



RARE EARTH EXPLORATION TARGETS IDENTIFIED AT AZIMUTH

Australian explorer **Magnum Mining & Exploration Limited** (ASX: **MGU**, **Magnum**, or the **Company**) has completed its assessment of the recently acquired Azimuth Rare Earth Element (REE) Project in Brazil¹. This follows the completion of the assessment of the Palmares REE Project recently announced² (**Figure 1**).

HIGHLIGHTS

- The Azimuth REE Project comprises 72 granted exploration permits covering ~1,201km² in Brazil
- The permits target the Azimuth 125° Lineament, a highly mineralised regional trend
- The Lineament hosts known REE deposits and processing facilities
- 21 targets have been identified based on geophysical character of known REE deposits and geological hosts in the region
- The targets are completely green fields with no historic work having been done on them
- A priority target is a possible Mt Weld look alike with a large size potential
- Geochemical assessment of the identified targets is being planned

Once the conditions precedent¹ are met Magnum will take 100% control of 72 granted exploration permits that make up the Azimuth REE Project located in the states of Minas Gerais and Goiás in south-central Brazil (**Figure 1**). The Project area is located about 200km south west of the country's capital, Brasília. The leases cover approximately 1,201km² over the crustal-scaled Azimuth 125° (Az125°) Lineament (**Figure 2**). They have had no or minimal exploration activities on them. The targeting review has now been completed and planning for the field season is underway.

¹ ASX:MGU "Magnum Secures Major Rare Earths Landholding in Brazil", 21 November, 2024

² ASX:MGU "Palmares delivers up to 1.69% TREO grades", 4 December, 2024



Figure 1 The Azimuth and Palmares REE Projects are located across the states of Bahia, Minas Gerais and Goiás states in south-central Brazil. The Azimuth area has an established REE industry, while Palmares is an emerging REE region.

The Azimuth 125° Lineament – a focus for mineralisation

The Az125° lineament is a significant geological feature that crosses the entire country and passes through the states of Goiás and Minas Gerais in south central Brazil. It is a major crustal-scaled feature that is linked to a range of mineralisation styles and commodities:

- Az125° is characterised by an extensive set of NW-SE oriented faults, approximately 850 km long and 70 km wide. It is a major structural feature that is identified from surface geological mapping, satellite imagery, and aeromagnetic data.
- It is associated with carbonatite and kimberlite complexes. Carbonatite complexes typically occur in ortho-platforms and appear as dykes, stocks, and plugs that are associated with alkaline rocks. These complexes often contain REE that may give rise to economic REE accumulations either as primary hard rock deposits or secondary enrichment through weathering and erosion.

- The evolution of Az125° can be associated with three main events: the Brasiliano (950–520 Ma), the Gondwana fragmentation (starting circa 180 Ma), and the tectono-magmatic activity of The Trindade plume (90–80 Ma). These events have shaped the lineament and influenced the emplacement of various basic dikes and intrusive alkaline rocks and driven mineralisation.

The ground held includes permits at the intersection of Az125° and the north-north-east trending Transbrasiliano Lineament. These crustal weaknesses allow exotic intrusives to intrude into the upper crust country rock, increasing the probability of REE bearing mineralisation occurring.

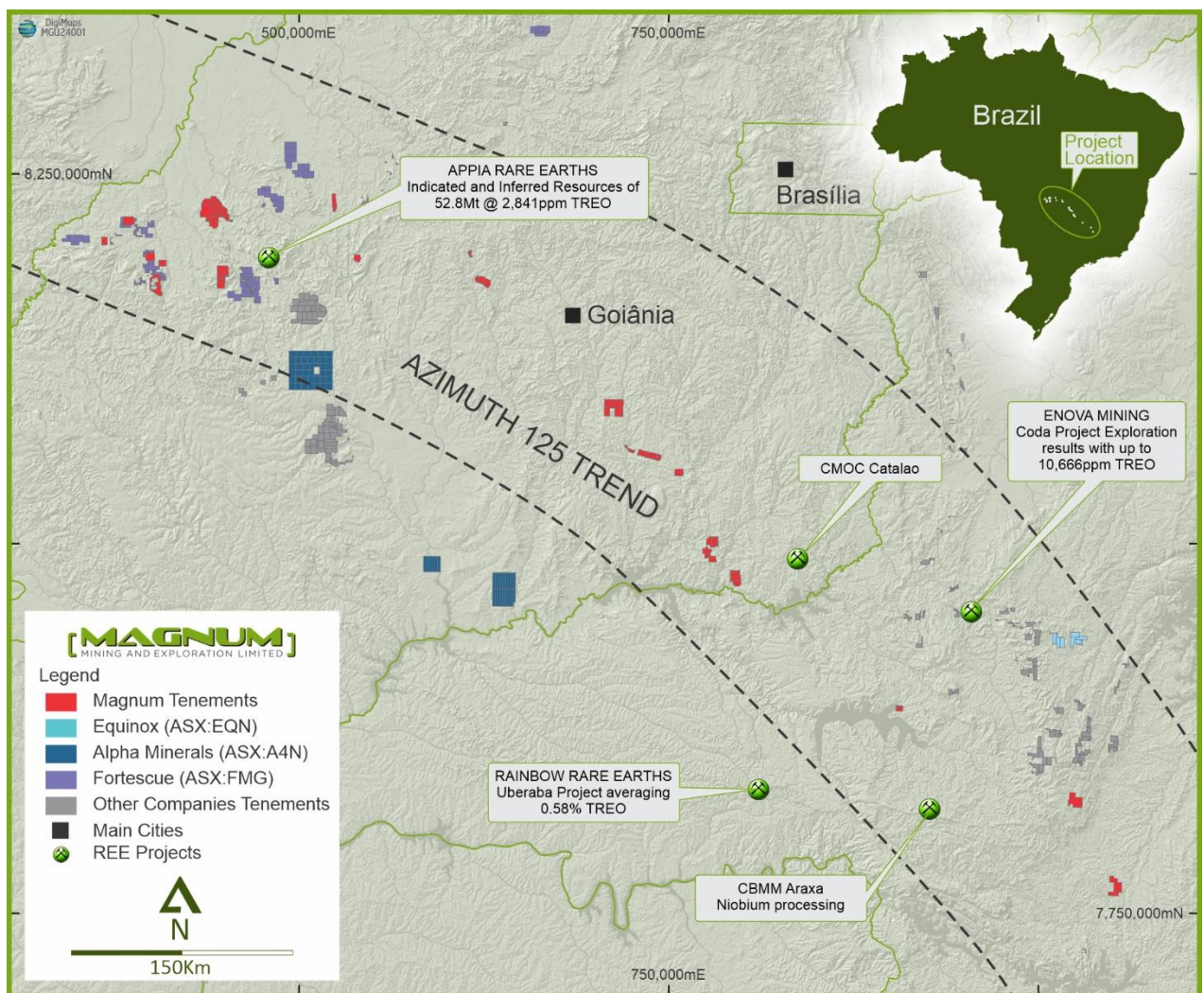


Figure 2 The Azimuth REE Project extends over 855km of the Azimuth 125° Lineament. The region is host to established REE resources, early stage exploration prospects, and REE processing plant.

Targeting of the area has been completed by Magnum's Brazilian geological team. Brazilian government aeromagnetic and radiometric data were used in the analysis.

LARGE IAC CLAY TARGETS IDENTIFIED

Az125° is host to Ionic Adsorption Clay (IAC) REE deposits. IAC deposits are the result of weathering of rare-earth rich host rocks which lead, over geological time, to the formation of REE rich clays. At Azimuth, the host and source rock is determined to be the Ipora Granite in the north west, and unnamed alkaline complexes in the south east.

An example of this style is Appia Rare Earths and Uranium Corporation's PCH Project with 46.2Mt @ 2,888ppm TREO in Indicated and Inferred Resources³ (**Figure 2**).

IAC accumulations are characterised by exotic mineralogy that includes thorium, making radiometric data a prime tool for target selection. Targets were further finessed through the consideration of likely underlying hard rock source and geological structure interpreted from aeromagnetic data.

Application of these targeting criteria has resulted in identifying 21 targets for possible REE mineralisation. Ground for these targets was secured with the application for, and granting of, 21 mineral exploration blocks.

Some examples of the thorium anomalies which were the basis for those applications are shown in (**Figure 3**). Thorium anomalies are pathfinders to IAC deposits in this district however, the presence of REE-bearing IAC can only be confirmed by geochemical sampling and assaying.

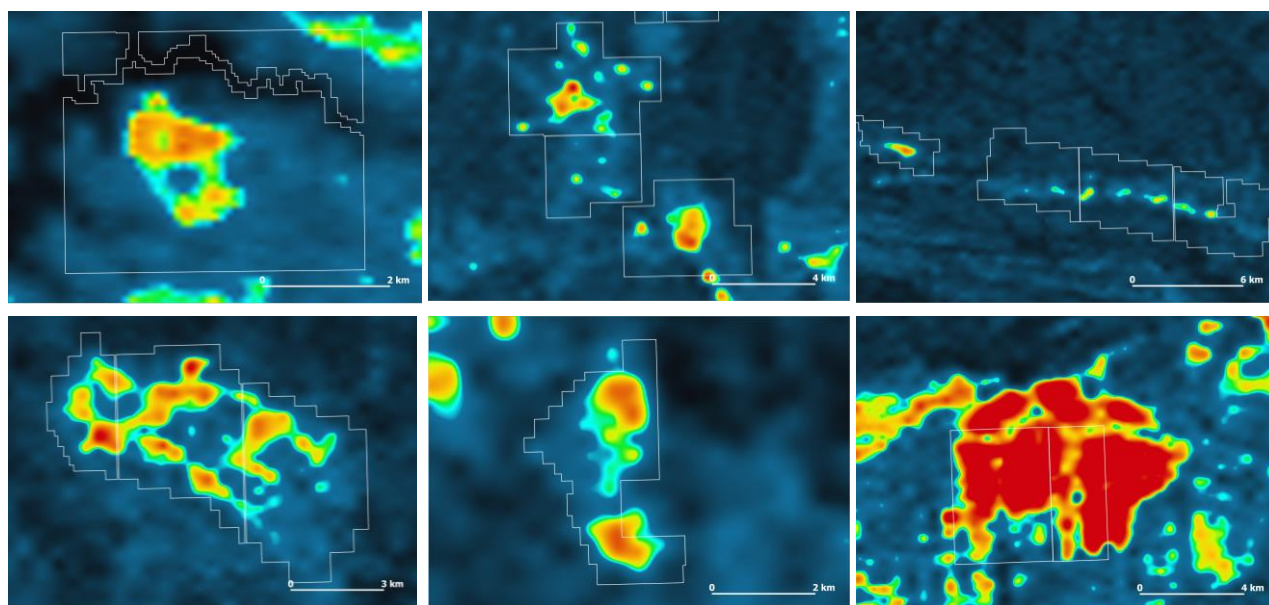


Figure 3 Examples of targets identified from the thorium channel of airborne radiometric data. Shown are the Block 3, 5, 9&10, 13, 17, and 18 targets (left to right, top to bottom). These have been interpreted as possible IAC deposits. Note scale bars on each image. Red represents high thorium anomalism.

³ CSE:API "Appia Announces Maiden Rare Earth Mineral Resource Estimate of 6.6 Million Tonnes Indicated Grading 2,513 ppm TREO and 46.2 Million Tonnes Inferred grading 2,888 ppm TREO at the PCH Ionic Adsorption Clay Project in Goiás, Brazil", 1 March, 2023

Possible Mt Weld look-alike identified

While the focus has been on IAC targets, possible hard rock and sources, have also been identified. One example is the Block 11 target - a Mt Weld look-alike based on aeromagnetic and radiometric data. The target is associated with a prominent magnetic anomaly (**Figure 4**) and is coincident with a conspicuous thorium anomaly (**Figure 5**). The magnetic data shows a strongly magnetic north-west trending dyke passing through it. The Block 11 target is remarkably similar to the geophysical response of the Mt Weld carbonatite which is also associated with strong north-west trending dykes (**Figure 4**).

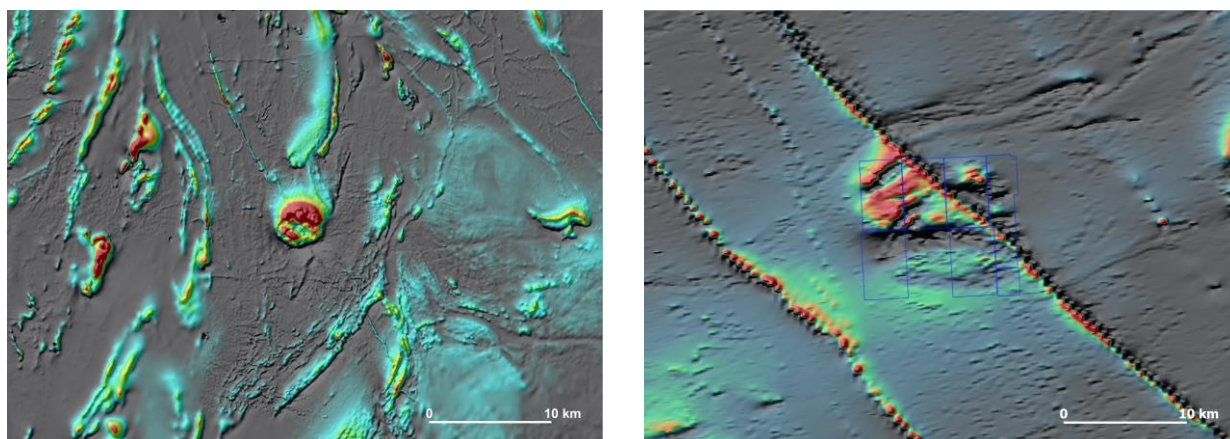


Figure 4 Aeromagnetic images of the Mt Weld REE carbonatite in Western Australia (left) and the Block 11 target in Brazil (right). Both features are semicircular with prominent north-west dyke association. Magnum's exploration permits are indicated on the right hand image. The Brazilian aeromagnetic survey is of much lower resolution than that over Mt Weld. Note scale bars. Red represents high magnetic values.

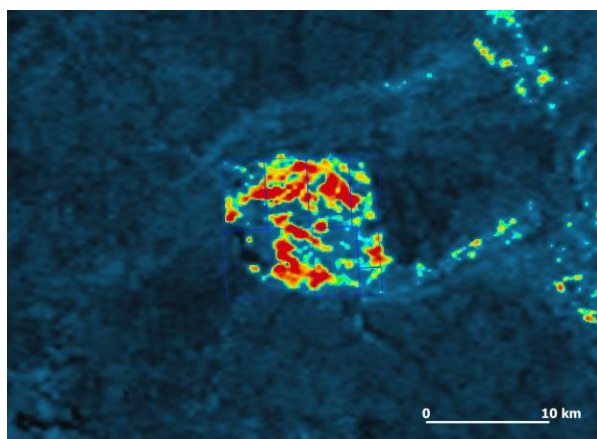


Figure 5 Block 11 Image of Thorium anomaly possibly indicating the presence of significant monazite – a thorium rich REE mineral. Red represents high thorium values.

Mt Weld is a polymetallic deposit in Western Australia. Prior to mining it held 17.5Mt @ 8.1% TREO, 7.9% T_{Ln}O, 1680 g/t Y₂O₃, and 37.7 Mt @ 1.07% Nb₂O₅, 1.16% T_{Ln}O, 0.09% Y₂O₃, with tantalum and phosphate credits. The regolith over the carbonatite was estimated in 1989 to contain 270 Mt @ 0.9% Nb₂O₅ and 15.2 Mt @ 11.2% lanthanide + yttrium oxides⁴. The deposit is currently being mined by Lynas Rare Earths Limited, an Australian publicly listed company. Current reserves and resources can be found on their website⁵.

NEXT STEPS

A programme of regional geochemical sampling is being designed as a first pass, on-ground assessment of the targets identified on the Azimuth REE Project ground.

⁴ Report by Porter, <https://portergeo.com.au/database/mineinfo.asp?mineid=mn770>

⁵ <https://lynasrareearths.com/mt-weld-western-australia/mt-weld-resources-reserves/>

ABOUT MAGNUM'S REE PROJECTS IN BRAZIL

Magnum entered into a binding acquisition agreement to acquire 100% of the issued shares of Palmares Estudos Geologicos LTDA (Palmares) from Beko Invest Limited (Beko or the Vendor), a Brazilian company. Palmares holds granted exploration licences comprising the Azimuth and Palmares Rare Earth Element (REE) Projects, located in the Minas Gerais, Goias, and Bahia states, Brazil.

The **Palmares REE Project** is a green field exploration project consisting of 18 granted claims situated in the centre-south of Bahia state. The leases cover a 43 km long and 13 km wide target zone totalling ~348 km² in a very tightly held area.

The Project is situated in a belt of Archaean granites and alkaline intrusives of high metamorphic grade in the Jequié Belt. This belt is the scene of intensive exploration that has identified areas between **1% Total Rare Earth Oxides (TREO)**⁶ as reported by Equinox Resources and **14.6% TREO**⁷ by Brazilian Rare Earths. These occur as both hard rock and surficial ionic clay deposits. The latter are particularly attractive due to their low exploration, mining, and beneficiation costs.

The **Azimuth REE Project** is a green field exploration project highly prospective for REE. It consists of 72 granted tenements covering ~1,201km² of highly prospective ground. These extend over 850km of the regional AZ125° Lineament.

The Az125° Lineament is a crustal trans-Brazilian feature that reflects the deep plumbing system in the region. Diamond bearing lamprophyres and kimberlites have been the historic exploration targets. The lineament is now recognised as a major source of other metal mineralisation due to the exotic intrusives that occur along it.

The Azimuth Project's leases cover granitic and alkaline intrusives lithologies that are a primary source of REEs, including monazite, xenotime, allanite, titanite, and apatite. These minerals are weathered, adsorbed and concentrated into surficial ionic clay deposits, termed Ionic Absorption Clay (IAC). The geophysical signatures of the source rocks are key to the exploration for REE deposits along this lineament. Aeromagnetic data is used extensively to focus in on permissive lithologies for REE, while radiometric data assist in identifying accumulations of the REE.

Carbonatites that are characterised by expressive geophysics anomalies are especially renowned for hosting significant concentrations of REEs and are often associated with minerals like bastnäsite and monazite. Intrusive alkaline rocks contain REE minerals eudialyte and loparite.

The region has attracted major REE explorers, which include those with both announced REE resources and significant exploration results, as well as Fortescue Metals Group (ASX: FMG) who have secured a landholding close to some of the Azimuth Project granted claims.

⁶ ASX:EQN "Ultra-High Grade REE in Clay of 10,110ppm TREO at Surface at Mata da Corda", 30 July, 2024.

⁷ ASX:BRE "Exceptional Heavy Rare Earth Discovery at Monte Alto Project", 23 October, 2024.

COMPETENT PERSON'S STATEMENT

The information in this announcement is based on information compiled by Mr Marcus Flis, a Competent Person who is a Fellow of the Australasian Institute of Mining and Metallurgy and a full time employee of Rountree Pty Ltd. Mr Flis has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 edition of the "Australasian Code for Reporting Exploration Results, Mineral Resources and Ore Reserves." Mr Flis consents to the inclusion of the matters outlined in this announcement the form and context in which they appear.

FORWARD LOOKING STATEMENTS

This release contains "forward-looking information" that is based on the Company's expectations, estimates and projections as of the date on which the statements were made. This forward-looking information includes, among other things, statements with respect to studies, the Company's business strategy, plan, development, objectives, performance, outlook, growth, cash flow, projections, targets and expectations. Generally, this forward-looking information can be identified by the use of forward-looking terminology such as 'outlook', 'anticipate', 'project', 'target', 'likely', 'believe', 'estimate', 'expect', 'intend', 'may', 'would', 'could', 'should', 'scheduled', 'will', 'plan', 'forecast', 'evolve' and similar expressions. Persons reading this news release are cautioned that such statements are only predictions, and that the Company's actual future results or performance may be materially different. Forward-looking information is subject to known and unknown risks, uncertainties and other factors that may cause the Company's actual results, level of activity, performance or achievements to be materially different from those expressed or implied by such forward-looking information.

Forward-looking information is developed based on assumptions about such risks, uncertainties and other factors set out herein, including but not limited to general business, economic, competitive, political and social uncertainties; the actual results of current development activities; conclusions of economic evaluations; changes in project parameters as plans continue to be refined; future prices of metals; failure of plant, equipment or processes to operate as anticipated; accident, labour disputes and other risks of the mining industry; and delays in obtaining governmental approvals or financing or in the completion of development or construction activities. This list is not exhaustive of the factors that may affect our forward-looking information. These and other factors should be considered carefully, and readers should not place undue reliance on such forward-looking information.

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JORC Code, 2012 Edition – Table 1 report

SECTION 1 – SAMPLING TECHNIQUES AND DATA

CRITERIA	COMMENTARY
Sampling techniques	- Data reported herein consists of three airborne geophysical surveys. - The surveys were flown by the Brazilian government - Magnetic data was collected with a stinger-mounter magnetometer on a fixed wing aircraft - Radiometric data was collected with a spectrometer using a 2,560 in³ sodium iodide downward facing crystal supported by a 512 in³ upward facing crystal.
Drilling techniques	Not applicable – no drilling undertaken.
Drill sample recovery	Not applicable – no drilling undertaken.
Logging	Not applicable – no drilling undertaken.
Sub- sampling techniques and sample preparation	Not applicable – no drilling undertaken.
Quality of assay data and laboratory tests	Not applicable.
Verification of sampling and assaying	No applicable.
Location of data points	- Survey navigation was by differential GPS (Trimble AG-132) with an accuracy of sub ± 10m. - Data was collected using the WGS-84 SAD-69 (IBGE) datum and later converted to UTM SIRGAS2000 zone 23S projection.
Data spacing and distribution	- Aeromagnetic/radiometric data was collected along lines spaced 500m apart with tie lines flown east-west at 5,000m spacing. - Sensor height is 100m - Data spacing is approximately 8m along ground (magnetometers) and 80m along ground (spectrometer)
Orientation of data in relation to geological structure	- Aeromagnetic/Radiometric surveys were flown north-south. - This is considered adequate in the early stages of exploration.
Sample security	No applicable.
Audits or reviews	No audits have been done.

SECTION 2 – REPORTING OF EXPLORATION RESULTS

Criteria listed in the preceding section also apply to this section

CRITERIA	COMMENTARY
Mineral tenement and land tenure status	- The Azimuth REE Project is 100% owned and controlled by Magnum Mining and Exploration Ltd, an Australian ASX listed public company. - The project consists of 72 granted mineral exploration permits covering ~1,201km² on the Azimuth 125° Lineament, Minas Gerais and Goiás states, Brazil. - All permits are in good standing. - The permits are registered at Agencia Nacional de Mineracao (ANM). - Permits held in the Azimuth REE Project are:

CRITERIA

COMMENTARY

#	TENEMENT	HA	COUNTY STATE	STATUS	COMMODITY
1	830284/2024	1765.35	PATROCÍNIO /MG	GRANTED	REE
2	830285/2024	1978.36	SANTA ROSA DA SERRA /MG	GRANTED	REE
3	830286/2024	1711.35	SANTA ROSA DA SERRA /MG	GRANTED	REE
4	830287/2024	1731.35	SANTA ROSA DA SERRA /MG	GRANTED	REE
5	830288/2024	1478.97	SANTA ROSA DA SERRA /MG	GRANTED	REE
6	830289/2024	1604.16	IGUATAMA /MG	GRANTED	REE
7	830290/2024	1815.11	IGUATAMA /MG	GRANTED	REE
8	830291/2024	1882.06	IGUATAMA /MG	GRANTED	REE
9	830281/2024	1531.83	IGUATAMA /MG	GRANTED	REE
10	860248/2024	1758.56	PIRACANJUBA /GO	GRANTED	REE
11	860247/2024	1028.19	PIRACANJUBA /GO	GRANTED	REE
12	860219/2024	1964.55	PIRACANJUBA /GO	GRANTED	REE
13	860220/2024	1963.93	PIRACANJUBA /GO	GRANTED	REE
14	860221/2024	1932.79	PIRACANJUBA /GO	GRANTED	REE
15	860222/2024	1932.53	PIRACANJUBA /GO	GRANTED	REE
16	860227/2024	1976.42	PIRACANJUBA /GO	GRANTED	REE
17	860226/2024	1899.26	PIRACANJUBA /GO	GRANTED	REE
18	860225/2024	396.81	PIRACANJUBA /GO	GRANTED	REE
19	860224/2024	1889.61	PIRACANJUBA /GO	GRANTED	REE
20	860223/2024	1954.28	PIRACANJUBA /GO	GRANTED	REE
21	860190/2024	1894.43	BOM JARDIM DE GOIÁS /GO	GRANTED	REE
22	860191/2024	1972.35	PIRANHAS /GO	GRANTED	REE
23	860192/2024	1066.45	PIRANHAS /GO	GRANTED	REE
24	860246/2024	1972.35	PIRANHAS /GO	GRANTED	REE
25	860198/2024	1448.05	PIRANHAS /GO	GRANTED	REE
26	860196/2024	1916.3	PIRANHAS /GO	GRANTED	REE
27	860194/2024	1897.74	PIRANHAS /GO	GRANTED	REE
28	860197/2024	1597.89	PIRANHAS /GO	GRANTED	REE
29	860195/2024	1975.17	PIRANHAS /GO	GRANTED	REE
30	860241/2024	1965.49	PIRANHAS /GO	GRANTED	REE
31	860193/2024	1798.77	CÓRREGO DO OURO /GO	GRANTED	REE
32	860189/2024	1951.59	BOM JARDIM DE GOIÁS /GO	GRANTED	REE
33	860187/2024	1933.25	BOM JARDIM DE GOIÁS /GO	GRANTED	REE
34	860199/2024	1993.41	MONTES CLAROS DE GOIÁS /GO	GRANTED	REE
35	860202/2024	1997.22	MONTES CLAROS DE GOIÁS /GO	GRANTED	REE
36	860200/2024	1295.98	MONTES CLAROS DE GOIÁS /GO	GRANTED	REE
37	860203/2024	1949.28	MONTES CLAROS DE GOIÁS /GO	GRANTED	REE
38	860204/2024	1851.99	MONTES CLAROS DE GOIÁS /GO	GRANTED	REE
39	860205/2024	1999.62	MONTES CLAROS DE GOIÁS /GO	GRANTED	REE
40	860207/2024	1999.68	MONTES CLAROS DE GOIÁS /GO	GRANTED	REE
41	860208/2024	1923.15	MONTES CLAROS DE GOIÁS /GO	GRANTED	REE
42	860206/2024	1999.65	MONTES CLAROS DE GOIÁS /GO	GRANTED	REE
43	860209/2024	1969.44	MONTES CLAROS DE GOIÁS /GO	GRANTED	REE
44	860210/2024	1963.35	MONTES CLAROS DE GOIÁS /GO	GRANTED	REE
45	860211/2024	442.5	MONTES CLAROS DE GOIÁS /GO	GRANTED	REE
46	860243/2024	1977.68	MONTES CLAROS DE GOIÁS /GO	GRANTED	REE
47	860242/2024	1854.61	MONTES CLAROS DE GOIÁS /GO	GRANTED	REE
48	860212/2024	1919.77	JUSSARA /GO	GRANTED	REE
49	860213/2024	958.19	NOVO BRASIL /GO	GRANTED	REE
50	860217/2024	1907.76	ANICUNS /GO	GRANTED	REE
51	860218/2024	751.18	ANICUNS /GO	GRANTED	REE
52	860215/2024	745.7	ANICUNS /GO	GRANTED	REE
53	860216/2024	1970.98	ANICUNS /GO	GRANTED	REE
54	860229/2024	1953.94	CALDAS NOVAS /GO	GRANTED	REE
55	860228/2024	1972.11	CALDAS NOVAS /GO	GRANTED	REE
56	860231/2024	552.95	CALDAS NOVAS /GO	GRANTED	REE
57	860230/2024	1894.26	CORUMBAÍBA /GO	GRANTED	REE
58	860232/2024	1862.56	CORUMBAÍBA /GO	GRANTED	REE
59	860236/2024	1600.2	CORUMBAÍBA /GO	GRANTED	REE
60	860234/2024	1961.99	CORUMBAÍBA /GO	GRANTED	REE
61	860235/2024	1063.27	CORUMBAÍBA /GO	GRANTED	REE
62	860233/2024	821.25	CORUMBAÍBA /GO	GRANTED	REE
63	860239/2024	1902.73	CUMARI /GO	GRANTED	REE
64	860240/2024	505.19	CUMARI /GO	GRANTED	REE
65	860238/2024	1860.12	ANHANGUERA /GO	GRANTED	REE
66	860237/2024	1852.56	ANHANGUERA /GO	GRANTED	REE
67	860384/2020	1997.33	Block Arenópolis GOIAS	GRANTED	Au
68	860385/2020	1670.48		GRANTED	Au
69	860386/2020	1906.42		GRANTED	Au
70	860397/2020	1698.09		GRANTED	Au
71	860398/2020	1800.17		GRANTED	Au
72	860519/2020	212.7		GRANTED	Au
TOTAL		120,144.76			

CRITERIA	COMMENTARY
Exploration done by other parties	- The area remains poorly explored with no recorded historic exploration. - Servico Geologico do Brasil (Geological Survey of Brazil) has undertaken regional geological field mapping and regional airborne geophysical surveying.
Geology	- The basement rocks underlying Brazil formed during the Precambrian and include the São Francisco Craton which outcrops in Minas Gerais and Bahia. - The Azimuth REE Project is located within the Tocantins Structural Province in the Brasília Fold Belt, which is part of the Goiás Magmatic Arc. The Tocantins Province is composed of a series of SSW-NNE trending terranes of mainly Proterozoic ages which stabilised in the Neoproterozoic in the final collision between the Amazon and São Francisco cratons. The Tocantins Province is divided into an eastern and western section. The eastern section is located in a N-S arc-shaped folded belt known as the Brasília Folded Belt (BFB), which extends northwards to the state of Tocantins and southwards to the state of Minas Gerais. The Brasília Fold Belt consists of a deformed mobile belt deposited during the Meso to Neoproterozoic in the western margin of the São Francisco Craton over a basement of Paleoproterozoic granitic-gneissic terrane affected by Mesoproterozoic deformation. The Azimuth REE Project lies at the centre of the BFB on the western margin of the belt and extends from adjacent to Appia's PCH deposit to \ near CBMM's Araxa REE deposit. It lies in the Goiás Alkaline Province of the BFB, an area dominated by Upper Cretaceous alkaline magmatism. - The area is transected by the Azimuth 125° (AZ125°) Lineament. This is crustal scale feature that cuts across the whole of Brazil. It is associated with basic dyke swarms and intrusives. The Azimuth REE Project has claims over the area where the AZ125° intersects the NE trending Transbrasiliano Lineament. - The northern permits are underlain by Iporá Granite with carbonatite (phosphate intrusion) and detrital-alluvial cover. The southern permits are underlain by gabbros of the Goiás Alkaline Province with overlying detrital-alluvial cover. - The mineralisation sought falls into two categories: - Carbonatite hosted REE - Rare earth ionic adsorption clay-(IAC) style deposits - IAC is the focus of exploration at the Project. Ionic clay-style deposits are especially important because they are rich in heavy rare earth elements (HREEs), which are more valuable and less abundant than the light rare earth elements (LREEs). These include elements like dysprosium and terbium, which are essential for many high-tech applications, including wind turbines, hybrid vehicles, and defence technologies.
Drill hole information	Not applicable – no drilling undertaken.
Data aggregation methods	Not applicable.
Relation between mineralisation widths and intercept lengths	Not applicable – no drilling undertaken.
Diagrams	See diagrams included in this announcement.
Balanced reporting	All results are reported in this release.
Other substantive exploration data	No substantive exploration data exists for the permit areas other than the airborne geophysical surveys.
Further work	Regional surface geochemical sampling of the Azimuth REE Project ground will be done in a prioritised way.