

HALLGARTEN + COMPANY

Coverage Update

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American Rare Earths (ASX: ARR | OTCQX: ARRNF | ADR: AMRRY) Strategy: LONG

Key Metrics

Price (AUD)	\$0.28
12-Month Target Price (AUD)	\$0.56
Upside to Target	104%
12mth hi-low	\$0.125-\$0.445
Market Cap (AUD mn)	\$122.77
Shares Outstanding (mns)	446.42
Fully diluted	493.41

American Rare Earths

Halleck Creek – Locked & Loaded

- + By a process of its own advancement and attrition of competitors, American Rare Earths, has positioned itself to join the exclusive club of Rare Earth miners in the US, which MP Materials stands alone currently
- + The JORC-compliant MRE for the flagship Halleck Creek project is 2.43 billion tonnes with an average NdPr grade of 871 ppm
- + There are few REE mining projects in the US and only a handful are in active consideration or credible, positioning American Rare Earths as a rather unique player
- + Moreover, planned mid-stream capacity in the US (e.g. Lynas in Texas) will need REE concentrate inputs, and yet the upstream may be inadequate to supply these concentrates
- + The low level of radioactive contaminants is a major plus at Halleck Creek
- + The company had around AUD\$11.9mn in cash on hand at the end of the September quarter
- + The company holds financial assets associated with ASX-listed Cobalt Blue Holdings (ASX: COB) and Godolphin Resources (ASX: GRL) of AUD\$4mn
- + The company has been a beneficiary of non-dilutive funding in the form of the grant from the Wyoming Energy Authority (WEA) of a substantial AUD\$10.7mn (US\$7.1mn)
- + The company has in hand an EXIM Bank Letter of Interest for up to US\$456mn (i.e. the full CapEx of the project)
- + Next up is a PFS for Halleck Creek, probably in mid-2025
- ✘ Rare Earth prices have been pummeled over the last 12 months with the widely held suspicion that the Chinese are, one-again, disciplining the market to reduce the number of potential to maintain some semblance of Chinese dominance
- ✘ The travails of lithium and a perceived slowing of the EV space have not helped by creating negative vibes despite the wind-energy space remaining ebullient
- ✘ The environment for funding REE project builds remains tough so CapEx on the Phase I of the Cowboy State Mine is to the low side and thus is seen as a virtue

Best in Breed

The old fable of the hare and the tortoise particularly applies to American Rare Earths. We commented back in the first Rare Earth Boom that there would likely be only a handful of survivors make it thru the brutal grinding process of the markets (and Chinese manipulation of REE prices) to arrive at the promised land. Despite the gloom and travails of the REE space for a big chunk of last decade, ARE soldiered on and the goal is within sight.

The winnowing process means that now there are few REE mining projects in the US and only a handful are in active consideration or credible, positioning American Rare Earths as a rather unique player.

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In March of 2023 the resource for Halleck Creek was published, a year later the PEA and a year that the company should have the PFS in hand. The time to pick up the pace has clearly arrived. As these publications have hit the wires (or will do) the whole world of Rare Earths has been upended by governments finally getting on board with the warnings that were first raised around 15 years ago about the dangers of a Chinese dominated REE supply chain.

This pivot by government comes fortuitously just at a moment when government support is going out to those most advanced and credible projects and ARE has been the beneficiary of support from both the State of Wyoming and the Federal government's prime financing institution, the EXIM Bank.

In this update, we look at progress at the PEA for Halleck Creek, the progress in financing and next steps on the road to developing the project into a mine.

Halleck Creek Project

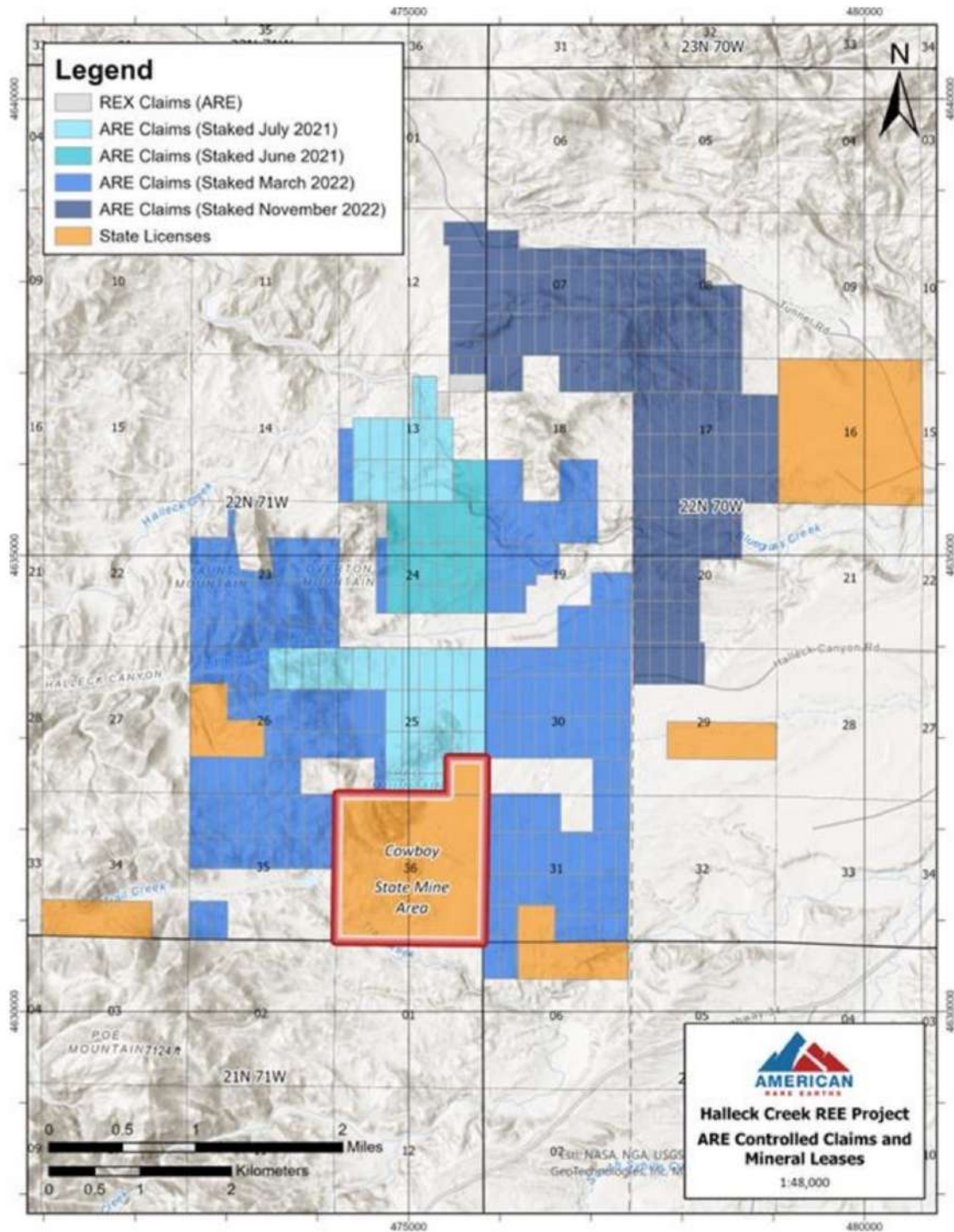
The Halleck Creek project is an exploration project located in the southern Laramie Mountain range of south-eastern Wyoming about 70 km northeast of Laramie, Wyoming, and 30 km southwest of Wheatland, Wyoming.



In December of 2020, ARE announced the acquisition of the project from Zenith Minerals (ASX: ZNC) for a combination of shares and cash. The purchase included all data, including samples and maps, associated and exploration permits.

The company subsequently staked more territory in its own right. Through Wyoming Rare (USA) Inc., ARR controls 367 unpatented federal lode mining claims totaling 6,320 acres (2,558 ha) across the Halleck Creek Project area. ARR controls four Wyoming State Mineral Leases which total 1,844 acres (745 ha).

The Halleck Creek project now extends to 8,165 acres (3,304 ha).



Halleck Creek Claims and Licenses

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Exploration

Progress has been fairly rapid at Halleck Creek considering that ARE only began exploration drilling on the target during March and April of 2022. This consisted of nine core holes, with five drilled on Overton Mountain and four on Red Mountain. Total length drilled resulted in 3,008 ft (917 m), and a total of 822 core samples were collected. The core recovery from most holes exceeded 99%.

A larger reverse circulation (RC) exploration program from October to December 2022 consisted of 38 RC holes and a total length drilled of 5,574.5 m (18,292 ft). Eighteen holes were drilled on Red Mountain, and twenty were drilled on Overton Mountain. RC samples were collected at 1.5-meter intervals and sent to ALS Global for REE analysis.

During 2023, geologists of ARE conducted mapping and sampling in the County Line, Trail Creek, and Red Mountain prospect areas. Contemporaneous with the geologic mapping effort, ARE geologists collected 189 surface samples which were analyzed using XRF and assayed by ALS global.



ARE conducted a reverse circulation and diamond core drilling program at the Halleck Creek Project during Q3 and Q4 of 2023. ARR completed a total of 15 RC holes with a total length drilled of 1,530 m (5,019.69 ft). ARR completed eight core holes to the depths shown below. One core hole was completed to a depth of 302 m (990.81 ft).

Met Work & Recoveries

Under the supervision of Wood PLC, a leading consulting and engineering company, metallurgical test work was undertaken to optimise the process flow sheet.

In June 2023, further metallurgical test work supported previous results showing a simple process flow sheet to produce a REE concentrate and maximise the recovery of magnet metals Neodymium and Praseodymium (NdPr). The bulk rougher/scavenger (primary) Wet High Intensity Magnetic Separation (WHIMS) produced 72% recovery and rejected 77% of feed mass, an upgrade ratio of 3.1. The tests rejected a highly encouraging 77% of waste material in the early processing stages prior to the flotation circuit, demonstrating potential opportunities to reduce the project's operating and capital costs. This is a 5% improvement from preliminary test work results announced in December 2022. These promising

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results are further enhanced by the low levels of penalty elements, Thorium and Uranium, which remain well below regulatory standard.

The Halleck Creek Resource

In March of 2023, the company published its awaited maiden JORC-compliant resource on the Halleck Creek project. The resource was prepared by Alfred Gillman of the consulting firm, Odessa Resources and James Guilinger, of World Industrial Minerals LLC, utilizing a TREO cut-off of 1,500 ppm.

The JORC Resource at Halleck Creek is 1.43 billion tonnes with an average TREO grade of 3,309 ppm, with an average NdPr grade of 734 ppm. The JORC Resource estimate has exceeded expectations in comparison to previous exploration target estimates and demonstrated that the Halleck Creek project had potential to be one of the world's most substantial REE deposits.

HALLECK CREEK RESOURCE								
Resource area	Tonnes (millions)		Grade		Contained TREO (mn tonnes)		Contained Nd/Pr (mn tonnes)	
	Indicated	Inferred	TREO ppm	Nd/Pr ppm	Indicated	Inferred	Indicated	Inferred
Overton Mountain	348	434	3408	767	1.202	1.464	0.274	0.326
Red Mountain	274	373	3190	695	0.907	1.158	0.202	0.248
	622	807			2.109	2.622	0.476	0.574

It is worth noting that the average Thorium grade reported in the resource was 58ppm, while the average U grade was an infinitesimal 7ppm.

At that time, the company expressed the view that the JORC Resource had the potential to greatly increase with future exploration campaigns.

Then in February of 2024 a revised resource was published (also prepared by Odessa Resources) incorporating drilling data collected in late 2023 by ARE.

Halleck Creek Resource									
Classification	Tonnage	Grade				Contained Material			
		TREO ppm	LREO ppm	HREO ppm	MREO ppm	TREO tonnes	LREO tonnes	HREO tonnes	MREO tonnes
Measured	206.72	3720	3352	370	904	769,018	692,935	76,550	186,836
Indicated	1210.17	3223	2838	349	780	3,899,931	3,434,947	422,124	943,421
M&I	1416.89	3285	2913	362	798	4,668,949	4,127,881	498,674	1,130,257
Inferred	924.698	3041	2696	339	737	2,812,121	2,493,178	313,187	681,138
Total	2341.59	3195	2828	347	774	7,481,070	6,621,059	811,861	1,811,395

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Using the 1,000 ppm TREO cut-off grade the estimated *in situ* resource estimate at Halleck Creek is 2.34 billion tonnes with an average grade of 3,195 ppm (0.32%) TREO. This represented an increase of 64% in *in situ* tonnes compared to the March 2023 maiden resource estimate for Halleck Creek.

The resource area covers only 388 hectares (958 acres) of the total exploration area held by the company, which totals 3,304 hectares (8,165 acres).

The Preliminary Economic Assessment (PEA – Scoping Study)

In mid-March of 2024, the company announced the results of its Preliminary Economic Study compiled by Stantec Consulting Services, an independent engineering consulting firm. The PEA team also included Tetra Tech, whose scope of work included all mineral processing, including tailings storage facilities for the project and previous work on mineral resources, and metallurgy completed by Odessa Resources and Wood (Pty).

Project capital and operating costs are based on Stantec's and Tetra Tech's prior experience with mine and mill operations of this size and scale.

Stantec assumed constant 2023 US dollars, metal pricing, recoveries and costs.

The scoping study for the Cowboy State Mine was based on an annual mining and processing rate of 3mn tpa for a period of 20-years.

The criteria used to develop the LOM schedule were:

- Utilize a tiered production schedule before achieving full production rates.
- Schedule full production at 3mn tonnes of ore per annum.
- Schedule material bench by bench on an annual basis.
- Limit production and mine operations to the Cowboy State Mine property.
- Target a 20-year LOM considering pre-production and end of life production rates.
- Limit production to 12 benches per phase per year or 1 bench per month.

The Economics

Economics for the project are robust, due in part to the large scale of resources, which occurs at surface with a very low strip ratio (0.03).

Two scenarios for annual production were covered by the PEA, one at 3mn tpa and the other at 6mn tpa. To err on the side of realism, the focus has been on the smaller volume scenario. The project is easily scalable due to the modest production rate assumed in this report and can respond to increased market demand for Rare Earths. Likewise, a modular approach to refining allows for expansion as

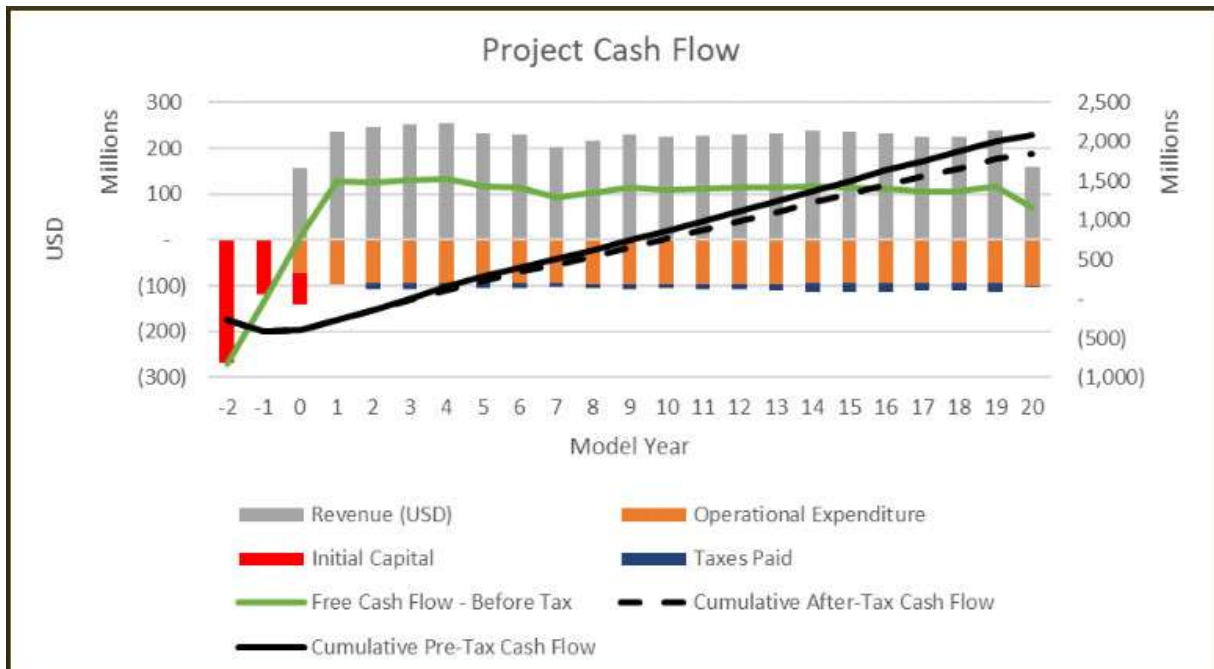
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demand increases.

Under the 3mn tpa per annum scenario the project’s financial metrics would be:

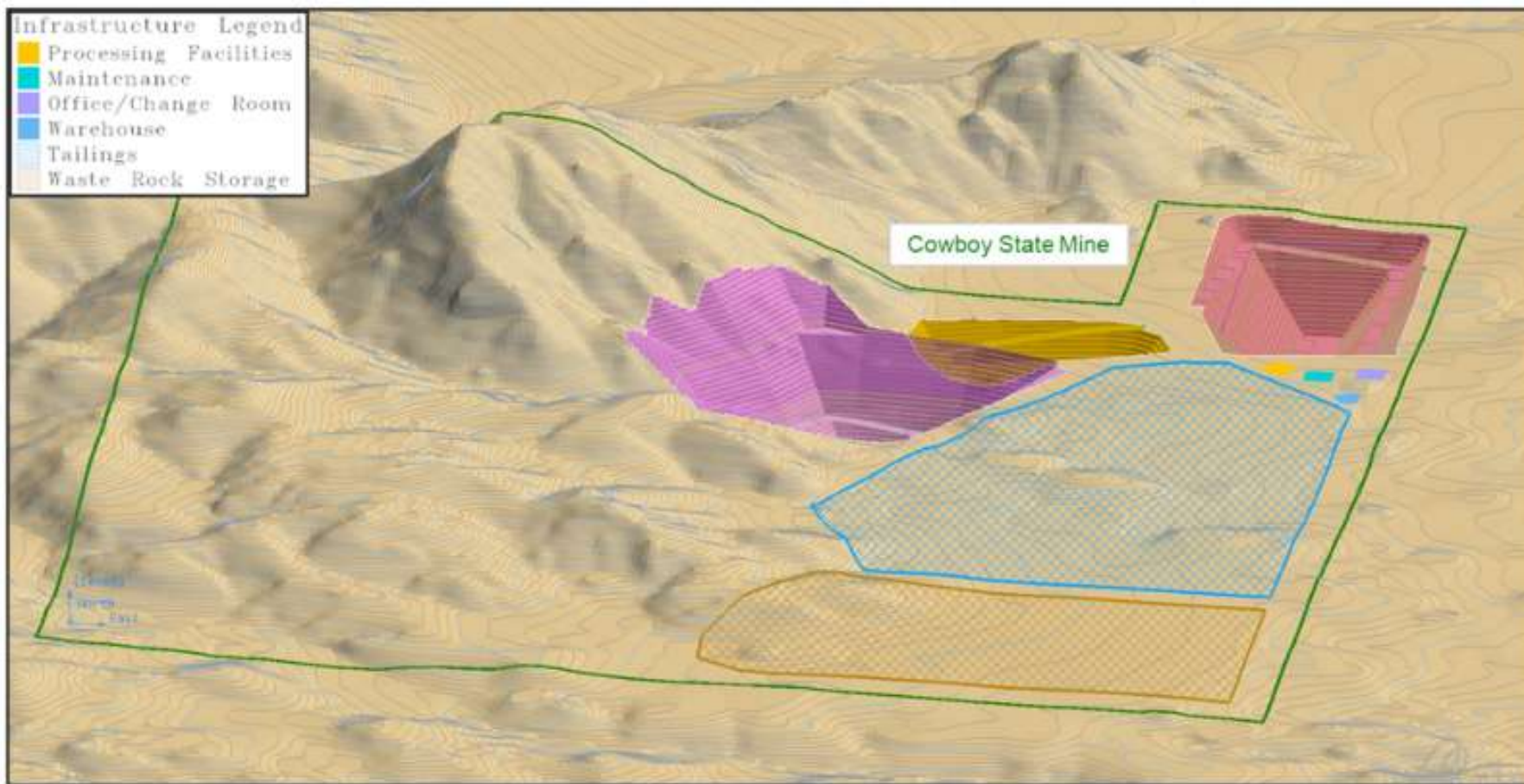
Financial Outcomes		
US\$		
	Pre-Tax	Post-Tax
Free cashflow	\$2081.1mn	\$1845.1mn
NPV (8%)	\$673.9mn	\$582.2mn
NPV (10%)	\$505.1mn	\$430mn
IRR (%)	22.50%	21%
Federal & State Taxes		\$236mn
Payback Period	2.9 years	3.1 years

The table that follows shows the cashflows over the first 22 years of the project (including two years of pre-production):



The Wyoming “Advantage”

The Cowboy State Mine is denoted by Red Mountain, which straddles state and federal lands, and resides on state mineral leases fully controlled by ARE.



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The scoping study was based off a smaller mine on the state sections of Halleck Creek. As noted, the full project will be multi-generational (beyond 100+ years mine life). In addition, one of the key points to developing on the state section first, is that it has a pathway to permitting. Permitting a mine on the state land in Wyoming can be achieved in less than two years from where ARE is currently at (given that the company has already commenced baseline monitoring).

CapEx

Process capital estimates were provided by Tetra Tech and considered infrastructure, equipment, and field costs assuming a portion of processing facilities will be located at Cowboy State Mine with the remainder located near Wheatland. Tetra Tech used an analogous Rare Earth processing project as the basis for this cost estimate. The CapEx can be summarized as:

Capital Expenditures	
US\$ millions	
Initial Mine Capital	\$5.4mn
Initial Processing Capital	\$374.7mn
Contingency (20%)	\$76mn
Total Initial Capital	<u>\$456.1mn</u>

Mine Planning

The mine plan is straightforward and will be performed by open pit methods using conventional rubber-tired trucks and front-end loaders and supported by basic mine site infrastructure consisting of a waste dump, tailings impoundment, line power and a natural gas line and prefabricated buildings.

A preproduction construction schedule of 2.5 years has been assumed and total mill feed processed is 63.2mn tonnes.

Stantec based capital and operating costs for a 3mn tpa open pit mining operation from the appropriate cost model from Costmine's Mining Cost Service.

The pit design targets area of higher grades within the mineral resource, while minimizing mining of Red Mountain to lower the potential environmental and social impacts of the project. The mountain itself has been identified as mineral-rich, with mineralization extending slightly beyond the toe of the mountain. The mineral resource available at Cowboy State Mine is significantly larger than required for the 20-year mine life at 3mn tpa which the PEA is premised upon.

The Cowboy State Mine, and associated LOM plan, are comprised of three mining areas. The isometric

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view on the following page shows the pits and processing/tailings sites. The first area/pit (shown in pink) is located in the northeastern corner of the property or East; the second is in the southwest or West (shown in yellow) and mines a portion of Red Mountain; and the third area (in purple) is located between the East and West and is generally lower grade. However, the order of the development may be altered as development plans evolve under the PFS.

As the first cab off the rank, it is interesting to look at the so-called East Pit/Phase 1 establishes the final pit ramp for the 1,754 masl bench, descending at 10% in a clockwise direction, reaching an elevation of 1,634 masl. The East Pit will not mine any portion of Red Mountain and takes place on relatively flat terrain, which will aid in achieving production targets during the pre-production/ramp-up periods during the early stages of mine development.

It is important to note that due to the extensive mineralization at the site, and low strip ratio, Stantec showed that mining could occur over 150 years based on the resource estimates, at the current planned production rate and using current economics.

Processing – Metallurgical Advantages

The Halleck Creek project stands out due to the unique characteristics of its ore, which makes processing both efficient and environmentally friendly compared to conventional hard rock Rare Earth projects. Unlike many hard rock deposits requiring high temperatures and energy-intensive processes like acid baking at extreme conditions, Halleck Creek ore benefits from a hybrid processing approach more akin to clay deposits.

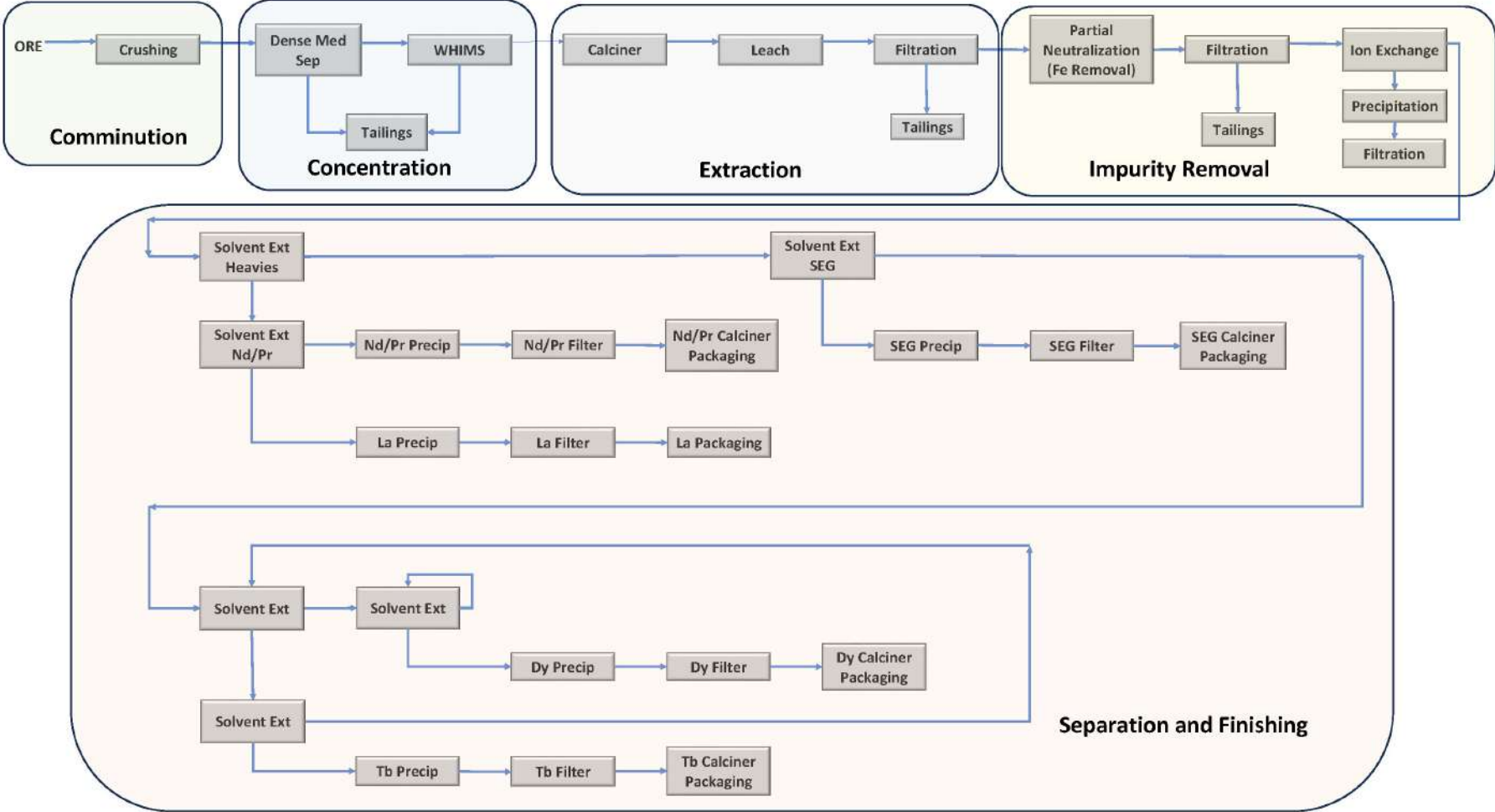
The project employs straightforward early-stage upgrading using dense media separation and wet high-intensity magnetic separation, achieving an impressive tenfold increase in ore grade. This is followed by direct acid leaching using sulfuric acid at relatively low temperatures (90°C) and mild pH levels, resulting in high recoveries of up to 87%. This simpler processing pathway avoids the need for aggressive techniques like high-temperature acid baking, reducing costs and offering significant environmental advantages.

The Process

Processing will begin at the mine site with comminution, and mineral separation producing a concentrate which will be trucked on state and federal highways to refining facilities probably near Wheatland, Wyoming.

The refining facility will perform leaching, impurity removal and solvent extraction to produce payable rare earth metal oxides, specifically NdPr, La, Dy, Tb and SEG (mixed Samarium Europium and Gadolinium).

The process is shown on the flowchart on the following page:



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Comminution – The Comminution circuit would be designed to process 3mn tpa on a dry basis, or 9,132 metric tonnes per day (tpd) assuming a 90% uptime (329 days per year) of ROM ore. The run-of-mine ore is crushed to less than 1.0 mm using HPGR.

Concentration – The Concentration circuit would be designed to match the Comminution Plant and process 3mn tpa of ore on a dry basis, or 9,132 tpd assuming a 90% uptime (329 days per year) of crushed ore. The TREO content of the ore is concentrated ten times (10X) using Density Separation and WHIMS.

Extraction – The Extraction circuit would be designed to process 231,945 tpa on a dry basis, or 705 tpd on a dry basis assuming a 90% uptime (329 days per year) of concentrate. The REEs are leached from the solid ore and placed into solution using dilute sulphuric acid. Cerium is rejected in this step by converting Ce³⁺ to Ce⁴⁺ by calcining the ore prior to leaching.

Impurity Removal – The Impurity Removal circuit would be designed to match output of the Extraction circuit, or 243 gpm of Pregnant Leach Solution (PLS). The circuit removes Fe, Th, Al, and U, using a partial neutralization precipitation and Ion Exchange (IX).

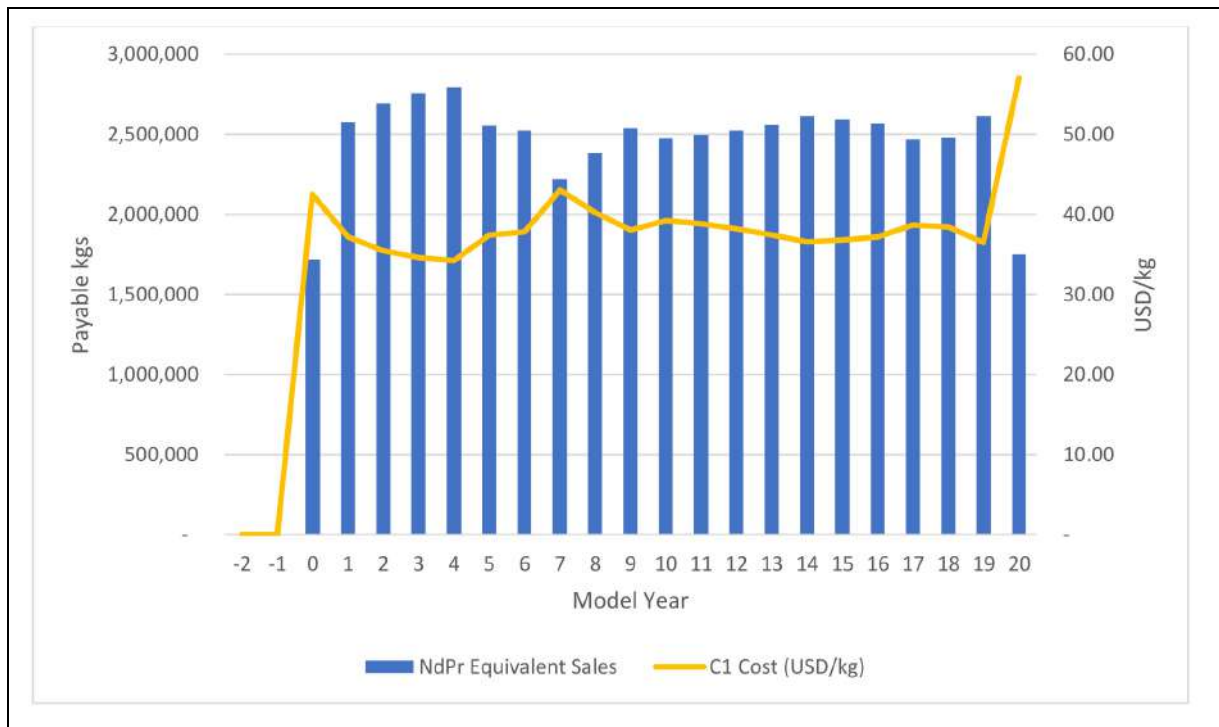
Separation & Finishing – The Separation and Finishing circuit would be designed to match the output of the Impurity Removal plant of 276 gpm of Uranium Removal discharge. Solvent Extraction (SX) is used to separate the REE's into the following finished products:

- Lanthanum (La) Carbonate
- Neodymium (Nd)/Praseodymium (Pr) Oxide also referred to as “Didy” Oxide
- Samarium (Sm), Europium (Eu), Gadolinium (Gd) mixed oxide concentrate also referred to as “SEG” concentrate
- Terbium Oxide (Tb)
- Dysprosium Oxide (Dy)

It is also important to note that the radionuclide content reporting to the REE carbonate concentrate is currently estimated at levels below 0.001%.

Tailings will likely be hauled back to the mine site using the same fleet of trucks.

The production schedule should look like:



Technology – Various Irons in the Fire

One thing that became clear in the wake of the first REE Boom was that the rewarmed conventional processing methods for REE oxides (many of which were unchanged from the 1960s and 1970s) were the downfall of some of the PEAs and PFSs that many players dished up during the feeding frenzy. Many of these “tried & true” also came with eye-watering price tags that ranged from \$500mn through to over one billion dollars.

This time around, if anything, it is entirely the opposite with most players seeking out new technologies to lower costs and differentiate themselves from the other players on the field. In particular, companies have been looking for systems that can bypass having to process out at great cost (of money and time) the essentially unwanted Lanthanum and Cerium. Few though are talking about the radioactive component in their deposits.

The drawbacks of most conventional REE extraction technologies is their reliance on energy- and chemical-intensive metallurgical techniques that can be expensive and environmentally harmful for source materials that contain low concentrations of REEs (<1% REE content). In addition, these technologies are unable to effectively extract both Scandium (Sc) and those elements in the Lanthanide series at high efficiency. Many of these technologies co-extract Uranium and Thorium, leading to challenging volumes of radioactive wastes.

ARE continues to pursue an array of technology partnerships, which were detailed [in our previous note](#)

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from September 2023.

The REE Space in the US – The Old is Made New Again

From over 300 claimants to be potential Rare Earth producers in 2011, at the end of the last Rare Earths boom, the number of developers had shrunk to less than twenty survivors by 2019. Of those only five had properties in the United States. Beyond the Halleck Creek (& La Paz) properties of ARR, the others were Bear Lodge property (Rare Earth Elements - OTCQB:REEMF & General Atomics), Mountain Pass in California (the sole producer, controlled by MP Materials) and Bokan in Alaska (owned by UCore – TSX-v:UCU).

Meanwhile, USA Rare Earths, holder of the Round Top project with Texas Mineral Resources (OTC:TMRC) has gone from market darling to being almost totally sidelined. In any case we regard Round Top as a beryllium mine.

We would note though that the number of prospective properties in the US has not shrunk to an appreciable extent since 2011, but rather the attrition has been in Canada, Africa, Australia and elsewhere.

Nevertheless, Mountain Pass (in the guise of Molycorp) died and was reborn under MP Materials - NYSE:MP) and the others went through a long somnolence (from which Bokan and Bear Lodge have still not awoken).

The Shifting Political Tides?

The recent shift in the U.S. administration marks a critical juncture for domestic resource development, particularly for critical minerals like rare earths. With the Trump administration back in office, policies emphasizing “America First” and domestic industrial revitalization are set to take centre stage. However, great advances have been made under the Biden Administration, much of it under the cover of the Energy Transition and its “masterwork”, the Inflation Reduction Act (IRA).

A pivotal figure in this evolving landscape is the Senator for Wyoming (REP) Senator John Barrasso. He is expected to assume a prominent role in the new administration. He is known for his staunch advocacy of mining reform and resource independence, Senator Barrasso’s influence could lead to tangible benefits for mining projects like Halleck Creek. His long-standing support for critical mineral initiatives and streamlined permitting processes bolsters Wyoming’s reputation as a leader in mining-friendly policy, further enhancing ARR’s development prospects.

At least we can say that there will not be backsliding by a second Trump Administration on defense matters, even if the EV “revolution” and global warming do not excite much enthusiasm in his inner circle. The Trump administration’s historical support for domestic resource development, encapsulated in its “drill, baby, drill” ethos, potentially signals strong backing for resource projects like Halleck Creek.

This favourable political environment, coupled with bipartisan recognition of the risks posed by foreign

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dependence on critical minerals, creates a robust foundation for moving forward projects like Halleck Creek.

Moreover, the new administration's push to counter China's dominance in REE production creates a strategic imperative for domestic production. ARR's focus on producing rare earth oxides, rather than raw concentrates, aligns neatly with the administration's vision of resource independence and industrial resilience.

The return of an administration that prioritizes resource independence, coupled with leadership from figures like Senator Barrasso, provides ARE with a favourable environment to advance Halleck Creek as a cornerstone of the REE strategy in the US.

Pondering the Role in the Supply Chain

One of the main fallacies of the First Rare Earth Boom (2009-12) was that all one needed was a mine and that this splendid creation (often in an outlandish location) could grow and prosper in isolation from the rest of the industrial-military complex that feeds upon Rare Earths. The error of their ways took a long time to be corrected but this time around, almost all participants in Rare Earths know that it is all about the value chain.

The word "chain" is particularly appropriate when one looks at constructs such as the Chemours/Energy Fuels/Neo Performance Materials mine-to-magnet flowchart. But this only shows that even the largest players cannot "do it all" and must rely upon the comfort of strangers to combine skillsets. Even this structure relies upon an end-processor that is in Estonia and it is not necessarily a given that a US-sourced monazite sand will end up in a US-made wind turbine magnet or an EV engine.

Then there were the plans (temporarily thwarted) of Vital Metals to send its output from Nechalacho in the NWT to Saskatoon and then on to Norway for end-processing, before ending up (we presume) in Europa's magnet making industry.

Then there is Ucore, which has planted its flag in the midstream with its development of a processing plant in Louisiana, which will require feed as long as its Bokan Mountain project remains on the drawing board. We recently wrote a [note](#) speaking of the technology issue as it pertains to REE processing.

Ergo some supply chains are looking stretched or disjointed and are being driven by the *Zeitgeist* of resource security within major economic players and blocs. Lynas is a particularly novel example having gone from a mine project in Western Australia, to a processor in Malaysia, to being on the cusp of being a processor in Australia and with advanced plans to become a processor in the US.

How, or if, the US development plan of Lynas play out could potentially mesh with the evolution of Halleck Creek, far more than with Lynas's mine back in Australia.

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Lynas purchased a 149-acre greenfield site in Seadrift, Texas, but located in an existing industrial zone. The site was selected for its proximity to a skilled workforce, potential customers, infrastructure and logistics. In mid-2023, Lynas claimed to be finalizing detailed engineering and long lead item procurement activities. The goal is the co-location of Heavy Rare Earths and Light Rare Earth separation and processing, as well as potential future growth opportunities such as downstream processing and recycling to create a circular mine to magnet supply chain.

As the company has been a recipient of US DoD largesse and has made a big PR push in Washington and Texas, any retreat from the plan would go down poorly in high places. If it does advance, we cannot see why sourcing of Rare Earth inputs would not be undertaken from more localized sources (i.e. from within the US, such as Halleck Creek).

Longer Term

It is management's intention in the longer term to produce metal oxide, not just a concentrate. This could all be done in Wyoming. Why ship a concentrate to Lynas or someone like Ucore, when one could cover the spectrum of mine to metal within the USA? Then one might sell direct to the US defense contractors, magnet makers and other users of these oxide products in the USA. However, the situation in the REE supply chains is exceptionally fluid at the current time and we must wait and see how these evolve.

Infrastructure

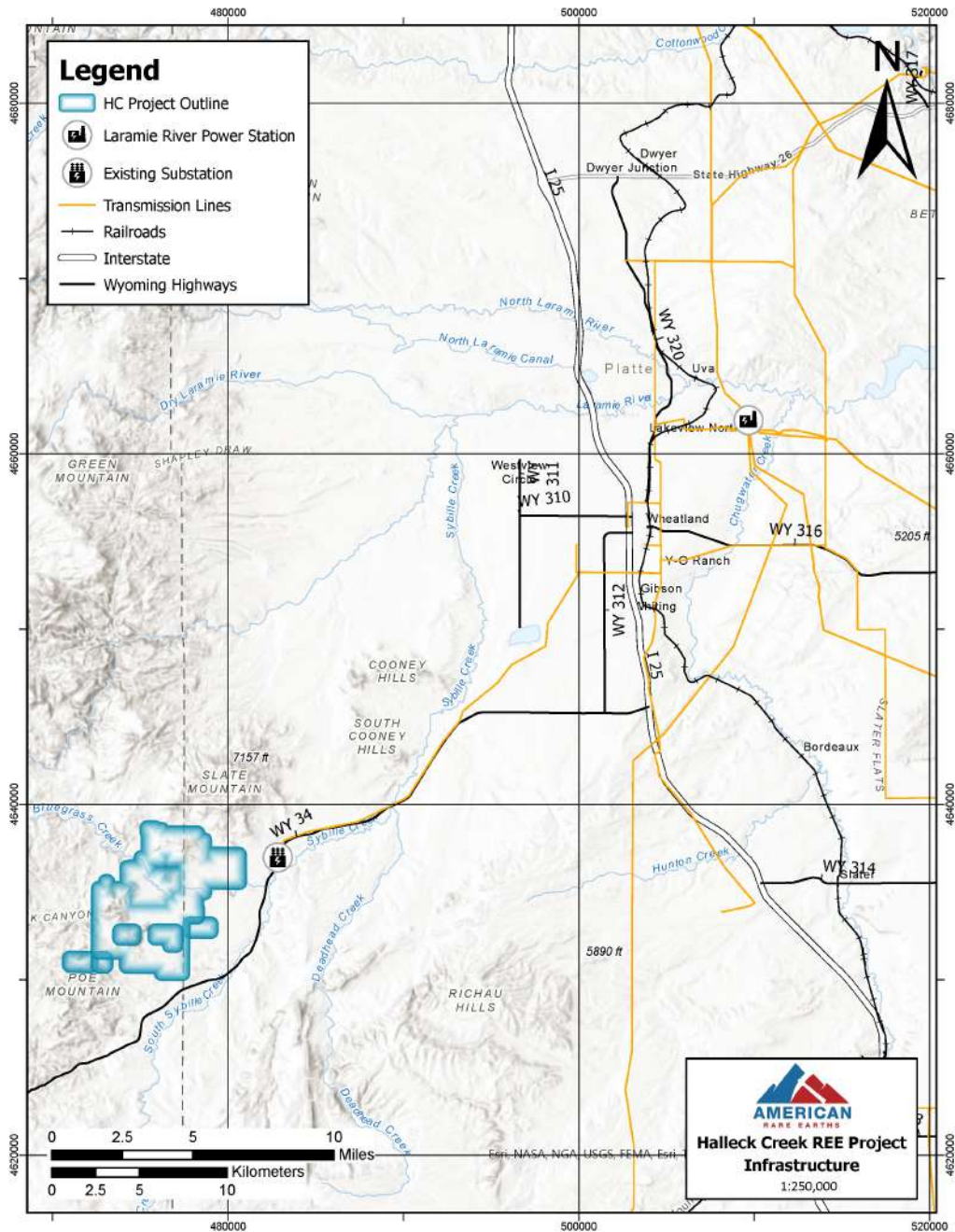
The Halleck Creek Project is approximately 70 km northeast of Laramie, and 30 km southwest of Wheatland, Wyoming. Road access from Wheatland is via Wyoming State Highway 34 southwest for approximately 29 km followed by an additional 10 km west on a County maintained gravel road.

Residential power runs along County Road 720. A 46 kV substation is located along Highway 34 and is approximately 3.7 km from the western side of the Halleck Creek state mineral leases.

The Burlington Northern Santa Fe railroad mainline runs through Wheatland as does Interstate highway 25, linking the city to the entire United States.

Below can be seen the electricity sources for the project.

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EXIM Bank – The Great (Financing) Leap Forward

In a major endorsement of the project in late September of 2024, it was announced that the company had received from the Export-Import Bank of the United States (EXIM) has issued a non-binding Letter of Interest to provide up to US\$456mn in debt financing. The funds will support the construction and execution phase of the Cowboy State Mine.

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A financing package of this size from EXIM will cover the entire initial capital expenditure for the Cowboy State Mine, making this a major inflection point on the way towards development of the Halleck Creek project to producing status.

Financing

In late February of 2024, the company announced that it had received firm commitments for a placement of 45 million new fully paid ordinary shares at an issue price of AUD\$0.30 to raise AUD\$13.5mn. The placement price represented a 5.1% discount to the 10-day VWAP.

Canaccord Genuity acted as sole Lead Manager and bookrunner while Bell Potter acted as Co-Lead Manager. The placement was strongly supported by new and existing institutional, professional, and sophisticated investors, both domestically (i.e. in Australia) and offshore.

Ramping up US Investor Exposure

The company made a major advance in increasing its exposure to US investors when it launched a sponsored Level 1 ADR Program. These ADRs began trading on the OTCQX (the top tier of the OTC market) on the 15th of August 2023 under symbol AMRRY.

Each ADR represents 50 ASX-traded ARR ordinary shares. Crucially, the ADRs are fully DTC eligible with Bank of New York Mellon being the nominated depository bank.

The SPAC Offer

While this “opportunity” was passed on by management, it is worth mentioning all the same.

In late April of 2024, the company advised that it has received an indicative, conditional and non-binding proposal from a NASDAQ-listed SPAC to acquire, by an issue of shares, the company’s 100%-owned subsidiary Wyoming Rare (USA) Inc, which holds the Halleck Creek project. The proposal would have resulted in the subsidiary being listed (via a combination) with the SPAC as a separate entity on the NASDAQ Exchange in the USA.

Such a path would be similar to that of MP Materials, which also achieved listing of Mountain Pass utilising a combination with a SPAC. However, in that case the asset was held by a hedge fund, not by a public company in another (country’s) market. And not all such moves have been so felicitous as we can point to the disastrous performance of Niocorp when it went the SPAC merger route.

The board of ARE stated it was aware of the potential benefits of this type of proposal but the need to maximise returns to shareholders, while minimising dilution, had led it to decline the offer of a merger.

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The Wyoming Grant

In late June of 2024, the company advised that its grant application to the state government had been approved, with AUD\$10.7mn (US\$7.1mn) in non-dilutive funding being awarded.

In late October of 2024, ARE received its first reimbursement from the Wyoming Energy Authority (WEA) grant, totaling just over AUD\$450,000 (US\$304,000).

This is a matched expenditure grant with the funds destined to be utilised for ongoing initiatives including exploration drilling, baseline environmental studies, and prefeasibility assessments. Thus, for every 50 cents that ARE spends on the project the WEA will reimburse 50% of the costs up to the US\$7.1mn).

Tie-Ups & JVs

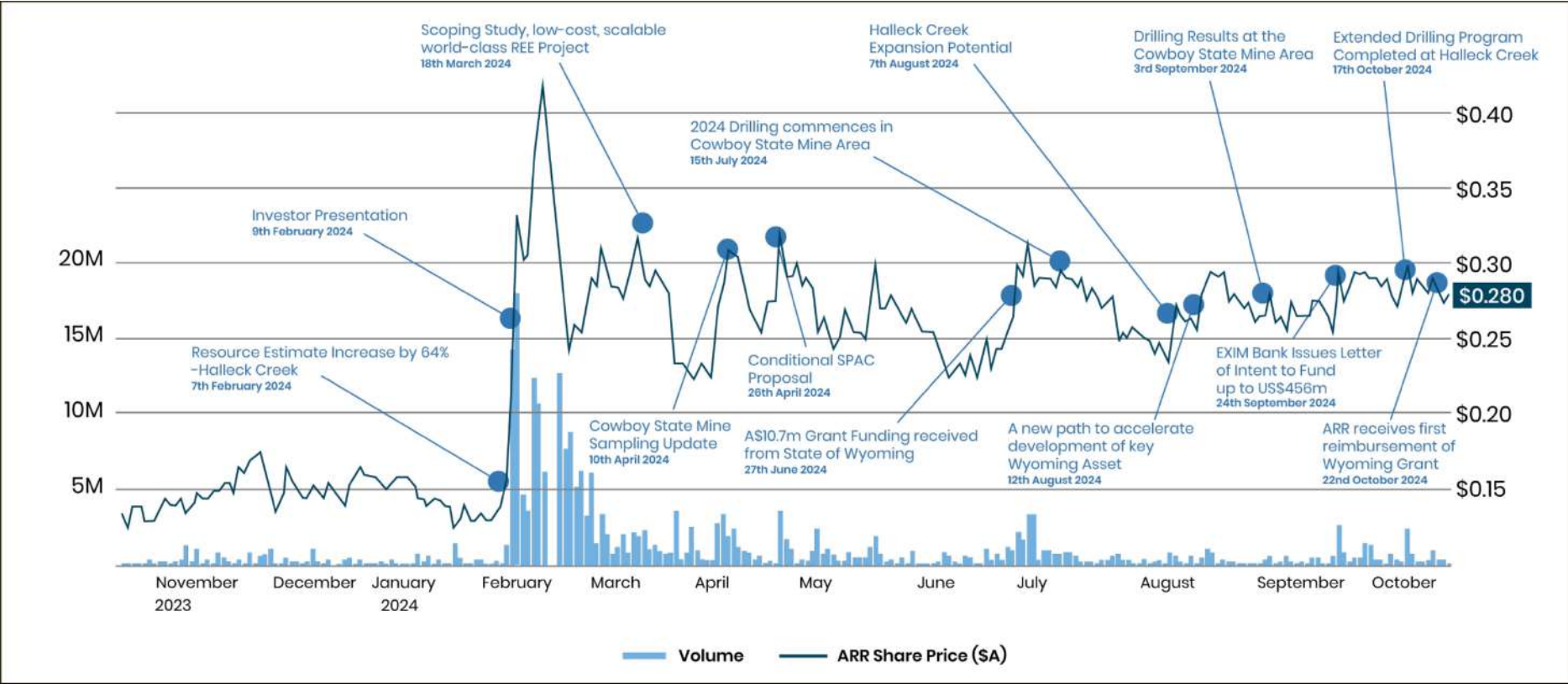
In recent days the company engaged BMO Capital Markets as a financial adviser to explore strategic investments, joint ventures, and offtake agreements. This collaboration is expected to move the Halleck Creek project along at a faster rate.

Technology – Various Irons in the Fire

One thing that became clear in the wake of the first REE Boom was that the rewarmed conventional processing methods for REE oxides (many of which were unchanged from the 1960s and 1970s) were the downfall of some of the PEAs and PFSs that many players dished up during the feeding frenzy. Many of these “tried & true” also came with eye-watering price tags that ranged from \$500mn through to over one billion dollars.

This time around, if anything, it is entirely the opposite with most players seeking out new technologies to lower costs and differentiate themselves from the other players on the field. In particular, companies have been looking for systems that can bypass having to process out at great cost (of money and time) the essentially unwanted Lanthanum and Cerium. Few though are talking about the radioactive component in their deposits.

The drawbacks of most conventional REE extraction technologies is their reliance on energy- and chemical-intensive metallurgical techniques that can be expensive and environmentally harmful for source materials that contain low concentrations of REEs (<1% REE content). In addition, these technologies are unable to effectively extract both Scandium (Sc) and those elements in the Lanthanide series at high efficiency. Many of these technologies co-extract Uranium and Thorium, leading to challenging volumes of radioactive wastes.



Price Performance

On the preceding page can be seen the price progression over the last year (with volumes traded) and clearly the stock established a new trading range within which it has remained since the surge and retreat in February/March. This contrasts with the malaise in most of the rest of the Rare Earth sector during 2024.

Risks

It is important to enumerate some of the risks that may be faced:

- ✘ Sustained weak Rare Earth prices
- ✘ The REE market is still controlled largely by China
- ✘ Financing difficulties for mine build
- ✘ Failure of demand to match rising production (i.e. build it and no-one comes)
- ✘ Excessive number of competing projects could crowd the scene and investors' attention in the event that REE prices remain robust

Rare Earth prices are not likely to go substantially lower than the levels they have been at in recent times as the Chinese risk tipping many of the SOEs in the space into sizeable losses. However, prices that were ebullient in the period 2020-22, have been pushed down by China since 2022, presumably in an attempt (*comme d'habitude*) to mess with the minds of potential REE producers outside China. This has achieved its goal in thwarting the ambitions of many REE juniors that are not uniquely positioned. The problem for the Chinese is that, as net importers of HREE, the baton has now passed to other hands and if they sabotage potential sources of HREE supply from external sources they will only harm themselves.

Money for major REE capex is now very much linked to government funding, or better said, partnership. Governments out there, especially those driven by defense or automobile industry considerations (i.e EVs), have shown varying degrees of propensity to underpin projects, though none have received 100% of their requirements as grants. Nor should they. Those projects without access to the Government push, and market pull, that comes with being in the USA (or to an extent Australia) will find funding very much harder to glean from the markets alone.

With the EV "revolution" finally gaining traction outside of China the potential for greater demand for REE magnets from that quarter is enhanced. We see no reason for REE demand to slacken and indeed there is the potential for it to finally start to meet some of the bullish projections of 10 years ago. However, that does not mean that EV demand will reach the somewhat unhinged projections of recent years.

Finally, there is the issue of competing projects. The Canadian projects have few contenders to be real.

Projects farther away stand some prospect (particularly if located on the territory of US allies, i.e. Australia, see Lynas) of being seen as being “as good as onshore”.

Conclusion

The look of the Rare Earths sector in the US in the second half of the 2020s is starting to crystallise. It will consist of Mountain Pass (with its weighting towards Lights), the processing plant of Lynas (being supplied by material from as yet unclear sources), the vertically integrated monazite sands complex of Energy Fuels/Chemours/NeoPerformance Materials and, highly likely, American Rare Earths.

The Rare Earth “crisis” has not gone away with the passing of the years, and indeed has intensified. The outcome of this is the West cobbling together, almost by accident, an alternative supply chain.

The PEA out earlier this year was a pivotal event for ARE as it moved Halleck Creek out of the shadows and into the full glare afforded to those companies viewed as potential movers and shakers in the future Rare Earths industrial supply chain in the US.

The sheer size, scale and magnitude of the Halleck Creek deposit puts it in the front rank of REE deposits anywhere, let alone in the US. The JORC Resource is currently 2.34bn tonnes, encompassing only approximately 16% of the area. The deposit is also open at depth with mineralization from a couple of drill holes to 300 metres showing the deposit remains open. Without indulging in hyperbole, the JORC resource alone could potentially support US consumption of REEs for over 100 years. In addition, there is significant exploration upside beyond the current resource estimate.

The PEA was by no means definitive though, as plans are still a work in progress and the upcoming Preliminary Feasibility Study should encompass recent changes in the corporate thought process.

The challenge now is to fund a plan to, economically, mine and upgrade to a REO product for the North American market. The strategic alliances on the technology side help towards the goal of differentiating the company from those others in the REE space.

With such a small number of names to conjure with inside US borders, American Rare Earths has the scarcity value arising from a combination of exploration work done, having a substantial estimated mineral resource to hand and now a mine plan, going through its second phase of tweaking. The second phase of rationalization in the Rare Earth space (since last year) means that there is not even a handful of REE mine projects in North America and ARE leads this pack in the dash for production.

Thus, we reiterate our **LONG** rating on American Rare Earths and reiterate our 12-month target price of 56 cts.



Important disclosures

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