

ASX ANNOUNCEMENT

Heavy Rare Earths Limited (ASX: HRE)
1 September 2023

MERINO RARE EARTH PROJECT GRANTED

- **HRE adds new project in Western Australia’s Mid West region to rare earth exploration portfolio: Merino**
- **100 per cent-owned project targeted for ion-adsorption type rare earth deposits**
- **Previous exploration delivers encouraging rare earth results**

Heavy Rare Earths Limited (“**HRE**” or “**the Company**”) is pleased to report an addition to its existing rare earth project portfolio of Cowalinya (WA) and Duke (NT).

Exploration licences E59/2795 and E59/2796, which together constitute HRE’s 100 per cent-owned **Merino rare earth project**, have now been granted by the Department of Mines, Industry Regulation and Safety. The project is located in the Mid West region of Western Australia approximately 225 kilometres ENE of the port city of Geraldton. It covers an area of 269 km² and the underlying tenure comprises the Wagga Wagga and Muralgarra pastoral leases. The sealed Geraldton-Mt Magnet Road crosses the northern part of the project area (Figure 1).

Native Title rights over the region is held by the Yamatji Nation.

The exploration model being investigated by HRE is heavy rare earths (HREE)-enriched ion-adsorption clay-hosted deposits similar to those found in southern China and Myanmar which supply most of the world’s HREEs. The Merino area ranked very highly in an internal study targeting this style of mineralisation in Western Australia’s palaeochannels.

Geology and Previous Exploration

The geology of the Merino area is dominated by Quaternary aeolian and alluvial sediments and salt lakes (playas) with north-west trending inliers of Archaean porphyritic granite and adamellite. Chemical analysis by the Geological Survey of Western Australia shows that these granitic intrusions contain up to 516 ppm TREE (total rare earths).

Palaeochannels are inferred to occur beneath most of the project area, but owing to the paucity of exploration drilling the precise location and depth of these palaeochannels remains uncertain. However, drilling of a single air core hole in E59/2796 (hole YAC004) has demonstrated the presence of a palaeochannel to a depth of at least 70 metres below surface. Two holes drilled to the east of E59/2795 (YAC001 and 002) intersected between 40 and 93 metres of palaeochannel fill. Both holes intersected anomalous levels of the rare earths lanthanum (La) and cerium (Ce): 10 metres @ 500 ppm La+Ce in YAC-001 and 27 metres @ 350 ppm La+Ce in YAC-002.

HRE notes that rare earths were also detected in the assays of vegetation samples from previous exploration in the north-eastern part of E59/2795 (up to 3919 ppb La+Ce+Nd+Y), but the significance of these results is not yet understood.

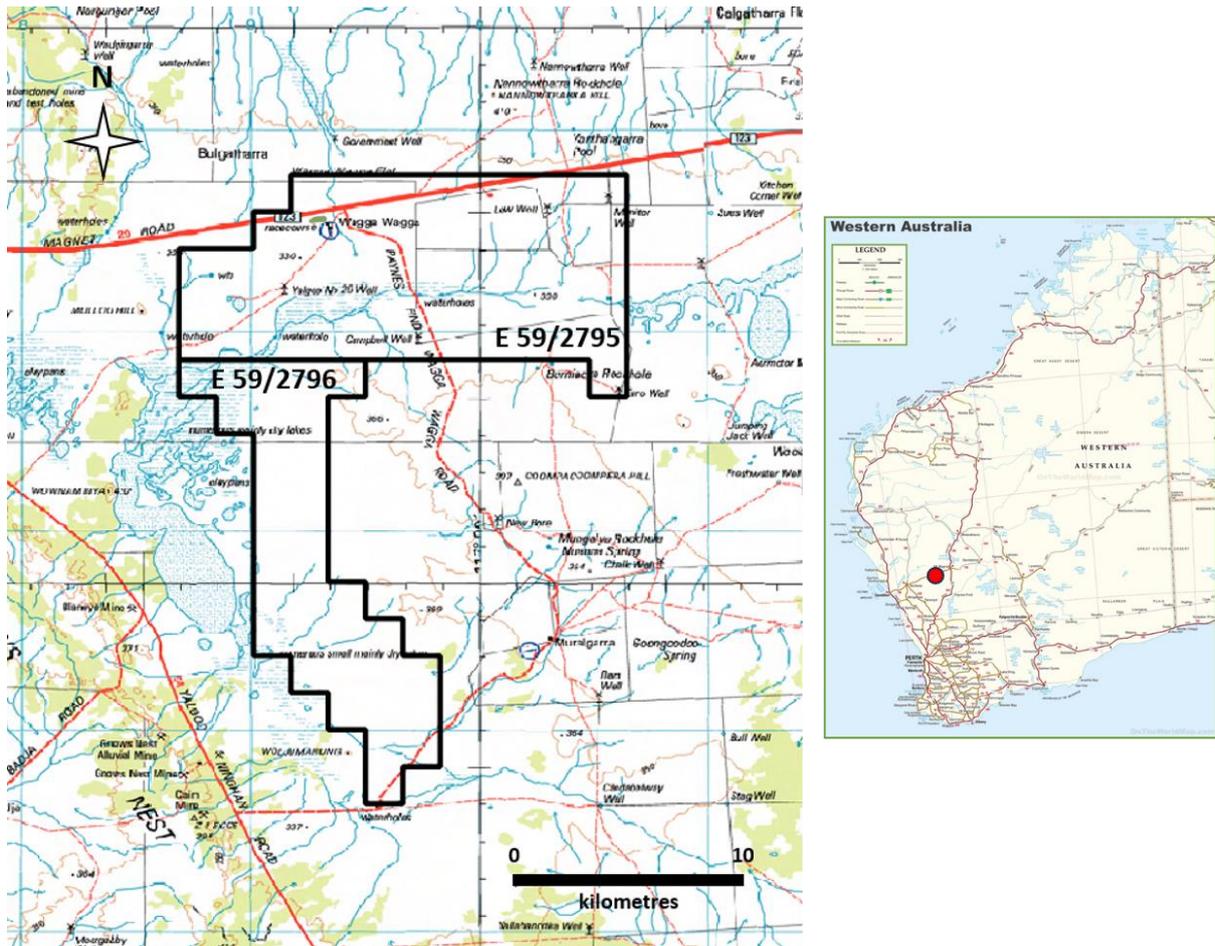


Figure 1: Location of Merino project tenements E59/2795 and E59/2796.
Background image: 1:250,000 scale Yalgoo and Kirkalocka Topographic Maps.

Planned Exploration by HRE

HRE plans to complete a first-pass sweep of the Merino project, comprising soil, rock and water bore sampling, during Year 1 of exploration. Drilling in Year 2 of the program will be subject to the results of Year 1 activities.

The Company is reviewing the Yamatji Nation Indigenous Land Use Agreement (ILUA) particularly as it relates to the application of the ILUA's Standard Heritage Agreement (SHA) on HRE's planned programs. On-ground exploration at Merino cannot commence until HRE agrees to the terms of the Yamatji SHA.

The proposed budget for Years 1 and 2 of exploration on the Merino project by HRE is summarized in Table 1. The statutory minimum annual expenditure commitment on the project is the same for each year at \$89,000.

Table 1: Merino Project Budget.

Activity	Year 1	Year 2
Rock, soil & water bore sampling ¹	\$54,000	-
Drilling ²	-	\$91,500
Tenement management ³	\$20,000	\$16,000
Administration & working capital ⁴	\$33,700	\$32,500
TOTAL	\$107,700	\$150,500

¹ Includes field support, technical consulting & assay

² Includes cultural heritage, field support, equipment rental & assay

³ Includes WA Government charges

⁴ Includes technical management

Updated Use of Funds from IPO Prospectus

The table below provides an updated 2-year Use of Funds from the Company's IPO Prospectus dated 5 July 2022 following the grant of the Merino tenements.

Activity	2-year Use of Funds
Drilling – exploration & resource upgrade	\$2,340,000
Assaying	\$440,000
Metallurgical process development	\$325,000
New project – Merino	\$100,000
Project Studies	\$300,000
Duke project exploration (NT)	\$100,000
Payment for Cowalinya vendors – exercise of option	\$300,000
Costs of the Offers	\$640,000
Administration & working capital	\$1,455,000
Total	\$6,000,000

-- Ends --

This announcement has been approved by the Board of HRE.

For more information, please contact:

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About Heavy Rare Earths Limited

Heavy Rare Earths Limited (ASX: HRE) is an Australian rare earth exploration and development company. HRE's key exploration project is Cowalinya, near Esperance in Western Australia. This is a clay-hosted rare earth project with an Inferred Resource of 28 Mt @ 625 ppm TREO and a desirable rare earth composition where 25% are the valuable magnet rare earths and 23% the strategic heavy rare earths.

Competent Person's Statement

The Exploration Results contained in this announcement were compiled by Dr. Andy Wilde of Wilde Geoscience. Dr. Wilde is a Fellow and RPGeo (Registered Professional Geoscientist) of the Australian Institute of Geoscientists (AIG). He has more than 35 years' experience in mineral exploration and has sufficient experience relevant to the style of mineralisation and type of deposit under consideration to qualify as a Competent Person as defined in the 2012 JORC Code. Dr. Wilde consents to the inclusion in this announcement of the matters based on the Exploration Results in the form and context in which they appear.

2012 JORC Code – Table 1

Section 1: Sampling Techniques and Data

Criteria	JORC Code Explanation	Commentary
Sampling techniques	Nature and quality of sampling (e.g., cut channels, random chips, or specific specialized 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.	Rio Tinto Exploration (Rio) collected 63 x 50g twig samples at a height of 1.5 – 2m from Mulga trees taller than 3m. Rio's open file report A103873 provides no information on sampling quality. Zenith Minerals (Zenith) sampled aircore drillholes (see below) but provided no information on sampling techniques other than samples were composited to 4m.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.	Not known.
	Aspects of the determination of mineralisation that are Material to the Public Report.	Not applicable.
Drilling techniques	Drill type (e.g., core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g., 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.).	HRE has not conducted any drilling at Merino to date. YAC001-004 are historic aircore holes, drilled in 2022 by Zenith targeting potash. Details of the drilling methods used are not available in Zenith's open file reports.
Drill sample recovery	Method of recording and assessing core and chip sample recoveries and results assessed.	Recovery data for YAC001-004 are not available and presumably were not recorded.
	Measures taken to maximize sample recovery and ensure representative nature of the samples.	Not known.
	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.	Not known.
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.	Qualitative lithological logging data are available in Zenith's open file reports A134684-134686.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.	See above.
	The total length and percentage of the relevant intersections logged.	See above.
	If core, whether cut or sawn and whether quarter, half or all core taken.	Not applicable.

Criteria	JORC Code Explanation	Commentary
Sub-sampling techniques and sample preparation	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	Not known.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	Not known.
	Quality control procedures adopted for all sub-sampling stages to maximize representivity of samples.	Not known.
	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.	Not known.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	Not known.
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.	Rio sent their twig samples to Genalysis Laboratories in Perth, Western Australia, for drying and milling (method BGMD01) and analysis using method BG/OM10 (aqua regia digest and ICP-OES/MS finish). There is no discussion of quality of this analysis in Rio's report. Zenith's drill samples were prepared at ALS Laboratories in Perth, Western Australia, using four acid digest and analysed using ICP-AES. This technique is considered to be a 'partial' digest and gives highly accurate and precise analyses for a suite of multielements including the REEs lanthanum (La), cerium (Ce) and yttrium (Y).
	For geophysical tools, spectrometers, handheld XRF instruments, etc., the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.	Not applicable
	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.	None documented.
Verification of sampling and assaying	The verification of significant intersections by either independent or alternative company personnel.	None documented.
	The use of twinned holes.	None documented.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	Zenith drilling data were entered into an Excel spreadsheet.

Criteria	JORC Code Explanation	Commentary
	Discuss any adjustment to assay data.	No adjustments have been performed to the data presented herein.
Location of data points	Accuracy and quality of surveys used to locate drillholes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.	Not documented.
	Specification of the grid system used.	MGA94 Zone 50.
	Quality and adequacy of topographic control.	Not applicable.
Data spacing and distribution	Data spacing for reporting of Exploration Results.	Not applicable.
	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.	Not applicable.
	Whether sample compositing has been applied.	Four metre composites were collected by Zenith down the entire length of all drill holes, except at the bottom of hole where composite intervals were less than 4m.
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.	Geological structure is poorly understood due to poor outcrop.
	If the relationship between the drilling orientation and the orientation of key mineralized structures is considered to have introduced a sampling bias, this should be assessed and reported if material.	Not known.
Sample security	The measures taken to ensure sample security.	Not known.
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	No audits or reviews have been commissioned to date.

Section 2: Reporting of Exploration Results

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.	<p>Exploration licences E59/2795 and E59/2796 that make up the Merino project are located 95 kilometres WSW of Mount Magnet in Western Australia (Figure 1). They consist of 56 and 33 graticular blocks respectively, occupying a total area of 269 km². They are situated on the Wagga Wagga (PL N049400) and Muralgarra (PL N049510) pastoral leases. The registered holder of the tenements is Heavy Rare Earths Limited (HRE).</p> <p>Full native title rights have been granted over the tenements and surrounding lands to people collectively represented by the Bundi Yamatji Aboriginal Corporation, with whom cultural heritage surveys are undertaken in advance of substantial disturbance exploration works.</p>
	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.	The tenements are in good standing. There are no impediments to operating on the tenements other than requirements of the Western Australian Department of Mines, Industry Regulation and Safety (DMIRS), and the Yamatji Proponent Standard Heritage Agreement which is industry standard.
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	<p>The previous exploration of most relevance to the Merino project was undertaken by Rio on E59/2032 in 2014, and Zenith on E59/2622-2624 in 2022.</p> <p>Rio's target commodities were Cu, Au and Mo. They collected 63 vegetation samples (<i>Acacia aneura</i>), the majority of which are located of HRE's E59/2795.</p> <p>Zenith explored the region for potash deposits within inferred brine-rich palaeochannels. They drilled 4 aircore holes, YAC001-004. One of the holes (YAC004) is located on HRE's E59/2796.</p>
Geology	Deposit type, geological setting and style of mineralisation.	<p>The deposit type being investigated is ion adsorption clay-hosted rare earth mineralisation. This style of supergene mineralisation is developed over bedrock granitic rock types which contain anomalous levels of rare earths. Although relatively modest in grade, low-cost mining and processing can make this type of deposit profitable to exploit.</p> <p>The geology of the Merino area is dominated by Quaternary aeolian and alluvial sediments and salt lakes (playas) with north-west trending inliers of Archaean porphyritic granite and adamellite of the Murchison Terrane.</p>

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Drillhole Information	<p>A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drillholes:</p> <ul style="list-style-type: none"> - easting and northing of the drillhole collar - elevation or RL (Reduced Level – elevation above sea level in metres) of the drillhole collar - dip and azimuth of the hole - down hole length and interception depth - hole length. 	Location information relating to Zenith's drilling is as follows:																											
		<table border="1"> <thead> <tr> <th>HOLE</th> <th>NORTHING (m)</th> <th>EASTING (m)</th> <th>DIP</th> <th>TOTAL DEPTH (m)</th> </tr> </thead> <tbody> <tr> <td>YAC001</td> <td>6863027</td> <td>520057</td> <td>-90°</td> <td>94</td> </tr> <tr> <td>YAC002</td> <td>6862074</td> <td>510216</td> <td>-90°</td> <td>47</td> </tr> <tr> <td>YAC003</td> <td>6857832</td> <td>511635</td> <td>-90°</td> <td>12</td> </tr> <tr> <td>YAC004</td> <td>6845601</td> <td>493272</td> <td>-90°</td> <td>71</td> </tr> </tbody> </table>	HOLE	NORTHING (m)	EASTING (m)	DIP	TOTAL DEPTH (m)	YAC001	6863027	520057	-90°	94	YAC002	6862074	510216	-90°	47	YAC003	6857832	511635	-90°	12	YAC004	6845601	493272	-90°	71		
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Data aggregation methods	In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g., cutting of high grades) and cut-off grades are usually Material and should be stated.	No minimum grade cut-off has been adopted. No high cut-off has been applied.																											
	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.	Not applicable.																											
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	No metal equivalent values were necessary or used.																											
Relationship between mineralisation widths and intercept lengths	<p>If the geometry of the mineralisation with respect to the drillhole angle is known, its nature should be reported.</p> <p>If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g., 'down hole length, true width not known').</p>	Down hole length, true width not known.																											
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 drillhole collar locations and appropriate sectional views.	Not applicable.																											
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 to avoid misleading reporting of Exploration Results.	Not applicable.																											

Criteria	JORC Code Explanation	Commentary
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.	Not applicable.
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.	HRE plans to undertake soil, rock and water bore sampling at Merino.