Caldeira Project Drilling Update

Highlights

- Drill comparisons of original auger holes and new twinned diamond holes highlight extensive clay horizons beneath original auger holes that ended in high-grade REE mineralisation.
- Eight of 11 new diamond holes show a significant depth extension of the target clay zone beneath the historic auger holes. The deepest hole extends clay zones from 14m to 54m depth.

The Global Mineral Resource Estimate (MRE)[1] for the Caldeira Project stands at 409Mt @ 2,626 ppm TREO[2] at a 1000ppm cut off:

- MRE is modelled to an average depth of 10m and deepest resource modelling currently ends 25m below surface.
- Diamond drilling confirms areas remain at depth for significant extensions to resources.
- The Company has planned a 100,000m aircore and diamond drill program targeting high-grade areas within the resource model to improve resource confidence to a Measured and Indicated classification – drilling will commence at the Cap do Mel Prospect.
- The Company has purchased a multipurpose drill rig and employed an experienced drill supervisor.

Meteoric Resources NL (**ASX: MEI**) (**Meteoric** or **the Company**) is pleased to announce an update on the current diamond drilling program and its plans for future exploration, resource definition and conversion at the Caldeira Project in Minas Gerais Brazil.

Executive Chairman, Dr Andrew Tunks said,

"Our current diamond drill program was designed to test the depth extent of the clay zone beneath historical drilling. Previous explorers employed a powered auger drill which only achieved an average depth of 6.9m across the project, with 85% of historic auger holes finishing in mineralisation above 1,000ppm TREO. Current drilling indicates an increase in the thickness of the target clay zone of up to 45m beneath the historic auger drilling. Clearly this shows that there remains considerable potential for additional REE mineralisation beneath the historic drilling.

The Company will drill 100,000m of aircore into the highest-grade areas of the resource to improve confidence in the resource estimate from Inferred category to Measured and Indicated in preparation for economic studies, as well as testing the true depth of REE mineralisation. To ensure these targets are met within a reasonable timeframe and budget the company will build its own drilling capacity in-house, purchasing a multi-purpose drill rig which will be set up to drill "aircore". Aircore is a drilling method developed in Australia capable of providing high quality, uncontaminated samples in unconsolidated sediments and clay horizons. To enhance our capacity, we have employed a vastly experienced Manager of Drilling to commission the new Rig and mentor the operators and exploration team to ensure our drilling goals are met within budget and on time."

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1 ASX:MEI - Caldeira REE Project Maiden Mineral Resource - 409Mt @ 2,626 ppm TREO

2 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

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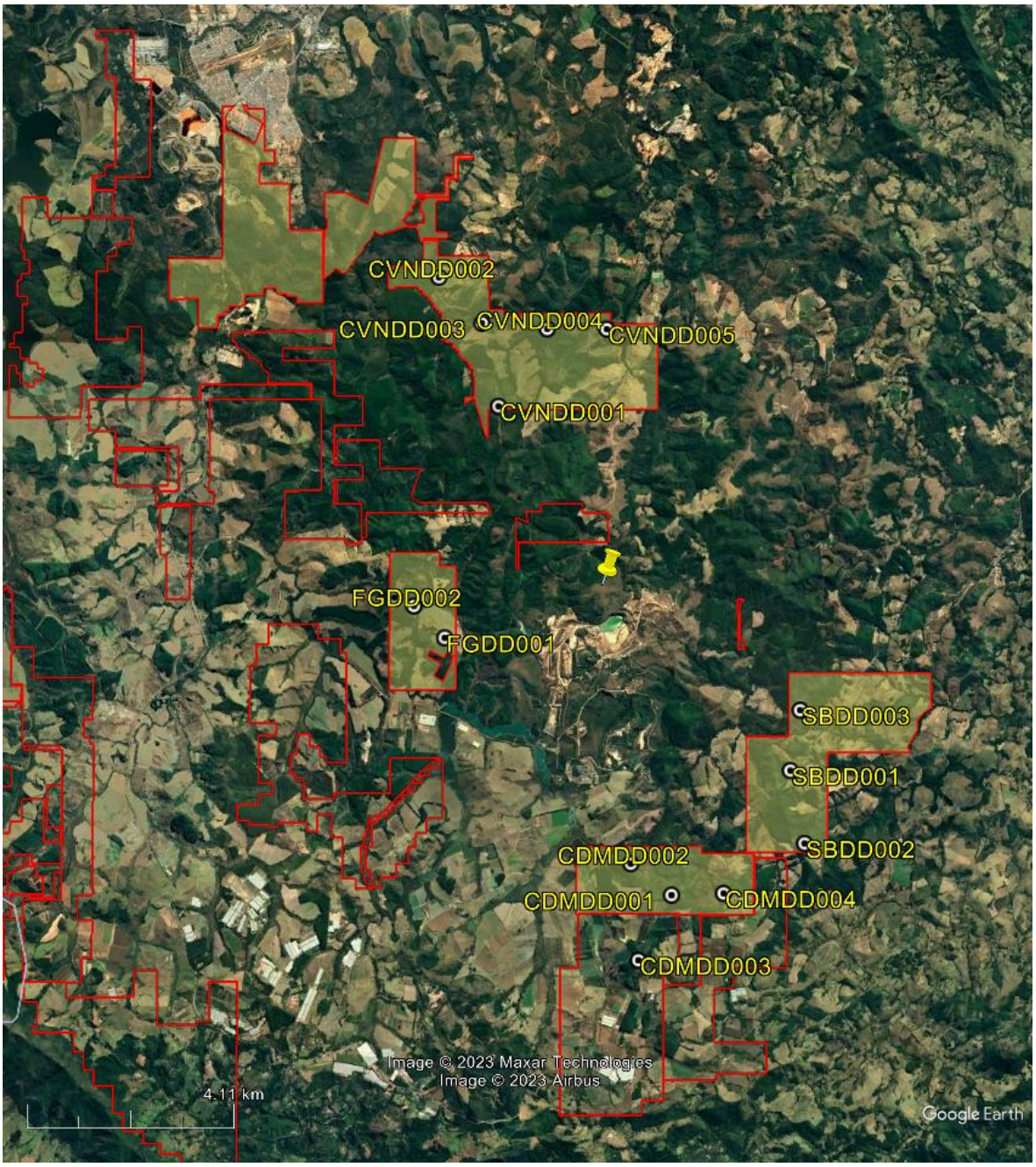

Figure 1. *Drill hole location plan showing license boundaries (MRE areas shown with yellow hatch) on Google Earth Image. CDMDD003 is the only hole drilled outside the MRE areas.*

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Diamond Drilling Update

Fifteen (15) diamond drill holes for a total of 457m of a planned 1,250m have been completed (06 May). After the initial drilling contractor was plagued by poor drilling productivity Willemita Sondagems Ltda mobilised to site on 04 April and achieved planned production through April. Of the fifteen (15) holes completed to date twelve (12) are twinning historical auger holes. Assay results are pending and will be released once the proposed 1,250m program is complete.

In Ionic Clay Adsorbed REE mineralisation the potential economic zone that can be leached by washing with ammonium sulfate is confined to the clay zone of the regolith profile. Beneath the clay zone, in the partially weathered and fresh syenite (basement), all REE elements are likely related to primary mineralisation and consequently are not a target for the Company. A comparison of depth of clays intercepted in the diamond holes and the historic auger holes is shown in **Table 1** and highlights that historic auger drilling did not reach the base of the clays and a considerable thickness of clay continues beneath the base of auger drilling.

Significant depth extensions to the clay zone have been logged at the Figueira Prospect where historical auger drilling ended between 12m and 14.2m depth. Most significant was in diamond hole FGDD002, where the base of the clay zone was logged at 50m depth.

Drilling to date indicates that the increase in the thickness of the clay zone is variable across the MRE areas but clearly highlights the potential for additional resources below the current model in the MRE, assuming part (if not all) of these clays contain TREO mineralisation. Complete geological logs of the Auger holes and the twinned diamond holes are presented in Appendix 1.

***Table 1**. – Comparison between historical auger drill holes with the twinned diamond drill holes.*

Historic Auger hole	Auger EOH Depth (m)	Twinned Diamond Drillhole	Depth of twin (m)	Depth clay zone in twin (m)	% depth increase - target thickness
CDM-134	18.5	CDMDD001	31.18	17.47	94%
CDM-194	14	CDMDD002	20.4	15.2	109%
CDM-204	10.2	CDMDD004	18.15	16.35	160%
SB-76	17.5	SBDD001	18.15	12.95	74%
SB-120	10.5	SBDD003	19.75	10.25	98%
SB-315	14.7	SBDD002	31.45	26.1	178%
FG-48	12	FGDD003	45.55	19.2	160%
FG-36	14	FGDD002	84.45	53.15	380%
FG-60	14.2	FGDD001	61.8	42.2	297%
CVN-182	11	CVNDD001	23.25	14.1	128%
CVN-22	12	CVNDD002	28.05	20.64	172%

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Proposed 100,000m Air Core Drilling Program

The Company previously announced a major drill program to improve confidence in the MRE from Inferred category to Measured and Indicated in preparation for economic studies, as well as testing the true depth of REE mineralisation (ASX:MEI 1 May 2023). A crucial first step has been the recruitment of Mr Rob McGaffin, an experienced Drilling Manager, who recently managed over 200 personnel for African Mining Services (AMS) in Ghana. Rob has overseen the selection of a new Multi-purpose (Aircore) Drill Rig which will be shipped to Brazil during May and is expected to be commissioned on the Caldeira Project at the end of June. Rob has been tasked with recruiting and building the Company's internal drilling capacity.

The new multi-purpose drill rig is a track mounted, supported by a compressor also on tracks, has a small footprint, and requires minimal clearing at the drill site ensuring minimum environmental impact. The rig comes with all crucial spares and is capable of drilling in excess of 200m per shift into the target clay zone. Once the drill rig is staffed and running the Company will consider increasing drilling capacity under Rob's supervision to ensure our drilling plans are delivered on time and within budget.

Drilling Information

***Table 2**. – Collar table for Auger Holes and Diamond holes – All holes are vertical*

Auger hole	E (m)	N (m)	RL (m)	EOH (m)	Diamond Twin	E (m)	N (m)	RL (m)	EOH (m)
CDM-134	346439	7566994	1328	18.5	CDMDD001	346439	7566998	1342	31.2
CDM-194	345627	7567601	1312	14	CDMDD002	345621	7567611	1339	20.4
CDM-204	347477	7567050	1310	10.2	CDMDD004	347477	7567043	1326	18.2
SB-76	348796	7569488	1307	17.5	SBDD001	348798	7569484	1307	18.2
SB-120	348988	7570683	1316	10.5	SBDD003	348988	7570683	1316	19.8
SB-315	349087	7568044	1298	14.7	SBDD002	349087	7568044	1298	31.5
FG-48	340847	7572850	1341	12	FGDD003	340847	7572850	1341	45.6
FG-36	341236	7572681	1334	14	FGDD002	341236	7572681	1334	84.5
FG-60	341860	7572053	1389	14.2	FGDD001	341860	7572053	1389	61.8
CVN-182	342891	7576694	1426	11	CVNDD001	342891	7576694	1426	23.3
CVN-22	341664	7579280	1361	12	CVNDD002	341664	7579280	1361	28.1
No Twin Hole					CVNDD003	342540	7578360	1250	43.0

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

Competent Person Statements

Dr Marcelo J De Carvalho

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.

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Appendix 1 Summary Drill Logs

Note: Full details on drilling methods and sampling for Auger holes Drilled by JOGMEC (2016 to 2019) previously released to ASX 16/12/2023 and 01/05/202.

Diamond drilling details are covered in Appendix 2. JORC Table 1 and repeated here for clarity.

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 is 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.

LEGEND CODE	Symbology	DESCRIPTION
H_A	Soil_A	Humic soil with organic material
H_B	Soil_B	Argilic soil with roots, without preserved rock texture
H_L	Soil_L	Argilic soil with lateritic fragments
H_C1	Soil_C1	Totally altered rock with a lot of clay (ratio 1:1) in relation to other minerals, oxide minerals concentration and does not have free silic
H_C2	Soil_C2	Totally altered rock with formation of cutans (films) of rounded clays making up more than 20% of the volume.
H_C3	Soil_C3	Totally altered rock with mottled spots
H_C4	Soil_C4	Totally altered rock with preserved rock texture and some pseudomorphs of crystals
BOT	Sandstone	Sandstone well rounded, medium grains and well selected (Eolic, Fm. Botucatu)
TUF	Tuff	Tuff, Fine grain with some rock fragments
BRV	Volcanic Breccia	Volcanic breccia composed by subrounded to angular fragments of Sandstone, Diabase and Nepheline Sienite
TIN	Tinguaite	Black Rock with fine to medium grain and radial minerals
FOI	Foiaite	Black rock with coarse grain, sometimes with minerals oriented by magmatic flux
FON	Fonolite	Black rock with fine grain sometimes with porphyry texture
LUJ	Lujaurite	Black rock with phaneritic texture with eudialite and few K-feldspar
CHI	Chibinite	Black rock with phaneritic texture with eudialite and moderate K-Feldspar
CHI	Gnaiss	Basement of the Volcanic Caldera and teh Parana Basin, composed by gnaiss
CHI	Pegmatite	Coarse grain rock with pegmatitic texture

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Auger hole	FROM	TO	Lithology	Diamond Hole	FROM	TO	Lithology
CDM-134	0	1	H_A	CDMDD001	0	1.67	H_A
CDM-134	1	2	H_C1	CDMDD001	1.67	3.63	H_C3
CDM-134	2	3	H_C1	CDMDD001	3.63	4.52	H_C3
CDM-134	3	4	H_C1	CDMDD001	4.52	6.65	H_C3
CDM-134	4	5	H_C1	CDMDD001	6.65	8.5	H_C3
CDM-134	5	6	H_C1	CDMDD001	8.5	9.65	H_C4
CDM-134	6	7	H_C1	CDMDD001	9.65	10.05	H_C3
CDM-134	7	8	H_C1	CDMDD001	10.05	10.45	H_C3
CDM-134	8	9	H_C1	CDMDD001	10.45	11.27	H_C3
CDM-134	9	10	H_C1	CDMDD001	11.27	12.1	H_C3
CDM-134	10	11	H_C1	CDMDD001	12.1	17.46	H_C3
CDM-134	11	12	H_C1	CDMDD001	17.46	19.79	H_C4
CDM-134	12	13	H_C1	CDMDD001	19.79	22.86	H_C4
CDM-134	13	14	H_C1	CDMDD001	22.86	24.9	H_C4
CDM-134	14	15	H_C1	CDMDD001	24.9	26.54	H_C4
CDM-134	15	16	H_C1	CDMDD001	26.54	29.83	FON
CDM-134	16	17	H_C1	CDMDD001	29.83	31.18	FON
CDM-134	17	18	H_C1	-	-	-	-
CDM-134	18	18.5	H_C1	-	-	-	-
CDM-194	0	1	H_A	CDMDD002	0	0.9	H_A
CDM-194	1	2	H_C1	CDMDD002	0.9	3	H_C1
CDM-194	2	3	H_C1	CDMDD002	3	3.9	H_C3
CDM-194	3	4	H_C1	CDMDD002	3.9	8.95	H_C3
CDM-194	4	5	H_C1	CDMDD002	8.95	12.9	H_C3
CDM-194	5	6	H_C1	CDMDD002	12.9	15.2	H_C3
CDM-194	6	7	H_C1	CDMDD002	15.2	16.35	H_C4
CDM-194	7	8	H_C1	CDMDD002	16.35	18.5	H_C4
CDM-194	8	9	H_C1	CDMDD002	18.5	20.4	FON
CDM-194	9	10	H_C1	-	-	-	-
CDM-194	10	11	H_C1	-	-	-	-
CDM-194	11	12	H_C1	-	-	-	-
CDM-194	12	13	H_C1	-	-	-	-
CDM-194	13	14	H_C1	-	-	-	-
CDM-204	0	1	H_C1	CDMDD004	0	0.8	H_A
CDM-204	1	2	H_C1	CDMDD004	0.8	1.7	H_C3
CDM-204	2	3	H_C1	CDMDD004	1.7	2.6	H_C3
CDM-204	3	4	H_C1	CDMDD004	2.6	8.47	H_C3
CDM-204	4	5	H_C1	CDMDD004	8.47	10	H_C4
CDM-204	5	6	H_C1	CDMDD004	10	16.35	H_C4
CDM-204	6	7	H_C4	CDMDD004	16.35	18.85	FOI
CDM-204	7	8	H_C1	-	-	-	-
CDM-204	8	9	H_C4	-	-	-	-
CDM-204	9	10	H_C4	-	-	-	-
CDM-204	10	10.2	H_C4	-	-	-	-
SB-76	1	2	H_C1	SBDD001	0	0.68	H_A
SB-76	2	3	H_C1	SBDD001	0.68	1.1	H_B
SB-76	3	4	H_C1	SBDD001	1.1	7.45	H_C3
SB-76	4	5	H_C1	SBDD001	7.45	12.95	H_C3
SB-76	5	6	H_C1	SBDD001	12.95	18.15	FON
SB-76	6	7	H_C1	-	-	-	-
SB-76	7	8	H_C1	-	-	-	-
SB-76	8	9	H_C1	-	-	-	-
SB-76	9	10	H_C1	-	-	-	-
SB-76	10	11	H_C1	-	-	-	-
SB-76	11	12	H_C1	-	-	-	-
SB-76	12	13	H_C1	-	-	-	-

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Auger hole	FROM	TO	Lithology	Diamond Hole	FROM	TO	Lithology
SB-76	13	14	H_C1	-	-	-	-
SB-76	14	15	H_C4	-	-	-	-
SB-76	15	16	H_C1	-	-	-	-
SB-76	16	17	H_C1	-	-	-	-
SB-76	17	17.5	H_C4	-	-	-	-
SB-315	0	1	H_A	SBDD002	0	1	H_A
SB-315	1	2	H_C1	SBDD002	1	1.6	H_B
SB-315	2	3	H_C1	SBDD002	1.6	4.62	H_C3
SB-315	3	4	H_C1	SBDD002	4.62	7.45	H_C3
SB-315	4	5	H_C1	SBDD002	7.45	18.92	H_C3
SB-315	5	6	H_C1	SBDD002	18.92	23.65	H_C4
SB-315	6	7	H_C1	SBDD002	23.65	26.1	H_C4
SB-315	7	8	H_C1	SBDD002	26.1	28	BRV
SB-315	8	9	H_C1	SBDD002	28	29.85	TUF
SB-315	9	10	H_C1	SBDD002	29.85	31.45	BRV
SB-315	10	11	H_C1	-	-	-	-
SB-315	11	12	H_C1	-	-	-	-
SB-315	12	13	H_C1	-	-	-	-
SB-315	13	14	H_C1	-	-	-	-
SB-315	14	14.7	H_C4	-	-	-	-
SB-120	0	1	H_C1	SBDD003	0	0.88	H_A
SB-120	1	2	H_C1	SBDD003	0.88	1.24	H_B
SB-120	2	3	H_C1	SBDD003	1.24	3.9	H_C3
SB-120	3	4	H_C1	SBDD003	3.9	9	TIN
SB-120	4	5	H_C1	SBDD003	9	10.25	H_C4
SB-120	5	6	H_C1	SBDD003	10.25	15.86	BRV
SB-120	6	7	H_C1	SBDD003	15.86	18.65	BRV
SB-120	7	8	H_C4	SBDD003	18.65	19.18	TUF
SB-120	8	9	H_C4	SBDD003	19.18	19.75	BRV
SB-120	9	10	H_C4	-	-	-	-
SB-120	10	10.5	H_C4	-	-	-	-
FG-60	0	1	H_A	FGDD001	0	0.45	H_A
FG-60	1	2	H_C1	FGDD001	0.45	1.55	H_B
FG-60	2	3	H_C1	FGDD001	1.55	5.38	H_C1
FG-60	3	4	H_C1	FGDD001	5.38	14.6	H_C3
FG-60	4	5	H_C1	FGDD001	14.6	42.2	H_C3
FG-60	5	6	H_C1	FGDD001	42.2	61.8	FOI
FG-60	6	7	H_C1	-	-	-	-
FG-60	7	8	H_C1	-	-	-	-
FG-60	8	9	H_C1	-	-	-	-
FG-60	9	10	H_C1	-	-	-	-
FG-60	10	11	H_C1	-	-	-	-
FG-60	11	12	H_C1	-	-	-	-
FG-60	12	13	H_C1	-	-	-	-
FG-60	13	14	H_C1	-	-	-	-
FG-60	14	14.2	H_C1	-	-	-	-
FG-36	0	1	H_C1	FGDD002	0	0.98	H_B
FG-36	1	2	H_C1	FGDD002	0.98	1.98	H_C1
FG-36	2	3	H_C1	FGDD002	1.98	3.92	H_C3
FG-36	3	4	H_C1	FGDD002	3.92	10.98	H_C3
FG-36	4	5	H_C1	FGDD002	10.98	19.41	H_C3
FG-36	5	6	H_C1	FGDD002	19.41	22.72	H_C3
FG-36	6	7	H_C1	FGDD002	22.72	31.95	H_C3
FG-36	7	8	H_C1	FGDD002	31.95	33.35	H_C3
FG-36	8	9	H_C1	FGDD002	33.35	36.97	H_C3
FG-36	9	10	H_C1	FGDD002	36.97	39	H_C3
FG-36	10	11	H_C1	FGDD002	39	46.26	H_C3

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Auger hole	FROM	TO	Lithology	Diamond Hole	FROM	TO	Lithology
FG-36	11	12	H_C1	FGDD002	46.26	47.62	H_C3
FG-36	12	13	H_C1	FGDD002	47.62	50.6	H_C4
FG-36	13	14	H_C4	FGDD002	50.6	53.15	H_C3
FG-36	-	-	-	FGDD002	53.15	60.65	H_C4
FG-36	-	-	-	FGDD002	60.65	67.31	H_C4
FG-36	-	-	-	FGDD002	67.31	68.48	H_C4
FG-36	-	-	-	FGDD002	68.48	72	H_C4
FG-36	-	-	-	FGDD002	72	78.66	H_C4
FG-36	-	-	-	FGDD002	78.66	84.45	H_C4
FG-27	0	1	H_A	FGDD003	0	0.65	H_A
FG-27	1	2	H_C1	FGDD003	0.65	8.08	H_C3
FG-27	2	3	H_C1	FGDD003	8.08	19.02	H_C3
FG-27	3	4	H_C1	FGDD003	19.02	21.8	H_C4
FG-27	4	5	H_C1	FGDD003	21.8	23.37	H_C4
FG-27	5	6	H_C1	FGDD003	23.37	45.55	H_C4
FG-27	6	7	H_C1	-	-	-	-
FG-27	7	8	H_C1	-	-	-	-
FG-27	8	9	H_C1	-	-	-	-
FG-27	9	10	H_C1	-	-	-	-
FG-27	10	11	H_C1	-	-	-	-
FG-27	11	12	H_C1	-	-	-	-
FG-27	12	13	H_C1	-	-	-	-
FG-27	13	14	H_C1	-	-	-	-
CVN-182	0	2	H_C1	CVNDD001	0	1.9	H_A
CVN-182	2	4	H_C1	CVNDD001	1.9	3.72	H_B
CVN-182	4	6	H_C1	CVNDD001	3.72	8.54	H_C1
CVN-182	6	8	H_C1	CVNDD001	8.54	14.1	H_C3
CVN-182	8	10	H_C1	CVNDD001	14.1	19.15	H_C4
CVN-182	10	11	H_C1	CVNDD001	19.15	23.25	FON
CVN-22	0	2	H_A	CVNDD002	0	0.75	H_A
CVN-22	2	4	H_C1	CVNDD002	0.75	2.1	H_C1
CVN-22	4	6	H_C1	CVNDD002	2.1	16.2	H_C2
CVN-22	6	8	H_C1	CVNDD002	16.2	20.64	H_C3
CVN-22	8	10	H_C1	CVNDD002	20.64	28.05	FON
CVN-22	10	12	H_C1				
-	-	-	-	CVNDD-003	0	0.6	H_A
-	-	-	-	CVNDD-003	0.6	1.7	H_B
-	-	-	-	CVNDD-003	1.7	6.06	H_C1
-	-	-	-	CVNDD-003	6.06	17.83	H_C3
-	-	-	-	CVNDD-003	17.83	20.65	H_C3
-	-	-	-	CVNDD-003	20.65	32.4	H_C4
-	-	-	-	CVNDD-003	32.4	42.95	FON
CVN-98	0	2	H_A	CVNDD004	0	2.48	H_B
CVN-98	2	4	H_C1	CVNDD004	2.48	14.9	H_C3
CVN-98	4	6	H_C1	CVNDD004	14.9	27.4	H_C4
CVN-98	6	8	H_C1	CVNDD004	27.4	31.1	FOI

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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 • No assays are reported in this release.
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

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	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	• See collar plan • No resources are reported • No assays 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

Criteria	Commentary
Mineral tenement and land tenure status	• Listed in Appendix 3. • 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	• No assay data is reported
Mineralisation widths and intercept lengths	• No assay data is reported
Diagrams	• See body of the text
Balanced reporting	• No assay data is reported
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.

Appendix 3 Caldeira REE Project - Licence details

License	Status	License Holder	Area (ha)
814.251/1971	Mining Concession	Mineração Perdizes Ltda	124.35
814.860/1971	Mining Concession	Mineração Zelândia Ltda	341.73
815.006/1971	Mining Concession	Mineração Perdizes Ltda	717.52
815.274/1971	Mining Request	Companhia Geral de Minas	739.73
815.645/1971	Mining Concession	Companhia Geral de Minas	366.02
815.681/1971	Mining Concession	Mineração Zelândia Ltda	766.54
815.682/1971	Mining Concession	Companhia Geral de Minas	575.26
816.211/1971	Mining Concession	Mineração Perdizes Ltda	796.55
817.223/1971	Mining Concession	Mineração Daniel Togni Loureiro Ltda	772.72
820.352/1972	Mining Concession	Mineração Zelândia Ltda	26.4
820.353/1972	Mining Concession	Mineração Zelândia Ltda	529.7
820.354/1972	Mining Concession	Mineração Zelândia Ltda	216.49
813.025/1973	Mining Request	Mineração Perdizes Ltda	943.74
808.556/1974	Mining Concession	Mineração Perdizes Ltda	204.09
811.232/1974	Mining Concession	Mineração Perdizes Ltda	524.4
809.359/1975	Mining Concession	Companhia Geral de Minas	317.36
803.459/1975	Mining Concession	Mineração Perdizes Ltda	24.02
804.222/1975	Mining Request	Mineração Perdizes Ltda	403.65
807.899/1975	Mining Request	Companhia Geral de Minas	948.92
808.027/1975	Mining Concession	Companhia Geral de Minas	600.76
809.358/1975	Mining Concession	Companhia Geral de Minas	617.23
830.391/1979	Mining Request	Mineração Perdizes Ltda	7.3
830.551/1979	Mining Request	Togni S A Materiais Refratários	528.88
830.000/1980	Mining Request	Mineração Perdizes Ltda	203.85
830.633/1980	Mining Request	Mineração Zelândia Ltda	35.25
831.880/1991	Mining Request	Mineração Zelândia Ltda	84.75
835.022/1993	Mining Concession	Mineração Perdizes Ltda	73.5
835.025/1993	Mining Concession	Mineração Perdizes Ltda	100.47
831.092/1983	Mining Concession	Mineração Perdizes Ltda	171.39
830.513/1979	Mining Request	Mineração Monte Carmelo Ltda	457.27
Licences to be acquired, refer ASX Announcement 24 April 2023:			
830.443/2018	Exploration Licence	Fertimax Fertilizantes Orgânicos Ltda.	79
830.444/2018	Exploration Licence	Fertimax Fertilizantes Orgânicos Ltda.	248
833.655/1996	Mining Apllication	Minas Rio Mineradora Ltda.	249
833.656/1996	Mining Apllication	Minas Rio Mineradora Ltda.	80
833.657/1996	Mining Apllication	Minas Rio Mineradora Ltda.	68
834.743/1995	Mining Apllication	Minas Rio Mineradora Ltda.	283
833.486/1996	Mining Apllication	Minas Rio Mineradora Ltda.	79
002.349/1967	Mining Licence	Varginha Mineração e Loteamentos Ltda.	74
833.176/2008	Exploration Application	Varginha Mineração e Loteamentos Ltda.	634
830.955/2006	Exploration Application	Varginha Mineração e Loteamentos Ltda.	1994
830.461/2018	Exploration Application	Fertimax Fertilizantes Orgânicos Ltda.	51
Encumbered Licences to be acquired, refer ASX Announcement 24 April 2023			
832.193/2012	Exploration Licence	Varginha Mineração e Loteamentos Ltda.	12
831.686/2012	Exploration Licence	Varginha Mineração e Loteamentos Ltda.	7
831.269/1992	Mining Licence	Varginha Mineração e Loteamentos Ltda.	442
832.572/2003	Mining Apllication	Varginha Mineração e Loteamentos Ltda.	204
833.551/1993	Mining Apllication	Varginha Mineração e Loteamentos Ltda.	99
833.553/1993	Mining Apllication	Varginha Mineração e Loteamentos Ltda.	98
830.697/2003	Mining Apllication	Varginha Mineração e Loteamentos Ltda.	5

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832.252/2001	Mining Apllication	Varginha Mineração e Loteamentos Ltda.	52
830.416/2001	Mining Apllication	Varginha Mineração e Loteamentos Ltda.	166
832.146/2002	Mining Apllication	Varginha Mineração e Loteamentos Ltda.	19

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