HEAVY RARE EARTHS LIMITED

ASX ANNOUNCEMENT
Heavy Rare Earths Limited (ASX: HRE)
13 December 2022

POSITIVE RARE EARTH METALLURGICAL TEST WORK FOR THE COWALINYA PROJECT

- **Particle size analysis reveals up to 90% of rare earths hosted in -25µm (target) size fraction in as low as 21% of bulk saprolite feed**
- **Rare earth grade increase of up to 299% in target size fraction**
- **Maximum rare earth grade of 3674 ppm TREO in target size fraction**
- **Metallurgical program now moves onto leach phase of target size fraction**

Heavy Rare Earths Limited (**"HRE"** or **"the Company"**) is pleased to report results from its metallurgical program on rare earth mineralisation from its 100 per cent-owned Cowalinya project in the Norseman-Esperance region of Western Australia.

This initial work by Perth-based Strategic Metallurgy ("Strategic") has been completed on 13 four- and five-metre composite samples of rare earth-bearing saprolite from 10 drill holes across the Cowalinya South and North deposits. These samples represent a reasonable first-pass basis for discerning the geo-metallurgical variability of saprolite-hosted rare earth mineralisation across the Cowalinya project.

Taken together, the Cowalinya South and North deposits are the foundation of HRE's maiden Inferred Resource of 28 million tonnes @ 625 ppm TREO (total rare earth oxide).[1]

Strategic undertook particle size analysis on the saprolite composites to determine the rare earth distribution across a range of size fractions, from +0.5mm (sand size) to -25µm (silt and clay size). This work is to aid in the design of an upstream process flowsheet that removes gangue from the saprolite. For Cowalinya, that potentially involves the use of a deslime cyclone.

The sizing work by Strategic has shown that, on average:

- 78.5% of the rare earths are confined to the target size fraction of -25µm (range 66.3%-90.1%)
- The target size fraction comprises 37.2% of the bulk saprolite feed mass (range 20.8%-59.9%)
- The rare earth grade of the target size fraction is 116% higher than the bulk saprolite feed grade (range 23%-299%).

These results are summarised in Table 1 and illustrated in Figures 1 and 2. The distribution of rare earths across all size fractions is presented in Table 2.

[1] Table 5.1 of Appendix 7 (Cowalinya Resource Report) of the Independent Geologist's Report contained in HRE's IPO Prospectus.

Table 1: Summary particle size analysis for the -25µm fraction.

SAMPLE NO.	HOLE NO.	FROM (m)	TO (m)	INTERVAL (m)	LITHOLOGY	TREO HEAD ASSAY (ppm)	-25µm TARGET FRACTION				
							MASS (%)	RARE EARTHS (%)	MAGNET RARE EARTHS (%)	TREO (ppm)	UPGRADE (%)
COWALINYA SOUTH DEPOSIT											
SM01	AC4	24	29	5	Lower Saprolite	1045	37.8%	80.7%	81.1%	2050	96%
SM02	AC16	12	17	5	Upper Saprolite	750	51.6%	90.1%	91.7%	1270	69%
SM03	AC16	24	29	5	Lower Saprolite	1383	27.0%	67.3%	68.1%	3674	165%
SM04	AC28	14	19	5	Upper Saprolite	1280	59.9%	84.8%	91.6%	1575	23%
SM05	AC28	32	37	5	Lower Saprolite	927	33.3%	82.3%	84.5%	2071	124%
SM06	AC36	20	25	5	Lower Saprolite	754	29.4%	79.3%	79.5%	1929	156%
SM07	AC41	11	16	5	Upper Saprolite	938	43.6%	83.8%	87.4%	1662	77%
SM08	AC41	22	27	5	Lower Saprolite	752	27.8%	72.8%	74.0%	1800	139%
SM09	AC47	17	22	5	Lower Saprolite	453	35.0%	68.1%	69.4%	806	78%
SM10	AC57	14	18	4	Upper Saprolite	744	29.5%	69.3%	68.6%	1752	135%
COWALINYA NORTH DEPOSIT											
SM11	AC69	13	18	5	Upper Saprolite	460	20.8%	89.0%	86.9%	1837	299%
SM12	AC89	28	33	5	Lower Saprolite	1376	46.6%	86.1%	86.9%	2642	92%
SM13	AC104	24	29	5	Lower Saprolite	1326	41.1%	66.3%	67.5%	2140	61%
AVERAGE							**37.2%**	**78.5%**	**79.8%**		**116%**

TREO = La2O3 + CeO2 + Pr6O11 + Nd2O3 + Sm2O3 + Eu2O3 + Gd2O3 + Tb4O7 + Dy2O3 + Ho2O3 + Er2O3 + Tm2O3 + Yb2O3 + Lu2O3 + Y2O3
Magnet Rare Earths = Pr + Nd + Tb + Dy

Importantly, there is also a close correspondence between the distribution of total rare earths (REE) and the valuable magnet rare earths (Pr-Nd-Tb-Dy) in the -25µm size fraction. This key relationship is highlighted in Figure 1.

Figure 1: Mass and rare earth distribution in -25µm size fraction.

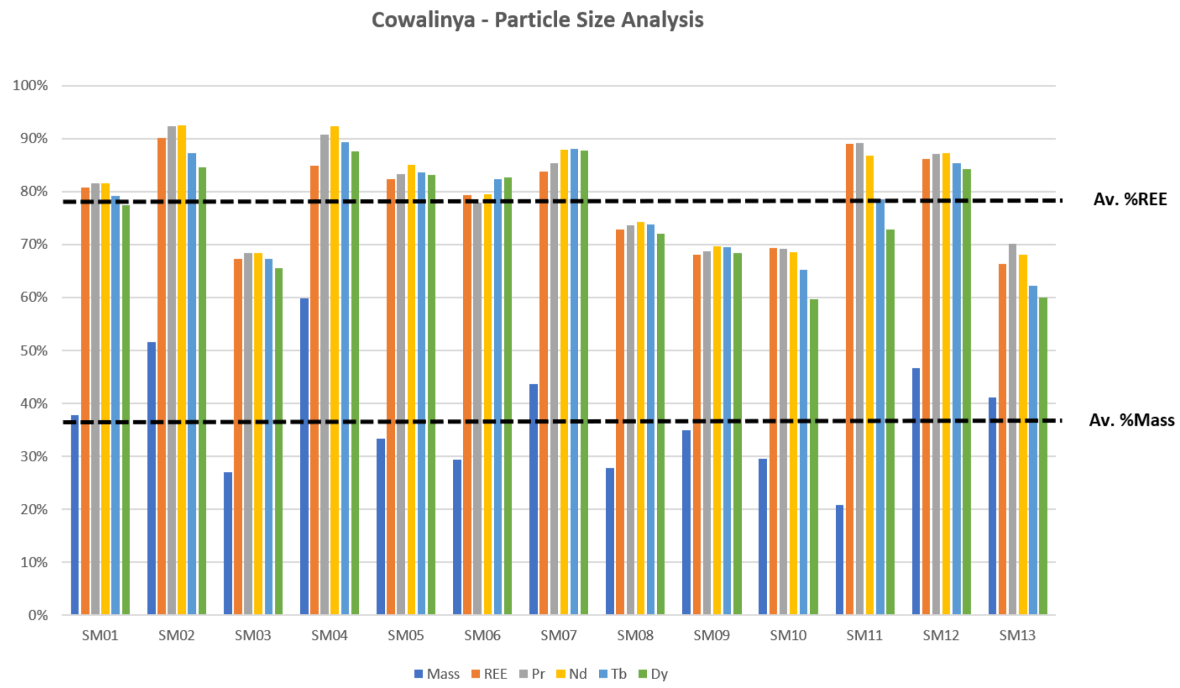
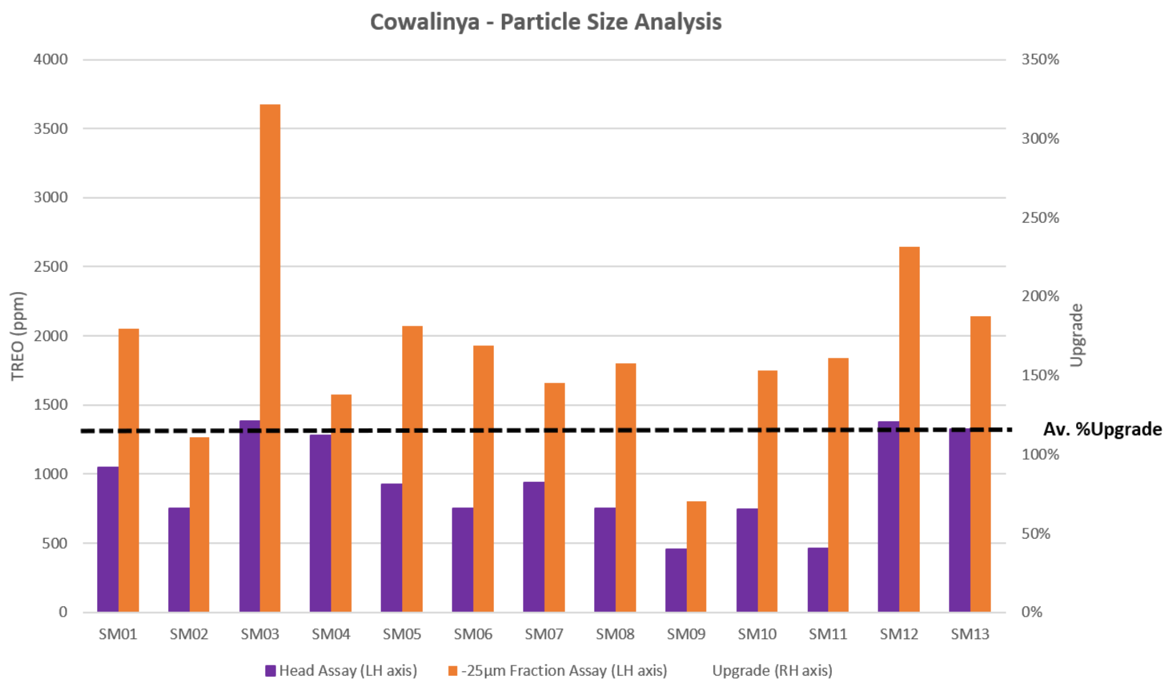


Figure 2: Rare earth upgrade in -25µm size fraction.



HRE Executive Director, Richard Brescianini, said, "These results are highly encouraging and provide a very solid technical platform for HRE in our development plans for Cowalinya. As a result of the promising initial assays from our now completed drilling campaign, we can choose to expand the scope of our geo-metallurgical variability program to include areas beyond the known Cowalinya resource."

HRE's metallurgical program now moves to the next phase of test work by Strategic which is aimed at establishing a suitable leach regime for Cowalinya mineralisation. This phase, which examines leach performance, solution composition, reagent consumption, metal recovery and impurity deportment, has commenced on -25µm target material isolated during the particle size analysis. Preliminary work by HRE showed that high proportions (89% on a weighted average) of the magnet rare earths can be brought into solution using weak hydrochloric acid.[2] Key outcomes from this next phase of work will be communicated to the ASX as material results come to hand.

-- Ends --

This announcement has been approved by the Board of HRE.

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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 Norseman in Western Australia. This is a clay-hosted rare earth project with a JORC Inferred Resource of 28Mt @ 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 Persons Statement

The Exploration Results contained in this announcement were compiled by Mr. Richard Brescianini. Mr. Brescianini is a member of the Australian Institute of Geoscientists (AIG). He is a director and full-time employee of Heavy Rare Earths Limited. Mr. Brescianini 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.

The Mineral Resources contained in this announcement have been extracted from the Independent Geologist's Report included in the Company's Initial Public Offering (IPO) Prospectus, a copy of which was lodged with the Australian Securities and Investments

[2] Page 99 of the Independent Geologist's Report contained in HRE's IPO Prospectus.

Commission (ASIC) on 5 July 2022. The Company confirms that it is not aware of any new information or data that materially affects the Mineral Resources as contained in the Company's IPO Prospectus. All material assumptions and technical parameters underpinning the Mineral Resources in the Company's IPO Prospectus continue to apply and have not materially changed.

Figure 3: South-east portion of E63/1972 showing location of drill holes sampled for metallurgical work.
Background image: Landgate digital elevation model.

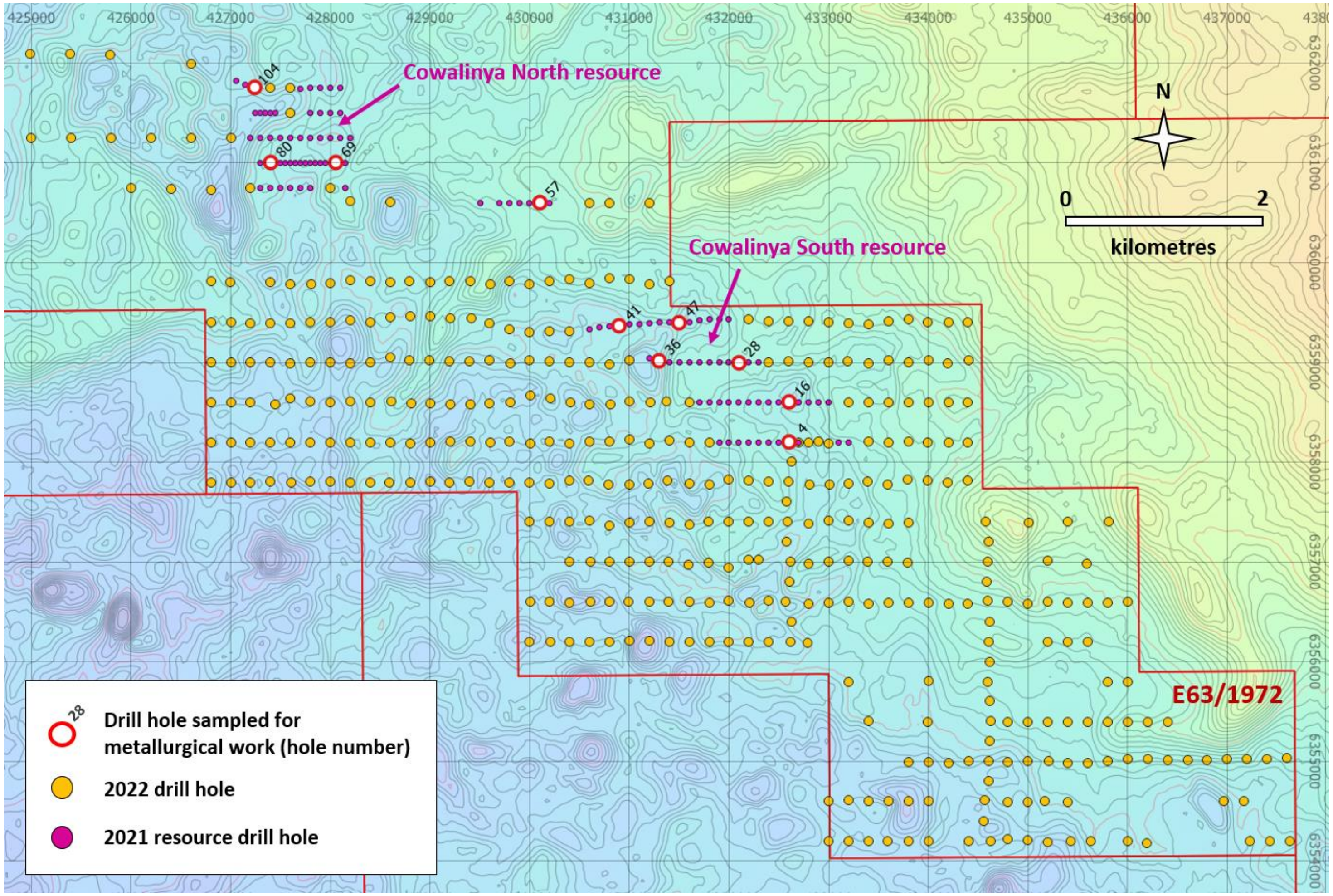

Table 2: Particle size analysis for composite samples SM01-SM13.

SM01: AC4 24-29m			
Size Fraction	Mass Distribution %	REE ppm	REE Distribution %
+500µm	9.87	116	1.44
-500/+300µm	11.96	98	1.47
-300/+212µm	9.92	121	1.50
-212/+150µm	7.25	150	1.36
-150/+106µm	6.59	229	1.88
-106/+75µm	4.54	385	2.19
-75/+53µm	3.43	449	1.92
-53/+38µm	4.46	644	3.59
-38/+25µm	4.18	748	3.90
-25µm	37.81	1708	80.74
Head		873	

SM02: AC16 12-17m			
Size Fraction	Mass Distribution %	REE ppm	REE Distribution %
+500µm	12.91	88	1.87
-500/+300µm	9.61	58	0.92
-300/+212µm	7.53	49	0.61
-212/+150µm	5.27	157	1.37
-150/+106µm	3.85	80	0.51
-106/+75µm	2.57	141	0.60
-75/+53µm	2.16	250	0.89
-53/+38µm	2.73	297	1.34
-38/+25µm	1.74	621	1.79
-25µm	51.64	1056	90.10
Head		624	

SM03: AC16 24-29m			
Size Fraction	Mass Distribution %	REE ppm	REE Distribution %
+500µm	15.53	340	4.30
-500/+300µm	12.61	263	2.70
-300/+212µm	9.41	314	2.40
-212/+150µm	8.19	406	2.71
-150/+106µm	8.74	473	3.36
-106/+75µm	7.04	810	4.64
-75/+53µm	4.67	1059	4.02
-53/+38µm	4.62	1362	5.11
-38/+25µm	2.19	1926	3.44
-25µm	27.01	3065	67.33
Head		1156	

SM04: AC28 14-19m			
Size Fraction	Mass Distribution %	REE ppm	REE Distribution %
+500µm	8.90	644	6.15
-500/+300µm	5.89	201	1.27
-300/+212µm	4.71	183	0.92
-212/+150µm	4.41	195	0.92
-150/+106µm	3.80	241	0.98
-106/+75µm	3.24	319	1.11
-75/+53µm	3.21	360	1.24
-53/+38µm	3.48	424	1.59
-38/+25µm	2.50	363	0.98
-25µm	59.85	1320	84.83
Head		1072	

SM05: AC28 32-37m			
Size Fraction	Mass Distribution %	REE ppm	REE Distribution %
+500µm	34.15	169	8.25
-500/+300µm	12.72	111	2.03
-300/+212µm	5.44	123	0.95
-212/+150µm	3.81	150	0.82
-150/+106µm	3.16	206	0.93
-106/+75µm	2.73	295	1.15
-75/+53µm	1.94	420	1.17
-53/+38µm	1.74	556	1.38
-38/+25µm	1.03	711	1.05
-25µm	33.29	1725	82.26
Head		772	

SM06: AC36 20-25m			
Size Fraction	Mass Distribution %	REE ppm	REE Distribution %
+500µm	16.38	116	3.18
-500/+300µm	13.73	96	2.22
-300/+212µm	10.39	120	2.10
-212/+150µm	8.60	146	2.11
-150/+106µm	6.91	171	1.98
-106/+75µm	7.64	278	3.57
-75/+53µm	2.86	406	1.95
-53/+38µm	2.25	440	1.66
-38/+25µm	1.86	603	1.89
-25µm	29.39	1604	79.33
Head		628	

SM07: AC41 11-16m			
Size Fraction	Mass Distribution %	REE ppm	REE Distribution %
+500µm	13.84	195	3.71
-500/+300µm	8.96	141	1.74
-300/+212µm	6.91	149	1.41
-212/+150µm	5.71	160	1.26
-150/+106µm	5.83	213	1.71
-106/+75µm	4.45	274	1.68
-75/+53µm	3.45	261	1.24
-53/+38µm	3.51	293	1.41
-38/+25µm	3.75	396	2.04
-25µm	43.60	1396	83.79
Head		788	

SM08: AC41 22-27m			
Size Fraction	Mass Distribution %	REE ppm	REE Distribution %
+500µm	11.26	210	4.13
-500/+300µm	11.92	89	1.85
-300/+212µm	11.28	134	2.64
-212/+150µm	9.80	165	2.83
-150/+106µm	8.65	233	3.53
-106/+75µm	6.87	246	2.95
-75/+53µm	4.99	350	3.05
-53/+38µm	3.96	409	2.84
-38/+25µm	3.44	558	3.36
-25µm	27.83	1495	72.81
Head		626	

SM09: AC47 17-22m			
Size Fraction	Mass Distribution %	REE ppm	REE Distribution %
+500µm	20.07	200	11.68
-500/+300µm	13.97	74	3.00
-300/+212µm	8.51	88	2.16
-212/+150µm	6.80	103	2.04
-150/+106µm	5.44	157	2.48
-106/+75µm	4.22	234	2.86
-75/+53µm	2.83	383	3.15
-53/+38µm	2.05	480	2.85
-38/+25µm	1.08	534	1.68
-25µm	35.03	669	68.09
Head		377	

SM10: AC57 14-18m			
Size Fraction	Mass Distribution %	REE ppm	REE Distribution %
+500µm	16.39	260	6.85
-500/+300µm	11.52	178	3.30
-300/+212µm	10.84	188	3.29
-212/+150µm	9.28	197	2.95
-150/+106µm	7.98	251	3.23
-106/+75µm	6.06	366	3.58
-75/+53µm	3.82	474	2.92
-53/+38µm	2.81	575	2.60
-38/+25µm	1.75	688	1.94
-25µm	29.54	1458	69.34
Head		620	

SM11: AC69 13-18m			
Size Fraction	Mass Distribution %	REE ppm	REE Distribution %
+500µm	18.66	37	1.93
-500/+300µm	16.81	38	1.78
-300/+212µm	11.43	32	1.04
-212/+150µm	9.30	35	0.90
-150/+106µm	8.12	52	1.18
-106/+75µm	6.23	64	1.11
-75/+53µm	3.96	90	0.99
-53/+38µm	3.13	141	1.23
-38/+25µm	1.56	203	0.89
-25µm	20.80	1528	88.95
Head		383	

SM12: AC89 28-33m			
Size Fraction	Mass Distribution %	REE ppm	REE Distribution %
+500µm	9.07	246	1.87
-500/+300µm	9.88	134	1.11
-300/+212µm	7.76	145	0.94
-212/+150µm	6.19	197	1.02
-150/+106µm	5.96	266	1.33
-106/+75µm	4.61	427	1.65
-75/+53µm	3.65	578	1.77
-53/+38µm	3.30	665	1.84
-38/+25µm	2.99	946	2.37
-25µm	46.60	2203	86.09
Head		1149	

SM13: AC104 24-29m			
Size Fraction	Mass Distribution %	REE ppm	REE Distribution %
+500µm	13.09	575	6.81
-500/+300µm	11.68	583	6.16
-300/+212µm	9.12	582	4.80
-212/+150µm	8.51	536	4.12
-150/+106µm	4.76	636	2.74
-106/+75µm	4.74	668	2.87
-75/+53µm	2.96	1040	2.79
-53/+38µm	2.38	1014	2.18
-38/+25µm	1.64	850	1.26
-25µm	41.10	1783	66.28
Head		1105	

REE = La + Ce + Pr + Nd + Sm + Eu + Gd + Tb + Dy + Ho + Er + Tm + Yb + Lu + Y

Table 3: Cowalinya air core holes for which metallurgical results are reported.

HOLE NO.	NORTHING (m)	EASTING (m)	RL (m)	DIP (°)	TOTAL DEPTH (m)
AC4	6358200	432600	261.3	-90	36
AC16	6358600	432600	261.0	-90	32
AC28	6359000	432100	265.2	-90	39
AC36	6359020	431300	259.0	-90	31
AC41	6359365	430900	259.9	-90	30
AC47	6359400	431500	261.0	-90	28
AC57	6360600	430100	267.7	-90	21
AC69	6361000	428050	261.4	-90	22
AC80	6361000	427400	261.4	-90	33
AC104	6361755	427245	259.1	-90	39

2012 JORC Code – Table 1

Section 1: Sampling Techniques and Data

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.	A total of 544 vertical aircore holes have been drilled by Heavy Rare Earths Limited (HRE) on the Cowalinya project, 109 holes in 2021 and 435 holes in 2022. Maximum hole depth is 58m. All holes have been tested for supergene rare earth element (REE) mineralisation hosted by saprolitic clays. Drilling in 2021 overlapped extensively with areas previously aircore drilled by two companies exploring for gold (AngloGold Ashanti Ltd and Great Southern Gold Pty Ltd). One-metre samples are collected from a cyclone into plastic bags. All holes drilled in 2022 have been 2m composite sampled with 1m samples at end of hole. Approximately 60% of samples collected in the 2021 drilling program were 4m composites with the remainder being 1m intervals. Overlying transported sediments are not routinely sampled as they do not contain anomalous amounts of REEs.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.	For aircore drilling, regular air and manual cleaning of cyclone is being undertaken. Certified standards and duplicate samples are submitted with drill samples.
	Aspects of the determination of mineralisation that are Material to the Public Report.	Aircore drilling is used to obtain 1m samples which are collected in plastic bags. Samples ranging from 1m to 2m composites are taken for analysis. Sample size is 2-3kg in weight. At LabWest Minerals Analysis (LabWest) in Perth, Western Australia, samples are dried, crushed, split and pulverized with a 0.1g sub-sample set aside for assay.
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.).	The drill type is aircore, a form of reverse circulation (RC) drilling using slim rods and a 3.5-inch blade bit. The samples recovered are typically rock chips and powder, similar to RC drilling.

Drill sample recovery	Method of recording and assessing core and chip sample recoveries and results assessed.	Aircore recovery is visually assessed by comparing drill chip volumes in sample bags for individual metres. Estimates of sample recovery are recorded on drill logs. Routine checks for correct sample depths are undertaken. Aircore sample recoveries are visually checked for recovery, moisture and contamination and are considered to be acceptable within industry standards. The cyclone is routinely cleaned ensuring no material build up.
	Measures taken to maximize sample recovery and ensure representative nature of the samples.	Due to the generally good drilling conditions through dry saprolite the site geologist believes the samples are reasonably representative. Poor sample recovery is regularly recorded in the first couple of metres of a hole and often when hard bedrock is intersected – usually less than a full metre is recovered. Wet samples with moderate recoveries are encountered most often in the transported sand/silcrete layer lying immediately above saprolite.
	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.	No sample bias has been identified to date. Future studies will be undertaken.
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.	Chip/clay samples are geologically logged in enough detail to discern lithological units. Logging is appropriate for this style of drilling and current stage of the project.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.	Logging is qualitative in nature.
	The total length and percentage of the relevant intersections logged.	All aircore holes are completely geologically logged.
Sub-sampling techniques and sample preparation	If core, whether cut or sawn and whether quarter, half or all core taken.	Not applicable.
	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	One-metre samples are collected from a cyclone into plastic bags. Four-metre (2021 program) and 2m (2022 program) composites, single metre samples, and 4m and 5m composites for metallurgical testwork are collected by spearing each plastic bag with a scoop down the side of the bag and dragging it back up the side of the bag so as not to lose any sample – this achieves a representative sample from top to bottom through the entire bag. The vast majority of samples are dry sampled.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	Sampling technique is appropriate for the sample types and stage of the project.

	Quality control procedures adopted for all sub-sampling stages to maximize representivity of samples.	QAQC procedures involve the use of certified standards every 20th sample.
	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.	A field duplicate is taken every 20th sample.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	The sample size of 2-3kg is considered appropriate to the grain size and style of mineralisation being investigated.
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 procedure adopted by Strategic Metallurgy for particle size analysis involves sieving by screen, with the coarsest screen being 0.5mm and the finest 25µm. Initially each sample is wet screened over 25µm with each respective oversize fraction presented to dry screening over 500, 300, 212, 150, 106, 75, 53, 38 and 25µm. All size fractions are weighed and a representative portion of each removed for analysis. Analyses are done at LabWest using their AF-02 technique: lithium meta/tetraborate fusion with ICP-MS/OES finish. This technique is considered to be a 'total' digest. A suite of 15 REEs – lanthanum (La), cerium (Ce), praseodymium (Pr), neodymium (Nd), samarium (Sm), europium (Eu), gadolinium (Gd), terbium (Tb), dysprosium (Dy), holmium (Ho), erbium (Er), thulium (Tm), ytterbium (Yb), lutetium (Lu), and yttrium (Y) – plus hafnium (Hf), niobium (Nb), lead (Pb), scandium (Sc), tin (Sn), tantalum (Ta), thorium (Th), uranium (U), tungsten (W) and zirconium (Zr), and oxides of aluminium (Al), calcium (Ca), chromium (Cr), iron (Fe), magnesium (Mg), manganese (Mn), sodium (Na), phosphorus (P), silicon (Si) and titanium (Ti), are measured.
	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.	OREAS standards and/or blanks are inserted every 20th sample. Field duplicates are taken every 20th sample. LabWest uses OREAS standards, blanks and sample repeats. Acceptable levels of accuracy have been achieved.

Verification of sampling and assaying	The verification of significant intersections by either independent or alternative company personnel.	Significant intersections have yet to be verified by an independent geological consultant. They have been verified by alternative company geological personnel.
	The use of twinned holes.	Two holes from the 2021 program have been twinned during the 2022 program: AC3 and AC4.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	All data have been entered into Excel spreadsheets.
	Discuss any adjustment to assay data.	No data has been adjusted.
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.	Hole collars are surveyed using a hand-held Garmin Etrex 22x GPS with ±3m accuracy. Northings, eastings and elevations are recorded using the hand-held GPS.
	Specification of the grid system used.	GDA94 z51.
	Quality and adequacy of topographic control.	The Cowalinya project is located in relatively flat terrain. Topographic control is provided by Landgate's Digital Elevation Model over the region which has an expected horizontal accuracy of 10m and vertical accuracy of 2m (both 95% confidence interval).
Data spacing and distribution	Data spacing for reporting of Exploration Results.	Generally, 400m x 200m.
	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.	Data spacing is considered sufficient for this style of mineralisation to establish Inferred Mineral Resources. The mineralisation occurs as extensive, generally flat lying supergene blankets hosted in saprolitic clays.
	Whether sample compositing has been applied.	All holes have been assayed by 2m composite samples, compiled from 1m drilled samples. Additionally, a 1m end-of-hole sample is submitted for a 62 multi-element assay. To date, a total of 4514 samples (including standards, blanks and field duplicates) have been submitted for assay in 2022.
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.	Sampling is likely to be unbiased as vertical holes are intersecting flat lying mineralisation.

	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.	It is unlikely to be biased.
Sample security	The measures taken to ensure sample security.	Experienced field assistants have undertaken the sampling and delivery of samples to the freight company in Esperance, which provides a direct delivery service to LabWest in Perth. The 1m drill samples from which metallurgical composites are derived are secured at HRE's storage facility in Perth.
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

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.	Exploration licence E63/1972 is located 55 km east-north-east of Salmon Gums in Western Australia. It consists of 80 graticular blocks comprising an area of 224 km^2. It is situated on unallocated crown land. The registered holder of the tenement is HRE. Full native title rights have been granted over the tenement and surrounding lands to the Ngadju people, with whom cultural heritage surveys are undertaken in advance of substantial disturbance exploration works.
	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 tenement is in good standing. There are no impediments to operating on the tenement other than requirements of the DMIRS and the Heritage Protection Agreement, all of which are industry standard.
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	AngloGold Ashanti and Great Southern Gold previously worked in the area of E63/1972 exploring for gold mineralisation. Surface geochemical sampling and aircore drilling was undertaken by both companies but no significant gold mineralisation was discovered. Both companies assayed bottom of hole samples for a suite of multi-elements including REEs. Anomalous bedrock REE values were recorded in numerous holes from their drilling. Great Southern Gold also assayed for La and Ce for the entire length of a number of holes. AngloGold Ashanti flew an airborne magnetic/radiometric survey to assist with mapping of buried bedrock lithologies. Buxton Resources and Toro Energy also previously worked in the area of E63/1972 exploring for gold and nickel mineralisation and uranium mineralisation, respectively. Both companies flew time-domain electromagnetic surveys to aid in their exploration targeting. No significant mineralisation was discovered.
Geology	Deposit type, geological setting and style of mineralisation.	The deposit type being investigated is low grade saprolite clay-hosted supergene rare earth mineralisation. This style of supergene rare earth mineralisation is developed over bedrock granitic rock types (granites and granitic gneisses) which contain anomalous levels of REEs. Although low grade, low mining and processing costs can make this type of deposit profitable to exploit.

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 drillholes: - 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.	All relevant data for the drilling is shown in Table 3.
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.	Rare earth assay results have been converted to oxide (REO) values using the following industry standard element-to-stoichiometric oxide conversion factors: La_2O_3 = La x 1.1728 CeO_2 = Ce x 1.2284 Pr_6O_{11} = Pr x 1.2082 Nd_2O_3 = Nd x 1.1664 Sm_2O_3 = Sm x 1.1596 Eu_2O_3 = Eu x 1.1579 Gd_2O_3 = Gd x 1.1526 Tb_4O_7 = Tb x 1.1762 Dy_2O_3 = Dy x 1.1477 Ho_2O_3 = Ho x 1.1455 Er_2O_3 = Er x 1.1435 Tm_2O_3 = Tm x 1.1421 Yb_2O_3 = Yb x 1.1387 Lu_2O_3 = Lu x 1.1371 Y_2O_3 = Y x 1.2699. These oxide values are summed to produce a TREO grade for each assay sample. Minimum grade cut-off used is 300ppm TREO. Maximum internal dilution is 2m @ <300ppm TREO. No high cut-off has been applied. Length weighted averages have been applied to intersections.

	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.	Intervals reporting >1000ppm TREO are reported separately.
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	No metal equivalent values have been used.
Relationship between mineralisation widths and intercept lengths	If the geometry of the mineralisation with respect to the drillhole angle is known, its nature should be reported. 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').	To date the targeted mineralisation appears to occur in flat lying sheets and drill holes have all been drilled at 90° vertically. The down hole length of intercept is effectively a true thickness of mineralisation.
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.	Refer to Figure 3 for a plan view of the Cowalinya drillhole collar locations, including the holes sampled for metallurgical testwork.
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.	Rare earth assays for all size fractions are presented in Table 2 as REE.
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.	Preliminary metallurgical testwork has shown up to 91% TREO recovery from Cowalinya South using 5% hydrochloric acid at 30°C. U and Th values are reported as they are considered to be deleterious elements in rare earth processing. The highest values recorded for these elements on the project to date are 52ppm U_3O_8 and 81ppm ThO_2.
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).	Comprehensive metallurgical testwork is in progress and petrological studies will be completed to identify REE-bearing mineral species.
	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 considers this to be commercially sensitive.