



21 March 2023

## Investor Presentation - 2023 Ord Minnett East Coast Mining Conference

Mr Chris Gibbs, CEO and Managing Director, will brief analysts and investors on Thursday 23 March 2023 during the Ord Minnett East Coast Mining Conference. A copy of the Company's presentation is enclosed.

Authorised by  
Chris Gibbs  
CEO & Managing Director

For further information, please visit [www.americanrareearths.com.au](http://www.americanrareearths.com.au)  
or contact [info@americanrareearths.com.au](mailto:info@americanrareearths.com.au)

### **About American Rare Earths:**

American Rare Earths Limited (ASX: ARR, OTCQB: ARRF, FSE: 1BHA) is emerging as an alternative international supply chain to China's market dominance of a global rare earth market expected to expand to US\$20 billion by the mid-2020s. The Company's mission is to supply Critical Materials for Renewable Energy, Green Tech, Electric Vehicles, National Security, and a Carbon-Reduced Future.

American Rare Earths is one of the few listed companies with exposure to the rapidly expanding US market, developing its 100% owned magnet metals projects, Halleck Creek in Wyoming, and La Paz in Arizona. Both have potential to be among the largest, rare earths deposits in North America. The company is concurrently evaluating other exploration opportunities while collaborating with US Government supported R&D to develop a sustainable domestic supply chain for the renewable future.



# American Rare Earths

(ASX: ARR; OTC: ARRNF; FSE: 1BH)

Ord Minnett East Coast Mining Conference  
March 2023

# 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.

No representation, warranty or assurance is given or made in relation to any forward-looking statement by ARR or it’s representatives, In addition, no representation, warranty or assurance is given in relation to any underlying assumption or that any forward-looking statements will be achieved. Actual future events may vary materially from the forward looking statements and the assumptions on which the forward-looking statements are based. Accordingly, presentation readers are cautioned not to place undue reliance on such forward looking statements as a result of the uncertainties.

ARR wishes to caution readers that these forward-looking statements are based on economic predictions and assumptions on reserves, mining method, production rates, metal prices and costs (both capital and operating) developed by ARR management in conjunction with consultants.

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

Accordingly, subject to any continuing obligations under the Corporations Act and the Australian Securities Exchange Listing Rules, ARR disclaims any obligation or undertaking to publicly update or revise any of the forward-looking statements in this presentation, whether as a result of new information, or any change in events, conditions or circumstances on which any such statements is based.

## Competent Person Statement

The information in this report that relates to Exploration Results is based on information compiled by Mr. Jim Guiling. Mr. Guiling is a Member of a Recognised Overseas Professional Organisation included in a list promulgated by the ASX (SME Registered Member of the Society of Mining, Metallurgy and Exploration Inc). Mr. Guiling is Principal of independent consultants World Industrial Minerals LLC. Mr. Guiling has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which they are undertaking 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. Guiling consents to the inclusion in the report of the matters based on their information in the form and context in which it appears.

The information in this document that relates to Mineral Resource Estimate is based on information provided by Mr Alfred Gillman. Mr. Gillman is Principal of the independent consultant firm Odessa Resources Pty Ltd. Mr. Gillman is a Fellow and Chartered Professional of the Australian Institute of Mining and Metallurgy (AUSIMM) 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. Gillman consents to the inclusion in the report of the matters based upon the information in the form and context in which it appears.

The mineral resources disclosed in this presentation are compliant with NI 43-101 standards which are close to the JORC Code in their key definitions. La Paz mineral resources can therefore be quoted as “qualifying foreign estimates” according to ASX listing rules.

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.

# Compelling story

American Rare Earths is in the right place, at the right time, and with the right commodities.

- **Two world-scale projects in mining friendly jurisdictions** – the massive Halleck Creek Project in Wyoming and its Arizona counterpart, La Paz.
- **Environmentally and socially responsible** – projects permitting friendly and enjoy low penalty elements
- **Outstanding metallurgy and mineralogy** – will reduce capital and operating costs by allowing conventional technology, opening the pathway to early production.
- **Well-funded** with cash of \$15.5m at end of December 2022 and significant financial assets ensuring we are well positioned to achieve our planned objectives over the next 2 to 3 years.
- **Key partnerships** – member of US Critical Materials Institute and key partner on multiple US Government funded R&D initiatives designed to transform rare earth processing.
- **Geopolitical forces** – a US administration determined to promote domestic mining of rare earths to lessen its country's dependence on Chinese supply that underpins our objective to become a significant American-based supplier of critically needed rare earths.
- **Market fundamentals** – rapidly increasing global demand for rare earth elements.

*“In other words, we have the key mineral elements in the biggest economy in the world, deposits that allow us to stand out from the rare earths crowd, and we are planning to supply the USA desperately seeking rare earths from a jurisdiction free of political risk.”*



*Our vision is to create significant shareholder value by being a leading and sustainable supplier of rare earths*

*Our mission is to supply rare earths for renewable energy, green technology, a sustainable economy, national security and a carbon reduced future*

# Key areas of focus to create substantial shareholder value



Expanding high value resources, including two of the potentially largest rare earths projects in the US



Collaborating with leading R&D projects part of the US Government push to build domestic supply



Exploring and developing new rare earth projects



Focus on Neodymium and Praseodymium (NdPr) whose demand is rapidly accelerating



# Corporate information

(ASX: ARR; OTCQB: ARRNF; FSE: 1BH)

## Offices

Sydney Suite 706, 89 York Street, Sydney, NSW, AU

USA 514 Grand Ave. #371 Laramie, WY 82070

## Capital Structure (AUD)

Price (after hours 17 March 2023) \$0.20

12 Month Hi-Low \$0.18 - \$0.58

Shares Outstanding 446.4m

Market Cap \$89.28m

Cash (on 31 Dec 2022) \$15.5m

## Ownership Structure

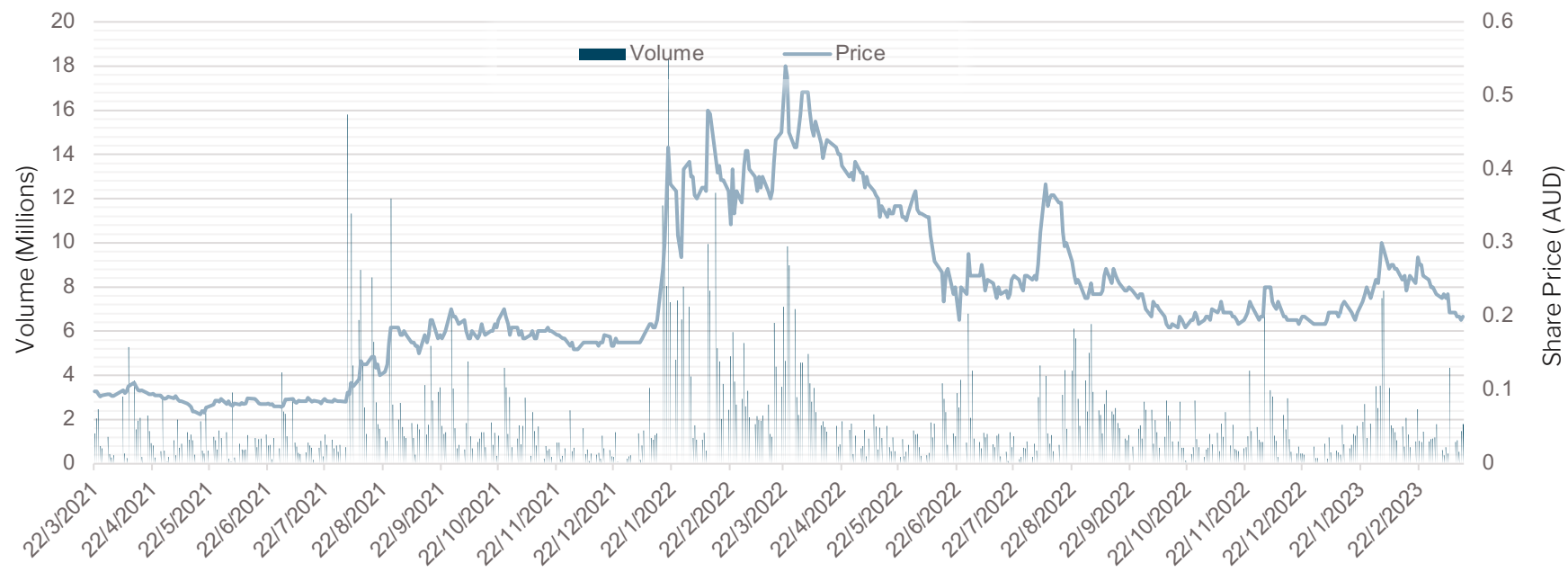
American Rare Earths Limited (Australia)

Western Rare Earths Inc USA (Project Searchlight)

Wyoming Rare (USA) Inc (Project Halleck Creek)

La Paz Rare Earth LLC, USA (Project La Paz)

## Two Year Share Price History



The background is a dark blue gradient. In the lower half, there is a perspective view of a grid of lines receding towards a horizon. The grid lines are lighter blue and create a sense of depth. The horizon line is a simple dark blue silhouette of a landscape with hills and a few small structures.

# Our Trajectory



# Our pathway to becoming a leading supplier of critical minerals for a sustainable future

## Exploration

Define resources and reserves



## Development

Advance mining assets



## Production

Purify and separate rare earths after extraction



## Finished Products

Be a leading supplier of rare earths for a range of technologically advanced products vital to the economy of the future

A dark blue-tinted landscape photograph of a desert. The foreground is filled with various types of cacti and low-lying desert vegetation. In the middle ground, there are rolling hills and a range of mountains in the distance under a cloudy sky. The overall mood is serene and expansive.

# Our Key Projects

# Key sites

## 1 Halleck Creek, WY

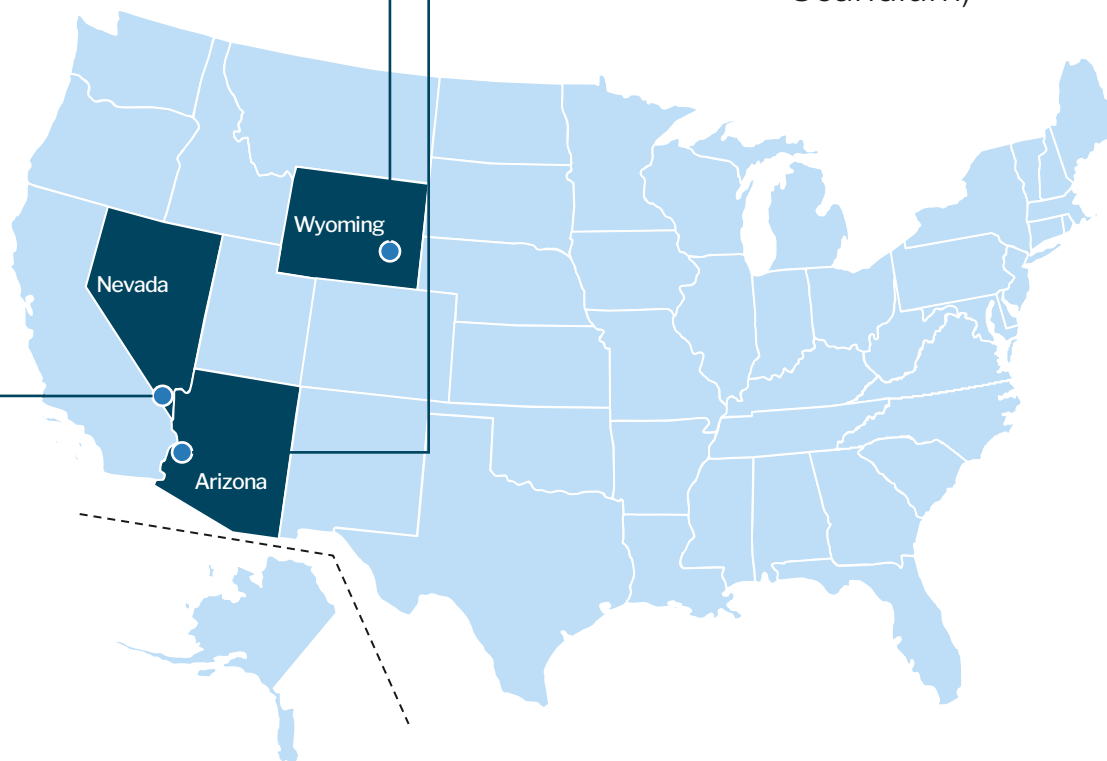
- Exploration Target of 1.01 to 1.27 billion tonnes
- High value magnetic metals (NdPr)
- JORC Resource Drilling Completed Dec 2022
- Significant JORC Resource Q1 2023

## 2 La Paz, AZ

- JORC resource of 170 million tonnes
- Exploration target of 742 to 928 million tonnes
- High value magnet metals (NdPr & Scandium)

## 3 Searchlight, NV

- <30km from only producing REE mine in US
- Initial sampling encountered substantial grades of heavy and magnet REE



## High value magnet REEs

60  
**Nd**  
Neodymium

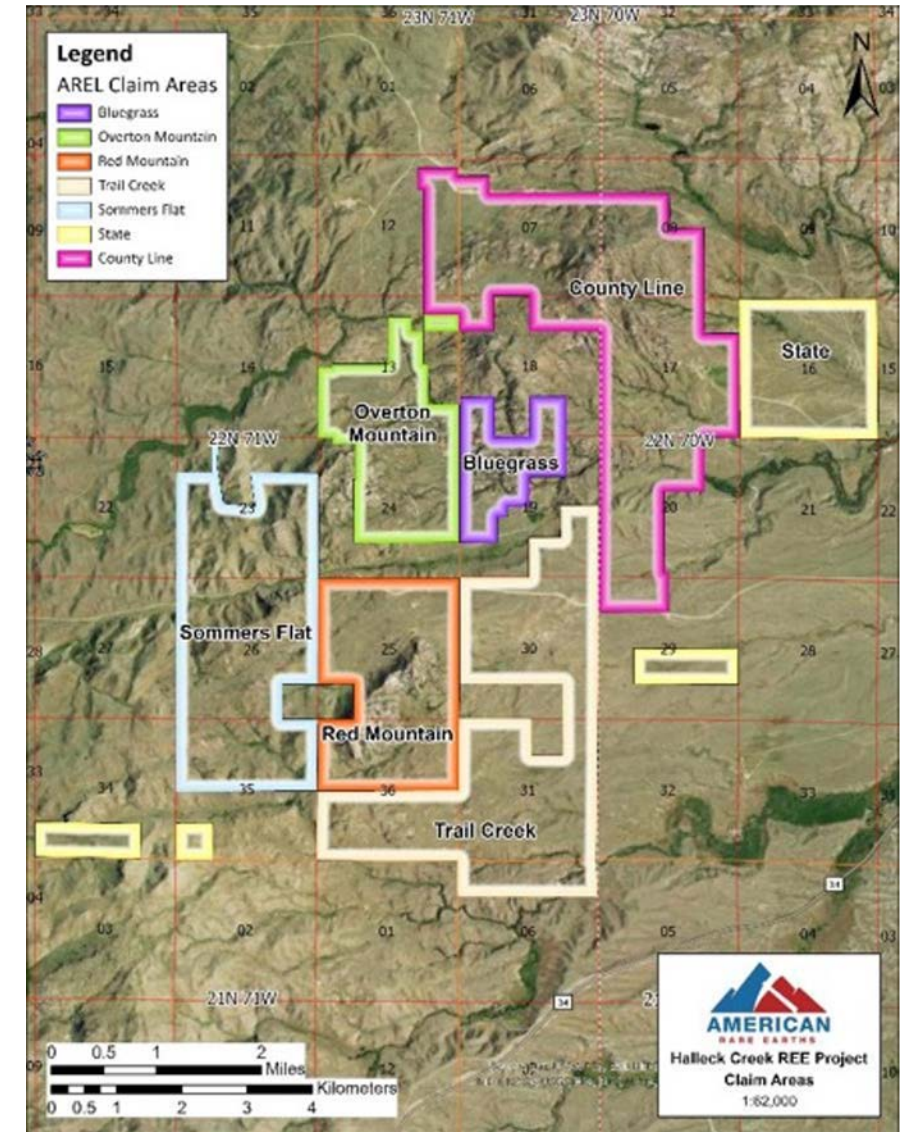
59  
**Pr**  
Praseodymium

# Halleck Creek, Wyoming



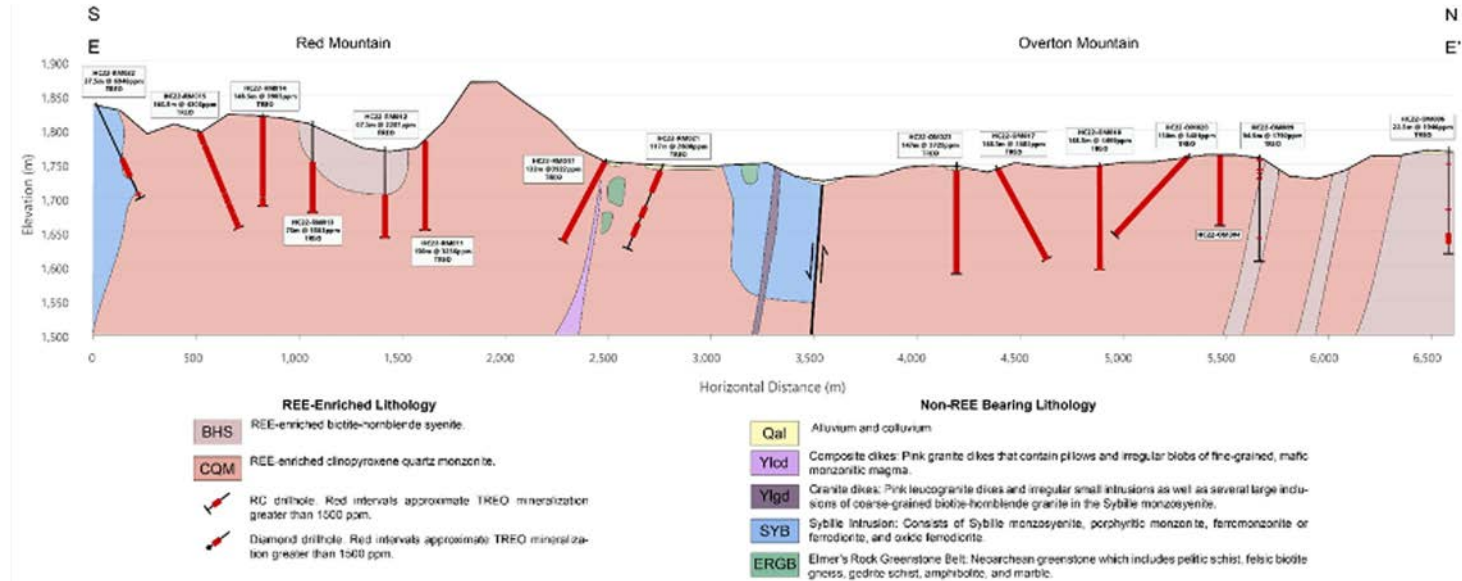
# Halleck Creek District

- Potentially the largest North American rare earths deposit
- Recently expanded district to 8,165 acres over seven zones
- Existing Exploration Target of 1.01 to 1.27 billion tonnes with significant upside
- Recent drilling shows mineralisation to depths of 50% more than exploration target
- The current resource estimate is between 692,000 and 865,000 tonnes of high value Magnet Rare Earth Oxides
- Total Rare Earth Oxides values up to 8,359ppm (parts per million).
- Testwork demonstrates the ore responds well to conventional processing technology, which reduces operating and capital costs
- Exceptionally low levels of radioactive penalty elements Uranium and Thorium further reducing costs while boosting the ESG profile
- Close to infrastructure and a highly skilled workforce

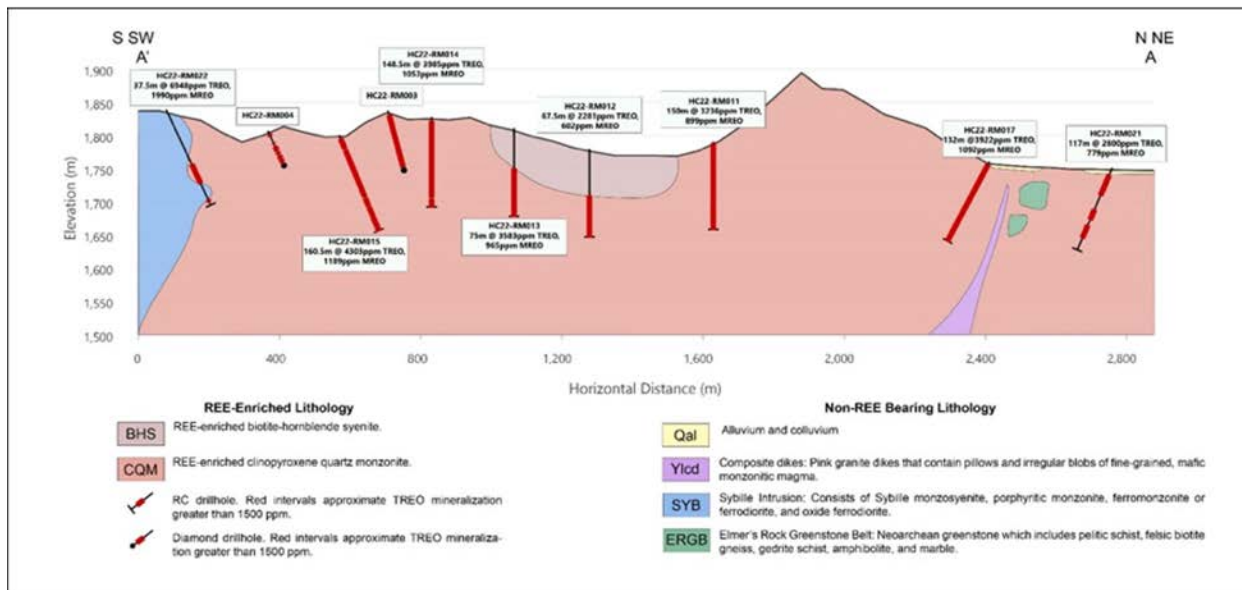


# Significant JORC in the pipeline

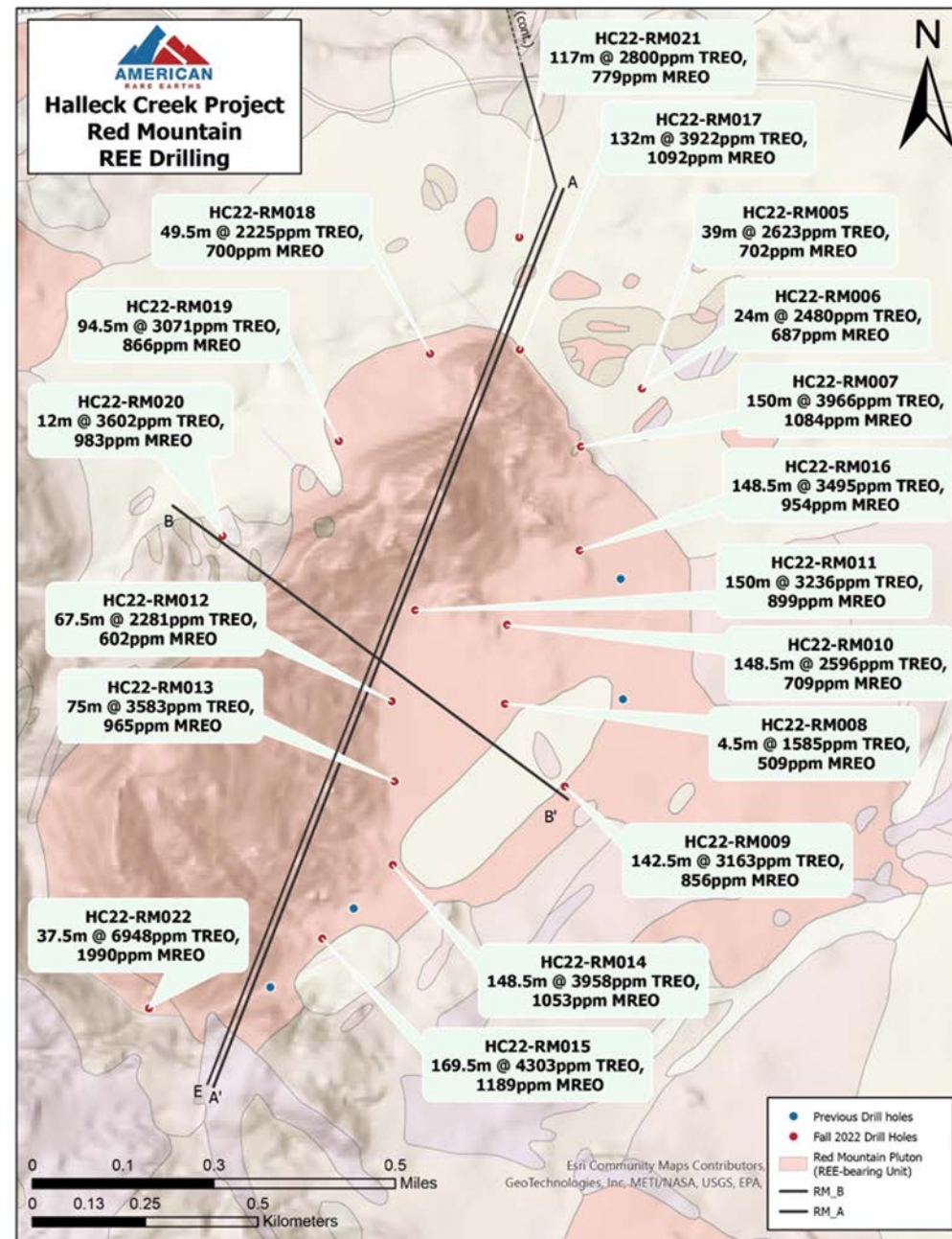
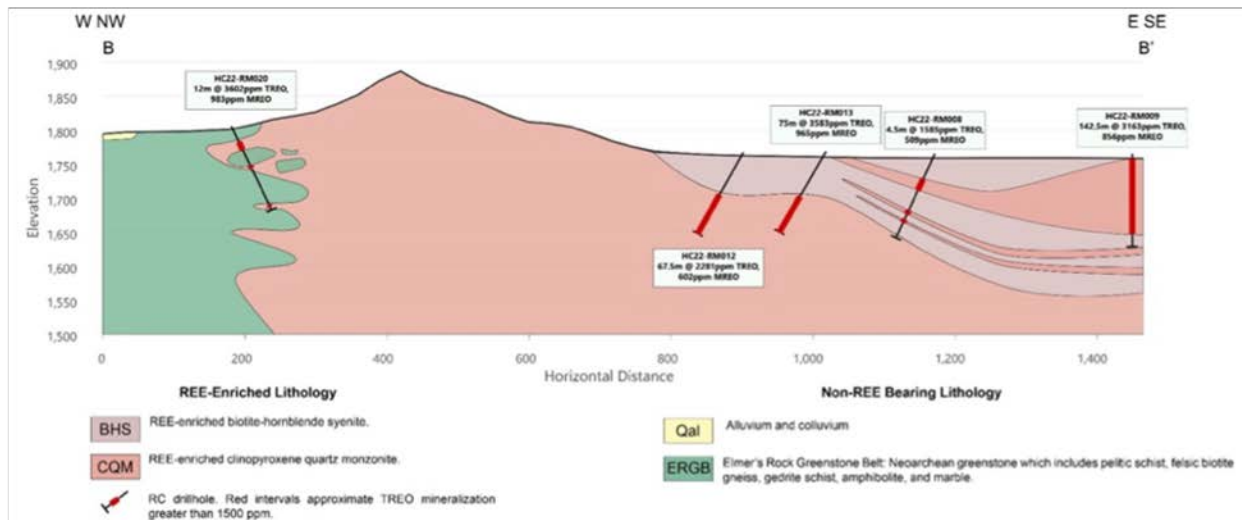
- 38-hole, 5,726m drilled with 3,817 samples collected to analysis.
- Final assays received confirm rare earth mineralisation at both the Red Mountain and Overton Mountain areas
- Surface grades from previous sampling shown now to be consistent at depth
- This is important as the area drilled is only 25% of the total area sampled to date
- The company is on target to release its maiden JORC Resource at the end of March 2023



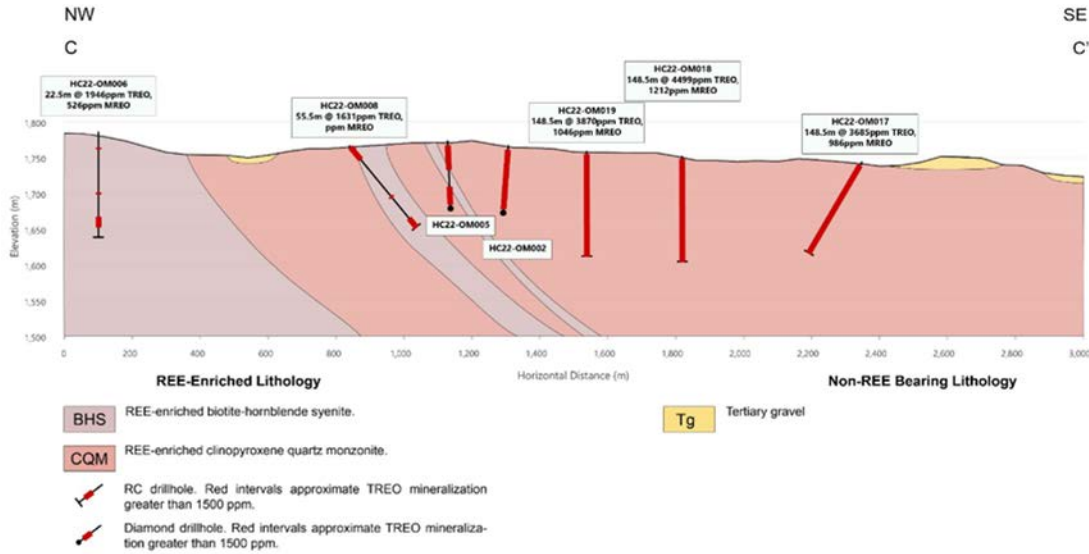
## Red Mountain Cross Section A-A



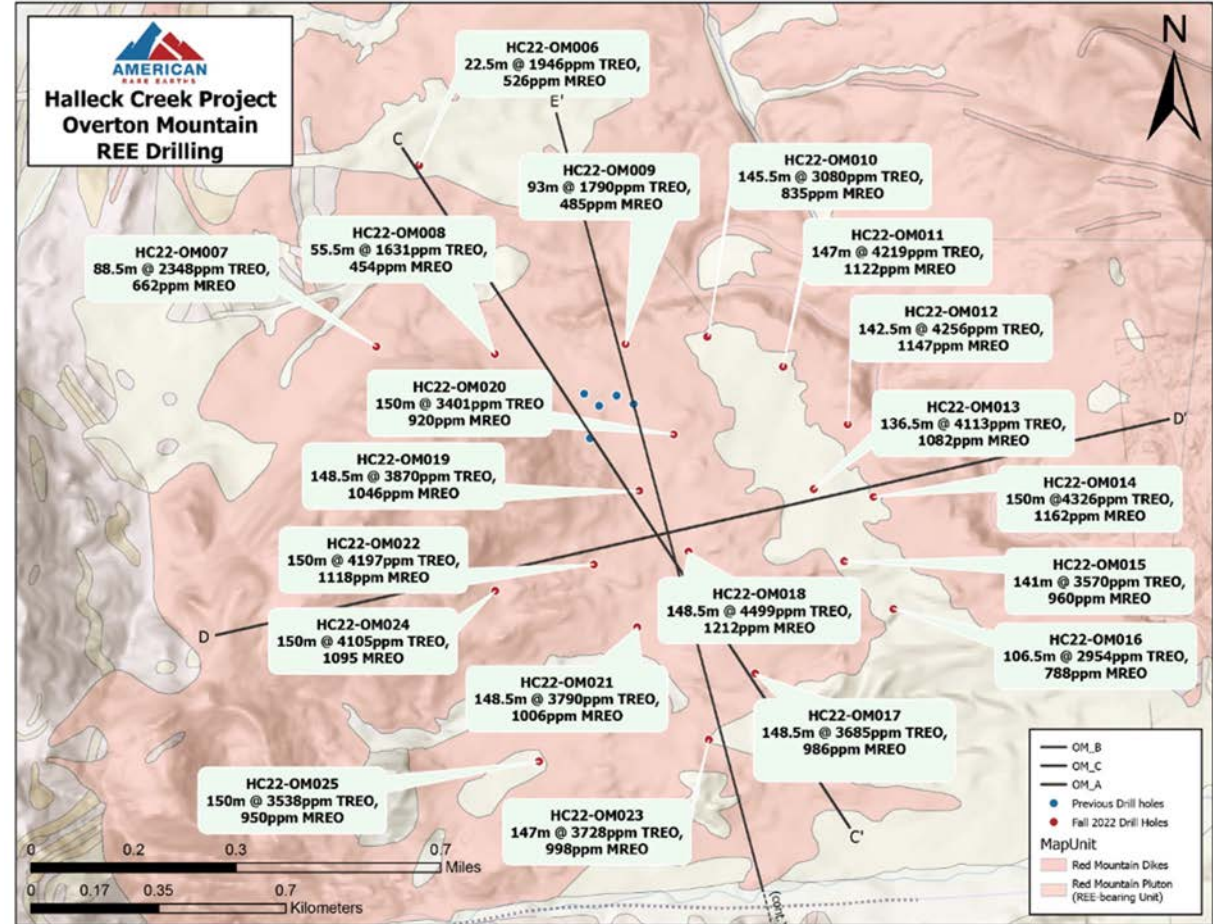
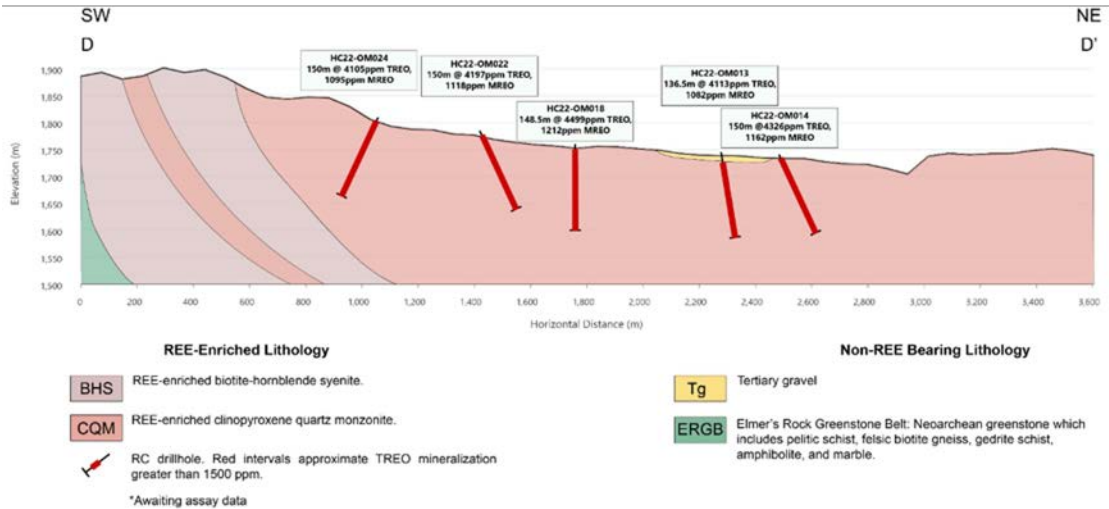
## Red Mountain Cross Section B-B



# Overton Mountain Cross Section C-C



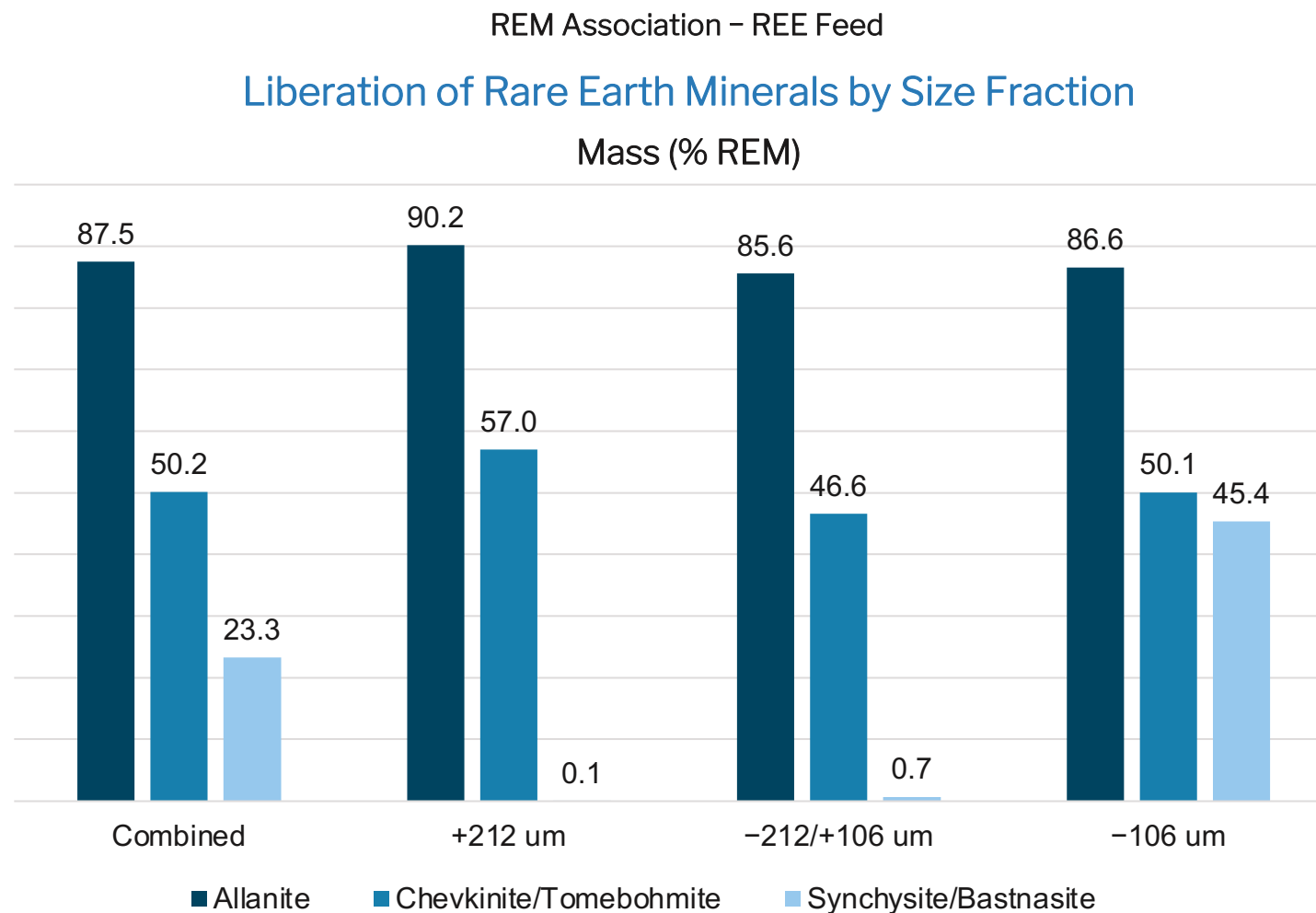
# Overton Mountain Cross Section D-D





# Outstanding mineralogy results

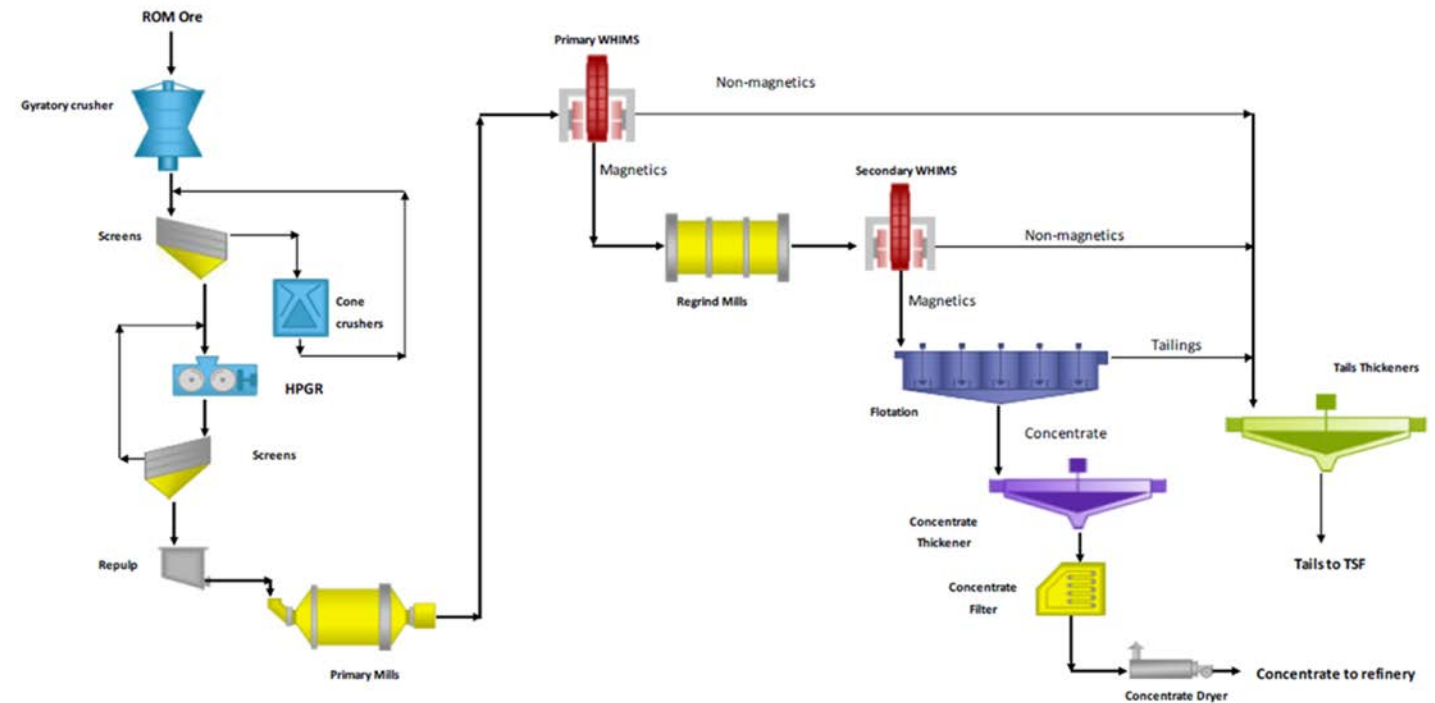
- The mineralogy test work determined that rich allanite is the primary rare earth element bearing mineral at the project
- The average grain size of the observed allanite was 232 microns, indicating a coarse grain structure
- Constitutes approximately 87.5% of all allanite in the sample material with minimal gangue (waste) minerals
- Grade-recovery relationships were developed by SGS to indicate the theoretical ultimate beneficiation potential for Cerium, Lanthanum, and Neodymium
- SGS predicted a Cerium grade of 9.3% for 94% recovery, a Lanthanum grade of 4.6% for 94% recovery and a Neodymium grade of 3.8% for 95% recovery



# Metallurgical test results

- Initial round of metallurgical results on the core material are very positive
- Halleck Creek was rated in the lowest 14th percentile for ore strength
- The Bond abrasion index test returned a value of 0.24, below the average of Wood Australia's database
- The Bond ball mill work index test result of 15.6 kWh/t is close to the average hardness relative to Wood's database
- Initial tests using Wet High Intensity Magnetic Separation (WHIMS) yielded 90.5% recovery for an upgrade factor of 3.3, rejecting 71.7% of feed mass
- The easier the ore is to crush and grind, the lower the Company's operating costs
- Conceptual flowsheet featuring a two-stage crushing circuit, HPGR and primary ball mill
- Other options, such as primary crushing and single stage SAG milling, to be evaluated in further studies

## Conceptual Flowsheet – Halleck Creek



La Paz,  
Arizona

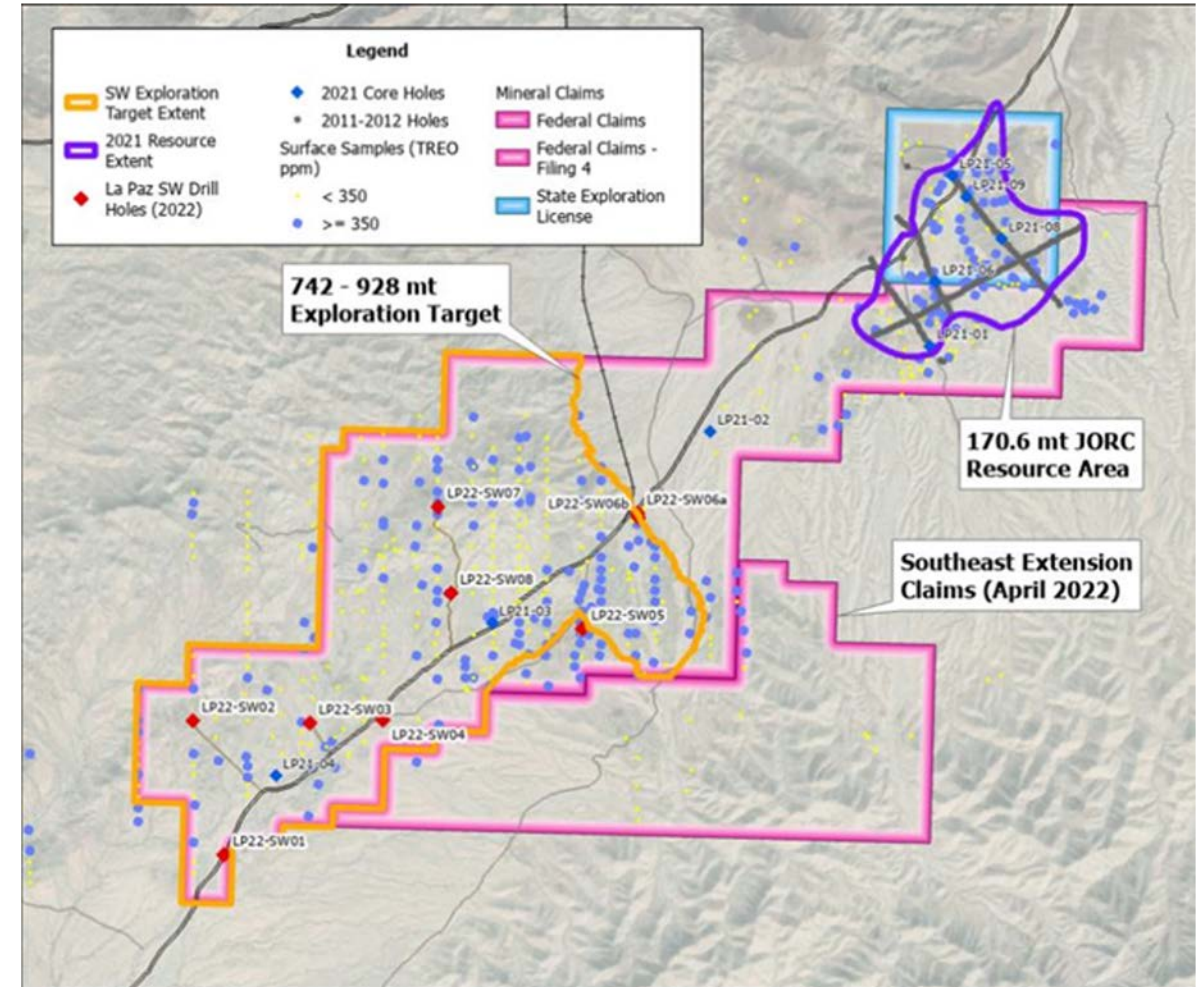


# La Paz REE and Scandium Project

- 170.6 million tonnes JORC compliant resource
- Exploration Target 742-928 million tonnes
- Exploration Licenses across 7,506 acres with 33 Claims
- Recovery rates of up to 66.4% TREO and 71.5% Scandium achieved
- Near-surface resource
- Negligible Thorium and Uranium
- Close to key infrastructure in mining friendly Arizona
- 2022 Exploration Drilling completed in the new La Paz SW area

| JORC 2021: Select Rare Earth Element Oxides |             |                  |
|---|-------------|------------------|
| Element                                     | Oxide (ppm) | Total Oxide (kg) |
| Scandium (Sc)                               | 26          | 4,406,306        |
| Neodymium (Nd)                              | 79.76       | 13,606,689       |
| Praseodymium (Pr)                           | 20.97       | 3,577,386        |
| Dysprosium (Dy)                             | 10.35       | 1,765,662        |
| Terbium (Tb)                                | 4.59        | 783,033          |
| Samarium (Sm)                               | 15.31       | 2,611,816        |

| JORC 2021: Estimated (TREO) Resources at La Paz |                    |            |                   |
|---|--------------------|------------|-------------------|
| Class   | Tonnage            | TREO (ppm) | TREO (kg)         |
| Indicated                                       | 35,161,600         | 459        | 16,144,347        |
| Inferred  | 135,433,800        | 472        | 63,865,163        |
| <b>Total</b>                                    | <b>170,595,400</b> | <b>469</b> | <b>80,009,510</b> |



# Resource upside

Multiple opportunities to substantially increase the JORC Resources at La Paz:

## Scope

- Current Resource estimate encompass only 10.2% of project area
- Maiden Resource area open laterally and at depth

## Quality

- Plan to increase Indicated portion of existing JORC Resource with tighter spaced drilling to convert from Inferred status

## Growth

- Opportunities to increase drilling locations inside the boundary
- >55% of the 206 drill holes ended in mineralisation, therefore holes down to 200m are planned

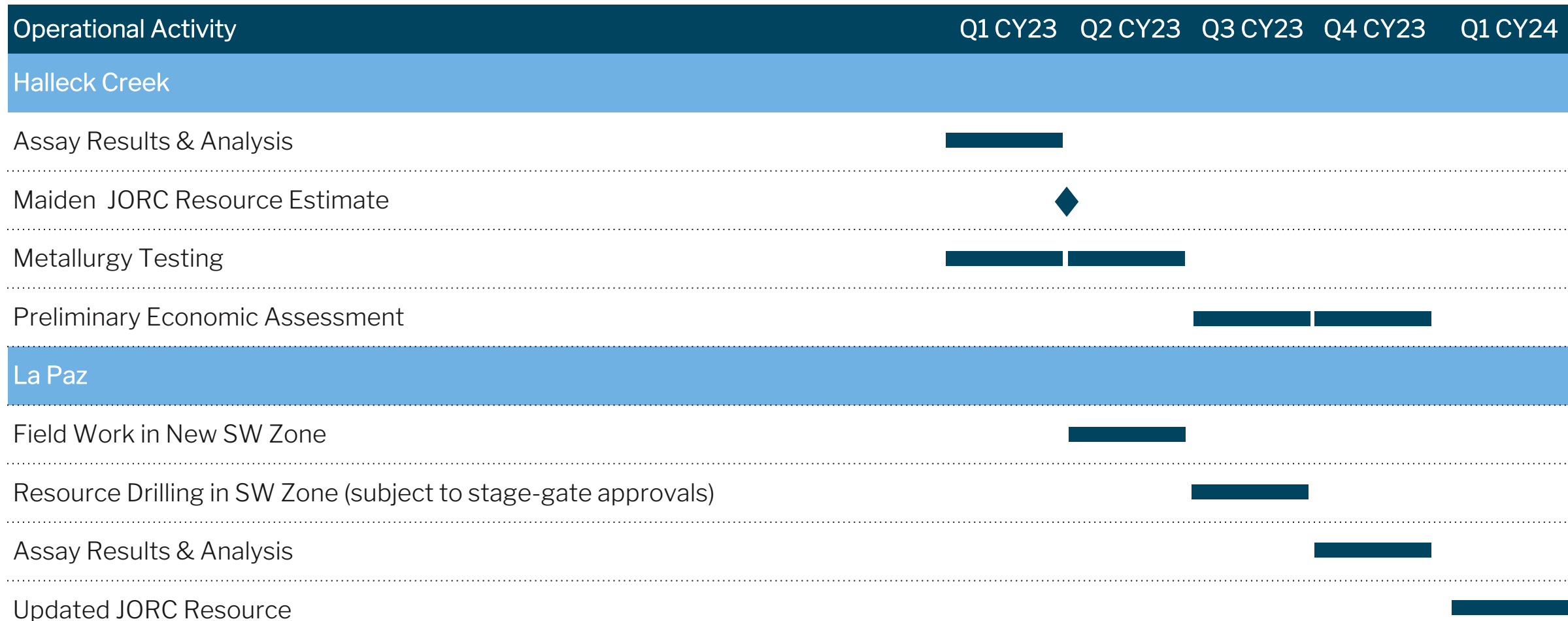


Upcoming activity



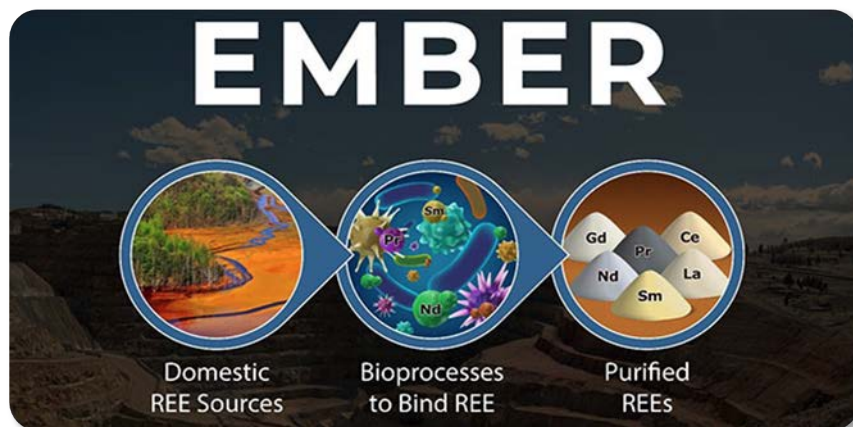
# Upcoming activity

With a portfolio of rare earths assets, we are anticipating frequent activity this year and beyond



# Collaborating with US funded R&D projects

We are proud to partner with leading researchers at:



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



US Department of Energy Critical Materials Institute (CMI)



# Contact us



[www.AmericanRareEarths.com.au](http://www.AmericanRareEarths.com.au)

Chris Gibbs

Managing Director

[info@AmericanRareEarths.com.au](mailto:info@AmericanRareEarths.com.au)

# Management & Executive Directors



## Chris Gibbs – Managing Director and Chief Executive Officer

Chris has over 28 Years experience in the resource sector within Australia, Canada, USA, South America, Africa and Europe. He is an innovative leader with a proven track record for implementing organisational change and delivering business results. Vice President of Argonaut Gold since 2018 and previous leadership roles with Centerra Gold, Barrick Gold, Placer Dome and Millennium Chemicals.



## Melissa Sanderson – Executive Director and President of North America

Her International career has spanned diplomacy and mining for 30+ years. Mel is adept at cross-cultural communication and brings leadership experience in inclusivity and diversity issues. At global mining leader Freeport-McMoRan, Mel sited, staffed, and ran a corporate office focused on government and public relations, as well as social responsibility programs. She served our nation as a senior diplomat in the U.S. Department of State.



## Dwight Kinnes – Chief Technical Officer

Dwight has over 35 years' experience as a technical geologist, specializing in resource modeling, working on mining projects across the US, Canada, Indonesia, Thailand, Columbia, and Australia. Prior to joining ARR, he spent 17 years as President/Principal Consultant at Highland GeoComputing, LLC focusing on resource development, mine production geology and technical database solutions.



## Mark Terry – Chief Financial Officer

Mark is a CPA with over 25 years experience in the management of financial, commercial and legal matters in the mineral exploration and mining industry. He commenced his career with KPMG before holding a range of senior finance positions with Normandy Mining, Newmont Australia and Xstrata Zinc where he was Finance and Commercial Manager for Australian Operations. Mark later held the role of CFO of Terramin Australia Limited before providing consulting services in senior finance and project roles with Havilah Resources and Rex Minerals. Most recently, Mark was CFO of Centrex Metals.



# Our Board



## Creagh O'Connor – Chairman

Creagh has approximately 40 years experience as a chief executive and board member for public and private companies. During this time, he has been involved in managing Australian and international oil, gas and mineral projects.



## Geoffrey Hill – Vice Chairman and Non-Executive Director

Geoff was a director of ARR from 1989 to June 2014, then re-joined the board in August 2015. He has extensive experience in the identification and implementation of mergers and takeovers and has acted for a wide range of corporate clients in Australia and overseas.



## Clarence McAllister – Non-Executive Director

Clarence has over 30 years of international experience in engineering and construction and has been the Chairman of the Board of Western Rare Earths since 2020 and of La Pa Rare Earth LLC prior to that. He is also the Founder and Chief Executive Officer of Fortis Engineers, a world-class electrical and mechanical engineering firm based in Phoenix, Arizona.



## Sten Gustafson – Non-Executive Director

With 25+ years of experience in the global natural resources sector, particularly oilfield services, exploration, refining, production, and marketing, Sten is a Senior natural resources industry executive and board member, as well as a former investment banker and corporate and securities attorney.



## Richard Hudson – Non-Executive Director

Richard is experienced in strong corporate governance & strong internal controls, resolving shareholder disputes, advising on business sales, acquisitions & mergers. He is currently Chairman of a private Contract Research Organisation in Animal Health operating in Australia & New Zealand. He is Company Secretary of a group of Emergency Veterinary Practices operating throughout Australia. He was previously Chairman for many years of manufacturing business operating in the marine industry in Australia, New Zealand, and Asia.

# End uses of magnet rare earths (NdPr)

Permanent magnets for electric vehicles, offshore wind turbines, consumer electronics and national defence



# Rare earths are a hot topic

**Forbes**

**Unless We Get Serious About Domestic Mining, America's Electrified Future Is Impossible**



**EXCLUSIVE U.S. bill would block defense contractors from using Chinese rare earths**



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**The new U.S. plan to rival China and end cornering of market in rare earth metals**

**The Economist**

Menu Weekly edition Search

Finance & economics | Mission critical

**Governments have identified commodities essential to economic and military security**

obtaining them is another matter

**MINING [DOT] COM**

**Merger of Chinese rare earth producers could affect prices, analysts say**

**Bloomberg**

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**Politics**

**New US Program Targets Rare Minerals Needed for EVs and Solar Panels**

- State Department's Fernandez sees effort aiding manufacturing
- Officials now liaising between companies and countries

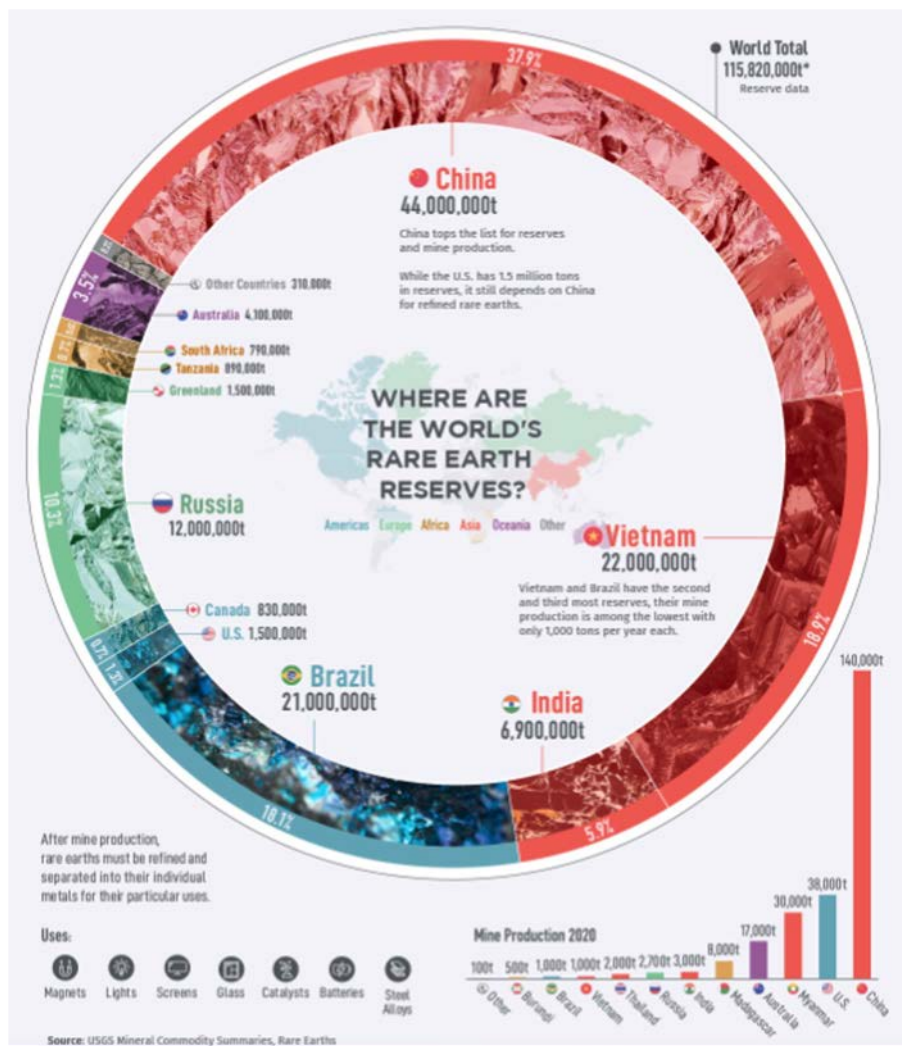
**FINANCIAL TIMES**

Opinion **Inside Business**

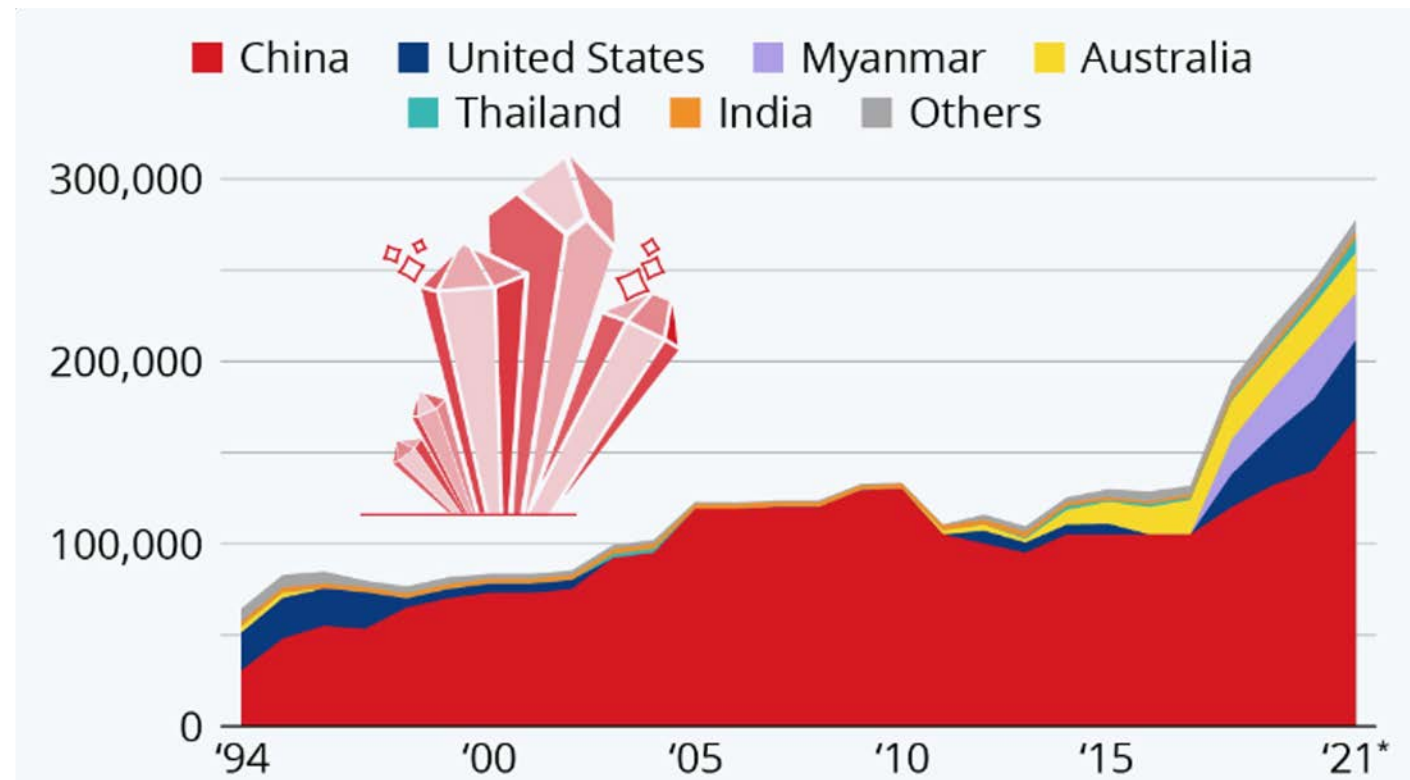
**Industry needs a rare earths supply chain outside China**

Resource security requires corporate collaboration as well as public funding

# Supply constraints and geopolitics



China mines 58% of rare earths but processes 85% at a time of rising geopolitical tensions.



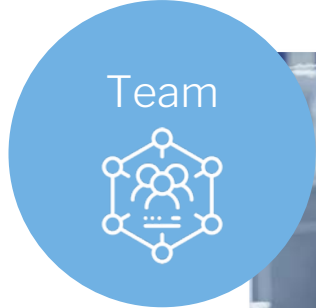
Documented production only, some estimations

\* Estimated

Source: United States Geological Survey

# US focus on supply chain security

The rare earths market's unique situation – enormous demand pull alongside US Government support



With its strong US presence American Rare Earths is well poised to be at forefront of transformation in the critical minerals sector.