First Mixed Rare Earth Carbonate (MREC) Produced for Caldeira REE Project

First Caldeira MREC delivered using the low-Capex, low-Opex, standard AMSUL wash process at atmospheric pressure and temperature at pH 4.0

Highlights

- ANSTO successfully "Close the Gap" on impurity removal and precipitation losses from historic Caldeira MREC testwork on first pass testwork – further optimisation continues.
- New testwork delivers significantly improved recoveries of key basket elements including:
  - **42% increase to Praseodymium (Pr) recoveries upgraded to 74%.**
  - **14% increase to Neodymium (Nd) recoveries upgraded to 73%.**
  - **29% increase to Dysprosium (Dy) recoveries upgraded to 50%.**
  - **12% increase to Terbium (Tb) recoveries upgraded to 53%.**
- MREC concentration at **57.3%**Total Rare Earth Oxides (**TREO**)[1] and high Magnetic Rare Earth Oxide (**MREO**)[2] to TREO ratio of **31.5%.**
- MREO content of **31.5%,** delivers **94% of the basket value**.
- **8% increase** of recovered TREO per tonne of ROM feed for increased cashflow and lower OPEX.
- Low levels of impurities reported to the MREC.

Meteoric Resources NL (**ASX: MEI**) ('**Meteoric**' or '**the Company**') is pleased to provide an update on initial results of the metallurgical test work being undertaken on its 100%-owned Caldeira Rare Earth Ionic Clay Project, in the state of Minas Gerais, Brazil.

Meteoric has engaged Australia's leading laboratory in Rare Earth Elements (REE) in Ionic clay leaching – Australian Nuclear Science and Technology Organisation (ANSTO) to establish metallurgical recoveries and assist with process flowsheet development. ANSTO has improved on previous testwork and produced the Caldeira Project's first saleable MREC product that is low in impurities and represents significantly improved metallurgical recoveries.

Chief Executive Officer, Nick Holthouse said,

"Excellent results from the MEI Metallurgy and ANSTO teams that make already impressive recoveries even better.

For the Caldeira Project, this is another significant step forward as we continue to advance metallurgical understanding and derisk the processing flowsheet. For potential offtakes, the production of an unoptimised, yet high quality MREC validates the AMSUL leach flowsheet and signals the availability of a high quality and saleable product to the offtake market.

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[1] TREO = $La_2O_3 + CeO_2 + Pr_6O_{11} + Nd_2O_3 + Sm_2O_3 + Eu_2O_3 + Gd_2O_3 + Tb_4O_7 + Dy_2O_3 + Ho_2O_3 + Er_2O_3 + Tm_2O_3 + Yb_2O_3 + Lu_2O_3 + Y_2O_3$

[2] MREO = $Pr_6O_{11} + Nd_2O_3 + Tb_4O_7 + Dy_2O_3$

Simply put, this equates to more recovered TREO, more NdPr and more DyTb, which in turn equates to increased revenue per ore feed tonne. Successful rare earth projects need to be resilient to low commodity pricing cycles as is currently being experienced and these improved recoveries bode well for the Caldeira Project to be at the lower end of the operating cost curve.

More good news to follow in the coming months as we continue to derisk the Caldeira Project, with important updates around the onboarding of key project personnel, resource updates, engineering study updates, permitting updates and ongoing off-resource exploration activities."

Executive Chairman Dr Andrew Tunks said,

"Combining this excellent metallurgical result with the world's highest grade Ionic clay REE project puts us first and foremost within the current crop of companies exploring and developing clay hosted rare earth deposits.

The rare earth recoveries we have published today are class leading and the process is simple and cheap to operate. The metallurgy reported here is complete recoveries to a saleable product and not simply leach recoveries as we have previously reported. In recent weeks, a significant worldwide shortage of acid has been reported but this process was completed in only mildly acidic conditions at pH 4.0. For perspective, this is similar to the acidity of beer or black coffee.

Based on the MREC samples outlined we can immediately engage with potential offtake partners around our product and the low levels of impurities achieved on our first attempt indicate the potential for further improvement as we continue to optimise the process."

ANSTO Testwork

A representative master composite from Capão de Mel (**CDM**) has been compiled that best reflects the average ore grades and chemistry over the first six years of the proposed high-grade mining strategy for the Capão de Mel license. This sample is currently undergoing leaching, impurity removal and MREC precipitate optimisation work at ANSTO, as previously reported in ASX announcements on the 26th June, 26th September and 8th December 2023, culminating in a continuous piloting phase towards mid-2024.

First Production of MREC at ANSTO

In parallel to this work, Meteoric has produced its first Mixed Rare Earth Carbonate (MREC) product at ANSTO. Within the MREC, the contained Rare Earth Oxides (REO) have a grade of 57.3% and a very high purity level of 98%. The remaining 2% consist of impurities as shown in Table 3.

The test work was undertaken from a 25kg subsample of the 250kg CDM master composite sample and through the AMSUL extraction, impurity removal and carbonate precipitation process has generated approximately 50 grams of a high quality MREC product as shown in Figures 2, 3 and 4 below.

Figure 1: *MREC precipitation tank and setup at ANSTO.*

Figure 2*: WET MREC filter cake product.*

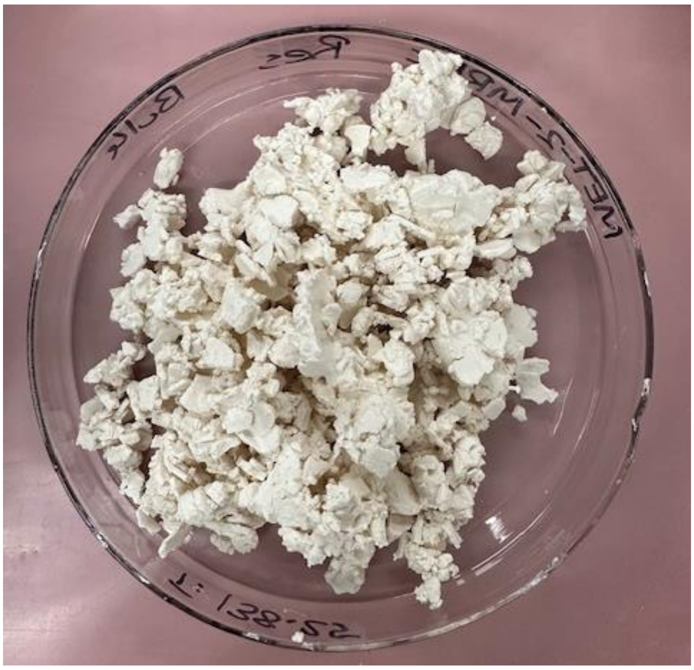

Figure 3*: Wet MREC after re-pulp and displacement wash.*

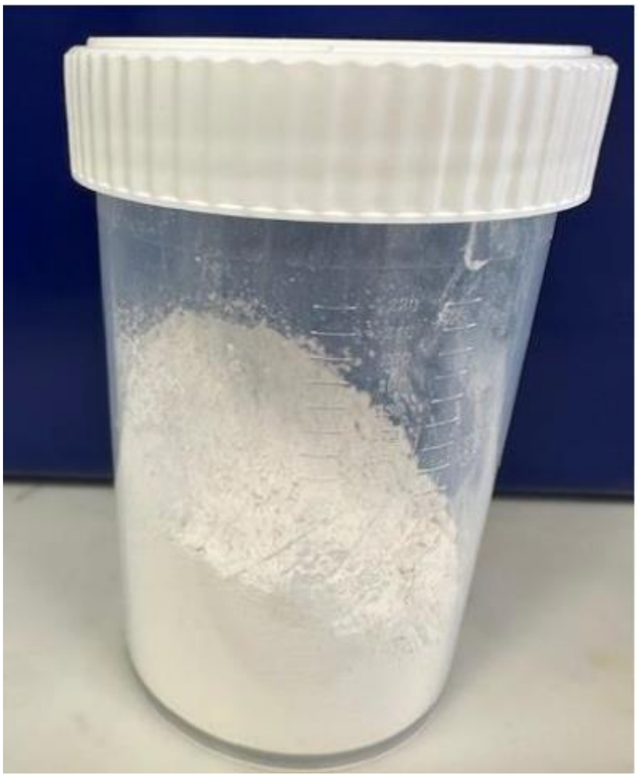

Figure 4: *Dry MREC final product.*

New Recoveries and Comparison to Previous work

Both JOGMEC (historic) and Meteoric composites underwent a standard AMSUL wash at pH 4.0, 0.5M ammonium sulphate, ambient temperature and 30 minutes leaching time. However, under the ANSTO regime the pH modifier used in the impurity removal and rare earth precipitation steps were different to those used with the JOGMEC programme.

The impurity removal and precipitation to MREC steps were the source of most of the losses experienced in the previous test work phase and where Meteoric has experienced significant gains, the impacts of which can be seen below in Table 1. Improved recoveries lead directly to additional recovered TREO kilograms per tonne of ROM feed and the impact of this can be seen below in Figure 6.

***Table 1**: Capaõ do Mel Composite Recoveries to MREC*

Rare Earth Oxide	JOGMEC Recoveries	MEI Recoveries	% Difference
La_2O_3	62	76	24
CeO2	4	<1	-92
Pr6O11	**52**	**74**	**42**
Nd2O3	**64**	**73**	**14**
Sm2O3	52	65	27
Eu2O3	54	61	14
Gd2O3	56	64	15
Tb4O7	**47**	**53**	**12**
Dy2O3	**39**	**50**	**29**
Ho2O3	26	43	63
Er2O3	29	37	28
Tm2O3	25	33	32
Yb2O3	18	25	42
Lu2O3	21	24	14
Y2O3	37	50	35
TREO	**42**	**53**	**28**
Magnets	**60**	**73**	**21**

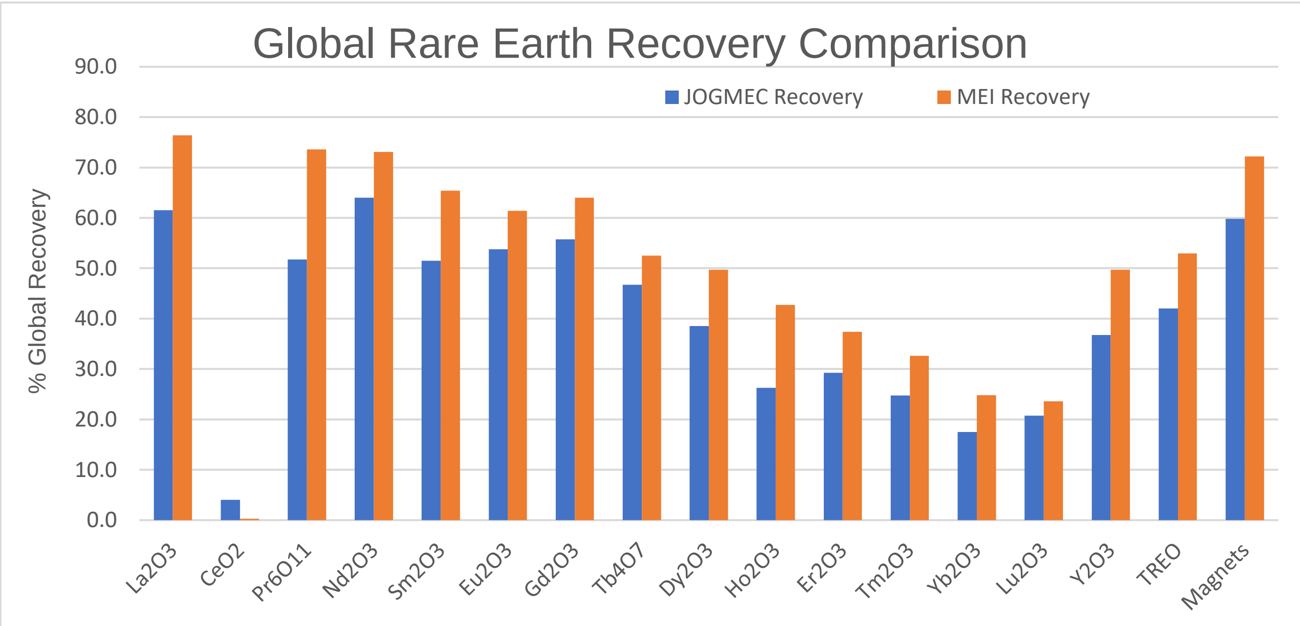

***Figure 5**: Capaõ do Mel composite sample recovery comparison between historic and new test work.*

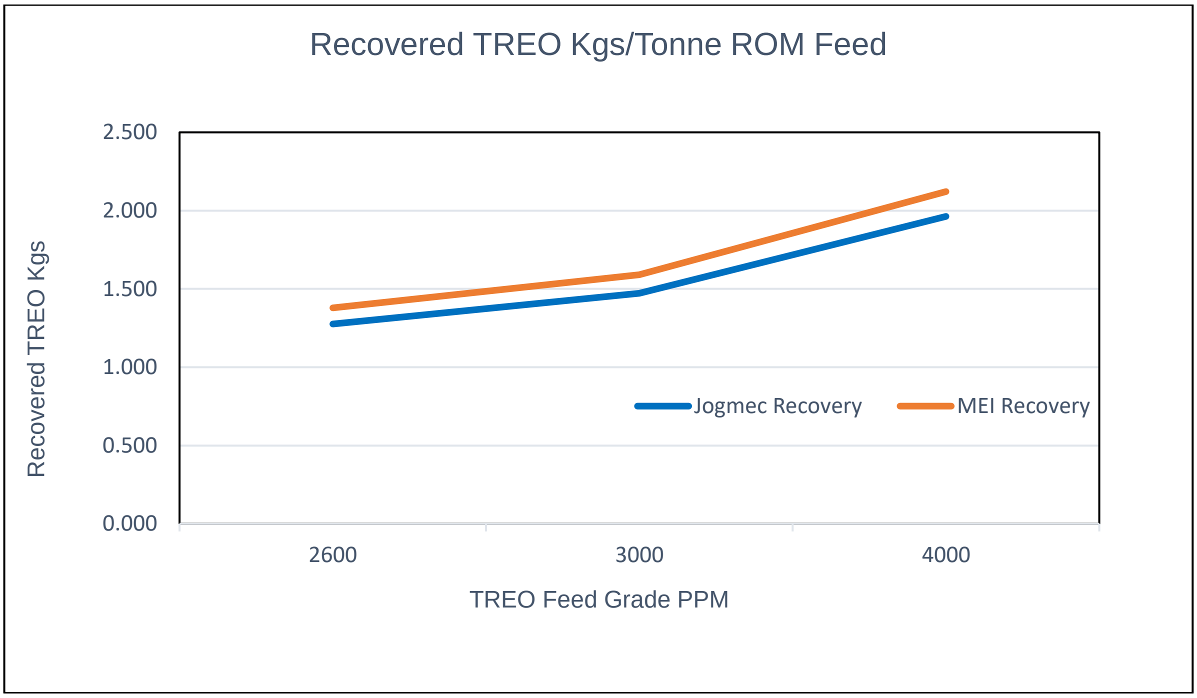

***Figure 6**: Recovered kilograms TREO per tonne ROM feed. New results significantly impact increased REE production rates.*

***Table 2**: Rare earth distribution in the MREC.*

Rare Earth Oxide	% Distribution
La_2O_3	57.6
CeO_2	1.4
Pr_6O_{11}	8.6
$Nd2_2O_3$	22.0
Sm_2O_3	2.4
Eu_2O_3	0.6
Gd_2O_3	1.5
Tb_4O_7	0.2
Dy_2O_3	0.8
Ho_2O_3	0.1
Er_2O_3	0.3
Tm_2O_3	0.01
Yb_2O_3	0.1
Lu_2O_3	0.01
Y_2O_3	4.5
Total	**100.0**

__Table 3__: Weight % of impurities in MREC expressed as oxides.

Impurity	Wt %
Calcium (Ca)	0.55
Aluminium (Al)	0.36
Nickel (Ni)	0.29
Zinc (Zn)	0.19
Silica (Si)	0.14
Iron (Fe)	0.11
Uranium(U)	0.0057
Thorium (Th)	0.00004
Others	0.4
TOTAL	**2.0%**

Within the MREC, the Rare Earth Oxides (REO) have a contained grade of 57.3% and have a very high purity level of 98%. The remaining 2% consist of impurities as shown in Table 3.

The impurities compare well with similar saleable MREC products developed by other projects. While unoptimised, this bodes well for further reduction of impurities over time with additional test work programmes.

Master Composite Details

The 250kg Capão de Mel master composite was assembled from ten diamond drill holes using 47 interval composites (ranging from 2.9 m – 4.4m), shown in Table 4 and Figure 7.

The assayed head grade for the master composite of 4,439 ppm TREO was in good agreement with the calculated head grade of 4,299 ppm estimated from the individual interval composites used to make the master composite. The calculated weighted average recovery to leach from the individual interval composites used is estimated from the diagnostic leaches at 74% for the MREE.

The composite was assembled to best match the proposed high grade feed strategy from the initial six-year mine plan. All intervals in the diamond drill holes were selected except for CDMDD001 11.3-14m and CDMDD002 15.2-18.5m, essentially because of a lack of samples for those intervals. In addition, intervals were not selected where magnet recovery was less than 30% leach extractions, typically occurring at the bottom of the clay profile and would therefore follow a natural mining sequence.

The JOGMEC bulk sample reported in the ASX announcement on the 20th December 2022 was a higher-grade sample at 4,928ppm TREO and was constructed from 184 x 1m intervals from 41 auger holes across CDM, however no consideration was given to a mine plan at that time.

Table 4: *CDM Master composite plan*

Drill Hole	Interval			Assayed Head (ppm)		Lithology	% Leach E				
	From	To	m	TREO	MREE		Pr %	Nd %	Tb %	Dy %	Magnets %
CDMDD001	2.2	5.5	3.3	7,418	1,631	Clay	67	69	44	36	67
	5.5	8.5	3.0	5,021	1,063	Clay	49	52	30	28	50
	8.5	11.3	2.8	6,378	1,380	Clay	64	66	51	47	65
	14.0	17.5	3.5	5,549	1,106	Clay	67	70	56	54	69
CDMDD002	2.0	5.0	3.0	2,639	344	Clay	43	44	24	24	43
	5.0	8.0	3.0	2,940	673	Clay	44	45	19	14	43
	8.0	11.0	3.0	5,596	1,415	Clay	70	77	49	48	74
	11.0	15.2	4.2	5,908	1,711	Clay	77	84	62	58	81
CDMDD004	2.6	6.0	3.4	7,296	2,235	Clay	83	89	66	61	87
	6.0	9.0	3.0	10,468	2,930	Clay	86	92	72	71	90
	9.0	12.0	3.0	7,649	2,220	Transition 1	83	90	69	68	87
	12.0	16.4	4.4	3,587	795	Transition 1	29	31	28	26	30
CDMDD005	2.0	5.0	3.0	9,621	2,316	Clay	49	53	41	40	52
CDMDD006	3.0	6.0	3.0	2,545	295	Clay	37	38	13	10	36
	6.0	7.9	1.9	2,920	332	Clay	47	46	10	10	42
	7.9	10.8	2.8	2,947	381	Clay	82	79	27	23	76
	10.8	13.0	2.3	1,880	313	Clay	65	64	23	19	62
	13.0	15.0	2.0	1,905	397	Clay	76	74	39	35	73
	15.0	19.0	4.0	2,956	454	Transition 1	51	50	14	11	48
	19.0	23.0	4.0	2,927	477	Transition 1	44	43	15	10	41
	23.0	27.0	4.0	3,317	708	Transition 1	44	43	34	27	43
	27.0	30.0	3.0	2,330	502	Transition 1	36	36	18	19	35
CDMDD007	3.0	5.8	2.8	3,615	680	Clay	67	67	49	44	66
	5.8	8.0	2.2	3,200	492	Clay	65	65	50	45	64
	8.0	11.0	3.0	1,865	237	Clay	52	53	34	26	52
	11.0	14.0	3.0	1,825	239	Clay	57	61	32	30	59
	14.0	17.0	3.0	2,526	349	Clay	54	57	32	30	55
	17.0	20.0	3.0	2,482	356	Clay	48	49	28	26	47
	20.0	23.0	3.0	2,158	242	Clay	52	54	28	22	51
CDMDD008	1.7	4.0	2.4	4,778	741	Clay	63	63	39	39	62
	4.0	7.0	3.0	5,460	1,333	Clay	70	76	63	64	74
	7.0	10.0	3.0	2,214	414	Clay	63	67	62	65	65
CDMDD009	2.3	4.8	2.5	7,431	1,542	Clay	72	75	59	57	73
	4.8	8.0	3.2	3,519	705	Clay	74	77	55	55	75
	8.0	11.0	3.0	1,875	374	Clay	68	77	38	36	71
	11.0	14.0	3.0	1,730	256	Transition 3	31	34	18	10	32
CDMDD010	2.4	6.0	3.6	4,202	848	Clay	77	80	47	43	78
	6.0	9.0	3.0	5,180	545	Clay	62	69	42	40	66
	9.0	11.8	2.8	2,728	349	Clay	57	65	28	20	59
	11.8	15.0	3.3	3,371	262	Clay	55	57	10	6	50
	15.0	19.3	4.3	3,516	383	Clay	51	53	18	12	50
	19.3	22.8	3.6	2,796	475	Transition 3	38	41	15	12	39
CDMDD0011	2.0	5.0	3.0	13,351	3,888	Clay	95	95	88	92	95
	5.0	8.5	3.5	13,202	3,566	Clay	88	95	84	89	95
	8.5	11.0	2.5	5,519	1,484	Clay	92	95	84	87	95
	11.0	13.7	2.7	4,752	1,192	Clay	84	90	74	79	95
	13.7	18.0	4.4	4,486	919	Transition 3	51	57	50	48	55
Weighted average				4,299	867		72	76	54	51	74

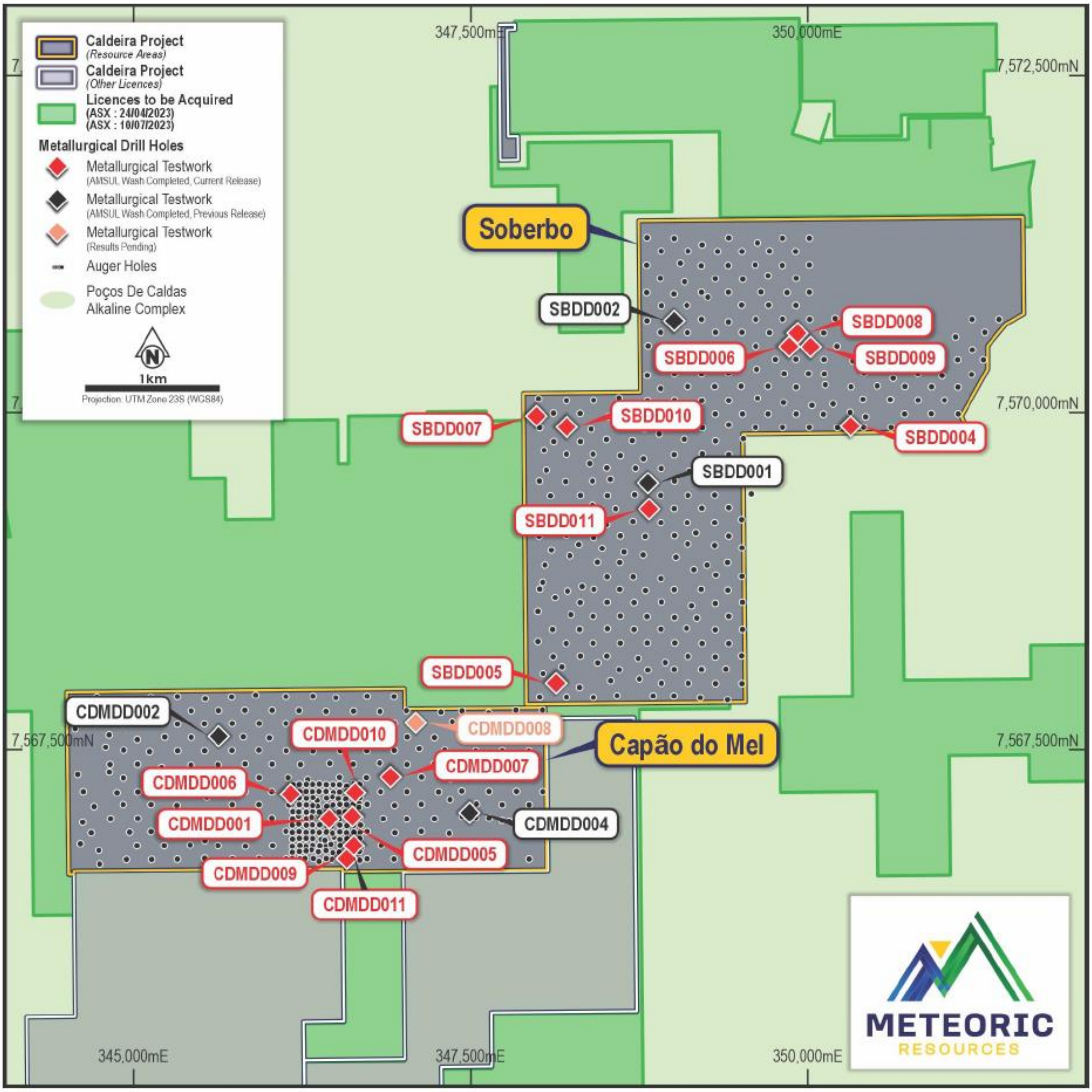

Figure 7: *Composite sample location plan.*

Next Steps

Leaching Program

A master composite of the CDM tenement representative of the LOM was constructed from all of the metallurgical drill holes that returned satisfactory metallurgical performance as shown in the CDM composite plan. The leaching program is well advanced in evaluating different lixiviants, lixiviant concentration, % solids and pH. Some of the optimised leach parameters have been used to make the first batch of MREC, however further optimisation is still required.

Optimisation of Impurity Removal

Some initial impurity removal sighter test profiling has been completed at different pH points to understand the optimum pH at which impurity removal is maximised whilst minimising the coprecipitation of rare earths. The first batch of MREC was produced trying to focus on product quality as a priority whilst recovery was of secondary importance. Once the leaching programme has identified the optimum parameters, further impurity removal optimisation will be performed to improve the rejection of deleterious elements such as aluminium, iron, silica, calcium, thorium and uranium, whilst maximising the recovery of the rare earths. This test work will aim to evaluate impurity removal conditions including pH, alkali type, temperature, residence time, % solids and solid liquid separation performance.

Rare Earth Precipitation

Further optimisation is still required once the upstream unit processes have been optimised sequentially.

Following the impurity removal program, rare earth precipitation tests will be performed to further improve the current MREC product. The test work will evaluate the type of precipitation agent, pH, temperature, residence time, % solids and solid liquid separation performance.

Schedule

The ANSTO bench top metallurgical scope is now approximately 50% complete. It will run until May 2024, culminating in a continuous pilot plant trial at ANSTO. The mini pilot will process a Capão de Mel ore feed that is representative of the first 5-6 years of mining and obtained from recent infill drilling samples.

About ANSTO

ANSTO has extensive experience in rare earth process development with several rare earth experts in its team having a combined ~30 years' experience dating back to early work on the Mt Weld Deposit (monazite mineralogy) in Western Australia in the early 1990s. Over the past 10-15 years, ANSTO has worked on numerous rare earth projects covering process development, piloting (Peak Resources, Arafura Rare Earths, ASM, Northern Minerals, Hastings Technology Metals, Mkango Resources, Iluka Resources) and providing expert advice.

Over the past five years, ANSTO's expertise has shifted to an increasing number of ionic adsorption and clay-hosted REE projects (>15 currently in progress), including the more advanced Aclara (Chile), Ionic Rare Earths (Uganda) and Australian Rare Earths (South Australia) projects. Work on these projects has included leaching/desorption, solid/liquid separation, impurity removal and rare earth precipitation, mineralogy, radionuclide deportment and removal, process modelling and mini-plant circuit operations.

Background Information on Ionic Clay REE Deposits

Geologically, the Caldeira REE Project is classified as an Ionic Adsorption Clay REE Deposit, which is characterised by the following key criteria:

- Formed in the saprolite (clay) zone of the weathering profile.
- The majority of the REE's are absorbed onto clay minerals and accumulate in the clay zone of the regolith profile.
- Adsorbed REEs are ionically attached to the clay minerals and can be liberated by washing in a weak solution of ammonium sulphate (or other metal salt) at near neutral pH.
- Ionic Adsorption Clay REE deposits are typically found near surface, often at depths of less than 10m.
- The U and Th levels in Ionic Clay REE deposits are typically low, as these elements are less soluble in ground water and are not preferentially adsorbed by clays during the weathering and leaching processes.

Mineral Resource Statement – Caldeira Project (ASX:MEI 1/5/2023)

Table 5: *Caldeira REE Project 2023 Mineral Resource Estimate– by licence at 1,000ppm TREO cut-off*

Licence	JORC Category	Tonnes Mt	TREO ppm	Pr_6O_{11} ppm	Nd_2O_3 ppm	Tb_4O_7 ppm	Dy_2O_3 ppm	MREO ppm	MREO/TREO %
Capão do Mel	Inferred	68	2,692	148	399	4	22	572	21.3%
Cupim Vermelho Notre	Inferred	104	2,485	152	472	5	26	655	26.4%
Dona Maria 1 & 2	Inferred	94	2,320	135	404	5	25	569	24.5%
Figueira	Inferred	50	2,811	135	377	5	26	542	19.3%
Soberbo	Inferred	92	2,948	190	537	6	27	759	25.8%
Total	**Inferred**	**409**	**2,626**	**154**	**447**	**5**	**25**	**631**	**24.0%**

This release has been approved by the Board of Meteoric Resources NL.

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The information in this announcement that relates to exploration results is based on information reviewed, collated and fairly represented by Dr Carvalho a Competent Person and a Member of the Australasian Institute of Mining and Metallurgy and a consultant to Meteoric Resources NL. Dr. Carvalho has sufficient experience relevant to the style of mineralisation and type of deposit under consideration, and to the activity which has been undertaken, to qualify as a Competent Person as defined in the 2012 Edition of the Joint Ore Reserves Committee (JORC) Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Dr. Carvalho consents to the inclusion in this report of the matters based on this information in the form and context in which it appears.

The information in this announcement that relates to the metallurgical results were compiled by Tony Hadley who is a permanent employee of Meteroic resources and is a Member of the Australian Institute of Mining and Metallurgy (AusIMM). Mr. Hadley has sufficient experience that is relevant to the metallurgical testwork which was undertaken to qualify as a Competent Person as defined in the 2012 JORC Code. Mr. Hadley consents to the inclusion in this announcement of the matters based on the information in the form and context in which it appears.

The information in this release that relates to Mineral Resource Estimates was prepared by BNA Mining Solutions and released on the ASX platform on 1 May 2023. The Company confirms that it is not aware of any new information or data that materially affects the Mineral Resources in this publication. The Company confirms that all material assumptions and technical parameters underpinning the estimates continue to apply and have not materially changed. The Company confirms that the form and context in which the BNA Mining Solutions findings are presented have not been materially modified.

APPENDIX 1

Collar Table of holes referred to in this release previously reported 30 January 2024.

Target	Hole_ID	East	North	RL	Hole Depth
Capão do Mel	CDMDD0001	346439	7566998	1342	50.00
Capão do Mel	CDMDD0002	345621	7567611	1339	50.00
Capão do Mel	CDMDD0004	347477	7567043	1326	50.00
Capão do Mel	CDMDD0005	346611	7567015	1316	9.78
Capão do Mel	CDMDD0006	346155	7567180	1250	46.35
Capão do Mel	CDMDD0007	346893	7567307	1288	39.44
Capão do Mel	CDMDD0008	347079	7567709	1272	40.58
Capão do Mel	CDMDD0009	346570	7566704	1277	29.61
Capão do Mel	CDMDD0010	346631	7567194	1308	57.75
Capão do Mel	CDMDD0011	346621	7566802	1296	25.95

APPENDIX 2 - JORC Code, 2012 Edition – Table 1

Section 1 Sampling Techniques and Data

Criteria	Commentary
Sampling techniques	▪ The drilling utilises a conventional wireline diamond drill rig (Mach 1200) with HQ diameter. ▪ The core is collected in core trays with depth markers at the end of each drill run (blocks). ▪ In the saprolite zone the core is halved with a metal spatula and bagged in plastic bags, the fresh rock was halved by a powered saw and bagged.
Drilling techniques	▪ The drilling uses a diamond drill rig (Mach 1200) with HQ diameter using the wireline technique. ▪ Each drill site was cleaned and levelled with a backhoe loader. ▪ All holes are drilled vertical. ▪ Drilling is stopped once intersection with unweathered basement intrusives is confirmed = +5m of fresh rock.
Drill sample recovery	▪ Core recoveries were measured after each drill run, comparing length of core recovered vs. drill depth. Overall Core recoveries are 92.5%, achieving 95% in the saprolite target horizon, 89% in the transitional rock (fresh fragments in clay), and 92.5% in fresh rock.
Logging	▪ The geology was described in a core facility by geologist - logging focused on the soil (humic) horizon, saprolite and fresh rock boundaries. Depth of geological boundaries are honoured and described with downhole depth – not meter by meter. ▪ Other important data parameters collected include: grainsize, texture and colour, which can help to identify the parent rock before weathering. ▪ All drilled holes have a digital photographic record. The log is stored in Microsoft Excel template with inbuilt validation tables and pick list to avoid data entry errors. ▪ All geological data are imported into a Microsoft Access database and validated.
Sub-sampling techniques and sample preparation	▪ Metallurgical samples consist of ¾ of the drill core, except for the CDMDD001 where the entire core was sampled due the drill core being NQ. ▪ The samples were generally composited into 3m composites, however on occasions the composites were reduced/extended based on geologic boundaries (clay zone v transition v fresh rock). Composites ranged from 2.0m – 4.6m. ▪ The top 2m of material was excluded from shipments to avoid problems importing organic material within the soils into Australia. Fresh rock was also excluded from the testwork as it is clearly not related to ionic clay mineralisation. ▪ The metallurgical samples were dried at 60 degrees Celsius and stage crushed to –1mm. A 25 kg sub sample from the 250 kg master composite was used in the bulk slurry leach at 35% solids, using 0.5M ammonium sulphate solution, ambient temperature and 30 minutes leaching time at pH 4.0. The % extractions are calculated using the head and the liqour assays.
Quality of assay data and laboratory tests	▪ A mixture of ANSTO and ALS methods were used for the solids. The liquors were measured by ALS Brisbane. ▪ The MREC product was measured by the three techniques detailed below but also by ANSTO acid digest. ▪ **Bulk Leach** Head and Leach solids by ALS ME-MS81and ANSTO XRF Liquors by ALS ME-MS02 for REEs (+Th, U, Sc) and ME-ICP02 for gangue ▪ **Bulk Impurity Removal** Residue by XRF and lithium tetraborate fusion digest with ICPMS/ICPOES finish, both at ANSTO

	Liquors by ALS ME-ICP02 and ME-MS02 ▪ **Bulk MREC** MREC product – analysed at ALS by ME-MS81, ME-4ACD81 and ME-XRF30 and validated at ANSTO by acid digest with finish by ICPMS/ICPOES Liquors by ME-ICP02 and ME-MS02 ▪ All samples were assayed by three ALS methods: ○ ME-MS81 – Lithium borate fusion digest with ICP-MS finish for Ba, Ce, Cr, Cs, Dy, Er, Eu, Ga, Gd, Hf, Ho, La, Lu, Nb, Nd, Pr, Rb, Sc, Sm, Sn, Sr, Ta, Tb, Th, Ti, Tm, U, V, W, Y, Yb, Zr ○ ME-4ACD81 – 4-Acid digestion with ICP-MS finish for Ag, Au, Cd, Co, Cu, Li, Mo, Ni, Pb, Sc, Tl, Zn ○ ME-XRF30 – X-Ray Fluorescence (XRF) for Al_2O_3, BaO, CaO, Cr_2O_3, Fe_2O_3, K_2O, MgO, MnO, Na_2O, P_2O_5, SiO_2, SrO, TiO_2, LOI (ME-GRA05). ▪ Laboratory inserted its own QA/QC controls, with standards, blanks and duplicates to assure the quality and standards of the lab. ▪ The QA/QC data includes a duplicate sample every 20 samples, and a blank and standard sample in each 30 samples. ▪ All liquor samples were sent to ALS in Brisbane for ICP-MS analysis (ME-MS02) for La, Ce, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu, Y, Th, U and for ICP-AES analysis (ME-ICP02) for Al, Ca, Fe, K, Mg, Mn, Na, S, Si and Zn.
Verification of sampling and assaying	▪ All data is in digital format and stored in a cloud server, also the company maintains a backup in a desktop computer to assure that the data could be restored if any problem occurs with the cloud or with the desktop server. ▪ Raw assays are received as Elemental data (ppm) from ALS laboratories. The Elemental data is converted to Element Oxide data using the following conversion factors:

	(conversion table below)

Symbol	Conversion Factor	Oxide Species
La	1.1728	La_2O_3
Ce	1.2284	CeO_2
Pr	1.2082	Pr_6O_{11}
Nd	1.1664	Nd_2O_3
Sm	1.1596	Sm_2O_3
Eu	1.1579	Eu_2O_3
Gd	1.1526	Gd_2O_3
Tb	1.1762	Tb_4O_7
Dy	1.1477	Dy_2O_3
Ho	1.1455	Ho_2O_3
Er	1.1435	Er_2O_3
Tm	1.1421	Tm_2O_3
Yb	1.1387	Yb_2O_3
Lu	1.1372	Lu_2O_3
Y	1.2699	Y_2O_3
Sc	1.5338	Sc_2O_3

Location of data points	▪ All collars were surveyed in SIRGAS 2000, 23S spindle UTM grid system. The SIRGAS 2000 is a South American Datum which is very similar with the WGS 84. ▪ At present the survey of collars was made with a handheld GPS. Prior to inclusion in any resource estimation work the holes will be surveyed by a RTK GPS. ▪ The Topographic data was collected by Nortear Topografia e Projectos Ltda., planialtimetric topographic surveyors. The GPS South Galaxy G1 RTK GNSS was used, capable of carrying out data surveys and kinematic locations in real time (RTK-Real Time Kinematic), consisting of two GNSS receivers, a BASE and a ROVER. The horizontal accuracy, in RTK, is 8mm + 1ppm, and vertical 15mm + 1ppm. The coordinates were provided in the following formats: Sirgas 2000 datum, and UTM WGS 84 datum - georeferenced to spindle 23S. ▪ For the generation of planialtimetric maps (DEM), drones were used with control points in the field (mainly in a region with more dense vegetation), in addition to the auger drillholes.an employed company with drone imaging and RTK GPS on auger drill holes.
Data spacing and distribution	▪ Collar plan displayed in the body of the release. ▪ No new resources are reported.
Orientation of data in relation to geological structure	▪ The mineralisation is flat lying and occurs within the saprolite/clay zone of a deeply developed regolith (reflecting topography and weathering). Vertical sampling from the diamond holes is appropriate. ▪ Diamond drill core is acknowledged to deliver uncontaminated samples, as such no sampling bias is believed to be introduced.
Sample security	▪ Samples are removed from the field and transported back to a Core shed to be logged and sampled as reported before. ▪ Composited samples were given unique identifiers and placed in plastic bags, before being packed into plastic drums suitable for export via airfreight to ANSTO in Australia. ▪ Export drums were shipped via FedEx Airfreight. Samples were collected from Meteoric core shed in Pocos de Caldas and tracked online to their destination in Sydney, Australia (ANSTO).

Audits or reviews	▪ MEI conducted a review of assay results as part of its Due Diligence prior to acquiring the project. Approximately 5% of all stored coarse rejects from auger drilling were resampled and submitted to two (2) labs: SGS Geosol and ALS Laboratories. Results verified the existing assay results, returning values +/-10% of the original grades, well within margins of error for the grade of mineralisation reported. (see ASX:MEI 13/03/23 for a more detailed discussion). ▪ No independent audit of sampling techniques and data has been completed.

Section 2 Reporting of Exploration Results

Criteria	Commentary
Mineral tenement and land tenure status	▪ No change since previous report. ▪ Given the rich history of mining and current mining activity in the Poços de Caldas there appears to be no impediments to obtaining a License to operate in the area.
Exploration done by other parties	▪ Licenses under the TOGNI Agreement: significant previous exploration exists in the form of surface geochem across 30 granted mining concessions, plus: geologic mapping, topographic surveys, and powered auger (1,396 holes for 12,963 samples). ▪ MEI performed Due Diligence on historic exploration and are satisfied the data is accurate and correct (refer ASX Release 13 March 2023 for a discussion). ▪ Licenses under VAGINHA and RAJ Agreements: no previous exploration exists for REEs.
Geology	▪ The Alkaline Complex of Poços de Caldas represents in Brazil one of the most important geological terrain which hosts deposits of ETR, bauxite, clay, uranium, zirconium, rare earths and leucite. The different types of mineralization are products of a history of post-magmatic alteration and weathering, in the last stages of its evolution (Schorscher & Shea, 1992; Ulbrich et al., 2005), The REE mineralisation discussed in this release is of the Ionic Clay type as evidenced by development within the saprolite/clay zone of the weathering profile of the Alkaline syenite basement as well as enriched HREE composition.
Drill hole Information	▪ Reported in body of report and Appendix 1.
Data aggregation methods	▪ Mineralised Intercepts are reported with a minimum of 4m width, lower cut-off 1000ppm TREO, with a maximum of 2m internal dilution. ▪ High-Grade Intercepts reported as “including” are reported with a minimum of 2m width, lower cut-off 3000 ppm TREO, with a maximum of 1m internal dilution. ▪ Ultra High-Grade Intercepts reported as “with” are reported with a minimum of 2m width, lower cut-off 10,000 ppm TREO, with a maximum of 1m internal dilution.
Mineralisation widths and intercept lengths	▪ All holes are vertical and mineralisation is developed in a flat lying clay and transition zone within the regolith. As such, reported widths are considered to equal true widths.
Diagrams	▪ Reported in the body of the text.

Balanced reporting	▪	All metallurgical recoveries for all samples are published in table 1 in body of report.
	▪	Highlights of the Mineralised Intercepts are reported in the body of the text with available results from every drill hole drilled in the period reported in the Mineralised Intercept table for balanced reporting.
Other substantive exploration data	▪	A maiden Inferred resource was published to the ASX on May 1st 2023 estimated from 1,379 drill holes for 13,309m to a maximum depth of 20m. Previous initial leach extraction results released 27 September 2023.
Further work	▪	Proposed work is discussed in the body of the text.