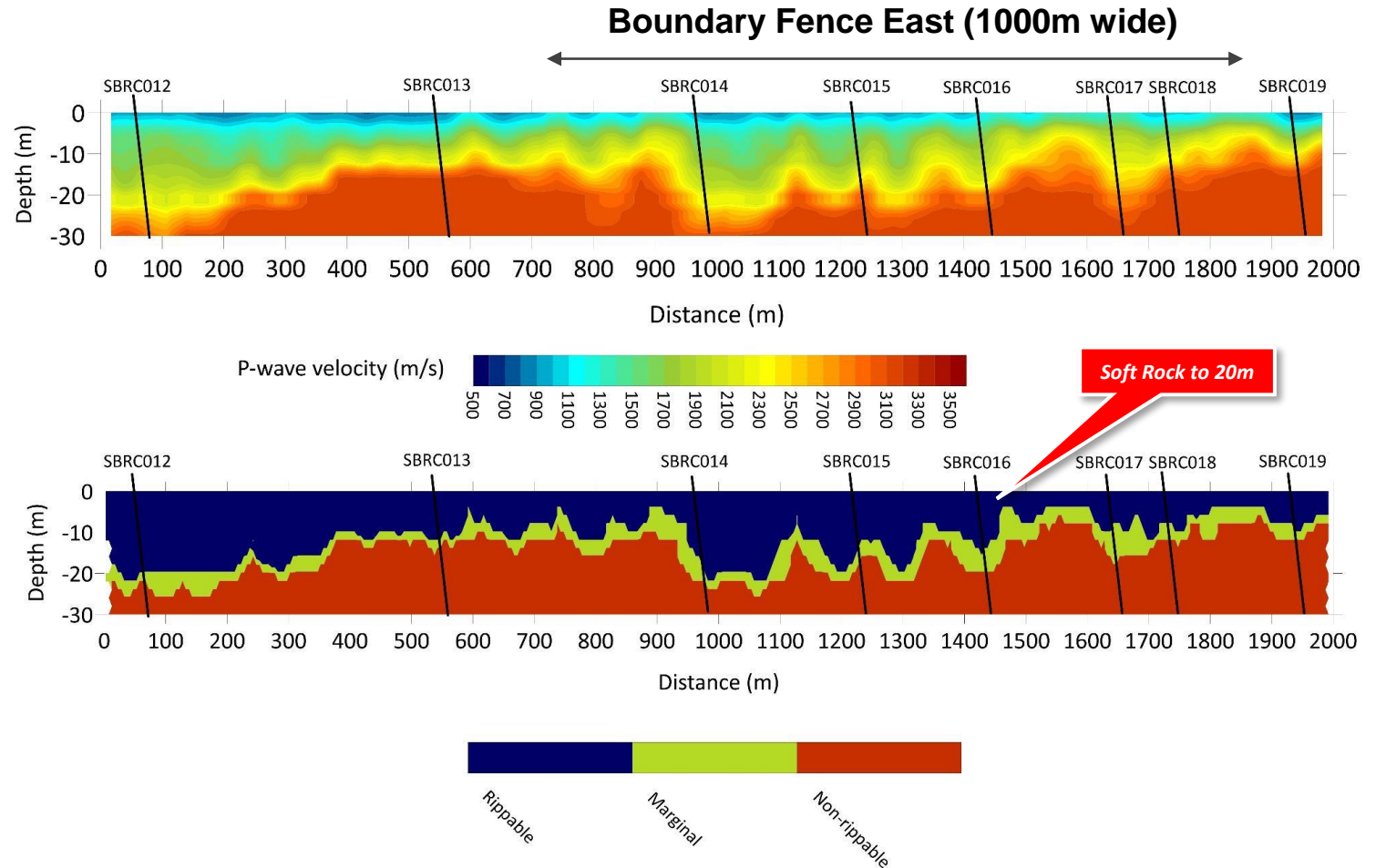
Sybella Discovery

A 'World First' in Northwest Queensland



New REO deposit style

- Softer weathered granite in top 20m adds mining and comminution advantages



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

Sybella Discovery

A 'World First' in Northwest Queensland



Oxidised Granite

Transitional - Part Oxidised
& Part Fresh Granite

Fresh Granite



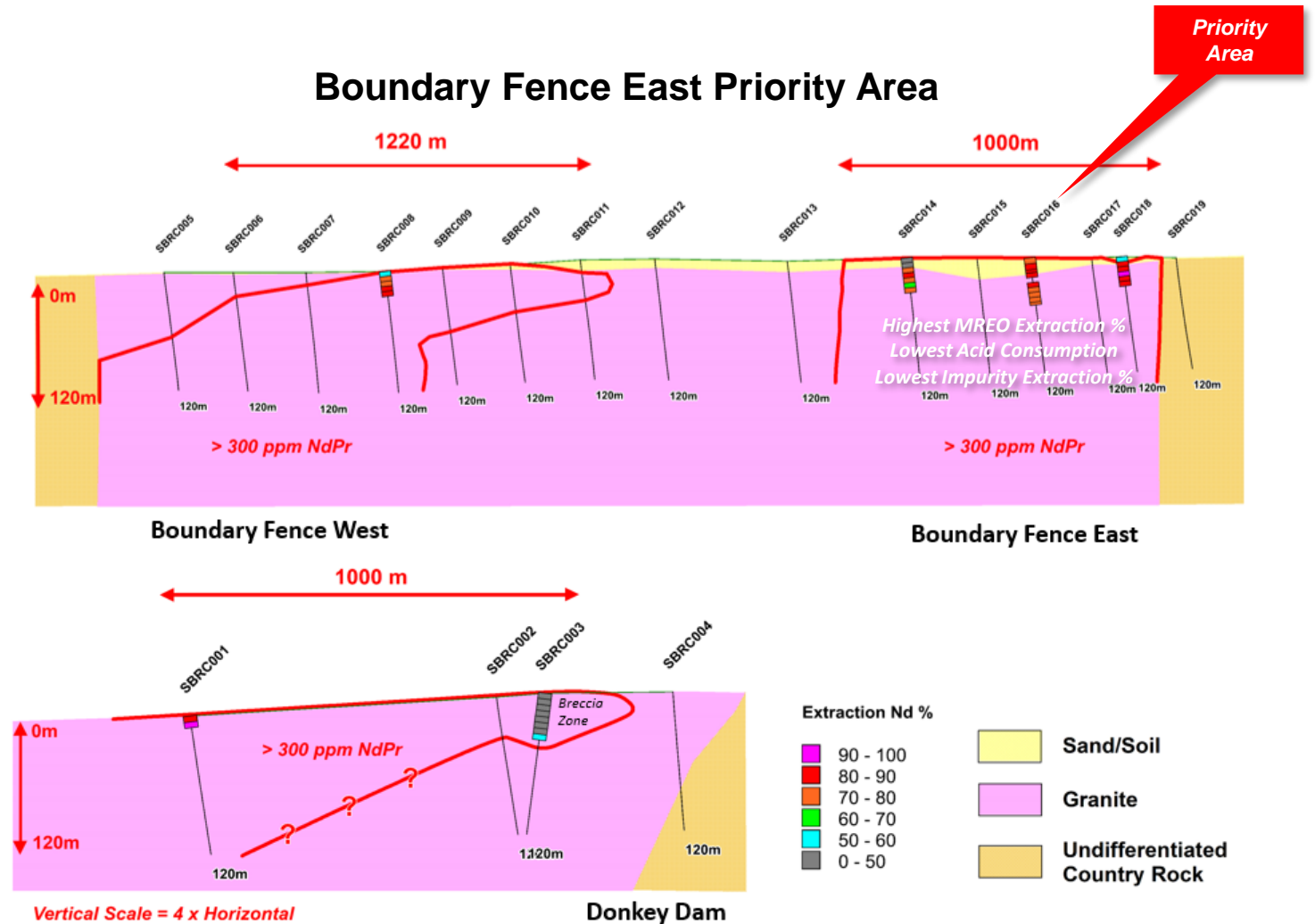
Sybella Discovery

Breakthrough Phase 1 Metallurgical Leach Tests



Successful proof-of-concept test work

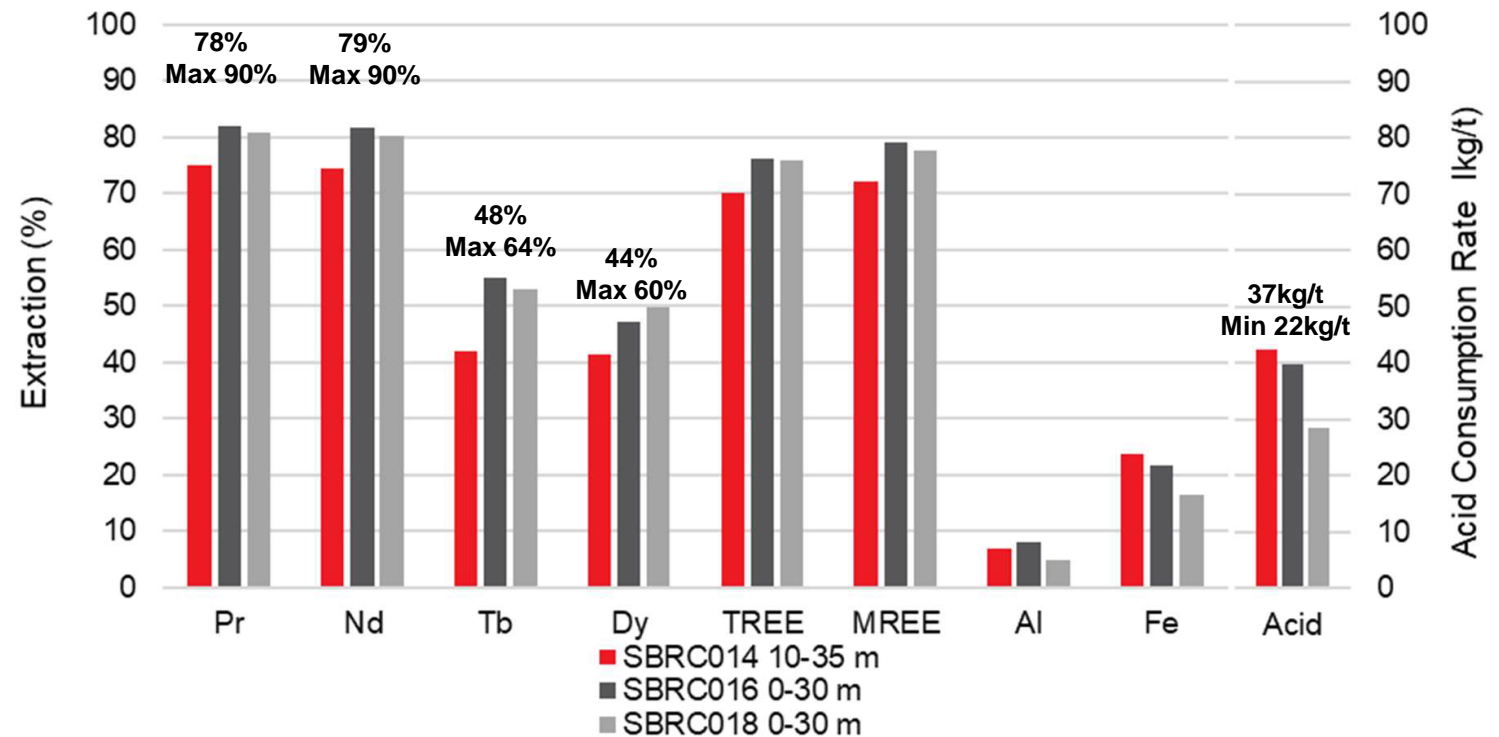
- 36 intermittent bottle roll leach tests (IBRT) on coarse RC-chip samples
- Strong REO extraction with low levels of impurities
- Using low levels of sulphuric acid at ambient (air) temperature



Successful proof-of-concept test work

- Strong REO extraction with low levels of impurities
- Using low levels of sulphuric acid at ambient (air) temperature

Boundary Fence East

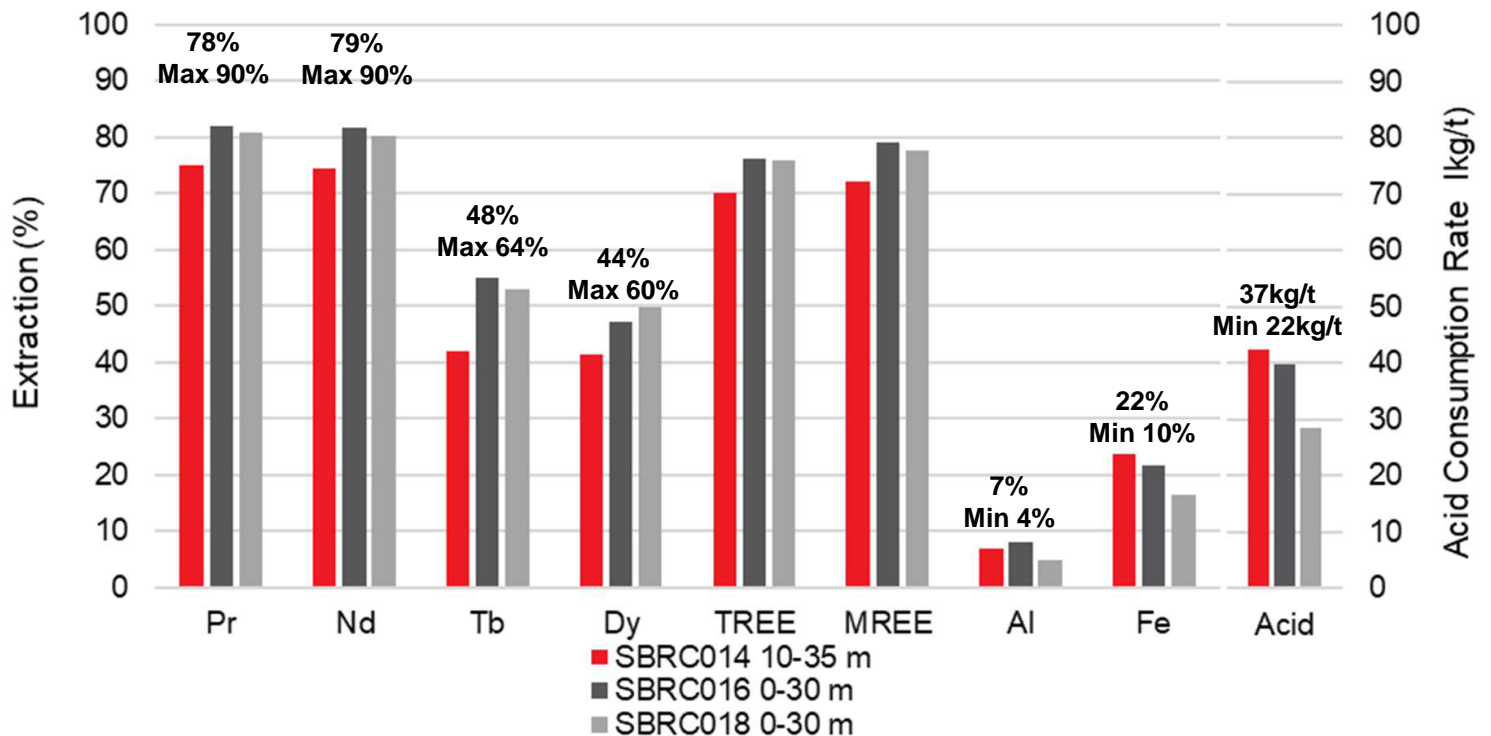


IBRT, RC chip, pH 1, 96-hour residence time, ambient temperature, 33% w/w solids

Successful proof-of-concept test work

- Low average impurity extractions of aluminium and iron
- Low average deleterious element extractions of 20 g/t thorium and 1 g/t uranium

Boundary Fence East

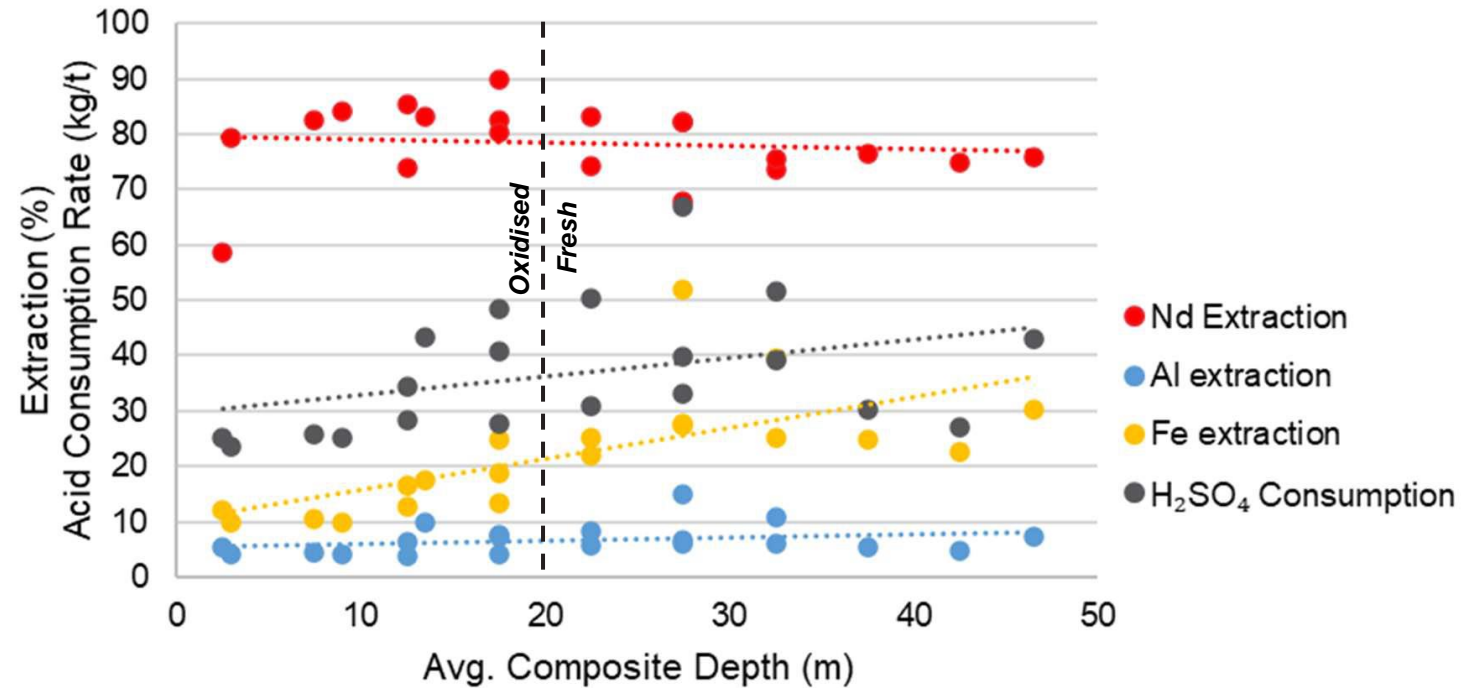


IBRT, RC chip, pH 1, 96-hour residence time, ambient temperature, 33% w/w solids

Successful proof-of-concept test work

- Broadly similar REO and impurity extractions and acid consumption results for both the oxidised and fresh granite samples

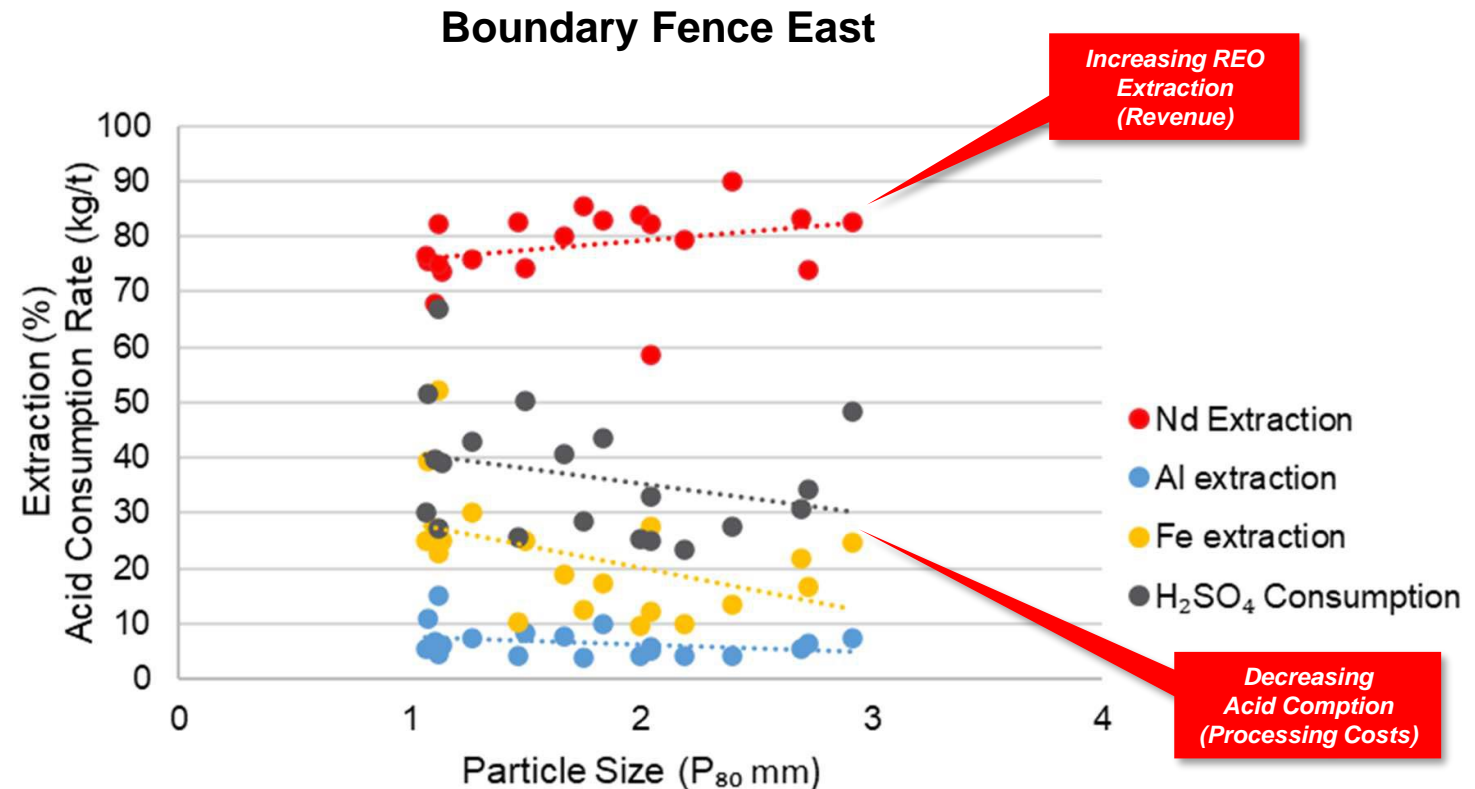
Boundary Fence East



IBRT, RC chip, pH 1, 96-hour residence time, ambient temperature, 33% w/w solids

Importantly!

- Results point to simple processing options potentially involving heap leach methods
- Data show significant opportunities to increase revenue and reduce processing costs by:
 - I. Increasing the particle (crush) size



IBRT, RC chip, pH 1, 96-hour residence time, ambient temperature, 33% w/w solids

Sybella Discovery

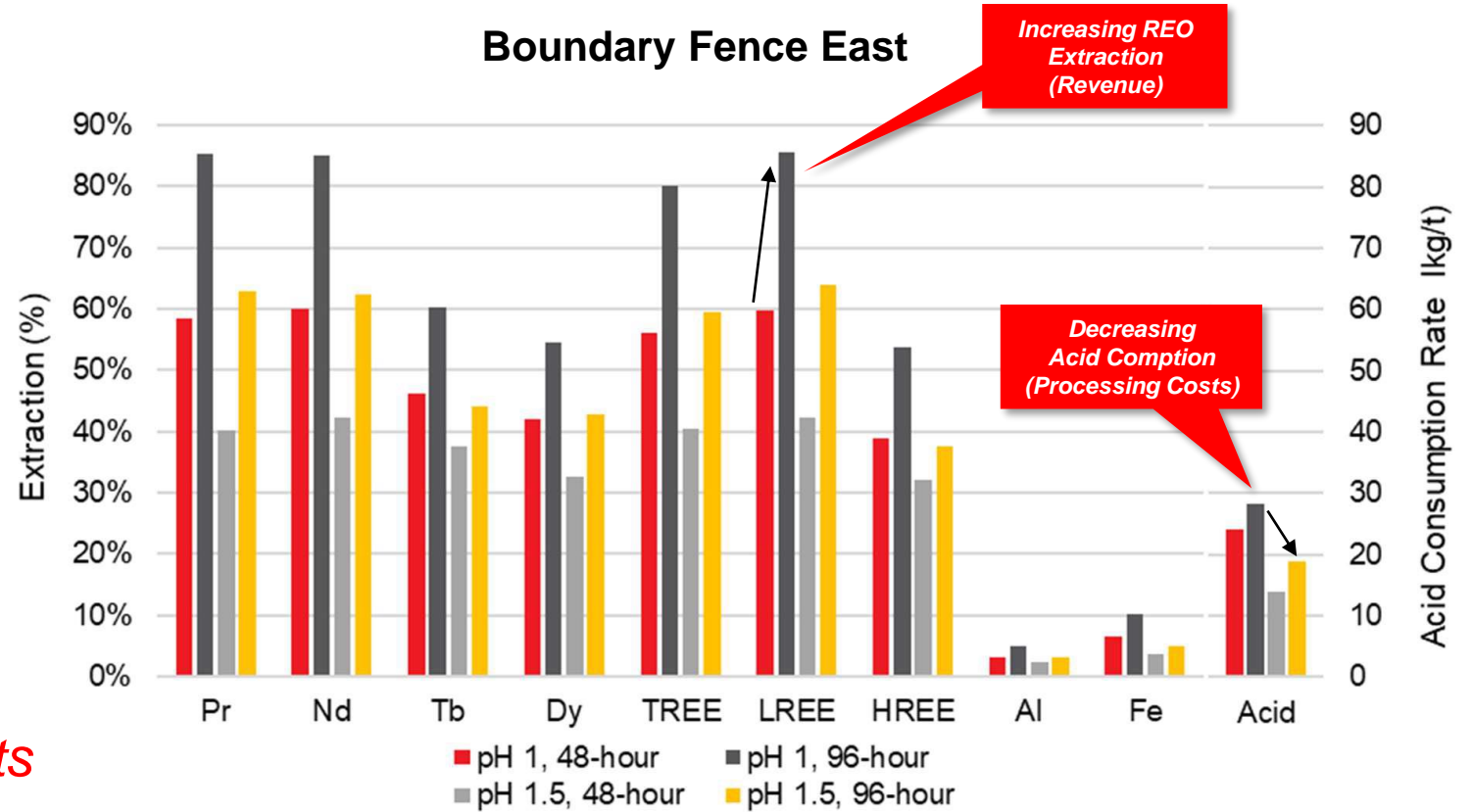
Breakthrough Phase 1 Metallurgical Leach Tests



Importantly!

- II. Increasing leach residence time
- III. Optimising the leach pH

“Sybella showing the processing benefits of Clay-Hosted Ionic deposits without the potential filtration and handling difficulties of clay ore”



IBRT, RC chip, pH 1, 96-hour residence time, ambient temperature, 33% w/w solids

Sybella Discovery Deposit Comparison



Simple Low Temperature Leachable

Complex High Temperature

	Sybella Granite-Hosted	Clay-Hosted Ionic	Hard Rock Carbonatites
Main REE Minerals	Fluoro-carbonates	Ionic adsorption on regolith clays	Monazite / apatite / fluoro-carbonates
Host Rock	Weak weathered & fresh REO enriched granite	Strong weathered clays above REO enriched intrusion/volcanic rocks	Carbonatite
Host Rock Reaction	Low acid consuming granite	Variable reagent consumption by clays	Acid consuming carbonatite
Ore Geometry	Evenly dispersed disseminations & micro-fractures	Discrete layer or secondary enrichment blanket	Veins or Pipes
Tonnage Potential	Vast	Large	Veins low, pipes large
Mine Grades	Low	Low	Higher
Proposed Mining	Bulk tonnage open pit Rip plus drill and blast	Selective open pit No drill and blast	Selective open pit Drill and blast
Expected Strip	Zero-low	Low-moderate	Veins high, pipes lower
Expected Comminution	Soft weathered Moderate fresh	None Very soft	Soft weathered Moderate fresh
Mineral Concentration	None required	None required	Complex gravity, possible flotation (30-40% payable as monazite concentrate)
Expected Processing to Solubilise REO Minerals	Simple Low (ambient air) temperature Sulphuric acid leach pH1-2 Heap leach potential	Simple Low (ambient air) temperature Ammonia Sulphate wash at pH4 Tank leach or heap leach Clay filtration required for tank leach	Complex High temperature Acid "cracking" of mineral concentrate. Potential for radionuclide issues
Expected Processing Costs	Lower	Moderate	Higher
Product	MREO (70-80% payable)	MREO (70-80% payable)	MREO (70-80% payable)
Refining or REO Separation	Optional	Optional	Essential (adds to capex)
Possible Capex and Scale	Low Capex Scalable	Moderate Capex Scalable	High Capex Needs to be large scale from start
Locations	Australia - Sybella	China/Myanmar - Guangdong Brazil - Caldiera Uganda - Makuutu	China - Bayn Obo Australia - Mount Weld, Yangibana

Sybella Discovery

Low Temperature Leachable Projects



Location	ASX Code	Project	Leach		Average Grade (g/t)					Extraction (%)				Extracted RE (g/t ore)				Extracted Nd ₂ O ₃ Equivalent	
			pH	Proposed Process ²	TREO	Pr ₆ O ₁₁	Nd ₂ O ₃	Tb ₄ O ₇	Dy ₂ O ₃	TREO	Pr	Nd	Tb	Dy	Pr ₆ O ₁₁	Nd ₂ O ₃	Tb ₄ O ₇	Dy ₂ O ₃	g/t ¹
Australia	RDM	Sybella	1	Heap	1,701	75	261	4.8	28	73	79	78	48	44	59	205	2.3	13	354
	AR3	Koppamurra	1	Tank	712	32	121	3.2	18	-	67	67	53	53	21	81	1.7	10	171
	OD6	Splinter Rock	0	Tank	1,308	63	220	2.6	15	-	60	62	58	53	37	136	1.5	8	230
Brazil	MEI	Caldeira	4	Tank	2,626	154	447	5	25	43	57	59	42	38	88	264	2.1	9	425
	TSX:ARA	Carina	4	Tank	1,510	66	231	6.9	42	-	45	46	53	49	29	106	3.6	21	283
Uganda	IXR	Makuutu	1	Heap	848	42	150	3	18	-	49	52	80	80	21	78	2.4	14	199

Notes

1 - The Nd₂O₃ equivalent calculation assumes the following REO prices: Nd₂O₃ US\$57/kg, Pr₆O₁₁ US\$57/kg, Tb₄O₇ US\$784/kg, Dy₂O₃ US\$267/kg

$Nd_2O_3 \text{ Equivalent} = ((\text{Extracted Pr}_6O_{11} \times \text{Pr}_6O_{11} \text{ Price}) + (\text{Extracted Nd}_2O_3 \times \text{Nd}_2O_3 \text{ Price}) + (\text{Extracted Tb}_4O_7 \times \text{Tb}_4O_7) + (\text{Extracted Dy}_2O_3 \times \text{Dy}_2O_3)) / \text{Nd}_2O_3 \text{ Price}$

Nd₂O₃ Equivalent value take into account the average IBRT Extraction % from SBRC014 10-35m, SBRC016 0-48m, SBRC018 0-30m for Sybella and Extraction % published by other listed companies

Nd₂O₃ Equivalent does not take into account any REO lose during impurity removal or clay filtration, or assumption about treatment costs.

2 - Proposed process has been assumed to be tank leaching unless suggested otherwise.

References

RDM - Head Grade: average Boundary Fence East SBRC014-018 0-120 m drill data, Extraction from unoptimised Phase 1 bottle rolls on RC chip, average Boundary Fence East

AR3 - Mineral Resource: ASX Release 19/09/23, Extraction: ASX Release 19/09/22 average of extractions in Figure 2

OD6 - Mineral Resource: ASX Release 18/07/23, Extraction: ASX Release 07/11/23, average 20 g/L HCl, 24-hour, Table 1

MEI - ASX Release 07/12/23, Extraction: average all clay and transition, Table 10

IXR - Mineral Resource: Makuutu DFS 20/03/23 Ore Reserve, Extraction: Makuutu Scoping Study 29/04/21, Figure 18

TSX:ARA - TSX Release 12/12/23, Extraction: total recovery corrected for 94% plant efficiency assumption

“Sybella showing the processing benefits of Clay-Hosted Ionic deposits without the potential filtration and handling difficulties of clay ore”

Sybella Discovery

Accelerated Exploration Programs



Metallurgical Test Work on Drill Core Underway

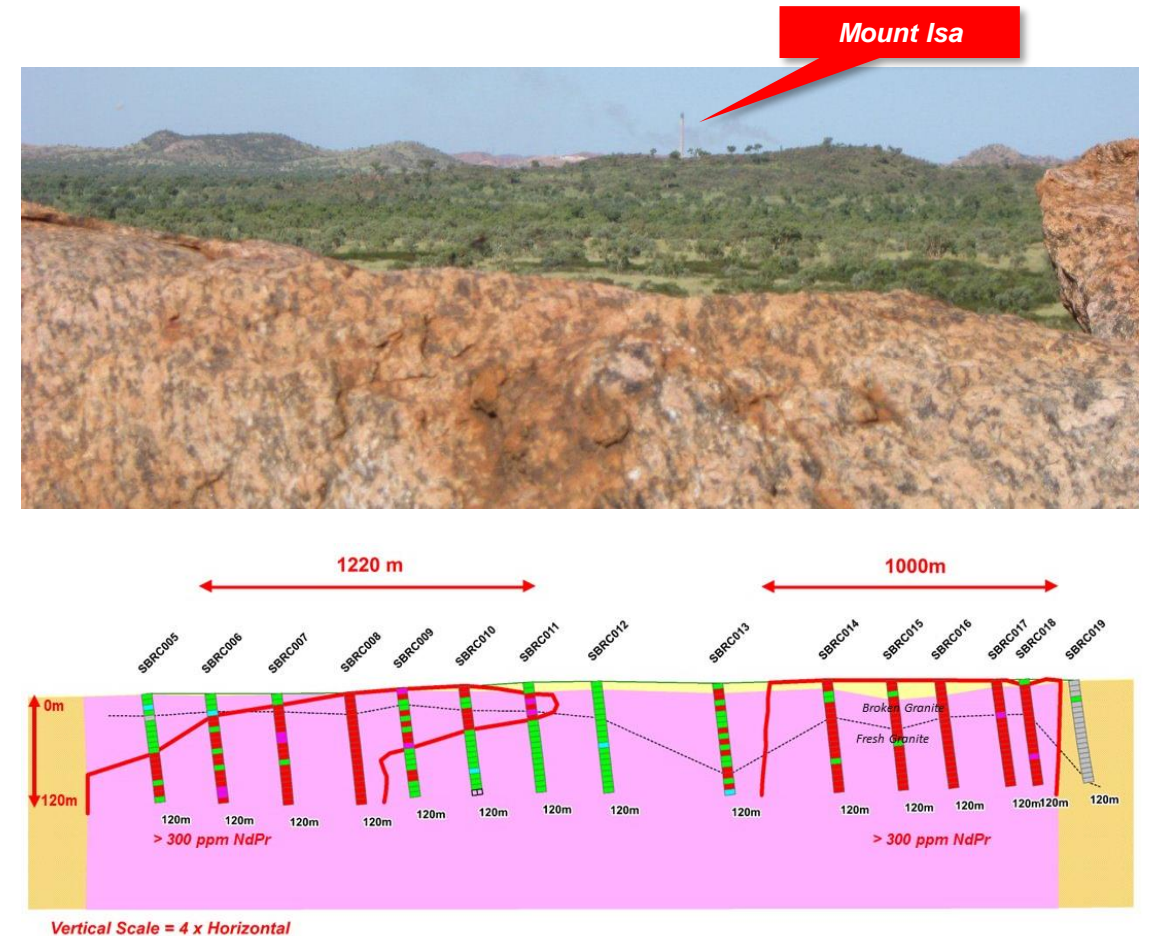
- Comminution tests
- Intermittent bottle-roll leach tests
 - Size fraction leach tests
 - Optimisation work
- Impurity removal trials
- Mineralogical work

Step-out drilling

- Scope out 12km x 3km granite
- 800m x 400m centres, 108 holes for 6480m
- Followed by localised resource definition drilling

Assessing alternative funding options

- Critical metals grants QLD or Federal governments
- R&D



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.



Red Metal Limited

Rob Rutherford – Managing Director

Level 15, 323 Castlereagh Street Sydney 2000




Ph: +61 (0)2 9281 1805 | Mobile: +61 (0) 429 651 126

admin@redmetal.com.au | www.redmetal.com.au

REO Supply vs Demand

Mine Supply

- China dominates
- Red flags

Origin	Annual REO (tonnes)				
	Total	Pr	Nd	Tb	Dy
China – hard rock (2021)* 	135,000	4,878	17,110	67	159
China – Ionic Clays (2021)* 	19,150	880	3,264	159	962
Myanmar – Ionic Clays (2021)** 	42,850	833	2,825	345	2,315
USA – Mountain Pass (2021)	43,000	1,849	5,160	26	22
Australia/Malaysia – Mt. Weld (2021)***	22,000	1,210	4,251	20	55
Others (2021)	18,000	929	3,263	16	45
Total (2021)	280,000	10,578	35,873	633	3,558
Grouped Total	280,000	46,452		4,191	
Demand (2031)	560,000	92,903		8,382	
New REO production required by 2031	280,000	46,452		4,191	

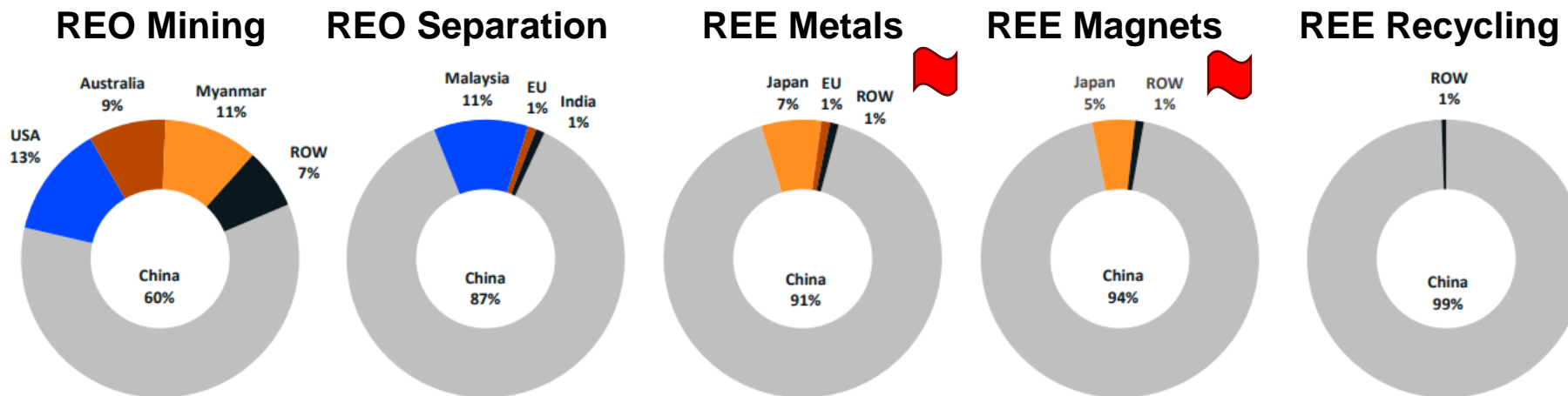
Demand

- Forecast to double by 2031

REO Supply vs Demand

Downstream

- China dominates
- Red flags



Demand

- Forecast to double by 2031

	Total	Pr	Nd	Tb	Dy
Total (2021)	280,000	10,578	35,873	633	3,558
Grouped Total	280,000	46,452		4,191	
Demand (2031)	560,000	92,903		8,382	
New REO production required by 2031	280,000	46,452		4,191	

https://assets-global.website-files.com/6267a587be31507747a1c8b6/63da79c8238104bb115c0597_OEMs%20presentation_vf.pdf

https://assets-global.website-files.com/6267a587be31507747a1c8b6/63da79c8238104bb115c0597_OEMs%20presentation_vf.pdf