Remarkable REE Drill Results Outside Caldeira Resource

Highest grade drill intercept this year of 149.5m @ 8,912 ppm TREO[1] mineralised from surface to EOH with 1,417 ppm MREO[2]

with 52m @ 12,692 pm TREO with 2,710ppm MREO from 61m

Highlights

- CVSDD001, located outside the Caldeira Project Mineral Resource, has returned the widest, highest-grade ionic clay REE drill intercept reported this year at the Caldeira Project.
- CVSDD001 had significantly higher values of both Light Magnet Rare Earths Neodymium (Nd) + Praseodymium (Pr) and Heavy Magnet Rare Earths Terbium (Tb) + Dysprosium (Dy) averaging four to five times higher than reported in the maiden mineral resource estimate for the Caldeira Project[3].
- CSVDD001 delivered an exceptional intersection of 52m from 61m downhole has LMREO grades of Nd_2O_3 -1,948 ppm Pr_6O_{11}- 656 ppm and HMREO grades of Dy_2O_3 -108 ppm and Tb_4O_7 - 21 ppm.
- MREO average grade over the entire 149.5m intersection stands at 1,417ppm MREO –higher than any peers' Ionic Clay TREO grade in reported resource estimates.
- CVSDD001 did not reach fresh rock and EOH (148-149.5m) grade is 5,972 ppm TREO

Additional outstanding drilling highlights include:

Resource Drilling

- CDMDD009 - 16.9m @ 3,649ppm TREO [0m], including 7m @ 5,834ppm TREO [0m]
- CDMDD010 - 52.6m @ 2,619ppm TREO [0m], including 5m @ 3,016ppm TREO [17m]
- CDMDD011 - 25m @ 6,575ppm TREO [0m], including 4.5m @ 15,598ppm TREO [2m]
- FGDD004 - 97.7m @ 1,817ppm TREO [0m], including 12.3m @ 3,666ppm TREO [22.8m]
- FGDD005 - 11.1m @ 2,670ppm TREO [0m], including 7.1m @ 3,072ppm TREO [4m]
- FGDD006 - 59m @ 2,594ppm TREO [0m], including 28m @ 3,905ppm TREO [10m]
- SBDD004 - 22.7m @ 2,359ppm TREO [0m], including 10.3m @ 3,755ppm TREO [0m]
- SBDD008 - 26.2m @ 3,306ppm TREO [0m], including 18.2m @ 4,172ppm TREO [8m]
- SBDD009 - 26.2m @ 3,958ppm TREO [0m], including 19.2m @ 4,785ppm TREO [7m]
- SBDD010 - 24.3m @ 2,992ppm TREO [0m], including 14m @ 4,038ppm TREO [7m]
- SBDD011 - 24.5m @ 2,240ppm TREO [0m], including 10m @ 3,781ppm TREO [12m]

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[1] Total Rare Earth Oxides (TREO) = La_2O3 + CeO2 +$Pr6O_{11}$ + 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] Magnetic Rare Earth Oxides (MREO) = $Pr6O_1$ + Nd_2O_33 + Tb_4O_7 + Dy_2O_3

[3] ASX:MEI May 1st 2023 : Caldeira Project Maiden Resource. HMREO = Heavy Magnet Rare Earth Oxides. LMREO = Light Magnetic Rare Earth Oxides.

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Exploration Drilling (Outside the Caldeira Project Resource Estimate)

- CVSDD001 - 149.5m @ 8,912 ppm TREO [0m],
  with 52m @ 12,692ppm or 1.27 % TREO [61m],
- BDPDD001 - 73.3m @ 3,939ppm TREO [0m], including 42,3m @ 4,719ppm TREO [0m]
- CDMDD003 - 26.7m @ 1,561ppm TREO [0m], including 4.2m @ 3,582ppm TREO [0.9m]
- CRDD001 - 58m @ 2,702ppm TREO [0m], including 33m @ 3,006ppm TREO [5m]
- CRDD002 - 28.4m @ 2,194ppm TREO [0m], including 12.1m @ 2,322ppm TREO [5m]

Exploration Drilling Update – Aircore Rig

- MEI has commenced a 60,000m aircore program with the objective to define Measured & Indicated Resources at Soberbo, Capao da Mel, and Figueira (**Figure 1**) following the purchase of a Hanjin 8D Multipurpose Drill rig.
- The Company recently published its maiden Mineral Resource Estimate (**MRE**) for the Caldeira REE Project under JORC 2012 which stands at a **World Class 409Mt @ 2,626 TREO at a 1,000ppm cut-off grade**, based solely on historical drilling to an average depth of less than 10m. Increased depth of mineralised clays encountered in recent diamond drilling has enormous positive implications for any future resource estimate.

Meteoric Resources NL (**Meteoric** or the **Company**) (ASX: **MEI**) is pleased to announce results from 22 diamond drill holes where assays have now been received. 17 of the holes were located inside the current resource area and are designed to test depth to basement and continuity of mineralisation at depth, below the resource model. Additional results have been received from a further 5 holes drilled outside the resource area. This new drilling is designed to test REE soil anomalies and expand the current footprint of the resource.

Executive Chairman, Dr Andrew Tunks said,

The Caldeira Project continues to deliver truly amazing results that even a month ago, we could not have predicted. The extensions of REE mineralisation below the Mineral Resource Estimate have now clearly been proven. Our maiden Resource was modelled on the results of previous exploration where all drilling was completed with powered auger. The depth restrictions of augur drilling limited our understanding of the depth of mineralisation across the project, with only an average drilling depth of less than 10m in historic results. Our diamond drilling now conclusively shows that the depth of mineralised clays is far greater than 10m and that REE mineralisation is developed throughout the entire regolith profile.

Of course, hole CVSD001, which is outside the resource area, is simply remarkable. It contains the best intercept we have yet seen at Caldeira and ended in strongly mineralised clay. For the first time, we have also seen a strong enriched heavy magnet rare earth zone where we have increased grades of terbium and dysprosium up to 57ppm and 248ppm respectively. The elevated presence of these valuable elements, averaging 4-5 times above the current resource's estimated head grade, will have a significant impact on the value of the MREC[4] basket price. This result underscores our belief that the Caldeira Project can provide the global economy with a viable alternative to China's dominance of rare earth supply.

[4] Mixed Rare Earths Carbonate

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Resources Confirmation and Depth Extension Diamond Drilling Program

Since Meteoric commenced its diamond drilling program, a total of 42 HQ Diamond (**DD**) Drill holes for 1,384.9m have been drilled across the six (6) known deposits, with combined Inferred Resources of 409Mt @ 2,626ppm TREO (**Figure 1**). The program was designed to test the depth to the base of the clays below the Inferred Resource and support metallurgical characterisation and density test work programs. Results from the 27 holes demonstrated that the Clay Zone increased by an average of 163% across the 6 deposits were previously reported (ASX: 24 July 2023).

The collar table for all drilling is presented in **Appendix 1**.

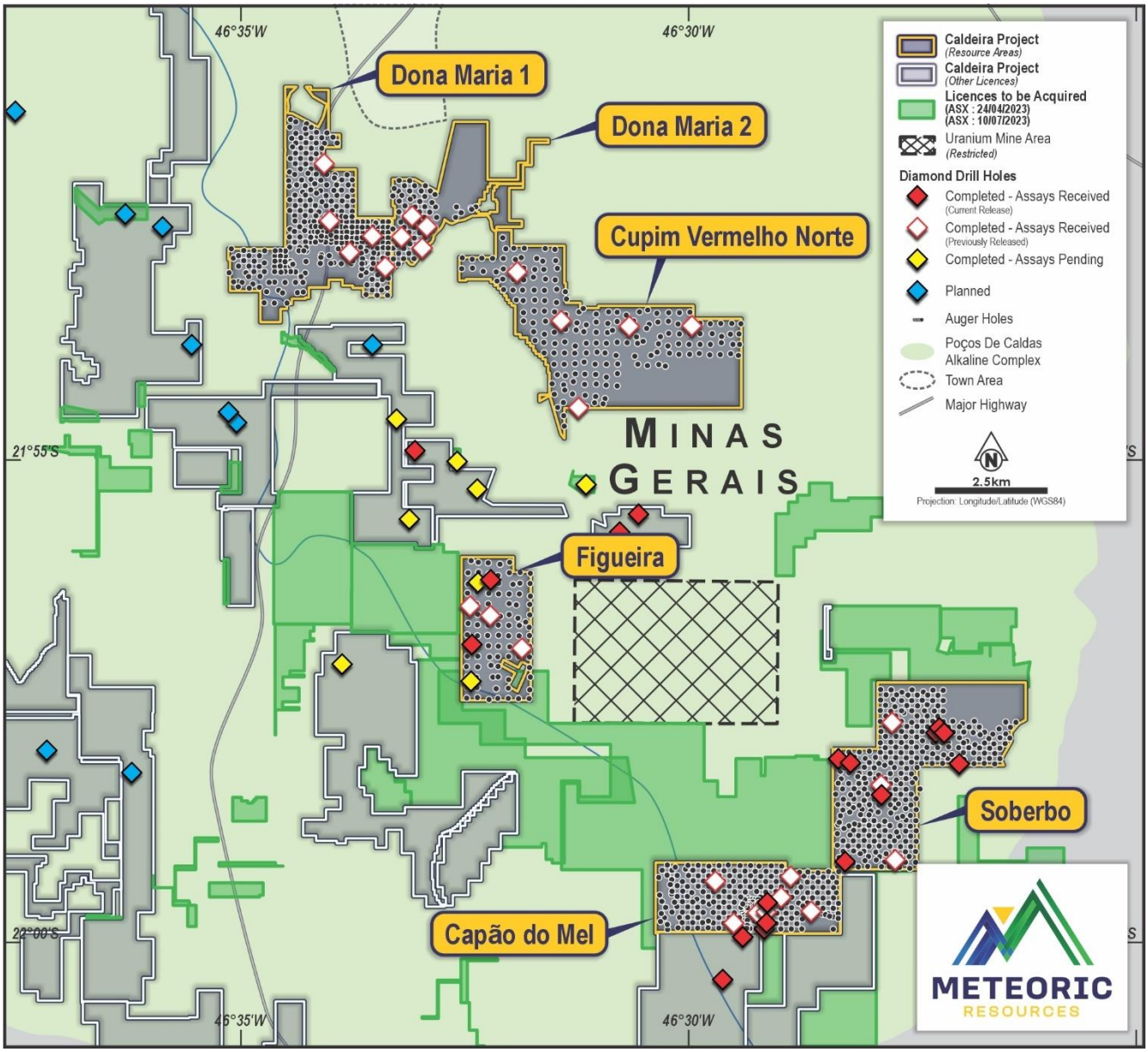

Figure 1: *DD Drill Hole Location Plan*

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Geology and Mineralisation

Rare Earth Element (REE) mineralisation occurs in a thick saprolite and transition zone (clay zone) which has formed as the result of intense weathering of the underlying intrusive host rocks. Drilling in the Inferred Resources continues to show the mineralised clay zone extending below the current base of the resource estimate.

Figures 2 to 4 below show a strong correlation with the block model from the current Inferred Resource in the upper part of the weathering profile (to a maximum of 20m depth), but also clearly show strong TREO grades (> 1,000ppm) extending below the block model, confirming both an increase in the depth of clay and an increase in the depth of mineralisation below the current resource. This has obvious positive implications for any updated resource estimate.

Results from a further fourteen (14) holes within the Inferred Resource areas were received in August (Table 1).

The average magnetic rare earth oxides (**MREO**) as a percentage of total rare earth oxides (**TREO**) average: 21% at Figueira (peak intercept grading 1,022ppm MREO (FGDD004)), 22% at Capao da Mel (peak intercept grading 5,461ppm MREO (CDMDD011)), and 24% at Soberbo (peak intercept grading 1,855ppm MREO (SBDD007)). This is consistent with data that was reported for the Inferred Resource estimate in May (ASX: 1 May 2023 - Table 4).

Table 1. *Mineralised Intercept Table – Brownfields (Inferred Resource areas) Diamond Drill Hole program.*

Target	Hole	From (m)	To (m)	Length (m)	TREO (ppm)	MREO (ppm)	MREO as % of TREO
Capão do Mel	CDMDD009	0.0	16.9	16.9	3,649	818	22.4%
	including	*0.0*	*7.0*	*7.0*	*5,834*	*1,445*	*24.8%*
	CDMDD010	0.0	52.6	52.6	2,619	448	17.1%
	including	*17.0*	*22.0*	*5.0*	*3,016*	*493*	*16.3%*
	CDMDD011	0.0	25.0	25.0	6,575	2,084	31.7%
	including	*2.0*	*6.5*	*4.5*	*15,598*	*5,461*	*35.0%*
Figueira	FGDD004	0.0	97.7	97.7	1,817	335	18.4%
	including	*22.8*	*35.0*	*12.3*	*3,666*	*1,022*	*27.9%*
	FGDD005	0.0	11.1	11.1	2,67	709	26.5%
	including	*4.0*	*11.1*	*7.1*	*3,072*	*740*	*24.1%*
	FGDD006	0.0	59.0	59.0	2,594	602	23.2%
	including	*10.0*	*38.0*	*28.0*	*3,905*	*991*	*25.4%*
Soberbo	SBDD004	0.0	22.7	22.7	2,359	522	22.1%
	including	*0.0*	*10.3*	*10.3*	*3,755*	*956*	*25.5%*
	SBDD005	0.0	17.0	17.0	1,494	253	16.9%
	SBDD006	0.0	7.5	7.5	1,428	106	7.5%
	SBDD007	0.0	8.8	8.8	4,112	1,284	31.2%
	including	*3.0*	*8.8*	*5.8*	*5,642*	*1,855*	*32.9%*
	SBDD008	0.0	26.2	26.2	3,306	898	27.2%
	including	*8.0*	*26.2*	*18.2*	*4,172*	*1,181*	*28.3%*
	SBDD009	0.0	26.2	26.2	3,958	1,199	30.3%
	including	*7.0*	*26.2*	*19.2*	*4,785*	*1,543*	*32.2%*
	SBDD010	0.0	24.3	24.3	2,992	728	24.3%
	including	*7.0*	*21.0*	*14.0*	*4,038*	*1,074*	*26.6%*
	SBDD011	0.0	24.5	24.5	2,240	526	23.5%
	including	*12.0*	*22.0*	*10.0*	*3,781*	*1,111*	*29.4%*

** min 4m width, bottom cut-off 1,000ppm TREO, max 2m internal dilution*
*** 'including': min 4m width, bottom cut-off 3,000 ppm TREO, max 2m internal dilution.*
**** 'with': min 4m width, bottom cut-off 10,000 ppm TREO, max 2m internal dilution.*

Exploration Drilling Program (Priority Soil Geochemistry Targets)

A regional exploration program to test seventeen (17) priority targets (soil anomalies) on licenses outside the Company's REE Inferred Resource areas began in July 2023. A total of 10 HQ Diamond (DD) Drill holes for 749m have been drilled across five (5) Greenfields Targets to date (**Appendix 1**). Results from 5 holes were received from Targets at: Cupim Vermelho Sul, Barra de Pacu, and Cercado (**Figure 2** and **Table 2**).

The highlight was an astonishing result at Cupim Vermelho Sul in CVSD001 which returned 149.5m @ 8,912ppm TREO from surface [0m] including 53m @ 12,692ppm or 1.27% TREO [61m].

The MREO as a percentage of TREO for the three (3) Targets ranged from 15.1% to 23.8% (**Table 2**), consistent with the percentages reported across the Inferred Resources (**Table 4**). However, of particular note is the contribution of the heavy rare earth oxides (HREOs – Tb_4O_7 + Dy_2O_3), especially in CVSD001 where dysprosium oxide (Dy_2O_3) averaged 107ppm over 52m from 61m to 113m down hole, compared to an average of 25ppm across the Inferred Resources. Terbium oxide (Tb_4O_7) averaged 21ppm over the same 52m interval compared to an average of 5ppm across the Inferred Resources (**Table 4**). This demonstrates there is an ability to define higher grade HREO zones within the mineralisation across the Project.

Table 2. *Mineralised Intercept Table – Greenfields (regional exploration) Diamond Drill Hole program.*

Target	Hole	From (m)	To (m)	Length (m)	TREO (ppm)	MREO (ppm)	MREO as % of TREO
Barra do Pacu	BDPDD-001	0.00	73.31	73.31	3,939	730	18.5%
	including	*0.00*	*42.31*	*42.31*	*4,719*	*890*	*18.9%*
	CDMDD003	0.00	26.70	26.70	1,561	372	23.8%
	including	*0.85*	*5.00*	*4.15*	*3,582*	*972*	*27.1%*
Cercado	CRDD001	0.00	58.00	58.00	2,702	408	15.1%
	including	*5.00*	*38.00*	*33.00*	*3,006*	*358*	*11.9%*
	CRDD002	0.00	28.42	28.42	2,194	402	18.3%
	including	*1.89*	*17.10*	*15.21*	*2,322*	*404*	*17.4%*
Cupim Vermelho Sul	CVSDD001	0.00	149.49	149.49	8,912	1,417	15.9%
	with	*61.00*	*113.00*	*53.00*	*12,585*	*2,710*	*21.5%*

** min 4m width, bottom cut-off 1,000ppm TREO, max 2m internal dilution*
*** 'including': min 2m width, bottom cut-off 3,000 ppm TREO, max 1m internal dilution*
**** 'with': min 2m width, bottom cut-off 10,000 ppm TREO, max 1m internal dilution*

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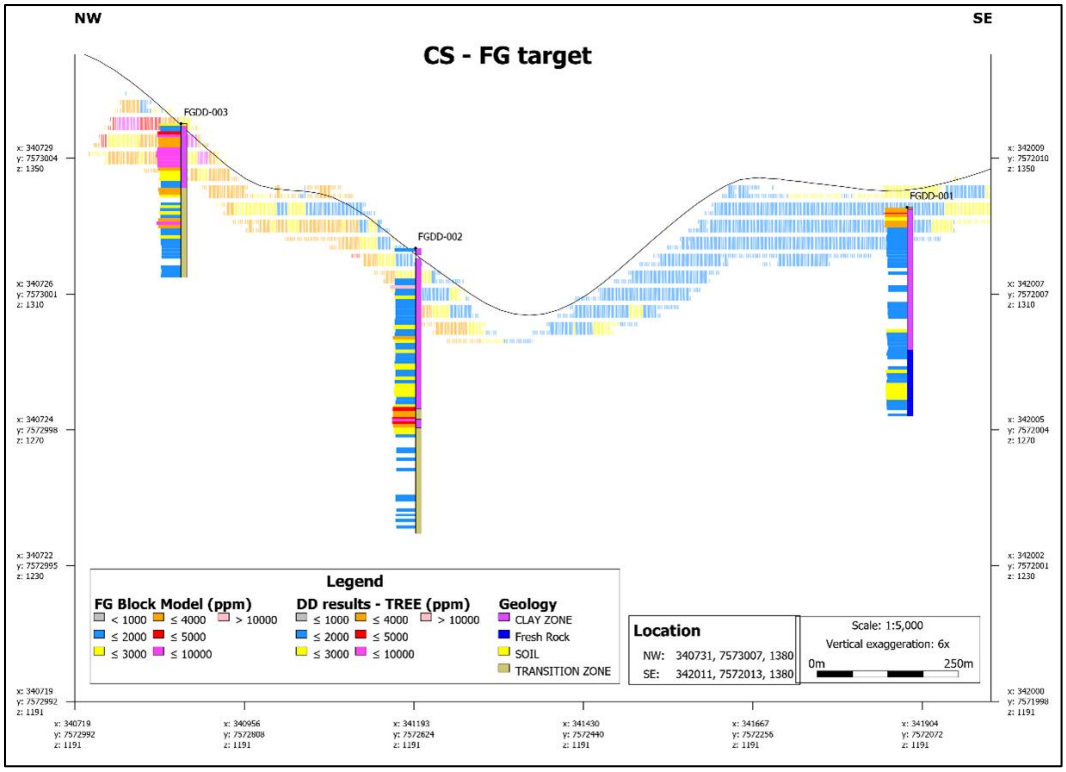

Figure 2: *Oblique Cross Section (NW-SE) through Figueira deposit showing: current Inferred Resource block model, DD drill holes intersecting clays up to 70m below the current Inferred Resource (FGDD002), with an average increase in depth of Clay Zone of 449% across the Deposit*

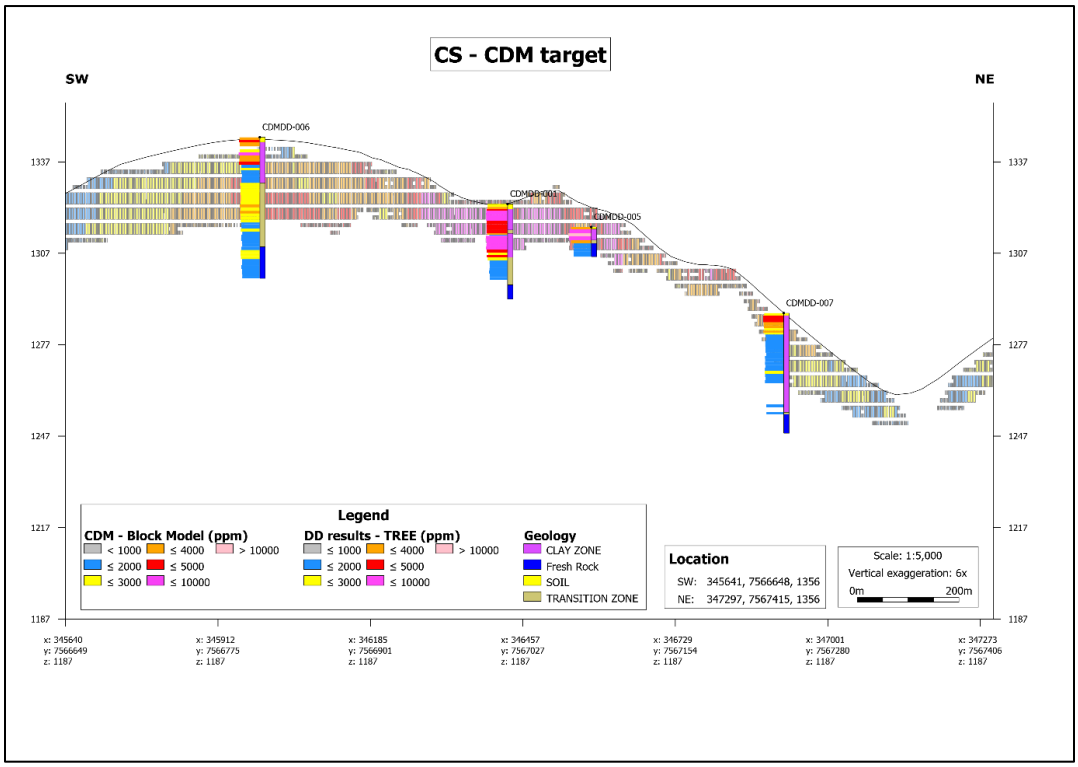

Figure 3: *Oblique Cross Section (SW-NE) through Capão do Mel deposit showing: current Inferred Resource block model, DD drill holes intersecting clays up to 19m below the current Inferred Resource (CDMDD006), with an average increase in depth of Clay Zone of 161% across the Deposit.*

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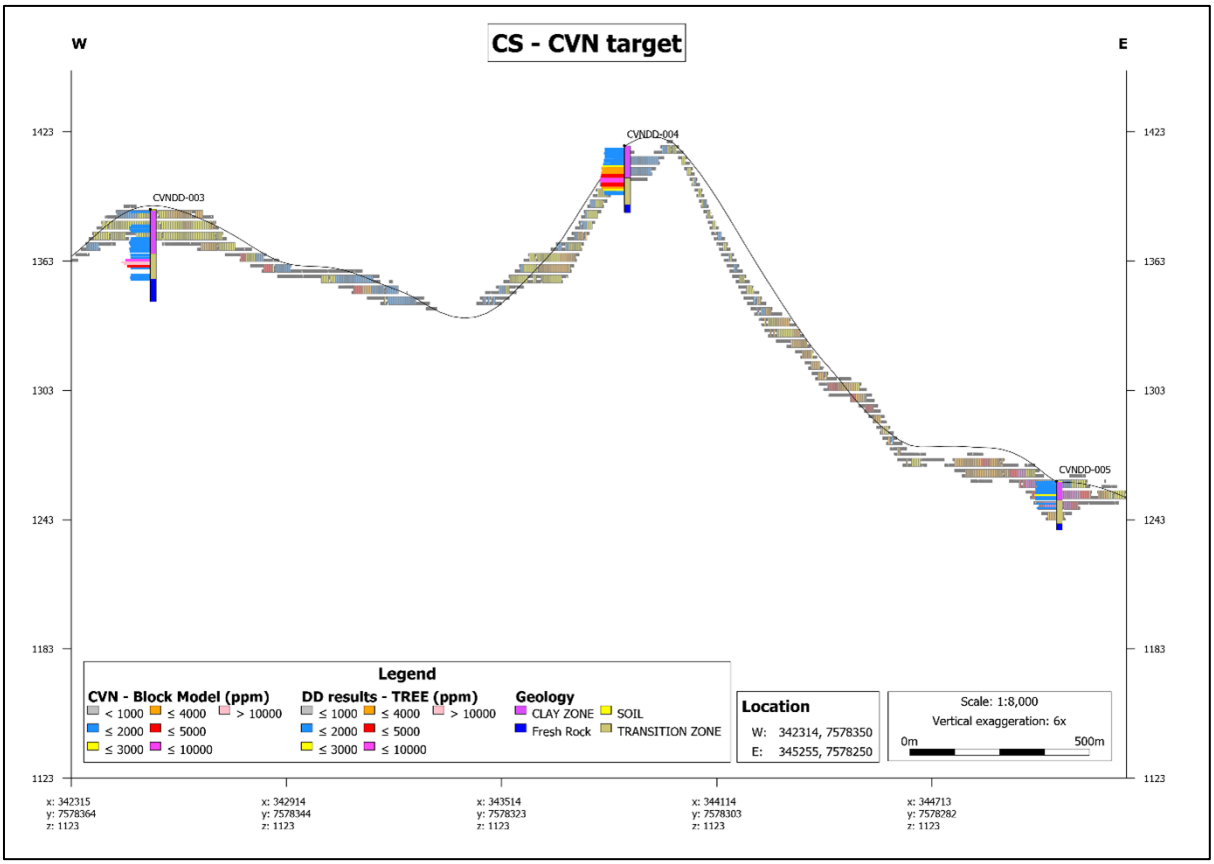

Figure 4: *Cross Section (E-W) through Cupim Vermelho Norte deposit showing current Inferred Resource block model, DD drill holes intersecting clays up to 17m below the current Inferred Resource (CVNDD003), with an average increase in depth of Clay Zone of 139% across the Deposit.*

Meteoric Multipurpose Drill Rig commences drilling

The Company has acquired a Hanjin 8D Multipurpose Drill rig and commenced a 60,000m Aircore program to define Measured & Indicated Resources at Soberbo, Capao da Mel, and Figueira prospects.

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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
- The majority of the REE's are **adsorbed** onto clay minerals and accumulate in the clay zone of the regolith profile
- Adsorbed REE 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 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 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 = $Pr6O_1 + Nd_2O_33 + Tb_4O_7 + Dy_2O_3$

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

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APPENDIX 1

Brownfields Targets (6 resource estimate areas) – DD Drill Hole Location Co-Ordinates (all holes were drilled vertical). Holes reported in this release are in bold

Target	Hole ID	East	North	RL	Hole Depth	Depth of Clay	Assays
Capão do Mel	CDMDD-001	346439	7566994	1328	31.2	26.5	Previously Reported
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
Capão do Mel	CDMDD-005	346611	7567015	1316	9.8	5.4	Previously Reported
Capão do Mel	CDMDD-006	345992	7566799	1344	46.4	36.0	Previously Reported
Capão do Mel	CDMDD-007	346893	7567307	1288	39.4	33.3	Previously Reported
Capão do Mel	CDMDD-008	347079	7567709	1272	40.6	36.8	Previously Reported
Capão do Mel	**CDMDD-009**	**346578**	**7566694**	**1289**	**29.6**	**16.9**	**Reported Above**
Capão do Mel	**CDMDD-010**	**346631**	**7567194**	**1308**	**57.8**	**52.6**	**Reported Above**
Capão do Mel	**CDMDD-011**	**346621**	**7566802**	**1296**	**26.0**	**26.0**	**Reported Above**
Cupim Vermelho	CVNDD-001	342885	7576690	1422	23.3	19.2	Previously Reported
Cupim Vermelho	CVNDD-002	341677	7579289	1382	28.1	20.6	Previously Reported
Cupim Vermelho	CVNDD-003	342535	7578361	1421	43.0	32.4	Previously Reported
Cupim Vermelho	CVNDD-004	343854	7578258	1434	31.1	27.4	Previously Reported
Cupim Vermelho	CVNDD-005	345060	7578282	1272	22.8	19.8	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 1	DM1DD-004	339141	7579358	1374	21.2	14.5	Previously Reported
Dona Maria 1	DM1DD-005	338056	7580236	1405	12.1	1.0	Previously Reported
Dona Maria 2	DM2DD-001	339847	7579729	1391	22.1	15.6	Previously Reported
Dona Maria 2	DM2DD-002	339441	7579946	1346	22.4	13.6	Previously Reported
Dona Maria 2	DM2DD-003	339936	7580142	1385	23.2	15.3	Previously Reported
Dona Maria 2	DM2DD-004	339649	7580345	1394	18.6	15.6	Previously Reported
Figueira	FGDD-001	341851	7572048	1351	61.8	42.2	Previously Reported
Figueira	FGDD-002	341238	7572677	1352	84.5	84.5	Previously Reported
Figueira	FGDD-003	340847	7572850	1282	45.6	45.6	Previously Reported
Figueira	**FGDD-004**	**340882**	**7571408**	**1343**	**97.7**	**97.7**	**Reported Above**
Figueira	**FGDD-005**	**340893**	**7572111**	**1330**	**20.7**	**11.1**	**Reported Above**
Figueira	**FGDD-006**	**341233**	**7573358**	**1250**	**59.0**	**59.0**	**Reported Above**
Figueira	FGDD-007	340994	7573308	1250	71.0	62.1	Pending
Soberbo	SBDD-001	348798	7569484	1307	18.2	13.0	Previously Reported
Soberbo	SBDD-002	349087	7568044	1298	31.5	26.1	Previously Reported
Soberbo	SBDD-003	348993	7570684	1311	19.8	3.9	Previously Reported
Soberbo	**SBDD-004**	**350298**	**7569905**	**1218**	**31.1**	**28.8**	**Reported Above**
Soberbo	**SBDD-005**	**348119**	**7568003**	**1313**	**23.4**	**17.0**	**Reported Above**
Soberbo	**SBDD-006**	**349845**	**7570492**	**1296**	**10.3**	**7.5**	**Reported Above**
Soberbo	**SBDD-007**	**347973**	**7569979**	**1209**	**11.1**	**8.8**	**Reported Above**
Soberbo	**SBDD-008**	**349905**	**7570592**	**1283**	**29.3**	**26.2**	**Reported Above**
Soberbo	**SBDD-009**	**350003**	**7570490**	**1261**	**29.6**	**26.2**	**Reported Above**
Soberbo	**SBDD-010**	**348201**	**7569900**	**1236**	**38.7**	**24.3**	**Reported Above**
Soberbo	**SBDD-011**	**348806**	**7569291**	**1306**	**28.9**	**24.5**	**Reported Above**
Total	42 Holes				1,384.9		

**Geographic Datum SIRGAS_2000_23S*

Greenfields Targets (Exploration) – DD Drill Hole Location Co-Ordinates (all holes were drilled vertical).

Holes reported in this release are in bold

Target	Hole ID	East	North	RL	Hole Depth	Depth of Clay	Assays
Barra do Pacu	***BDPDD-001***	***346169***	***7566530***	***1339***	***73.3***	***73.3***	***Reported Above***
Barra do Pacu	***CDMDD-003***	***345786***	***7565709***	***1363***	***31.3***	***26.7***	***Reported Above***
Cercado	***CRDD-001***	***343712***	***7574301***	***1461***	***81.6***	***58.0***	***Reported Above***
Cercado	***CRDD-002***	***344072***	***7574647***	***1456***	***35.2***	***35.2***	***Reported Above***
Cercado	CRDD-003	343050	7575204	1464	75.3	75.3	Pending
Cupim Vermelho Sul	***CVSDD001***	***339750***	***7575833***	***1463***	***149.5***	***149.5***	***Reported Above***
Cupim Vermelho Sul	CVSDD002	340953	7575108	1391	70.8	58.0	Pending
Cupim Vermelho Sul	CVSDD003	340564	7575627	1356	56.6	42.0	Pending
Pião	PIDD-001	339387	7576438	1427	143.0	101.7	Pending
Pinheiro	PNDD-001	338391	7571712	1343	32.6	27.2	Pending
Total	10 Holes				749.0		

**Geographic Datum SIRGAS_2000_23S*

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 release that relates to Mineral Resources 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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APPENDIX 2 - JORC Code, 2012 Edition – Table 1

Section 1 Sampling Techniques and Data

Criteria	Commentary
Sampling techniques	• The drilling is diamond drill rig (Mach 1200) with HQ diameter using the wireline technic. • The samples were collected in core trays with depth 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 technic. • 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. Core recoveries were generally better than 95% however in some fresh rock zones the recovery can be near of 75%. Within the saprolite target horizon recoveries average better than 95%.
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 the 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 Microsoft Excel template with inbuilt validation tables and pick list to avoid data enter errors. • All geological data are imported into a Microsoft Access database.

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 holes discussed in this release are twin holes to verify historic drilling • 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. • Data is not adjusted

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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 the moment the survey of collars was made with a hand GPS and in a second moment it 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.
Data spacing and distribution	• See collar plan – Figure 1 body of text – Appendix 1 Collar Table • 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 powered auger holes is appropriate. • 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. • Each drill hole is packed in plastic bags forming a batch to be sent to the lab where it is processed as reported above. • The remaining sample is stored in the same boxes which was inserted on the drill process and stored on the same core shad in 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

q	Commentary
Mineral tenement and land tenure status	• 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	• The Caldeira Project has had significant exploration 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).
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
Data aggregation methods	• min 4m width, bottom cut-off 1,000ppm TREO, max 2m internal dilution

	• 'including': min 2m width, bottom cut-off 3,000 ppm TREO, max 1m internal dilution • 'with': min 2m width, bottom cut-off 10,000 ppm TREO, max 1m internal dilution
Mineralisation widths and intercept lengths	• Drilling vertical into horizontal zones drilled width = true width
Diagrams	• See body of the text
Balanced reporting	• Results for all mineralised intercepts are reported in Tables 1 & 2.
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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