Metallurgical Testwork Confirms Outstanding Ionic Clay Recoveries for Caldeira REE Project

Highest globally reported Ionic Adsorption Clay recoveries using a standard AMSUL wash

Highlights

- Metallurgical testwork results validate historical leach extractions for Ionic Clays[1] at the Caldeira Project
- Results are believed to include the highest rare earth leach extractions ever reported for a standard ammonium sulphate (AMSUL) wash at pH 4.0 for any public listed company on the ASX or globally.
- Mineralisation across all tenements tested display strong ionic behavior over thick intervals using a standard AMSUL wash test.
- Improved recoveries of Dysprosium and Terbium to the leach, with both elements strong value drivers in the basket.
- Exceptional Magnet Rare Earth Element[2] (MREE) leach extractions, include;
  - **88% over 9.4m from 2.6m in CDMDD004, including best values of Nd 92% - Pr 86% - Tb 72% and Dy 71%**
  - **86% over 7.9m from 2.0m in DM1DD003, including best values of Nd 91% - Pr 87% - Tb 71% and Dy 73%**
  - **84% over 24.8m from 2.2m in DM1DD002, including best values of Nd 94% - Pr 95% - Tb 81% and Dy 75%**
  - **83% over 6.0m from 9.0m in FGDD003, including best values of Nd 88% - Pr 81% - Tb 65% and Dy 66%**
  - **79% over 13.6m from 2.0m in DM2DD004, including best values of Nd 84% - Pr 81% - Tb 70% and Dy 68%**
- High recoveries from high-grade magnet metal samples demonstrating that even at high grades the bulk of the MREE are amenable to AMSUL leaching.

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 ionic clay leaching - Australian Nuclear Science and Technology Organisation (ANSTO) to assist with process flowsheet development. The testwork reported comes from diamond drill cores collected during a metallurgical sampling program completed by Meteoric across the six deposits with defined Inferred Resources. These results build on historical test work from a single composite sample at the Capo do Mel deposit which produced outstanding results including leachability averaging 70%.

[1] ASX:MEI 20/12/2023 Caldeira Confirmed as Ionic Adsorption Clay REE Project

[2] Magnetic Rare Earth Elements (MREE) = Pr, Nd, Tb, Dy

Chief Executive Officer, Nick Holthouse said,

"Truly World Class!

"The exceptional results documented today in the all-important recovery to leach phase of the test work has exceeded the expectations of Meteoric and ANSTO. Not only do the results confirm the vast majority of the samples tested are in fact Ionic and amenable to low Capex and Opex AMSUL leaching at pH 4.0, but they also demonstrate that exceptional leach extractions exist below the current boundaries of the Inferred Resource.

Importantly, this is the first phase of our metallurgical program and these exceptional results will now be optimised to quantify the reagent concentrations and leach kinetics and potentially further increase the recoveries.

Caldeira Project's exceptional rare earth grades and significant mineralised thicknesses coupled with these best in class recoveries bode extremely well for further optimisation of MEI's proposed high-grade feed scenario that will be laser focused to deliver early project value.

I look forward very much to the additional results available in the next quarter and beyond this phase of work to the precipitation of Mixed Rare Earth Carbonate (MREC) phase of the program due early in 2024."

New ANSTO Metallurgical Leach Results

Metallurgical testwork commenced at ANSTO in July 2023 on 3m composite samples from nine (9) diamond drill cores completed as part of the Company's metallurgical sampling program in March-July 2023. The program targeted the six deposits which currently define the Company's stated Inferred Resource Estimates: Capão Do Mel, Soberbo, Figueira, Cupim Vermelho Norte, Donna Maria 1, and Donna Maria 2 (Figure 1 & Appendix 1).

The metallurgical testwork program was designed to:

- Validate the results of previous testwork undertaken by JOGMEC in 2019 and reported to the ASX by MEI in December 2022; and
- Assess the metallurgical variability both laterally and at depth across each of the deposits, paying particular attention to the clay zone below known JOGMEC drilling, the current resource estimation boundary, and the previous SGS testwork.

Composite samples (3m) were collected from beneath the soil horizon (soil average 2m depth), starting in the clay zone and progressing down the hole until the intrusive basement was reached. Whilst the soil from the deposit does contain strongly elevated REE, it was not included in the testwork as it is planned for stockpiling and subsequent replacement and revegetation after mining.

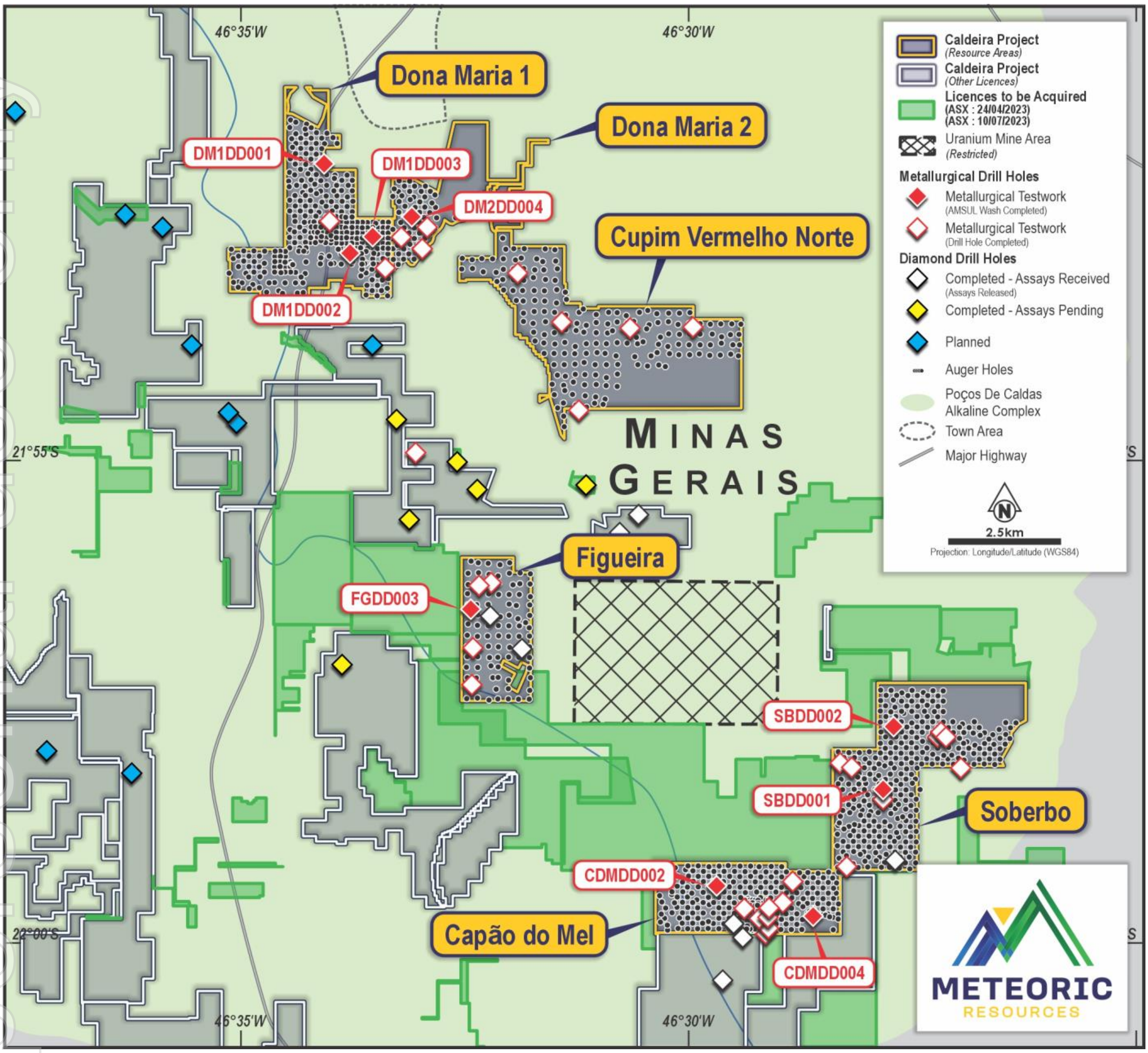

Figure 1: *Metallurgical Drill Hole Location Plan, Caldeira Project.*

Results

Mineralisation across all tenements tested so far displays strong ionic behavior over thick intervals using a standard AMSUL wash test. Best results include:

- 84% over 24.8m from 2.2m in DM1DD002, with a high of 94% magnet metal extractions including 94% for Nd, 95% for Pr, 81% for Tb and 75% for Dy from 8.0 – 11.0m.
- 86% over 7.9m from 2.0m in DM1DD003, with a high of 89% magnet metal extractions including 91% for Nd, 87% for Pr, 71% for Tb and 73% for Dy from 5.0 – 7.0m.
- 79% over 13.6m from 2.0m in DM1DD004, with a high of 82% magnet metal extractions including 84% for Nd, 81% for Pr, 70% for Tb and 68% for Dy from 11.0 – 15.6m.
- 88% over a 9.4m interval from 2.6m in CDMDD004, with a high of 90% magnet extractions including 92% for Nd, 86% for Pr, 72% for Tb and 71% for Dy from 6.0 – 9.0m.
- 83% over a 6.0m interval from 9.0m in FGDD003, with a high of 86% magnet extractions including 88% for Nd, 81% for Pr, 65% Tb and 66% Dy from 9.0 – 12.0m.

Grades of 1.05% TREO in CDMDD004 from 6.0 - 9.0m with 89% magnet metal extractions demonstrate that even at high grades the bulk of the MREE is still ionically attached to the clays and is amenable to AMSUL leaching.

The Heavy Rare Earth extractions across all Donna Maria 1 holes were the highest of all the tenements tested thus far. Interestingly, they showed elevated insitu Dy_2O_3+Tb_4O_7/TREO ratios from 1.8-2.6% of the TREO basket and impressive average extractions of 72% and 70% over a 9m interval in DM1DD001, from 6.0 – 15.0m. Similarly, DM1DD002 showed the highest average heavy rare earth extractions with Dy_2O_3 and Tb_4O_7 of 74% and 78% over a 9m interval.

Typically, the holes that displayed the highest metallurgical recoveries are in the strongly weathered clay zone above the transition zone into the basement. Samples in the top part of the hole (usually the first 1-2m below the soil horizon) show a cerium enrichment zone, where cerium has been oxidised from Ce+3 to Ce+4, which has resulted in significant precipitation of Cerianite (CeO_2) whilst the remaining liberated rare earths elements travel down the profile until they physically adsorb onto the kaolinite clay surface. This zone of enrichment is observed to be 5-30m thick and shows exceptional recoveries under standard ammonium sulphate leaching conditions.

The results clearly show the rare earth extractions achieved from the six deposits evaluated under standard ammonium sulphate wash conditions (currently still un-optimised) respond extremely favourably, and unequivocally validate the historical recoveries that this is a true rare earth ionic clay deposit.

The extractions for Neodymium, Praseodymium, Dysprosium and Terbium are believed to be the highest extractions reported by any ASX-listed company with a REE ionic clay deposit in Australia, or indeed the world, for a standard AMSUL wash at pH 4.0 and ambient temperature.

Table 1: Metallurgical Drill Holes – REE & REO recoveries by depth (leach extractions above 50% are highlighted in bold type)

Drill Hole	Interval			Lithology	Assayed Head (ppm)			Pr	Nd	Tb	Dy	MREE Recovery	TREE-Ce Recovery
	From	To	m		TREO	TREE-Ce	MREE	%	%	%	%	%	%
CDMDD002	2	5	3	Clay	2,639	991	344	43	44	24	24	43	42
	5	8	3	Clay	2,940	2,057	673	44	45	19	14	43	36
	8	11	3	Clay	5,596	3,787	1,415	70	77	49	48	74	68
	11	15.2	4.2	Clay	5,908	4,550	1,711	77	84	62	58	81	79
	15.2	18.5	3.3	Transition	3,076	2,144	740	43	45	30	31	44	43
CDMDD004	2.6	6	3.4	Clay	7,296	5,786	2,235	83	89	66	61	87	84
	6	9	3	Clay	10,468	7,991	2,930	86	92	72	71	90	90
	9	12	3	Transition	7,649	6,254	2,220	83	90	69	68	87	86
	12	16.4	4.4	Transition	3,587	2,345	795	29	31	28	26	30	32
FDG003	2.3	6	3.7	Clay	4,819	2,688	883	50	49	35	27	48	47
	6	9	3	Clay	5,310	3,529	1,153	64	69	47	42	67	65
	9	12	3	Clay	7,370	5,957	1,843	81	88	65	66	86	84
	12	15	3	Clay	4,458	3,510	1,067	77	82	63	63	80	80
	15	19	4	Clay	2,244	1,437	436	48	52	44	40	50	55
	19	22.6	3.6	Transition	2,848	1,606	460	8	10	18	18	10	11
	22.6	26	3.4	Transition	1,877	886	263	11	12	11	10	12	12
	26	29	3	Transition	3,487	1,573	485	3	4	7	4	4	4
	29	32	3	Transition	4,458	2,250	630	3	3	5	2	3	3
	32	35	3	Transition	2,021	956	283	1	1	-	2	1	1
	35	38	3	Transition	1,483	712	216	2	2	-	2	2	2
	38	42	4	Transition	1,277	597	183	2	2	-	3	2	2
	42	45.6	3.6	Transition	1,690	794	230	2	2	-	2	2	2
SBDD001	2	5	3	Clay	2,777	1,709	640	36	40	21	20	38	35
	5	9	4	Clay	3,286	2,119	827	49	50	31	28	49	46
	9	13	4	Clay	5,768	4,469	1,707	47	51	35	34	50	48
SBDD002	2	5	3	Clay	2,690	845	313	46	49	21	17	47	42
	5	8	3	Clay	2,550	1,106	397	34	38	22	21	36	31
	8	11	3	Clay	2,054	1,077	394	46	51	32	23	49	42
	11	14	3	Clay	4,502	2,013	809	77	83	41	32	80	74
	14	17	3	Clay	4,238	3,344	1,337	85	91	60	57	89	85
	17	20	3	Clay	4,008	2,966	1,086	-*	-*	-*	-*	-*	-*
	20	23.7	3.7	Transition	4,538	3,534	1,295	83	89	73	67	87	83
	23.7	26.1	2.5	Transition	5,383	4,130	1,604	52	55	70	68	55	57
DM1DD001	2.8	6	3.2	Clay	2,616	1,675	729	58	64	45	37	61	56
	6	8.7	2.7	Clay	3,697	2,812	1,195	68	73	66	67	71	70
	8.7	12	3.3	Transition	4,303	3,533	1,401	69	75	73	75	73	74
	12	15	3	Transition	2,575	1,936	755	67	71	72	73	71	71
	15	18	3	Transition	1,518	899	338	28	32	37	35	31	29
	18	20.4	2.4	Transition	845	419	151	16	18	17	12	18	15
DM1DD002	2.2	5	2.8	Clay	2,503	1,436	549	87	90	51	42	88	87
	5	8	3	Clay	5,567	4,004	1,531	93	92	77	76	91	93
	8	11	3	Clay	5,201	3,951	1,459	95	94	81	75	94	96
	11	14	3	Clay	4,155	3,142	1,119	89	89	76	71	88	90
	14	17	3	Clay	3,046	2,152	760	86	89	70	70	88	90
	17	20.9	3.9	Clay	1,469	727	219	64	69	41	29	66	60
	20.9	24	3.1	Transition	3,056	873	249	74	77	31	30	73	75
	24	27	3	Transition	1,847	997	278	86	87	72	49	85	88
	27	31	4	Transition	943	487	122	69	73	41	26	68	64
	31	34.6	3.6	Transition	1,095	449	122	42	45	20	16	42	42
DM1DD003	2	5	3	Clay	5,616	3,778	1,457	85	83	51	48	83	84
	5	7	2	Clay	8,195	6,520	2,428	87	91	71	73	89	90
	7	9.93	2.9	Transition	3,928	2,901	1,017	85	88	75	72	87	90
DM2DD004	2	5	3	Clay	1,781	1,389	350	78	81	58	57	78	78
	5	8	3	Clay	1,445	1,157	293	75	78	54	53	75	74
	11	15.6	4.6	Transition	1,829	1,446	370	81	84	70	68	82	83

-* Denotes samples under re-assay

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

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

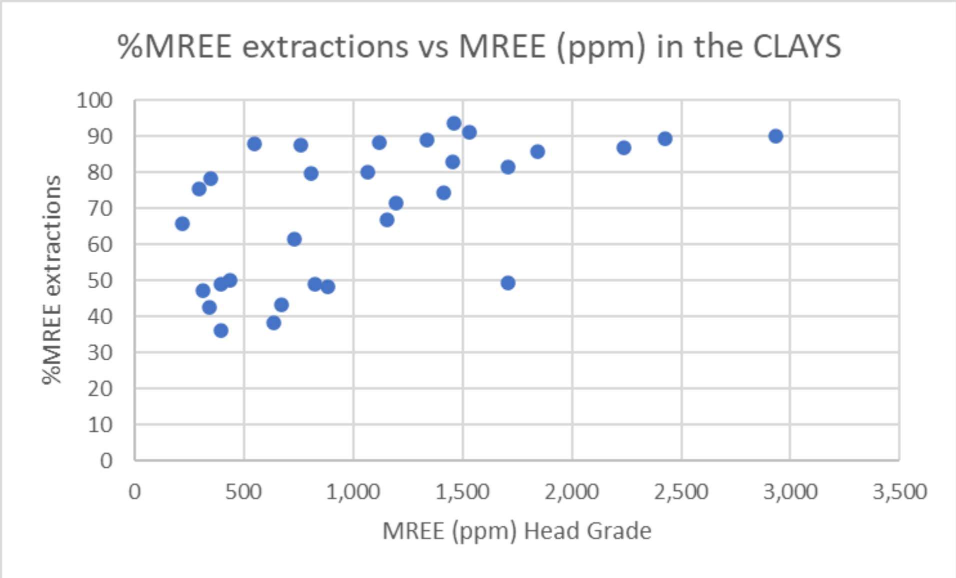

Figure 2: *Graph of MREE grades vs desorption extractions in the CLAYS with standard pH4 AMSUL wash*

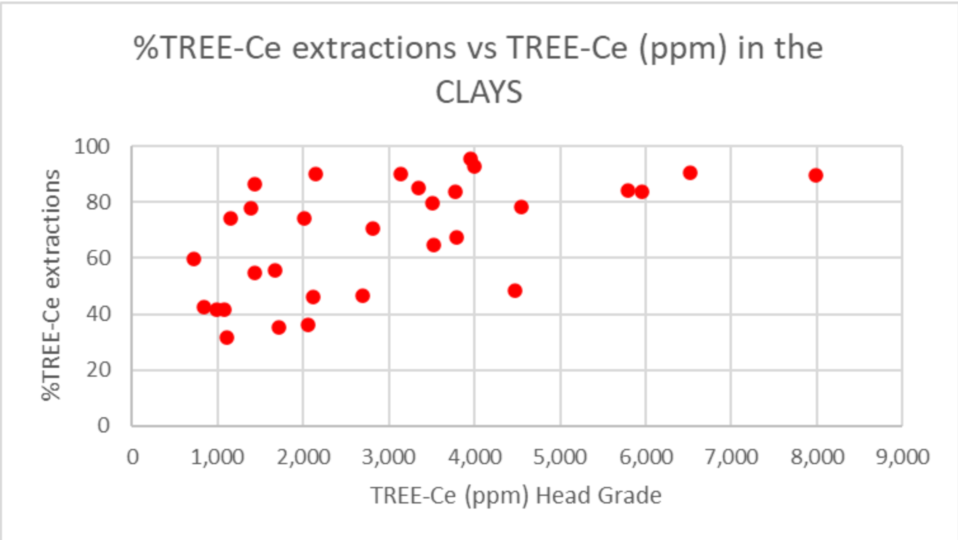

Figure 3: *Graph of TREE-Ce grades vs desorption extractions in the CLAYS with standard pH4 AMSUL wash*

Figures 2 & 3 above show high MREE and TREE-Ce extractions across all six deposit areas.

The graphs also show high extractions across the full grade spectrum, but interestingly the extractions tend to increase with grade. One 3m interval in CDMDD006 with 1.05% TREO head grade, achieved an astonishing 90% magnet element extractions.

This initial testwork has contributed significantly to MEI's knowledge base on metallurgical performance laterally, at depth and across different lithologies. The new information will be built into a geometallurgical model for the Caldeira Project. Further leaching parameters will be investigated in Q4 2023 to further optimise recoveries.

Next Steps

Leaching Program

Diagnostic leach tests will continue throughout September and October on the remaining metallurgical holes, with a particular focus on the CDM and Soberbo tenements. A master composite of the CDM tenement will be constructed from all of the metallurgical drill holes that return satisfactory metallurgical performance. The leaching program will aim to optimise the extractions by evaluating different lixiviants, lixiviant concentration, % solids and pH.

Impurity Removal

Following the leaching program, impurity removal optimisations 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. The 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

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

Schedule

The metallurgical scope is comprehensive and will run for approximately seven more months to enable adequate characterisation of each of the prospects. As milestone results come to hand, they will be reported to the market with remaining leach results due in October 2023 and impurity removal and precipitation to MREC results due in late Q4.

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 **adsorbed** 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 waters and are not preferentially adsorbed by clays during the weathering and leaching processes

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

***Table 3:** 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%**

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

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

For further information, please contact:

Dr Andrew Tunks
Executive Chairman
Meteoric Resources NL
E ajtunks@meteoric.com.au
T +61 400 205 555

Ben Creagh
Investor and Media Relations
NWR Communications
E benc@nwrcommunications.com.au
T +61 417 464 233

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 consultant to 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 reported in this release.

Target	Hole ID	East	North	RL	Hole Depth	Depth of Clay	Assays
Capão do Mel	CDMDD-002	345627	7567601	1312	20.4	18.5	Previously Reported
Capão do Mel	CDMDD-004	347477	7567043	1326	18.9	16.4	Previously Reported
Dona Maria 1	DM1DD-001	337939	7581336	1353	33.3	20.4	Previously Reported
Dona Maria 1	DM1DD-002	338450	7579638	1367	37.3	34.6	Previously Reported
Dona Maria 1	DM1DD-003	338886	7579953	1382	15.1	9.9	Previously Reported
Dona Maria 2	DM2DD-004	339141	7579358	1374	21.2	14.5	Previously Reported
Figueira	FGDD-003	340847	7572850	1282	45.6	45.6	Previously Reported
Soberbo	SBDD-001	348798	7569484	1307	18.2	13	Previously Reported
Soberbo	SBDD-002	349087	7568044	1298	31.5	26.1	Previously Reported

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 followed by pulverising in a ring mill. An 80 gram sub sample was used in each diagnostic leach at 4% solids, using 0.4M 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	• All samples were assayed by three ALS methods:
	  ○ ME-MS81 – Lithium borate fusion prior acid dissolution and ICP-MS analysis 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 - Lithium borate fusion prior acid dissolution and ICP-MS analysis for Ag, Au, Cd, Co, Cu, Li, Mo, Ni, Pb, Sc, Tl, Zn.
	  ○ ME-ICP06 – X-Ray Fluorescence (XRF) and acid ICP-AES analysis 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.
	• 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.
- Head, liqour and residue metallurgical samples were sent to ALS in Brisbane where the samples underwent a lithium borate fusion prior to acid dissolution and La, Ce, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu , Y, Th & U were read by ICP-MS. ANSTO read all of the gangue elements using ICP-OES, namely Al, Fe, K, Mg, Mn, Ca, 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 back up 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:

-

Element	Conversion Factor	Oxide
Ce	1.2284	CeO2
Dy	1.1477	Dy2O3
Er	1.1435	Er2O3
Eu	1.1579	Eu2O3
Gd	1.1526	Gd2O3
Ho	1.1455	Ho2O3
La	1.1728	La2O3
Lu	1.1371	Lu2O3
Nd	1.1664	Nd2O3
Pr	1.2082	Pr6O11
Sc	1.5338	Sc2O3
Sm	1.1596	Sm2O3
Tb	1.1762	Tb4O7
Tm	1.1421	Tm2O3
Y	1.2699	Y2O3
Yb	1.1387	Yb2O3

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 made by 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 shad 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.
Further work	•	Proposed work is discussed in the body of the text.