ASX Release: 12 September 2022

POSITIVE SCOPING STUDY FOR CUMMINS RANGE SHOWS POTENTIAL FOR SUSTAINABLE, LONG-LIFE RARE EARTHS PROJECT

HIGHLIGHTS

- **Strong financials with attractive NPV, IRR and payback period and low cash costs**
- **Significant production profile of sustainably, Australian produced rare earth and phosphate products with local placement opportunities**
- **Scoping Study base only on current 2021 Indicated and Inferred Resources with 85% of the mine plan in the Indicated category**
- **Study considers the utilisation of grid-connected hydroelectric power for refinery operations, a potential world first for rare earth refineries**
- **Board approves commencement of Pre-Feasibility Study**

RareX Limited (**RareX, the Company**) (**ASX: REE**) is pleased to report positive outcomes from a Scoping Study (**Scoping Study, the Study**) completed on its 100% owned Cummins Range Rare Earths Project (**the Project**, **Cummins Range**), located in the Kimberley region of WA. The Scoping Study was led by Primero with support from Mining Plus among other leading consultancies.

RareX Managing Director, Jeremy Robinson, said: *"This Scoping Study shows that the Cummins Range Project has the potential to be a world leader in the application of low carbon energy solutions to rare earths projects. The Project's maximum resource utilisation and refining capacity powered by green hydroelectric power, demonstrate RareX's commitment to reducing its potential carbon footprint. The Study has been based on the current 2021 Resource and has good potential to grow in scale in the coming 12 months."*

Cautionary statement

The Scoping Study referred to in this release was completed to determine the viability of a combined mine, beneficiation, and hydrometallurgical processing plan in the Wyndham East Kimberly region of Western Australia, using rare earth deposits at Cummins Range to produce rare earth products.

It is a preliminary technical and economic study of the potential viability of the Project.

The Scoping Study referred to in this release is based on low-level technical and economic assessments and is insufficient to support an estimation of Ore Reserves or to provide assurance of an economic development case at this stage, or to provide certainty that the conclusions of the Scoping Study will be realised. Further evaluation work and appropriate studies are required before RareX will be in a position to estimate any ore reserves or to provide any assurance of an economic development case.

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This scoping study is an order of magnitude technical and economical assessment and is partially supported by Inferred Mineral Resources[1].

The Study is based on the material assumptions outlined below. These include assumptions about the availability of funding. While RareX considers all of the material assumptions to be based on reasonable grounds, there is no certainty that they will prove to be correct of that the range of outcomes indicated by the Study will be achieved.

To achieve the range of outcomes indicated in the Study, funding of approximately AU$430m will likely be required. Investors should note that there is no certainty that RareX will be able to raise that amount of funding when needed. It is also possible that such funding may only be available on terms that may be dilutive or otherwise affect the value of RareX's existing shares.

It is also possible that RareX could pursue other value realisation strategies such as a sale, partial sale or joint venture of the Project. If it does, this could materially reduce RareX's proportionate ownership of the Project.

The Study includes appropriate assessment of realistically assumed modifying factors together with other relevant operational factors.

The Study is based on indicated resources 85% and inferred resources 15%, which underpin the production target disclosed in the Study. 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 of indicated mineral resources or that the production target itself will be realised.

The Study demonstrates a potentially viable project and has given the Board of RareX the confidence to approve the commencement of a Pre-Feasibility Study (**PFS**) which will commence in Q3 2022.

This Study is an order of magnitude technical and economical assessment and is partially supported by Inferred Mineral Resources[2]. The Study includes appropriate assessment of realistically assumed modifying factors together with other relevant operational factors.

The Project concept outlined in the Scoping Study comprises a mine and flotation beneficiation facility at site producing a rare earth mineral concentrate and a phosphate mineral concentrate which is trucked along mainly sealed roads to Wyndham Port. At Wyndham Port, a hydroelectric powered rare earth refinery facility is envisaged which produces a mixed rare earth carbonate (**MREC**) product for export with a by-product of merchant grade phosphoric acid. Additional to these products is the phosphate mineral concentrate which itself contains elevated rare earth grades.

Both phosphate products (phosphoric acid and mineral concentrate) have a market in the fertiliser sector and there is an opportunity for RareX to participate in the production of fertilisers by reacting the self-generated phosphoric acid with the mineral concentrate from the mine site, however, this was outside of the scope of this Study.

Products have been priced according to their grades and market intelligence. MREC pricing is based on the Cummins Range basket price of US$29.31/kg backed by industry knowledge and information from international metals market analysis and pricing index companies. Phosphate pricing is based on market sources. Additionally, a pricing credit is assumed for the phosphate mineral concentrate which contains appreciable rare earths.

[1] ASX Announcement 19 July 2021: RareX delivers major resource upgrade at Cummins Range Rare Earths Project.
[2] ASX Announcement 19 July 2021: RareX delivers major resource upgrade at Cummins Range Rare Earths Project.

Further opportunity exists to produce a combined phosphate and rare earth mineral concentrate at site - allowing for reduced site infrastructure – with separation and processing at port. This should result in a substantially larger mining operation.

Key Project Metrics

Financial	**Units**	**Value**
Total Capital Expenditure	AU$ million	430
Discount Rate (pre-tax, nom)	%	8.0 %
NPV_8	AU$ million	633
IRR (pre-tax, nom)	%	29 %
Payback	Yrs	2.8
LOM EBITDA	AU$ billion	1.9
Products	**Units**	**Volume**
MREC Product (dry)	Ktpa	8.9
Phosphate Concentrate Produced (dry)	Ktpa	128.8
Phosphoric Acid Produced	Ktpa	13.5
Capex split[3]	**Units**	**Value**
Cummins Range Mine Site and Beneficiation	AU$ million	200
Wyndham Port Refinery Facility	AU$ million	229
Opex	**Units**	**Value**
Cash Costs	AU$/kg TREO in MREC	26.6[4]
By-Product Credit	AU$/kg TREO in MREC	(20.5)[5]
Cash Costs (after credit)	AU$/kg TREO in MREC	6.1[6]
Product price	**Units**	**Value**
Basket price (ex *Sc_2O_3*)	US$/t	29,310
MREC Price (FOB)	US$/t	13,580
Phosphate Price inc. REO Credit (FOB)	US$/t	405
Phosphoric Acid Price (FOB)	US$/t	926

Note:
TREO = Total Rare Earth Oxides
MREC = Mixed Rare Earth Carbonate
REO = Rare Earth Oxide
LoM = Life of Mine

[3] Beneficiation and Refinery capital costs include non-process infrastructure owner's costs, indirect costs and a nominal 20% contingency to direct costs.
[4] Total LoM C1 cash cost: AU$1.6b by total TREO produced in the MREC product: 60.6kt
[5] Total revenue of phosphate mineral concentrate (inc RE credit) and phosphoric acid: US$832 by total TREO produced in MREC product: 60.6kt.
[6] Cash costs per kg TREO in MREC less by-product credit per kg TREO in MREC.

Upcoming milestones and key catalysts

The completion of the Scoping Study and the approval to formally initiate the PFS lends the Project to material near term milestones proposed as follows:

2022

A Initiation of PFS

B Initiation of advanced metallurgical programme

C Initiation of renewable hydro power purchase agreement

D Initiation of land purchase agreement for the rare earth refinery at the port

E Initiation of business development activities for offtakes discussions for phosphate and rare earth.

F Orebody geochemistry definition.

G Mining licence negotiation protocol agreement with Jaru PBC

H Completion of 2022 drilling season

2023

A Metallurgical, geotechnical and resource drilling programme

B Environmental and socio-economic baseline assessments

C Oxide separation facility scoping study

D Fertiliser plant scoping study

E Mineral resource estimate expansion including rare earths and phosphates

F Mining licence agreement with Jaru complete

G Initiation of Pilot plant

H Completion of advanced metallurgical programme

I Completion of renewable hydro power purchase agreement

J Completion of rare earth refinery land purchase agreement

K Pre-feasibility study complete

L Environmental referral complete

M Maiden Ore Reserve

N Business development activities materially advanced on Phosphate and Rare Earth

SCOPING STUDY

1 INTRODUCTION

The Cummins Range Rare Earths Project (**Cummins Range**, the **Project**) is a globally significant rare earths project located in the Kimberley region of Western Australia near the township of Halls Creek. Halls Creek is well provisioned for infrastructure with power, water and sealed airstrip. It is serviced by the Great Northern Highway which connects to the modern ports of Wyndham and Darwin. Currently, Cummins Range is accessible from the Great Northern Highway via the Tanami Road and the site access track, both currently unsealed. The Tanami Road section is anticipated to be sealed by the time the Project becomes operational, supported by government initiatives.

Cummins Range was acquired in mid-2019 and, in mid-2020, undertook its maiden drill program completing 6,143 m of reverse circulation (**RC**) drilling which was highly successful in proving up the high-grade core of the deposit. This led to a JORC 2012 Mineral Resource Estimate (cut-off grade 0.5% TREO) containing 18.8 million tonnes of 1.15% TREO and 9.91% P_2O_5 with a high neodymium and praseodymium (**NdPr**) content of 20% and low thorium-uranium of 159 ppm[7]. The primary rare earth mineral is monazite, the most well understood and processed rare earth mineral in the world. RareX has subsequently issued an exploration target, potentially doubling the resource[8].

The predominantly monazite hosted rare earth mineralisation at Cummins Range is hosted in the weathered portion of the underlying carbonatite intrusion with the deposit outcropping in multiple locations. The underlying carbonatite intrusion contains both carbonatite and pyroxenite units with common massive phoscorite. Recent exploration activities have identified the intrusion to be a mineralised dyke, itself in close proximity to a rich phosphate dyke[9], increasing the potential to bring a stronger phosphate angle into subsequent study phases.

RareX is actively investigating ways in which it can develop the Project in a manner which is carbon-neutral or produces minimal carbon emissions. Not only is the facility to be largely powered by already installed hydroelectricity, but the phosphate by-product will be used in the agricultural sector – much of it locally – increasing crop yields. Longer term, the facilities layout has the potential to support electrified vehicle fleets charged from hydroelectricity and the remaining diesel use at site can be transitioned to full electrification over time given appropriate renewable energy installations. However, these longer-term goals are not currently priced into the Study and their impact on the overall Project financial metrics are unknown.

[7] ASX Announcement 19 July 2021: RareX delivers major resource upgrade at Cummins Range Rare Earths Project.
[8] ASX Announcement 16 February 2022: Maiden exploration target for Cummins Range primary zone.
[9] ASX Announcement 09 August 2022: 2022 drilling confirms scale, significance of Cummins Range.

Figure 1-1: The Cummins Range exploration camp and base in the Kimberley

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Figure 1-2: RareX exploration team on site at Cummins Range

3 MATERIAL ASSUMPTIONS

3.1 MODIFYING FACTORS

Refer Sections 5 to 17.

3.2 TIMEFRAME FOR DEVELOPMENT AND PRODUCTION

Refer Section 1.

3.3 AVAILABILITY OF FUNDING

Refer Section 13.3.

3.4 SEQUENCING OF RESOURCE CATEGORIES

Refer Section 9.7.

4 COMPETENT PERSON'S STATEMENTS

The indicated and inferred Mineral Resource Estimates underpinning this Study, including the production target and forecast financial information, have been prepared by competent persons, as set out in this Section 4.Competent Person's Statements.

4.1 GEOLOGY

The information in this announcement that relates to the geological model is based on and fairly represents information compiled by Mr Guy Moulang, an experienced geologist who is an employee of RareX Limited. Mr Moulang is a Member of the Australian Institute of Geoscientists and has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity to 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". Mr Moulang consents to the inclusion in this announcement of the matters based on this information in the form and context in which it appears. Prior exploration results were reported in accordance with Listing Rule 5.7 and the Company confirms there have been no material changes since the information was first reported. Mr Moulang holds securities in RareX.

4.2 MINERAL RESOURCES

The information in this report that relates to Mineral Resources is based on information compiled by Richard Maddocks, a Competent Person who is a Fellow of The Australasian Institute of Mining and Metallurgy. Richard Maddocks is a consultant to Auralia Mining Consulting. Richard Maddocks has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken 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'. Richard Maddocks consents to the inclusion in the report of the matters based on this information in the form and context in which it appears. Mr Maddocks does not hold securities in RareX.

The Mineral Resource Estimate in this announcement was reported by the Company in accordance with Listing Rule 5.8 on 19 July 2021. The Company confirms it is not aware of any new information or data that materially affects the information included in the previous announcement and that all material assumptions and technical parameters underpinning the estimates in the previous announcement continue to apply and have not materially changed.

4.3 EXPLORATION TARGET

The information in this announcement that relates to the Exploration Target is based on and fairly represents information compiled by Mr Guy Moulang, an experienced geologist who is an employee of RareX Limited. Mr Moulang is a Member of the Australian Institute of Geoscientists and has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity to 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”. Mr Moulang consents to the inclusion in this announcement of the matters based on this information in the form and context in which it appears. Mr Moulang holds securities in RareX.

4.4 METALLURGY

The information in this release that relates to metallurgical testwork is based on information compiled and / or reviewed by Mr Gavin Beer who is a Member of The Australasian Institute of Mining and Metallurgy and a Chartered Professional. Mr Beer is a consulting metallurgist with sufficient experience relevant to the activity which he is undertaking to be recognised as competent to compile and report such information. Mr Beer consents to the inclusion in the report of the matters based on his information in the form and context in which it appears. Mr Beer does not hold securities in RareX.

5 LOCATION AND SITE ACCESS

The Cummins Range Rare Earth Project is located in the Kimberley region for Western Australia south-west of the town of Halls Creek, as shown below. Access to the Project from Halls Creek is via the Great Northern Highway and then the Tanami Road to Ruby Plains station. From there, access is along station tracks. Halls Creek also has a sealed airstrip and connects to the ports of Wyndham and Darwin via the Great Northern Highway.

On 12 May 2022, the Western Australian Government announced that it has decided to seal the Tanami Road. The Western Australian State Budget 2022/23 has allocated an additional $100 million, alongside the recently announced $400 million Federal allocation, to completely seal the Tanami Road in WA.

The newly sealed Tanami Road will improve safety, accessibility and flood resilience to better support communities and industries in the north-east of Western Australia. This will help RareX to assure a steady operation throughout the year in particular during the wet season[10]. Main Roads Western

[10] Haulage costs included in this study assume the portion of the Tanami Road used by the project is sealed.

Australia has developed plans to seal the first 20 km section south of Great Northern Highway near Halls Creek in 2022. Detailed design, ground surveys and approvals are also planned or underway.

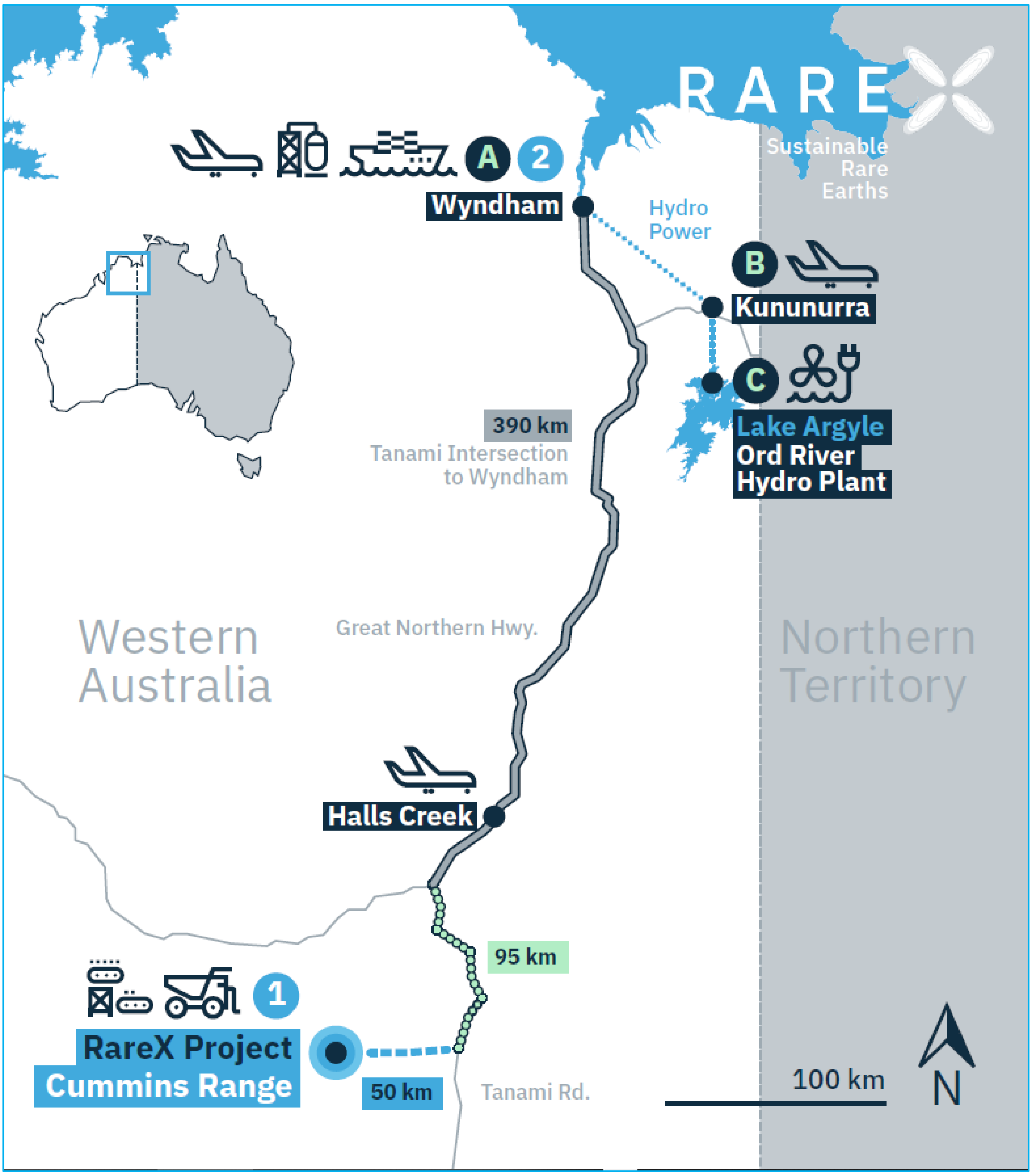

Figure 5-1: Map of Project location and key Project infrastructure

6 LICENCES AND PERMITTING

The Cummins Range Project is an exploration tenement, number E80/5092, which sits upon Jaru determined native title. A heritage agreement is in place between Jaru and RareX. The mining licence process is underway with the Jaru prescribed body corporate (**PBC**).

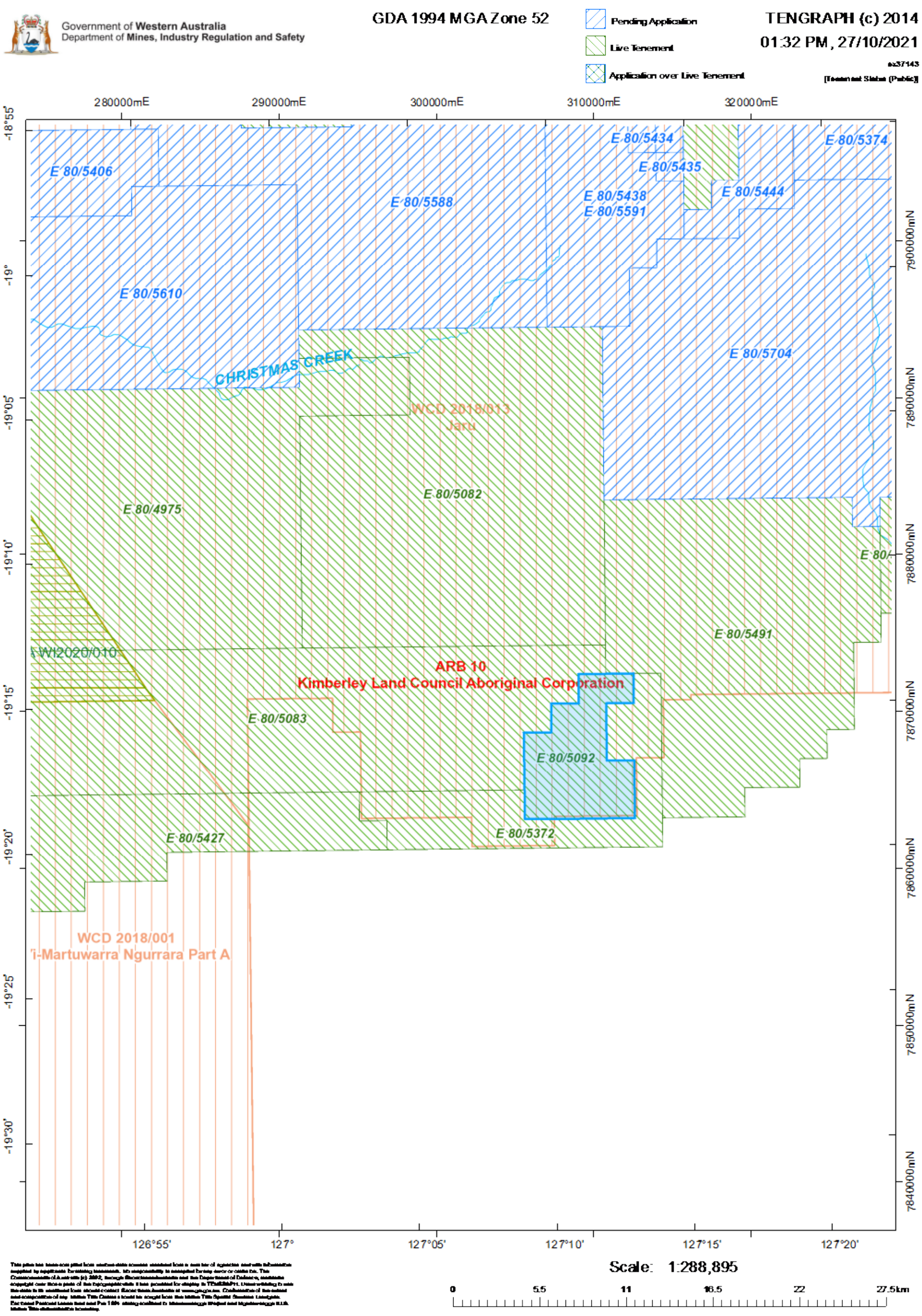

Figure 6-1: Licence area

7 GEOLOGY AND RESOURCES

7.1 GEOLOGY

The Cummins Range Resource[11] sits largely within the regolith overlying three sub-parallel carbonatite dykes that strike at 320 degrees and dip to the south-west at 55 degrees (Figure 7-1). The dykes range from 50m to over 200m wide and have proximal networks of carbonatite dykes generally less than 5m wide. The high-grade regolith mineralisation sits above the central dyke and this has been named the Rare Dyke. The northern dyke is characterised at surface by high-grade phosphate mineralisation[12] and is named the Phos Dyke. The Pendent Dyke sits above the Rare Dyke.

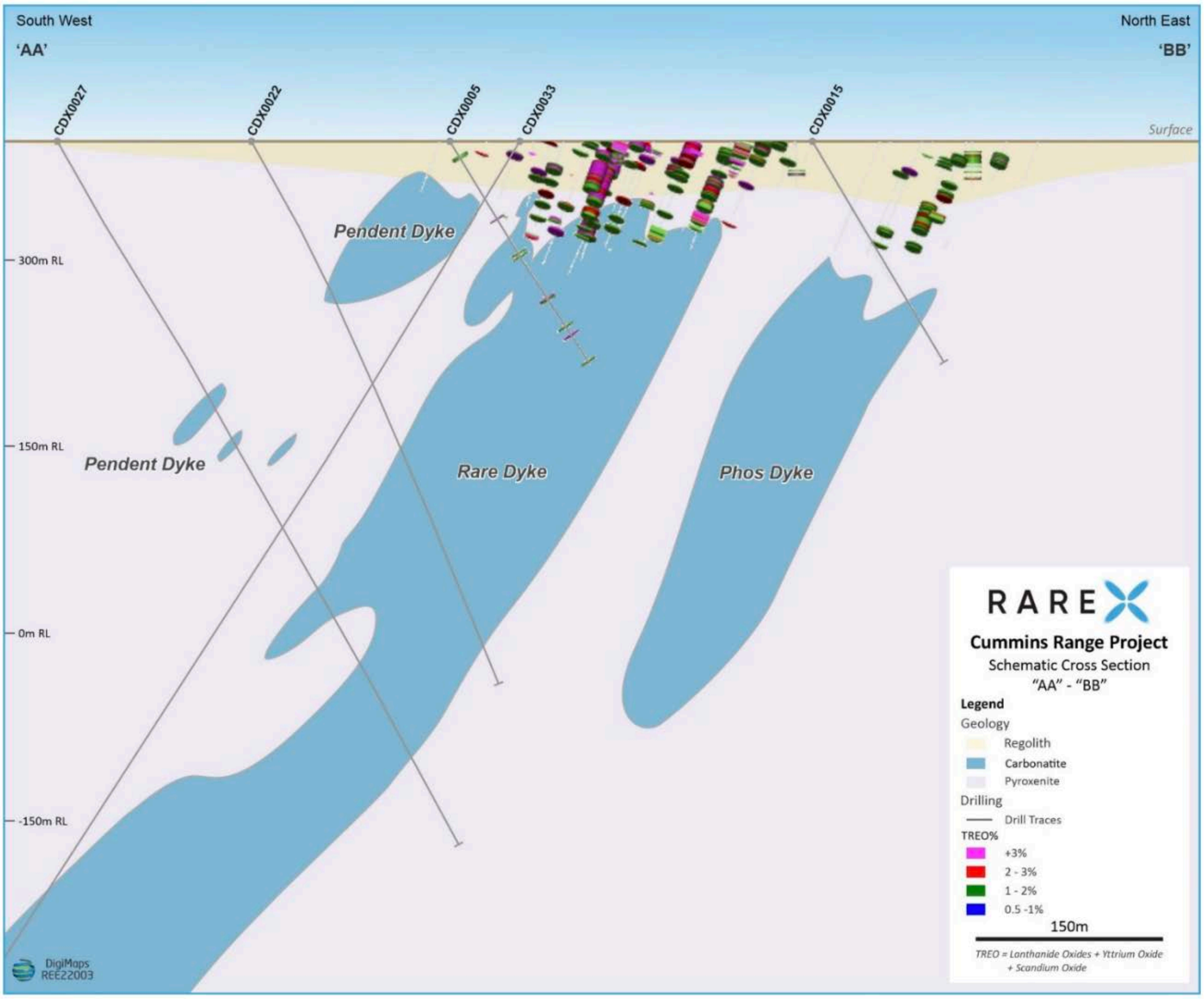

Figure 7-1: Resource cross section

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[11] ASX Announcement 19 July 2021: RareX delivers major resource upgrade at Cummins Range Rare Earths Project.

[12] ASX Announcement 14 February 2022: Significant primary high-grade phosphate discovery at Cummins Range.

7.2 MINERAL RESOURCE ESTIMATE

The Mineral Resource Estimate was announced by RareX on 19 July 2021 and defines a deposit with significant rare earths, dominated by neodymium and praseodymium, the magnet rare earths, appreciable amounts of scandium and niobium and, additionally, a significant grade of phosphate.

The deposit is accompanied by a significant high-grade component. The Mineral Resource Estimate is quantified as:

- **11.1 million tonnes (Mt) at 1.34% TREO + 0.17% Nb_2O_5** *(0.5% TREO cut-off)*; and
- **4.9 million tonnes (Mt) at 2.11% + 0.23% Nb_2O_5** *(1.0% TREO cut-off)*.

Table 7-1: Cummins Range Mineral Resource Estimate

0.5% Cut Off	Mt	TREO %	NdPr %	Nb_2O_5 %	HREO ppm	P_2O_5 %
Indicated	11.1	1.34	0.27	0.17	830	10.9
Inferred	7.7	0.88	0.18	0.11	540	8.4
Total	**18.8**	**1.15**	**0.23**	**0.14**	**711**	**9.9**

1.0% Cut Off	Mt	TREO %	NdPr %	Nb_2O_5 %	HREO ppm	P_2O_5 %
Indicated	4.9	2.11	0.41	0.23	1,150	12
Inferred	1.6	1.60	0.31	0.16	800	10.8
Total	**6.5**	**1.98**	**0.38**	**0.21**	**1,060**	**11.7**

Note:
HREO = Heavy Rare Earth Oxides

Considerable upside exists as defined in the Exploration Target[13], released on 16 February 2022, which is the focus of the 2022 drilling campaign and is disclosed in Section 7.5.

Cautionary Statement

The potential quantity and grade of an exploration target is conceptual in nature, there has been insufficient exploration to determine a mineral resource and there is no certainty that further exploration work will result in the determination of mineral resources or that the production target itself will be realised.

[13] ASX Announcement: 16 February 2022: Maiden Exploration Target for Cummins Range primary zone highlights significant growth potential.

7.3 BLOCK MODEL

The model is on a local grid and is sufficiently large enough to cover the likely extent of the ultimate pit shell.

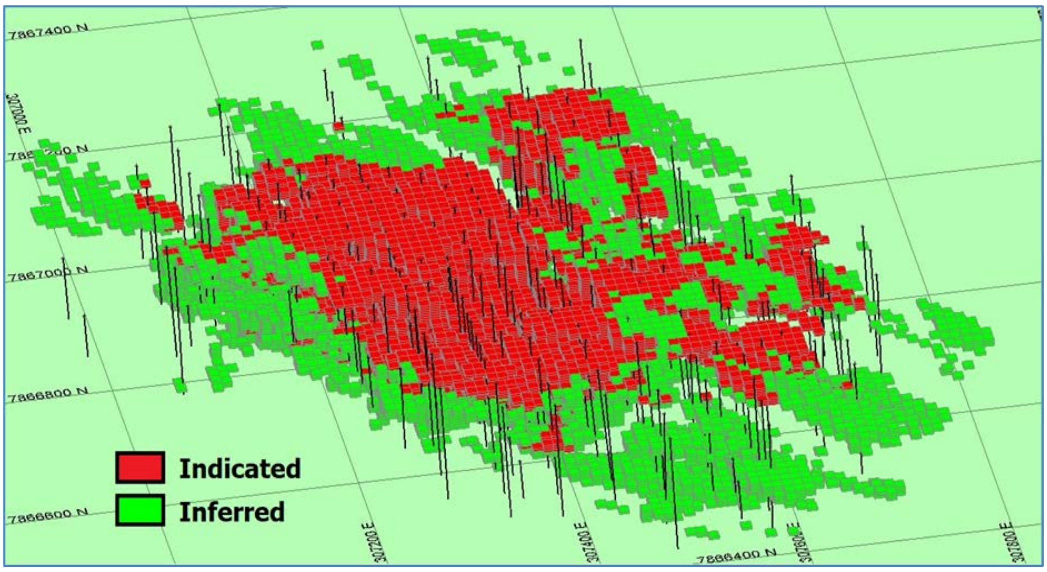


Figure 7-2: Block model

7.4 RARE EARTH BASKET

The Basket Price is essentially the in-situ value of a kilogram of material of separated rare earth oxide, in the proportions as defined in the Mineral Resource Estimate. This is the typical way rare earth deposits are presented. Basket Price varies day to day.

RareX's Basket Price and underpinning price assumptions are shown in Table 7-2. An equivalent Basket Price using the same content, but alternative pricing inputs, was presented in the Mineral Resource Estimate market announcement in July 2021[14]. Except for Nd, Pr, Ce, La, Tb, Dy and SEG, all other elements have been excluded in the RareX Basket Price calculation.

Cautionary Statement

The Basket Price does not reflect an in-situ valuation of the Project. To determine the value and assess the viability of the Project, investors should have regard to the application of the modifying factors set out in Sections 5 to 17 and the financial metrics contained in Section 13.4.

[14] ASX Announcement 19 July 2021: RareX delivers major resource upgrade at Cummins Range Rare Earths Project.

Table 7-2: Mineral Resource Estimate-based Basket Price

Element	Modelled price US$/kg	% of TREO	Basket Price US$/Kg	Current Price [15]	Highest price in 2022 [16]
			LREO		
La_2O_3	1.10	26.29%	0.29	1.03	1.16
CeO_2	1.10	46.27%	0.51	1.07	1.28
Pr_6O_{11}	110.00	4.72%	5.20	96.66	159.41
Nd_2O_3	110.00	15.33%	16.86	95.93	173.48
Sub-Total		**92.61%**	**22.86**		
			HREO		
Sm_2O_3	2.50	1.83%	0.05	2.78	4.29
Eu_2O_3	26.00	0.44%	0.11	26.98	30.01
Gd_2O_3	36.00	1.10%	0.40	37.00	97.88
Tb_4O_7	2,300.00	0.12%	2.80	1,860.99	2,106.24
Dy_2O_3	595.00	0.52%	3.10	315,94	452.98
Sub-Total		**4.01%**	**6.45**		
			Total Basket Price		
US$/kg			**29.31**		

Note: Basket Price excludes Sc_2O_3

The Mineral Resource Estimate referred to in this announcement was reported by the Company in accordance with listing rule 5.8 on 19 July 2021. The Company confirms it is not aware of any new information or data, including changes in the basket price, that materially affects the information included in the previous announcement and that all material assumptions and technical parameters underpinning the estimates in the previous announcement continue to apply and have not materially changed.

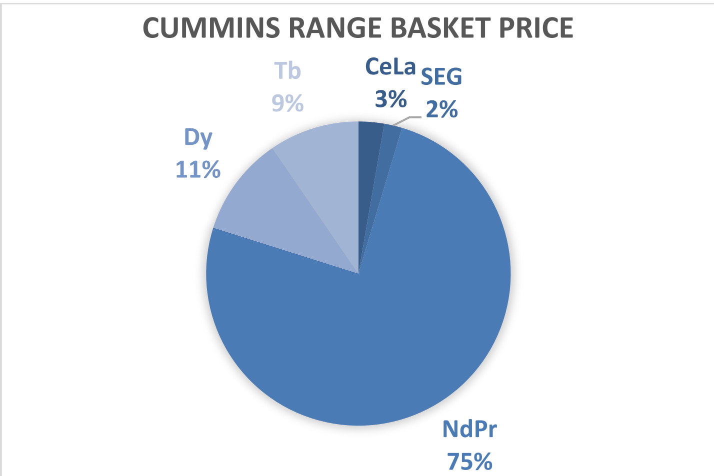


Figure 7-3: Basket price distribution

[15] Domestic China ex works (US$/kg), Source Asian Metal. 05 September 2022.
[16] Domestic China ex-works (US$/kg), Source Asian Metal.

7.5 EXPLORATION TARGET

The Exploration Target[17], which is in addition to and located below the current Indicated and Inferred Mineral Resource within the Main Rare Earths Zone, comprises **23Mt at 1.6% TREO to 41Mt at 2.4% TREO**, as set out below:

Table 7-3: Exploration Target

Exploration Target – February 2022[18]			
Lower		Upper	
Tonnes (Mt)	Grade (TREO)	Tonnes (Mt)	Grade (TREO)
23	1.6%	41	2.4%

Cautionary Statement

The potential quantity and grade of the Exploration Target is conceptual in nature, and there has been insufficient exploration to estimate a Mineral Resource and it is uncertain if further exploration will result in the estimation of a Mineral Resource.

The Exploration Target has been developed following the extensive diamond drilling program completed in 2021 which has successfully proven that high-grade rare earths mineralisation extends into the primary, below the weathered zone. A 15,000m diamond drilling program designed to test the Exploration Target is on track for completion this calendar year. Drilling throughout 2022 continues to confirm this target. The average grade of the primary mineralisation below the current Resource is 2% TREO and therefore a range of 1.6% and 2.4% is provided around that figure to account for uncertainty. RareX notes that the grade is above the 1.15% in its current JORC Resource at the 0.5% cut-off, but is in line with the 1.98% TREO reported grade for the 1.0% cut-off.

8 METALLURGY

The goals of metallurgical testing to date have been to determine the more fundamental aspects of the Project through a series of sighter programmes and associated mineralogy interpretation spanning ore-sorting, flotation, gangue leaching, digestion (acid baking and alkali cracking). The testwork focussed on ruling in and ruling out certain flotation regimes, hence large variances of results. None of the work to date has been to optimise conditions and sample selection has focussed on helping define the fundamentals rather than complete run of mine (**ROM**) blend representation, which is the focus of the subsequent programme currently underway.

[17] ASX Announcement: 16 February 2022: Maiden Exploration Target for Cummins Range primary zone highlights significant growth potential.
[18] Additional to Current Indicated and Inferred Resource but not included in the production target or forecast financial information contained in this Study.

Figure 8-1: Drill core used for metallurgical studies

Testwork was performed at Auralia Metallurgy, Nagrom Perth, Tomra and Australian Nuclear Science and Technology Organisation (**ANSTO**).

Testwork will subsequently go through optimisation which presents further opportunity for the Project. Current results, as confirmed by Gavin Beer, are conducive to representing the Project in the manner in which it is presented in this announcement and the underpinning process design criteria (**PDC**) and process flow diagrams (**PFD**).

8.1 MINERALOGY

Quantitative X-ray Powder Diffraction (**XRD**) and Quantitative Evaluation of Materials by Scanning Electron Microscopy (**QEMSCAN**) were performed on both regolith and fresh materials of the Cummins Range Project. According to the results, the primary rare earth mineralisation was identified as monazite in both the regolith and fresh zones. Secondary rare earth bearing minerals were found to be crandallite in the regolith zone, bastnasite and xenotime in the fresh zone. The dominant gangues in the deposit were goethite, apatite and silicate minerals.

Figure 8-2: Drilling for geological and metallurgical samples

8.2 ORE SORTING

Ore sorting tests were performed on two drill core samples from the regolith and fresh zones. While the soft nature of regolith sample limited the mass feed to the ore sorter, the ore sort concentrate returned a TREO grade that was 3.75 times of the feed grade. The mass yield and recovery, however, are yet to be optimised. The fresh sample feed mass to the ore sorter were considered more appropriate hence more reliable results which showed good TREO concentration at a good recovery to the ore sort concentrate. Potentials still exist for the ore sorting process, particularly improving the gangues rejection for both regolith and fresh materials.

Ore sorting has not been included in the process flow design but will be considered for PFS.

8.3 BENEFICIATION

The majority of the beneficiation testwork was carried out on two RC composites from the regolith zone (totalling 70 kg) which were tested at Auralia Metallurgy and Nagrom. Additionally, one fresh composite (170 kg) is currently being tested to compliment the anticipated resource expansion following the Exploration Target. The beneficiation testwork was targeted at achieving a TREO grade between 10 and 20%, with acceptable recovery. This was achieved and exceeded following tests involving different beneficiation methods and 15% TREO grade at a 59% recovery became the design basis for the beneficiation plant. From these tests the basic circuit configuration, reagent regimes, dosages and float conditions were confirmed. Some magnetic separation tests were also performed to confirm its viability for inclusion into the process flowsheet, however these were not included in the scoping study process flow design.

There were 28 flotation tests performed on the two composites, and promising results were obtained from the tests that have given RareX the confidence to use the results for designing the beneficiation process in the scoping study. A summary of the flotation testwork results are shown in Table 8-1.

Table 8-1: Flotation results summary

Product	TREO + Y		NdPrO		P_2O_5	
	Grade, %	Recovery, %	Grade, %	Recovery, %	Grade, %	Recovery, %
PF Cln Con	5.79 - 25.34	0.39 - 63.56	0.51 - 4.37	0.39 - 48.40	10.16 - 36.91	0.57 - 88.48
RE Cln Con	2.43 - 26.61	17.97 - 72.95	0.52 - 4.61	17.97 - 58.91	0.23 - 31.60	1.00 - 55.03

Note:
PF Cln Con = Pre Float Cleaner Concentrate
RE Cln Con = Rare Earth Cleaner Concentrate

Magnetic separation tested on the two RC composites showed some good upgrade of the TREO grade, but separation circuits and conditions are to be further investigated and optimised.

8.4 REFINING

Preliminary refining testwork was performed at Nagrom and ANSTO assessing the amenability of gangue removal and rare earth elements extraction prior to precipitation of the mixed rare earth carbonate.

Gangue leaches on flotation concentrates were mainly aimed at apatite removal. Different acids at different concentrations were tested in the gangue leaches. Gangue leaches at Nagrom demonstrated good apatite removal with minimal REE loss to the leach solution. Amongst all the gangue leaches performed, phosphoric acid showed better performance (Table 8-2), and is currently being further investigated and optimised at ANSTO.

Additional gangue leach, acid bake and caustic cracking testwork are currently in progress at ANSTO to build on the initial programme at Nagrom and to further support the process flowsheet development and optimisation of process parameters.

Table 8-2: Gangue leach results summary

Acid	Ca Extraction, %	P Extraction, %	Nd Extraction, %	Pr Extraction, %	LRE Extraction, %
HCl	10.71 - 91.89	0.48 - 53.79	0.00 - 38.36	0.00 - 37.54	0.00 - 39.55
H_2SO_4	6.82 - 11.84	0.07 - 33.02	0.00 - 7.18	0.00 - 6.09	0.02 - 6.13
H_3PO_4	9.74 - 91.00	0.00 - 45.00	0.00 - 2.00	0.00 - 2.00	0.00 - 1.00

9 MINING

Mining will be by conventional open cut methods, currently over a 12-year mine life but with considerable potential to extend mine life through further exploration and development work.

9.1 OREBODY PARAMETERS

The mineralisation modelled in the mine scheduling is hosted in the weathered portion of the underlying carbonatite intrusion with the deposit outcropping in multiple locations leading to a potential low-cost open pit mining scenario. The underlying carbonatite intrusion contains both carbonatite and pyroxenite units with occasional massive phoscorite.

The Cummins Range rare earth oxide deposit occurs within the Cummins Range carbonatite complex which is a 2.0 km diameter near-vertical diatreme pipe that has been deeply weathered but essentially outcropping with only thin aeolian sand cover in places. The diatreme pipe consists of various mafic to ultramafic rocks with later carbonatite intrusions. The primary ultramafic and carbonatite rocks host low to high-grade rare-earth elements with background levels of 1000-2000 ppm TREO and high-grade zones up to 17% TREO. The current Mineral Resource Estimate [19] sits primarily within the oxidised/weathered zone which reaches to 120m below the surface.

The resource is anticipated to expand further, including into the primary, un-weathered, rock as presented in the Exploration Target[20].

9.2 MINING METHOD

Mining of the REO deposit will be undertaken using industry standard conventional open pit mining methods utilising grade control, drill and blast pre-conditioning where required, and bench mining utilising a 120 t excavator, trucks and ancillary mining equipment. The Project has been planned to be mined on a double-shift continuous 24 h roster.

Pit walls are generally dug on an overall slope angle of between 37 to 45 degrees depending on the geotechnical rock mass characteristics and structural conditions, and geotechnical analysis, with the aim to minimise damage and danger from rock falls. The pit walls will consist of a batter and berm configuration with a berm every 10 m to prevent rock falls continuing down the entire face of the wall. A ramp will be situated within the pit, forming a route along which haul trucks can transport ore and waste rock to the ROM, ore-stockpiles, or waste dumps.

Haul roads and ramps are generally designed to accommodate a 60 t articulated dump truck similar to a Bell B60E, and are 21 m wide for dual lane and 12 m wide when a single lane ramp is required, or 90 t truck similar to CAT 777G with a 25 m dual lane and 14 m single lane widths respectively.

The pit design for the Scoping Study has been considered at a depth of 110m and approximately 500m in diameter. The current work programme is anticipated to substantially increase the pit size.

[19] ASX Announcement 19 July 2021: RareX delivers major resource upgrade at Cummins Range Rare Earths Project.
[20] ASX Announcement 16 February 2022: Maiden exploration target for Cummins Range primary zone.

9.3 ORE MINING AND RECOVERY

Ore will be extracted by conventional drill and blast methods on 5m benches and mined in 2.5m flitches. The resource block model dimensions are 10m x 10m x 2.5m RL which should adequately account for ore loss and mining dilution, when utilising a 120 t excavator for ore mining.

9.4 MINE OPTIMISATION

The resource model was provided by RareX to Mining Plus. Mine optimisation was completed on nominal basket price values of contained rare earth metals, discounted to account for future processing. The mining costs used in the optimisations were derived from a number of mid-sized rare earths mine studies recently undertaken by Mining Plus including both owner mining and contractor operations and utilised 120 t excavators with 90 t trucks. The mining cost includes variable rates for drilling and blasting by material type, and a load and haul rate by bench level and likely destination. In addition to these rates, monthly fixed charges covering supervision, management, administration, buildings and other infrastructure requirements were applied.

The pit slopes utilised for the optimisation is a simplified version of the various studies of overall 45 degree angle and will be updated for the next phase with more recent geotechnical information as it becomes available.

The block model is on a local grid and is sufficiently large enough to cover the likely extent of the ultimate pit shell.

The Whittle optimisation shell is shown in Figure 9-1. No detailed pit designs were completed for this Study.

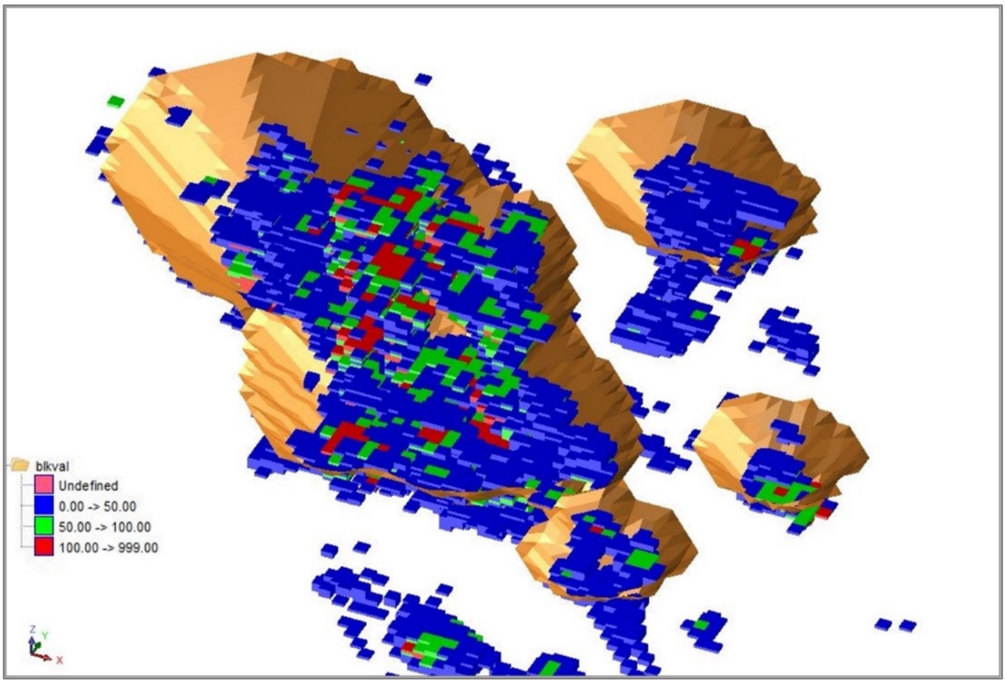


Figure 9-1: Optimisation shells

Ongoing work will include further monetisation potential of the phosphate portion of the resource which will is likely to result in larger and simplified mining pits.

9.5 PRE-PRODUCTION MINING

Overburden is variable and ranges from loose particles to good quality rock. The overburden is suitable for extraction using conventional excavator and truck, upon completion of drilling and blasting of the rock for breakage of any fresh rock if required. The initial overburden removed is taken to a pre-determined and prepared topsoil stockpile location, and then deposited. The waste material is stockpiled and then rehabilitated with topsoil from the mining area.

9.6 WASTE ROCK DISPOSAL

It is assumed all fresh waste material is potentially acid generating with the potential to create acid-mine drainage hazards and will be contained within the core of waste dumps, encapsulated by the oxide waste.

This means that the waste dump construction will need to have an oxide floor (5m), then the fresh is tipped on this floor, and then oxide is placed on the sides and the top to encapsulate any potentially acid forming (**PAF**) material. This may require an oxide dump for rehandle or if the staging of the pit is possible then the oxide can be placed around the edges as the dump is built with dozers in logical construction method. A high-level waste dump design showing material placement is shown in material is placed in 20m lifts with 37 degree repose angle and 5m berms to accommodate for total waste movement per the production schedule.

Detailed waste characterisation studies will be undertaken to confirm waste dump design parameters and encapsulation of PAF material.

9.7 PRODUCTION SCHEDULE

The key strategy for the Scoping Study mine production plan was to ascertain the sequence and production rates that were required to feed a 500,000 tpa processing plant and target a 10-year project life at Cummins Range based on the current mineral resource estimate[21].

Mine scheduling was completed in Whittle's strategic scheduler. This uses Whittle scheduling tools to select pushbacks, the ultimate shell, and operational parameters i.e., mine and mill capacity to create a mining, stockpiling and processing sequence. The initial production schedule resulted in a 12-year mine life excluding the pre-production period, Figure 9-2.

[21] ASX Announcement 19 July 2021: RareX delivers major resource upgrade at Cummins Range Rare Earths Project.

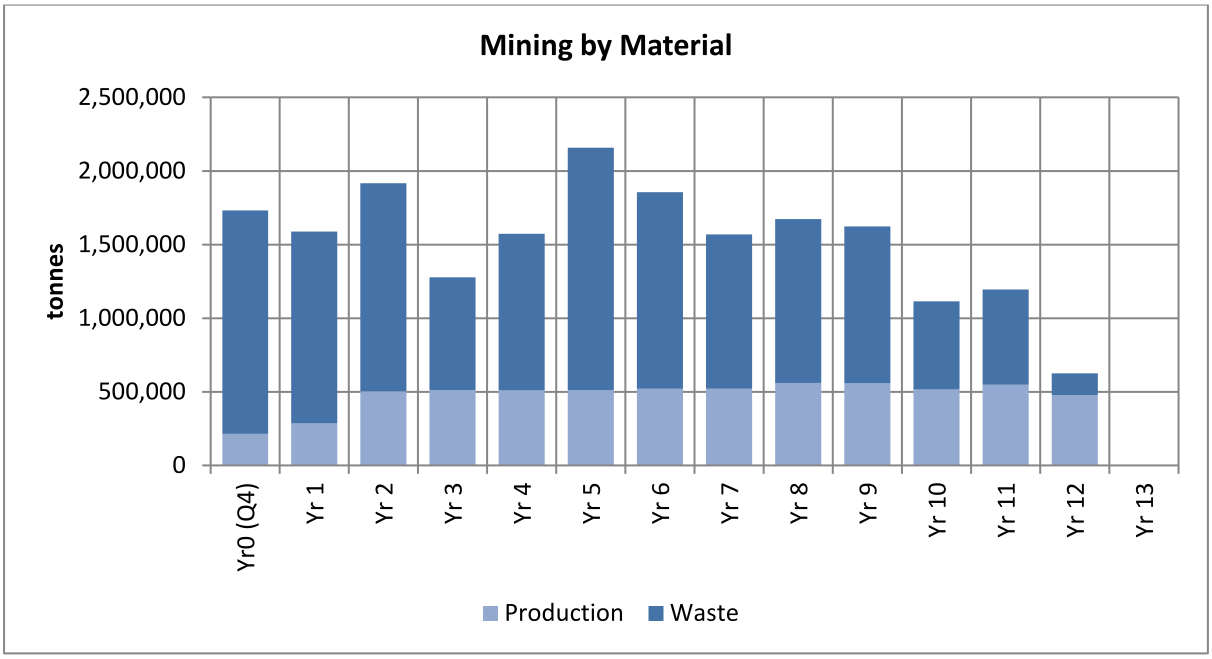


Figure 9-2: Mine production schedule

Given the exploration target[22], significant project upside exists though an increased mine life. This will be investigated at the PFS stage and it is noted that the Exploration Target is not included in the mine production schedule.

Mining predominantly takes place in the Indicated portion of the ore body. Over the production schedule, more than 85% of material mined is Indicated with the remaining Inferred. No unclassified resource material was used in the schedule (Figure 9-3).

[22] ASX Announcement 16 February 2022: Maiden exploration target for Cummins Range primary zone.

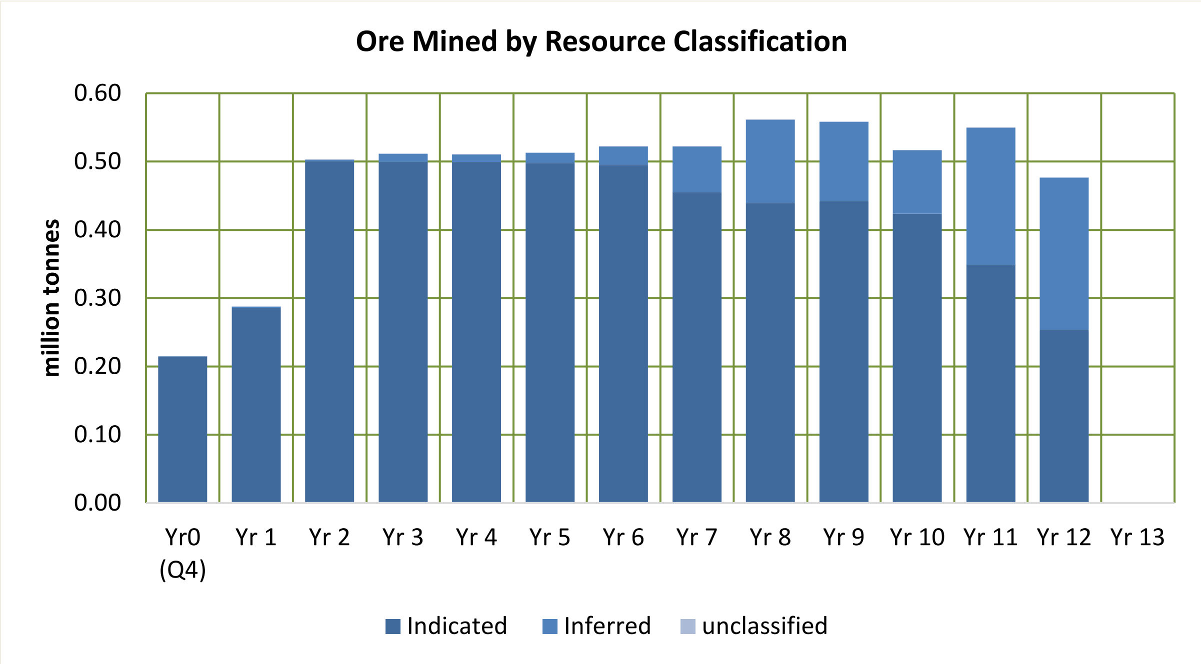


Figure 9-3: Mine production schedule by resource classification

9.8 MINING EQUIPMENT

Mining is to be conventional drill, blast load and haul utilising a mid-sized excavator and trucks typical of the region. The size of the mining fleet is selected to match the scale of the operation using a single PC1250 excavator matched with four 90t trucks. The full fleet mobilisation cost is based on contractor rates used in previous Mining Plus studies. Practical fleet considerations will be addressed in more detail the future study phase.

10 PROCESSING

The processing pathway consists of beneficiating the ROM ore on site and trucking the rare earth mineral concentrate to the hydrometallurgical refinery at the coast at Wyndham port. Phosphate mineral concentrate from the beneficiation plant by-product stream is also trucked to the port. At the coast, the rare earth mineral concentrate is refined into mixed rare earth carbonates which will be sold in sealed bulk bags and loaded onto a ship at Wyndham port. Phosphoric acid is also produced as by-product at the refinery and sold onto a ship along with the phosphate mineral concentrate direct from site.

Two significant process opportunities present themselves for further investigation which has been initiated:

1. Beneficiate in a manner which keeps the phosphate and rare earth minerals together to allow for a reduction of site infrastructure and simplification of transport, and

2. At the coast, react the phosphoric acid with the phosphate mineral concentrate to form a superphosphate fertiliser for use in the local agricultural sector, with the surplus sold abroad.

10.1 PROCESSING PHYSICALS

Table 10-1: Processing physicals – LOM average per annum

Mine	Units	Value
Material mined - Ore	ktpa	481
Waste mined - Ore	ktpa	1,050
Strip Ratio	O:W	1:2.2
Indicated : Inferred	%	85%:15%
Beneficiation		
Material processed	ktpa	481
TREO feed grade	%	1.9%
NdPr feed grade	%	0.4%
Beneficiated concentrate produced (dry)	ktpa	35
Phosphate concentrate produced (dry)	ktpa	129
Refinery		
Material processed	ktpa	35
TREO feed grade	%	15%
NdPr feed grade	%	2.8%
Phosphate feed grade in RE concentrate	%	23%

10.2 PRODUCT PHYSICALS

Table 10-2: Product physicals – LOM average per annum

MREC	Units	Value
MREC Product (dry)	ktpa	8.9
Final Product MREC Grade (dry) - %TREO	%	52%
TREO Produced	ktpa	4.7
NdPr Produced	ktpa	0.9
Phosphate Mineral Concentrate		
Phosphate Concentrate Produced (dry)	ktpa	129
Phosphate Concentrate Grade - %P_2O_5	%	32%
Phosphate Concentrate Grade - %TREO	%	2.5%
TREO Produced (dry)	ktpa	3.2
NdPr Produced (dry)	ktpa	0.6
Phosphoric Acid		
Phosphoric Acid Produced (dry)	ktpa	13.5
Phosphoric Acid Grade - %P_2O_5	%	54%
Total Rare Earth Oxides		
Total TREO Produced	ktpa	7.9
Total NdPr Produced	ktpa	1.5

10.3 BENEFICIATION

The beneficiation plant (bene plant) is nominally designed to be built adjacent to the mine to produce two mineral concentrate streams: a primary product of 36.6 ktpa (dry) of rare earth mineral concentrate of 15% TREO, and a by-product of 130 ktpa (dry) of phosphate mineral concentrate of 32% P_2O_5. A summary of the concentrate specifications is presented in Table 10-3.

Table 10-3: Bene plant flotation concentrate specifications

	Rare Earth Concentrate	Phosphate Mineral Concentrate
Annual Production, ktpa (dry)	36.6	130
TREO	15.0%	2.52%
NdPrO	2.76%	0.47%
Fe_2O_3	16.48%	14.14%
SiO_2	3.85%	15.79%
BaO	0.46%	0.19%
CaO	9.93%	23.43%
P_2O_5	23.14%	32.2%
Al_2O_3	5.84%	6.97%
U_3O_8	1,023 ppm	148 ppm
ThO_2	220 ppm	35 ppm

Based on the metallurgy testwork to date and similar concentrator flowsheets by industry peers, the current Cummins Range process flowsheet concept incorporates industry proven unit processes including:

- Primary crushing, single stage jaw crusher.
- Crushed ore storage.
- SAG mill comminution and classification circuit to P_{80} 53 µm.
- Gangue pre-flotation (roughing and 2 stages of cleaning).
- Rare earth (RE) flotation (roughing and 4 stages of cleaning).
- Tails thickening.
- Concentrate thickening.
- Concentrate filtration with plate & frame filter press for production of a filtered RE flotation concentrate.
- Phosphate concentrate filter dryer.

The overall process flow diagram is shown in Figure 10-1.

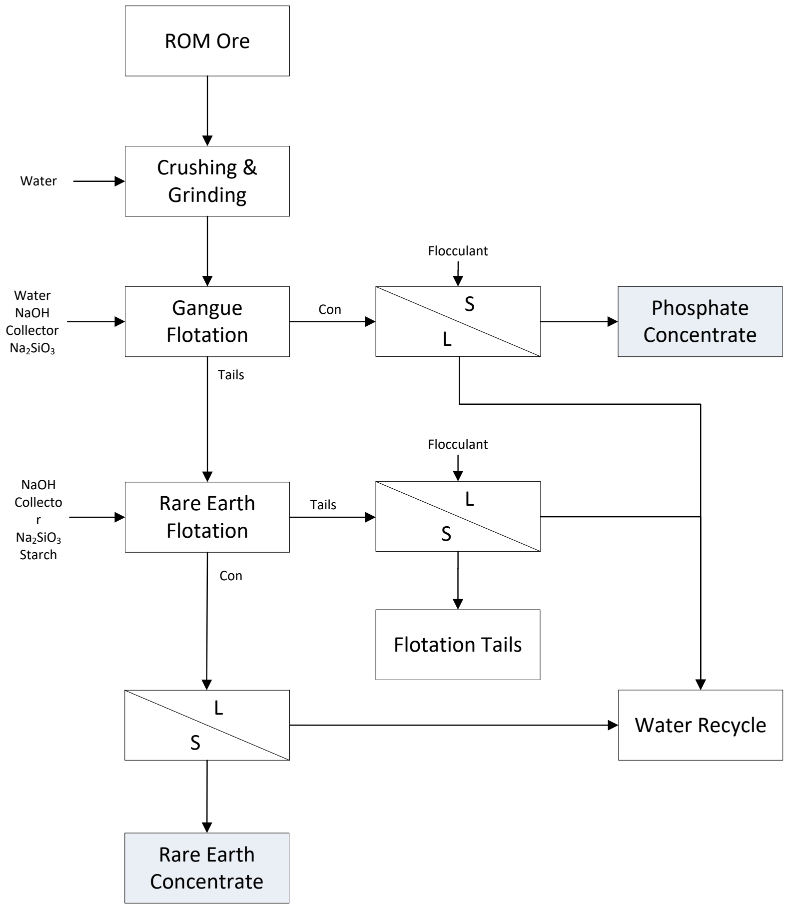


Figure 10-1: Bene plant block flowsheet

The bene process plant design is based on a nominal feed grade of 1.86% TREO for the ROM ore, consistent with mine scheduling.

The process design basis assumes continuous operation (24 h/day, 365 days/annum), and treatment of 500,000 tpa of ROM ore with typical plant availability and industry standard annual operating hours of 8,000 hours, which is considered appropriate given the type of process infrastructure. The nominated availability considers all downtime associated with planned maintenance and typical process interruptions.

The high-level process mass balance model was developed by Primero from the process design criteria assumptions and testwork data. At the next phase of study, specific process design software will be utilised.

The beneficiation plant uses the following reagents:

- Flotation collector.
- Sodium hydroxide.

- Sodium silicate.
- Starch.
- Flocculant.

Reagent and consumables cost build-ups are based on unit pricing (database), consumption rates and hours of operation, and transport to site. Reagents and other consumable usage rates have been determined from the following sources:

- Process Design Criteria and Mass Balance.
- First principles, testwork, database/allowances.

A tailings dam has been factored into the design for handling inert tailings waste.

The bene plant specification is shown in Table 10-4.

Table 10-4: Bene plant process design basis

Parameters	Description	Units	Values
Operating Hours		h/annum	8,760
Availability		%	91%
Actual Operating Hours		h/annum	8,000
Plant Feed	Annual tonnage	ktpa	500
	TREO feed grade	%	1.86
Product	TREO recovery	%	59
	TREO grade in flotation concentrate (dry)	%	15.0
	Annual flotation concentrate (dry)	tpa	36,580
Reagents	Flotation collector	tpa	1,075
	Sodium hydroxide	tpa	2,000
	Sodium silicate	tpa	1,500
	Starch	tpa	150
	Flocculant	tpa	20
Power	Installed power	MW	3.5
Fuel	Diesel	kL	767

10.4 REFINERY

The Scoping Study contemplates refining of mineral concentrate for production of MREC at the port of Wyndham.

The refinery is fully electrified in design to minimise carbon footprint and optimise to the hydroelectric grid. This includes electric steam boilers and an electrically heated rotary kiln for the acid bake rather than the traditionally hydrocarbon powered.

The hydrometallurgical refinery process plant design is based on a nominal flotation concentrate with a TREO grade of 15.0% (2.76% NdPr oxide), consistent with the current understanding of the flotation output of the Cummins Range RE beneficiation plant feed (ROM ore average grade of 1.86% TREO and 0.36% NdPr oxide).

The hydrometallurgical refinery design basis assumes continuous operation (24 h/day, 365 days/annum), and treatment of 36.6 ktpa of RE flotation concentrate (dry), with typical industry standard and annual refinery process plant availability of 85%, which is considered appropriate given the type of process infrastructure. The nominated availability considers all downtime associated with planned maintenance and typical process interruptions.

The high-level process mass balance model was developed from the process design criteria assumptions and testwork data.

The process design consists of a gangue leach initially which generates a recirculating load of phosphoric acid from which the surplus becomes a by-product. The residue from the gangue leach moves to a sulphuric acid bake followed by a water leach to dissolve the rare earth sulphates, the insoluble solids, mainly silica and iron, will be separated by filtration. Soluble iron in the water leach solution is then oxidised to it ferric state in the solution adjustment step. The majority of the impurities, mainly iron, phosphorous and thorium can then be subsequently removed in the form of precipitates by adjusting the solution pH with magnesia addition. Small amounts of dissolved uranium remaining in the solution is them removed through ion exchange resin.

Water leach residues, precipitates from the solution purification will be regarded as waste streams from the refinery containing small quantities of thorium and uranium. The thorium and uranium levels in the combined tailing streams is at 0.82 Bq/g which is below the 1 Bq/g limit of radioactive material classification.

Sodium carbonate is then added to the purified solution for precipitation of mixed rare earth carbonates. The precipitated slurry is then filtered and dried before packaging in 1 t bulk bag for export.

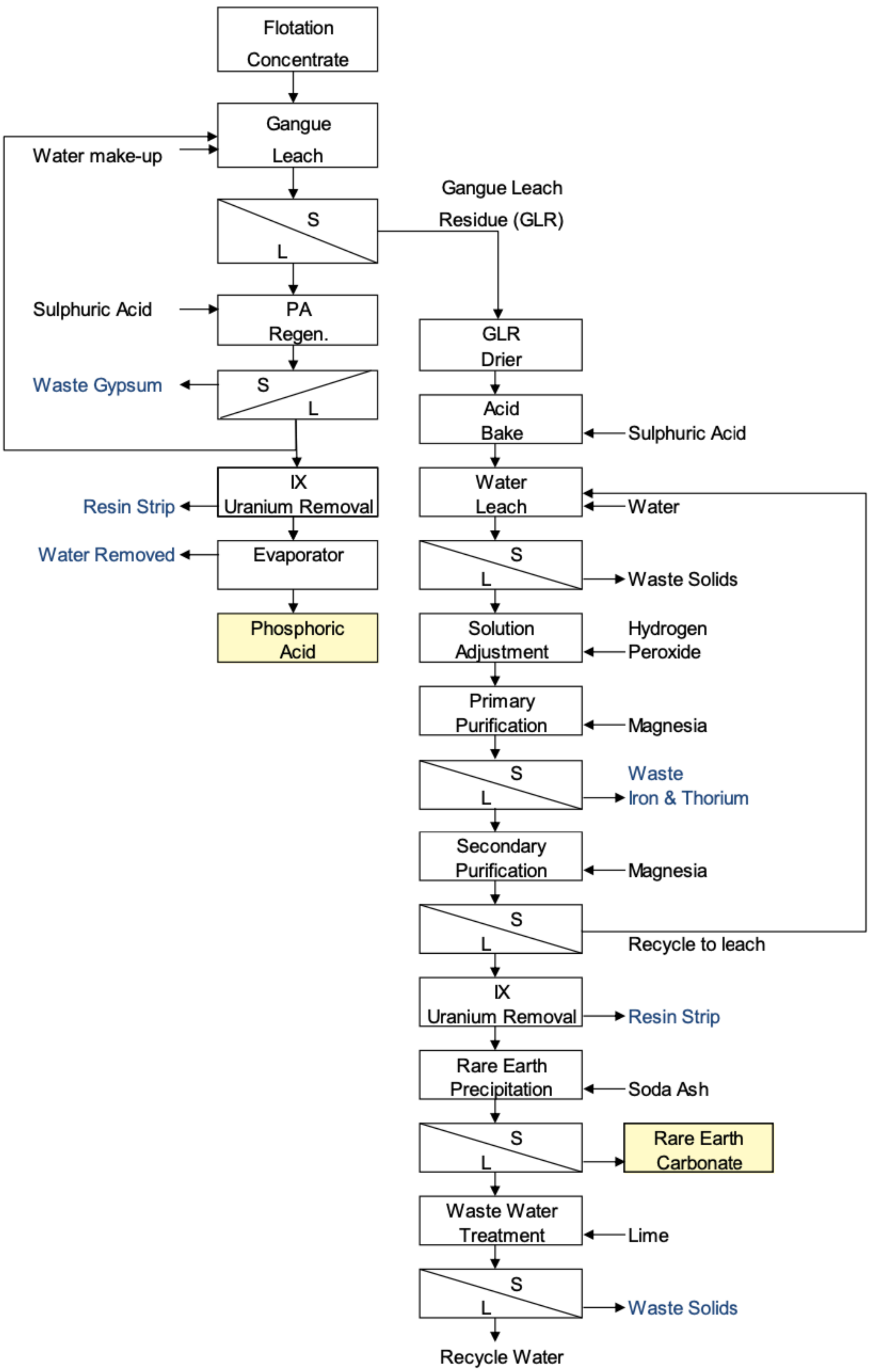


Figure 10-2: Refinery Block Flowsheet

Equipment selection and sizing is preliminary and subject to change, pending future metallurgical testwork and testing of rare earth flotation concentrate samples. For the purposes of the Scoping Study, the process plant design assumes factored database / benchmark data for the preliminary sizing of process equipment. The main refinery process areas encompass:

- Gangue Leach & Phosphoric Acid Production.
  - Phosphoric acid purification.
  - Phosphoric acid regeneration.
  - Acid bake.
- Hydrometallurgical Processing.
  - Water leach.
  - Solution adjustment.
  - Purification.
  - Uranium removal.
  - MREC precipitation.
- Reagents.
- Plant Services.
  - Water services.
  - Utilities.

The refinery mainly uses the following reagents:

- Phosphoric acid.
- Sulphuric acid.
- Hydrogen peroxide.
- Magnesia.
- Sodium carbonate.
- Lime.

The refinery design specifications are shown in Table 10-5.

Table 10-5: Refinery process design basis

Parameters	Description	Units	Values
Operating Hours		h/annum	8,760
Availability		%	85
Actual Operating Hours		h/annum	7,446
Plant Feed	Annual float concentrate tonnage	tpa	36,580
	TREO grade in flotation concentrate (dry)	%	15.0
Product	TREO recovery	%	88.4
	TREO grade in MREC (dry)	%	52%
	Annual flotation concentrate (dry)		
Reagents	Sulphuric acid	tpa	39,297
	Hydrogen peroxide	tpa	13,979
	Magnesia	tpa	3,092
	Sodium carbonate	tpa	3,604
	Lime	tpa	1,010
Power	Installed power	MW	8.1
Fuel	Diesel	kL	741

10.5 RADIATION MANAGEMENT

According to Code of Practice and Safety Guide – Radiation Protection and Radioactive Waste Management in Mining and Mineral Processing (2005) published by Australian Radiation Protection and Nuclear Safety Agency (**ARPANSA**), material containing naturally occurring radionuclides in secular equilibrium, with head-of-chain uranium or thorium activity concentrations less than 1 Bq/g are generally considered inherently safe and therefore exempt from regulation. Where the activity concentration exceed 1 Bq/g by ten times (i.e. 10 Bq/g), the material is classified as a Class 7 radioactive material and must be transported with full compliance to legislation and regulation.

There are four streams from the bene plant and refinery:

1. Rare earth concentrate containing 1,023 ppm U_3O_8 and 220 ppm of ThO_2 (dry basis), this is equivalent to a radiation activity of 9.75 Bq/g at the annual transport tonnage. Although close to the Class 7 limit there are a number of future mitigants, including the main opportunity to combine the mineral concentrates (beneficiate in a manner which produces a combined mineral concentrate product for coastal processing), thus diluting the radiation activity.

2. Phosphate mineral concentrate containing 148 ppm U_3O_8 and 35 ppm of ThO_2 (dry basis), this is equivalent to a radiation activity of 1.42 Bq/g at the annual transport tonnage.

3. Flotation tails containing 121 ppm U_3O_8 and 21 ppm of ThO_2 (dry basis), this is equivalent to a radiation activity of 1.02 Bq/g at the annual transport tonnage.

4. Refinery combined waste stream containing 121 ppm U_3O_8 and 21 ppm of ThO_2 (dry basis), this is equivalent to a radiation activity of 0.82 Bq/g at the annual transport tonnage.

As indicated above, the materials from the Cummins Range Project all have a radiation concentration below 10 Bq/g, hence are exempt from radioactive transport (Class 7) regulations and can be shipped / transported as general cargo.

11 NON-PROCESS INFRASTRUCTURE

11.1 CUMMINS RANGE MINE SITE

The mine site consists for the following main facilities:

- Access road of approximately 50 km.
- Mining pit.
- Offices.
- Workshop.
- Warehouse.
- Camp.
- Diesel-hybrid power station with a 5MW capacity operated by a third party as a build-own-operate (**BOO**) facility.
- Diesel storage.
- Water abstraction assumed to be from a bore field within 5 km.
- Water treatment and purification.

Cambridge Gulf Limited (**CGL**), the operators and managers of Wyndham port, operate a fuel farm in Wyndham with a combined capacity of 17 million litres, and it is assumed that fuel supplies to site will be sourced through CGL. Provision has been made for 3 weeks supply storage on site.

Future work will investigate the full use of renewable energy at site, rather than a hybrid solution and given the proximity to the Ord River hydroelectric plant there are some potential novel solutions to transfer this electricity to site.

11.2 WYNDHAM PORT

No significant additional non processing infrastructure is required at Wyndham port due to the availability of existing facilities.

Provision has been made for a laboratory within the refinery.

For the purposes of the Scoping Study, it is assumed that the site power will be via grid supply, generated at the Ord River Hydroelectric Power Station. Since Rio Tinto's Argyle Diamond Mine has wound down to closure, significant generation capacity exists in the PacificHydro owned facility. Distribution to Wyndham, via Kununurra is managed through Horizon Power. RareX has been supported in its assessment of grid capacity at Wyndham to supply the hydrometallurgical refinery load by Resources WA and with RareX the group are in discussions with PacificHydro and Horizon Power to define the pathway towards a power purchase agreement.

The Scoping Study assumes that the grid power is sufficiently stable, and there is no provision for emergency power back-up. Further technical studies and commercial definition work is ongoing.

No upgrades have been factored into the cost assessment however an allowance has been applied for 5 km for the high-voltage (33 kV) transmission line from the grid connection to the process plant substation.

It is anticipated that direct project fuel use at Wyndham will be for the mobile equipment supporting the hydromet plant only, as the hydromet-plant has been designed for full electrification.

Future study work will include an assessment to electrify this local fleet with charging from the hydro powered grid, eliminating fuel use for the RareX facilities at the port.

12 PRODUCTS AND MARKETS

It is anticipated the Project can produce MREC as its primary product following the feed of a rare earth mineral concentrate into the hydrometallurgical processing refinery from the beneficiation plant.

Additionally, the Project is anticipated to produce a phosphate rich mineral concentrate from the bene tailings, and phosphoric acid from the gangue leaching step of the refinery. There is the opportunity for these two streams to be combined to form a phosphate fertiliser as either a double super phosphate (**DSP**) or a triple super phosphate (**TSP**), or even an ammonium phosphate (**DAP** or **MAP**), however this is currently out of scope of this study. Gypsum by-product is also an out-of-scope potential by-product, but it is worth noting that the soils in the agricultural region of Kununurra are phosphate depleted clays, which perfectly match this opportunity.

Future work will consider a combined rare earth and phosphate mineral concentrate for refining at the coast and this may have commercial value in its own right, opening the opportunity to defer some processing infrastructure allowing for a more rapid start up.

Therefore, for this scoping study, three products are under consideration:

- Mixed rare earth carbonate (**MREC**).
- Phosphate mineral concentrate.
- Phosphoric acid.

12.1 MARKET

12.1.1 MREC

A mixed rare earth concentrate (**MREC**) is perceived as the first real sellable rare earth product in the rare earth value chain and a logical market entry point for a rare earth mining company.

It also enables the MREC producer to become part of the rare earth refinery ecosystem and to gain firsthand important experience in marketing and sales and more importantly in operations.

A logical second step would be to further integrate and expand downstream into solvent extraction where the refinery is capable of separating individual elements, or element groups, to produce rare earth oxides and eventually metals and even potentially alloys. Each step allows the producer to capture more value and to get deeper integrated into the rare earth value chain. Figure 12-1 highlights the individual steps of the value chain.

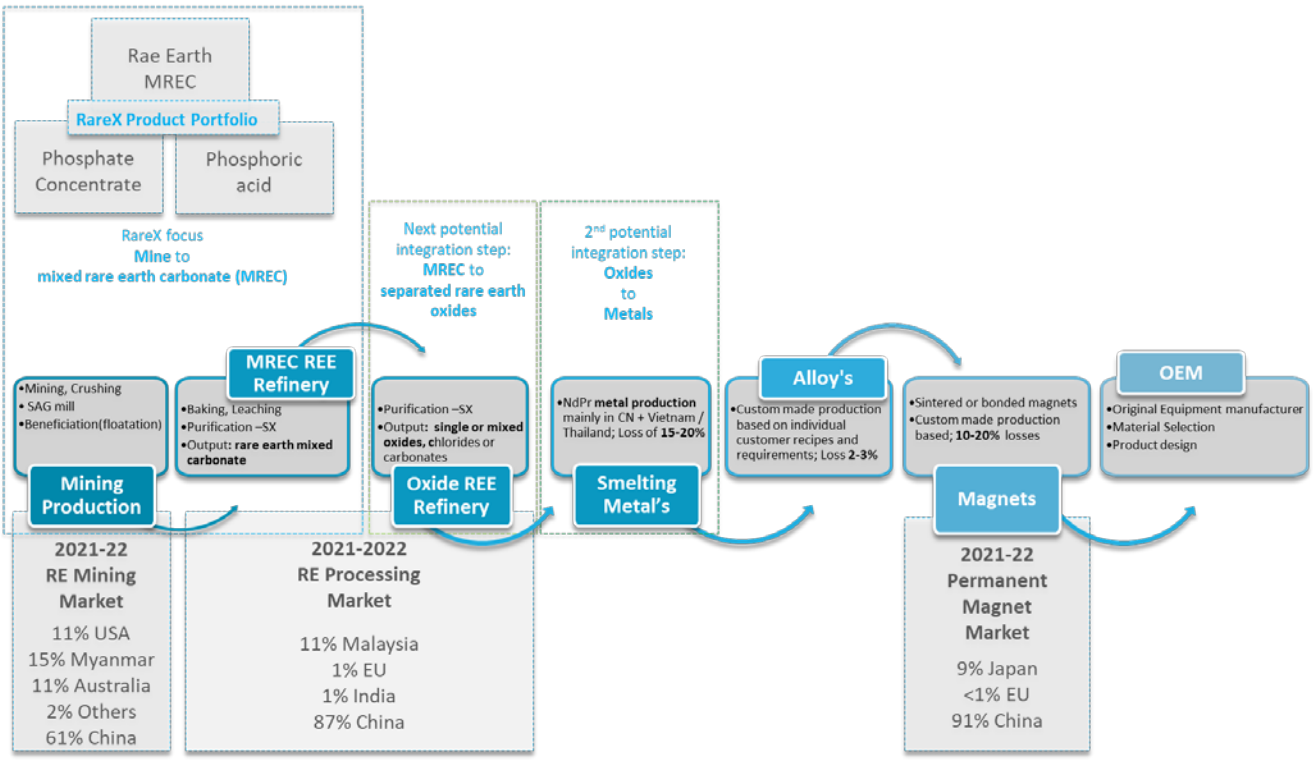


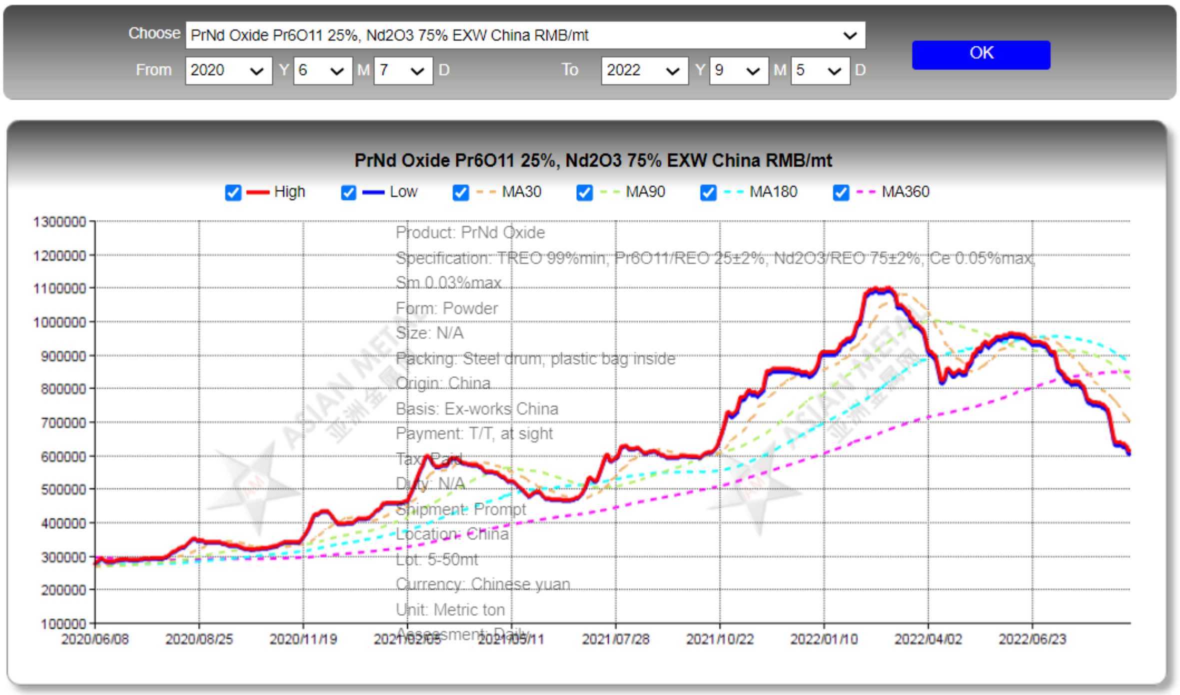
Figure 12-1: Rare earth value chain

Neodymium and praseodymium (**NdPr**) represent one of the most valuable elements among the group of 17 rare earth elements called light rare earth elements. NdPr is used in the alloys to make high-strength neodymium, iron, and boron permanent magnets called NdFeB.

These magnets are the core enabler for the low carbon future, powering wind turbine electric generators and the electric motors in electric vehicles and other electric mobility applications due to their favourable high power-to-weight ratio.

More than 90% of the electric vehicle manufacturers have decided to select rare earth NdFeB permanent magnet motors as their default drive train solution independent of the OEM decision on the electric storage source - lithium battery or hydrogen fuel cell - to power the electric motor.

The global transition to lower-carbon technologies has boosted the interest in the rare earth projects, and the involved supply chain, worldwide. At the same time, prices have risen to a level where a sustainable non-Chinese rare earth supply chain development can be realised. This is also underpinned by the fact that the US, Canadian and Australian governments have increased their efforts and their support for the rare earth sector.



Date	Latest			Monthly Average			MA30			MA90	MA180	MA360
	Low	High	Mid	Low	High	Mid	Low	High	Mid	Mid	Mid	Mid
2022-09-05	605000.00	615000.00	610000.00	610000	620000	615000	686600.00	696600.00	691600.00	825437.50	875744.00	849309.43

Figure 12-2: NdPr pricing trends

Because of the changing dynamics in the market, we are positive that we will see a growing interest outside of China for an MREC product as already several billions of US dollars have been committed by the likes of Lynas and Iluka and the Australian government and by MP Materials and Lynas in North America aiming to expand the rare-earth solvent extraction refinery footprint in the western world.

12.1.2 Phosphate

Since the beginning of the war in Ukraine, it became evidently clear that the fertiliser markets and export sources need to be diversified. The scarcity of fertiliser is plunging countries into new crises because Russia and Ukraine can't supply as usual and China, which is the largest exporter, has decided to reduce its exports and to focus on his domestic demand. Rabobank has summarised the reliance on the exports from these markets as shown in (Figure 12-3).

Nexus production and exports*		Ammonia	Urea	Ammonium Sulfate	Ammonium Nitrate	Calcium Ammonium Nitrate	Phosphate Rock	Phosphoric Acid	Mono-ammonium Phosphate	Di-ammonium Phosphate	Muriate of Potash
Belarus	Production	0.59%	0.68%	0.71%	1.19%	0.00%	0.00%	0.43%	0.04%	0.00%	17.48%
	Exports	0.13%	0.42%	0.06%	0.00%	0.00%	0.00%	0.00%	0.06%	0.00%	20.51%
Russia	Production	10.53%	5.33%	6.27%	25.44%	3.74%	8.43%	7.93%	9.67%	4.24%	19.01%
	Exports	22.71%	13.91%	2.54%	45.81%	4.14%	9.18%	0.00%	14.52%	8.24%	20.66%
Ukraine	Production	1.51%	1.74%	0.19%	3.32%	1.33%	0.00%	0.00%	0.01%	0.00%	0.00%
	Exports	0.91%	2.94%	0.05%	0.84%	1.80%	0.00%	0.00%	0.00%	0.00%	0.00%

*Countries/regions with greatest need for supply chain adjustment if trade is impacted***

	Nitrogen			Phosphates		Potash
	Ammonia	Urea	Ammonium Nitrate	Mono-ammonium Phosphate	Di-ammonium Phosphate	Muriate of Potash
	Ukraine, Belgium, Finland, Europe, Middle East & Africa	Brazil, Estonia, Peru, Europe, North America, Middle East & Africa	Brazil, Estonia, Latin America, Europe, Former Soviet Union, Middle East & Africa	Brazil, Estonia, Latin America, Europe, Former Soviet Union, Middle East & Africa	Belgium, Latin America, Europe, Former Soviet Union, North America	Brazil, US, Europe, Latin America, Middle East & Africa, Southeast Asia

*Production and export data 2020
**Trade data 2021 indicative
Source: IFA, CRU, Rabobank 2022

Figure 12-3: Russia, Belarus and Ukraine's share of global NPK production and exports

The impact of this supply chain vulnerability on the 2022 and 2023 growing seasons of the EU, North America, Latin America, Chain and Australia is shown in Figure 12-4.

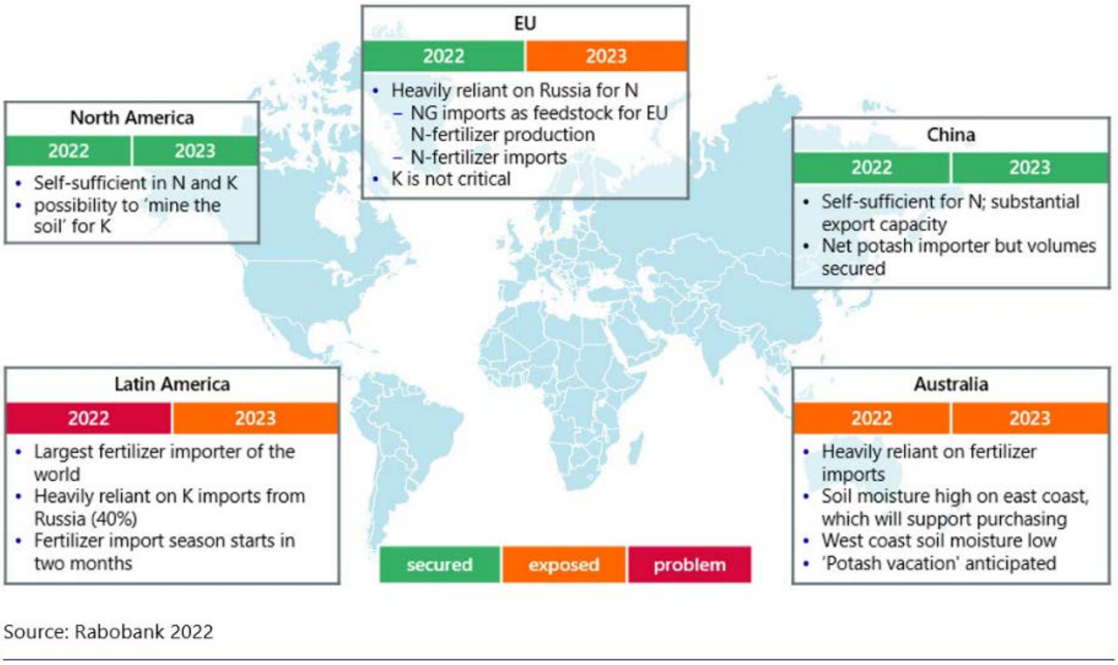


Figure 12-4: NPK supply chain disruption impacts

RareX believes the battle for fertiliser and in particular phosphates has only just begun, as gas is a major raw material for fertiliser production, and especially, for example, Europe which imports almost 40% of the latter from Russia.

Therefore, in this context, we see an extremely positive outlook for new supply sources of phosphates (Figure 12-5). COVID-19 and the recent geopolitical turmoils have changed the perspective on global supply chains and are encouraging onshoring and local supply chain solutions.

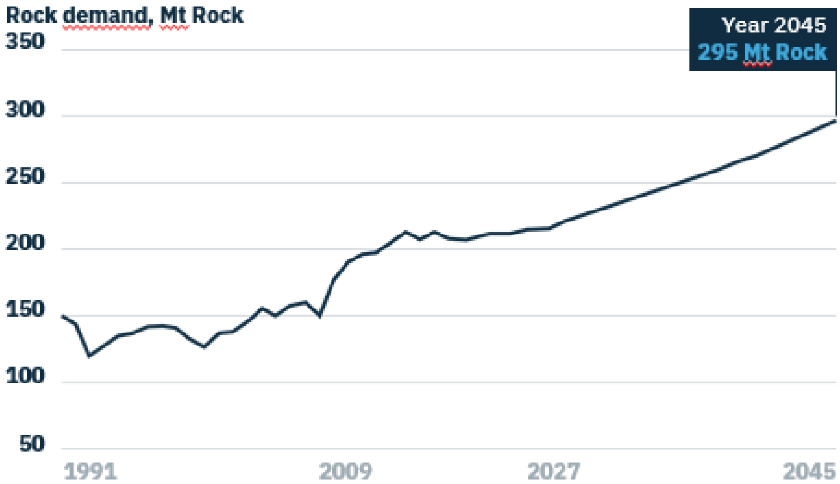


Figure 12-5: Phosphate demand forecast – Source: CRU

We believe in the significant demand growth for phosphates not only because of the agriculture demand but also because of the automotive market and the emerging application of the lithium-iron-phosphate (**LFP**) market.

The LFP battery has emerged as a leading technology in batteries.

Many car manufacturers including Ford, VW and Tesla are increasingly leveraging lithium-iron-phosphate (**LFP**) for electric vehicle (**EV**) batteries, substituting for the more commonly used nickel or cobalt formulations, to capitalize on lower costs and the better environmental and sustainable supply chain solution. LFP batteries are expected to win the low- to mid-priced EV market with sodium-ion batteries being the main competitor.

Furthermore, it is expected that LFP batteries will also play a key role in the energy storage market, a market that could exceed automotive demands and could, even more, propel the demand for phosphates. UBS analysts said on 16 August 2022, they expect LFP batteries to represent 40% of the global battery market by 2030, 25 percentage points higher than previous projections, due to improved driving range performance from LFP batteries and growing interest from battery producers to seek alternatives to the more common high-nickel content battery chemistries.

ARK's research even suggests that continued cost declines, nickel supply constraints, and improving EV efficiency should continue to propel the market share of LFP cells from roughly 33% in 2021 to ~47% by 2026.

12.1.3 Phosphoric Acid

Phosphate fertilisers are the largest application for phosphoric acid in value, essential for successful crop root development. The Asia-Pacific accounted for the largest share of the global phosphoric acid market. The booming economy in the region is expected to drive the demand especially for fertilisers to satisfy the rising demand in the food industry due to increasing population. Beside fertiliser phosphoric acid is also used in applications for detergents, feed & food additives, industrial use, water treatment, metal treatment, pharmaceutical, medical and electronics. Due to this and the aforesaid arguments on the phosphate market in general, we share the same positive market outlook also for this product.

12.2 PRICING

The product pricing overview is shown in Table 12-1.

Table 12-1: Cummins Range product pricing FOB

Product	Unit	LOM Avg pa
MREC Price	US$/t	13,580
Phosphate Price inc. REO credit	US$/t	405
Phosphoric Acid Price	US$/t	926

12.2.1 MREC

MREC is an interim rare earth product and doesn't have an independent western world public pricing index. The only available source for official published pricing information is China where all officially licenced industry players are fully vertically integrated and seldom sell rare earth intermediates like rare earth concentrates or mixed rare earth carbonates. Underpinning detail for pricing information is therefore opaque and RareX continues to analyse and improve its pricing forecasts.

The price of rare earth oxides included in the RareX pricing models is derived from Asian market indices based on the Chinese market on a CIF basis.

RareX has chosen to price its MREC on the basis of its Basket Price of US$29.31/kg (NdPr of US$110/kg) less a conservative separation fee of US$3.50/kg (inflated from Hastings US$2.50/kg reported in 2017[23]).

Further discounting is required for TREO grade content and grade dilution (by way of gangue, water of crystallisation or moisture) and by deleterious elements which incur a cost. Note that a rare earth carbonate has a TREO content of c. 50% +/- 5% and in the case of Cummins Range: 52.63%.

This results in an assumed MREC price of US$13,580/t FOB being used in the financial model.

12.2.2 Phosphate Mineral Concentrate

The Project is anticipated to produce c. 130 ktpa of phosphate mineral concentrate with a grade of 32% P_2O_5 and 2.5% TREO and particle size of P_{80} passing 53 µm.

Market research and the latest product pricing information for phosphate rock concentrates from the market research company CRU indicates that the May 2022 price (CIF) pays US$320 per tonne. Historical pricing shows a more conservative position of around US$150-180 / tonne however fundamental market dynamics have likely shifted for the long term.

[23] https://www.investi.com.au/api/announcements/has/cd45de38-d0f.pdf page 72

Figure 12-6: Rock phosphate pricing (Source: Arianne Phosphates corporate presentation, June 2022 + other market information for rock phosphate 68-72% BPL FOB Morocco)

The phosphate mineral concentrate contains an appreciable quantity of rare earths, and a credit has been assumed at a 75% basket price process discount. Existing phosphate fertiliser producers are developing rare earth refining capability for their residue streams, giving RareX confidence in achieving this credit.

For the Scoping Study, a midpoint in phosphate pricing (historical-current) has been selected with a TREO credit.

12.2.3 Phosphoric Acid

The Project is anticipated to produce approximately 13.5 ktpa of merchant grade (**MGA**) phosphoric acid, nominally 75% w/w phosphoric acid (equivalent to 54% w/w of P_2O_5) and 25% w/w water. Product pricing was based on market research company CRU.

13 FINANCIALS

13.1 CAPEX

Capital costs have been prepared by Primero and Mining Plus to a typical level of estimation accuracy, +/-35%, commensurate to a Scoping Study and an AACE Class 5 estimate. All capital costs are presented in Australian dollars (**AU$**) and are presented in real dollars Q4 2021. FX has been considered at 1:1.49.

Equipment pricing was derived from a combination of vendor inputs, recent history database pricing on similar projects, build-up of rates and allowances. Indirect costs were estimated using factors derived from industry standard project factors. EPCM is included in indirects.

Table 13-1: Capex summary

Area	Units	Construction Y1 Cost	Construction Y2 Cost	Total	Split
Mining	AU$ million	2.5	3.0	5.5	1%
Beneficiation plant	AU$ million	36.4	44.5	80.9	19%
Refinery	AU$ million	44.5	54.4	99.0	23%
Non-Processing Infrastructure	AU$ million	36.8	45.0	81.9	19%
Indirect	AU$ million	24.0	29.3	53.3	12%
Owners Costs	AU$ million	17.3	21.2	38.5	9%
Contingency	AU$ million	31.8	38.9	70.7	16%
Total	**AU$ million**	**193.4**	**236.3**	**429.7**	**100%**

13.2 OPEX

Operating costs have been developed using the process design criteria parameters and information provided by third parties.

The average annualised cost per annum is shown in Table 13-2.

Table 13-2: Operating costs summary

Opex	AU$ million pa LOM av.	AU$/kg TREO (MREC basis)
Mining	11.1	2.4
Beneficiating	30.6	6.6
Refining	63.0	13.5
Transport and Other	19.2	4.1
Total	123.9	26.6

13.2.1 Power

At the mine site it is assumed that power will be supplied by a build-own-operate (**BOO**) vendor through a hybrid power facility. The power consumption has been estimated from the factored equipment electrical load and assumed average power draw of 70% for equipment in duty. Installed power is estimated as approximately 3.5MW.

At the port the refinery is assumed to be grid connected. Installed power at the refinery is estimated as approximately 8MW with average draw approximately 5MW. Discussions regarding access to grid power have begun between Horizon Power, Pacific Hydro and RareX supported by mining energy company, Resources WA.

13.2.2 Manning

Manning levels were developed based on expected administration, operations and maintenance requirements of the proposed facilities. Management labour is based on a 4/3 day roster and the other staff are based on a 2/1 week roster to provide continuous coverage for the plant operation with allowance for leave and absenteeism coverage. The labour cost excludes all head office personnel.

It has been costed for the Cummins Range site to operate on a fly-in-fly-out (**FIFO**) arrangement and for the refinery at Wyndham port to operate on a drive-in-drive-out (**DIDO**) arrangement from Kununurra with provision for some skilled roles on FIFO.

Labour costs have been developed based on salary information from an average of various published Australian recruitment salary surveys, as well as Primero and Mining Plus database information. The total cost of employment is calculated by adding burdens (including travel, insurances, etc) to the direct salary costs.

Table 13-3: Operations personnel

Area	Total roles	Total onsite at any one time
Mining bene plant and NPI	88	62
Hydromet plant and NPI	70	50
Total	158	112

13.2.3 Fuel

Delivered fuel costs have been provided by Cambridge Gulf Limited (**CGL**). CGL currently supply RareX with fuel from Wyndham port. On site fuel is used mainly for mining and power generation. At Wyndham port fuel is only used for the supporting vehicle fleet as the hydromet facility has been specified to run from the grid.

13.2.4 Transport

Product logistics between the mine site and the Wyndham refinery (535 km) is assumed to be contract conventional trucking. Rare earth mineral concentrate and phosphate mineral concentrate will be trucked in separate packages.

Transport and stevedoring costs have been provided by CGL, the current operators of Wyndham port.

Future studies will include the opportunity to electrify part or all of this supply chain.

13.2.5 Maintenance

The maintenance costs cover maintenance materials only and are exclusive of all maintenance labour costs which are included in the labour costs.

Maintenance materials costs for the process plant areas have been factored from the mechanical equipment supply cost, using factors from the Primero database and supported by data from "Plant Design and Economics for Chemical Engineers" by M.S. Peters, K.D. Timmerhaus, 4th ed.

The allowance covers mechanical spares and wear parts but excludes wear components, grinding media and other general consumables which are allowed for in the consumable costs.

Mobile equipment maintenance costs have been calculated from Primero database values and the mobile equipment identified to support the process plant operation.

13.2.6 General and Administration

General and administration costs have been based on allowances and Primero database for similar operations. It includes items such as:

- Site office.
- Light vehicle insurance.
- Security contract.
- Office cleaning.
- Allowances for consultants, medical, entertainment and training for personnel.
- General costs for services, waste disposal and sewage disposal.

13.3 FUNDING

To achieve the range of outcomes indicated in the Study, funding of approximately AU$430m will likely be required.

While RareX has reasonable grounds to believe it will be able to finance the Project using one or more of the avenues discussed below, the economic analysis does not price in the cost of funding over and above the application of the discount factor disclosed in Section 13. Practically, there are a number of avenues expected to be available to RareX to ultimately fund the development of Cummins Range, particularly due to the strategic nature of the products. Investors should note that there is no certainty that RareX will be able to raise the amount of funding when needed. It is also possible that such funding may only be available on terms that may be dilutive or otherwise affect the value of RareX's existing shares.

13.3.1 Australia

The strong underlying increase in demand for rare earths – fuelled by the rapid transition towards electric mobility, spearheaded by electric vehicles – has been reflected in a continuous price increase since April 2020. Therefore, RareX has determined a strategy that allows the company to tap into this newly developed Australian governmental financing ecosystem.

The recent initiatives of the Australian Government and American Government clearly acknowledged and addressed these issues by introducing governmental financing support through grants, funds and debt facilities assisting to overcome the classical hurdle of requiring binding offtakes to secure the necessary project funding.

This ongoing transformation in terms of support and the significant change in the financial ecosystem for the critical materials sector is highlighted by the fact that a number of RareX's Australian peers in the rare earth sector recently secured significant financing support from the Australian Government:

- On 4 April 2022, Iluka (ASX: ILU) secured AU$1.2 billion worth of support from the Federal Government's Export Finance Australia for their domestic Eneabba rare earth oxide refinery in Western Australia. The significance of this transaction is emphasized by the fact that the same agency granted AU$719 million in total loans, guarantees and bonds the previous financial year.

- On 2 February 2022, Hastings (ASX: HAS) secured a loan of up to AU$140-million from the Northern Australian Infrastructure Fund (**NAIF**) for their Yangibana mixed carbonate rare earth project in Western Australia.

- On 16 March 2022, Arafura (ASX: ARU) was awarded grant funding of AU$30 million under the Federal Government's Modern Manufacturing Initiative (**MMI**).

- Additionally, AU$239 million in loans have been granted to EcoGraf Ltd (ASX: EGR) and Renascor Resources (ASX: RNU) through the Critical Minerals Facility.

13.3.2 United States of America

US Commerce Secretary, Gina Raimondo, has committed to help finance Australian critical minerals projects through America's export financing arms, as President Joe Biden invokes Cold War powers to boost the domestic supply of minerals crucial for defence equipment and electric vehicles. Ms Raimondo and Australian Trade Minister, Dan Tehan, held several meetings on this matter.

The ongoing transformation in terms of available governmental support and the significant changes in the financial ecosystem that is available to the critical materials sector and for rare earth projects in Australia and the USA (USA critical material overview) is tremendous.

RareX has understood that this change in the market sentiment represents a unique opportunity to find the appropriate financial support for the Company and the flagship Cummins Range Project to become a producer of rare earth material in Australia.

Additionally, there are funds available for the Company in exploration, PFS and DFS stages.

Especially in the light of the submission of the Department of Defence's (**DoD**) fourth batch of legislative proposals for the FY23 NDAA on the May 6th, 2022, which included reforms to the Defence Production Act (pgs. 148-157). The most relevant suggested change in legislation for RareX is that the DoD suggested to expand "domestic sources definition" and to include the US, Canada, Australia and the United Kingdom.

If the proposed changes get approved, it represents a massive game changer for Australian and UK critical material projects as RareX's understanding is that this puts them on the same level as US domestic projects with the equal opportunity access US government support.

Additionally, on 17 August 2022, the US president signed the Inflation Reduction Act which represents a major step forward for the Australian Government's manufacturing agenda and will help underpin the demand for high quality Australian battery minerals. Under the Reduction Act, 40 per cent of the value of the critical minerals in the battery must be sourced from a country that has a free-trade agreement with the US, increasing to 80 per cent by 2027.

Furthermore, the US Government has granted following support for following rare earth projects:

- February 1, 2021 - The US DoD has awarded US$30.4 million to Australia's Lynas Rare Earths Ltd to build a Texas facility for processing specialised minerals used to make weapons, electronics and other good.
- February 22,2022 - DoD Awards US$35 Million to MP Materials to Build US Heavy Rare Earth Separation Capacity.
- June 15, 2022 - Australia's Lynas gets US$120m Pentagon contract for US rare earths project.

This and the latest developments between the US and the Australian government gives RareX grounds to consider that RareX could be eminently fundable through the Australian and US Governments and independent financing institutions.

RareX is currently working with Naust Capital on funding options for Cummins Range.

13.4 ECONOMIC OUTCOMES

13.4.1 Financial Metrics

Financial modelling was undertaken with support from Naust Capital. The key project economic outcomes are presented in Table 13-4. Revenue is net of 2.5% royalty.

Table 13-4: Project financial metrics

Project (pre-tax)	Unit	Value
Capex	AU$ million	430
Discount Rate (pre-tax, nom)	%	8 %
NPV_8	AU$ million	633
IRR (pre-tax, nom)	%	29 %
Payback	Yrs	2.8
LOM EBITDA	AU$ million	1,900

13.4.2 Sensitivity Analysis

Figure 13-1 and Figure 13-2 show NPV sensitivities to a +/-10% cost fluctuation across select parameters.

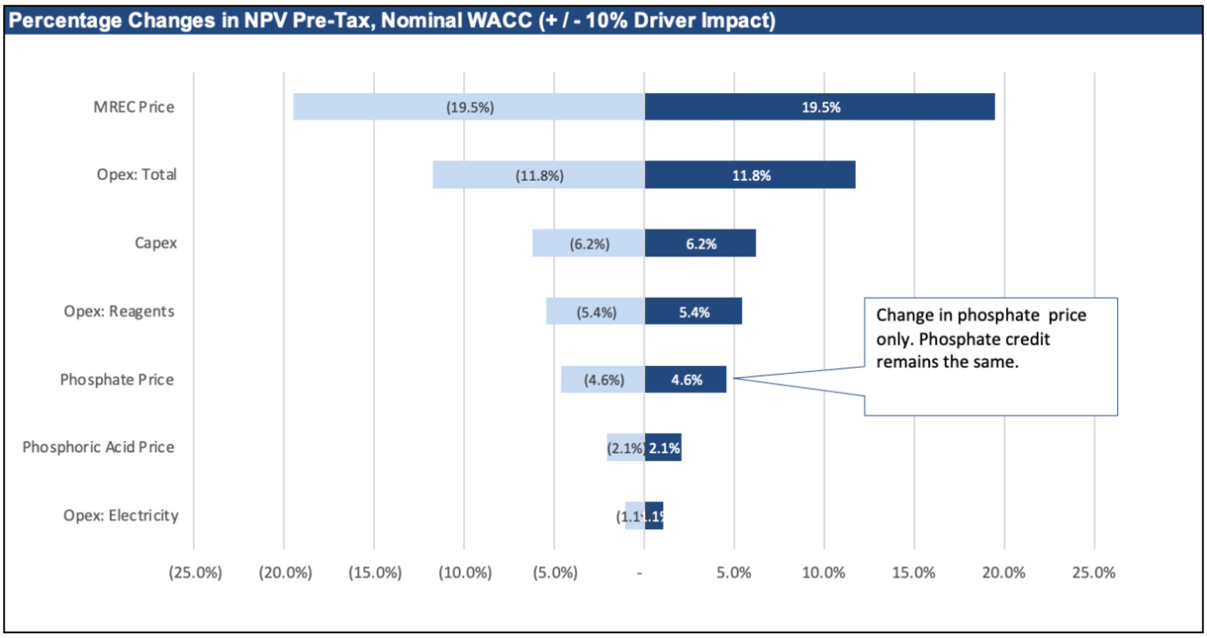


Figure 13-1: NPV sensitivity by percentage change

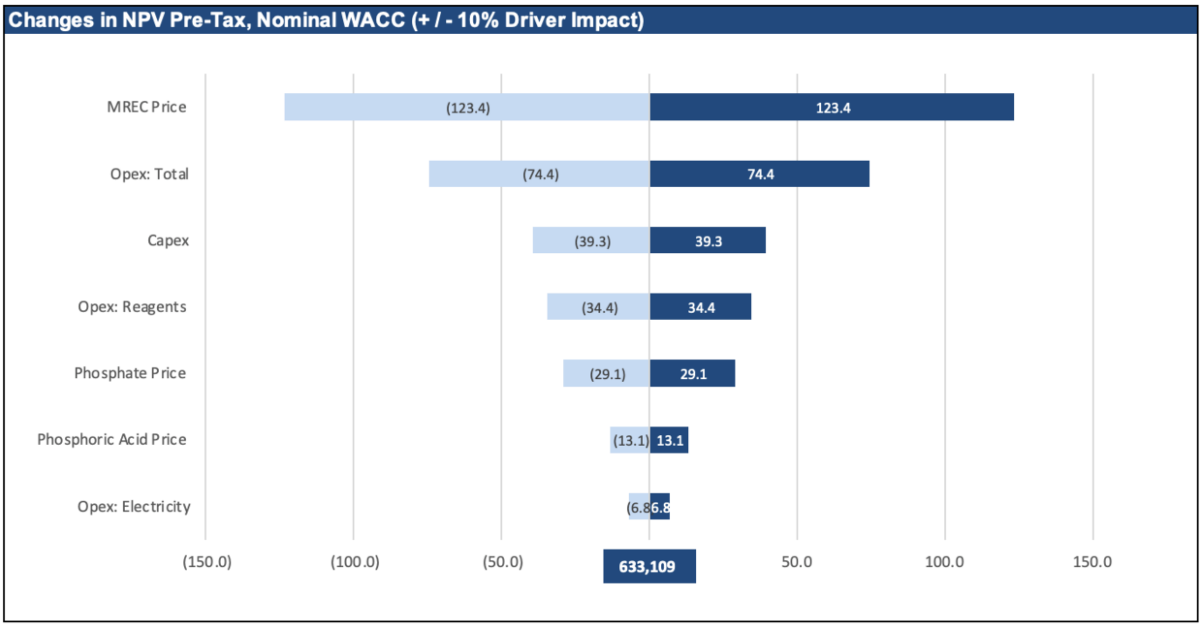


Figure 13-2: NPV sensitivity by value

14 ENVIRONMENTAL SETTING

The environmental setting of the Project has been described in a desktop report produced by Animal Plant Mineral Pty Ltd (**APM**) in December 2021.

14.1 BIOGEOGRAPHIC REGION

The Interim Biogeographic Regionalisation for Australia (**IBRA**) places the CRP on the border of the Kimberley Interzone Subregion of the Ord Victoria Plain Region and the McLarty Subregion of the Great Sandy Desert Region. Bioregions were described by Thackway and Cresswell (1995).

The Ord-Victoria Plain Bioregion is described as comprising:

"Level to gently undulating plains with scattered hills on Cambrian volcanics and Proterozoic sedimentary rocks; vertosols on plains and predominantly skeletal soils on hills; grassland with scattered Bloodwood and Snappy Gum with spinifex and annual grasses. It experiences dry hot tropical, semi-arid summer rainfall."

The Great Sand Desert Bioregion is described as:

"Mainly tree steppe grading to shrub steppe in south, comprising open hummock grassland of *Triodia pungens* and *Plectrachne schinzii* with scattered trees of *Owenia reticulata* and Bloodwoods, and shrubs of Acacia spp., *Grevillea wickhamii* and *G. refracta*, on Quaternary red longitudinal sand dune fields overlying Jurassic and Cretaceous sandstones of the Canning and Armadeus Basins. *Casuarina decaisneana* (Desert Oak) occurs in the far east of the region. Gently undulating lateritised uplands support shrub steppe such as *Acacia pachycarpa* shrublands over *Triodia pungens* hummock grass. Calcrete and evaporite surfaces are associated with occluded palaeo-drainage systems that traverse the desert; these include extensive salt lake chains with samphire low shrublands, and *Melaleuca glomerata - M. lasiandra* shrublands. Monsoonal influences are apparent in the north western sector of this region. It experiences arid tropical with summer rain."

14.2 CLIMATE

The Project area has a tropical monsoonal climate with distinct wet and dry seasons, separated by brief transition periods. The Kimberley region is subject to a hot and humid wet season from November to April, and a warm dry season from May to October. The region receives approximately 90% of its annual rainfall during the summer wet season. Most of the rainfall is due to monsoonal lows and cyclonic disturbances, with frequent thunderstorm activity. The dry season experiences infrequent rainfall, with consecutive dry months common.

Evaporation rates are high throughout the year, and relative humidity is high during the wet season. Evaporation can reach, on average, 11 mm/day towards the end of the dry season (BoM 2019). Prevailing winds are usually the north-westerly monsoons during the wet season and south-easterly trade winds during the dry season.

14.3 HYDROLOGY AND HYDROGEOLOGY

The Project is in the Sturt Creek Catchment. Based on satellite imagery, publicly available watercourse datasets provided by Geoscience Australia and field knowledge, there are no creeks or rivers located within E80/5092 or in close proximity to the Cummins Range site, although the existing access road to the site intersects local surface water systems.

The Project is situated within the proclaimed Canning-Kimberley Groundwater Area.

Mapping of the hydrogeological units of Western Australia completed by the Department of Mines in 1989 indicate that the Project area is located within the fractured rock province of the Halls Creek Orogen. Mapped aquifers within E80/5092 are Proterozoic sandstones and metamorphic rocks. These units are described as indurated and often deformed and metamorphosed, resulting in low permeability, fractured, and weathered local aquifers. Groundwater is generally restricted to weathered zones and fractures that extend to depths of up to approximately 100 (m bgl). Groundwater yields and salinity are highly variable.

Groundwater levels and productivity are yet to be determined for the Project area; however, monitoring is underway with Advisian consultants having installed water monitoring bores during the 2022 season. Using information recoded in exploration geology logs, it is expected that groundwater will be encountered at an average depth of 40 mbgl (approximately 349 m AHD). The installed water monitoring bores will be left to stabilise before monitoring commences.

Figure 14-1: Water monitoring bore installation

14.4 ECOLOGY

APM conducted flora, vegetation and fauna studies for the Project in 2012 with the survey area corresponding with E80/5092.

Three broad landforms were recorded during the assessment: sandplains, sand dunes, and clay pans.

The dominant vegetation is sandplain association VA3, which accounts for 92% of the tenement. The vegetation condition was recorded as being variable across vegetation types due to the frequency of fires and the preferred grazing habitat for cattle. Weeds were recorded as seldom and non-aggressive species.

No Threatened or Priority flora were recorded at the CRP during field surveys of the area despite data base searches identifying 11 Priority flora species as potentially being present within a 100 km radius of the Project.

Database searches identified 37 significant fauna species as potentially being present within 100 km of the Project area. Of these, only the Priority 2 listed species Spotted Ctenotus (Ctenotus *uber johstonei*) was recorded during the on-ground survey.

It was noted that there is a high likelihood of occurrence of the Greater Bilby (*Macrotis lagotis*) and Night Parrot (*Pezoporus occidentalis*) which are listed as a Threatened species at a State level and as Vulnerable and Endangered respectively under Commonwealth legislation. This will be focussed upon in upcoming surveys.

Figure 14-2: Fauna survey

14.5 AREAS OF CONSERVATION SIGNIFICANCE

No State or Commonwealth listed Threatened Ecological Communities (**TEC**s) are known to occur within the vicinity of the CRP area.

The closest Environmentally Sensitive Area (**ESA**) is Wolfe Creek Meteorite Crater National Park, 60 km to the east of the CRP, on the eastern side of the Tanami Road. The CRP lies within a Schedule 1 Clearing Area meaning that all clearing requires a Native Vegetation Clearing Permit (**NVCP**) and is not subject to exemptions, unless formally assessed through the WA Environmental Protection Authority (**EPA**).

The Ord River Regeneration Reserve is 88 km north east of the Project and is managed by the Department of Biodiversity and Conservation (**DBCA**). The reserve aims to revegetate bare, severely degraded and eroded parts of the Ord River catchment in order to minimise siltation of Lake Argyle, which provides irrigation water to the Kununurra area. It covers an area of over 10,000 km^2.

14.6 ENVIRONMENTAL STUDIES

A number of baseline environmental studies will be required to support future environmental approval applications. Some of these studies have commenced and others are planned to be undertaken during the remainder of 2022 and first half of 2023. Timing for completion of studies has been scheduled to take into account seasonal needs e.g. wet and dry seasons for ecological studies and input information needs for others e.g. groundwater abstraction predictions for subterranean fauna, mine plan for mine waste geochemistry and availability of process wastes for process waste geochemical characterisation.

Figure 14-3: Flora survey

It is recognised that the current site layout is conceptual, and changes are likely to occur as feasibility studies progress. Baseline studies as such are focused on the full proposed mining lease area (circa 2,909 ha) recognising the layout and proposed disturbance footprints within the mining lease may change. Collection of baseline information for the full area of the proposed mining lease will allow flexibility in planning and will aid in giving context to actual proposed disturbance areas recognising the paucity of baseline information for the local and regional area.

Uncertainty exists regarding the location of a site access road and need for development of a water supply borefield that may be external to the proposed mining lease area. Greater efficiency and cost effectiveness will be achieved by combining baseline studies for these area with those planned for the mine site area if information availability permits.

15 SOCIAL SETTING

The Cummins Range Project site is remote with the Billiluna community, part of the Tjurabalan tribe, 60 km to the east being the closest village community.

15.1 NATIVE TITLE

E 80/5092 is situated within Jaru Native Title Determination Area WCD2018/013.

In October 2019, a Native Title Heritage Protection and Mineral Exploration Agreement was executed with the Kimberley Land Council (**KLC**) in relation to Jaru Lands in the East Kimberley where the Project is located. The Agreement provides for a cooperative framework in which the Company can conduct exploration on Project tenements that are granted on Jaru Lands and provides for community benefits to the Jaru People including opportunities for employment.

15.2 INDIGENOUS PROTECTION AREAS

An IPA is an area of Indigenous-owned land or sea where traditional Indigenous owners have entered into an agreement with the Australian Government to promote biodiversity and cultural resource conservation- making up over a third of Australia's National Reserve System.

The Paruku IPA was declared in September 2001. It is located about 34 km south of the Project and covers an area of 4300 km^2 incorporating the Lake Gregory System, which is 90 km from the Project. Paruku (ba-roo-goo), the Walmajarri name for the Lake Gregory System, is a remote, semi-permanent freshwater wetland. The area is owned and managed by the Walmajarri people to preserve its cultural and ecological values. Paruku is the terminus of several major dreaming tracks, including the Tjurabalan tingarri (Dreaming), which travels along Sturt Creek to the lakes, and links several language groups, predominantly Jaru and Walmajarri.

The Warlu Jilajaa Jumu IPA was declared on 9 November 2007. It is located about 78 km south of the Project and covers a 16,430 km^2 area in the Great Sandy Desert, in the north eastern section of Ngurrara country. The IPA’s name comes from the Walmajarri words Warlu, the fire used to keep country healthy, Jila meaning living water, permanent waterholes, and Jumu, seasonal soaks.

No IPAs exist within the proposed development area.

15.3 ABORIGINAL HERITAGE

A search of the DPLH Aboriginal Heritage Inquiry System (**AHIS**) indicates there are no Registered Aboriginal Heritage Sites or Other Heritage Sites within the Project area.

RareX has worked with the Jaru people to obtain clearances for exploration related land disturbance, and continues to work with the Jaru and their prescribed body corporate (**PBC**).

Figure 15-1: Jaru PBC member Miranda Gore with RareX senior geologist Greg Wynne

15.4 PASTORAL LAND USE

The primary land use in the area of the Project is rangeland grazing of cattle.

E 80/5092 overlies Lamboo Pastoral Lease (LPL N049432) and Carranya Station (LPL N049659). Lamboo homestead is located approximately 94 km north northeast of the Project and Carranya homestead is located approximately 64 km east of the Project.

The Carranya Station lease is held by the Indigenous Land and Sea Corporation (**ILSC**) and is subleased to the Yougawalla Pastoral Company.

Lamboo Station pastoral lease is owned by the Ngunjiwirri Aboriginal Corporation (**NAC**) on behalf of the Ngunjiwirri People. The property was purchased in 1994 by the (then) Aboriginal and Torres Strait Islander Commission (**ATSIC**) through the WA Aboriginal Lands Trust (**ALT**) and handed over to the local people in the same year. It is run as an agricultural enterprise and to provide land for the Jaru people to live.

Figure 15-2: Cattle on Ruby Plains station, north of the project area

15.5 SOCIAL STUDIES

It is recognised that a number of baseline social and economic studies would be beneficial to inform Project development and implementation. The majority of these are not specifically required by the West Australian approvals process, however provide important information that would be beneficial to RareX and will allow alignment with RareX ESG commitments. It is also recognised that social impact assessment is a requirement of many financial institutions that may become future investors in the Project.

Social and economic baseline studies may include:

- Demographics - population, age profile, employment, income, and levels of education.
- Economic overview of local area and East Kimberley region.
- Employment, livelihood and business.
- Community - identification of existing emergency services, health and well being services, education services, community services and transport options.
- Housing and accommodation -availability and standards of short and long term accommodation options.
- Social cohesion within local and regional context.

- Indigenous values and interests.
- Indigenous participation - employment, training, business development opportunities.
- Economic assessment.

16 STAKEHOLDER IDENTIFICATION

WSP Golders have been engaged by RareX to be the lead consultant for stakeholder engagement. MBS environmental consultants will work with WSP Golders and RareX to identify, engage with stakeholders and document stakeholder engagement.

Inclusion of information regarding stakeholder engagement is requirement of the majority of all environmental approval applications. This includes provision of details of individual engagement activities, key concerns and actions taken to resolve or address concerns.

A comprehensive list of stakeholders that are considered likely to have interests in the environmental and or social impacts of the Project has been prepared. Community road shows have been undertaken and will increase as project definition improves.

17 ENVIRONMENTAL APPROVAL STRATEGY

The mine site and coastal refinery will be pursued separately due to their differing context. RareX will prepare for a full referral under State and Commonwealth EP and EPBC Acts respectively, at the completion of the PFS following early engagements with key state and federal stakeholders. RareX will consider early identification/self selection of PER process through the EPA Referral which maximises transparency via required public display of ERD and associated documents. Concurrent development and submission of secondary approval assessment applications (e.g. Mining Proposal, Works Approval, Groundwater Licence) will be undertaken.

Baseline studies have been initiated and will continue through 2023. RareX have and will continue to involve Traditional Owners in key baseline ecological studies to ensure collection of knowledge on cultural significance of flora, vegetation and fauna. Early engagement with Traditional Owners for completion of cultural heritage studies (archaeology and ethnographic assessments) will also be undertaken.

Knowledge from baseline studies will be incorporated into PFS, DFS and detailed design to minimise adverse environmental and social impacts, whilst maximising benefits.

18 OPPORTUNITIES AND RISKS

18.1 OPPORTUNITIES

- Expand the Resource following the 2022 drill campaign.
- Expand the Project scale and/or life to reflect a larger resource.

- Beneficiate in a manner which keeps the phosphate and rare earth minerals together to allow for a reduction of site infrastructure and simplification of transport.
- Include ore sorting in the beneficiation facility.
- Coupled with the preceding opportunity, phase in the infrastructure by way of interim products as a way to accelerate start-up, reduce risk and reduce initial funding requirements.
- Downstream processing to capitalise on hydroelectricity at a coastal location to produce more refined products including scandium oxide and niobium separation.
- Fertiliser facility to react the phosphoric acid with the phosphate mineral concentrate to form a superphosphate of ammonium-phosphate fertiliser for use in the local agricultural sector, with the surplus sold abroad.
- Electrify the supply chain taking advantage of the hydroelectricity distribution grid for charging stations.
- Improve the renewable energy penetration at site.

18.2 RISKS

- Metallurgical understanding and variability analysis is still relativity immature and needs building upon.
- The electrical grid to Wyndham will likely need augmentation and /or upgrading to support the Project and any additional project loads. RareX foresees this type of regional infrastructure growth a perfect fit for government infrastructure grants and loans.
- Remote locations are challenging for workforces, particularly attracting the requisite skills. RareX intends to conduct significant analysis and planning of how to integrate the Project with the local populations to minimise FIFO requirements.
- Water sourcing was assumed from bores / abstraction within a 5 km radius of both bene and refinery. Insufficient work has been completed to confirm this assumption. Hydrogeological studies are underway.
- Tailings facilities have been assumed in cost only – no engineering has been completed on the type of facility. Options analysis will consider backhauling of refinery wastes into the pit void.

19 STUDY CONTRIBUTORS

RareX has used a select group of fit-for-purpose consultants to reach the level of project definition described within this announcement. Although likely to continue with the same group, RareX will continually strive to select the right combination of consultants that best suits the Project.

Table 19-1: Project consultants

Study component	Lead
Scoping Study Lead	Primero
Geology & Mineral Resource	Auralia / RareX
Metallurgy and mineralogy	Gavin Beer Auralia Met Nagrom Ansto Tomra ALS
Mining	Mining Plus
Process Flowsheet	Gavin Beer
Process Plant	Primero
Site Infrastructure	Primero
Environmental, Permitting, Social and Community Impact	Animal Plant Mineral MBS Environmental WSP Golders Advisian
Capital and Operating Cost	Primero Mining Plus
Product Pricing & Marketing	RareX Cannacord Genuity

20 TIMELINE

Historical milestones

2018 – Rare earths identified for strategic focus.

2019 – Cummins Range acquired. Heritage agreement signed with Jaru.

2020 – Company re-brands to RareX, divests non-core portfolio.

2021 – Exploration drilling and Resource upgrade. Metallurgy begins. ESG commitments established.

2022 – Exploration Target drilling. Scoping Study released. Environmental Baselines begin. Mining Licence application initiated.

Forecast milestones

Pre-Feasibility Study. Maiden Ore Reserve. Resource expansion. Mining Licence. Environmental referral. Pilot plant– **2022-23**

Definitive feasibility study. Construction readiness. Binding offtake. FID – **2024**

Construction. Operational readiness – **2025**

Commissioning. Operations – **2026**

This announcement has been authorised for release by the Board of RareX Limited.

APPENDIX 1 – JORC TABLE 1

JORC CODE 2012 – TABLE 1, SECTION1

Sampling techniques and data - Metallurgy

Criteria	JORC Code explanation	Commentary
Sampling techniques	• Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc.). These examples should not be taken as limiting the broad meaning of sampling.	• Both RC chips and diamond drill cores were sampled for the metallurgical testwork. Samples were selected based on drill assays, drill hole location and intervals, geological and mineralogical data. Samples were riffle split from bulk samples and sent to Auralia Metallurgy in Perth and/or Nagrom Perth and/or ALS Perth for assays and further testwork.
	• Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.	• For RC chips, the entire bulk samples were riffle split to ensure a representative sample from the selected interval. For diamond drill cores, half core was sent to a laboratory to conduct crushing and sampling. All laboratories used in the assaying of the Cummins Range material were checked for sampling and assaying equipment and equipment calibrations / accuracy.
	• Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.	• Sample interval selection for the metallurgical testwork was based on geological controls and mineralisation of the deposit, the samples were considered representative of the mineralisation that were intended to be tested.

Drilling techniques	• Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).	• Drilling techniques used for the Cummins Range samples used for the metallurgical testwork were: o Reverse Circulation (RC) drilling in 2020-2021 using 5 ½ inch diameter hammer. o Diamond drilling in 2021- 2022 using HQ and PQ sized rods.
Drill sample recovery	• Method of recording and assessing core and chip sample recoveries and results assessed.	• Samples used for the metallurgical testwork were collected by riffle split. Additional laboratory assays were undertaken on the samples submitted for the testwork and showed good alignments to the drill assays.
	• Measures taken to maximise sample recovery and ensure representative nature of the samples.	• Larger and more capable rigs were used for collection of the metallurgical samples which allowed for good recoveries of samples. During each drill program, all drill rigs were checked by professional geologists, and all drill holes were logged and monitored for recoveries and accuracy prior to sample splitting and logging.
	• Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.	• Holes used for the metallurgical testwork had good sample recovery hence minor sample bias. There is no distinctive relationship exist between sample recovery and grade.
Logging	• Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.	• All samples used for the metallurgical testwork were geologically logged to a detail level that supported the metallurgical studies.
	• Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.	• The logging is qualitative and quantitative in nature for the metallurgy samples. The recorded details included; lithology, grainsize, weathering, colour, alteration, sulphide quantity and type, structure and veining. Photos were taken for all core samples. • Mineralogy was also completed via XRD and QEMSCAN
	• The total length and percentage of the relevant intersections logged.	• Logging of all metallurgical samples were carried out on geological intervals.

Sub-sampling techniques and sample preparation	• If core, whether cut or sawn and whether quarter, half or all core taken.	• Cores were cut in half and half cores from each selected interval were used for metallurgical testwork.
	• If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.	• RC chips were riffle split from the bulk bags. Samples were dry when riffle split.
	• For all sample types, the nature, quality and appropriateness of the sample preparation technique.	• Samples used for the metallurgical testwork included RC and diamond drill cores which were split and prepared with appropriate equipment. Where required, the samples were crushed / ground and/or chemically treated to ensure the samples were properly prepared for the required testwork.
	• Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	• All sample preparation and sampling equipment was cleaned with adequate procedures before taking of each sample to ensure there is no cross-contamination between samples.
	• Measures taken to ensure that the sampling is representative of the in-situ material collected, including for instance results for field duplicate/second-half sampling.	• Drill assays, mineralogical and geological information were reviewed for selection testwork samples. Additional assays on the samples showed high repeatability of drill assays suggesting good representivity of the in-situ material hence no further sampling was required.
	• Whether sample sizes are appropriate to the grain size of the material being sampled.	• The metallurgical sample sizes were appropriate to the grain size of the material being sampled. Where necessary, material was crushed and/or pulverised before riffle / rotary split to ensure good consistency of sampling representivity.
Quality of assay data and laboratory tests	• The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.	• The assay analyses of all samples were conducted by registered laboratories (i.e., ALS and Nagrom etc.) with suitable equipment and well-known quality assurance accreditation to ensure the accuracy of the assay results. Samples were assayed by X-ray fluorescence (XRF) and Inductively Coupled Plasma (ICP).
	• For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations	• There was no reliance upon geophysical tools, spectrometers, or any other techniques for the required metallurgical testwork apart from the use of a portable XRF to quickly track the progress of metallurgical tests. These XRF results

	factors applied and their derivation, etc.	were later confirmed with ICP analysis at the laboratory. The XRF had been calibrated for very elevated levels of REE and phosphate. System checks, blanks and standards were analysed before any PXRF readings were taken.
	• Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.	• The metallurgical samples were tested against the standards and the good alignments to drill assays confirmed the accuracy of the results. Bench-top XRF assays were also verified with additional ICP assays and the XRF equipment was further calibrated to ensure the precision is well established.
Verification of sampling and assaying	• The verification of significant intersections by either independent or alternative company personnel.	• There are no significant intercepts mentioned in this announcement.
	• The use of twinned holes.	• Twin holes were not used for collection of metallurgical samples.
	• Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	• An electronic geological database was used for data storage. For metallurgical testwork, all raw data from laboratories, results analysis and summary reports were documented in a metallurgy database.
	• Discuss any adjustment to assay data.	• No adjustment was made to the assay data.
Location of data points	• Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.	• Drill hole collar locations for the metallurgical testwork have been surveyed using a differential GPS with accuracy to 0.1 m.
	• Specification of the grid system used.	• GDA94, MGA Zone 52
	• Quality and adequacy of topographic control.	• Drillhole collar locations for the metallurgical testwork have been surveyed using a differential GPS with accuracy to 0.1m.
Data spacing and distribution	• Data spacing for reporting of Exploration Results.	• The regolith samples were mainly collected from three drill holes that were spaced out over ~120 m x 180 m of the deposit and were ranging from 0 m down hole to 112 m down hole. For the fresh core samples, the drill holes that the

		metallurgical samples came from were spread out over 400 m of strike and range from 70 m down hole to 285 m down hole.
	• Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.	• The data spacing is considered appropriate for the metallurgical testwork at this study level.
	• Whether sample compositing has been applied.	• Samples were all composited for the metallurgical testwork. Representative portion of each selected intervals were sent to the designated laboratories to undergo staged crushing and grinding before being composited and homogenised with suitable equipment. Where drill cores were used for the testwork, half cores were crushed into suitable sizes before splitting the representative samples used for composition.
Orientation of data in relation to geological structure	• Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.	• The orientation of the metallurgical sampling is not considered to be biased towards any geological characteristics.
	• If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.	• N/A
Sample security	• The measures taken to ensure sample security.	• All metallurgical samples were secured with appropriate labelling system. Samples were labelled with standard designations and were stored in locked shed. Samples were transported to Perth from site by reputable transport companies. Individual bags are cable tied and the pallets are wrapped in plastic with detailed logging sheet included.
Audits or reviews	• The results of any audits or reviews of sampling techniques and data.	• No audits were undertaken however the Competent Person was involved in all stages of the metallurgical sampling and tests. In-house reviews were also

		completed on the sampling techniques and testwork results.

JORC CODE 2012 – TABLE 1, SECTION 2

Exploration Results - Metallurgy

(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	• Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.	• The Cummins Range deposit is located on tenement E80/5092 and is 100% owned by Cummins Range Pty Ltd which is a wholly owned subsidiary of RareX Ltd. Cummins Range Pty Ltd purchased the tenement from Element 25 with a potential capped royalty payment of AU$1m should a positive PFS be completed within 36 months of purchase finalisation.
	• The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.	• No security or impediments with tenement E80/5092
Exploration done by other parties	• Acknowledgment and appraisal of exploration by other parties.	• CRA Exploration defined REO mineralisation at Cummins Range in 1978 using predominantly aircore drilling. Navigator Resources progressed this discovery with additional drilling after purchasing the tenement in 2006. Navigator announced a resource estimate in 2008. Kimberly Rare Earths drilled additional holes and upgraded the resource estimate in 2012.

Geology	• Deposit type, geological setting and style of mineralisation.	• The Cummins Range REO deposit occurs within the Cummins Range carbonatite complex which is a 2.0 km diameter near-vertical diatreme pipe that has been deeply weathered but essentially outcropping with only thin aeolian sand cover in places. The diatreme pipe consists of various mafic to ultramafic rocks with later carbonatite intrusions. The primary ultramafic and carbonatite rocks host low to high grade rare earth elements with back ground levels of 1000-2000 ppm TREO and high grade zones up to 17% TREO. The current resource sits primarily within the oxidised/weathered zone which reaches to 120m below the surface. Metallurgical studies carried out to date show that the rare earth elements are primarily hosted by Monazite which is a common and favourable host for rare earth elements.

Drillhole Information	• A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: o easting and northing of the drill hole collar o elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar o dip and azimuth of the hole o down hole length and interception depth o hole length.	• Drill hole information from 2007-2012 drilling can be found in the previous announced resource to the ASX dated 15, October 2019. • The RareX 2020 infill drill hole details and assays can be found in the ASX announcements dated as below: o 17th, December 2020 o 27th, October 2020 o 19th, October 2020 o 30th, September 2020 • The RareX 2021-2022 drill hole details and assays can be found in the ASX announcements dated as below: o 31st, August 2022 o 9th, August 2022 o 27th, May 2022 o 25th, May 2022 o 30th, March 2022 o 14th, February 2022 o 18th, January 2022 o 22nd, November 2021 o 11th, November 2021 o 23rd, September 2021 o 9th, September 2021 o 2nd, September 2021 o 29th, July 2021
	• If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.	• N/A

Data aggregation methods	• In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.	• The resource has been reported using cut-off grades of 0.5% and 1.0% TREO and are considered appropriate for a potential open mining scenario and metallurgical testwork.
	• Where aggregate intercepts incorporate short lengths of high-grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.	• No aggregate intercepts incorporate short lengths of high-grade results and longer lengths of low grade results.
	• The assumptions used for any reporting of metal equivalent values should be clearly stated.	• N/A
Relationship between mineralisation widths and intercept lengths	• These relationships are particularly important in the reporting of Exploration Results. • If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.	• The Cummins Range resource is mostly located in the regolith profile of the Cummins Range diatreme. The weathering profile has created super high grade REE mineralisation with significant vertical and horizonal development. These high grade intersections are mostly focused along a north west structure that extends for over 800 m. Thick vertical intersections along this structure will thin as you move towards the north east or south west. The horizontal development of these zones can reach up to hundreds of metres. mineralisation is developing in favourable horizons within the regolith and is interpreted to be horizontal. All of the drilling where the metallurgical samples were taken from were at 60 degrees to the south and is sufficient to test a horizontal ore body.
	• If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').	• No drill intercepts have been reported in this scoping study

Diagrams	• Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported. These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.	• Maps and diagrams are included in the body of the announcement.
Balanced reporting	• Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced avoiding misleading reporting of Exploration Results.	• This announced resource is considered balance.
Other substantive exploration data	• Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.	• This scoping study has been completed on the 2021 resource. The 2021 and 2022 exploration results have not been included. This drilling has been focus on expanding the fresh rock resource and has tested for mineralisation up to 400m below the 2021 resource. • With the completion of the 2022 drill program a new resource is expected in 2023.
Further work	• The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling). • Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	• The resource is open along strike and at depth. Diamond drilling is currently in progress for extensions to the deposit. • Metallurgical work will continue to refine the REE and phosphate recovery process. • A PFS has been authorised to commence.

END