ASX ANNOUNCEMENT
Heavy Rare Earths Limited (ASX: HRE)
31 January 2023

HIGHEST GRADE RARE EARTHS TO DATE AT COWALINYA PROJECT

- **Assays received for additional 49 holes from HRE's rare earth exploration and resource expansion drilling program at Cowalinya**
- **Highest rare earth assay at Cowalinya to date – 7222 ppm TREO**
- **Rare earth grades exceed the Cowalinya resource grade (625 ppm TREO) in thick intervals of up to 22 metres in 35 drill holes. New intervals include:**
  - **AC225: 14 metres @ 3217 ppm TREO (32.5% magnet REOs) from 16 metres**
    - **including 6 metres @ 5848 ppm TREO from 24 metres**
  - **AC221: 10 metres @ 2087 ppm TREO (25.1% magnet REOs) from 17 metres**
    - **including 4 metres @ 4266 ppm TREO from 17 metres**
  - **AC223: 17 metres @ 1069 ppm TREO (26.3% magnet REOs) from 11 metres**
    - **including 4 metres @ 1897 ppm TREO from 23 metres**
  - **AC212: 14 metres @ 1033 ppm TREO (29.0% magnet REOs) from 22 metres**
    - **including 4 metres @ 2040 ppm TREO from 24 metres**
  - **AC244: 7 metres @ 895 ppm TREO (30.9% magnet REOs) from 20 metres**
- **Evidence continues to build for substantial zone of rare earth mineralisation west of Cowalinya South deposit**
- **Rare earth mineralisation not strike constrained in newly discovered western zone**

Heavy Rare Earths Limited (**"HRE"** or **"the Company"**) is pleased to report assays from another 49 air core holes of the now completed 438-hole exploration and resource expansion drilling program at its 100 per cent-owned Cowalinya rare earth project in the Norseman-Esperance region of Western Australia.

This brings the total number of holes reported to 141, nearly one third of all holes drilled during the 2022 campaign.

The latest batch reported by LabWest Minerals Analysis features **the highest-grade assay returned in drilling on the Cowalinya project to date: 0.72% TREO over 2 metres in hole AC225**. Hole AC225 is located 900 metres west of the Cowalinya South resource[1] and sits amongst a cluster of 10 mineralised holes on two adjacent 400 metre-spaced drill lines

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

(6359400N and 6359800N; see Figure 1). This cluster could represent the northern continuation of the 2-kilometre-wide zone of rare earth mineralisation encountered in 11 consecutive holes AC190-AC201 1.2 kilometres to the south *(refer to ASX announcement 3 January 2023)*. The 10 intercepts that define this newly discovered coherent zone of mineralisation are as follows:

- AC211: 17 metes @ 402 ppm TREO from 20 metres
- **AC212: 14 metres @ 1022 ppm TREO from 22 metres**
- AC213: 12 metres @ 748 ppm TREO from 17 metres
- AC214: 5 metres @ 634 ppm TREO from 22 metres
- AC215: 4 metres @ 434 ppm TREO from 31 metres
- AC38 (drilled in 2021 and re-assayed in 2022): 9 metres @ 544 ppm TREO from 12 metres
- **AC223: 17 metres @ 1069 ppm TREO from 11 metres**
- AC224: 12 metres @ 509 ppm TREO from 9 metres
- **AC225: 14 metres @ 3217 ppm TREO from 16 metres (incomplete)**
- AC226: 14 metres @ 473 ppm TREO from 12 metres (incomplete).

Significantly, rare earth mineralisation remains open at depth in holes AC225 and AC226 with assays not yet reported for the 30-35 metre depth interval in hole AC225 and for 26-54 metres in hole AC226 (Figure 2). In addition, the mineralised zones have not been strike constrained with rare earth assays pending for some 90 holes west of 432600E between 6357800N and 6359800N.

To the east of the Cowalinya South deposit, further evidence emerges of a second new zone of mineralisation. The mineralised horizon that grades as high as 895 ppm TREO in holes AC243-AC248 in the north-east corner of HRE's tenement (see Table 1 and Figure 1) has the potential to link with recently reported mineralisation drilled in holes AC178-AC181 800 metres to the south *(refer to ASX announcement 3 January 2023)*.

Assays for the remaining 297 drillholes, including those in the central and northern parts of the tenement, will be reported by the Company as results are received.

Table 1: Mineralised saprolite intervals from all 2022 drilling that exceed the average grade-thickness of the mineralised horizon in the Cowalinya deposit.
Newly reported holes are highlighted at the top.

HOLE NO.	FROM (m)	TO (m)	INTERVAL (m)	TREO (ppm)	Magnet REOs/TREO
AC206	22	34	12	568	23.6%
AC211	20	37	17	402	26.5%
AC212	22	36	14	1033	29.0%
AC213	17	29	12	748	27.4%
AC221	17	27	10	2087	25.1%
AC222	15	35	20	407	22.0%
AC223	11	28	17	1069	26.3%
AC224	9	21	12	509	22.1%
AC225	16	30	14	3217	32.5%
AC226	12	26	14	473	23.5%
AC244	20	27	7	895	30.9%

AC245	14	27	13	500	22.1%
AC246	18	25	7	824	23.7%
AC110	18	29	11	826	26.2%
AC111	16	30	14	712	27.9%
AC112	19	29	10	663	29.2%
AC115	22	29	7	1042	27.1%
AC118	19	35	16	396	22.0%
AC119	16	25	9	673	22.9%
AC122	16	21	5	1258	27.6%
AC124	14	30	16	539	22.5%
AC129	15	25	10	740	22.5%
AC130	18	38	20	726	22.4%
AC134	6	18	12	632	19.4%
AC137	15	29	14	758	26.3%
AC142	14	25	11	768	25.9%
AC165	23	35	12	500	23.5%
AC175	22	44	22	576	21.8%
AC178	28	40	12	563	26.0%
AC179	14	36	22	665	24.8%
AC181	15	26	11	745	27.3%
AC193	20	40	20	448	24.3%
AC194	20	28	8	727	24.1%
AC195	15	30	15	541	21.3%
AC196	19	37	18	631	23.2%
AC198	35	45	10	640	19.8%
AC199	21	35	14	412	25.4%
AC200	20	26	6	1862	25.8%
AC201	22	40	18	710	22.2%
AC204	15	33	18	473	25.7%

TREO = La_2O_3+CeO_2+Pr_6O_{11}+Nd_2O_3+Sm_2O_3+Eu_2O_3+Gd_2O_3+Tb_4O_7+Dy_2O_3+Ho_2O_3+Er_2O_3+Tm_2O_3+Yb_2O_3+Lu_2O_3+Y_2O_3
Magnet REOs = Pr_6O_{11}+Nd_2O_3+Tb_4O_7+Dy_2O_3

-- 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 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 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 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.

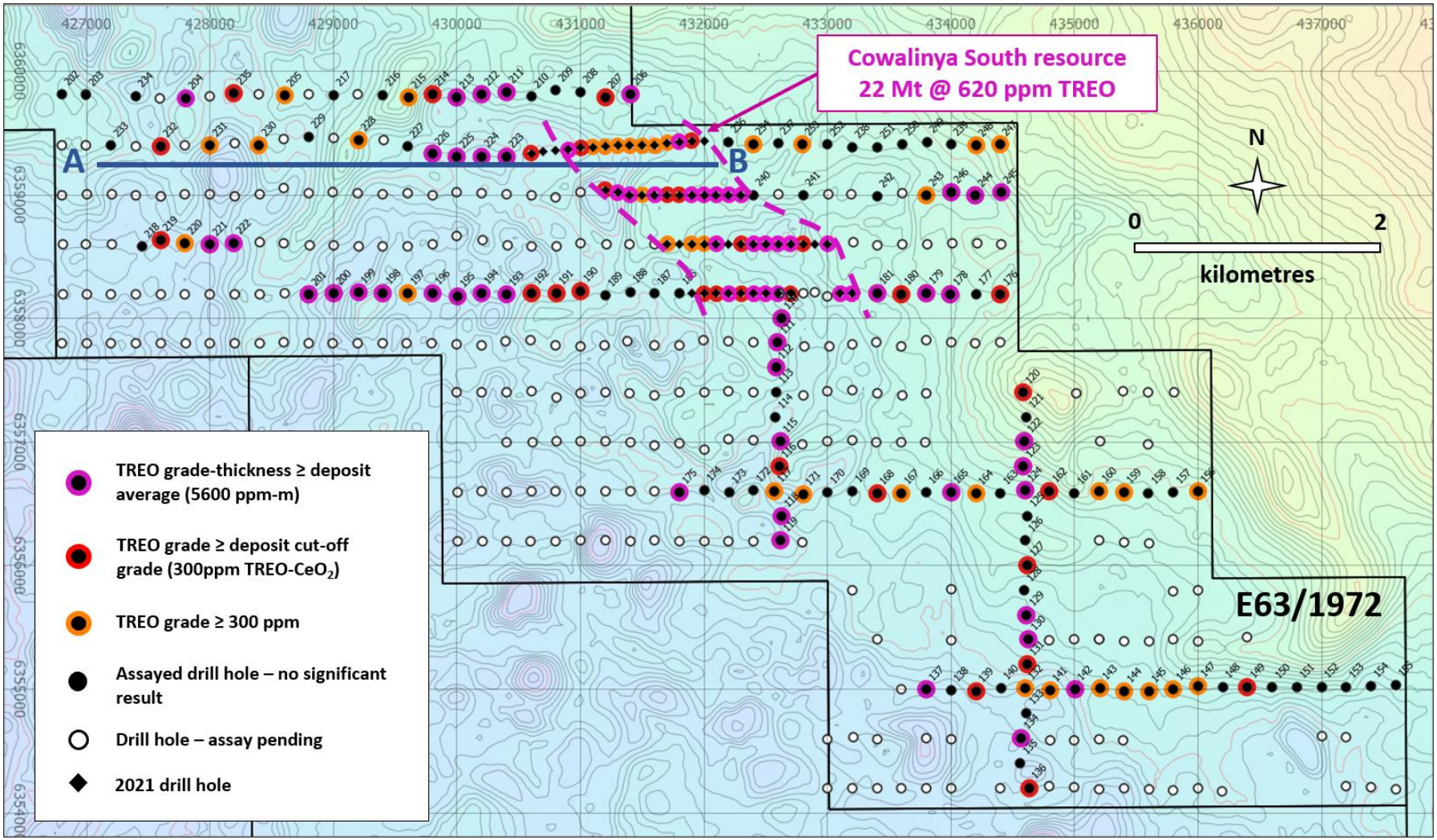

Figure 1: Plan view of Cowalinya air core drilling on E63/1972 showing holes with significant intervals of REE mineralisation.
Background image: Landgate digital elevation model.

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Figure 2: Cross section along drill line A-B (6359400N).
Location of A-B shown on Figure 1.

Table 2: Mineralised saprolite intervals that assay ≥300 ppm TREO.

HOLE NO.	FROM (m)	TO (m)	INTERVAL (m)	TREO (ppm)	TREO-CeO_2 (ppm)	Magnet REOs/TREO
AC206	22	24	2	627	353	23.6%
AC206	24	26	2	478	296	24.6%
AC206	26	28	2	706	427	24.7%
AC206	28	30	2	671	460	23.8%
AC206	30	32	2	447	321	22.4%
AC206	32	34	2	482	331	22.6%
AC207	16	18	2	842	594	29.6%
AC207	18	20	2	880	675	19.5%
AC209	17	19	2	331	178	25.2%
AC210	14	16	2	402	211	25.7%
AC211	20	22	2	497	395	33.3%
AC211	22	24	2	285	240	32.0%
AC211	24	26	2	421	371	30.3%
AC211	26	28	2	424	355	26.4%
AC211	28	30	2	402	303	24.5%
AC211	30	32	2	307	201	22.1%
AC211	32	34	2	334	217	23.4%
AC211	34	36	2	596	447	20.3%
AC211	36	37	1	302	198	25.4%
AC212	22	24	2	687	257	18.0%
AC212	24	26	2	2562	1864	33.0%
AC212	26	28	2	1517	1204	34.9%
AC212	28	30	2	685	447	30.8%
AC212	30	32	2	518	396	33.7%
AC212	32	34	2	623	475	28.9%

AC212	34	36	2	636	432	23.7%
AC213	17	19	2	612	487	29.6%
AC213	19	21	2	494	230	20.1%
AC213	21	23	2	1245	1045	37.3%
AC213	23	25	2	1031	879	33.5%
AC213	25	27	2	459	291	24.4%
AC213	27	29	2	644	482	19.8%
AC214	22	24	2	651	506	22.9%
AC214	24	26	2	652	521	25.5%
AC214	26	27	1	565	439	25.5%
AC215	31	33	2	430	273	23.3%
AC215	33	35	2	438	288	22.7%
AC217	11	13	2	363	187	16.0%
AC219	19	21	2	687	564	33.9%
AC219	21	23	2	532	437	35.6%
AC219	23	25	2	416	342	29.8%
AC220	18	20	2	384	251	25.4%
AC220	20	22	2	344	234	25.2%
AC220	22	24	2	606	368	21.3%
AC220	24	26	2	365	235	25.9%
AC221	17	19	2	5688	3673	27.2%
AC221	19	21	2	2843	1912	25.6%
AC221	21	23	2	609	370	24.4%
AC221	23	25	2	659	416	23.7%
AC221	25	27	2	635	411	24.9%
AC221	31	33	2	661	386	22.8%
AC221	33	35	2	481	293	23.5%
AC221	35	37	2	422	273	23.8%

AC222	15	17	2	366	225	19.8%
AC222	17	19	2	593	333	22.0%
AC222	19	21	2	416	283	23.3%
AC222	21	23	2	555	388	22.6%
AC222	23	25	2	347	263	20.4%
AC222	25	27	2	352	234	21.6%
AC222	27	29	2	312	232	22.1%
AC222	29	31	2	397	255	22.9%
AC222	31	33	2	383	252	23.0%
AC222	33	35	2	352	225	21.9%
AC223	11	13	2	343	292	28.2%
AC223	13	15	2	266	212	28.3%
AC223	15	17	2	342	146	12.9%
AC223	17	19	2	1309	1040	35.5%
AC223	19	21	2	1804	1452	35.0%
AC223	21	23	2	832	614	31.9%
AC223	23	25	2	1731	1104	24.4%
AC223	25	27	2	2062	1235	19.1%
AC223	27	28	1	800	402	17.1%
AC224	9	11	2	378	193	18.1%
AC224	11	13	2	670	350	22.6%
AC224	13	15	2	594	318	23.4%
AC224	15	17	2	376	199	22.0%
AC224	17	19	2	479	263	22.7%
AC224	19	21	2	557	313	23.9%
AC225	16	18	2	1238	894	34.9%
AC225	18	20	2	1449	972	27.6%
AC225	20	22	2	1273	765	22.8%

AC225	22	24	2	1017	474	18.8%
AC225	24	26	2	6211	5461	41.3%
AC225	26	28	2	7222	6682	44.5%
AC225	28	30	2	4110	3826	38.0%
AC226	12	14	2	363	284	27.1%
AC226	14	16	2	197	123	18.4%
AC226	16	18	2	703	261	13.9%
AC226	18	20	2	369	261	25.8%
AC226	20	22	2	400	296	26.9%
AC226	22	24	2	645	478	27.5%
AC226	24	26	2	637	435	25.1%
AC227	19	21	2	329	268	20.6%
AC228	13	15	2	348	300	33.2%
AC228	15	17	2	364	301	37.6%
AC228	17	19	2	324	249	29.3%
AC228	25	27	2	554	346	28.8%
AC230	15	17	2	453	245	26.1%
AC230	17	19	2	389	204	22.0%
AC230	19	21	2	334	180	25.1%
AC230	21	22	1	368	202	25.5%
AC231	16	18	2	452	352	30.2%
AC231	18	20	2	480	301	28.9%
AC231	20	22	2	612	323	23.1%
AC231	22	24	2	301	158	22.1%
AC232	18	20	2	1086	692	31.5%
AC232	20	21	1	1191	795	31.6%
AC235	19	21	2	385	296	31.5%
AC235	21	23	2	464	330	26.7%

AC235	23	25	2	660	510	26.3%
AC235	25	27	2	1045	812	24.1%
AC237	21	22	1	342	172	20.5%
AC238	18	20	2	414	274	21.5%
AC239	35	36	1	354	223	22.8%
AC243	13	15	2	395	295	32.4%
AC243	15	27	2	329	180	22.2%
AC243	27	19	2	547	361	24.7%
AC243	19	21	2	173	96	19.5%
AC243	21	23	2	513	273	21.2%
AC243	23	25	2	351	200	25.2%
AC244	20	22	2	639	489	35.6%
AC244	22	24	2	1584	1462	41.4%
AC244	24	26	2	360	260	18.8%
AC244	26	27	1	1099	645	24.3%
AC245	14	16	2	580	316	18.7%
AC245	16	18	2	364	232	22.4%
AC245	18	20	2	374	287	25.5%
AC245	20	22	2	375	244	21.2%
AC245	22	24	2	258	143	21.6%
AC245	24	26	2	627	338	22.3%
AC245	26	27	1	1347	674	23.7%
AC246	18	20	2	1291	954	31.6%
AC246	20	22	2	595	400	21.2%
AC246	22	24	2	700	521	20.5%
AC246	24	25	1	594	451	19.5%
AC247	5	7	2	349	193	23.9%
AC247	7	9	2	378	198	24.2%

AC247	9	11	2	491	234	18.8%
AC247	11	13	2	326	178	27.5%
AC248	26	28	2	540	301	23.2%
AC248	28	30	2	462	257	22.7%
AC248	30	32	2	400	231	23.3%
AC248	32	34	2	549	318	24.2%
AC249	15	17	2	396	233	23.4%
AC249	21	23	2	464	276	22.5%
AC250	14	16	2	691	389	31.2%
AC251	11	13	2	331	171	10.2%
AC253	13	15	2	373	194	15.2%
AC253	15	17	2	574	285	21.8%
AC253	17	19	2	247	140	20.9%
AC253	19	21	2	303	187	23.1%
AC253	21	23	2	250	150	22.9%
AC253	23	24	1	833	586	28.9%
AC254	11	13	2	391	200	13.8%
AC254	13	15	2	518	281	22.3%

TREO = La_2O_3+CeO_2+Pr_6O_{11}+Nd_2O_3+Sm_2O_3+Eu_2O_3+Gd_2O_3+Tb_4O_7+Dy_2O_3+Ho_2O_3+Er_2O_3+Tm_2O_3+Yb_2O_3+Lu_2O_3+Y_2O_3.
Magnet REOs = Pr_6O_{11}+Nd_2O_3+Tb_4O_7+Dy_2O_3.

Table 3: Cowalinya air core holes for which rare earth assays are reported.

HOLE NO.	NORTHING (m)	EASTING (m)	RL (m)	DIP (°)	TOTAL DEPTH (m)
AC206	6359817	431402	263.7	-90	35
AC207	6359788	431199	264.3	-90	21
AC208	6359833	431000	264.2	-90	24
AC209	6359844	430801	264.6	-90	20
AC210	6359793	430601	263.8	-90	18
AC211	6359832	430400	264.7	-90	38
AC212	6359813	430201	263.4	-90	37
AC213	6359785	430000	261.5	-90	39
AC214	6359810	429799	262.4	-90	28
AC215	6359788	429610	268.0	-90	36
AC216	6359809	439400	267.4	-90	22
AC217	6359808	429000	261.9	-90	23
AC218	6358581	427450	255.3	-90	32
AC219	6358636	427598	255.5	-90	42
AC220	6358608	427798	254.7	-90	41
AC221	6358596	428000	254.4	-90	38
AC222	6358612	428200	256.2	-90	39
AC223	6359308	430398	258.1	-90	29
AC224	6359312	430200	257.4	-90	22
AC225	6359305	430000	259.4	-90	36
AC226	6359329	429799	260.1	-90	55
AC227	6359389	429597	261.6	-90	34
AC228	6359445	429202	264.6	-90	28
AC229	6359466	428798	260.3	-90	20
AC230	6359403	428398	259.8	-90	23
AC231	6359400	428000	257.0	-90	26
AC232	6359395	427600	258.0	-90	28
AC233	6359397	427199	261.7	-90	19
AC234	6359799	427397	256.7	-90	15
AC235	6359819	428196	260.4	-90	27
AC236	6359430	432198	266.5	-90	13
AC237	6359416	432598	266.1	-90	23

AC238	6359387	433200	267.7	-90	23
AC239	6359406	433998	270.5	-90	37
AC240	6359000	432397	264.8	-90	15
AC241	6358999	432801	265.0	-90	27
AC242	6358988	433399	264.6	-90	12
AC243	6358997	433801	268.3	-90	26
AC244	6358993	434197	268.4	-90	28
AC245	6359019	434404	270.6	-90	28
AC246	6359023	434001	268.0	-90	26
AC247	6359406	434394	274.1	-90	22
AC248	6359399	434202	271.5	-90	35
AC249	6359430	433804	269.5	-90	25
AC250	6359409	433604	268.3	-90	20
AC251	6359383	433404	268.5	-90	14
AC252	6359406	433001	267.9	-90	25
AC253	6359409	432797	266.1	-90	25
AC254	6359413	432396	267.6	-90	18

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.	At the end of the current program, a total of 547 vertical aircore holes have been drilled by HRE on the Cowalinya project, 109 holes in 2021 and 438 holes in 2022. Maximum hole depth is 59 metres. 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 2 metre composite sampled with 1 metre samples at end of hole. 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 2-3 kilograms in weight. At LabWest Minerals Analysis (LabWest) in Perth, Western Australia, samples are dried, crushed, split and pulverized with a 0.1-gram 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. Two-metre composites and single metre samples 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 2-3 kilograms 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.	Analyses are done at LabWest using their AF-02S 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 scandium (Sc), thorium (Th) and uranium (U), and oxides of aluminium (Al), calcium (Ca), iron (Fe), magnesium (Mg) and phosphorus (P), 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 have been twinned at Cowalinya: AC4 and AC222.
	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 ±3 metre 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 10 metres and vertical accuracy of 2 metres (both 95% confidence interval).
Data spacing and distribution	Data spacing for reporting of Exploration Results.	Generally 400 metres x 200 metres.
	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 2 metre composite samples, compiled from 1 metre drilled samples. Additionally, a 1 metre end-of-hole sample is submitted for a 63 multi-element assay. A total of 618 samples (including standards, blanks and field duplicates) have been submitted for assay.
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.
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 kilometres 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 Heavy Rare Earths Limited (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.	All REE 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 300 ppm TREO. Maximum internal dilution is 2 metres @ <300 ppm 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 >1000 ppm 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 (e.g., '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 1 for plan view of the Cowalinya drillhole collar locations. Refer to Figure 2 for drillhole section 6359400N.
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.	Summary assays for all mineralised intervals ≥300 ppm TREO are presented in Table 2.
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.	Particle size analysis on mineralised saprolite shows that, on average: - 78.5% of REEs are confined to the -25 µm size fraction - the -25 µm fraction comprises 37.2% of the bulk saprolite feed mass - the REE grade of the -25 µm fraction is 116% higher than the bulk saprolite feed grade. Preliminary leach 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 55 ppm U_3O_8 and 81 ppm 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.	Potential extensions to the Cowalinya South deposit are indicated in Figure 1.