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American Rare Earths

"Pioneering the future of clean energy"

Scoping Study Presentation

March 2024

(ASX: ARR | ADRs - OTCQX: AMRRY | Common Shares - OTCQB: ARRNF)

Disclaimers and Forward-Looking Statements

Disclaimers

This presentation contains forward-looking statements that involve subjective judgement and analysis and accordingly, are subject to significant uncertainties and risks, many of which are outside the control of, and are unknown to, American Rare Earths (“ARR”). In such circumstances, the forward-looking statements can be identified by the use of forward-looking words such as “may”, “will”, “expect”, “intend”, “seek”, “estimate”, “believe”, “continue” or other similar words.

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This presentation and the forward-looking statements made in this presentation, speak only as of the date of the presentation.

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Competent Person Statement

This work was reviewed and approved for release by Mr Kelton Smith (Society of Mining Engineers #4227309RM) who is employed by Tetra Tech and has sufficient experience which is relevant to the processing, separation, metallurgical testing 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 JORC Code. Mr. Smith is an experienced technical manager with a degree in Chemical engineering, operations management and engineering management. He has held several senior engineering management roles at rare earth companies (Molycorp and NioCorp) as well as ample rare earth experience as a industry consultant. Mr. Smith consents to the inclusion in the report of the matters based upon the information in the form and context in which it appears.

This work was reviewed and approved for release by Mr Gordon Sobering (Society of Mining Engineers #4061917RM) who is employed by Stantec and has sufficient experience which is relevant to the mining plan 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 JORC Code. Gordon is a Professional Engineer and has 35 years of experience in the minerals industry including senior positions with Barrick, Newmont Mining, Goldcorp Inc., Doe Run, Energy Fuels Resources and ASARCO. Mr. Sobering consents to the inclusion in the report of the matters based upon the information in the form and context in which it appears.

The information in this document is based on information compiled by personnel under the direction of Mr. Dwight Kinnes who is Chief Technical Officer of American Rare Earths. This geological work was reviewed and approved for release by Mr. Kinnes (Society of Mining Engineers #4063295RM) who is employed by American Rare Earths and 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 JORC Code. Mr Kinnes consents to the inclusion in the report of the matters based upon the information in the form and context in which it appears.

ARR confirms it is not aware of any new information or data that materially affects the information included in the original market announcement, and, in the case of estimates of Mineral Resources, that all material assumptions and technical parameters underpinning the estimates in the relevant market announcements continue to apply and have not materially changed. ARR confirms that the form and context in which the Competent Person’s findings presented have not been materially modified from the original market announcement.

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Cautionary Statements

ARR has published the study in its entirety on the Halleck Creek project tab at REEshore.com

The Study referred to in this announcement is a preliminary technical and economic study of the potential viability of the Halleck Creek Rare Earths project by developing a mine and constructing a beneficiation facility onsite and refinery facility offsite. The Study referred to in this announcement is based on lower-level technical and preliminary economic assessments and is insufficient to support estimation of Ore Reserves or to provide assurance of an economic development case at this stage, or certainty that the conclusions of the Study will be realized.

Approximately 85% of the Phase I initial production (20-year cash flow model) is in the Measured + Indicated Mineral Resource category and 15% is in the Inferred Mineral Resource Category. The inferred mineral resource is not the determining factor in determining the viability of the Halleck Creek Rare Earths project.

There is a low level of geological confidence associated with inferred Mineral Resources and there is no certainty that further exploration work will result in the determination other Measured or Indicated Mineral Resources or that the Production Target or preliminary economic assessment will be realized.

The Study is based on the material assumptions highlighted throughout this announcement. While the Company considers all the material assumptions to be based on reasonable grounds, there is no certainty that they will prove to be correct or that the range of outcomes indicated by the Study will be achieved.

These include assumptions about the availability of funding. To achieve the potential project development outcomes indicated in the Study, funding in the order of US$380 million + $76 million of contingency is needed (ARR presently has U.S. market capitalization of approximately US$100 million). Investors should note that there is no certainty that the Company will be able to raise funding when needed, however the Company has concluded it has a reasonable basis for providing the forward-looking statements included in this announcement and believes that it has a "reasonable basis" to expect it will be able to fund the development of the project. This is based on a reasonable ratio of initial capital expenditure to market capitalization of 4.6 : 1 which includes 20% contingency.

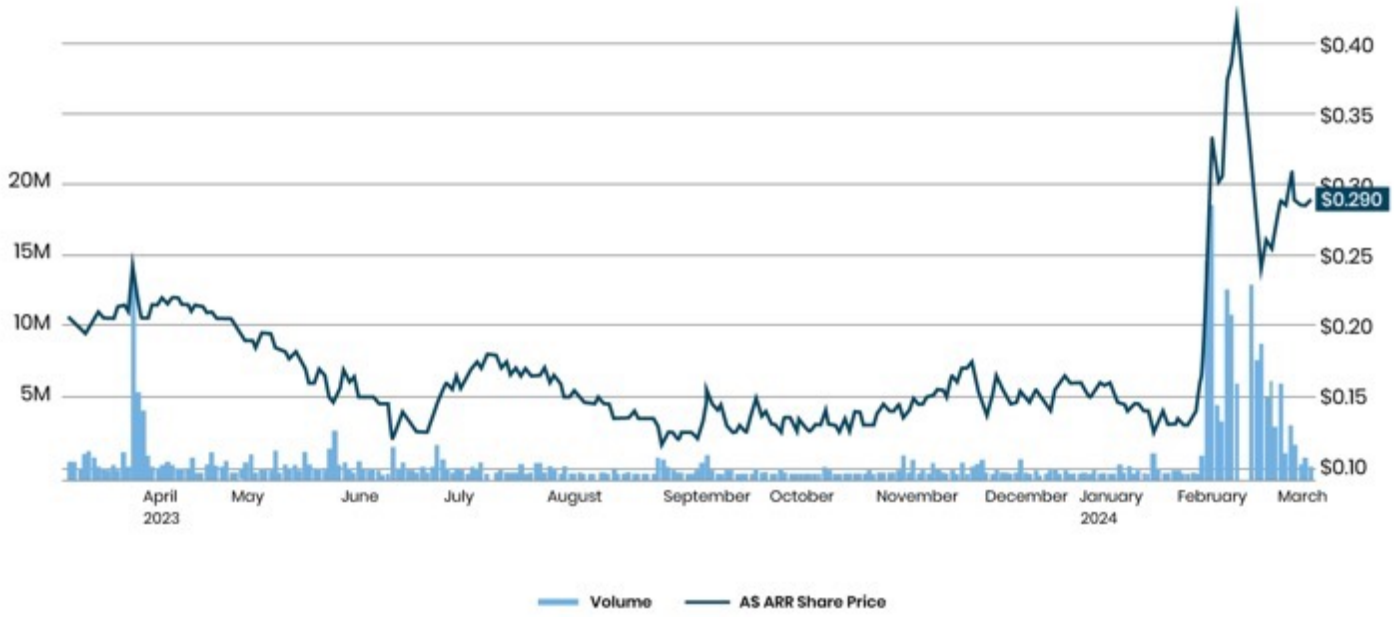
It is also possible that such funding may only be available on terms that may be dilutive to, or otherwise affect the value of the Company's existing shares. It is also possible that the Company could pursue other strategies to provide alternative funding options. Given the uncertainties involved, investors should not make any investment decisions based solely on the results of the Study.

Investor Presentation

Corporate Snapshot

Share Price (market close 18/03/2024)	A$0.29 cents
Shares Outstanding	493.4 million
Market Cap (18/03/2024)	A$143 million
Cash on Hand[1]	A$18.3 million
Invested Financial Assets (31/12/2023)[2]	A$5.2 million

12 Month Share Price Performance (ASX:ARR)



Management



Donald Swartz
Chief Executive Officer



Jose Rico
Chief Financial Officer



Dwight Kinnes
Chief Technical Officer



Kelton Smith
Processing/Metallurgy



Joe Evers
General Counsel



Wayne Kernaghan
Company Secretary

1. Cash balance as at 31 December 2023, inclusive of A$13.5 million capital raise announced to the ASX on 23 February 2024
2. Represents investments in Cobalt Blue and Godolphin, inclusive of promissory notes receivable.

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Investment Overview

- Domestic sourcing of magnet metals have strategic importance for US.
- Forecasted deficit for magnet metals.
- Flagship deposit test results indicate:
  - Low-cost, conventional processing
- Scalable development within homogenous rare earth mineralisation
- Expedited permitting pathway
- Low penalty elements
- Strong, experienced management and board
- Established industry partnerships



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Phase 1 Scoping Study Key Outcomes

The Phase 1 scoping study based on a 20+year cash flow demonstrates Halleck Creek as a world-class REE project.

22.5% IRR	**US$380 Million Initial Capex +20% contingency**	**2.9 Years Payback**	**Direct Leach (no cracking)**
Scalable Expansion Optionality	**Mine Planning 180 years @3Mtpa**	**85% of Phase 1 Measured+ Indicated Resource**	**27.1% MREO**
US$37.56/kg LOM operating cost (NdPr eqv)	**10X upgrade Beneficiation and Concentration**	**67% REE Recoveries**	**Separated Rare Earth Products NdPr, Tb + Dy**

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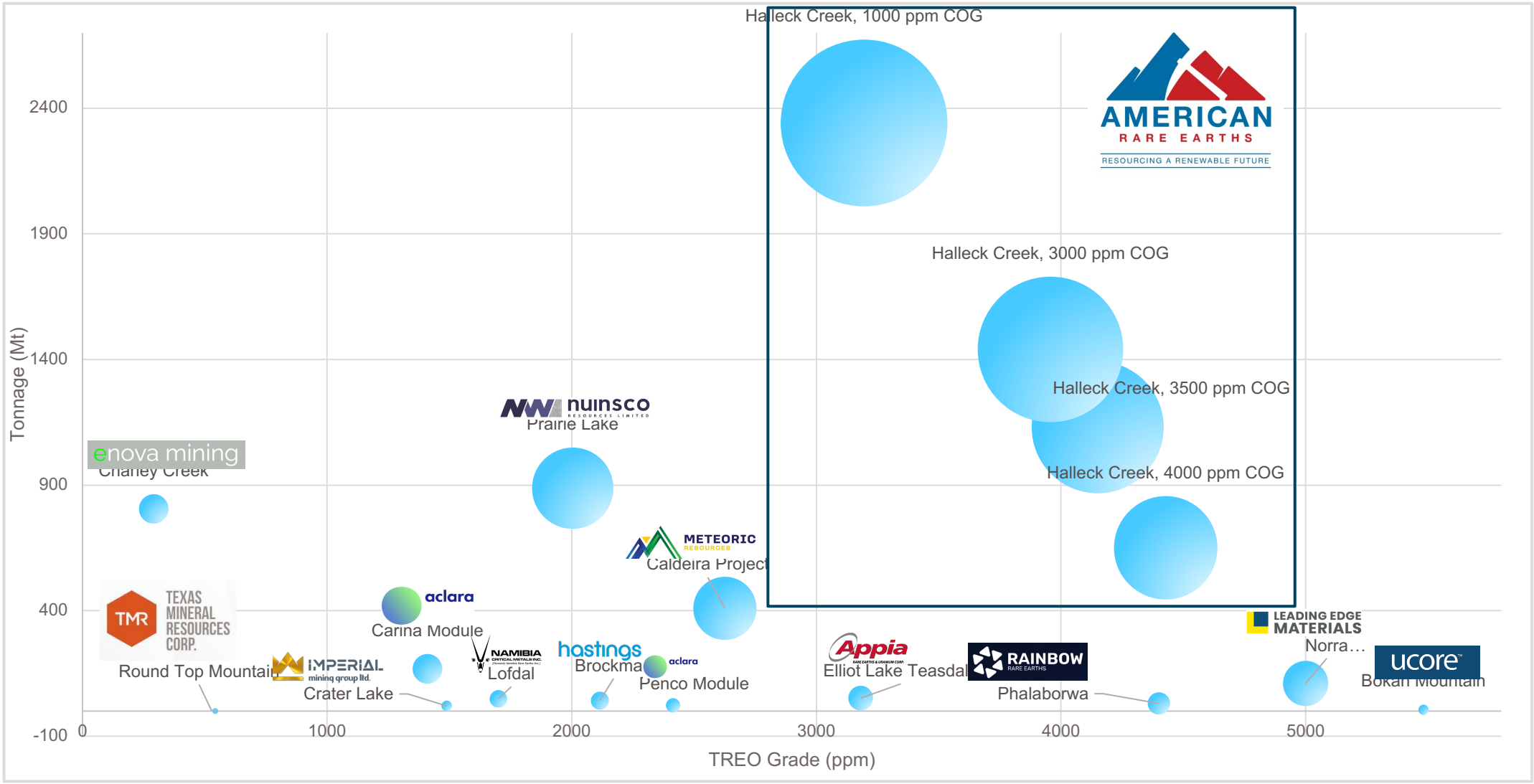
Geologic Characteristics Offer Best of Both Worlds

Deposit Comparison	Halleck Creek	Conventional Hard Rock	Ionic Clay
Location	Tier 1	Tier 1	Sovereign Risk
Grade	4-5 % TREO[1]	~6% TREO	0.07 %
Low Penalty Elements (U / Th)[2]	✓	✗	✓
Processing	Tank Leaching	Acid Bake / Cracking	In-Situ Leaching
ESG Positive Inputs	✓	✗	✗
Reduced Capex and Opex[3]	✓	✗	✓
Scalable / Homogenous Deposit[4]	✓	✗	✗

1. Following low-cost extraction and beneficiation and increase in grade following the JORC update. See ASX announcement 7 February 2024
2. Less than 500ppm confirmed prior to beneficiation. Test work/analysis is in process post beneficiation
3. Lower CapEx and OpEx of physical separation and conventional tank leaching at 90°C, relative to acid bake/cracking processing at +600°C. See ASX Announcements 22 January 2024, and 19 October 2023
4. 2.34 Bt JORC resource, with only 25% of project explored. See JORC update ASX announcement 7 February 2024

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Halleck Creek Project Overview* - High-Grade Resource with Substantial Scale

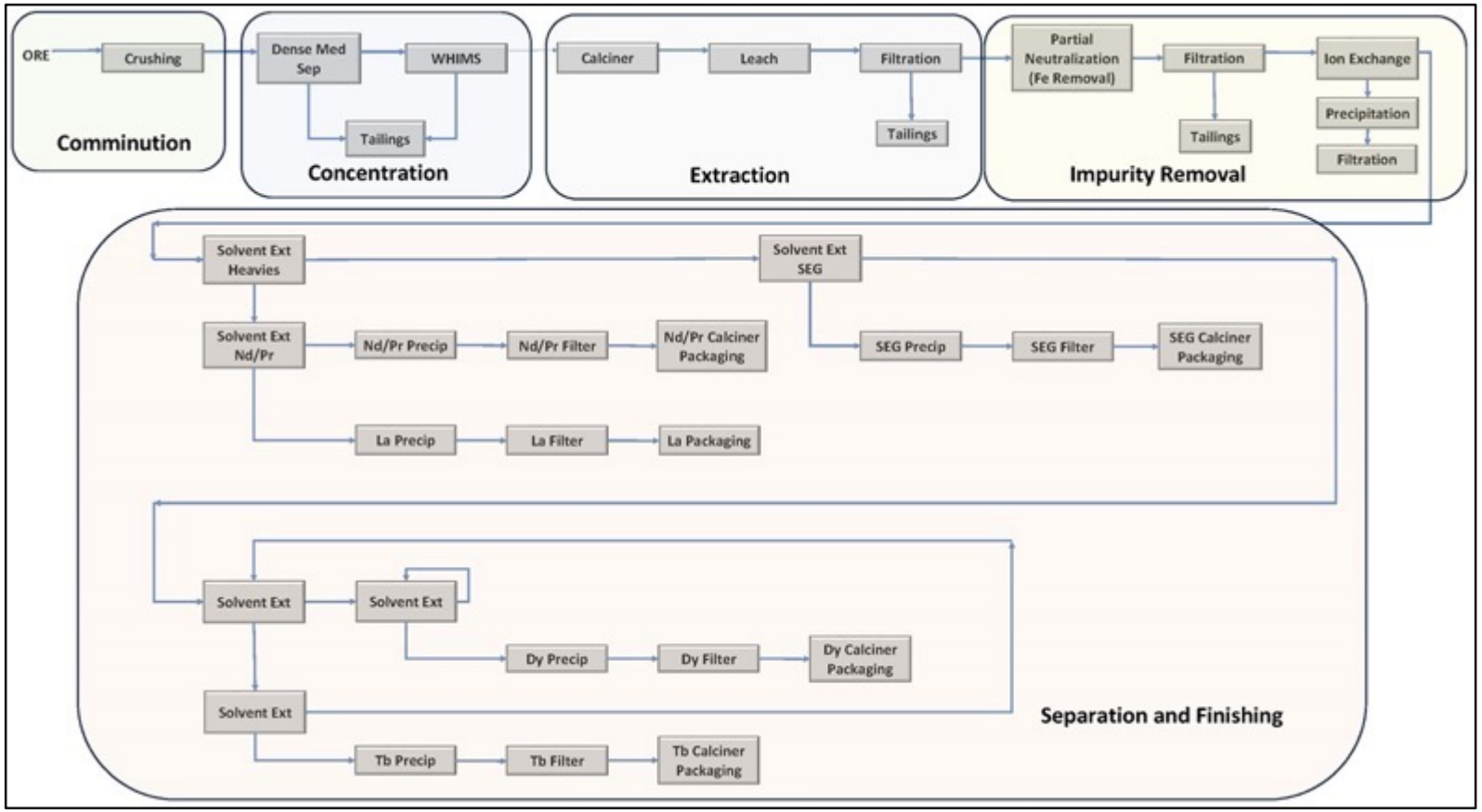


*See Slide # 21 i(n Appendix) for source documents. COG = Cut-Off Grade

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Preliminary Flowsheet

- Up to 86% of Allanite shown to be liberated from in-situ rock mass during crushing and grinding
- Up to 93% of non-REE gangue material can be separated from REE bearing allanite.
- Physical separation methods shown to increase grade by approximately 10X with an 84% recovery of TREO.
- In-Situ TREO grades between 3,500ppm and 4,000ppm increased to 35,000ppm (3.5%) to 40,000 (4.0%).
- Gravity and Dense Media Separation removes between 77% and 83% of gangue material from ore material.
- Wet High Intensity Magnet Separation (WHIMS) can separate another 7% to 10% of non-magnetic material from paramagnetic material.
- Metamict structure causes allanite to be susectible to direct leaching (less aggressive techniques).
- Non-refractory, no cracking required, 90°C direct leach 87% recoveries without silica gelling issues

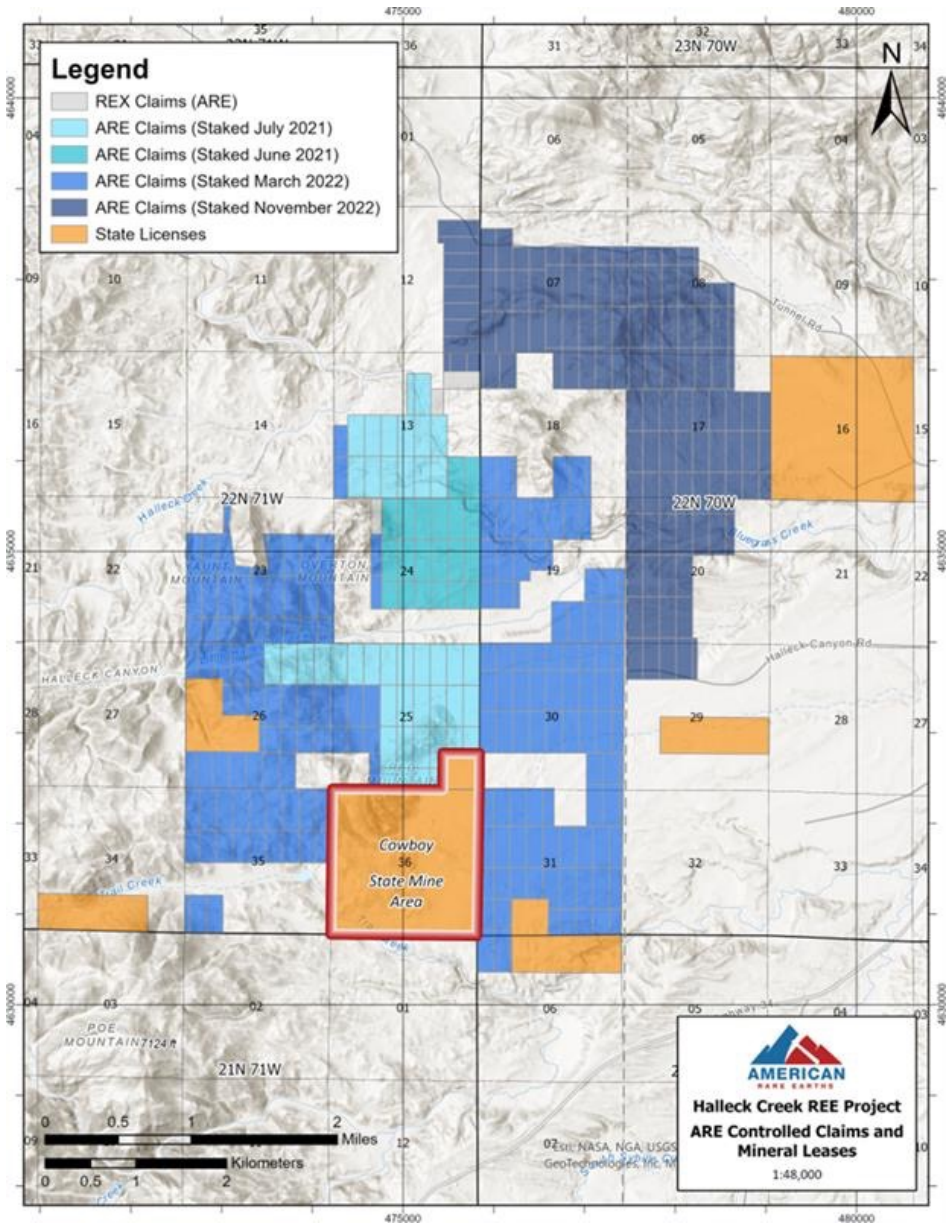


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Halleck Creek Project Overview
(100% owned)

Potential to be the largest, low-cost rare earth Deposit in North America

- LOM average Cost (USD/kg NdPr Equivalent) = $38.38/kg v $50/kg China Northern RE
- Heavies (Tb, Dy) 2%
- Cowboy State Mine shown in red border, limited to 400 acres initially to reduce capex for market entry and reduce financing risk.
- February 2024 JORC Resource of 2.34 billion tonnes, with 1.42 billion tonnes of measured and indicated resources at a grade of 3,296 ppm TREO using a 1,000ppm TREO cut-off.[1]
- March 2023 Scoping Study demonstrates Halleck Creek as world-class REE project.[2]
- Potential for remarkable scalability, with 75% of mineralised zones yet to be drilled and deposit remaining open at depth
- Breakthrough metallurgy and mineralogy results reduce capital and operating costs opening the path to early production.
- Environmentally and socially responsible with low penalty elements.
- Inflation Reduction Act (IRA) 45X eligible with design to produce separated products.
- MREO = 27.1% of TREO
- Study compiled by leading independent technical consultants (Stantec, TetraTech, Odessa).



Halleck Creek Claims and Licenses

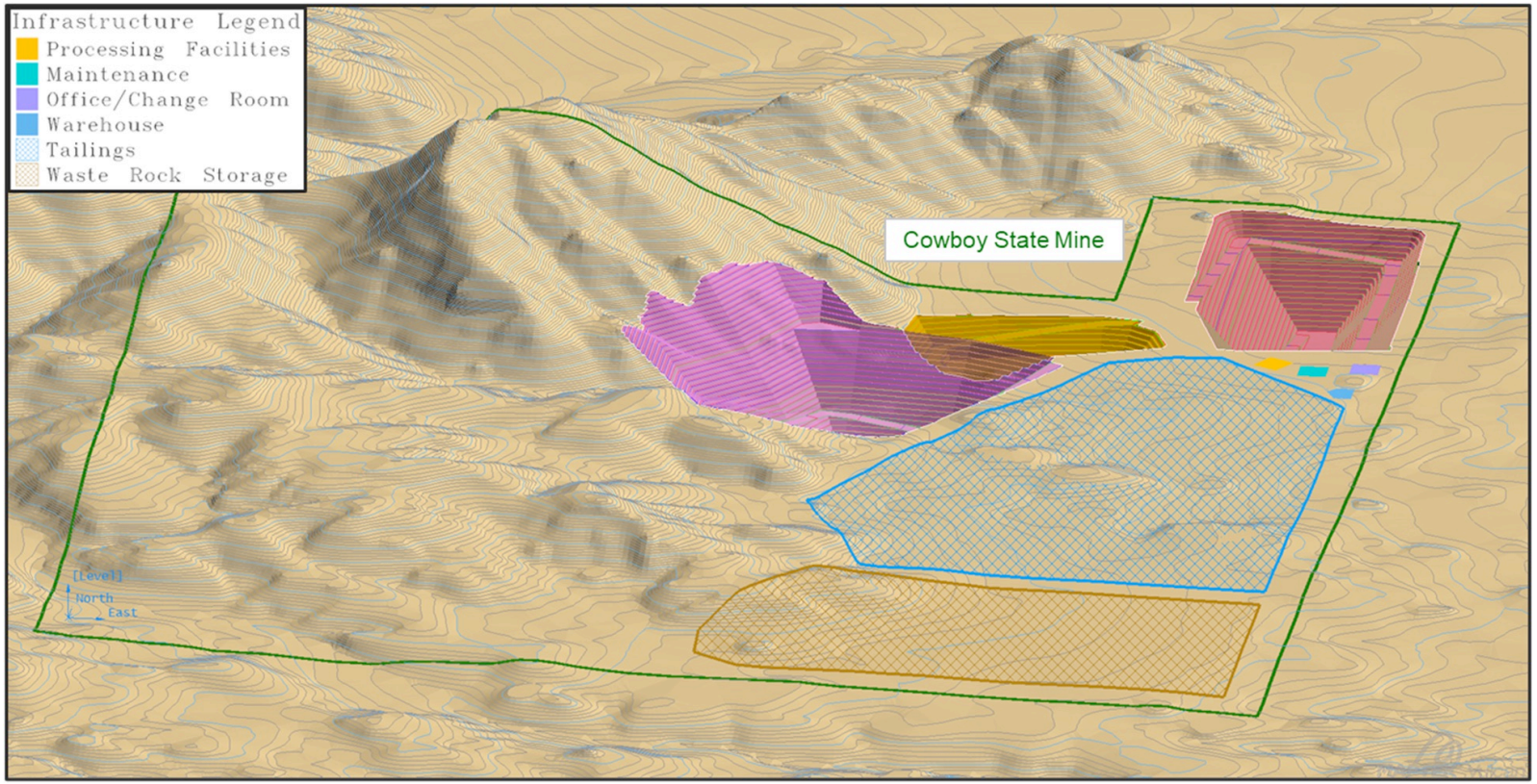
1 – ASX Announcement – "Resource Estimate Increased by 64% - Halleck Creek" – 7 Feb 2024
2 – ASX Announcement - "Scoping Study, low-cost, scalable, world-class REE project - 18 March 2024

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Mining Methods

Low Risk Open Pit Mining in a Favourable Mining Jurisdiction

- Mine plan designed on Wyoming State Mineral Leases, expedited permitting.
- Ore grade material outcrop with estimated strip ratio of 0.03:1
- Low-cost open-pit mining well suited to homogenous TREO grades.
- The average TREO grade contained in scoping study pit shells is approximately 3,805ppm.
- Low-cost power (US$0.0349 per kWh).
- Mining hub with availability skilled labor.
- Low levels of Uranium and Thorium 68ppm.
- Substantial pre-existing infrastructure.

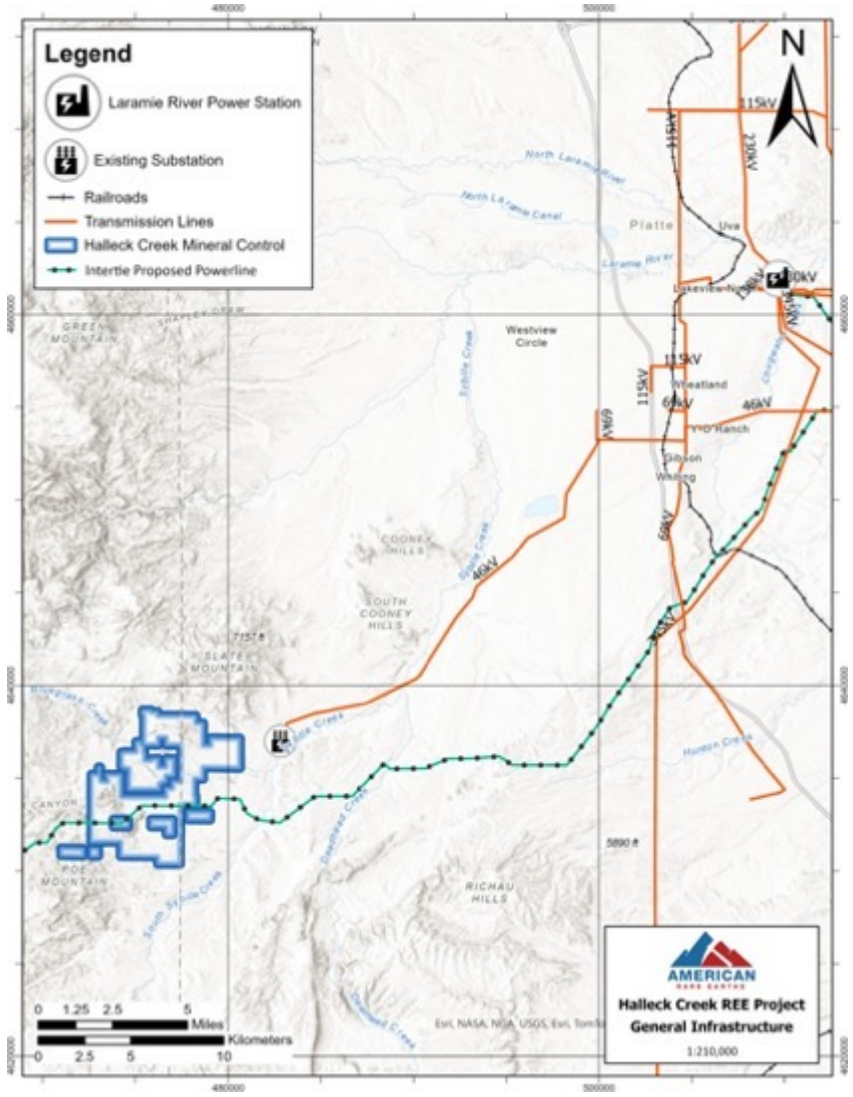


Cowboy State Mine (Isometric)

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Infrastructure

- Close to infrastructure, a highly skilled workforce and the University of Wyoming.
- Located in the Central Laramie Mountains, between Laramie and Wheatland.
- Interstate and railroad access via existing state roads.
- Burlington Northern Sante Fe mainline railroad runs through Wheatland.
- Union Pacific railroad runs through Laramie.



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Separated / Finished Products

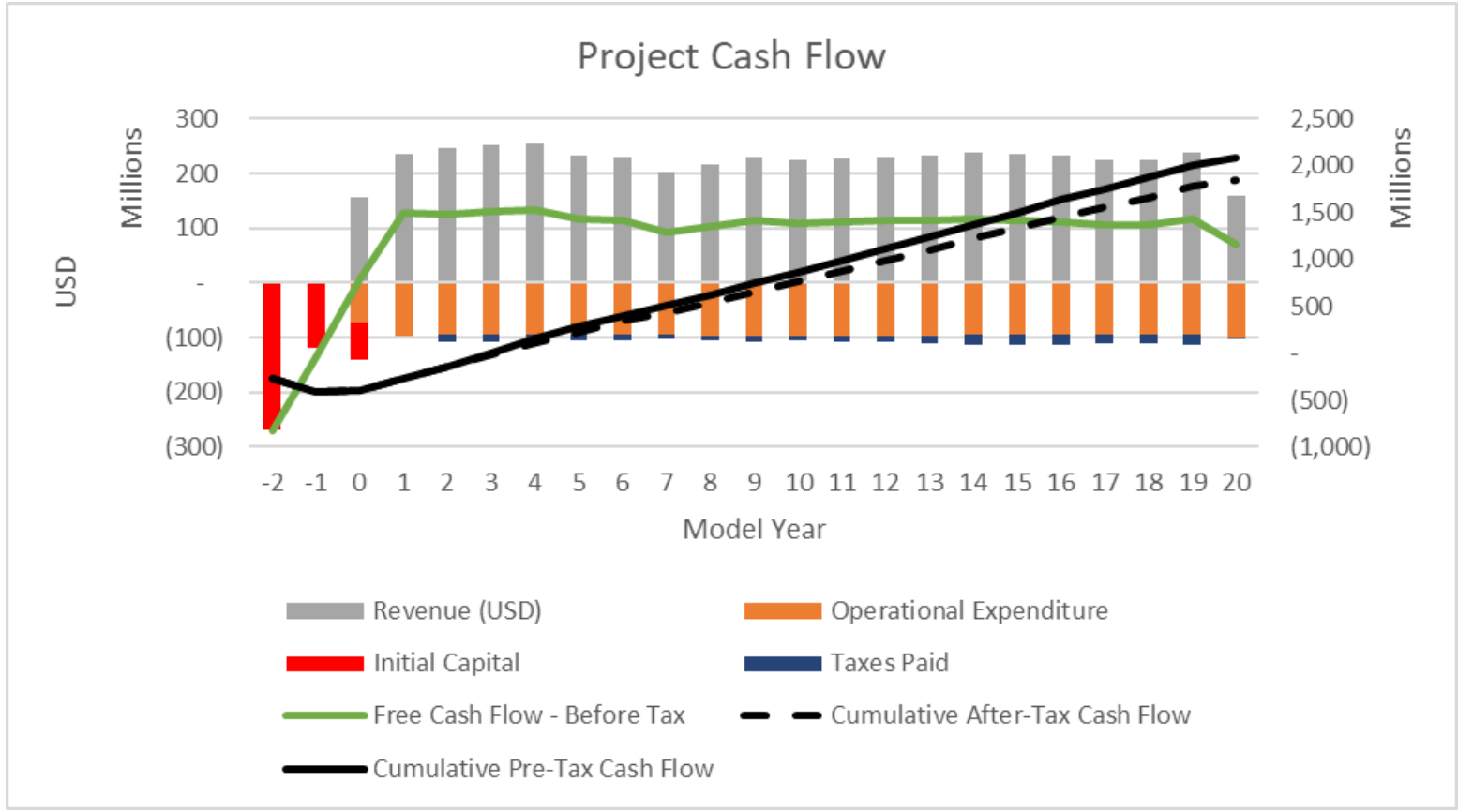
Pricing	Recovery (%)	Avg Annual Production (mt)	Pricing (US$/kg)	OpEx (US$/kg)
NdPR Oxide	64%	1,529	$ 91.00	$ 38.38
Tb Oxide	70%	17	$ 1500.00	$ 632.56
Dy Oxide	67%	91	$ 400.00	$ 168.68
SEG Concentrate	70%	383	$ 10.00	$ 4.22
La	69%	1,486	$ 2.00	$ 0.84
Total	**67%**	**3,506**	**$ 60.85**	**$ 25.66**

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Excellent Project Economics and Estimated Financial Returns

Phase 1 shows a pre-tax IRR of 23% (3Mtpa) with NPV $505 - $674 Milion)

Before Tax Financials	Unit	Value
Free Cash Flow	USD	2,081.1 m
NPV	at 8%	673.9 m
NPV	at 10%	505.1 m
IRR (%)	%	22.5
Payback Period	Yr	2.9
Total Initial Capital	USD	456.1 m



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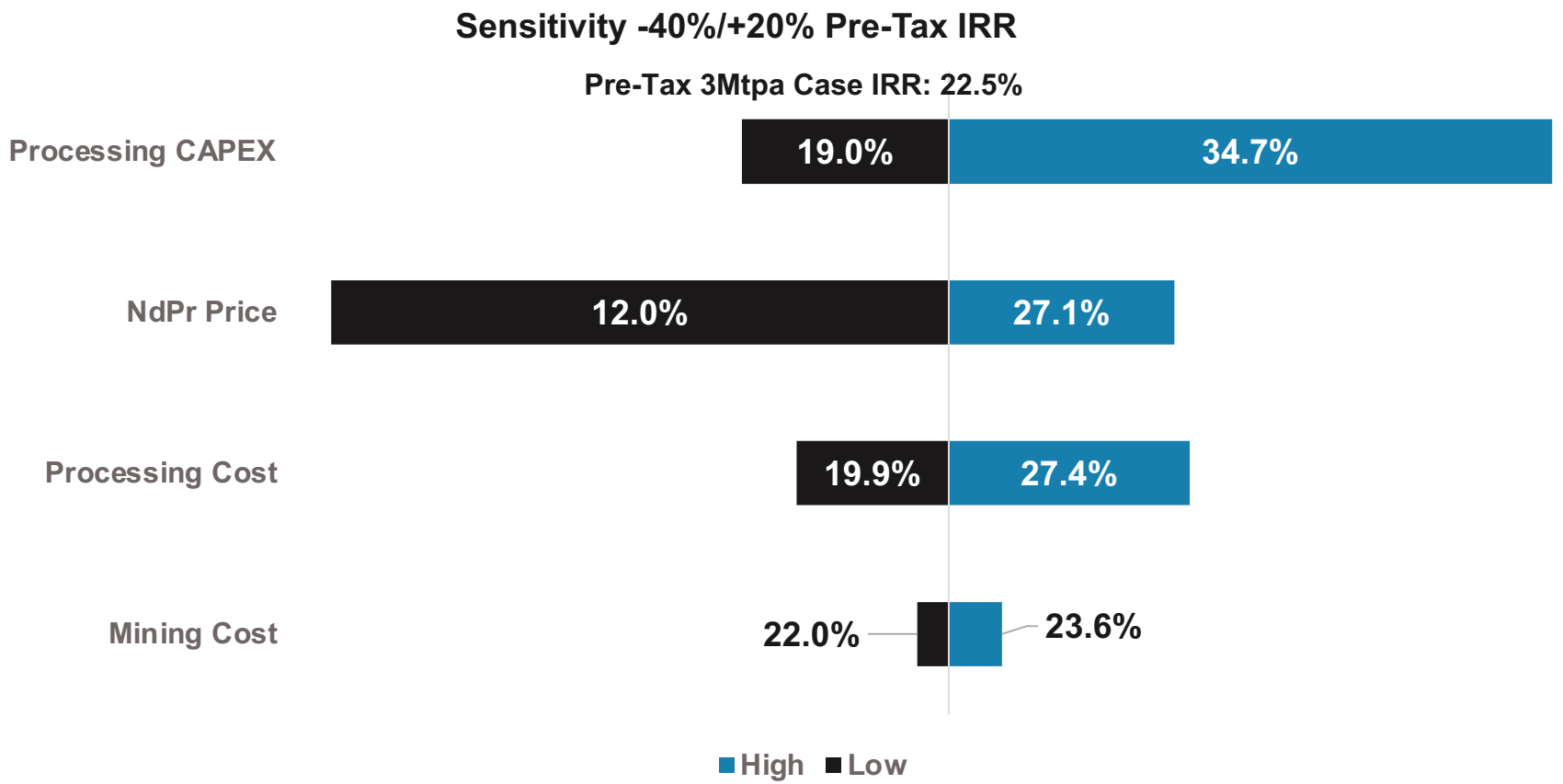
3Mtpa – Base Case and Sensitivities

% of Base Case Change (%)	NdPr_Eq Price (USD/kg)	After Tax NPV at 10% (US$ M)	After Tax IRR (%)	Before Tax NPV at 10% (US$ M)	Before Tax IRR (%)
60%	54.60	70	12.0%	70	12.0%
80%	72.80	249	16.8%	288	17.6%
100%	91.00	430	21.1%	505	22.5%
110%	100.10	522	23.2%	614	24.8%
120%	109.20	615	25.3%	722	27.1%
% of Base Case Change (%)	**Mining Cost (USD/Ore Tonne)**	**After Tax NPV at 10% (US$ M)**	**After Tax IRR (%)**	**Before Tax NPV at 10% (US$ M)**	**Before Tax IRR (%)**
60%	2.84	470	22.1%	553	23.6%
80%	3.79	450	21.6%	529	23.1%
100%	4.74	430	21.1%	505	22.5%
110%	5.21	420	20.9%	493	22.3%
120%	5.69	410	20.7%	481	22.0%
% of Base Case Change (%)	**Processing Cost (USD/ Tonne)**	**After Tax NPV at 10% (US$ M)**	**After Tax IRR (%)**	**Before Tax NPV at 10% (US$ M)**	**Before Tax IRR (%)**
60%	15.86	615	25.5%	728	27.4%
80%	21.15	524	23.4%	618	25.0%
100%	26.43	430	21.1%	505	22.5%
110%	29.08	383	20.0%	448	21.2%
120%	31.72	337	18.9%	391	19.9%
% of Base Case Change (%)	**Processing Capex (US $M)**	**After Tax NPV at 10% (US$ M)**	**After Tax IRR (%)**	**Before Tax NPV at 10% (US$ M)**	**Before Tax IRR (%)**
60%	270	595	32.7%	682	34.7%
80%	360	512	25.7%	594	27.4%
100%	450	430	21.1%	505	22.5%
110%	495	389	19.4%	461	20.6%
120%	539	350	17.9%	416	19.0%

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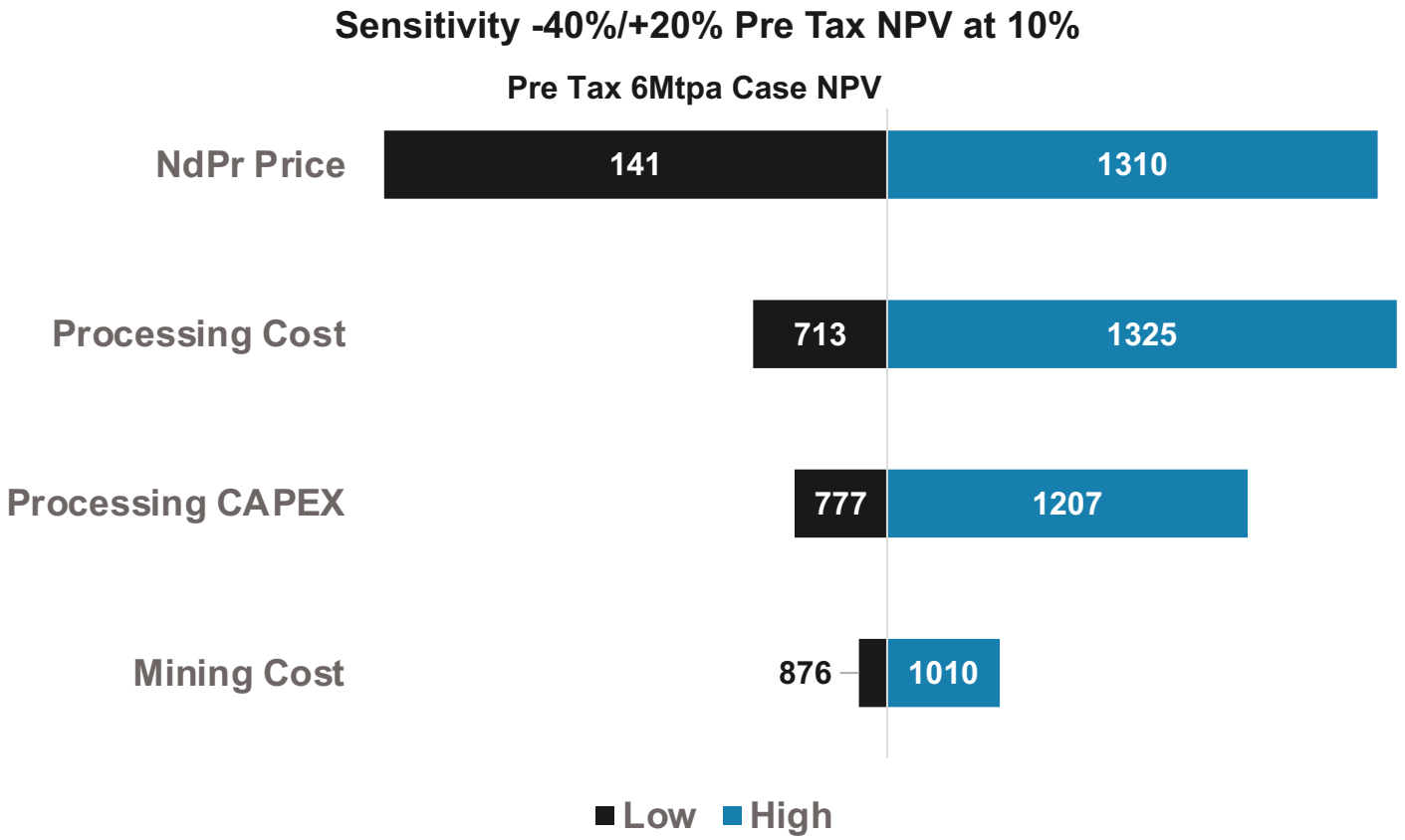
3Mtpa – Base Case Sensitivities

Processing CAPEX and NdPr Pricing are key economic drivers



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6Mtpa – Expansion Case Sensitivities



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Halleck Creek Development Strategy

Three-phased parallel path to permitting

Phase 1:

- COMPLETED -> scoping study Q1 2024
- Pursuing test mine authorisation from the State of Wyoming **(application submitted).**
- Test mine and piloting.
- Low-cost path to de-risking project.

Phase 2:

- Pursue full state permit for expanded area **(Timeframe 1-3 years).**
- Scaled operations and processing across state land.

Phase 3:

- Modular processing design to mitigate forecasted U.S. supply deficit (Timeframe TBD based on project plan).



Expediting permitting, development by pursuing a parallel path to permitting

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Strong Partners

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WWC ENGINEERING · wsp · wood. · SGS · FTE · ALS · NAGROM · Stantec

Tufts University · Columbia University in the City of New York · Lawrence Livermore National Laboratory · PennState · Ames Laboratory U.S. Department of Energy 1947 2022 · University of Kentucky · University of Wyoming



US Department of Energy



US Department of Defense Advanced Research Projects Agency's EMBER program



US Department of Energy Critical Materials Institute (CMI)

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Appendix

Halleck Creek Project Overview Source Material

- Enova Mining
- Texas Mineral Resources
- Imperial Mining Group
- Appia Rare Earths and Uranium
- Namibia Critical Metals
- Nuinsco Resources
- Hastings Technology Metals
- Aclara Resources, Penco
- Meteoric Resources
- American Rare Earths
- Rainbow Rare Earths Ltd
- Leading Edge Materials Corp
- Ucore Rare Metals
- Aclara Resources, Carina

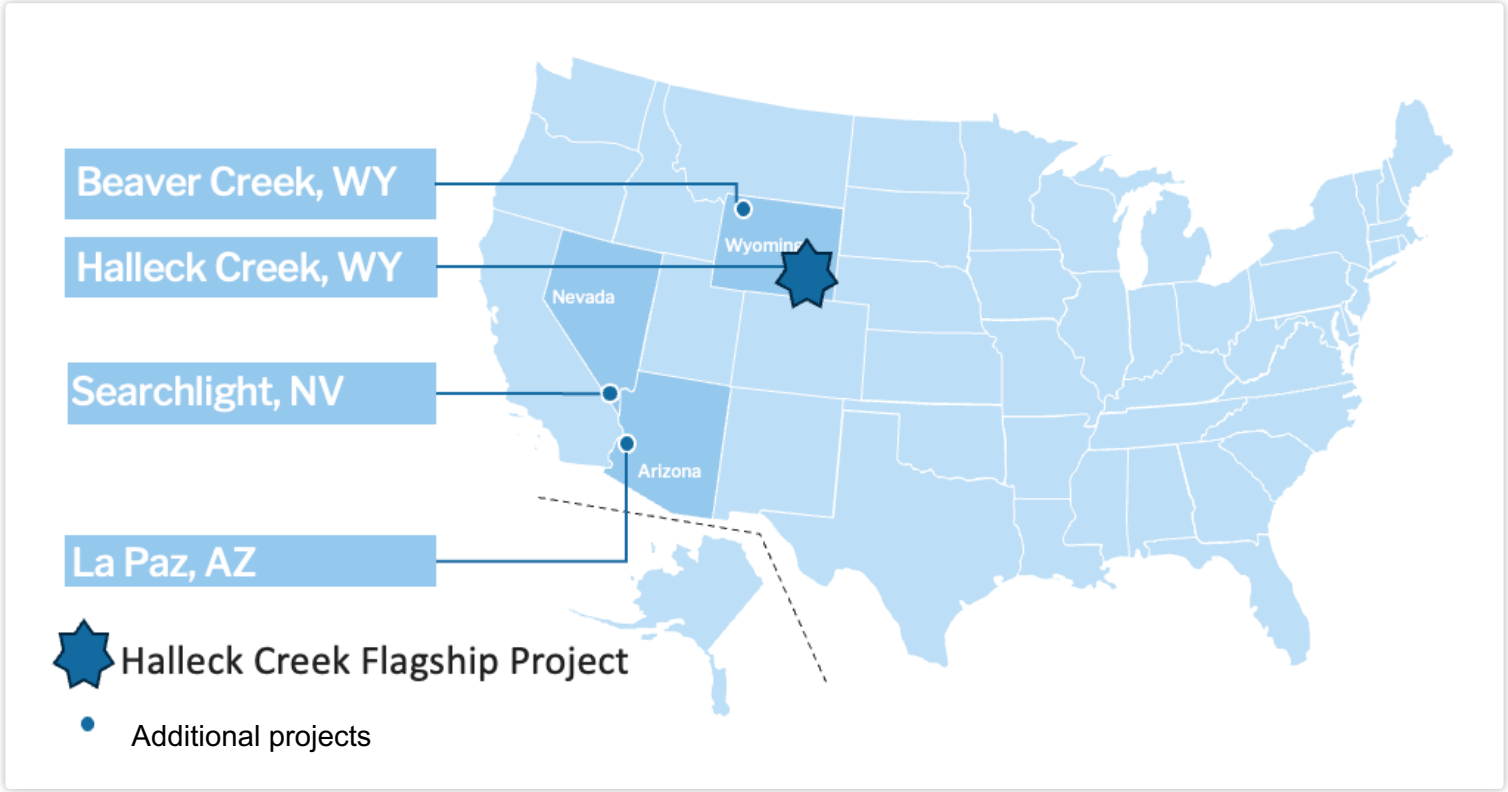


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About American Rare Earths

We are committed to developing our projects featuring sustainable practices, inclusive principles and leading technologies to support the United States' national security and economic transformation goals.

- Largest ASX-listed portfolio of strategic rare earth element assets in the United States.
- Projects across southwest U.S. in favorable mining jurisdictions together covering 17,400 acres.
- Flagship Halleck Creek Project (100% owned) has potential to be largest rare earths deposit in the US
- February 2024 JORC Resource is 2.34 billion tonnes*
- 1.42 billion tonnes of measured and indicated resources were estimated at a grade of 3,296 ppm TREO using a 1,000ppm TREO cut-off*



*Refer to ASX Announcement 7 February 2024

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Halleck Creek Updated Mineral Resource Estimate*

Using the 1,000 ppm TREO cut-off grade the estimated in situ resource estimate at Halleck Creek is 2.34 billion tonnes (Gt) with an average grade of 3,196 pm (0.32%) TREO. This represents an increase of 64% in in situ tonnes compared to the March 2023 maiden resource estimate for Halleck Creek.

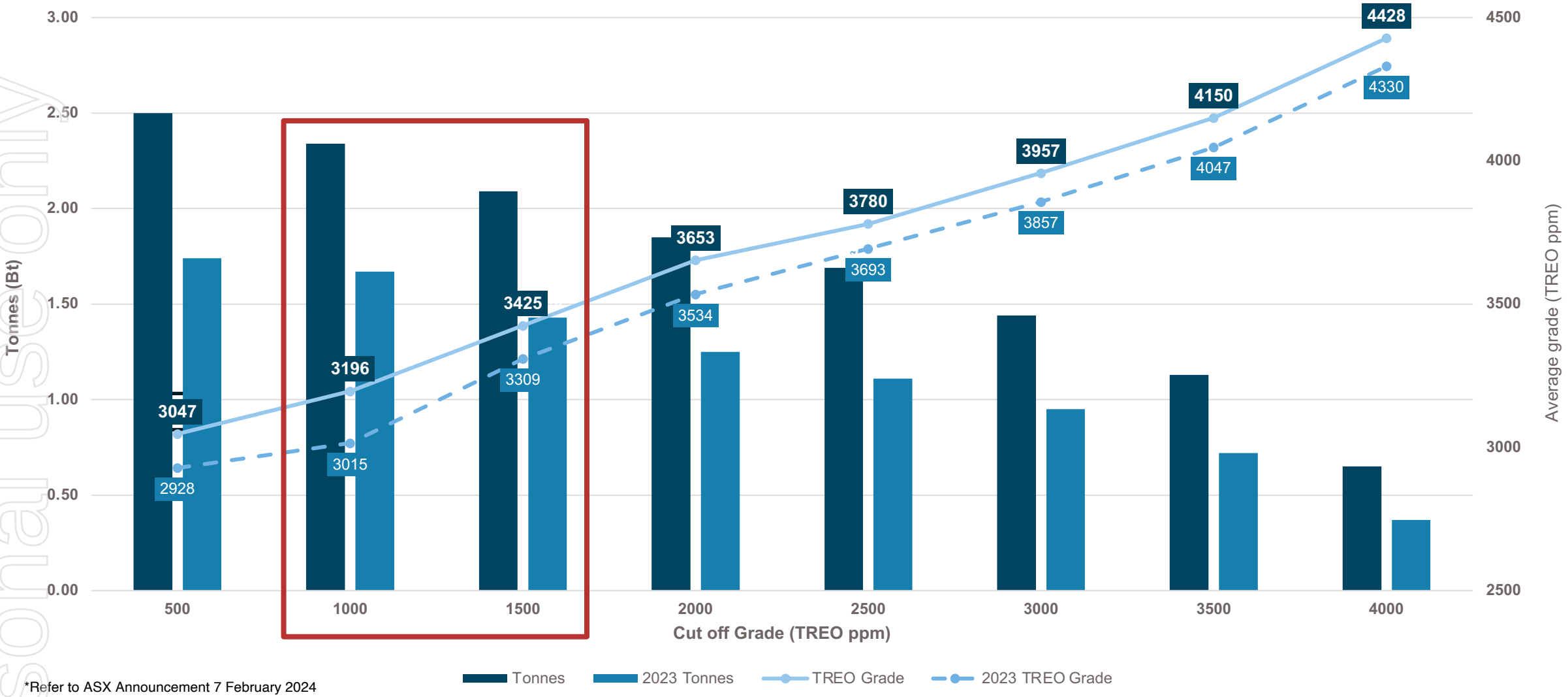
The estimated average Magnet Rare Earth Oxide (MREO) comprises 24% of TREO.

Classification	Tonnage	Grade				Contained Material			
		TREO	LREO	HREO	MREO	TREO	LREO	HREO	MREO
	t	ppm	ppm	ppm	ppm	t	t	t	t
Measured	206,716,068	3,720	3,352	370	904	769,018	692,935	76,550	186,836
Indicated	1,210,173,301	3,223	2,838	349	780	3,899,931	3,434,947	422,124	943,421
Meas + Ind	1,416,889,369	3,295	2,913	352	798	4,668,949	4,127,881	498,674	1,130,257
Inferred	924,698,618	3,041	2,696	339	737	2,812,121	2,493,178	313,187	681,138
Total	2,341,587,986	3,196	2,828	347	774	7,481,070	6,621,059	811,861	1,811,395
Rounded	2,342,000,000	3,196	2,828	347	774	7,481,000	6,621,000	812,000	1,811,000

*Refer to ASX Announcement 7 February 2024

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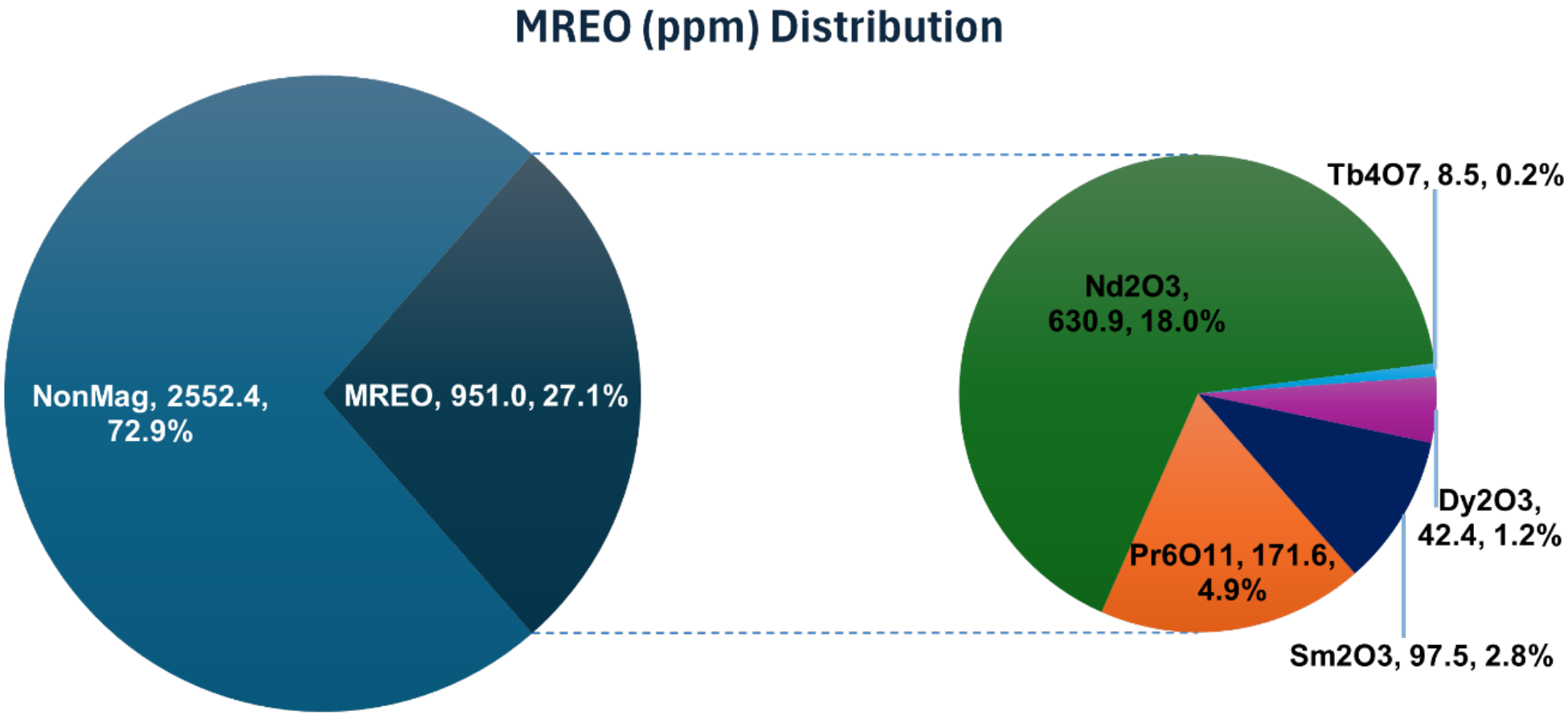
2023 vs 2024 Grades and Tonnages*



*Refer to ASX Announcement 7 February 2024

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Rare Earth Distribution



Based on all drilling data to date

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