ASX ANNOUNCEMENT

RESOURCE DELINEATION DRILLING COMMENCING AT THE MOUNT RIDLEY RARE EARTH PROJECT

12 January 2023

HIGHLIGHTS

Aircore Drilling

- Stage 3 – Primary Target Expansion drilling will begin shortly.
- 101 aircore holes for 4,251m, drilled at Mt Ridley in late 2022 completed the Stage 2 Regional Programme, designed to identify areas with Rare Earth Element (REE[1]) enrichment.
- 2,816 samples are currently being assayed by ALS Limited.
- Pre-existing tracks continue to be refurbished for drilling.

Metallurgy

- Independent Metallurgical Operations (IMO) to oversee metallurgical test work.
- Units of metallurgical test work to be conducted by IMO, ALS, Nagrom and Simulus.
- 20 PQ diamond drill core holes drilled for 961.5m, providing material for the extractive metallurgical test work. Core is currently being cut and sampled by ALS.

Mount Ridley's Chairman Mr. Peter Christie commented:

"The key tasks for 2023 include resource delineation drilling and advancing metallurgical studies towards the development of a flow sheet for the extraction of rare earths.

"The Company is well positioned to fund these work programmes with cash and liquid security reserves of approximately $5.5 million.

"Drill sites are being prepared now for an aircore programme of at least 50,000m to be drilled over the next two quarters. At the same time, 961.5m of drill core is being cut and sampled at the ALS metallurgical laboratory ahead of extractive metallurgical test work."

1 REE: 14 rare earth elements plus yttrium were analysed: cerium (Ce), dysprosium (Dy), erbium (Er), europium (Eu), gadolinium (Gd), holmium (Ho), lanthanum (La), lutetium (Lu), neodymium (Nd), praseodymium (Pr), samarium (Sm), terbium (Tb), thulium (Tm), ytterbium (Yb). Yttrium (Y) is usually included with REE.

Overview

Mount Ridley Mines Limited (ASX: **MRD**, "**Mt Ridley**" or "**the Company**") is pleased to provide an update for its 100% owned Mount Ridley REE Project, located approximately 50km north of the Port of Esperance, Western Australia and with an area of approximately 3,400km^2 (Figure 1).

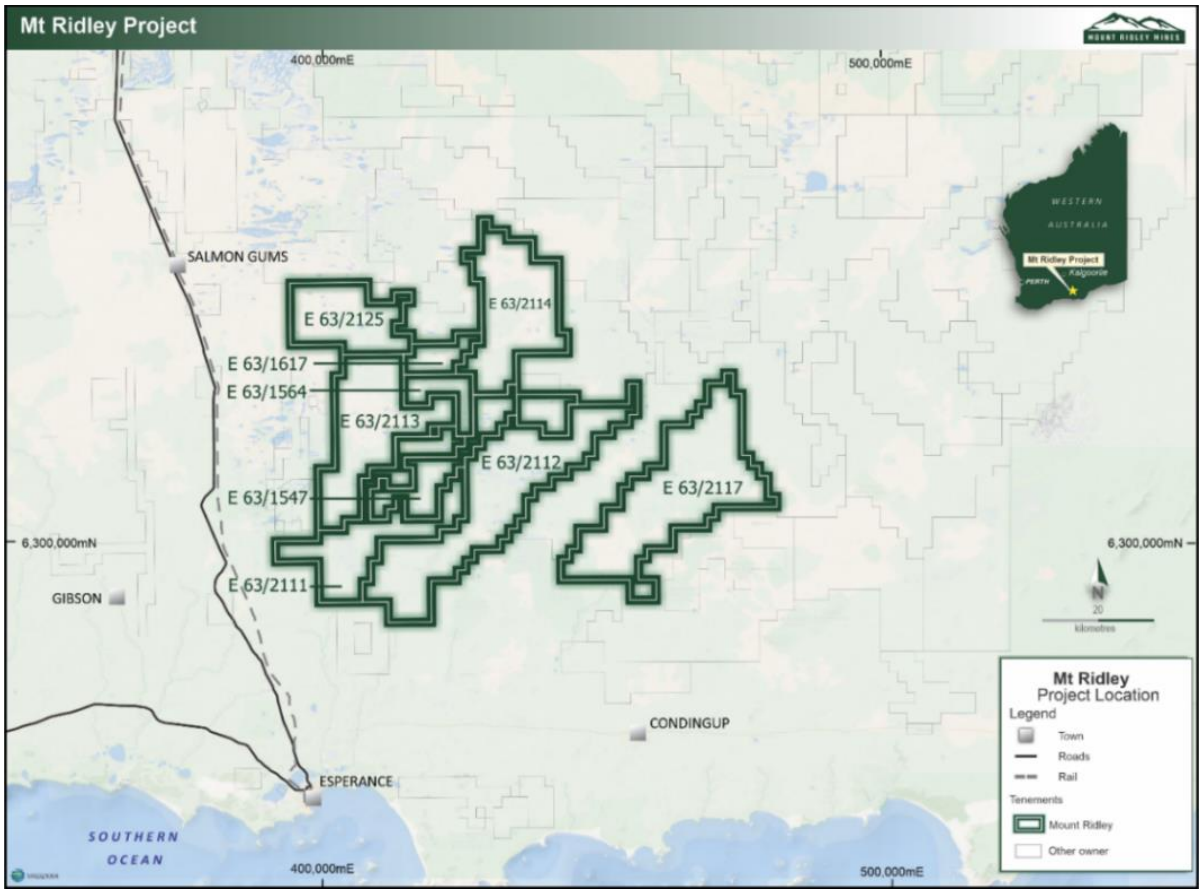

Figure 1: The Mount Ridley Project, with an area of approximately 3,400km^2, is located on predominantly Crown Land approximately 35km north-east of the deep-water Port of Esperance, WA. The Project is also close to the Esperance-Kalgoorlie infrastructure corridor and Esperance Airport.

Aircore drilling to commence expanding targets at known areas of REE mineralisation.

Stage 3 – Primary Target Expansion Drilling: The Company has received Programme of Works (POW) approvals from the Department of Mines Industry Regulation and Safety (DMIRS), which permits aircore drilling at all prospects, including Mia, Butch, Tyrrell's Keith's, Marcellus', Winston's, Jules' and Vincent's Prospects.

Drilling will resume at the Mia Prospect on a 2,000m by 400m pattern, progressively being closed in to a 400m by 400m grid as results warrant, a process that will be undertaken at all targets. Further infill drilling will take place as required to enable JORC compliant Resource estimates to be completed.

Extractive Metallurgy will commence concurrently.

The Company has retained Independent Metallurgical Operations, a Perth-based metallurgical consultancy and laboratory, to plan and oversee REE extraction test work as the first step towards the development of a process flowsheet.

In late 2022, the Company completed 20 PQ diamond drill core holes providing 961.5m of material for extractive metallurgical test work.

Currently the core is being cut, photographed and non-destructively analysed using infra-red and x-ray techniques. A subset of the core will be analysed conventionally to provide baseline head grades.

Subsequent studies will include;

- Beneficiation
- Clay mineralogy and identification of the REE-host minerals
- Salt and acid leach testing under a range of conditions
- Specific gravity measurements and
- Other novel leach trials.

Project geology – are we able to identify the most fertile geological units and target these?

409 bottom-of-hole, mostly fresh, samples of basement rocks have been analysed by Portable Spectral Services, using a Bruker M4 Tornado microXRF. These are in addition to 344 samples previously scanned. A proprietary mineral library allows precise mineral and rock identification. This technology is used to identify the lithology of basement rocks, and REE-containing minerals and other mineralisation indicators.

The final report is due shortly and will provide a framework for a project scale geological basement map integrating geology with detailed aeromagnetic, gravity and electromagnetics datasets.

Photograph 1: 24 hours a day diamond core drilling yielded 961.5m of PQ core for metallurgical test work.

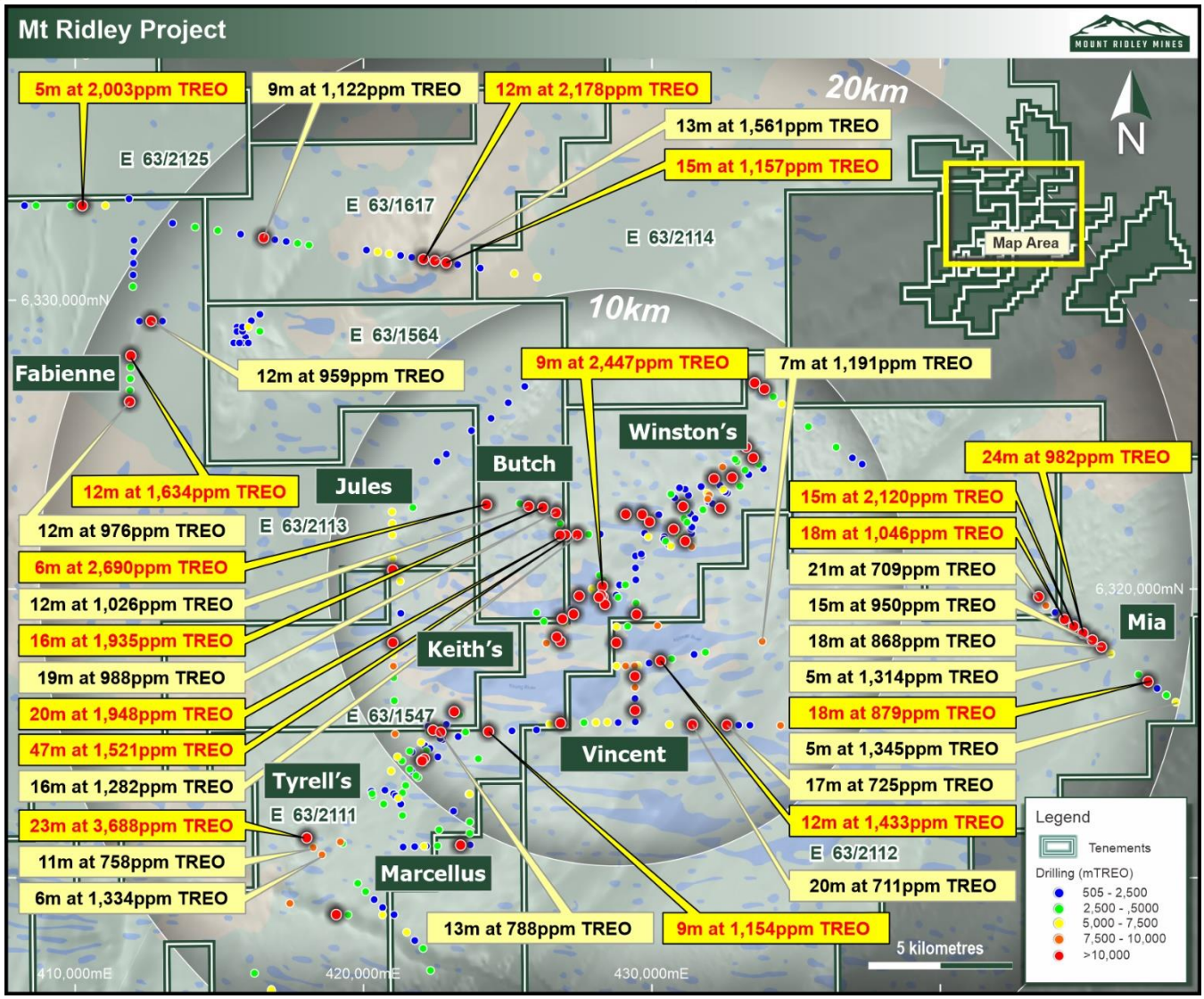

Figure 2: To date, 768 drill holes have been analysed for REE within an area 40km x 30km. Intersections illustrated were calculated using 500ppm TREO as the lower cut-off grade, which yielded an average grade of 1062ppm TREO[2]. Collar locations are coloured by m.TREO[3]. Prospect locations are shown within the field of view, which is approximately 40km by 35km.

Heritage Protection and Environment Management

The Company and the Esperance Tjaltjraak Native Title Aboriginal Corporation (**ETNTAC**) has developed an Aboriginal Heritage Management Plan (**AHMP**) which, among other things, identifies areas of cultural significance that the Company will avoid.

The Company has adopted a best practice Exploration Environment Management Plan (**EEMP**) recording the Company's obligations and procedures when operating at the Mount Ridley Project.

Under the AHMP and EEMP, areas of proposed new clearing will be inspected by on-site heritage and flora/fauna monitors when drill traverses are cleared.

2 TREO means the sum of the 14 REE+Y, each converted to its respective element oxide equivalent using the formulae in Table 1.
3 m.TREO means metres of intersection width (m) multiplied by TREO.

ABOUT THE MOUNT RIDLEY REE PROJECT[4]

The Company announced on 1 July 2021 that laterally extensive REE mineralisation had been identified at its namesake, 100%-held, Mount Ridley Project.

Regional drilling along traverses of up to 40km in length have intersected multiple wide zones of significant (>500ppm) TREO mineralisation with an apparent width of 15km in places.

Key intersections from previous drilling include;

- 23m at 3,688ppm TREO from 6m in MRAC1053 at Tyrrell's Prospect
- 15m at 2,120ppm TREO from 15m in MRAC1234 at the Mia Prospect
- 47m at 1,521ppm TREO from 33m in MRAC0955 at the Butch Prospect
- 12m at 2,178ppm TREO from 45m in MRAC1325 at the Fabienne Prospect
- 9m at 2,447ppm TREO from 54m in MRAC1026 at the Winston Prospect
- 12m at 1,346ppm TREO from 24m in MRAC0920 at the Vincent Prospect and
- 12m at 1,180ppm TREO from 36m from MRAC1003 at the Jules Prospect.

The Company reported that on a weighted average basis by sample interval, the average assayed grade is 1,062ppm TREO (using a 500ppm TREO lower cut-off) and comprises 26% Magnet REO[5].

Completed Work Summary

- Samples from over 3,500m of drilling by Mt Ridley Mines from 2017-2018 were analysed for REE.
- During the first half of 2022, 409 aircore holes (18,927m) were drilled along cleared tracks identifying priority prospects at Mia, Tyrrell's Keith's, Marcellus', Winston's, Jules' and Vincent's.
- Subsequently in late 2022, 101 holes (4,521m) were drilled generating a further 2,816 samples which are currently being analysed.
- 961.5m of PQ diamond drill core has been drilled and is being processing for extractive metallurgical test work.
- 880 drill pulps were analysed using a short wave infra-red ("SWIR") instrument to help map clay mineral distribution as a component of an ongoing Research and Development project studying the REE mineralisation genesis. The drill core will be analysed using a SWIR analyser.
- 344 samples of near fresh rock stubs from the bottom of aircore holes drilled in 2014 were scanned using a Bruker M4 Tornado micro-XRF analyser. A further 409 samples from 2022 drillholes are currently being scanned. This study forms a component of the Research and Development project.
- The Company's geochemical consultant is continuing to generate prospectivity indicies from these datasets.

The Company acknowledges the Esperance Nyungar People, custodians of the Project area.

This announcement has been authorised for release by the Company's Board of Directors.

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4 Mount Ridley Mines Limited announcements to ASX 1 July 2021,2 August 2021, 13 September 2021, 2 August 2022, 6 October 2022.
5 Magnet REO or MagREO means magnet rare earth oxides; the sum of Dy_2O_3, Nd_2O_3, Pr_6O_{11} and Tb_4O_7

ABOUT MOUNT RIDLEY MINES LIMITED

Mount Ridley is a company targeting demand driven metals in Western Australia.

Its namesake Mount Ridley Project, located within a Fraser Range sub-basin, was initially acquired for its nickel and copper sulphides potential. In addition it is now recognised as being prospective for clay hosted REE deposits.

The Company also holds approximately 18% of the Weld Range in the mid-west of Western Australia. Areas of the tenements are prospective iron and gold.

Competent Person

The information in this report that relates to exploration strategy and results is based on information supplied to and compiled by Mr David Crook. Mr Crook is a consulting geologist retained by Mount Ridley Mines Limited. Mr Crook is a member of The Australasian Institute of Mining and Metallurgy and the Australian Institute of Geoscientists and has sufficient experience which is relevant to the exploration processes undertaken to qualify as a Competent Person as defined in the 2012 Editions of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'.

With respect to JORC Table 1 included in MRD announcements to ASX dated:

- 2 August 2021. "REE Potential Unveiled at Mount Ridley."
- 13 September 2021. "REE Targets Extended."
- 21 October 2021. "Encouraging Rare Earth Extraction Results."
- 2 August 2022. "Excellent Drilling Results Expand Rare Earth Mineralisation Footprint at the Mt Ridley Project."
- 6 October 2022. "Highest grades to date returned from Mt Ridley Rare Earth Project Mineralised footprint extended to more than 1,200km^2."

Mount Ridley confirms that it is not aware of any new information or data that materially affects the information included in these announcements and that all material assumptions and technical parameters underpinning the exploration results continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcement.

Caution Regarding Forward Looking Information

This announcement may contain forward-looking statements that may involve a number of risks and uncertainties. These forward-looking statements are expressed in good faith and believed to have a reasonable basis. These statements reflect current expectations, intentions or strategies regarding the future and assumptions based on currently available information. Should one or more of the risks or uncertainties materialise, or should underlying assumptions prove incorrect, actual results may vary from the expectations, intentions and strategies described in this announcement. No obligation is assumed to update forward looking statements if these beliefs, opinions, and estimates should change or to reflect other future developments.

Reference

"REO" means the rare earth element converted to its element oxide equivalent using the factors provided at Element-to-stoichiometric oxide conversion factors - JCU Australia. TREO means the sum of the 14 REO+ Y_2O_3.

Table 1: Conversions from elements to oxides		
Ce_ppm	1.2284	CeO_2_ppm
Dy_ppm	1.1477	Dy_2O_3_ppm
Er_ppm	1.1435	Er_2O_3_ppm
Eu_ppm	1.1579	Eu_2O_3_ppm
Gd_ppm	1.1526	Gd_2O_3_ppm
Ho_ppm	1.1455	Ho_2O_3_ppm
La_ppm	1.1728	La_2O_3_ppm
Lu_ppm	1.1372	Lu_2O_3_ppm
Nd_ppm	1.1664	Nd_2O_3_ppm
Pr_ppm	1.2082	Pr_6O_{11}_ppm
Sm_ppm	1.1596	Sm_2O_3_ppm
Tb_ppm	1.1762	Tb_4O_7_ppm
Tm_ppm	1.1421	Tm_2O_3_ppm
Y_ppm	1.2695	Y_2O_3_ppm
Yb_ppm	1.1387	Yb_2O_3_ppm