

## Successful Metallurgical Results from the Monte Alto Project

### Overview

The Monte Alto Rare Earth Project in Bahia, Brazil, has delivered successful results from initial metallurgical leaching studies of the ultra-high grade REE-Nb-Sc-Ta-U mineralisation. The successful test work on non-beneficiated mineralisation confirmed highly efficient rare earth extractions of up to 94% TREO into a stable solution, at atmospheric pressure and low sulfuric acid concentrations.

The ultra-high grade mineralisation was assessed for direct metallurgical leaching of crushed and milled REE-Nb-Sc-Ta-U hard rock mineralisation, without prior-beneficiation (target run-of-mine material with ore-sorting). This processing pathway has the potential to deliver higher total product yields, at lower capital and operating costs.

The exceptional grades of Monte Alto's mineralisation underpin the flexibility to pursue either direct metallurgical leaching or the potential export of high-grade Direct Ship Mineral (DSM). The REE-Nb-Sc-Ta-U hard rock mineralisation has reported weighted average rare earth grades of 16.4% TREO from drilling to date, including grades of 27,063ppm NdPr and 1,327ppm of heavy rare earths DyTb<sup>\*(1)</sup>.

These exceptional grades are primarily within the 'chevkinite' mineral phase, comprising 63%-78% of the REE mineral assemblage and hosting ~80% of total rare earth elements, along with high co-product grades of niobium, scandium, tantalum and uranium.

To assess the potential for a high-grade DSM product, an initial metallurgical test work program by ANSTO Minerals has evaluated the direct leaching performance of Monte Alto's non-beneficiated REE-Nb-Sc-Ta-U mineralisation.

### Mineralogical Characterisation

Comprehensive mineralogical studies by SGS Laboratories and ANSTO Minerals have provided detailed insights into Monte Alto's ultra-high grade REE-Nb-Sc-Ta-U mineralisation:

- 'Chevkinite' is the dominant mineral in the ultra-high grade REE-Nb-Sc-Ta-U mineralisation
- Chevkinite is monoclinic REE-Ti-Fe sorosilicate mineral, containing very high concentrations of rare earth elements, niobium, tantalum, scandium and uranium
- Chevkinite has been found as a minor accessory mineral in REE-rich deposits in Russia, China, Greenland and the U.S.A. Chevkinite has also been identified in meteorites and in lunar rocks brought back by the Apollo space missions. Until the discovery of Monte Alto, less abundant chevkinite was typically overshadowed by typically more refractory rare earth minerals such as monazite and xenotime
- The chevkinite mineralisation at Monte Alto stands out for its remarkable scale, with the deposit currently mapped over a strike length of 1 km and true drilling intercepts reaching up to 28 meters in width
- The chevkinite is coarse-grained with over 80% of the chevkinite grains 'sand-sized', and only a negligible amount in the sub-38 µm 'slimes' size fraction
- The high-grade monazite sands delineated from surface at Monte Alto, and extensively across the Rocha da Rocha province, are posited to be the weathered expression of the underlying ultra-high grade REE-Nb-Sc-Ta-U 'source rock'

*Note\* Refer End Notes for further information including details of previously reported exploration results*

## Direct Metallurgical Leaching

Initial metallurgical testing by ANSTO Minerals has delivered highly promising results:

- Direct metallurgical leaching of the REE-Nb-Sc-Ta-U mineralisation successfully confirmed efficient rare earth extractions of up to 94% TREO into a stable solution, including up to 94% for NdPr and over 92% for DyTb
- High TREE liquor tenors of over 23 g/L were achieved
- Rapid-leaching kinetics with over 90% extraction within 2 hours
- Efficient leaching achieved at atmospheric pressure with sulfuric acid concentrations at or below 75 g/L
- The primary amphibole gangue-mineral did not consume acid during leaching and reported to solid residue
- Pregnant leach solutions exhibited fast filtration rates, supporting downstream impurity removal

## Monte Alto Scoping Study – Stage I

The Monte Alto Stage I Scoping Study, scheduled for completion in Q2 2025, will evaluate an initial operation targeting two saleable export products:

- 1) High-grade rare earth monazite concentrate: Extracted from the shallow, free-dig, high-grade monazite sand deposit, and processed using industry-standard gravity, magnetic, and flotation methods
- 2) Direct Ship Mineral (DSM): Run-of-mine, crushed, and ore-sorted hard rock REE-Nb-Sc-Ta-U mineralisation

Future Stage II Scoping Studies will assess the technical and economic feasibility for downstream leaching and separation operations for both high-grade monazite concentrates and REE-Nb-Sc-Ta-U feedstocks

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## Brazilian Rare Earths' CEO and Managing Director, Bernardo da Veiga, commented:

"We are thrilled with the results of the metallurgical studies from Monte Alto. The results highlight the remarkable efficiency of processing chevkinite-dominant mineralisation under atmospheric leaching conditions.

Our scoping level technical studies remain on schedule, and we look forward to providing further updates as we move closer to defining the economic potential of Monte Alto."

**Brazilian Rare Earths Limited (ASX:BRE | OTCQX:BRELY | OTCQX:BRETF)** (BRE) is pleased to announce successful initial metallurgical results from the ultra-high grade REE-Nb-Sc-Ta-U mineralisation at the Monte Alto Rare Earth Project (Monte Alto), located in Bahia, Brazil.

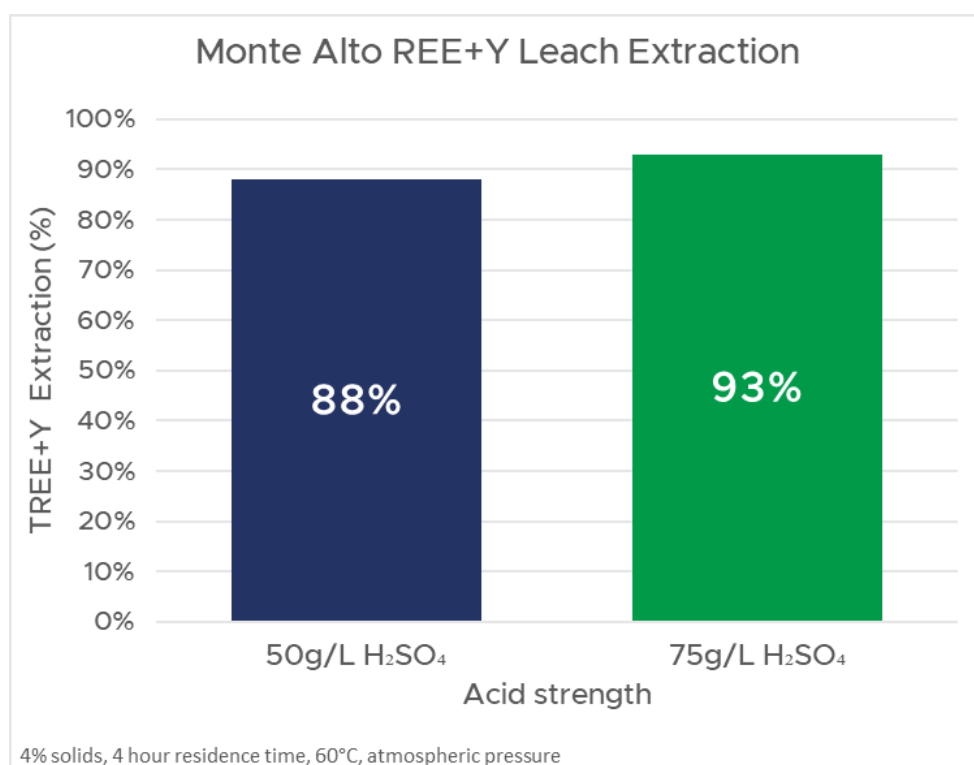
Monte Alto is BRE's most advanced project in the extensive Rocha da Rocha rare earths and critical minerals province. Discovered less than two years ago, the project has been systematically explored and delineated through multiple exploration programs. The current mineralised strike length is over 1 km with a width of 0.5 km. Drilling has intersected wide zones of ultra-high-grade REE-Nb-Sc-Ta-U hard rock mineralisation from surface to depths of up to 200 metres. The ultra-high grade hard rock mineralisation is overlain by a free-dig, high-grade monazite-sand deposit that extends from surface to depths of around 75 metres<sup>\*(1)</sup>.

The Monte Alto deposit is hosted within the Volta do Rio Plutonic Suite (VRPS), a provincial-scale magmatic system that has already yielded multiple discoveries of ultra-high-grade REE-Nb-Sc-Ta-U mineralisation, including at the Sulista and Pelé Projects. The hard rock REE-Nb-Sc-Ta-U mineralisation is coeval with the granites of the VRPS and repeats along the prominent geophysical trendline that runs down the extensive spine of the Rocha da Rocha Province.

Comprehensive mineralogical studies on the ultra-high-grade REE-Nb-Sc-Ta-U mineralisation have confirmed the dominant high-grade rare earth mineral is 'chevkinite' (up to 61% by weight).

Chevkinite is a readily leachable rare earth mineral, hosting the majority (~80%) of rare earth elements (REE) and critical co-product elements within the REE-Nb-Sc-Ta-U mineralisation. The accessory mineral apatite-britholite hosts ~10% of the REEs, with the balance hosted by minor REE minerals.

The first phase of metallurgical test work by ANSTO successfully confirmed that rare earths in the REE-Nb-Sc-Ta-U mineralisation can be efficiently extracted into stable solution, using mild leaching conditions and at atmospheric pressures (Figure 1).



*Figure 1: Initial, non-optimised, REE-Nb-Sc-Ta-U mineralisation recoveries*

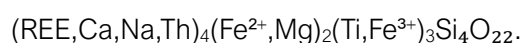
## Mineralogical Assessment and Characterisation

A comprehensive study of the ultra-high grade REE-Nb-Sc-Ta-U mineralisation at Monte Alto has been conducted by SGS Laboratories and ANSTO Minerals, revealing 'chevkinite' as the primary REE host mineral. Chevkinite, a monoclinic REE-Ti-Fe sorosilicate mineral, is highly enriched with rare earth elements, niobium, tantalum, scandium, and uranium.

Until Monte Alto's discovery, chevkinite had been known only as a minor accessory mineral in REE-rich deposits across regions like Russia, China, Greenland, and the USA. However, at Monte Alto, it occurs in massive horizons, with mineralised bands of up to 28 meters underpinning remarkable scale. High-grade chevkinite mineralisation has also been identified at the Sulista Project, located 80 kilometres to the south of Monte Alto, and at the Pelé and Velhinhos Projects.

### Chevkinite

At Monte Alto, chevkinite-(Ce) emerges as the predominant mineral, characterised by high concentrations of REEs. Its chemical composition is expressed as:



Typically appearing as black or brown prismatic crystals, chevkinite is naturally brittle, often metamict (lacking a defined crystal structure), and relatively porous. These properties make it highly susceptible to fluid infiltration and hydrothermal alteration, factors that enhance its amenability to metallurgical processing and leaching.

Notably, chevkinite is coarse-grained at Monte Alto, with over 80% of grains 'sand-sized', reducing processing complexity. In addition, more than 80% of chevkinite is liberated at a coarse grind size of 80% passing 300 microns, minimising the need for intensive grinding. Initial metallurgical testing has confirmed that REEs and critical co-products can be efficiently extracted under mild leaching conditions.

The chevkinite and accessory apatite-britholite mineralisation at Monte Alto is unmatched in scale and grade, with no comparable deposits identified from reviewed research studies.

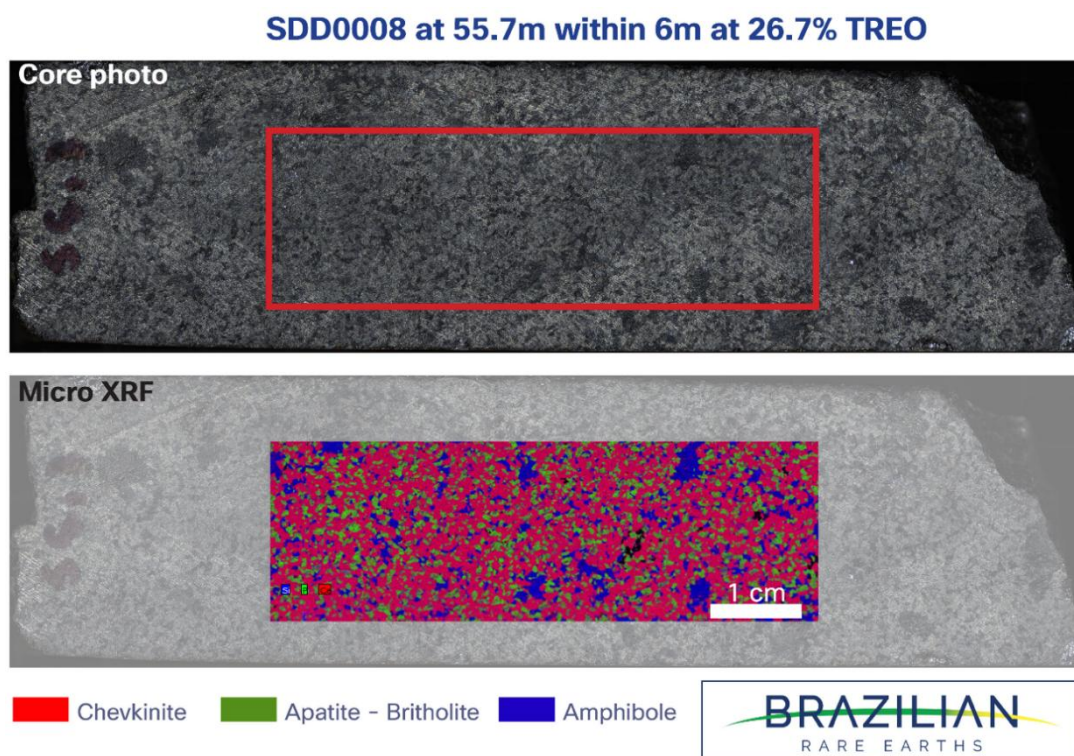


Figure 2: Micro-XRF map illustrating the spatial distribution of coarse-grained chevkinite minerals in a sample of ultra-high grade REE-Nb-Sc-Ta-U mineralisation from Monte Alto

Note\* Refer End Notes for further information including details of previously reported exploration results

## Accessory Apatite-Britholite Mineralisation

In addition to chevkinite, the Monte Alto mineralisation includes an accessory phospho-silicate mineral termed apatite-britholite. This mineral exhibits a solid-solution relationship between apatite and britholite, with REE concentrations frequently exceeding 40 wt% TREO. Its chemical formula is approximated as:



Apatite-britholite is notable for its susceptibility to hydrothermal alteration, which facilitates partial replacement by secondary REE phases such as monazite. This process is believed to underpin the formation of monazite-sand deposits found in the saprolite overlying the primary chevkinite-rich source rock at Monte Alto. Preliminary metallurgical tests have demonstrated efficient REE recovery from apatite-britholite under similar mild leaching conditions.

## Metallurgical Sample Preparation and Extraction

ANSTO conducted a metallurgical test work program to analyse the leaching behaviour of the REE-Nb-Sc-Ta-U mineralisation from Monte Alto.

The Monte Alto metallurgical sample was a composite sample of REE-Nb-Sc-Ta-U mineralisation over a 46.2 m cumulative intercept length. It included a 36 m whole-core interval from drill hole SDD0009 (118 m to 154 m), which is representative of the high-grade REE-Nb-Sc-Ta-U mineralisation at the centre of the Monte Alto deposit at depth. This mineralised sample was supplemented by intervals of three-quarter core from drill holes SDD0009 and SDD0008 (see Figure 3 and the plan map in Appendix C).

The ANSTO metallurgical sample was collected to appraise the mineralogical and metallurgical characteristics of the REE-Nb-Sc-Ta-U mineralisation. The bulk high-grade mineralised sample (~400 kg) was shipped from Brazil to Mineral Technologies Ltd in Australia. The metallurgical sample was crushed to 100% passing <2 mm and homogenised. A 30 kg representative sub-sample was shipped to ANSTO Minerals for detailed process development test work. For the diagnostic leach test work, representative sub-samples of the <2 mm sub-sample were split out and milled to ~80% passing 40 µm. At this grind size, the chevkinite and apatite-britholite minerals were largely well-liberated.

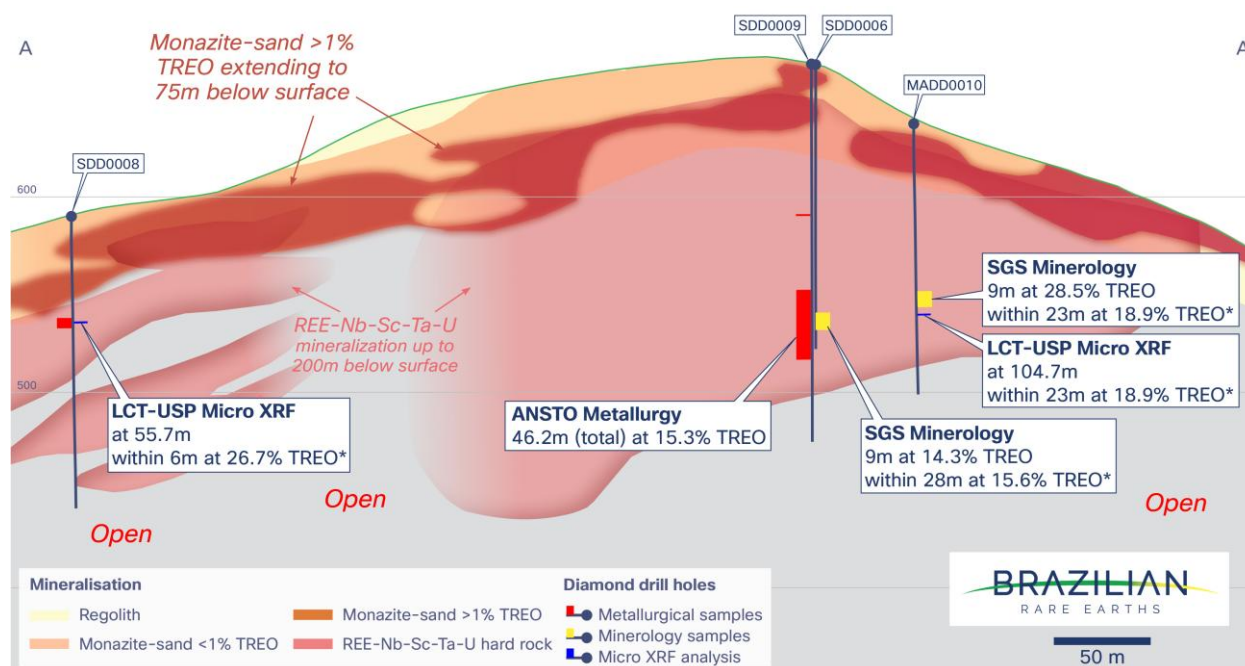


Figure 3: Monte Alto long-section with location of ANSTO metallurgical sample and SGS minerology samples  
(\*Denotes significant intercepts previously reported. ANSTO sample detailed in Appendix D and E)

Note\* Refer End Notes for further information including details of previously reported exploration results



## Sample Characterisation

A representative sub-sample of High-Grade mineralisation was analysed by XRF and fusion digestion followed by ICP-MS and ICP-OES assays of the digest liquor, with reported elemental compositions in Appendix E. Also included in this Appendix is the expected head grade based on the weighted average grade of the material utilised in the composite. The measured head grade aligns remarkably well with the expected head grade. The sample geochemistry is characteristic of the mineral sourced from the Monte Alto deposit with iron, calcium, silica and rare earth elements. Notably, it has very-high concentrations of rare earths, niobium, tantalum, uranium and scandium (Appendix E).

## Minerology and Metallurgical Analysis

Composite samples of hard rock REE-Nb-Sc-Ta-U mineralisation were analysed using Quantitative Evaluation of Minerals by Scanning Electron Microscopy (QEMSCAN). ANSTO's initial mineralogical investigation on a sample of the finely ground material (targeting 40 µm) that was used for development test work presented in this report. SGS composites were collected from two 9 m intercepts containing Ultra-High Grade (UHG: +15% TREO) and High-Grade (HG: +10% TREO) mineralisation. The samples consisted of approximately 5 kg of coarse reject material, crushed to 75% passing the 3 mm fraction.

In all samples, QEMSCAN analysis identified a simple mineral assemblage, primarily comprising three dominant minerals: chevkinite and accessory apatite-britholite as the dominant REE bearing phases and amphibole as the primary gangue mineral. The relative abundances of minerals in fresh hard rock samples are illustrated in Figure 4.

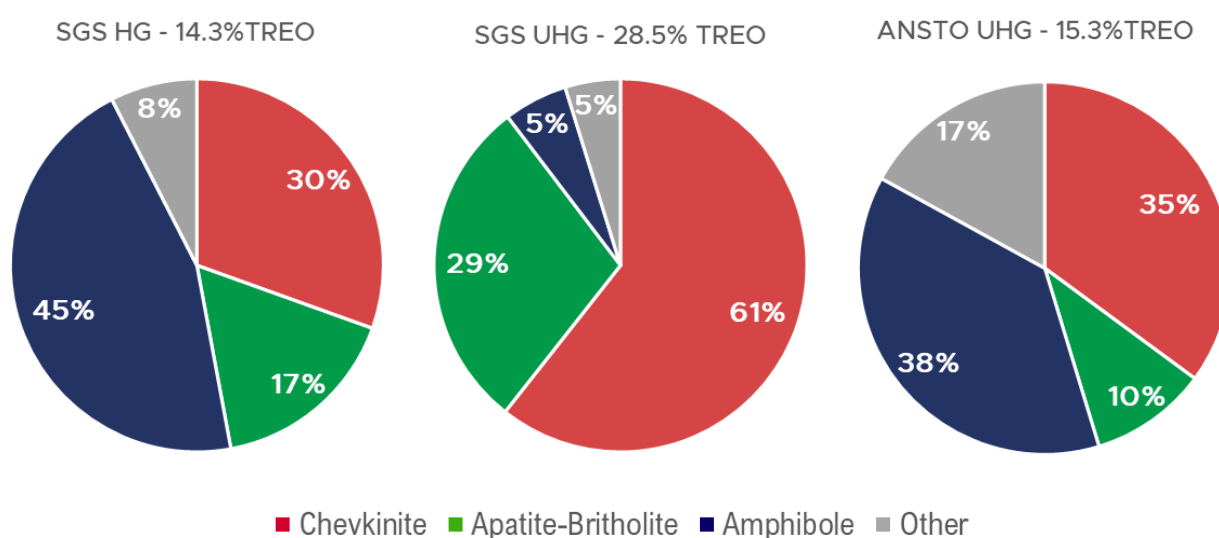


Figure 4: QEMSCAN modal minerals abundance in high-grade (left) and ultra-high grade (middle and right) composite samples highlighting correlation between TREO grade and chevkinite abundance

This mineral assemblage is observed throughout Monte Alto and underpins the relatively uniform grade that characterises the REE-Nb-Sc-Ta-U deposit. The distinction between UHG and HG TREO mineralisation types is related to the proportion of REE-bearing minerals (chevkinite and apatite-britholite) relative to the amphibole gangue.

- Ultra-High Grade (UHG +15% TREO) mineralisation: High-tenor, thick chevkinite bands, often occurring as intervals over 10 m thick, with recorded REE mineral abundances up to 90 wt%
- High-Grade (HG +10% TREO) contains mixed zones, or interleaved bands, of amphibole and chevkinite, with recorded REE mineral concentrations up to 47 wt%

A comprehensive analysis of the REE-mineral host and gangue minerals is provided in the ANTISO QEMSCAN results in Appendix F. The most abundant REE-bearing minerals in the metallurgical composite sample are chevkinite-Ce (35.1%) and apatite-britholite (10.2%). Minor and trace REE-bearing minerals detected in the sample by QEMSCAN and manual SEM examination include allanite (2.2%), davidite (0.6%), monazite (0.4%), bastnasite (0.2%) and cerite (0.1%).

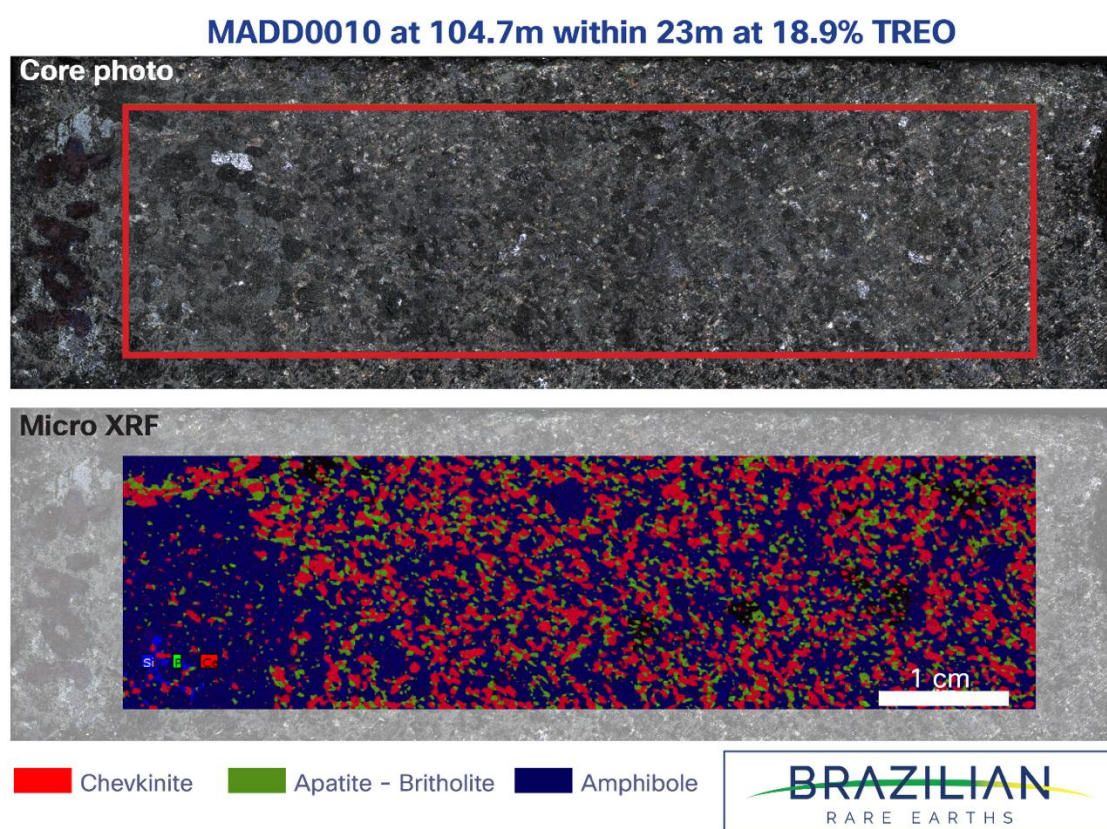
The gangue mineralisation was predominantly comprised of an amphibole consistent with ferrohornblende (38%). Minor concentrations of Fe-oxide/hydroxide (2.9%), apatite (2.3%) and plagioclase feldspar (1.3%) were also detected along with trace concentrations of pyrite, thorite, organic material, ilmenite, smectites, pyroxene, biotite/annite, K-feldspar, quartz and chlorite.

### Mineralisation Texture

Micro-XRF analysis was conducted on the Monte Alto hard rock samples to map the distribution of elements and mineral grains (sample locations in Figure 3). This analysis was conducted at the Technological Characterisation Laboratory of the University of São Paulo to deliver high-resolution chemical mapping and the identification of key REE minerals.

Composite maps of Ce, P, and Si classified chevkinite, apatite-britholite, and amphibole, and this work highlighted a simple, coarse-grained mineral assemblage that was consistent across samples. Grain clusters were observed with maximum sizes ranging from 1 to 2 mm.

The proportions of REE minerals in the UHG samples in Figure 2 and Figure 5 closely match QEMSCAN results, reinforcing the positive correlation between REE head grades and chevkinite abundance. Additional micro-XRF images in Appendix G show the simple, coarse-grained mineral assemblage that is consistent between drill core samples from Monte Alto and the Sulista project, located ~80 km to the south of Monte Alto.



*Figure 5: Micro-XRF map showing the spatial distribution of coarse grained chevkinite mineralisation in a sample of high-grade REE-Nb-Sc-Ta-U Mineralisation from Monte Alto*

*Note\* Refer End Notes for further information including details of previously reported exploration results*

## Grain Size and Mineral Liberation Analysis

SGS mineral analysis (Appendix H) confirmed that both chevkinite and apatite-britholite are predominately coarse-grained, with a median grain size of ~240 µm in the UHG mineralisation and 105 to 135 µm in the HG mineralisation. Only negligible quantities reported to the sub-38 µm "slimes" size fraction.

High-resolution Mineral Liberation Analysis from the samples confirmed a high degree of chevkinite and apatite-britholite liberation. Over 90% of chevkinite and 80% of apatite-britholite was liberated at the P<sub>80</sub> grind size of ~50 µm for the ANSTO metallurgical sample. Mineral release curves are presented in Appendix H.

## REE Department

The indicative elemental department of the Ce, La and Nd was calculated using QEMSCAN software by ANSTO. The results, summarised in Table 1, showed that ~80% of the rare earth elements are hosted by chevkinite and ~10% hosted by apatite-britholite.

A proportion of the rare earth elements are hosted by the minor primary REE mineral phases (e.g. allanite) as well as the metasomatic alteration products of REE minerals (e.g. monazite). These minerals collectively host the balance of rare earth elements (~10%).

Table 1: ANSTO analysis of Ce, La and Nd partitioning in high-grade REE-Nb-Sc-Ta-U mineralisation

Mineral	Mineral Mass (%)	Mineral Grade (wt%)			Partition (%)		
		Ce	La	Nd	Ce	La	Nd
Chevkinite	35.1	14.8	9.3	3.9	79	82	77
Apatite-Britholite	10.2	6.0	2.3	2.0	9	6	12
Other REE Minerals	0.1 - 2.2	5.6 - 63.9	1.9 - 14.5	12.0 - 36.9	0.5 - 4.1	0.2 - 6.2	4.9 - 5.7

The department of Ce, La, and Nd in minerals identified by ANSTO are presented in Appendix I.

## Consistency of Chevkinite Department

Point chemical analysis of chevkinite and apatite-britholite grains with Electron Microprobe (EMP) was undertaken at Queen's University, Canada, under the supervision of SGS Mineral Services.

The results confirmed that REE-Nb-Ta-Sc-U are hosted within chevkinite mineral at EMP concentrations of up to 4.1% Nd, 1.5% Pr, 1.2% Nb, 0.03% Sc, 0.07% Ta, and 0.69% U (Table 2). Although heavy rare elements Dy and Tb were not included in the analysis, concentrations up to 0.33% Gd and 0.46% Y indicates a department of heavy rare earth elements in chevkinite. Chevkinite grains showed remarkable compositional consistency, both within individual samples, and across samples separated by over 50 meters in distance, with the relative standard deviations for Nd and Pr consistently below 10%. Additionally, chevkinite from both the UHG and HG samples showed near-identical compositions, underscoring the potential for a consistent mineral product across the mineralisation styles.

Apatite-britholite grains also contain high concentrations of rare earth elements. The apatite-britholite is particularly enriched in the heavy rare earth elements with concentrations up to 0.68% Gd and 1.98% Y. Like chevkinite, the apatite-britholite shows high compositional consistency within and between individual samples.

The EMP analysis showed low variability across the fresh rock chevkinite samples which may indicate uniform formation conditions at the Monte Alto deposit. EMP element concentrations for the key minerals are presented in Appendix J.



Table 2: Monte Alto Chevkinite EMP results - REE and co-product oxides

Element	SGS UHG (n=32)	Average % SGS HG (n=32)	All (n=64)	Min %	Max %	RSD
La	9.55	9.60	9.57	8.64	10.22	2%
Ce	16.04	16.71	16.37	14.54	17.59	3%
Nd	3.61	3.96	3.79	3.45	4.13	6%
Pr	1.31	1.42	1.37	1.22	1.53	6%
Sm	0.35	0.40	0.38	0.28	0.49	13%
Gd	0.24	0.25	0.25	0.17	0.33	14%
Y	0.42	0.43	0.43	0.35	0.46	5%
Nb	0.93	1.14	1.03	0.88	1.19	11%
Sc	0.02	0.02	0.02	0.02	0.03	14%
Ta	0.04	0.05	0.04	0.03	0.07	21%
U	0.61	0.48	0.54	0.41	0.69	15%

Table 3: Monte Alto Apatite-Britholite EMP results - REE and co-product oxides

Element	SGS UHG (n=32)	Average % SGS HG (n=32)	All (n=64)	Min %	Max %	RSD
La	3.09	3.86	3.48	2.83	4.06	12%
Ce	6.59	8.48	7.57	6.09	8.82	14%
Nd	2.31	3.10	2.72	2.09	3.29	16%
Pr	0.66	0.92	0.79	0.49	1.08	19%
Sm	0.35	0.51	0.43	0.21	0.65	24%
Gd	0.41	0.55	0.48	0.32	0.68	18%
Y	1.40	1.78	1.60	1.24	1.98	13%
Sc	0.001	0.001	0.001	0.000	0.008	211%
U	0.24	0.24	0.24	0.18	0.35	11%

## Leaching Characterisation

The leaching test work program is divided into two key phases:

1. Diagnostic Testing: Characterisation of the mineral matrix's behaviour under various leaching conditions
2. Larger-Scale Testing: Production of a mixed rare earth element carbonate (MREC) and optimisation of impurity removal

This report presents the leaching results and analysis from Phase 1, with this test work conducted in a baffled batch leach vessel equipped with temperature monitoring and periodic acid additions. Acid additions were guided by titration estimates of acid consumption. This methodology inherently results in acid concentrations falling below the target levels during the tests, particularly in the early stages when reaction rates are highest. Continuous leaching with managed acid addition is expected to mitigate much of the variability in leaching responses observed in this phase.

To date, using dilute sulfuric acid as the lixiviant, the test work has demonstrated a highly efficient and targeted extraction of rare earth elements from the mineralised samples into a stable solution under atmospheric leach conditions. The process efficiency is highlighted by the mild acidic conditions and low operating temperatures.

The acid leaching is efficient in leaching the REE-bearing chevkinite and apatite-britholite mineral phases, while the amphibole, which contains no REEs, remains refractory under these conditions and reports unaffected to the residue. The targeted nature of the leaching is highlighted by selective leaching of REE-hosted minerals whilst leaving the gangue minerals mostly untouched, ensuring acid consumption is focussed on extracting rare earths.

Upon completion of the full test work program, the generated data will guide the development of an optimised processing route for the economic exploitation of Monte Alto's mineralised domains. It will also inform and guide future process development activities.

### Acid Leaching Susceptibility Tests

The testing program began with a progressive acidification test designed to evaluate the susceptibility of the REE-hosted mineral matrix to leaching under increasing concentrations of sulfuric acid. The results, presented in Figure 6, demonstrate that the REE-hosted minerals are readily leached at sulfuric acid concentrations of up to 100 g/L and a moderately elevated temperature of 60°C.

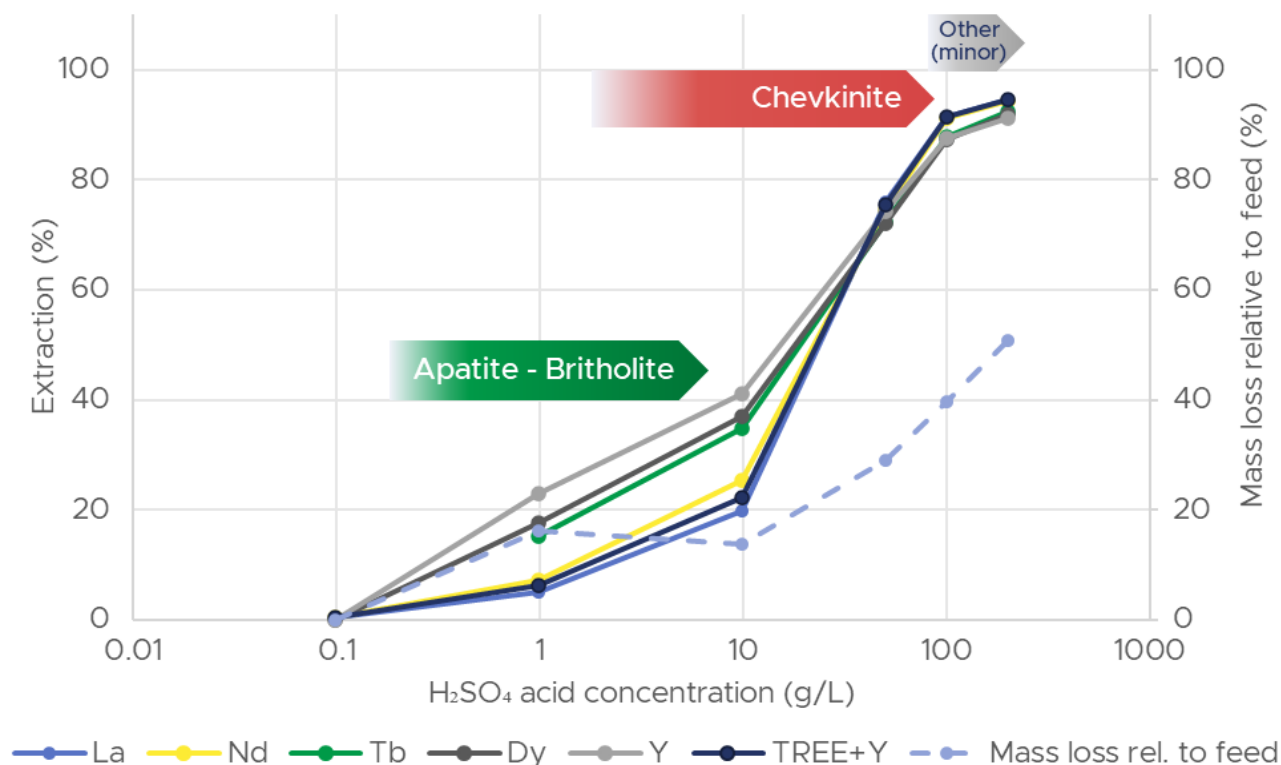


Figure 6: Extraction into solution versus initial leach acidity (4% solids density, 60°C, 45-minute intervals)  
Horizontal arrows indicate the approximate acid concentrations where mineral dissolution occurs

Uranium leaching mirrored that of the TREE+Y indicating that the uranium is co-costed within the same mineral phases or in mineral phases with near identical susceptibility to the acidity levels tested.

Elemental deportment calculations (Appendix I) indicates that a significant proportion of the Th in the mineral sample is associated with the chevkinite phase (69%), and a smaller portion is associated with thorite (22%). Thorite, observed through manual SEM examination as fine-grained inclusions within some chevkinite particles, is more refractory under the conditions tested. This results in a substantial fraction of Th remaining locked in thorite under the less acidic leaching conditions. Consequently, the differential mineralogical association of Th with chevkinite and thorite leads to a reduced rate of Th leaching relative to uranium, as shown in Figure 7.

Importantly, the primary gangue mineral phase is largely unaffected by the leaching conditions used in the susceptibility test. This is evidenced by the low extraction rates of silicon, iron, and aluminium into the pregnant leach solution (PLS). The amphibole, which does not consume any acid during the leaching of REE-bearing minerals, reports to the solid residue. This indicates that the leaching process is highly targeted, effectively dissolving the primary REE-host minerals while minimising acid consumption on gangue mineral phases.

*Note: Refer End Notes for further information including details of previously reported exploration results*

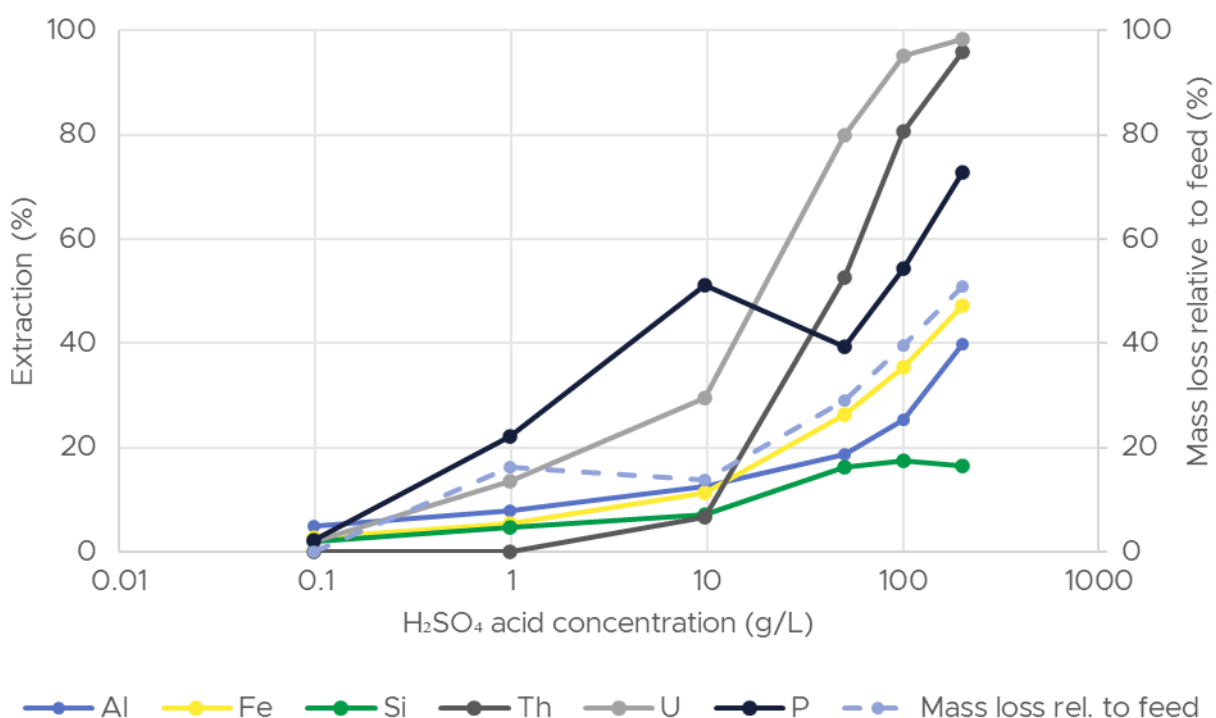


Figure 7: Accessory metals and uranium extraction tracks LREE, signals a common host-mineral (4% solids density, 60°C, 45-minute intervals)

### Acid Leaching Kinetics

With the acid strength operating range established, a series of leaching kinetics tests were conducted to assess the rate at which the dissolution occurs at the specified acid strength target. The results shown in Figure 8 demonstrate highly rapid leaching kinetics, with the low-pulp density test achieving 90% extraction within just 2 hours.

As observed in the acid leaching susceptibility study, there is a quantifiable difference in the leaching rates of heavy rare earth elements (HREE) compared to light rare earth elements (LREE), as illustrated in Figure 9. This difference is more pronounced at lower acid strengths, suggesting that while the apatite-britholite phase is largely unaffected by lower acid strength, the chevkinite requires slightly higher acid concentrations to fully dissolve.

These findings further refine the operating window for efficient leaching of most of the REE-hosted minerals, identifying an optimal acid strength range of 50 g/L to 75 g/L for leaching over a residence time of up to 6 hours. All tests conducted with target acid strengths of 50 g/L or higher consistently achieved extraction efficiencies exceeding 90%.

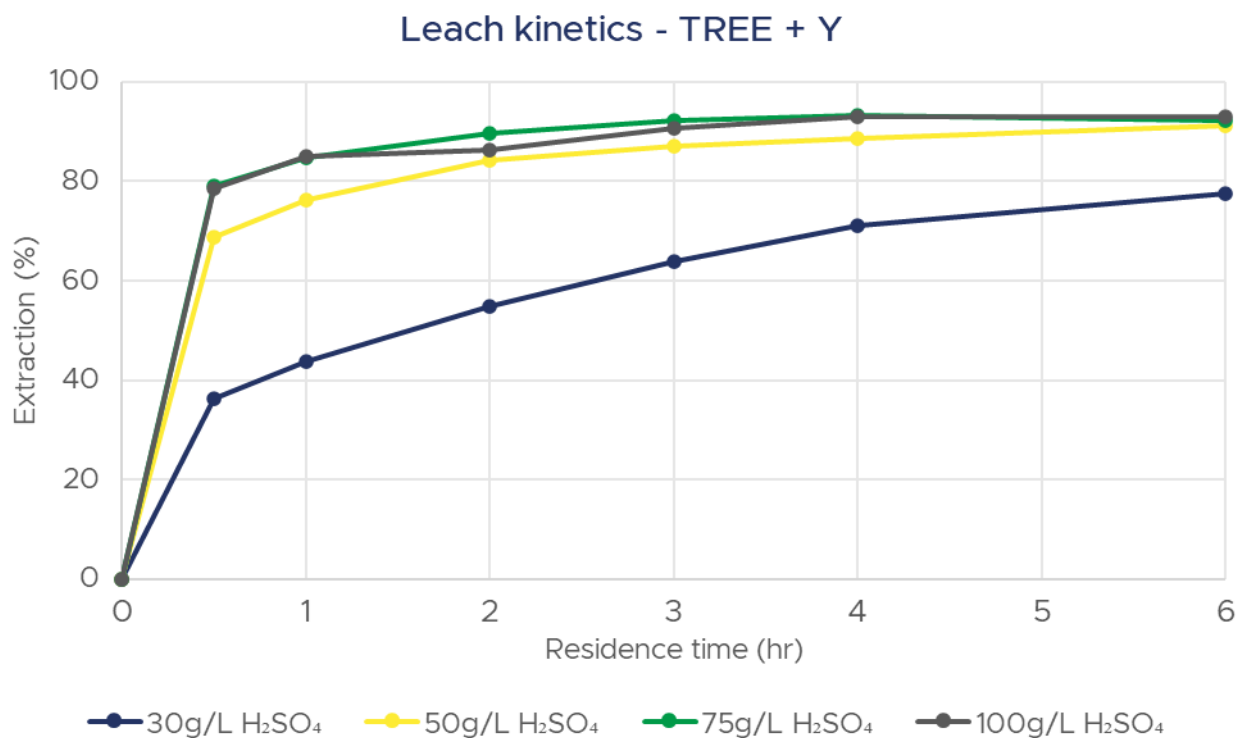


Figure 8: Leaching kinetics of REE at different acid strengths (4% solids density; 60°C)

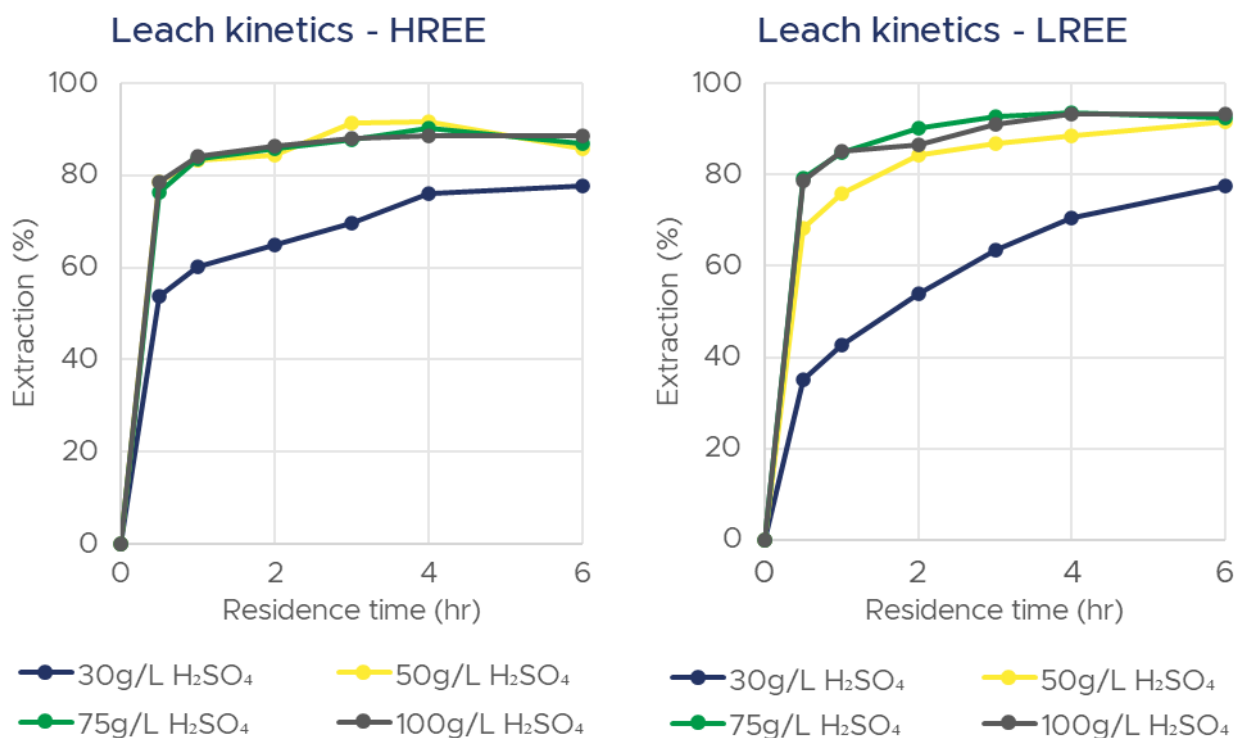


Figure 9: Leaching kinetics HREE and LREE at different acid strengths (4% solids density; 60°C)



## Acid Leaching Optimisation

Acid leaching optimisation focussed on evaluating the impact of increased pulp density on leaching performance. The pulp density was increased from the baseline diagnostic density of 4% to 15% and 20% and 20%, with tests conducted at two acid concentrations: 75 g/L and 50 g/L.

### Enhanced Leaching Kinetics

Tests with the higher acid strength (75 g/L) exhibited superior leaching kinetics compared to the 50 g/L cases, particularly at elevated pulp densities. Higher acid strength minimises the operating period below the most efficient leaching acid strength. At 15% pulp density and 75 g/L acid concentration, an extraction efficiency of over 89% was achieved within 6 hours, demonstrating stable pulp and solution properties that were easily filtered.

### PLS Concentration and Stability

Both the 15% and 20% solids tests at 75 g/L acid concentration produced a pregnant leach solution with a total rare earth elements concentration of approximately 23 g/L. This concentration likely represents the upper limit of stable REE solubility in the acidic sulphate system. Future tests will explore leaching behaviour of pulp densities at or below 15% solids to optimise REE extraction while maintaining efficient kinetics.

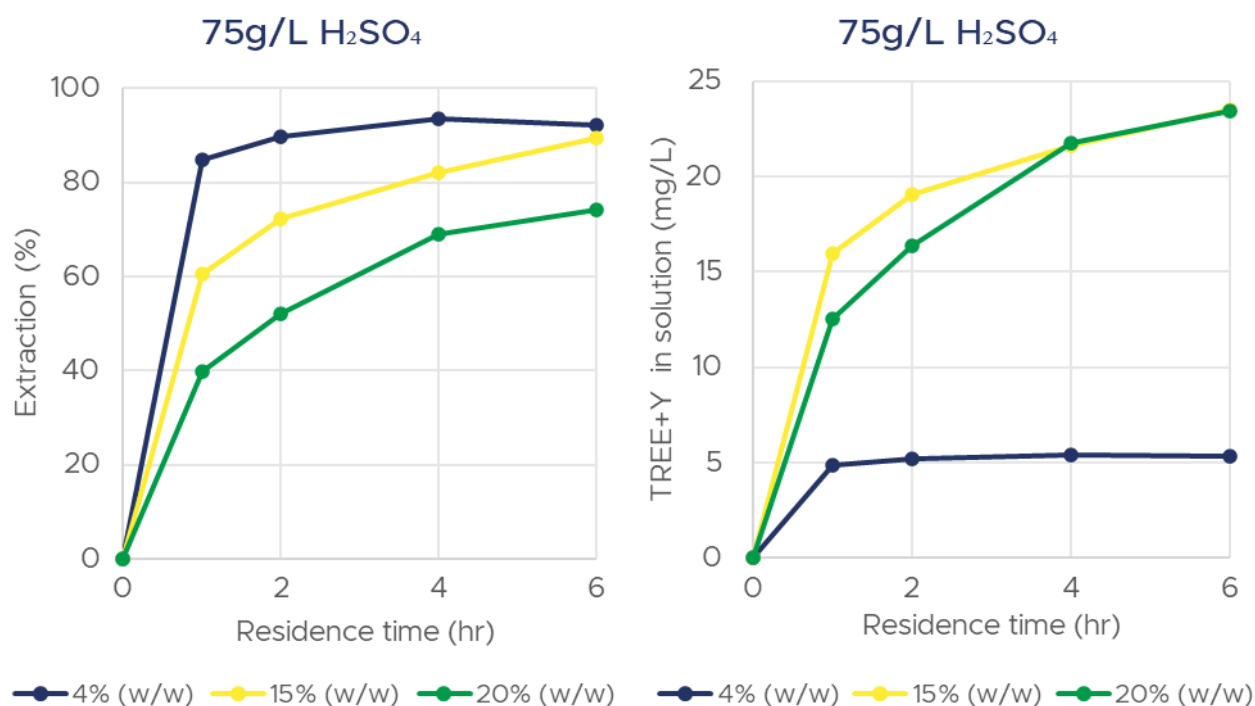


Figure 10: TREE+Y extraction kinetics (right) and solution concentration (left) at various leaching pulp densities (75 g/L, 60 °C)

### Acid Consumption

Acid consumption varied depending on the leaching efficiency and cation exchange with the mineral matrix. Notably, the amphibole gangue showed no reaction under the tested conditions, corroborating its stability in this leaching environment and confirming that it is not acid consuming.

### Selective Extraction Performance

The representative solution chemistry and extraction data is provided in Appendix K.

Using non-optimised operating conditions (15% solids, 75 g/L, 60°C, 6 hours), a TREE+Y extraction efficiency of 89% was achieved, with a corresponding solution concentration of 23.5 g/L.

The extraction of tantalum and niobium under these conditions were minimal with both reporting to the solid residue in the leaching process. Uranium reported to the PLS at levels consistent with TREE+Y and it will be targeted for efficient recovery in the impurity removal stage. A significant proportion of the Th reports to the PLS and will be removed/immobilised in the impurity removal stage of testing. The extraction of scandium was 58% indicating that a portion of the scandium is hosted in a separate mineral phase, warranting further investigation.

At lower acid concentrations of 50 g/L the extraction efficiency and kinetics were moderated. The results presented in Figure 11 indicate that at 4% pulp density, leaching kinetics plateau after approximately 2 hours, with slowing extraction increments thereafter. In contrast, leaching rates at 15% and 20% pulp densities were significantly slower. This disparity likely stems from extended periods between sample points and the correction of the acid strength (replacing consumed acid) during testing relative to the leaching kinetic rate. Improved acid monitoring during the test work and timely acid intervention are anticipated to bring the kinetics of higher pulp densities closer to those of the 4% case.

Current investigations aim to refine initial leaching conditions to lower free acid levels at the end of the leaching process, to streamline the impurity removal, and enhance the leaching kinetics for higher pulp densities whilst holding leaching specificity. Optimising these parameters will improve the efficiency and selectivity of the leaching process.

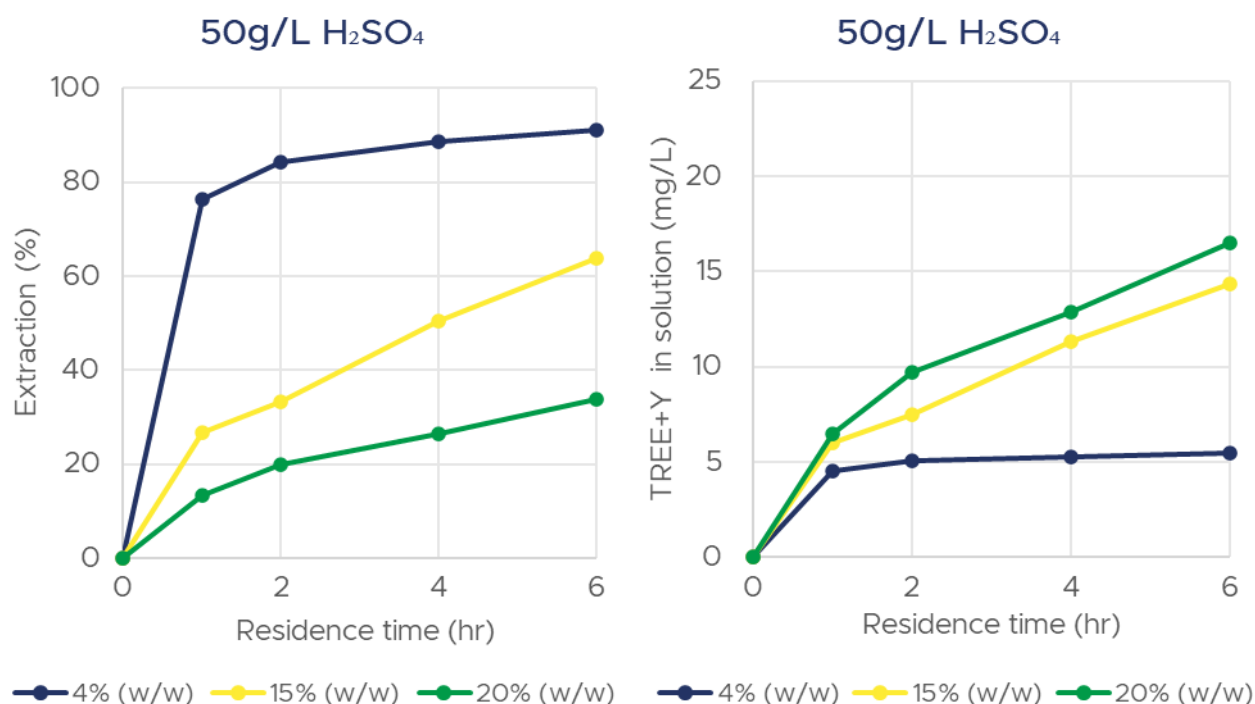


Figure 11: TREE+Y extraction kinetics (right) and solution concentration (left) at various leaching pulp densities (50 g/L, 60°C)

## Future Testing Pipeline

The ANSTO testing program is advancing on schedule, with completion anticipated in early 2025. The second phase of the test work program will focus on impurity removal, including the recovery of uranium, prior to producing a mixed rare earth carbonate (MREC).

The key objectives of the future test work program include:

*Co-product recovery and impurity management:*

- Progress and enhance recovery of the co-products including uranium, niobium tantalum and scandium
- Impurity removal and immobilisation

*Comprehensive beneficiation studies:*

- Hard-rock beneficiation: Ore sorting, gravity concentration, flotation, and magnetic separation
- Monazite sands: Refine and enhance beneficiation process (gravity concentration, flotation, and magnetic separation) and optimise the cracking process for the high-grade monazite sand concentrates

The test work programs are being conducted in both Brazil and Australia to ensure a full evaluation of the process. Mineral concentrates produced from the beneficiation activities may undergo further extractive metallurgical testing in both regions to assess and maximise the economic value of the processes.

This announcement has been authorised for release by the CEO and Managing Director.

For further information and enquires please contact:

Bernardo da Veiga

MD and CEO

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## References and Notes

1. TREO = Total Rare Earth Oxides; NdPr = Nd<sub>2</sub>O<sub>3</sub> + Pr<sub>6</sub>O<sub>11</sub>; DyTb = Dy<sub>2</sub>O<sub>3</sub> + Tb<sub>4</sub>O<sub>7</sub>
2. Refer to the Prospectus dated 13 November 2023 (ASX, 19 December 2023) and the Company's ASX Announcements dated 25 March 2024, 6 June 2024, 11 June 2024 and 26 August 2024 (collectively Original ASX Announcements) for previously reported exploration results and mineral resource estimates. BRE confirms that:
  - (a) It is not aware of any new information or data that materially affects the information included in the Original ASX Announcements and
  - (b) In the case of the estimates of Mineral Resources, all material assumptions and technical parameters underpinning the estimates in the Original ASX Announcements continue to apply and have not materially changed.
3. Macdonald, Ray, et al. "Composition, paragenesis, and alteration of the chevkinite group of minerals." *American Mineralogist* 104.3 (2019): 348-369.
4. MacDonald, Ray, et al. "Interaction of Rare-Metal Minerals with Hydrothermal Fluids: Evidence From Quartz–Epidote Metasomatites of The Haldzan Buragtag Massif, Mongolian Altai." *Canadian Mineralogist* 53.6 (2015): 1015-1034.
5. When reporting exploration results (including weighted average intercepts) or mineral resource estimates, data is rounded to the nearest reporting unit. Discrepancies may occur due to rounding.

## Forward-Looking Statements and Information

This Announcement may contain "forward-looking statements" and "forward-looking information", including statements and forecasts which include (without limitation) expectations regarding industry growth and other trend projections, forward-looking statements about the BRE's Projects, future strategies, results and outlook of BRE and the opportunities available to BRE. Often, but not always, forward-looking information can be identified by the use of words such as "plans", "expects", "is expected", "is expecting", "budget", "outlook", "scheduled", "target", "estimates", "forecasts", "intends", "anticipates", or "believes", or variations (including negative variations) of such words and phrases, or state that certain actions, events or results "may", "could", "would", "might", or "will" be taken, occur or be achieved. Such information is based on assumptions and judgments of BRE regarding future events and results. Readers are cautioned that forward-looking information involves known and unknown risks, uncertainties and other factors which may cause the actual results, targets, performance or achievements of BRE to be materially different from any future results, targets, performance or achievements expressed or implied by the forward-looking information.

Forward-looking statements are not guarantees of future performance and involve known and unknown risks, uncertainties, assumptions and other important factors, many of which are beyond the control of the Company, the Directors and management of the Company. Key risk factors associated with an investment in the Company are detailed in Section 3 of the Prospectus dated 13 November 2023. These and other factors could cause actual results to differ materially from those expressed in any forward-looking statements.

Forward-looking information and statements are (further to the above) based on the reasonable assumptions, estimates, analysis and opinions of BRE made in light of its perception of trends, current conditions and expected developments, as well as other factors that BRE believes to be relevant and reasonable in the circumstances at the date such statements are made, but which may prove to be incorrect. Although BRE believes that the assumptions and expectations reflected in such forward-looking statements and information (including as described in this Announcement) are reasonable, readers are cautioned that this is not exhaustive of all factors which may impact on the forward-looking information.

The Company cannot and does not give assurances that the results, performance or achievements expressed or implied in the forward-looking information or statements detailed in this Announcement will actually occur and prospective investors are cautioned not to place undue reliance on these forward-looking information or statements.

Forward looking statements in these materials speak only at the date of issue. Subject to any continuing obligations under applicable law or any relevant stock exchange listing rules, in providing this information the Company does not undertake any obligation to publicly update or revise any of the forward-looking statements or to advise of any change in events, conditions or circumstances on which any such statement is based.

## Competent Persons Statement

The information in this announcement that relates to Exploration Results is based on, and fairly represents, information compiled or reviewed by Mr Adam Karst P.G, a Competent Person who is a registered member of the Society of Mining, Metallurgy and Exploration which is a Recognised Overseas Professional Organisation. Mr Karst has sufficient experience that is relevant to the style of mineralisation and types of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the Joint Ore Reserves Committee Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr. Karst consents to the inclusion in this report of the results of the matters based on his information in the form and context in which it appears.

The information in this release that relates to metallurgical testwork is based on information compiled and / or reviewed by Mr Gavin Beer who is a Member of The Australasian Institute of Mining and Metallurgy (AusIMM) and a Chartered Professional. Mr Beer is a consulting metallurgist with sufficient experience relevant to the activity which he is undertaking to be recognised as competent to compile and report such information. Mr Beer consents to the inclusion in the report of the matters based on his information in the form and context in which it appears. Mr Beer does not hold securities in BRE.

*Note\* Refer End Notes for further information including details of previously reported exploration results*

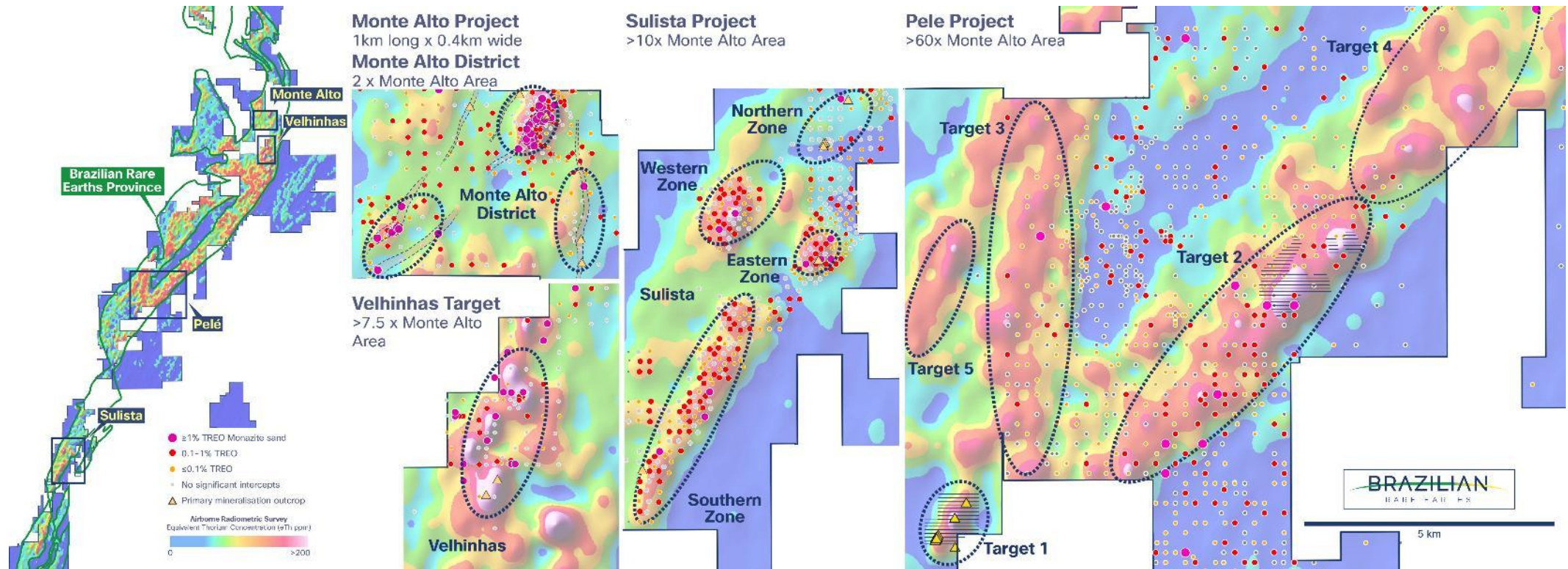


## Appendix A: BRE Critical Minerals

	Market Applications	EU Critical Mineral	USA Critical Mineral
	Neodymium is used for permanent magnets used in electric vehicles, robotics, wind turbines, electronic equipment and defence applications	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Praseodymium is used for permanent magnets used in electric vehicles, robotics, wind turbines, electronic equipment and defence applications	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Heavy rare earth: Dysprosium is used for high temperature and coercivity permanent magnets used in electric vehicles, robotics, wind turbines and defence	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Heavy rare earth: Terbium is used for high temperature and coercivity permanent magnets used in electric vehicles, robotics, wind turbines and defence	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Heavy rare earth: Gadolinium is crucial to high-tech applications across medical imaging, energy systems, and data storage	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Heavy rare earth: Lutetium is vital rare earth element for medical diagnostics, cancer treatment, and advanced laser applications	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Heavy rare earth: Erbium has unique optical and electronic properties that are critical for fiber-optics, lasers, and nuclear reactor technologies	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Yttrium is essential for high-tech applications, including phosphors, LEDs, superconductors, aerospace alloys, lasers and solid-oxide fuel cells	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Niobium is used as a micro alloying element for high strength steels and superalloys	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Tantalum is used in semi-conductors, capacitors, super-alloys and medical devices	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Scandium is used in high performance aluminium-scandium alloys to enhance strength to weight ratios	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	The primary use of uranium is as fuel for nuclear reactors, generating electricity through nuclear fission		

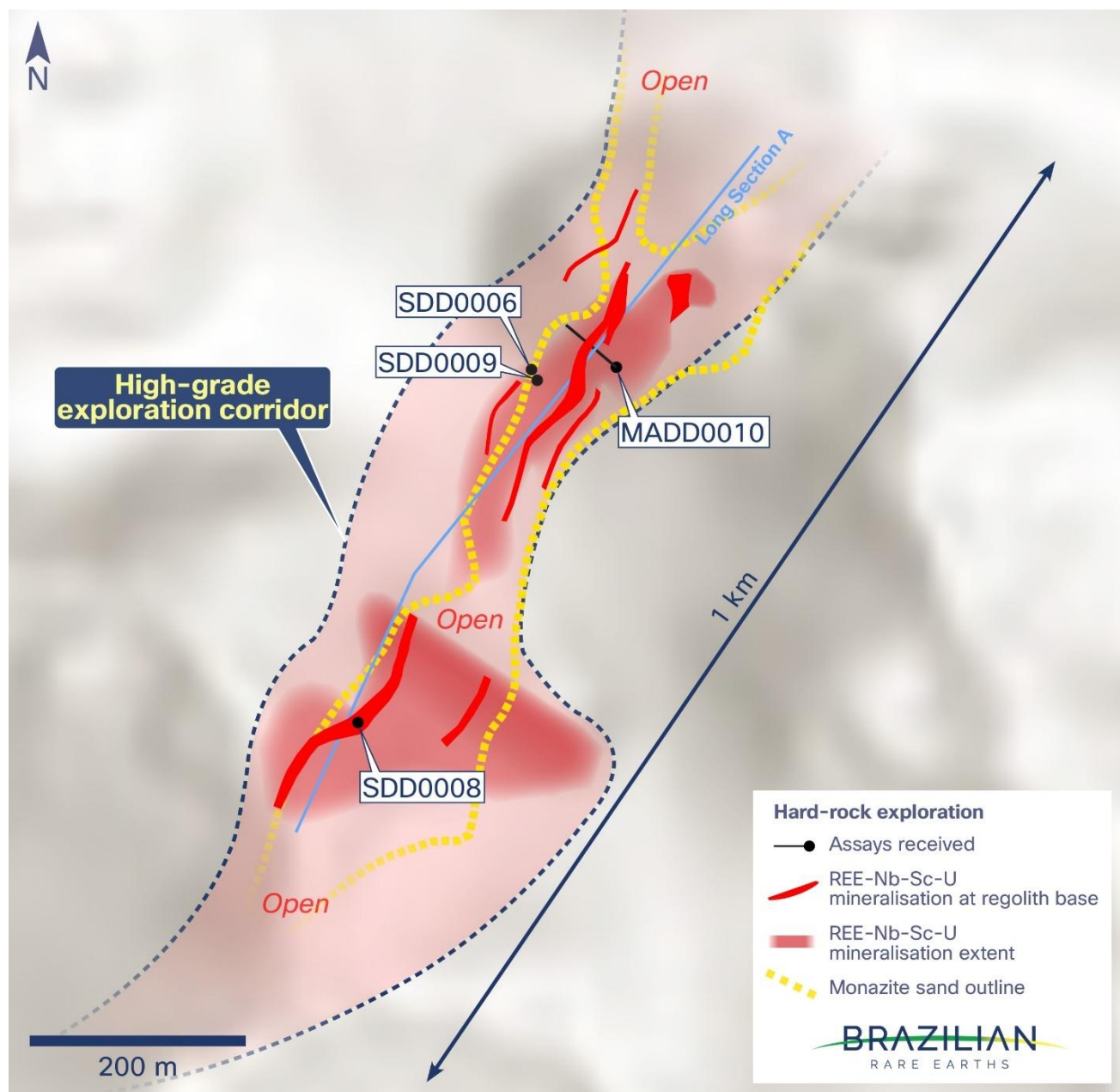
*Note: This is a sub-section of the minerals and elements that has been discovered to date at Monte Alto*

## Appendix B: BRE exploration projects\*



Note \* Refer to End Notes for details of previously reported exploration results

## Appendix C: Location of Monte Alto Drill Holes used for Reported Mineralogy and Metallurgy Test work



Note: Refer End Notes for further information including details of previously reported exploration results

## Appendix D: Composition of ANSTO Metallurgical Sample and Expected Head Grade Calculation

ANSTO metallurgical composite sample is derived from intervals of whole and ¾ core obtained from previously reported drill holes\*. The expected head grade of the ANSTO metallurgical composite is calculated from the mass weighted average grade of previously reported exploration assays\* over the corresponding interval. If the interval was not previously sampled, exploration assays<sup>1</sup> from a geologically equivalent interval were used to generate a representative average.

TREO (%)	La <sub>2</sub> O <sub>3</sub> (ppm)	CeO <sub>2</sub> (ppm)	Pr <sub>6</sub> O <sub>11</sub> (ppm)	Nd <sub>2</sub> O <sub>3</sub> (ppm)	Sm <sub>2</sub> O <sub>3</sub> (ppm)	Eu <sub>2</sub> O <sub>3</sub> (ppm)	Gd <sub>2</sub> O <sub>3</sub> (ppm)	Tb <sub>4</sub> O <sub>7</sub> (ppm)	Dy <sub>2</sub> O <sub>3</sub> (ppm)	Ho <sub>2</sub> O <sub>3</sub> (ppm)	Er <sub>2</sub> O <sub>3</sub> (ppm)	Tm <sub>2</sub> O <sub>3</sub> (ppm)	Yb <sub>2</sub> O <sub>3</sub> (ppm)	Lu <sub>2</sub> O <sub>3</sub> (ppm)	Y <sub>2</sub> O <sub>3</sub> (ppm)	Nb <sub>2</sub> O <sub>5</sub> (ppm)	Sc <sub>2</sub> O <sub>3</sub> (ppm)	Ta <sub>2</sub> O <sub>5</sub> (ppm)	U <sub>3</sub> O <sub>8</sub> (ppm)	ThO <sub>2</sub> (ppm)
SDD0008: 5.3m of ¾ core from 51.5m (31kg)																				
28.4	75,791	141,392	12,572	33,951	4,291	48.9	2,845	337	1,992	318	874	108	680	93.8	8,885	8,239	204	486	3,202	32,844
SDD0009: 1.7m of whole core from 79m (20kg)																				
No exploration assays -representative average grade obtained from equivalent material in SDD0006 from 102 to 106m																				
14.2	38,500	70,475	5,768	15,925	2,000	33.4	1,326	194	1,075	186	512	66	408	58.4	5,155	4,292	201	274	2,483	23,286
SDD0009: 6.4m ¾ core from 118m (47kg)																				
19.5	52,024	95,868	8,771	23,625	2,999	36.8	1,995	230	1,358	223	636	78	519	70.4	6,222	5,612	212	340	2,670	25,276
SDD0009: 23.2m of whole core from 124.4m (~274kg)																				
No exploration assays -representative average grade obtained from equivalent material in SDD0006 124m to 148m																				
14.9	40,533	73,746	6,102	16,829	2,092	33.5	1,445	202	1,098	189	520	67	413	58.4	5,257	4,429	201	281	2,399	23,775
SDD0009: 9.6m of ¾ core rom 147.6m (~59kg)																				
16.1	43,834	79,725	7,024	18,808	2,376	29.5	1,564	176	987	172	494	61	411	57.2	5,027	4,428	207	262	2,615	22,271
<b>Total Composite: 46.2m cumulative length (431kg)</b>																				
16.5	44,680	81,690	6,969	19,031	2,383	34.4	1,617	210	1,175	200	554	70	443	62.1	5,587	4,825	203	299	2,520	24,363
TREE (%)	La (ppm)	Ce (ppm)	Pr (ppm)	Nd (ppm)	Sm (ppm)	Eu (ppm)	Gd (ppm)	Tb (ppm)	Dy (ppm)	Ho (ppm)	Er (ppm)	Tm (ppm)	Yb (ppm)	Lu (ppm)	Y (ppm)	Nb (ppm)	Sc (ppm)	Ta (ppm)	U (ppm)	Th (ppm)
<b>Total Composite: 46.2m cumulative length (431kg)</b>																				
13.7	38,097	66,501	5,768	16,316	2,055	29.7	1,403	182	1,024	175	484	60.8	389	54.6	4,400	3,373	132	245	2,137	21,410

*Note\* Refer End Notes for further information including details of previously reported exploration results*



## Appendix E: ANSTO Assayed Head Grade

Feed head grade as measured by ANSTO Minerals compared with expected head grade based on weighted average from resource database

Element	Unit	Feed head grade	Expected head grade
Al	%	2.57	2.51
Ba	%	<0.001	0.01
Ca	%	8.88	8.91
Fe	%	12.6	14.22
Hf	%	<0.001	0.003
K	%	0.61	0.59
Mg	%	1.84	1.84
Mn	%	0.19	0.19
Na	%	0.66	0.58
<b>Nb</b>	<b>%</b>	<b>0.31</b>	<b>0.34</b>
P	%	2.10	2.14
Pb	%	0.26	0.22
S	%	0.33	0.06
<b>Sc</b>	<b>%</b>	<b>0.014</b>	<b>0.013</b>
Si	%	12.4	12.00
Sr	%	0.01	0.01
<b>Ta</b>	<b>%</b>	<b>0.02</b>	<b>0.02</b>
Th	%	2.03	2.14
Ti	%	3.46	3.61
<b>U</b>	<b>%</b>	<b>0.22</b>	<b>0.21</b>
Zn	%	0.02	0.02
Y	%	0.433	0.44
<b>LRE</b>	<b>%</b>	<b>11.78</b>	<b>12.67</b>
<b>MRE</b>	<b>%</b>	<b>0.32</b>	<b>0.35</b>
<b>HRE</b>	<b>%</b>	<b>0.22</b>	<b>0.24</b>

Rare earth element grade and deportment in feed sample

Element	Unit	Feed head grade	Oxide equivalent	Oxide distribution
La	%	3.54	4.15	27.07
Ce	%	6.15	7.55	49.26
<b>Pr</b>	<b>%</b>	<b>0.552</b>	<b>0.667</b>	<b>4.35</b>
<b>Nd</b>	<b>%</b>	<b>1.54</b>	<b>1.79</b>	<b>11.68</b>
Sm	%	0.189	0.219	1.426
Eu	%	0.003	0.003	0.021
Gd	%	0.124	0.143	0.931
<b>Tb</b>	<b>%</b>	<b>0.017</b>	<b>0.020</b>	<b>0.129</b>
<b>Dy</b>	<b>%</b>	<b>0.094</b>	<b>0.108</b>	<b>0.704</b>
Ho	%	0.018	0.020	0.132
Er	%	0.046	0.053	0.345
Tm	%	0.006	0.007	0.045
Yb	%	0.039	0.044	0.286
Lu	%	0.005	0.006	0.037
Y	%	0.433	0.550	3.585
<b>LRE</b>	<b>%</b>	<b>11.78</b>	<b>14.16</b>	<b>92.36</b>
<b>MRE</b>	<b>%</b>	<b>0.315</b>	<b>0.365</b>	<b>2.38</b>
<b>HRE</b>	<b>%</b>	<b>0.224</b>	<b>0.400</b>	<b>2.61</b>
<b>TRE+Y</b>	<b>%</b>	<b>12.75</b>	<b>15.33</b>	<b>100.00</b>

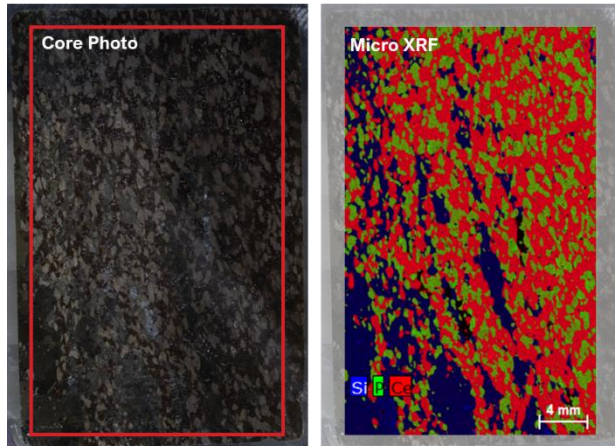
## Appendix F: Mineralogical Distribution of the ANSTO Metallurgical Composite

REE-Containing Minerals		
Mineral	Chemical Formulae	Wt %
Chevkinite-Ce	$(\text{Ce,La,Ca})_4(\text{Fe}^{2+},\text{Mg})_2(\text{Ti,Fe}^{3+})_3\text{Si}_4\text{O}_{22}$	35.10
Apatite-Britholite	Ca, P, O, Ce, Si	10.20
Allanite	$(\text{Ca,Ce,La})_2(\text{Al,Fe}^{2+},\text{Fe}^{3+})_3(\text{SiO}_4)(\text{Si}_2\text{O}_7)\text{O}(\text{OH})$	2.20
Davidite	$(\text{Ce,La})(\text{Y,U,Fe}^{2+})(\text{Ti,Fe}^{3+})_{20}(\text{O,OH})_{38}$	0.57
Monazite	$(\text{Ce,La,Nd,Th})\text{PO}_4$	0.38
Bastnasite	$(\text{Ce,La,Nd})(\text{CO}_3)\text{F}$	0.17
Cerite	$(\text{Ce,La,Ca})_9(\text{Mg,Fe})(\text{SiO}_4)_3(\text{SiO}_3\text{OH})_4(\text{OH})_3$	0.11
REE Minerals	REE, Y, $\text{CO}_3$ , $\text{PO}_4$ , O	0.96
Gangue Minerals		
Mineral	Chemical Formulae	Wt %
Amphibole	$\text{Ca}_2[(\text{Fe}^{2+},\text{Mg})_4\text{Al}](\text{Si}_7\text{Al})\text{O}_{22}(\text{OH})_2$	37.70
Fe-Oxide/Hydroxide	$\text{Fe}_x\text{O}_y/\text{FeO}(\text{OH})$	2.89
Apatite	$\text{Ca}_5(\text{PO}_4)_3(\text{F,OH})$	2.33
Plagioclase	$(\text{Na,Ca})\text{AlSi}_3\text{O}_8$	1.33
Pyrite	$\text{FeS}_2$	0.94
Thorite	$(\text{Th,U})\text{SiO}_4$	0.76
Organic Material	C, O, H, S	0.75
Ilmenite	$\text{FeTiO}_3$	0.51
Smectites	$(\text{Na,Ca})_{0.3}(\text{Al,Mg})_2\text{Si}_4\text{O}_{10}(\text{OH})_2 \cdot n\text{H}_2\text{O}$	0.36
Pyroxene	$(\text{Ca,Na,Mg,Fe})\text{Al,Si,O,OH}$	0.30
Biotite/Annite	$\text{K}(\text{Mg,Fe}^{2+})_3(\text{Al,Fe}^{3+})\text{Si}_3\text{O}_{10}(\text{OH,F})_2$	0.28
K-Feldspar	$\text{KAlSi}_3\text{O}_8$	0.22
Quartz	$\text{SiO}_2$	0.22
Chlorite	$(\text{Fe,Mg})_5\text{Al}(\text{Si}_3\text{Al})\text{O}_{10}(\text{OH,O})_8$	0.21
Others	Various	0.50
Unclassified		0.89

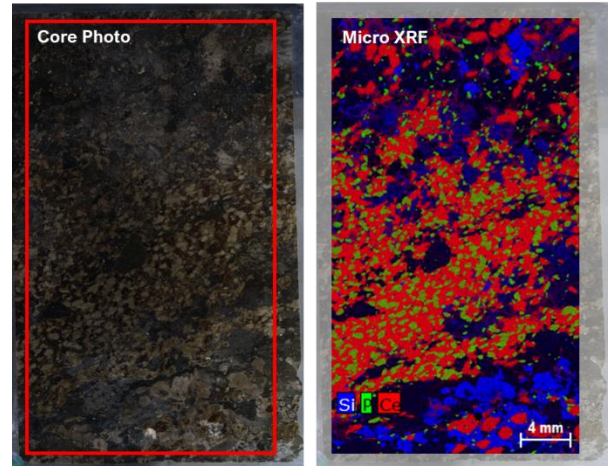
## Appendix G: Micro XRF Images of Monte Alto and Sulista Drill Core Samples

LCT-USP Micro XRF analysis was conducted on grab samples of 10cm fragments of ¼ core within previously reported significant intervals<sup>1</sup> using a Bruker M4PLUS Tornado with a 80µm pixel size.

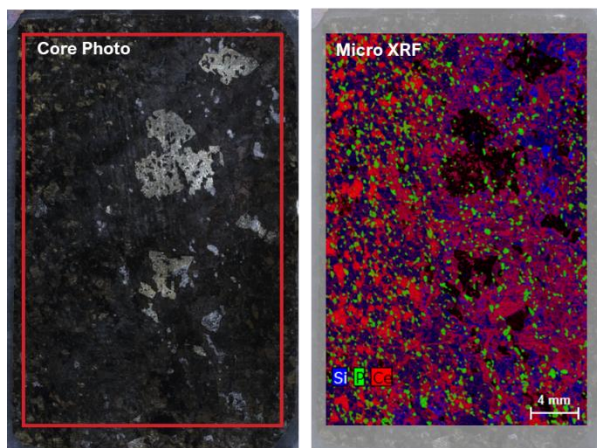
**MADD0010 at 105m within 23m at 18.9% TREO**



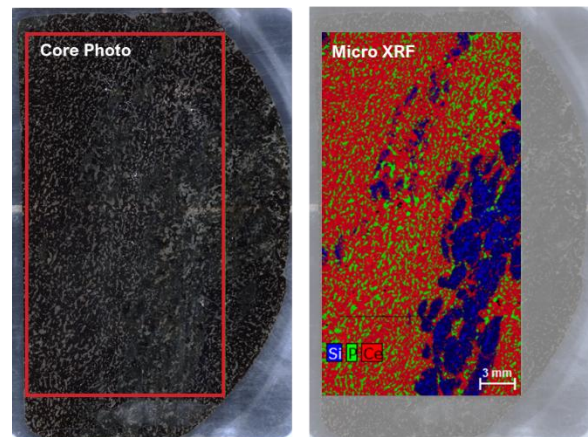
**SDD0009 at 118.95m within 6.4m at 19.8% TREO**



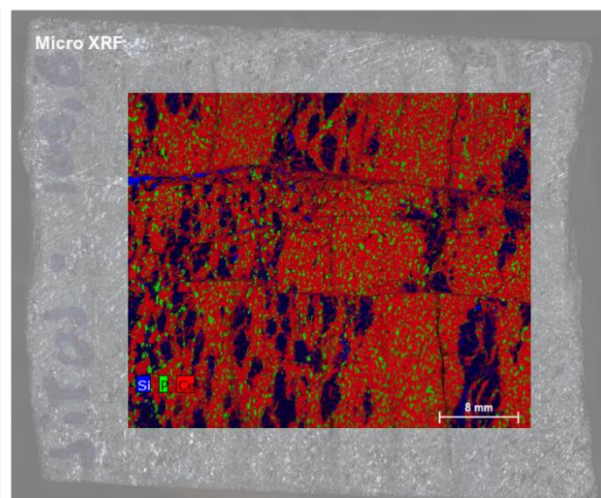
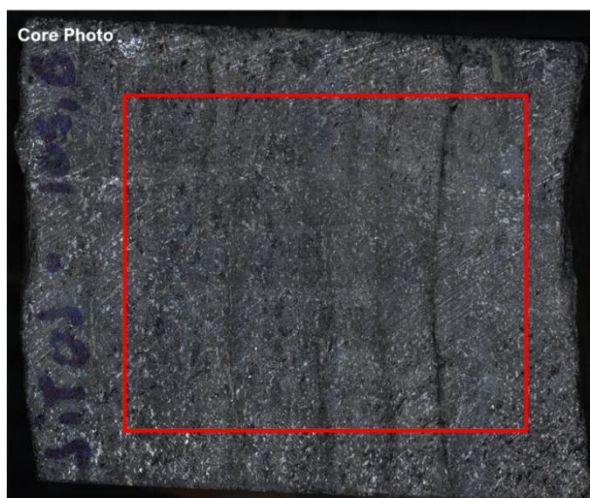
**SDD0008 at 95.85m within 8.1m at 17.6% TREO**



**JITDD0001 at 106.3m within 12.3m at 12.5% TREO**



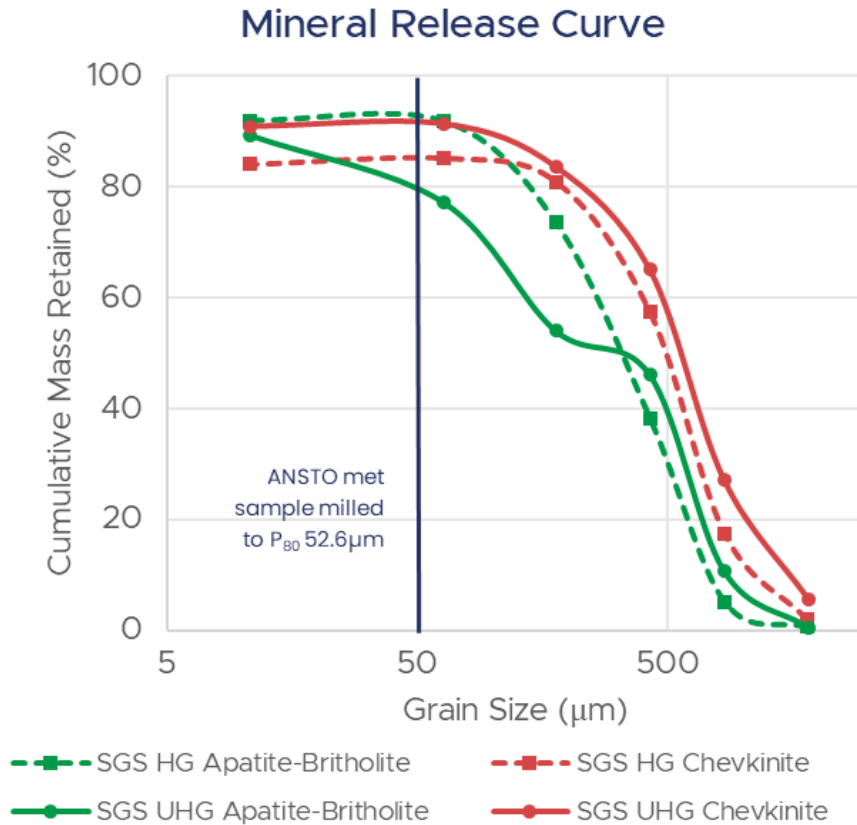
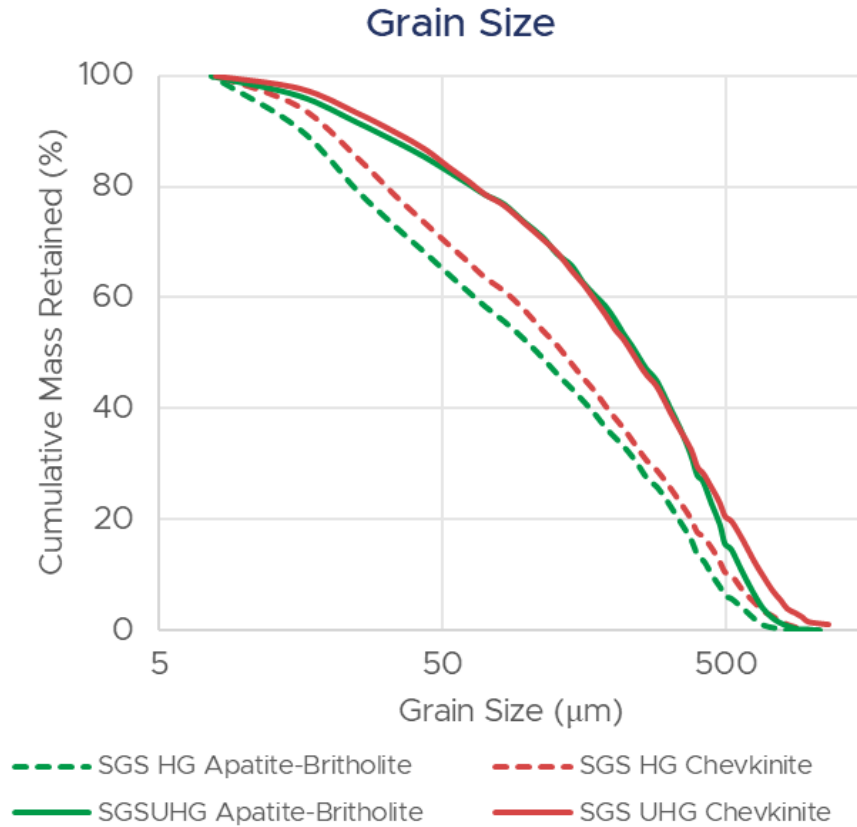
**JITDD0001 at 105.6m within 12.3m at 12.5% TREO**



■ Chevkinite ■ Apatite - Britholite ■ Amphibole



Appendix H: SGS Analysis of Particle Size Distribution and Mineral Release Curve





## Appendix I: ANSTO Sample Elemental Department

### Elemental Department of Ce

Mineral	Ce (wt%)	Ce (Proportion %)
Chevkinite	5.24	78.8
Apatite-Britholite	0.61	9.2
Allanite	0.27	4.1
Bastnasite	0.11	1.6
Monazite	0.07	1.1
Cerite	0.05	0.7
Davidite	0.03	0.5
REE Minerals	0.26	4.0
Total	6.65	100

### Elemental Department of La

Mineral	La (wt%)	La (Proportion %)
Chevkinite	3.15	82.1
Allanite	0.24	6.2
Apatite-Britholite	0.23	6.0
Monazite	0.05	1.4
Davidite	0.01	0.3
Bastnasite	0.01	0.2
REE Minerals	0.15	3.8
Total	3.84	100

### Elemental Department of Nd

Mineral	Nd (wt%)	Nd (Proportion %)
Chevkinite	1.26	76.9
Apatite-Britholite	0.20	12.4
Monazite	0.08	4.9
REE Minerals	0.09	5.7
Total	1.65	100

### Elemental Department of Th

Mineral	Th (wt%)	Th (Proportion %)
Chevkinite	1.48	69.4
Thorite	0.46	21.5
Apatite-Britholite	0.15	6.9
Monazite	0.01	0.5
REE Minerals	0.04	1.8
Total	2.13	100

## Appendix J: SGS Electron Microprobe Results for Abundant Minerals in Monte Alto REE-Nb-Sc-Ta-U Mineralisation

### Chevkinite

Element	SGS UHG (n=32)	Average % SGS HG (n=32)	All (n=64)	Min %	Max %	RSD
<b>REE and by-product elements</b>						
La	9.55	9.60	9.57	8.64	10.22	2%
Ce	16.04	16.71	16.37	14.54	17.59	3%
Nd	3.61	3.96	3.79	3.45	4.13	6%
Pr	1.31	1.42	1.37	1.22	1.53	6%
Sm	0.35	0.40	0.38	0.28	0.49	13%
Gd	0.24	0.25	0.25	0.17	0.33	14%
Y	0.42	0.43	0.43	0.35	0.46	5%
Nb	0.93	1.14	1.03	0.88	1.19	11%
Sc	0.02	0.02	0.02	0.02	0.03	14%
Ta	0.04	0.05	0.04	0.03	0.07	21%
U	0.61	0.48	0.54	0.41	0.69	15%
<b>Compositional elements</b>						
Al	0.7	0.7	0.7	0.4	0.7	7%
Ca	2.0	2.1	2.0	1.5	2.3	7%
Fe	7.9	8.1	8.0	4.7	8.6	6%
Mg	0.2	0.2	0.2	0.1	0.2	17%
Mn	0.1	0.1	0.1	0.1	0.1	18%
Na	0.0	0.0	0.0	0.0	0.0	76%
P	0.0	0.0	0.0	0.0	0.0	22%
Pb	0.4	0.6	0.5	0.2	0.8	36%
Si	8.9	8.9	8.9	8.4	9.0	1%
Th	6.1	5.3	5.7	4.9	6.6	9%
Ti	9.5	9.2	9.3	8.8	10.4	3%

### Apatite-Britholite

Element	SGS UHG (n=32)	Average % SGS HG (n=32)	All (n=64)	Min %	Max %	RSD
<b>REE and by-product elements</b>						
La	3.09	3.86	3.48	2.83	4.06	12%
Ce	6.59	8.48	7.57	6.09	8.82	14%
Nd	2.31	3.10	2.72	2.09	3.29	16%
Pr	0.66	0.92	0.79	0.49	1.08	19%
Sm	0.35	0.51	0.43	0.21	0.65	24%
Gd	0.41	0.55	0.48	0.32	0.68	18%
Y	1.40	1.78	1.60	1.24	1.98	13%
Sc	0.001	0.001	0.001	0.000	0.008	211%
U	0.24	0.24	0.24	0.18	0.35	11%
<b>Compositional elements</b>						
Ca	29.0	26.1	27.5	25.6	29.6	6%
Cl	0.1	0.2	0.2	0.1	0.3	26%
F	3.1	3.2	3.1	2.8	3.5	5%
Fe	0.3	0.4	0.3	0.2	0.4	15%
Mg	0.0	0.0	0.0	0.0	0.0	220%
Mn	0.1	0.1	0.1	0.1	0.2	16%
Na	0.1	0.1	0.1	0.0	0.1	22%
P	12.5	10.8	11.6	10.6	12.9	8%
Si	3.1	3.9	3.5	2.9	4.1	13%
Sr	0.0	0.0	0.0	0.0	0.1	160%
Th	0.9	1.1	1.0	0.7	1.2	14%

## Amphibole

Element	SGS UHG (n=32)	Average % SGS HG (n=32)	All (n=64)	Min %	Max %	RSD
REE and by-product elements						
Sc	0.02	0.02	0.01	0.00	0.03	42%
Compositional elements						
Al	9.8	9.7	9.7	8.7	10.3	3%
Ca	10.4	10.4	10.5	10.2	10.8	1%
Cl	0.8	0.8	0.7	0.4	1.2	19%
Cr	0.0	0.0	0.0	0.0	0.0	109%
Fe	23.6	23.6	23.7	22.2	24.9	2%
Fe	1.9	2.1	2.0	1.6	2.4	8%
K	1.7	1.7	1.7	1.3	1.9	5%
Mg	6.7	6.9	6.6	6.0	8.1	5%
Mn	0.4	0.3	0.3	0.3	0.4	7%
Na	2.2	2.2	2.1	1.9	2.5	5%
Si	40.0	39.7	40.0	39.4	41.1	1%

## Appendix K: Representative Solution Chemistry and Extraction

PLS filtrate chemical analyses (15% solids, 75 g/L, 60°C, 6 hours)

Element	Unit	Magnitude	Element	Unit	Magnitude
La	mg/L	6,796	Al	mg/L	1,458
Ce	mg/L	11,050	Ba	mg/L	<1
Pr	mg/L	901	Ca	mg/L	1,592
Nd	mg/L	3,127	F*	mg/L	
Sm	mg/L	326	Fe	mg/L	9,236
Eu	mg/L	5	K	mg/L	155
Gd	mg/L	223	Mg	mg/L	1,125
Tb	mg/L	30	Mn	mg/L	149
Dy	mg/L	165	Na	mg/L	185
Ho	mg/L	31	Nb	mg/L	11
Er	mg/L	83	P	mg/L	714
Tm	mg/L	11	Pb	mg/L	59
Yb	mg/L	73	S	mg/L	44,207
Lu	mg/L	10	Sc	mg/L	14
Y	mg/L	698	Si	mg/L	1,746
LRE	mg/L	21,874	Ta	mg/L	<10
MRE	mg/L	554	Th	mg/L	2,067
HRE	mg/L	403	Ti	mg/L	771
TRE+Y	mg/L	23,529	U	mg/L	372

Extraction into solution (15% solids, 75 g/L, 60°C, 6 hours)

Element	Unit	Magnitude	Element	Unit	Magnitude
La	%	90	Al	%	24
Ce	%	90	Ba*	%	
Pr	%	89	Ca	%	7
Nd	%	87	F*	%	
Sm	%	89	Fe	%	30
Eu*	%		K	%	10
Gd	%	83	Mg	%	25
Tb	%	86	Mn	%	50
Dy	%	87	Na	%	12
Ho	%	87	Nb	%	1
Er	%	82	P	%	14
Tm*	%		Pb	%	9
Yb	%	89	S	%	0
Lu*	%		Sc	%	58
Y	%	87	Si	%	6
LRE	%	89	Ta	%	0
MRE	%	87	Th	%	61
HRE	%	188	Ti	%	9
TRE+Y	%	89	U	%	91

\*Results pending

## APPENDIX L: JORC Table

### Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections)

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul style="list-style-type: none"> <li><i>Nature and quality of sampling (eg. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.</i></li> <li><i>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</i></li> <li><i>Aspects of the determination of mineralisation that are Material to the Public Report.</i></li> <li><i>In cases where 'industry standard' work has been done this would be relatively simple (eg. 'reverse circulation drilling was used to obtain 1m samples from which 3kg was pulverised to produce a 30g charge for fire assay'). In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg. submarine nodules) may warrant disclosure of detailed information.</i></li> </ul>	<p>The reported test work samples are obtained from diamond core drilling. Diamond drill holes were drilled with 3m run lengths in fresh rock. Drill core was collected directly from the core barrel and placed in pre-labelled core trays and transported to the BRE's secure exploration facility where it was measured for recovery, geologically logged, photographed, and marked up for sampling.</p> <p>All drilling provided a continuous sample of mineralised zone. All mineralisation that is material to this report has been directly determined through quantitative laboratory analytical techniques that are detailed in the sections below.</p>
Drilling techniques	<ul style="list-style-type: none"> <li><i>Drill type (eg. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).</i></li> </ul>	<p>Core drilling was conducted by BRE using a Royal Eijkelpomp CompactRotoSonic XL170 MAX DUO rig to drill vertical holes with an operational depth limit of 200m and an average depth of 112m; and using an I-800 DKVIII-12 rig to drill angled holes with an operational depth limit of 500m and an average depth of 160m.</p> <p>Drill core was recovered from surface to the target depth. All diamond drill holes utilised a 3.05m long single wall barrel and were collared with HQ and were transitioned to NQ upon encountering non-weathered and unoxidized bedrock. Water is used as a drilling fluid as necessary and to aid in extruding material from the core barrel.</p>
Drill sample recovery	<ul style="list-style-type: none"> <li><i>Method of recording and assessing core and chip sample recoveries and results assessed.</i></li> <li><i>Measures taken to maximise sample recovery and ensure representative nature of the samples.</i></li> <li><i>Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.</i></li> </ul>	<p>The diamond core was transported from the drill site to the logging facility in covered boxes with the utmost care. Once at the logging facility, broken core was re-aligned to its original position as closely as possible. The recovered drill core was measured, and the length was divided by the interval drilled and expressed as a percentage. This recovery data was recorded in the database.</p> <p>Recoveries for all core drilling included in the mineralogy and metallurgy samples detailed in this report are consistently good (averaging 100%). There does not appear to be a relationship between sample recovery and grade or sample bias due to preferential loss or gain of fine or coarse material with the drilling and sampling methods used.</p>



Criteria	JORC Code explanation	Commentary
Logging	<ul style="list-style-type: none"> <li>Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.</li> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</li> <li>The total length and percentage of the relevant intersections logged.</li> </ul>	<p>All drill core used for the mineralogy and metallurgy test work are geologically logged to a detail level that supports the studies presented in this report.</p> <p>Drill core was logged at BRE's exploration facility by a logging geologist. Core was photographed wet in core boxes immediately before geochemical sampling. Core photos show sample numbers, drill run lengths for material in the core box.</p> <p>Logging included qualitative determinations of primary and secondary lithology units, weathering profile unit (mottled zone, lateritic zone, saprock, saprolite, etc.) as well as colour and textural characteristics of the rock. Quantitative measurements of structural and geophysical features were also measured.</p> <p>GPS coordinates as well as geological logging data for all drillholes were captured in a Microsoft Excel spreadsheet and uploaded to the project database in MXDeposit.</p> <p>All drill holes reported in this news release were logged entirely.</p>
Sub-sampling techniques and sample preparation	<ul style="list-style-type: none"> <li>If core, whether cut or sawn and whether quarter, half or all core taken.</li> <li>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</li> <li>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> <li>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</li> <li>Measures taken to ensure that the sampling is representative of the in-situ material collected, including for instance results for field duplicate/second-half sampling.</li> <li>Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	<p>For the metallurgical test work sample interval selection considered lithological boundaries (i.e. sample was to, and not across, major contacts) as well as zonation of chevkinite and apatite-britholite mineralisation intensity. All the samples in this report are considered representative of the fresh in-situ REE-Nb-Sc-Ta U mineralisation present at Monte Alto and elsewhere on the Property. The SGS mineralogy and LCT-USP Micro XRF samples detailed in this report represent both high-grade (HG) and ultra-high grade (UHG) styles of this mineralisation type. Submitted samples of all types have appropriate mass to represent the material collected.</p> <p><b>ANSTO metallurgical</b> composite samples was predominantly obtained from whole core, with a cumulative interval length of 46.2m. The bulk Monte Alto high-grade mineralised sample (circa 400kg) was shipped from the Project site in Brazil to Mineral Technologies Australia. The sample was crushed to 100% passing &lt;2 mm and homogenised. A staged crushing process was utilised to minimise risk of overgrinding. A 30kg representative sub-sample was shipped to Australia's Nuclear Science and Technology Organisation (ANSTO) for further processing.</p> <p>At ANSTO, the 30kg &lt;2mm sub-sample was split out and milled to target approximately 80% passing 40µm. The particle size distribution (PSD) of one of the milled samples was determined by laser sizing is P<sub>80</sub> was 52.6µm, with a very small portion of &gt;100µm particles. At the grind size employed chevkinite and apatite-britholite are generally well liberated for subsequent test work.</p> <p>After testing, leach residues were submitted in their entirety for analysis, whilst solutions were subsampled for analysis.</p>

Criteria	JORC Code explanation	Commentary
		<p><b>SGS mineralogical composite samples</b> were made up from coarse reject material generated from the preparation of geochemical samples. Geochemical samples were obtained from diamond drill core cut using a core saw, into two quarter core samples with one submitted for assay and the other retained for archive. Cuts were made along a line drawn to ensure samples were not influenced by the distribution of mineralisation within the drill core (i.e. the cut line bisected mineralised zones). To avoid selection bias, the right of core was consistently sampled and the bottom half retained in the core tray for archiving. The split for geochemical assay was placed in pre-numbered sample bags for shipment to the laboratory.</p> <p>SGS minerology samples were derived from quarter core sub-samples initially submitted for geochemical analysis. At SGS Geosol ¼ core samples were initially dried at 105 degrees Celsius for 24 hours and crushed to 75% passing the 3mm fraction. After removal of the geochemical sub-sample, remaining coarse reject material was composited to represent a continuous 9m interval of high-grade Mineralisation in hole SDD0006 and a continuous 9m interval of ultra-high grade Mineralisation in hole MADD0010. Composite samples had an average mass of 4kg and were shipped to SGS Mineral Services, Lakefield, Ontario, Canada for further processing.</p> <p>The coarse reject crush size is appropriate for analysis of the grain size of the REE-Nb-Sc-Ta-U mineralisation being tested which rarely contains grains larger than 3mm</p> <p><b>LCT-USP Micro XRF analysis</b> was conducted on grab sample fragments of archival ¼ core approximately 10cm in length.</p>
Quality of assay data and laboratory tests	<ul style="list-style-type: none"> <li>• The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> <li>• For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.</li> <li>• Nature of quality control procedures adopted (eg. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.</li> </ul>	<p><b>ANSTO</b> Representative sub-sample of the HG material was analysed by XRF and fusion digestion followed by ICP-MS and ICP-OES assay of the digest liquor. Standard laboratory QAQC was undertaken and monitored by the laboratory and mass balances for each test reported by ANSTO were reconciled against the feed grade.</p> <p><b>SGS</b> Elemental assays by QEMSCAN were verified by analysis of a representative sample split by XRF and fusion digestion followed by ICP-MS and ICP-OES assay</p> <p><b>Micro XRF Analysis</b> A sample from EAL001 was mapped using the BRUKER M4PLUS TORNADO, with a 80µm pixel size, 10mS dwell time and Rh tube running at 35kV and 800µA.</p>

Criteria	JORC Code explanation	Commentary
Verification of sampling and assaying	<ul style="list-style-type: none"> <li>The verification of significant intersections by either independent or alternative company personnel.</li> <li>The use of twinned holes.</li> <li>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> <li>Discuss any adjustment to assay data.</li> </ul>	<p>No independent verification of significant intersections was undertaken.</p> <p>All assay results are checked by the company's Principal Geologist. Logging for drillholes was directly uploaded to the project database housed in the MXDeposit system. Assay data and certificates in digital format from the laboratory are directly uploaded to the project database.</p> <p>Mineralised intersections have been verified against the downhole geology and the Company's previously reported geochemical analysis.</p> <p><b>The ANSTO</b> composite samples had a head grade of 15.3% TREO and was predominantly obtained from an interval in metallurgical drill hole SDD0009 from 124.4m to 147.55m. SDD0009 is a twin of an earlier exploration drillhole SDD0006 5m to the southwest. The corresponding mineralised intercept in hole SDD0006 from 124m-148m had a grade of 16.5% and verifies that the metallurgical composite is representative of the insitu Mineralisation as tested by exploration drilling and assaying.</p> <p>Rare earth oxide is the industry-accepted form for reporting rare earth elements. The following calculations are used for compiling REO into their reporting and evaluation groups:</p> <p>Note that Y<sub>2</sub>O<sub>3</sub> is included in the TREO, HREO and MREO calculations.</p> <p>TREO (Total Rare Earth Oxide) = La<sub>2</sub>O<sub>3</sub> + CeO<sub>2</sub> + Pr<sub>6</sub>O<sub>11</sub> + Nd<sub>2</sub>O<sub>3</sub> + Sm<sub>2</sub>O<sub>3</sub> + Eu<sub>2</sub>O<sub>3</sub> + Gd<sub>2</sub>O<sub>3</sub> + Tb<sub>4</sub>O<sub>7</sub> + Dy<sub>2</sub>O<sub>3</sub> + Ho<sub>2</sub>O<sub>3</sub> + Er<sub>2</sub>O<sub>3</sub> + Tm<sub>2</sub>O<sub>3</sub> + Yb<sub>2</sub>O<sub>3</sub> + Y<sub>2</sub>O<sub>3</sub> + Lu<sub>2</sub>O<sub>3</sub>.</p> <p>HREO (Heavy Rare Earth Oxide) = Sm<sub>2</sub>O<sub>3</sub> + Eu<sub>2</sub>O<sub>3</sub> + Gd<sub>2</sub>O<sub>3</sub> + Tb<sub>4</sub>O<sub>7</sub> + Dy<sub>2</sub>O<sub>3</sub> + Ho<sub>2</sub>O<sub>3</sub> + Er<sub>2</sub>O<sub>3</sub> + Tm<sub>2</sub>O<sub>3</sub> + Yb<sub>2</sub>O<sub>3</sub>, + Y<sub>2</sub>O<sub>3</sub> + Lu<sub>2</sub>O<sub>3</sub> .</p> <p>MREO (Magnet Rare Earth Oxide) = Nd<sub>2</sub>O<sub>3</sub> + Pr<sub>6</sub>O<sub>11</sub>Pr<sub>6</sub>O<sub>11</sub> + Tb<sub>4</sub>O<sub>7</sub> + Dy<sub>2</sub>O<sub>3</sub> + Gd<sub>2</sub>O<sub>3</sub> + Ho<sub>2</sub>O<sub>3</sub> + Sm<sub>2</sub>O<sub>3</sub> + Y<sub>2</sub>O<sub>3</sub> .</p> <p>LREO (Light Rare Earth Oxide) = La<sub>2</sub>O<sub>3</sub> + CeO<sub>2</sub> + Pr<sub>6</sub>O<sub>11</sub> + Nd<sub>2</sub>O<sub>3</sub> .</p> <p>NdPr = Nd<sub>2</sub>O<sub>3</sub> + Pr<sub>6</sub>O<sub>11</sub> .</p> <p>NdPr% of TREO = Nd<sub>2</sub>O<sub>3</sub> + Pr<sub>6</sub>O<sub>11</sub>/TREO x 100.</p> <p>HREO% of TREO = HREO/TREO x 100.</p>

Criteria	JORC Code explanation	Commentary																																																
		<p>Conversion of elemental analysis (REE) to stoichiometric oxide (REO) was undertaken by spreadsheet using defined conversion factors.</p> <table border="1"> <thead> <tr> <th>Element</th><th>Factor</th><th>Oxide</th></tr> </thead> <tbody> <tr><td>La</td><td>1.1728</td><td>La<sub>2</sub>O<sub>3</sub></td></tr> <tr><td>Ce</td><td>1.2284</td><td>Ce<sub>2</sub>O<sub>3</sub></td></tr> <tr><td>Pr</td><td>1.2082</td><td>Pr<sub>6</sub>O<sub>11</sub></td></tr> <tr><td>Nd</td><td>1.1664</td><td>Nd<sub>2</sub>O<sub>3</sub></td></tr> <tr><td>Sm</td><td>1.1596</td><td>Sm<sub>2</sub>O<sub>3</sub></td></tr> <tr><td>Eu</td><td>1.1579</td><td>Eu<sub>2</sub>O<sub>3</sub></td></tr> <tr><td>Gd</td><td>1.1526</td><td>Gd<sub>2</sub>O<sub>3</sub></td></tr> <tr><td>Tb</td><td>1.1762</td><td>Tb<sub>4</sub>O<sub>7</sub></td></tr> <tr><td>Dy</td><td>1.1477</td><td>Dy<sub>2</sub>O<sub>3</sub></td></tr> <tr><td>Ho</td><td>1.1455</td><td>Ho<sub>2</sub>O<sub>3</sub></td></tr> <tr><td>Er</td><td>1.1435</td><td>Er<sub>2</sub>O<sub>3</sub></td></tr> <tr><td>Tm</td><td>1.1421</td><td>Tm<sub>2</sub>O<sub>3</sub></td></tr> <tr><td>Yb</td><td>1.1387</td><td>Yb<sub>2</sub>O<sub>3</sub></td></tr> <tr><td>Lu</td><td>1.1372</td><td>Lu<sub>2</sub>O<sub>3</sub></td></tr> <tr><td>Y</td><td>1.2699</td><td>Y<sub>2</sub>O<sub>3</sub></td></tr> </tbody> </table> <p>The process of converting elemental analysis of rare earth elements (REE) to stoichiometric oxide (REO) was carried out using predefined conversion factors on a spreadsheet. (Source: <a href="https://www.jcu.edu.au/advanced-analytical-centre/services-and-resources/resources-and-extras/element-to-stoichiometric-oxide-conversion-factors">https://www.jcu.edu.au/advanced-analytical-centre/services-and-resources/resources-and-extras/element-to-stoichiometric-oxide-conversion-factors</a>)</p>	Element	Factor	Oxide	La	1.1728	La <sub>2</sub> O <sub>3</sub>	Ce	1.2284	Ce <sub>2</sub> O <sub>3</sub>	Pr	1.2082	Pr <sub>6</sub> O <sub>11</sub>	Nd	1.1664	Nd <sub>2</sub> O <sub>3</sub>	Sm	1.1596	Sm <sub>2</sub> O <sub>3</sub>	Eu	1.1579	Eu <sub>2</sub> O <sub>3</sub>	Gd	1.1526	Gd <sub>2</sub> O <sub>3</sub>	Tb	1.1762	Tb <sub>4</sub> O <sub>7</sub>	Dy	1.1477	Dy <sub>2</sub> O <sub>3</sub>	Ho	1.1455	Ho <sub>2</sub> O <sub>3</sub>	Er	1.1435	Er <sub>2</sub> O <sub>3</sub>	Tm	1.1421	Tm <sub>2</sub> O <sub>3</sub>	Yb	1.1387	Yb <sub>2</sub> O <sub>3</sub>	Lu	1.1372	Lu <sub>2</sub> O <sub>3</sub>	Y	1.2699	Y <sub>2</sub> O <sub>3</sub>
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Location of data points	<ul style="list-style-type: none"> <li>Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.</li> <li>Specification of the grid system used.</li> <li>Quality and adequacy of topographic control.</li> </ul>	<p>Diamond drill collars are located by a surveyor using RTK-GPS with centimetre scale accuracy.</p> <p>Drill hole surveying was performed on each diamond hole using a REFLEX EZ-Trac multi-shot instrument. Readings were taken every 10 to 25m and recorded depth, azimuth, and inclination. Projected drill hole traces show little deviation from planned orientations.</p> <p>The accuracy of projected exploration data locations is sufficient for this stage of exploration and to support mineral resource estimation studies.</p> <p>The grid datum used is SIRGAS 2000 UTM 24S. Topographic control is provided by an airborne LiDAR and photogrammetry survey with highly accurate RTN-GPS ground control survey control. The LiDAR data was collected at a density of 4 points per m<sup>2</sup> and processed to provide 'bare earth' DTM models with an accuracy class of +/- 0.1m.</p>																																																

Criteria	JORC Code explanation	Commentary
<i>Data spacing and distribution</i>	<ul style="list-style-type: none"> <li>• <i>Data spacing for reporting of Exploration Results.</i></li> <li>• <i>Whether the data spacing, and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.</i></li> <li>• <i>Whether sample compositing has been applied.</i></li> </ul>	<p>For selected areas at Monte Alto that host fresh rock REE-Nb-Sc-U mineralisation, the drill spacing is generally 20m to 80m along strike and down dip. This spacing is sufficient to establish geology and grade continuity in accordance with Inferred and Indicated classification criteria.</p> <p><b>The ANSTO metallurgical sample</b> is a composite of:</p> <ul style="list-style-type: none"> <li>• a 36m whole core interval from hole SDD0009 (118m to 154m), intersecting the main mineralisation body over a significant depth extent at the centre of the Monte Alto deposit. The sample characterises a large volume of the fresh, high-grade, REE-Nb-Sc-Ta-U mineralisation that makes up the majority of Monte Alto hard rock deposit. This material is supplemented by:</li> <li>• a 1.7m of ¾ core obtained from further up the hole SDD0009 (79m to 80.7m) and a 5m interval of ¾ core from hole SDD0008, 370m to the south-southwest.</li> </ul> <p>The bulk Monte Alto high-grade (HG) mineralised sample (circa 400kg) was shipped from the Project site in Brazil to Mineral Technologies Australia. The sample was staged crushed to 100 % passing &lt;2 mm and homogenised to prevent excessive generation of fines. A 30kg representative sub-sample was shipped to Australia's Nuclear Science and Technology Organisation (ANSTO) for further processing.</p> <p><b>The SGS minerology samples</b> detailed in the report are obtained from coarse reject material composited to represent a:</p> <ul style="list-style-type: none"> <li>• continuous 9m interval of high-grade Mineralisation in hole SDD0006 at the centre of the Monte Alto deposit, and</li> <li>• continuous 9m interval of ultra-high grade Mineralisation in hole MADD0010 60m to the north west at the centre of the Monte Alto deposit</li> </ul> <p>Together, these samples characterise the fresh HG and UHG chevkinite rich REE-Nb-Sc-Ta-U mineralisation that makes up the majority of Monte Alto hard rock deposit.</p> <p><b>LCT-USP Micro XRF samples</b> detailed in this report are obtained from grab samples of ¼ core fragments collected fresh rock mineralisation from drill holes spaced at 70m to 360m throughout the Monte Alto deposit and a core drill hole at the Sulista project. Together, these samples represent the fresh REE-Nb-Sc-Ta-U mineralisation that makes up the majority of Monte Alto hard rock deposit and confirm a consistent mineral assemblage and texture across the deposit which has been characterised by the metallurgy and minerology samples detailed in this report.</p>



Criteria	JORC Code explanation	Commentary
<i>Orientation of data in relation to geological structure</i>	<ul style="list-style-type: none"> <li><i>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</i></li> <li><i>If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.</i></li> </ul>	<p>The distribution of mineralisation in fresh rock at Monte Alto is controlled by steeply dipping to sub vertical mega-enclaves of REE-Nb-Sc-Ta-U Mineralisation that strike northwest. The angled drill holes were designed to intersect these bodies as perpendicular as possible. Vertical SSD series holes tend to intersect steeply dipping mineralisation at a highly oblique angle resulting in a relative bias toward Mineralisation with this orientation.</p> <p>Neither drilling type is systematically biased towards any other geological characteristic such as Mineralisation grade.</p> <p><b>ANSTO metallurgical sampling</b> was designed to target fresh rock REE-Nb-Sc-Ta-U Mineralisation. They are not considered to be biased towards any other geological characteristics.</p> <p><b>SGS mineralogical samples</b> are designed to assess the variation in mineral abundances and characteristics between the HG and UHG portions of fresh rock REE-Nb-Sc-Ta-U Mineralisation are biased toward those zones accordingly.</p> <p><b>LCT-USP Micro XRF analysis</b> was conducted on grab samples of 10cm fragments of ¼ core which are effectively single location points and do not represent a continuous sample along the mineralised system.</p> <p>The extent of sampled material and its representativeness of the fresh hard rock REE-Nb-Sc-Ta Mineralisation is considered appropriate for metallurgical testwork at the initial stage of study that described in this report.</p>
<i>Sample security</i>	<ul style="list-style-type: none"> <li><i>The measures taken to ensure sample security.</i></li> </ul>	<p>After collection in the field, the drill core samples were transported in their core boxes to the Company's secure warehouse. Drill core intervals selected for the ANSTO metallurgical composite were placed into polypropylene bags at 1-2m intervals. Sample bags were label and fastened using a cable tie before being placed in 200L plastic barrels. A total of three barrels were secured to a pallet and wrapped in plastic for transport by air freight.</p> <p>All samples were transported from site to independent preparation and analysis laboratories by reputable transport companies. An electronic copy of all waybills related to the sample forwarding was obtained and forwarded to the receiving laboratory. Once the samples arrived at the laboratory, the Company was notified by the laboratory manager and any non-compliance is reported. The laboratory did not report any issues related to the samples received.</p> <p>Coarse reject material that comprised the QEMSCAN sample was securely transported using SGS inter laboratory shipping procedures.</p>

Criteria	JORC Code explanation	Commentary
<i>Audits or reviews</i>	<ul style="list-style-type: none"> <li><i>The results of any audits or reviews of sampling techniques and data.</i></li> </ul>	No audits were undertaken however the Competent Person was involved in all stages of the metallurgical sampling and tests. In-house reviews were also completed on the sampling techniques and testwork results.

## Section 2 Reporting of Exploration Results

Criteria	JORC Code explanation	Commentary
<i>Mineral tenement and land tenure status</i>	<ul style="list-style-type: none"> <li><i>Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.</i></li> <li><i>The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.</i></li> </ul>	<p>The Project is 100% owned by, or to be acquired by, subsidiaries of Brazilian Rare Earths Limited (BRE), an Australian registered company.</p> <p>Located in the State of Bahia, Northeastern Brazil, the BRE Property consists of 262 granted exploration permits covering a land area of approximately 4,222 km<sup>2</sup>. Permits are registered at Brazil's National Mining Agency</p> <p>The Project also includes four applications for mining permits and two disponibilidades, as well as an option (described in the prospectus as the Amargosa Option Agreement) to acquire three additional granted exploration permits.</p> <p>All exploration permits are held by the Company's Brazilian subsidiaries directly or are to be acquired through agreements with third parties as detailed in the BRE prospectus and in the Company's ASX Announcement "BRE Expands Control over Rocha da Rocha Rare Earth Province" dated January 22, 2024</p> <p>All mining permits in Brazil are subject to state and landowner royalties, pursuant to article 20, § 1, of the Constitution and article 11, "b", of the Mining Code. In Brazil, the Financial Compensation for the Exploration of Mineral Resources (Compensação Financeira por Exploração Mineral - CFEM) is a royalty to be paid to the Federal Government at rates that can vary from 1% up to 3.5%, depending on the substance. It is worth noting that CFEM rates for mining rare earth elements are 2%. CFEM shall be paid (i) on the first sale of the mineral product; or (ii) when there is mineralogical mischaracterisation or in the industrialisation of the substance, which is which is considered "consume" of the product by the holder of the mining tenement; or (iii) when the products are exported, whichever occurs first. The basis for calculating the CFEM will vary depending on the event that causes the payment of the royalty. The landowner royalties could be subject of a transaction, however, if there is no agreement to access the land or the contract does not specify the royalties, article 11, §1, of the Mining Code sets forth that the royalties will correspond to half of the amounts paid as CFEM. The exploration tenement (870.685/2021) that host the Monte Alto project that is the subject of this report is subject to an additional 2.5% royalty agreement in favour of Brazil Royalty Corp. Participações e Investimentos Ltda (BRRCP).</p>

Criteria	JORC Code explanation	Commentary
		<p>The portion of exploration tenement (870.685/2021) that hosts the Monte Alto Deposit that is the subject of this report measures 53.26 km<sup>2</sup> and is not known to within any environmentally designated areas. The remainder of the tenement, measuring 84.17 km<sup>2</sup>, falls within a State Nature Reserve (APA Caminhos Ecológicos da Boa Esperança), in which mining activities are allowed if authorised by the local environmental agency.</p> <p>The tenements are secure and in good standing with no known impediments to obtaining a licence to operate in the area.</p>
Exploration done by other parties	<ul style="list-style-type: none"> <li>Acknowledgment and appraisal of exploration by other parties.</li> </ul>	<p>On the BRE Property, no previous exploration programs conducted by other parties for REEs. Between 2007 and 2011 other parties conducted exploration that is detailed in the company's prospectus and included exploratory drilling amounting to 56,919m in 4,257 drill holes.</p>
Geology	<ul style="list-style-type: none"> <li>Deposit type, geological setting and style of mineralisation.</li> </ul>	<p>The Company's tenements contain REE deposits interpreted as analogies to Ion ADSCrption ionic Clay ("IAC") deposits, and regolith hosted deposits of monazite mineral grains, and primary in-situ REEE-Nb-Sc mineralisation.</p> <p>The Project is hosted by the Jequié Complex, a terrain of the north-eastern São Francisco Craton, that includes the Volta do Rio Plutonic Suite of high-K ferroan ("A-type") granitoids, subordinate mafic to intermediate rocks; and thorium rich monazitic leucogranites with associated REE. The region is affected by intense NE-SW regional shearing which may be associated with a REE enriched hydrothermal system.</p> <p>Exploration completed by the Company has focused on the bedrock and regolith profile.</p> <p>Bedrock mineralisation is characterised by steeply dipping to sub vertical mega-enclaves of chevkinite rich REE-Nb-Sc-Ta-U mineralisation. Elemental deportment of the Ce, La, Nd and Th in the sample was calculated by ANSTO using QEMSCAN software. The results presented in demonstrate that approximately 80% of the REEs analysed are hosted by chevkinite, with circa 10% hosted by apatite-britholite.</p> <p>Local bedrock controls to mineralisation, such as faults or dykes, are not well understood. The company has initiated mapping of the limited bedrock exposures at property and proposes to undertake deeper drilling to create a model of the local geological setting.</p> <p>The regolith mineralisation is characterised by a REE enriched lateritic zone at surface underlain by a depleted mottled zone grading into a zone of REE-accumulation in the saprolite part of the profile. Minerology and metallurgy aspects of the regolith and near surface mineralisation are not described in this report but will be detailed in future.</p>
Drill hole Information	<ul style="list-style-type: none"> <li>A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: <ul style="list-style-type: none"> <li>easting and northing of the drill hole collar</li> <li>elevation or RL (Reduced Level – elevation above sea level in</li> </ul> </li> </ul>	<p>The details related to all the diamond core drill holes presented in this Report are reported in BRE's ASX Announcements dated 1 February 2024, 6 June 2024 and 26 August 2024 (Original ASX Announcements). Other than the items noted below, BRE confirms that it is</p>

Criteria	JORC Code explanation	Commentary
	<p><i>metres) of the drill hole collar</i></p> <ul style="list-style-type: none"> <li>○ <i>dip and azimuth of the hole</i></li> <li>○ <i>down hole length and interception depth</i></li> <li>○ <i>hole length.</i></li> <li>● <i>If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.</i></li> </ul>	<p>not aware of any new information or data that materially affects the information included in the Original ASX Announcements.</p>
<i>Data aggregation methods</i>	<ul style="list-style-type: none"> <li>● <i>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg. cutting of high grades) and cut-off grades are usually Material and should be stated.</i></li> <li>● <i>Where aggregate intercepts incorporate short lengths of high-grade results and longer lengths of low-grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.</i></li> <li>● <i>The assumptions used for any reporting of metal equivalent values should be clearly stated.</i></li> </ul>	<p>Downhole length weighted averaging is used to aggregate assay data from multiple samples within the significant intercepts reported previous announcements.</p> <p>No maximum or minimum cut-off grades or metal equivalents values are used in this announcement.</p>
<i>Relationship between mineralisation widths and intercept lengths</i>	<ul style="list-style-type: none"> <li>● <i>These relationships are particularly important in the reporting of Exploration Results.</i></li> <li>● <i>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</i></li> <li>● <i>If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg. 'down hole length, true width not known').</i></li> </ul>	<p>Sampled intercepts detailed in this release are reported in down hole lengths. For the Mineralisation that is the subject of this report, the true thickness of previously reported intercepts are detailed in the Original ASX Announcements.</p> <p>The distribution of mineralisation in fresh rock at Monte Alto is controlled by moderate to steeply dipping and sub vertical mega-enclaves of chevkinite rich REE-Nb-Sc-Ta-U Mineralisation that strikes northwest. Angled drill holes have inclinations ranging from -55 to -75 degrees and will tend to intersect mineralisation at moderate angle. For these holes true thickness will typically be 50%-90% of down hole thickness. Vertical SSD series holes in the northern portion of Monte Alto tend to intersect mineralisation at a highly oblique angle. For these holes true thickness will typically be 30-50% of down hole thickness.</p>
<i>Diagrams</i>	<ul style="list-style-type: none"> <li>● <i>Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.</i></li> </ul>	<p>Diagrams, tables, and any graphic visualisation are presented in the body of the report.</p>
<i>Balanced reporting</i>	<ul style="list-style-type: none"> <li>● <i>Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced avoiding misleading reporting of Exploration Results.</i></li> </ul>	<p>The report presents all minerology and metallurgy results that pertain to the fresh hard rock REE-Nb-Sc-Ta Mineralisation corresponding to the ANSTO metallurgical sample is presented in this report that is the subject of this report.</p> <p>The two SGS minerology samples detailed in this report are part of a five-sample program of to assess mineralisation variability across the deposit. In addition to the results for HG and UHG fresh rock samples corresponding to the ANSTO metallurgical sample that is detailed in this news release, BRE have obtained results for three samples of near surface mineralisation in saprolite and saprock material. These results are currently being</p>

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		<p>reviewed and will be the subject of a future report focused on the mineralogy and metallurgy of BREs monazite sand in saprolite project.</p> <p>These samples disclosed are representative of the material that is the subject of this report. The report is unbiased with respect to Mineralisation grades and/or width and is consistent with the JORC guidelines.</p>
<i>Other substantive exploration data</i>	<ul style="list-style-type: none"> <li><i>Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.</i></li> </ul>	<p>The details of mineralogical and metallurgical test results are detailed extensively throughout this report.</p> <p>With the exception of previously reported exploration result that are the subject of earlier ASX Announcements, the Competent Person is not aware of any other substantive exploration data that is meaningful or material to the fresh hard rock REE-Nb-Sc-Ta Mineralisation that is the focus of this report.</p>
<i>Further work</i>	<ul style="list-style-type: none"> <li><i>The nature and scale of planned further work (eg. tests for lateral extensions or depth extensions or large-scale step-out drilling).</i></li> <li><i>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</i></li> </ul>	<p>To further develop the Monte Alto target and develop a hard-rock REE-Nb-Sc-Ta-U Mineral Resource, the Company will complete additional step-out and infill diamond core drilling to establish geological and grade continuity aiming for a drill spacing of 40m x 40m at the Monte Alto deposit.</p> <p>Elsewhere on the project BRE intends to test the Regolith Exploration Target (effective date of July 1, 2023) which is based on the results of BRE's previous drill programs and will be tested by ongoing infill and step out auger drilling in high priority areas.</p> <p>Upcoming works aim to assess whether the project may become economically feasible including metallurgical recovery, process flowsheet and optimisation. Further resource definition through additional drilling and sampling, geological mapping, and regional exploration through additional land acquisition are also planned. No forecast is made of such matters.</p>