Exceptional REE Drill Results Outside Inferred Resources: Includes Elevated Tb + Dy

Highlights

- High-grade ionic clay rare earth element (**REE**) drill results from drilling outside of the Inferred Resources further confirm the exceptional prospectivity of the Caldeira REE Project within the Poços de Caldas Alkaline Intrusive Complex, Brazil.

Outstanding TREO[1] intercepts include:

- PIADD001 – **143m @ 6,406ppm TREO** [0m], with
  - **6m @ 10,378ppm TREO** [9m],
  - **6m @ 11,664ppm TREO** [21m], and
  - **8m @ 23,946ppm TREO** [85m]
- CVSDD0004 – **200m @ 3,387ppm TREO** [0m] including:
  - **16m @ 4,199ppm TREO** [3m] and **28m @ 6,859ppm TREO** [31m], with
  - **5m @ 11,888ppm TREO** [36m] and **5m @ 10,726ppm TREO** [44m]
- CVSDD0005 – **201m @ 3,451ppm TREO** [0m] including:
  - **6m @ 10,417ppm TREO** [1m]
  - **10m @ 7,180ppm TREO** [65m]
- CERDD0004 – **67m @ 2,026ppm TREO** [0m] including:
  - **17m @ 3,295ppm TREO** [8m]
- COQDD0002 – **24m @ 4,127ppm TREO** [1m]
- CVSDD0002 – **71m @ 2,514ppm TREO** [0m] including:
  - **7m @ 7,594ppm TREO** [2m], with
  - **3m @ 14,564ppm TREO** [6m], and
  - **34m @ 5,454ppm TREO** [80m]
- AGODD0002 - **37m @ 3,143ppm TREO** [0m]
- BDPDD0002 **- 31m @ 5,727ppm TREO** [0m], with **4m @ 10,454ppm TREO [26m]**
- BDPDD0003 **- 25m @ 5,391ppm TREO [6m],** with **3m @ 10,685ppm TREO [22m].**

- Significant zones of enriched Heavy Magnetic Rare Earth Oxides – HMREO[2] (Tb oxide + Dy oxide) have been discovered far higher than the global average of HMREO 30ppm reported in Inferred Resources:
  - PIADD0001 - 143m @ 6,406ppm TREO [0m] - **110 ppm HMREO**
    - 8m @ 23,946ppm TREO [85m] - **1,170 ppm HMREO**
  - CVSDD0004 - 200m @ 3,387ppm TREO [0m] - **62 ppm HMREO**
  - CVSDD0005 - 201m @ 3,451ppm TREO [0m] - **55 ppm HMREO**
  - COQDD0002 - 24m @ 4,127ppm TREO [1m] - **52 ppm HMREO**

[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 HMREO = Tb_4O_7 + Dy_2O_3

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Executive Chairman, Dr Andrew Tunks said,

"The new exploration drilling reported here continues our remarkable success at the Caldeira Project where every hole we have drilled has intercepted considerable clay hosted rare earth mineralisation.

Crucially all the drilling in this release sits outside the current 409Mt @ 2600ppm TREO Inferred Mineral Resource highlighting the potential for continued resource growth in the coming months and years as we continue to explore the giant rare earth enriched system.

This exploration drilling has focused on the discovery of new high-grade areas both for total rare earth grades, but also the search for valuable high-grade zones of heavy magnetic rare earths, specifically Terbium and Dysprosium. Once again, the Caldeira Project has come up trumps and our work has shown that such high-grade heavies are present and can be significantly enriched. In particular look at PIADD001 which intersected almost 150m of mineralisation at a grade in excess of 6,000ppm TREO including very high-grade magnetic rare earth mineralisation including 8m @ over 4,900 ppm of Nd & Pr oxides as well as over 1400ppm of Terbium & Dysprosium oxides, The entire intersection is logged within the clay zone where metallurgical testwork of similar materials has returned high recoveries . This is an exciting new frontier and will become the focus for further drilling as we attempt to define the geometry and spacing of the enriched zones.

The diamond rig will continue to drill test further new areas and also complete additional drilling inside the resource for the collection of crucial mining data such as specific gravity, rock quality and metallurgical sampling."

Chief Executive Officer, Nick Holthouse also commented,

"More great results from our hardworking and innovative exploration team…

Whilst they are highlighted by exciting results outside the current resource licences across the entire Caldeira, of particular interest to our Project Development Team are the near-term basket value-add opportunities that are becoming apparent adjacent to and south of the Capão de Mel licence. Enhanced near mine HMREO grades and the subsequent value add to the basket with extensions of the current infill resource drilling into this zone are short-term priorities for us.

Project Development activities also continue at pace with multiple project development packages continuing in parallel, including:

Resource estimation for the Soberbo licence is underway and drilling will soon be completed at Capão de Mel, resulting in a series of resource updates to the market commencing in Q2 this year.

Engineering studies with Ausenco continue to close out with financial analysis to be completed at the completion of the Soberbo and Capão de Mel resource updates.

Metallurgical testwork remains on track and continues to deliver excellent results.

Underpinning these activities is our ongoing progress with permitting, which is being undertaken by our environmental consultants, Alger Consulteria. Alger continues to work closely with Ausenco and remains on track for the tabling of the Environmental Impact Statement this year for the all-important Licença Prévia (LP) and construction permits due in late 2025."

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Exploration Diamond (DD) Drilling Program Update

An initial exploration diamond drilling campaign conducted by MEI focused on testing seventeen (17) high priority soil anomalies (TREO grades) on licences outside the Inferred Resource areas and defining the depth of clay in those areas (ASX Release - 31 August 2023).

A subsequent drilling program was implemented to:

- step-out around excellent drill results from the Phase 1 Program (e.g. CVSDD001 with 149.5m @ 8,912 ppm TREO [0m]),
- investigate extensions to high-grade REE mineralisation adjacent to the Inferred Resource areas to expand potential initial mining areas eg, south of Capão de Mel, and
- test second order soil anomalies on additional exploration licences.

All of these objectives had the additional focus of identifying areas of enriched Heavy Magnetic Rare Earth Oxides (HMREO) mineralisation, where incremental increases add significantly to the value of the 'basket'.

A total of 36 diamond drill holes for 2,017m have been drilled across the Caldeira REE Project since July 2023 (**Figure 1** & **Table 2**). Mineralised intercepts for 31 of these drill holes are described below and reported in **Table 1**.

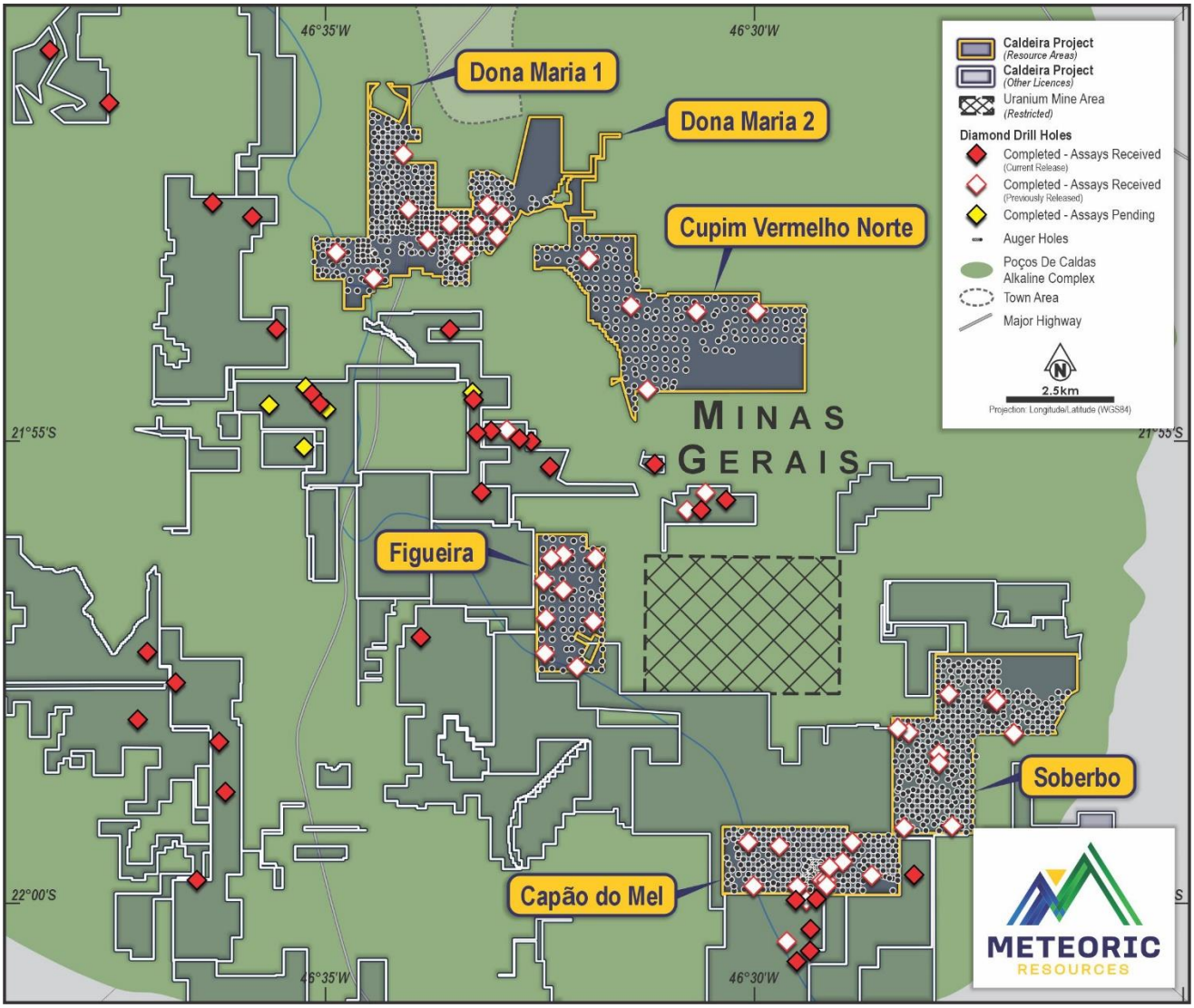

Figure 1: *Meteoric Caldeira REE Project - DD Drill Hole Location Plan.*

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Geology and Mineralisation

Central Caldeira (Inferred Resources at Cupim Vermelho & Figueira)

The central region of the Caldeira Project corresponds to the central part of the Poços de Caldas Alkaline Intrusive Complex. CVSDD001 previously intersected **149.5m @ 8,912 ppm TREO** [0m], with **52m @ 12,692ppm or 1.27 % TREO** [61m] ;. This drill hole sits in the Central Caldeira area, with Cupim Vermelho Norte to the northeast (**104 Mt @ 2,485ppm TREO**) and Figueira to the southwest (**50 Mt @ 2,811ppm TREO**). Step-out/follow-up drilling was conducted at Cupim Vermelho Sul (CVS), Cercado (CER), and Piao (PIA) (**Figure 4**).

Geologically, the basement geology (beneath the clay) of this area is dominated by brecciated rocks of the Pocos de Caldas Alkaline Complex. Results from the recent drilling in this area shows an encouraging trend: the depth of mineralised clay and the TREO grades remain high, and the observation of enriched HMREO. Significant intercepts include:

- CVSDD0004 – **200m @ 3,387ppm TREO** [0m] including:
  - **16m @ 4,199ppm TREO** [3m] and **28m @ 6,859ppm TREO** [31m], with
  - **5m @ 11,888ppm TREO** [36m] and **5m @ 10,726ppm TREO** [44m]
- CVSDD0005 – **201m @ 3,451ppm TREO** [0m] including:
  - **6m @ 10,417ppm TREO** [1m], with
  - **10m @ 7,180ppm TREO** [65m]
- CERDD0004 - **67m @ 2,026ppm TREO** [0m] including:
  - **17m @ 3,295ppm TREO** [8m]
- COQDD0002 - **24m @ 4,127ppm TREO** [1m]
- CVSDD0002 - **71m @ 2,514ppm TREO** [0m] including:
  - **7m @ 7,594ppm TREO** [2m], with
  - **3m @ 14,564ppm TREO** [6m], and
  - **34m @ 5,454ppm TREO** [80m]
- PIADD001 - **143m @ 6,406ppm TREO** [0m], with
  - **6m @ 10,378ppm TREO** [9m],
  - **6m @ 11,664ppm TREO** [21m], and
  - **8m @ 23,946ppm TREO** [85m]
- AGODD0002 - **37m @ 3,143ppm TREO** [0m]

The Central Caldeira continues to deliver large intercepts with exceptional TREO grades, notably in our first drill hole into the Piao prospect. PIADD001 has three (3) significant intervals (6m, 6m, and 8m respectively) all greater than 1% TREO. These intervals all occur in a clay zone.

The HMREO grades range from 33ppm up to 145ppm. This is almost five (5) times the global average of 30ppm reported in the Inferred Resources and is seen to occur at shallow depths. **Figure 2** displays strip logs of selected holes from the Central Caldeira, with HMREO grades shown at right of the strip log. The Figure clearly shows wide intercepts in all drillholes with values >50pp 00m (maximum intercept of 1,170ppm). This is significantly higher than the global average of 30ppm reported for the current Inferred Resources. These results suggest the area has immense potential to not only add new resources in Central Caldeira, but also increase Terbium + Dysprosium (Tb + Dy) grades. This will enhance the economic value of the total resources and could add significant value to the Project.

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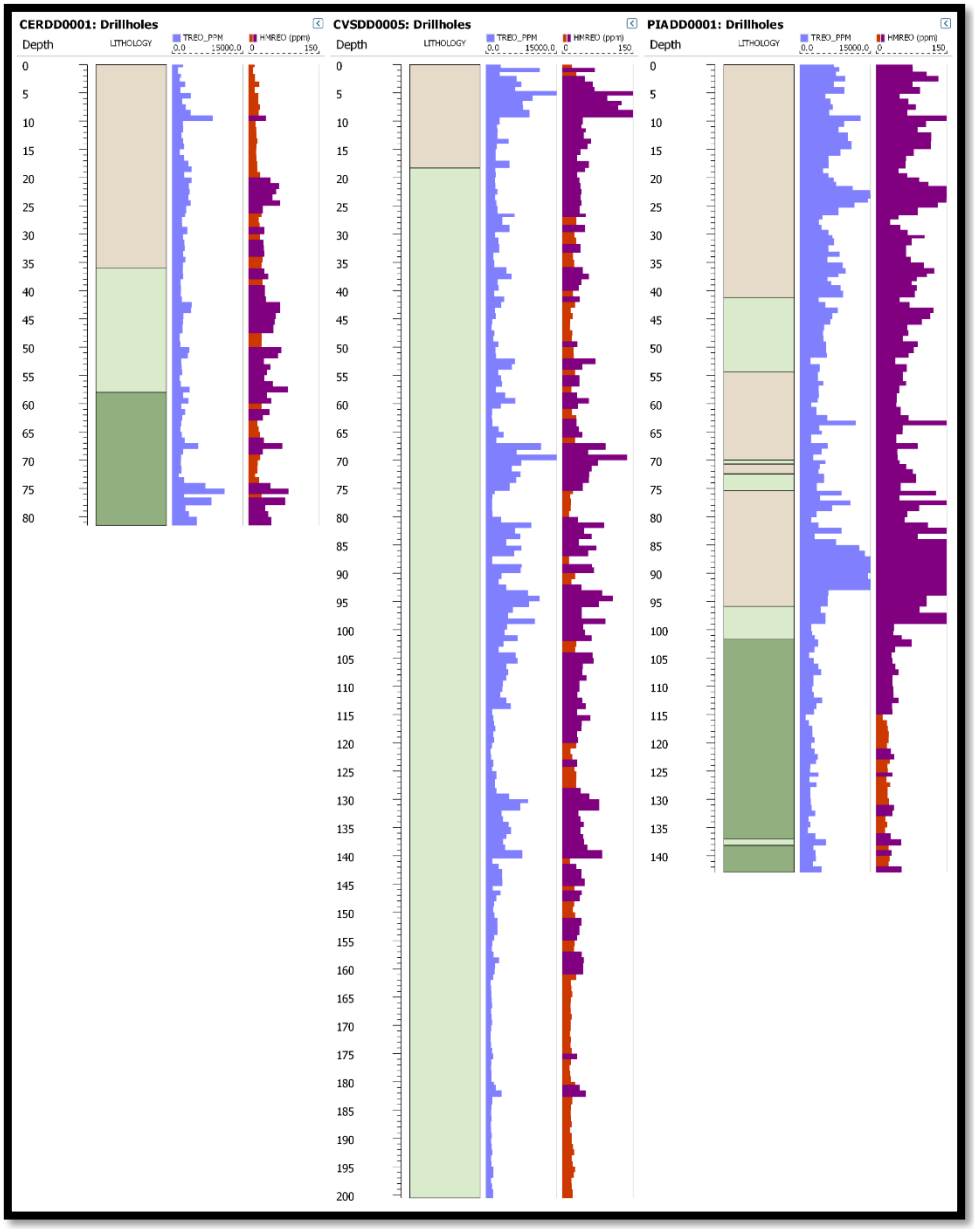

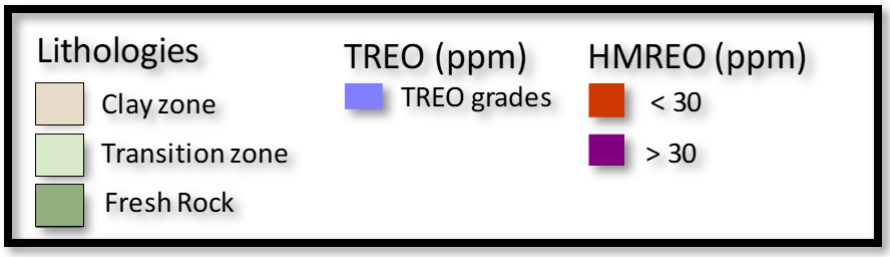

Figure 2: *Strip Logs of selected drill holes from Cercado (CER), Cupim Vermelho Sul (CVS), and Piao (PIA) showing: depth of clays + transition (left), TREO grades (centre), and HMREO grades with zones of enrichment (right).*

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Southern Caldeira (South of Inferred Resources at Capão do Mel & Soberbo)

The southern portion of the Caldeira Project corresponds to the southern part of the Poços de Caldas Alkaline Intrusive Complex. At Barra do Pacu, drill hole BDPDD001 previously intersected **73.3m @ 3,939ppm TREO** [0m], including **42.3m @ 4,719ppm TREO** [0m]. This drill holes sits in the Southern Caldeira area, immediately south of Capão do Mel (**68 Mt @ 2,692ppm TREO**) and Soberbo (**92 Mt @ 2,948ppm TREO**). Step-out/follow-up drilling was conducted on Barra do Pacu (BDP) (**Figure 4**).

Results from the recent drilling in this area also shows encouraging thicknesses of well mineralised clay and the TREO grades remain high (**Figure 3**). Significant intercepts include:

- BDPDD0002 - **31m @ 5,727ppm TREO** [0m]
    - **4m @ 10,454ppm TREO** [26m]
- BDPDD0003 - **25m @ 5,391ppm TREO** [6m]
- BDPDD0004 - **11m @ 5,695ppm TREO** [7m]
- BDPDD0006 - **5m @ 4,977ppm TREO** [8m]

These results confirm the area has immense potential to add significant high-grade resources in the Southern area, immediately adjacent to Capão do Mel (area targeted for early production due to its high-grade TREO and excellent recoveries). The HMREO grades vary to a maximum of 1.6% and can also occur at shallow depths (**Figure 3**).

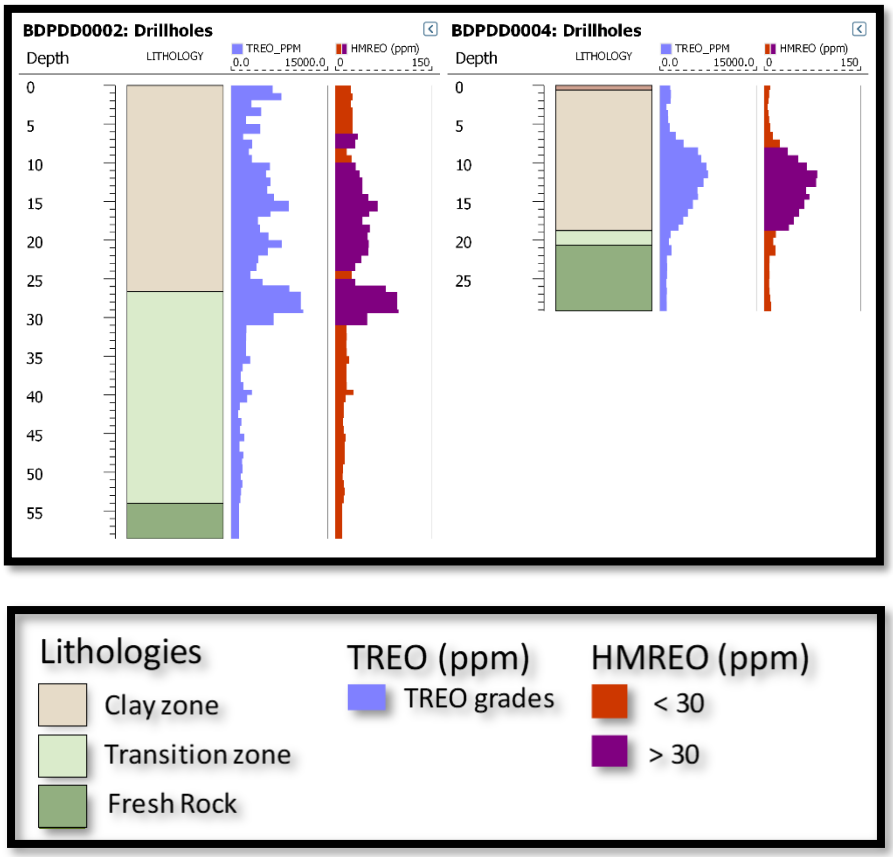

Figure 3: *Strip Logs of selected drill holes from Barra do Pacu (BDP) showing: depth of clays + transition (left), TREO grades (centre), and elevated HMREO grades with zones of enrichment (right).*

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Additional Soil Anomalies Tested

Drilling was also completed on previously untested soil anomalies generated in historic exploration with more excellent REE mineralisation results and obvious potential to add significant high-grade resources.

In the Northern Caldeira anomalies were tested at: Agostinho (AGO), Coqueirinho (COQ), and Fazenda Limoeiro (FLI) (**Figure 4**). Best results from the north include:

- AGODD0001 - **18m @ 3,628ppm TREO** [17m] with 48 ppm HMREO
- AGODD0002 - **37m @ 3,143ppm TREO** [0m] with 42 ppm HMREO
- COQDD0001 - **15m @ 4,974ppm TREO** [13m] 57 ppm HMREO
- COQDD0002 - **24m @ 4,127ppm TREO** [1m] with 61 ppm HMREO
- FLIDD0001 - **8m @ 4,298ppm TREO** [0m] with 63 ppm HMREO
- FLIDD0002 - **6m @ 3,722ppm TREO** [10m] with 36 ppm HMREO.

The areas sit immediately to the south and to the west of Dona Maria I & II (**94Mt @ 2,320ppm TREO**). Geologically, this area is dominated by nepheline syenite and secondarily phonolites, with a general absence of brecciation. The HMREO grades are extremely encouraging with thick mineralised intervals (18m to 37m) averaging up to a maximum Tb+Dy Ratio of 1.5%, often from surface. These results suggest the area has immense potential to not only add new resources in the Northern area, but at increased HMREO grades.

Lastly, drilling was undertaken in the Western Caldeira at: Cipo (CIP), Donana (DON), Pinheiri (PIN), and Tamanduá (TAM). Best results from the west include:

- CIPDD0001 – **33.5m @ 1,991ppm TREO** [0m] with 24 ppm HMREO, including
  - **10m @ 3,490ppm TREO** [21m] with 31 ppm HMREO
- DONDD0001 - **15m @ 1,640ppm TREO** [0m] with 21 ppm HMREO, including
  - **4m @ 3,208ppm TREO** [0m] **with** 53 ppm HMREO
- PINDD0001 – **32.6m @ 1,777ppm TREO** [0m] with 18 ppm HMREO, including
  - **11m @ 3,053ppm TREO** [0m] with 32 ppm HMREO
- TAMDD0001 – **15.7m @ 1,626ppm TREO** [0m] with 21 ppm HMREO
- TAMDD0002 – **14.7m @ 1,784ppm TREO** [0m] with 18 ppm HMREO
- TAMDD0003 - **20m @ 2,938ppm TREO** [0m] with 28 ppm HMREO

The area is 11km west of Capão do Mel, and 7km west of Figueira (**Figure 4**). Geologically, this area is dominated by phonolites and subordinately alkaline subvolcanic rock (locally named Tinguaite). Whilst the mineralised intercepts from the area do not contain the extremely high grades observed in other areas, there are intercepts within the holes with >3,000ppm TREO, and HMREO grades to 53ppm.

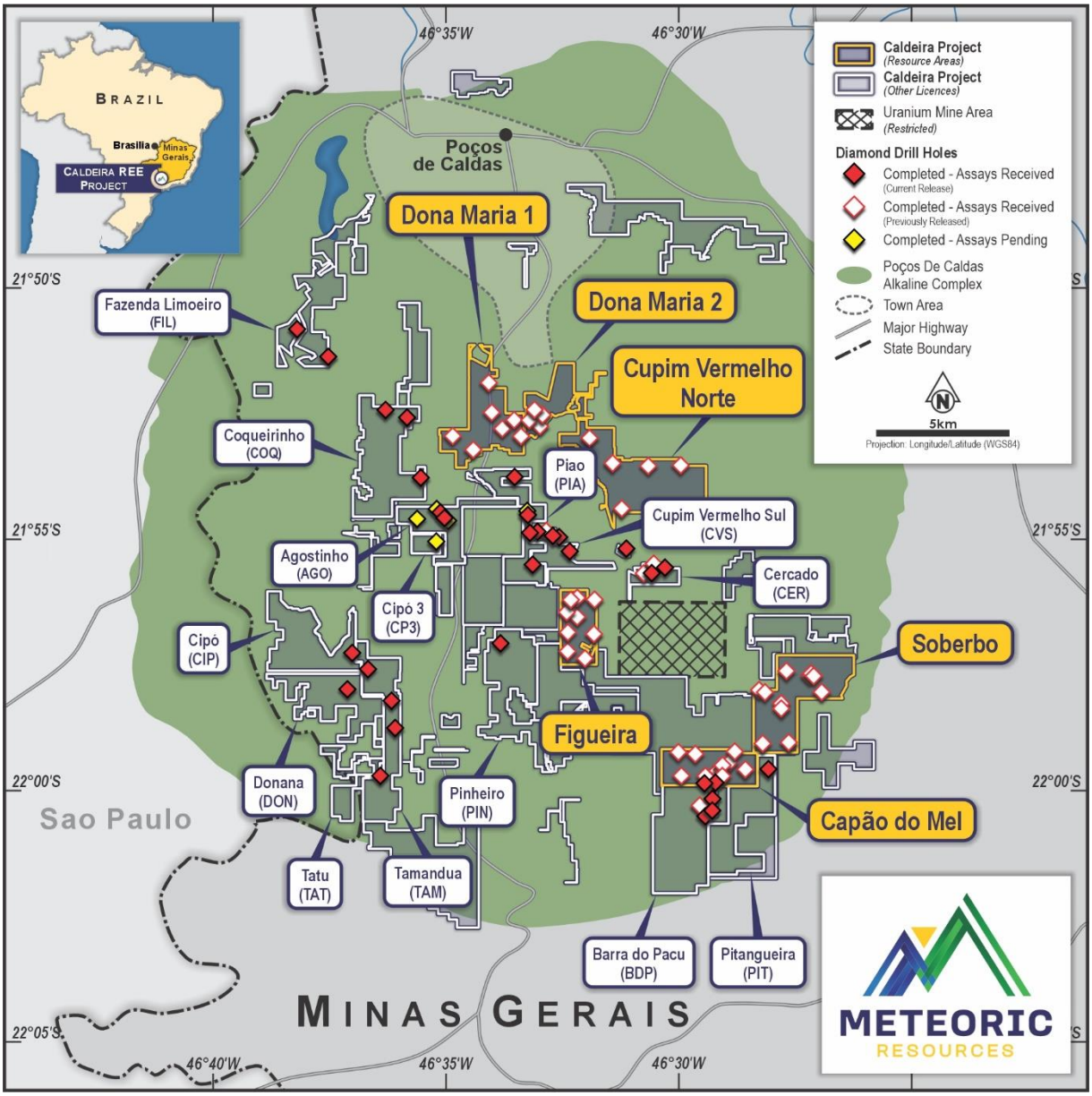

Figure 4: *Prospect location plan for Meteoric's Caldeira REE Project.*

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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
- Majority of the REEs are **adsorbed** onto clay minerals and accumulated in the clay zone of the regolith profile
- Adsorbed REE are ionically attached to the clay minerals and can be liberated by leaching in a weak solution of ammonium sulphate (or other metal salt) at near neutral pH
- Ionic Adsorption Clay REE Deposits are typically found near the surface, often at depths of less than 10 metres
- 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 2. *Caldeira REE Project 2023 Mineral Resource Estimate (JORC 2012) – by licence at 1,000ppm TREO cut-off*

Licence	JORC Category	Tonnes Mt	TREO ppm	Pr_6O_{11} ppm	Nd_2O_3 Ppm	LMREO ppm	Tb_4O_7 ppm	Dy_2O_3 ppm	HMREO ppm	MREO ppm
Capão do Mel	Inferred	68	2,692	148	399	547	4	22	26	572
Cupim Vermelho Norte	Inferred	104	2,485	152	472	624	5	26	31	655
Dona Maria 1 & 2	Inferred	94	2,320	135	404	539	5	25	30	569
Figueira	Inferred	50	2,811	135	377	512	5	26	31	542
Soberbo	Inferred	92	2,948	190	537	727	6	27	33	759
Total	**Inferred**	**409**	**2,626**	**154**	**447**	**601**	**5**	**25**	**30**	**631**

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

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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 is an executive director 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 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.

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Table 1. Mineralised Intercept Table – Exploration diamond drill hole program.

TARGET	HOLE	From (m)	To (m)	Interval (m)	TREO (ppm)	Pr_6O_{11} + Nd_2O_3 (ppm)	Tb_4O_7 + Dy_2O_3 (ppm)	MREO (ppm)
Agostinho	AGODD0001	0.0	43.2	43.2	2,616	224	18	243
	including	*17.0*	*35.0*	*18.0*	*3,628*	*787*	*48*	*834*
	AGODD0002	0.0	37.1	37.1	3,143	730	42	772
Barra do Pacú	BDPDD0002	0.0	58.6	58.6	3,855	649	37	685
	including	*0.0*	*31.0*	*31.0*	*5,727*	*1,004*	*53*	*1,057*
	with	***25.9***	***29.5***	***3.6***	***10,454***	***2,706***	***106***	***2,812***
	BDPDD0003	0.0	39.1	39.1	4,151	704	41	745
	including	*6.0*	*31.0*	*25.0*	*5,391*	*1,084*	*47*	*1,131*
	with	***21.9***	***25.0***	***3.1***	***10,685***	***2,657***	***73***	***2,730***
	BDPDD0004	0.0	29.2	29.2	3,053	695	30	725
	including	*7.0*	*18.0*	*11.0*	*5,695*	*1,684*	*68*	*1,752*
	BDPDD0005	0.0	52.1	52.1	1,642	197	15	212
	including	*4.0*	*9.1*	*5.1*	*3,200*	*223*	*19*	*242*
	BDPDD0006	0.0	43.4	43.4	1,984	324	21	345
	including	*8.1*	*13.0*	*4.9*	*4,977*	*938*	*52*	*990*
Cercado	CERDD0003	0.0	75.3	75.3	2,419	443	24	466
	including	*46.0*	*58.0*	*12.0*	*3,202*	*864*	*35*	*899*
	CERDD0004	0.0	66.8	66.8	2,026	374	33	407
	including	*7.9*	*25.2*	*17.3*	*3,295*	*694*	*46*	*740*
	CERDD0005	0.0	120.1	120.1	1,628	300	23	323
	including	*0.0*	*7.8*	*7.8*	*5,109*	*556*	*39*	*595*
Cipó	CIPDD0001	0.0	33.5	33.5	1,991	313	24	337
	including	*21.0*	*30.8*	*9.8*	*3,490*	*676*	*31*	*706*
Coqueirinho	COQDD0001	0.0	82.6	82.6	2,019	339	24	363
	including	*13.0*	*28.0*	*15.0*	*4,974*	*1,101*	*57*	*1,157*
	COQDD0002	0.0	32.6	32.6	3,603	838	52	890
	including	*0.8*	*25.0*	*24.2*	*4,127*	*992*	*61*	*1,053*
	COQDD0003	0.0	17.8	17.8	2,145	391	29	420
Cupim Vermelho Sul	CVSDD0002	0.0	70.8	70.8	2,514	401	31	433
	including	*1.8*	*8.8*	*7.0*	*7,594*	*596*	*71*	*666*
	with	***6.3***	***8.8***	***2.5***	***14,564***	***1,389***	***103***	***1,492***
	and	*13.0*	*21.0*	*8.0*	*3,167*	*303*	*25*	*328*
	and	*32.1*	*37.0*	*4.9*	*3,157*	*791*	*46*	*837*
	CVSDD0003	0.0	56.6	56.6	3,322	436	31	467
	including	*0.0*	*35.0*	*35.0*	*3,766*	*477*	*31*	*507*
	CVSDD0004	0.0	200.0	200.0	3,387	543	62	605
	including	*3.0*	*19.0*	*16.0*	*4,199*	*564*	*66*	*630*

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TARGET	HOLE	From (m)	To (m)	Interval (m)	TREO (ppm)	Pr_6O_{11} + Nd_2O_3 (ppm)	Tb_4O_7 + Dy_2O_3 (ppm)	MREO (ppm)
	and	*31.0*	*59.3*	*28.3*	*6,859*	*1,200*	*106*	*1,306*
	with	***36.0***	***41.0***	***5.0***	***11,888***	***1,137***	***112***	***1,250***
	with	***44.0***	***49.0***	***5.0***	***10,726***	***2,227***	***145***	***2,373***
	including	*63.0*	*76.0*	*13.0*	*3,814*	*525*	*57*	*583*
	CVSDD0005	0.0	200.6	200.6	3,451	546	55	601
	CVSDD0005	0.0	9.4	9.4	9,337	2,221	120	2,341
	with	***0.6***	***6.4***	***5.8***	***10,417***	***2,159***	***105***	***2,264***
	including	*65.0*	*75.4*	*10.4*	*7,180*	*1,054*	*79*	*1,132*
	with	***67.0***	***70.0***	***3.0***	***11,628***	***1,464***	***111***	***1,575***
	including	*80.0*	*114.0*	*34.0*	*5,454*	*838*	*59*	*897*
	and	*129.0*	*145.4*	*16.4*	*4,599*	*690*	*58*	*748*
Donana	DONDD0001	0.0	15.0	15.0	1,640	302	21	323
	including	*0.0*	*4.0*	*4.0*	*3,208*	*721*	*53*	*774*
Fazenda Limoeiro	FLIDD0001	0.0	18.0	18.0	2,746	705	40	745
	including	*0.0*	*8.0*	*8.0*	*4,298*	*1,280*	*63*	*1,343*
	FLIDD0002	0.0	24.8	24.8	2,109	449	21	470
	including	*10.0*	*15.5*	*5.5*	*3,722*	*1,065*	*36*	*1,101*
Pião	PIADD0001	0.0	143.0	143.0	6,406	1,248	110	1,357
	with	***9.0***	***15.0***	***6.0***	***10,378***	***2,036***	***135***	***2,171***
	with	***20.8***	***26.7***	***5.9***	***11,664***	***2,317***	***155***	***2,472***
	with	***85.0***	***93.0***	***8.0***	***23,946***	***4,908***	***1,170***	***6,078***
	PIADD0002	0.0	46.2	46.2	2,556	460	31	491
	including	*15.0*	*32.0*	*17.0*	*3,271*	*713*	*41*	*754*
	PIADD0003	0.0	12.7	12.7	1,214	198	20	218
	PIADD0004	0.0	62.6	62.6	1,318	248	19	268
Pinheiro	PINDD0001	0.0	32.6	32.6	1,777	311	18	329
	including	*0.0*	*11.0*	*11.0*	*3,053*	*686*	*32*	*717*
Pitangueira	PITDD0001	0.0	44.8	44.8	1,697	337	19	356
Tamanduá	TAMDD0001	0.0	15.7	15.7	1,626	324	21	345
	TAMDD0002	0.0	14.7	14.7	1,784	331	18	350
	TAMDD0003	0.0	19.5	19.5	2,938	581	28	610
Tatú	TATDD0001	0.0	6.3	6.3	927	129	9	138

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Table 2. DD drill hole location information.

TARGET	TYPE	HOLE ID	DEPTH (m)	EASTING	NORTHING	ELEVATION	ASX STATUS
Agostinho	DD	AGODD0001	43.17	336,154	7,576,539	1,323	This Release
	DD	AGODD0002	37.09	336,312	7,576,339	1,289	This Release
Barra do Pacú	DD	BDPDD0002	58.61	346,372	7,566,554	1,317	This Release
	DD	BDPDD0003	39.12	345,958	7,566,534	1,336	This Release
	DD	BDPDD0004	29.16	346,259	7,565,955	1,319	This Release
	DD	BDPDD0005	52.09	345,999	7,565,311	1,335	This Release
	DD	BDPDD0006	43.35	346,252	7,565,523	1,363	This Release
Cercado	DD	CERDD0003	75.25	343,049	7,575,205	1,468	This Release
	DD	CERDD0004	66.83	344,485	7,574,505	1,437	This Release
	DD	CERDD0005	120.05	343,988	7,574,303	1,446	This Release
Cipó	DD	CIPDD0001	39.46	332,897	7,571,351	1,305	This Release
Coqueirinho	DD	COQDD0001	82.62	334,117	7,580,334	1,287	This Release
	DD	COQDD0002	32.64	335,429	7,577,831	1,342	This Release
	DD	COQDD0003	17.78	334,919	7,580,056	1,301	This Release
Cupim Vermelho Sul	DD	CVSDD0002	70.80	340,953	7,575,108	1,391	This Release
	DD	CVSDD0003	56.58	340,564	7,575,629	1,359	This Release
	DD	CVSDD0004	200.02	339,756	7,575,833	1,451	This Release
	DD	CVSDD0005	200.57	340,326	7,575,683	1,357	This Release
Donana	DD	DONDD0001	14.96	332,724	7,570,003	1,354	This Release
Fazenda Limoeiro	DD	FLIDD0001	17.95	331,993	7,582,304	1,316	This Release
	DD	FLIDD0002	24.82	330,836	7,583,313	1,287	This Release
Pião	DD	PIADD0001	142.96	339,398	7,576,452	1,415	This Release
	DD	PIADD0002	46.24	339,579	7,574,617	1,404	This Release
	DD	PIADD0003	12.67	338,908	7,577,850	1,365	This Release
	DD	PIADD0004	62.59	339,473	7,575,793	1,350	This Release
Pinheiro	DD	PINDD0001	32.64	338,389	7,571,708	1,327	This Release
Pitangueira	DD	PITDD0001	44.75	348,327	7,567,059	1,295	This Release
Tamandua	DD	TAMDD0001	15.71	334,357	7,569,580	1,347	This Release
	DD	TAMDD0002	14.67	334,497	7,568,580	1,296	This Release
	DD	TAMDD0003	19.53	333,481	7,570,748	1,282	This Release
Tatu	DD	TATDD0001	6.28	333,947	7,566,812	1,320	This Release
Agostinho	DD	AGODD0003	65.67	335,295	7,576,309	1,350	Pending
	DD	AGODD0004	45.78	336,024	7,576,672	1,300	Pending
	DD	AGODD0005	33.56	336,445	7,576,235	1,300	Pending
Cipo 3	DD	CP3DD0001	23.79	336,006	7,575,471	1,300	Pending
Pião	DD	PIADD0005	126.32	339,377	7,576,605	1,350	Pending
Barra do Pacú	DD	BDPDD0001	73.31	346,168	7,566,529	1,343	Previously Reported
Capão do Mel	DD	CDMDD0001	31.18	346,437	7,566,998	1,322	Previously Reported
	DD	CDMDD0002	20.40	345,620	7,567,610	1,309	Previously Reported
	DD	CDMDD0003	31.25	345,785	7,565,709	1,355	Previously Reported
	DD	CDMDD0004	18.85	347,477	7,567,044	1,307	Previously Reported
	DD	CDMDD0005	9.78	346,611	7,567,019	1,306	Previously Reported
	DD	CDMDD0006	46.35	345,993	7,566,806	1,339	Previously Reported
	DD	CDMDD0007	39.44	346,893	7,567,309	1,278	Previously Reported
	DD	CDMDD0008	40.58	347,081	7,567,706	1,264	Previously Reported
	DD	CDMDD0009	29.61	346,569	7,566,704	1,284	Previously Reported
	DD	CDMDD0010	57.75	346,632	7,567,196	1,308	Previously Reported
	DD	CDMDD0011	25.95	346,621	7,566,802	1,291	Previously Reported
	DD	CDMDD0012	41.09	345,109	7,566,811	1,305	Previously Reported
	DD	CDMDD0013	45.89	344,998	7,567,684	1,298	Previously Reported
Cercado	DD	CERDD0001	81.55	343,700	7,574,295	1,454	Previously Reported
	DD	CERDD0002	35.18	344,068	7,574,647	1,436	Previously Reported
Cupim Vermelho Norte	DD	CVNDD0001	23.25	342,883	7,576,691	1,404	Previously Reported
	DD	CVNDD0002	28.05	341,677	7,579,290	1,367	Previously Reported
	DD	CVNDD0003	42.95	342,535	7,578,363	1,409	Previously Reported
	DD	CVNDD0004	31.10	343,854	7,578,257	1,416	Previously Reported
	DD	CVNDD0005	22.75	345,059	7,578,282	1,255	Previously Reported
Cupim Vermelho Sul	DD	CVSDD0001	149.49	340,077	7,575,858	1,376	Previously Reported
Dona Maria 1	DD	DM1DD0001	33.25	337,939	7,581,336	1,346	Previously Reported
	DD	DM1DD0002	37.25	338,448	7,579,639	1,361	Previously Reported
	DD	DM1DD0003	15.05	338,887	7,579,957	1,362	Previously Reported
	DD	DM1DD0004	21.20	339,144	7,579,358	1,365	Previously Reported
	DD	DM1DD0005	12.11	338,052	7,580,242	1,385	Previously Reported
	DD	DM1DD0006	33.24	337,372	7,578,861	1,279	Previously Reported
	DD	DM1DD0007	27.50	336,613	7,579,372	1,281	Previously Reported
Dona Maria 2	DD	DM2DD0001	22.05	339,844	7,579,731	1,383	Previously Reported

TARGET	TYPE	HOLE ID	DEPTH (m)	EASTING	NORTHING	ELEVATION	ASX STATUS
	DD	DM2DD0002	22.35	339,441	7,579,947	1,335	Previously Reported
	DD	DM2DD0003	23.20	339,932	7,580,147	1,369	Previously Reported
	DD	DM2DD0004	18.62	339,640	7,580,342	1,389	Previously Reported
Figueira	DD	FIGDD0001	61.80	341,854	7,572,049	1,339	Previously Reported
	DD	FIGDD0002	84.45	341,239	7,572,677	1,340	Previously Reported
	DD	FIGDD0003	45.55	340,849	7,572,859	1,366	Previously Reported
	DD	FIGDD0004	111.87	340,882	7,571,408	1,338	Previously Reported
	DD	FIGDD0005	20.74	340,893	7,572,112	1,325	Previously Reported
	DD	FIGDD0006	58.99	341,236	7,573,390	1,357	Previously Reported
	DD	FIGDD0007	71.04	340,993	7,573,311	1,394	Previously Reported
	DD	FIGDD0008	31.34	341,530	7,571,146	1,300	Previously Reported
	DD	FIGDD0009	96.66	341,876	7,573,324	1,366	Previously Reported
Soberbo	DD	SBBDD0001	18.15	348,798	7,569,486	1,298	Previously Reported
	DD	SBBDD0002	31.45	349,085	7,568,049	1,284	Previously Reported
	DD	SBBDD0003	19.75	348,991	7,570,681	1,295	Previously Reported
	DD	SBBDD0004	31.10	350,299	7,569,907	1,215	Previously Reported
	DD	SBBDD0005	23.40	348,119	7,568,005	1,304	Previously Reported
	DD	SBBDD0006	10.25	349,844	7,570,495	1,292	Previously Reported
	DD	SBBDD0007	11.14	347,976	7,569,982	1,207	Previously Reported
	DD	SBBDD0008	29.25	349,904	7,570,592	1,275	Previously Reported
	DD	SBBDD0009	29.57	350,004	7,570,493	1,259	Previously Reported
	DD	SBBDD0010	38.69	348,196	7,569,900	1,232	Previously Reported
	DD	SBBDD0011	28.85	348,804	7,569,298	1,303	Previously Reported

** Geographic datum SIRGAS_2000_23S*

*** All holes are drilled vertical*

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JORC 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 is 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 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. • Others important parameters data collected includes: 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

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	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	• Sample preparation (drying, crushing, splitting and pulverising) is carried out by ALS laboratory using industry standard protocols: ○ dried at 60°C ○ the fresh rock is crushed to sub 2mm ○ the saprolite is just disaggregated with hammers ○ Riffle split 800g sub-sample ○ 800 g pulverized to 90% passing 75um, monitored by sieving. ○ Aliquot selection from pulp packet
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.
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:-
Location of data points	• All collars were surveyed in SIRGAS 2000, 23S spindle UTM grid system. The SIRGAS 2000 is a

Element Oxide	Oxide Factor
CeO2	1.2284
Dy2O3	1.1477
Er2O3	1.1435
Eu2O3	1.1579
Gd2O3	1.1526
Ho2O3	1.1455
La2O3	1.1728
Lu2O3	1.1371
Nd2O3	1.1664
Pr6O11	1.2082
Sc2O3	1.5338
Sm2O3	1.1596
Tb4O7	1.1762
ThO2	1.1379
Tm2O3	1.1421
U3O8	1.1793
Y2O3	1.2699
Yb2O3	1.1387

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	South American Datum which is very similar with the WGS 84. • At present the survey of collars was made with a hand 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 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. • All samples for submission to the lab are packed in plastic bags (in batches) and sent to the lab where it is processed as reported above. • The remaining sample is stored in the core trays and stored at the core shed on wooden pallets. • The transport of samples from Poços de Caldas to ALS laboratory in Vespasiano was undertaken by a competent independent contractor.
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	• 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	• Metallurgical work was carried out on samples split from a 200kg composite sample, which in turn was composed of a selection of 184 samples from 41 holes (100 x100m grid) across the Capo do Mel Target. Head grade of the composite sample was 4,917ppm TREO. Results showed excellent recoveries by desorption of Rare Earth Elements (REE) using ammonium sulphate solution [(NH4)2SO4)] in weakly acidic conditions [pH 4]. Average recovery of the low temperature magnet REE Pr + Nd was 58%. desorption was achieved using a standard ammonium sulphate solution at pH 4 and confirms the Caldeira Project is an Ionic (Adsorption) Clay REE deposit (for further discussion refer ASX Release 20 December 2023). • 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.

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