Competent Person's Report

Monte Muambe REE - Mozambique

23 January 2023

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Executive Summary

Altona's Monte Muambe Project in Mozambique is centred on a known carbonatite volcano within the Chilwa Alkaline Province which is host to other anomalously REE mineralised carbonatites within the region. The site is favourably located with respect to transport routes and ports and is within a stable political environment in an area with an existing mining culture and fair infrastructure.

Altona's systematic exploration coupled with historical data has allowed for the delineation of targets within the project area, and the early reporting of a REE Exploration Target across their Targets 1 & 4 of between 56.7Mt and 6.5MT at TREO grades ranging from 1.65% to 2.45% using the described constraints and methodology in this report.

Exploration completed by Altona by the end of 2022, seeks to better define existing targets, test additional targets highlighted by their exploration, and seeks to provide sufficient detail and coverage to allow for the definition of a maiden Mineral Resource Estimate in the first quarter of 2023 where possible.

Disclaimer

The information in this document that relates to exploration results is based on information compiled by J.P. Hattingh who is a Member of SACNASP and the GSSA. J.P. Hattingh is not an employee of Altona. J.P. Hattingh has sufficient experience relevant to the styles of mineralisation and types of deposit under consideration and the activities being undertaken to qualify as a Competent Person as defined by JORC 2012.

The Exploration Target described in this document is conceptual in nature, and there is insufficient information to establish whether further exploration will result in the determination of a Mineral Resource within the meaning of the JORC Code.

Whilst Rock and Stock Investments (Pty) Ltd has taken all reasonable care with respect to the compilation of the information, Rock and Stock Investments (Pty) Ltd makes no representation as to its accuracy or reliability. We advise that you seek independent professional advice before making any investment decisions.

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1 Project Outline

1.1. Scope & Location

Altona Rare Earths Plc (Altona) engaged Rock and Stock Investments (Pty) Ltd (RSI) to provide a Competent Person's Report on the Exploration Results pertaining to the Rare Earth Element, Monte Muambe Project, in Tete Province, Mozambique. This report has been completed in compliance with Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC, 2012). The project relates to an area covered by prospecting licence LPP7573L.

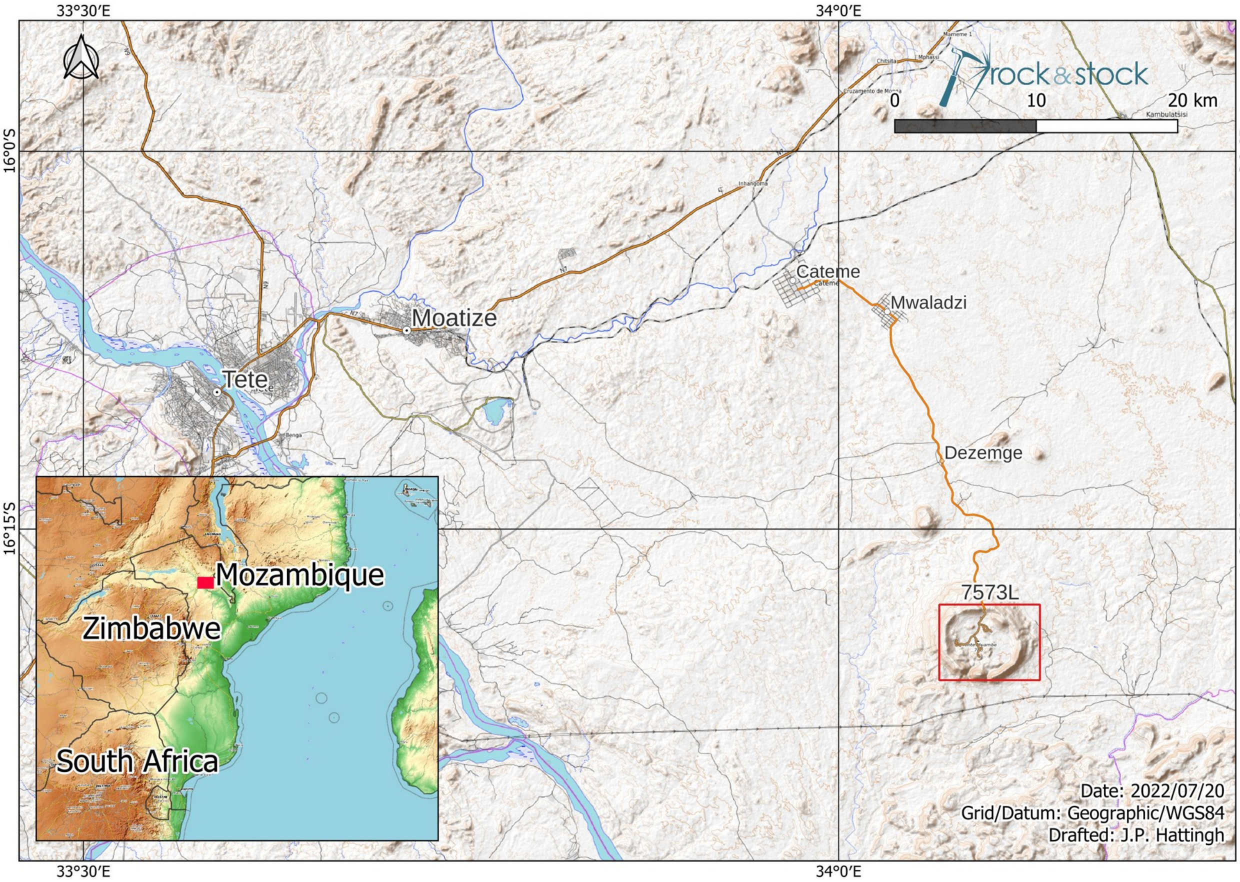


Figure 1: Location of Monte Muambe Project, Licence LPP7573L in Tete Province, Mozambique.

This report provides the reader with an overview of exploration results to date, with particular attention to the exploration work completed by Altona on prospecting licence LPP7573L. Altona is targeting rare earth element (REE) mineralisation and has drill tested a number of targets on the project.

Mozambique is a Southern African country located on the south-east coast of Africa sharing borders with Tanzania, Malawi, Zimbabwe, Eswatini (Swaziland) and South Africa. Mozambique gained its independence from Portugal in 1975 and has been generally peaceful since multi-party elections in 1994, following a protracted period of civil war after independence.

Following multiparty elections, the country has enjoyed fairly stable and robust economic growth in the region, impacted as elsewhere by the Covid-19 pandemic and to an extent by a low level Islamic insurgency, in Cabo Delgado Province where natural gas deposits were found.

The Monte Muambe Project is centred on a carbonatite volcano located 55 kilometres south-east of the town of Tete in Tete Province, Mozambique (Figure 1).

Unless otherwise stated, all diagrams and positions in this report utilise the WGS84 datum and geographic coordinates or UTM36S projected coordinates in metres.

1.2. Tenure & Licencing

A legal due diligence did not form part of the scope of this report and the author has made sole reliance on that information publicly available and that provided by Altona.

Monte Muambe Project is covered by prospecting licence LPP7573L, with the licence corners granted, indicated in Table 1. Licence LPP7573L covers an area of 3,939.96 hectares. This licence was originally issued in the name of the Mozambican entity, Ussokoti Investimentos Sociedade Unipessoal Limitada (Ussokoti), and was issued for the period 22 May 2017 to 22 May 2022. Ussokoti requested an extension of the period of the prospecting licence and a transfer of LPP7573L to Monte Muambe Mining Limitada (MMML). MMML is a Special Purpose Vehicle (SPV), setup for purposes of Altona's earn-in into the project. In terms of Mozambican laws, a prospecting licence may be issued for an initial period of 5 years and renewed for an additional 3 year period.

Point	Latitude		Longitude	
	Degrees	Minutes	Degrees	Minutes
1	-16	18	34	4
2	-16	18	34	8
3	-16	21	34	8
4	-16	21	34	4

Table 1: Licence Corners for LPP7573L as granted.

On 26 October 2022, INAMI notified MMML that the license had been transferred to it from Ussokoti and renewed for a further 3 year term, up to and including 22 May 2025. As at the date of this report, the Mozambique Mining Cadastre Portal indicates that the license is held by MMML, and expires on 22 May 2025 (MMCMP, 2023).

As at 23 January 2023 MMML is held 20% by Altona. In terms of the agreements between Altona, Ussokoti and MMML, Altona will bear 100% of the project costs up to completion of

Phase 3 and holds a majority position on the board of MMML. The earn-in arrangement between the companies is broadly as follows (Table 2, Altona, 2021):

Stage	Cash Payment	Share Payment	Holding in SPV
On signing			1%
Phase 1	£40,000 (at start)	1 million Altona shares (at end)	20%
Phase 2	£40,000 (at start)	1 million Altona shares (at end)	51%
Phase 3	£160,000 (4 tranches of £40,000 over the period)	1 million Altona shares (at end)	70%

Table 2: Altona Earn-in Arrangements for Monte Muambe Project.

The work and minimum expenditure commitments are as follows:

Phase 1 (8 months): 3,000m exploration drilling programme, with a minimum expenditure commitment of USD400,000.

Phase 2 (12 months): In-fill drilling programme to produce a maiden Mineral Resource Estimate to establish the Total Rare Earths Oxide ("TREO") present, and first pass metallurgy which is a key parameter for REE projects, with a minimum expenditure commitment of USD700,000.

Phase 3 (2 years): Preparation of a feasibility study, with a minimum expenditure commitment of USD2 million. The Company will also apply for a mining concession during this phase.

1.2.1 Applicable Mineral Law and Licencing

Whilst this report deals purely with exploration results and in no way implies that there are mineral resources or ore reserves or that they will be defined in due course, the following broadly outlines the mineral law, licence requirements and implications with respect to any mining in Mozambique. The current law came into force on 18 August 2014 (Norton Rose Fulbright, 2014). Licences can be awarded to any legal person established and registered in Mozambique who have the required technical and financial capacity. The following licences are available (Thomson Reuters, 2020):

- Prospecting and Research License (Licença de Prospecção e Pesquisa or LPP),
  - Up to a maximum area of 19,998 hectares for non-construction minerals (such as REE),
  - Issued for a period of up to 8 years;
- Mining Concession (Concessão Mineira),
  - Valid for a period of 25 years and can be extended for a further period of 25 years,
  - Confers the right to extract, develop and process mineral resources discovered under an Exploration Licence;
- Mining Certificate (Certificado Mineiro),

    - Relevant mainly to small-scale artisanal mining activities. Granted to Mozambican nationals and legal entities;
- Mining Pass (Senha Licença),
    - Relevant mainly to small-scale artisanal mining activities. Granted to Mozambican nationals and legal entities;
- Mining Treatment Licence (Licença de Tratamento Mineiro),
    - Applicable where the investor does not hold a valid Mining Concession, Mining Certificate or Mining Pass;
- Mining Processing Licence (Licença de Processamento Mineiro),
    - Applicable where the investor does not hold a valid Mining Concession, Mining Certificate or Mining Pass; and
- Licence for the Commercialisation of Mining Products (Licença de Comercialização de Produtos Mineiros),
    - Governs the activity of the sale and purchase of mineral products sourced from outside of Mozambique.

Following from a prospecting licence (LPP), in the case of a large scale, non-artisanal or locally operated mining operation, a mining concession would be required for the mining of any ore reserves should they be defined.

Royalties and taxes which would become applicable in the instance of any mining include: Income Tax, Value Added Tax (VAT), Production Tax (in essence a royalty of 3% in the case of REE), Surface Tax (related to area held), Municipal Taxes and any other taxes required by law.

Mining activities would require a full environmental impact assessment (EIA) and the mining company must provide a bond to cover the costs of environmental restoration during the closure of the mine. The bond can be an insurance policy, a bank guarantee or a deposit in cash in a bank account provided by MIREME. The amount of the bond is based on an estimate of the costs of the restoration (calculated during or after the active life of the project). The amount is set by MIREME and is reviewed every two years. For mining, the amount is based on the terms of the EIA.

1.3. Access

Monte Muambe is approximately 50km east-south-east of the city of Tete, the capital city of Tete Province which lies on the banks of the Zambezi River and at the site of two bridges which cross the Zambezi (one currently being rebuilt following recent flooding). The city of Tete also sits at the critical juncture of the all weather tar roads linking Harare, Zimbabwe with Blantyre, Malawi, as well as the port cities of Quelimane and Beira in Mozambique. Additionally Tete is immediately adjacent to and adjoining the coal mining town of Moatize, which has a railway linking it to the port city of Beira. At its closest point the Moatize-Beira railway line is approximately 20km north-east of the Monte Muambe crater.

The city of Tete, in addition to important rail and road links is also serviced by international flights to Tete's Chingozi Airport by Airlink out of South Africa, as well as locally by Mozambican carrier LAM - Mozambique Airlines.

Access to Monte Muambe from Tete is first via 45 kilometres on an all weather tar road up to the town of Cateme, just south of the N7 national road, and from there a further approximately 33 kilometres of unimproved dirt road to the crater rim of Monte Muambe where the exploration field camp is located (Figure 2).

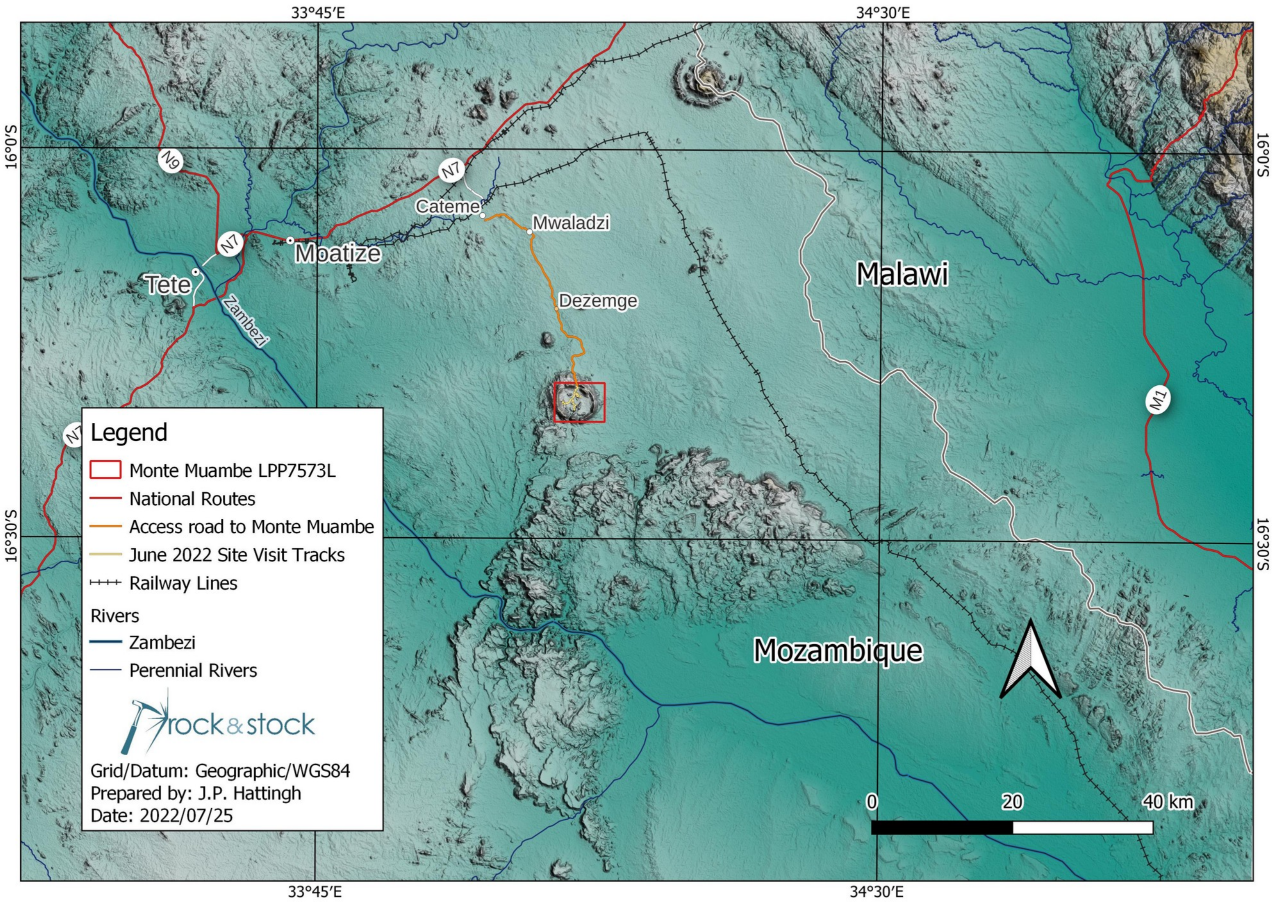


Figure 2: Primary infrastructure in relation to Monte Muambe Project overlain on hillshaded SRTM elevation map.

Access from the Monte Muambe crater rim to the interior hills and valley floor where the carbonatites are located is via good condition dirt tracks from the field camp and office.

1.4. Climate

The nearest specific climatic data obtainable is for Tete. In general temperatures at the crater rim can be a few degrees cooler than in Tete (which is far lower in elevation), with an elevation difference of up to 600m on the crater rim and 400m inside the crater. The climate of Tete is tropical semi-arid, with a hot, rainy and mostly cloudy period from December to March and a long dry windy and mostly clear season from April to October, within which there is a relatively cool period from June to August (Climates To Travel, n.d.). Tete, being located in central-western Mozambique, at a low altitude along the Zambezi River, is the hottest area of the country. The most intense heat waves occur in the last months of the year, before the rainy season. Over the course of the year, the temperature typically varies from 18°C to 36°C and is rarely below 16°C or above 41°C.

Figure 3: Climate data for Tete (WMO, 2022).

Exploration and any future possible mining and processing will be affected by the rainy season, especially insofar as transport of men and materials to the work areas. However, while it would be preferable to complete exploration outside of the rainy season, in an operational (mining and processing) environment it is not deemed likely that the climate would be responsible for a curtailed operating season. Whilst historical exploration has typically occurred during the dry season, MMML has worked through wet seasons.

1.5. Power

Mozambique has approximately 2.8GW of installed capacity (Energypedia, 2022 and USA International Trade Administration, 2021). The electricity supply is managed by Electricidade de Moçambique (EDM). The largest power generation plant in the country, which is still responsible for the bulk of installed capacity, is the Cahora Bassa hydro dam, operated by the government owned Hidroelectrica de Cahora Bassa (HCB). HCB sells 65% of its existing generation to South Africa, and the remaining 35% is sold to the northern regions of

Mozambique and to Zimbabwe. HCB's operations are located on the Zambezi River in Tete Province.

Currently only 34.9% of the population has access to electricity, with most of that being urban supply, this is largely due to an underdeveloped transmission and distribution network, lack of financing, the bureaucracy involved in developing new power projects and unfavourable market conditions for new generation (IEA, 2022).

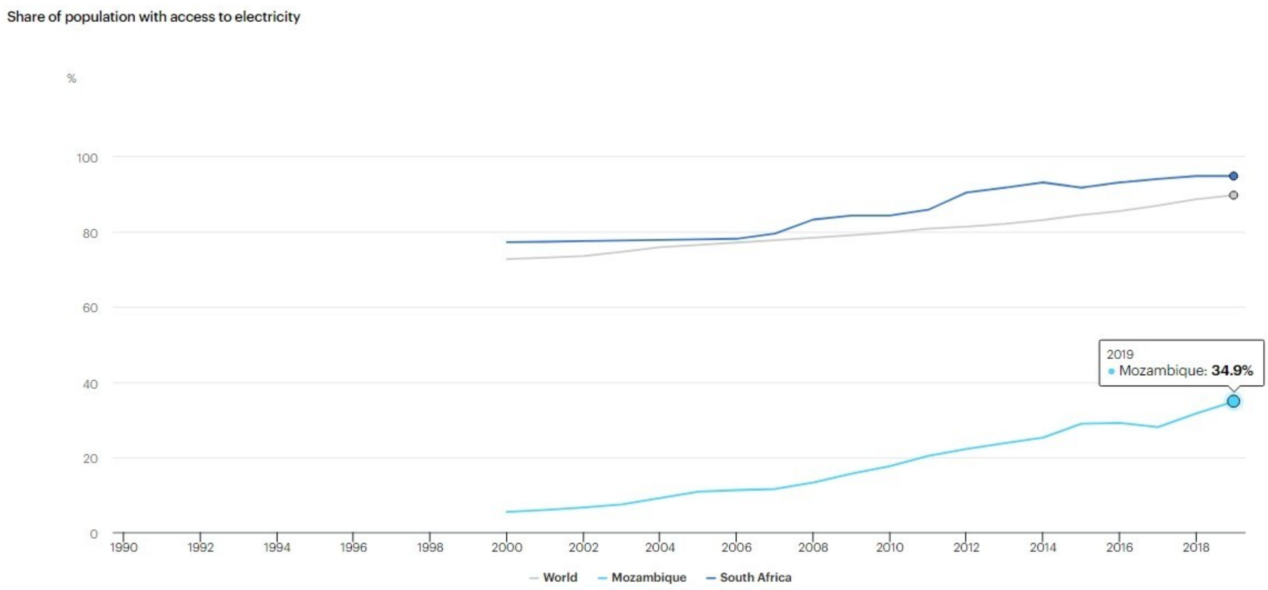


Figure 4: Mozambican Access to Electricity, relative to World and South Africa (IEA, 2022).

In spite of the current constrained power situation, Mozambique has the largest power generation potential of all Southern African countries. It is estimated that it could generate 187 gigawatts of power from coal, hydro, gas, and wind resources, excluding solar (USA International Trade Administration, 2021). The government also has a number of projects to both increase capacity as well as transmission, large projects notably include:

- The Cahora Bassa North Bank Hydropower expansion, to add an additional 850 to 1300 MW.
- The 1500 MW Mphanda Nkuwa Hydropower (60 km downstream from Cahora Bassa dam and 70 km upstream from Tete city).
- As well as various gas-to-power Thermal Power Plants centred on the Temane-Pande gas fields in central Mozambique and the Rovuma basin gas fields in northern Mozambique. These projects both include accompanying transmission line projects in line with the Mozambique government's MEFA Programme (Mozambique Energy for ALL) which aims (i) to increase stability of the Mozambican power system, (ii) enable a large expansion of power sales to Southern Africa Power Pool (SAPP), (iii) expand access to electricity and (iv) assist in improving EDM's financial sustainability.

The first Independent Power Projects (IPPs) in Mozambique came online in 2015. The Gigawatt 120MW gas-fired power station at Ressano Garcia plant was commissioned in 2015 under a Power Purchase Agreement (PPA) with EDM. Gas-based generation in Mozambique is expected to increase by 18.1% annually through 2025. Mozambique's first utility-scale solar power plant, a photovoltaic plant with a capacity of 40MW, was commissioned in Zambézia Province in 2017. Additionally, there are numerous other greenfield opportunities for both solar and wind projects. Mozambique has set significant targets for the development of its electricity sector: at least 2,300 MW of new installed capacity by 2030 and about 5 million new connections, both on grid and off grid, to achieve universal access to electricity by 2030 (AFDB, 2021).

In spite of Mozambique's current frequent power shortages mainly due to extreme weather events and lack of capacity, the current projects, build programme and government initiatives, speak to an easing power situation in the country, though commissioning on time and bureaucratic hurdles are likely to remain issues in the near future.

Power supply is a critical factor in the running of any operations and any future planning needs to take cognisance of the currently constrained power supply. Any future possible operations would need to take cognisance of the available power supply and transmission and may also need to factor in transmission lines and/or self or co-generation. The current power situation will not impact on any planned exploration activities.

1.6. Water

Licence LPP7573L does not contain any perennial rivers and the crater itself is drained by two non-perennial streams which exit the crater in the south and then eastwards and ultimately southwards towards the Zambezi. The limited water currently required for exploration activities and personnel, is pumped from a borehole sited within the crater area.

Water for any potential mining and processing activities would likely need be sourced from new well-fields and/or catchment dams.

1.7. Environment

The LPP7573L does not fall within any proclaimed reserve or park. The Mozambique cadastre system (MMCMP (2022) shows it is within "Áreas Interditas", though this is only applicable to coal licences (*pers comm* C. Simonet). There is no visible settlement within the crater area, though members of the local population are known to visit the area to collect wood and other natural resources, including hunting of small game - MMML has sought to protect the local forest and discourages local hunting and the collection and harvesting of wood.

Exploration activities are covered by a simplified Environmental Impact Assessment (EIA) and any future possible mining require the submission of an Environmental Management Programme (EMP) as part of the Mining Concession application process. For mining a full EIA is required.

1.8. Social

No people live within the crater on LPP7573L and no structures related to any communities are located within the crater. The local population in the area are known to visit the crater area for hunting and gathering purposes but have made no permanent structures or dwellings within the crater.

1.9. Adjacent Properties & History

1.9.1 Adjacent Properties

Licence LPP7573L covers the carbonatite volcano entirely, immediately adjoining prospecting rights are in respect of base metals and iron and cover dissimilar geology. Similarly the closest active mines are concerned with the exploitation of Karoo aged coal deposits and are unrelated to the Monte Muambe volcano or carbonatites.

1.9.2 History

Earliest mention appears to be Dixey, F. (1930) who refers to the geology of Monte Muambe in the February 1930 issue of the Geological Magazine. Dixey states “limestone is locally impregnated with manganiferous iron ores”, remembering of course that at that point there was much debate as to the origin of such apparently “intrusive” sedimentary rocks. Dixey’s interest was largely academic as at the time of publishing he filled the position of Director of the Geological Survey of Nyasaland (now Malawi).

The property currently being explored is entirely related to the Monte Muambe volcano which has seen earlier exploration specifically related to its fluorite occurrences. The carbonatite-related Monte Muambe volcano falls within the Chilwa Alkaline Province (CAP) which stretches from the southern end of Lake Malawi southwards into Mozambique to Monte Muambe and as such the greater province contains other alkaline deposits and carbonatites though these are spatially separated from Monte Muambe (Figure 5).

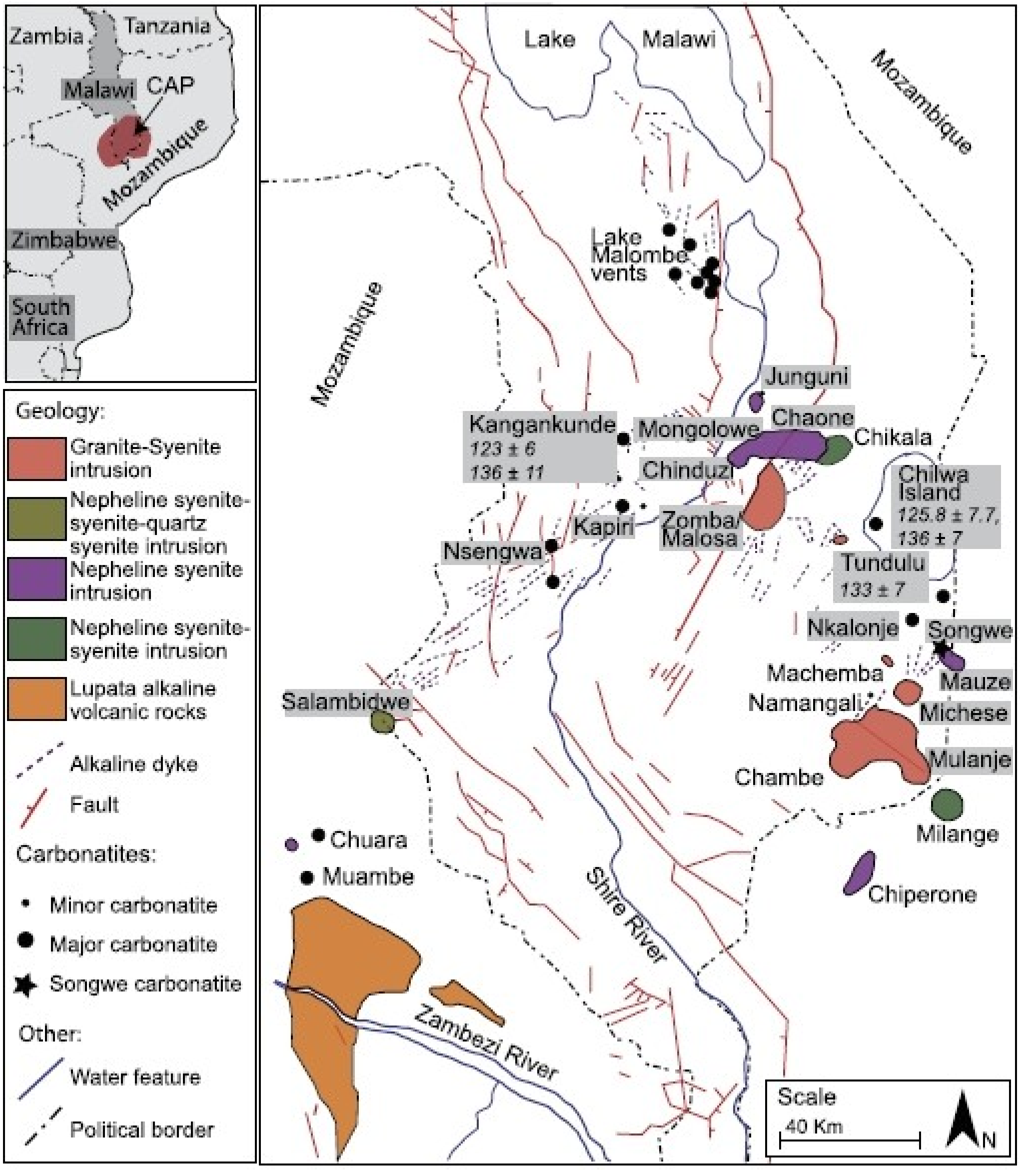


Figure 5: Monte Muambe indicated in the southwestern end of the Chilwa Alkaline Province (Broom-Fendley et al, 2017).

REE mineralisation is known from a number of carbonatites in the Chilwa Alkaline Province with the most well-known of these being Mkango Resources Ltd’s Songwe Hill REE deposit in Malawi, some 200km north-east of Monte Muambe – this project is in an advanced phase of feasibility though not yet in production (Mkango, n.d.).

Exploration directly related to the site, following Dixey’s 1930 mention, includes geologist Bettencourt Dias having spent two field seasons in the area exploring for REE and U in 1960 and 1961 (Siegfried, 2022), followed by work in the early 1980’s by the Institute for Geological and Geophysical Research, Beograd, Yugoslavia, whom mapped Monte Muambe, documented fluorite, excavated a number of trenches and reported 1,422,906 t of fluorite ore containing 79% of fluorite (Cílek, 1989) and (Afonso and Marques, 1993 cited in Lächelt, 2004).

In 1998, Grupo Madal appointed Geodass who completed a helicopter borne geophysical airborne survey. The survey was measured at a line spacing of a 100m, with both magnetic as well as radiometric data consisting of K, U and Th being recorded (Siegfried, 2022). Together with BHP, Grupo Madal, collected a bulk sample of the fluorite mineralisation which was subject to metallurgical bench studies by the group MINTEK in South Africa (Moodley, 2000). The Mintek work was able to produce a fluorspar concentrate of 96% CaF_2 at 62% recovery.

In 2009 the Australian listed junior mining company Globe Metals and Mining (Globe) entered into a joint venture agreement with the licence holder to acquire up to a 90% in the Monte Muambe Project. In 2012 they announced an inferred mineral resource of 1.63 million tonnes grading 19% fluorite using a 10% CaF_2 cut-off of, for an inferred fluorite resource of 310 thousand tonnes. Quantitative Group Pty Ltd performed the estimation and reporting in accordance with JORC 2004 (Journeaux, 2012), and based it on data from 97 reverse circulation (RC) boreholes provided by Globe. Globe also started to identify REE mineralisation at this time and designated REE targets in six separate zones which they named: AA, BB, CC, DD, GG and MAG Zone. These targets were then tested by the continuing RC borehole programme from the initial fluorite drilling programme. RC drilling included boreholes on their Zone AA and EE which are largely analogous with MMML's Targets 1 and 4. In November 2013 Globe announced their withdrawal from the project citing their view of unfavourable economics of the deposit at that time and their intention to focus on their more advanced Kanyika Niobium Project in Malawi. At cessation of activities, Globe had drilled 165 holes for a total drill length of 12,587m.

In 2021 Altona raised funding to acquire rare earth projects. In June 2021 Altona announced the acquisition of the Monte Muambe Project. Geological fieldwork commenced shortly thereafter and in October 2021 Altona commenced their first drilling project.

1.10. Competent Persons and Site Inspection

J.P. Hattingh is the Competent Person who bears overall responsibility for the drafting and compilation of this report and personally visited LPP7573L from the 20th to the 24th of June 2022, spending 4 nights in the Monte Muambe field camp on site.

M.J. Phipps performed the modelling and estimation utilised for the reporting of an exploration targets in this report.

2 Geological Setting, Deposit & Mineralisation

2.1. Regional Geology

Monte Muambe is an almost perfectly circular carbonatite volcano measuring approximately five kilometres in diameter. The intrusive is broadly zoned with a carbonatite core surrounded by fenite. The high crater rim being defined by relatively more indurated arkosic sandstone country rock of the Karoo Supergroup. The intrusive, falls within the Late Jurassic to Early Cretaceous Chilwa Alkaline Province (CAP) (Figure 5) which intruded the Karoo lithologies. Monte Muambe which lies at the intersection of the east-west Zambezi Mobile Belt and the North-South rift margin, was fairly comprehensively mapped by Dias (1961) and was

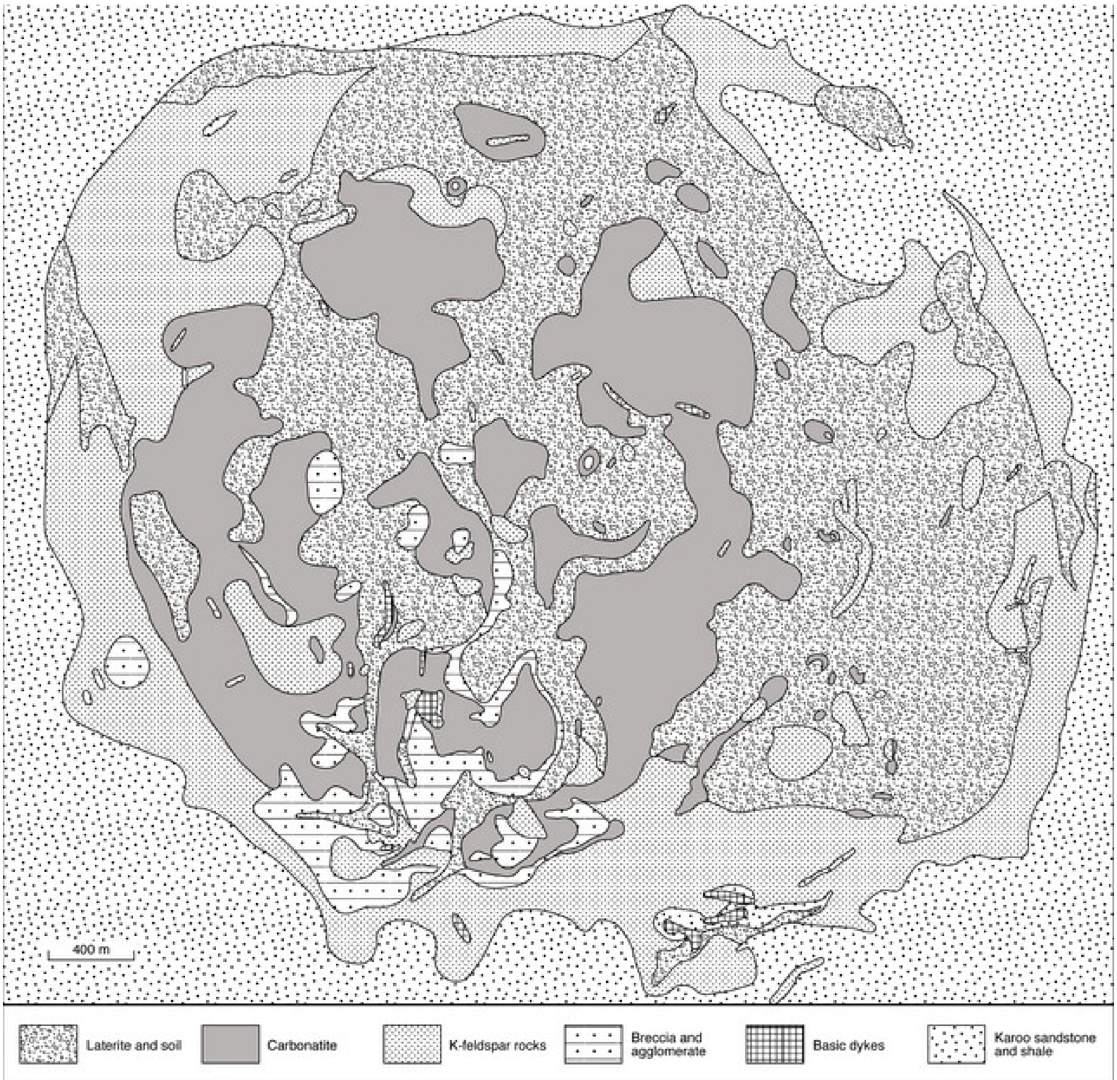


Figure 6: Monte Muambe Geological Map after Dias (1961) in (HiTech AlkCarb, 2019).

subsequently partially re-mapped or check-mapped by Globe (Figure 7)(Siegfried, 2022) with a very similar map being produced.

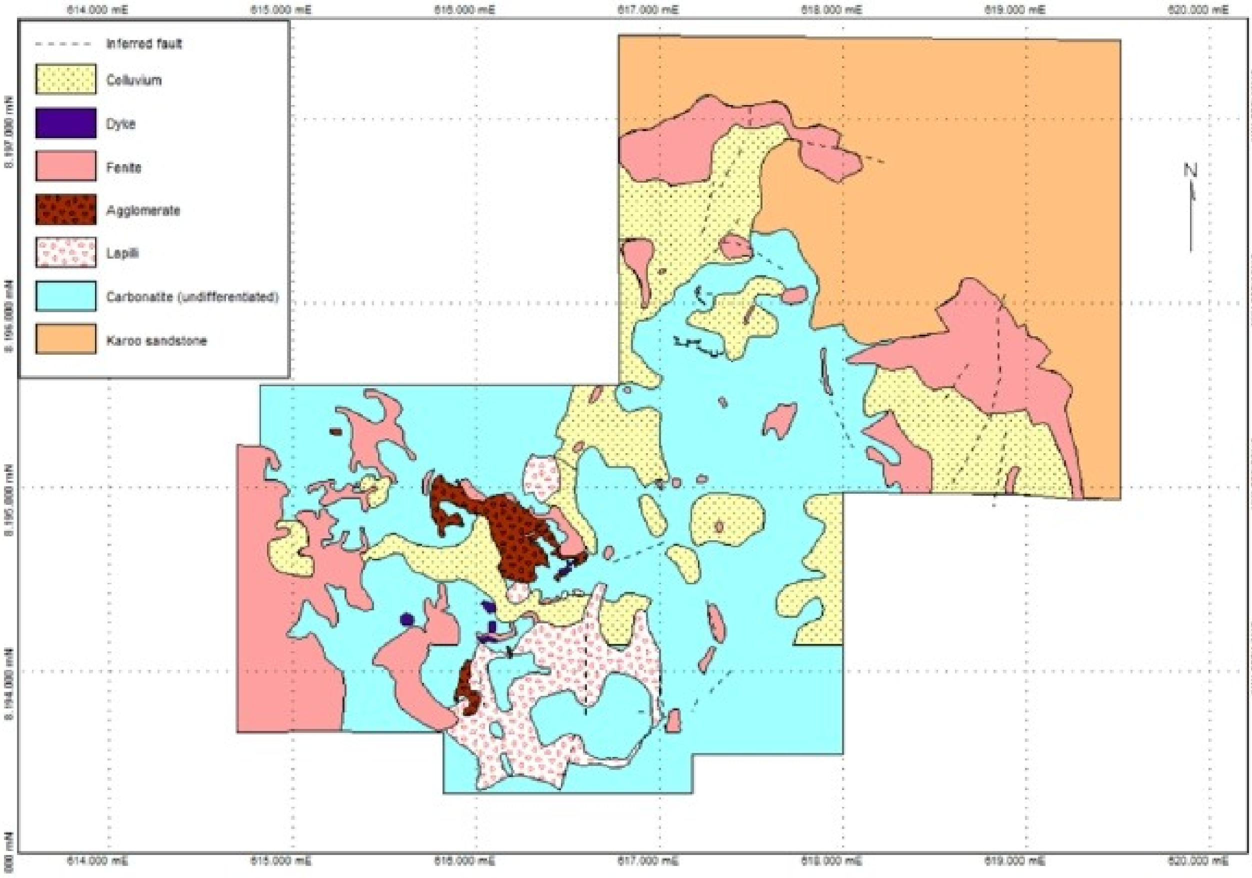


Figure 7: Partially completed Monte Muambe Geological Map by Globe (Siegried, 2022).

The geology indicated in Figure 8 is based on an amalgamation of the simplification of the historical mapping and the regional geological map.

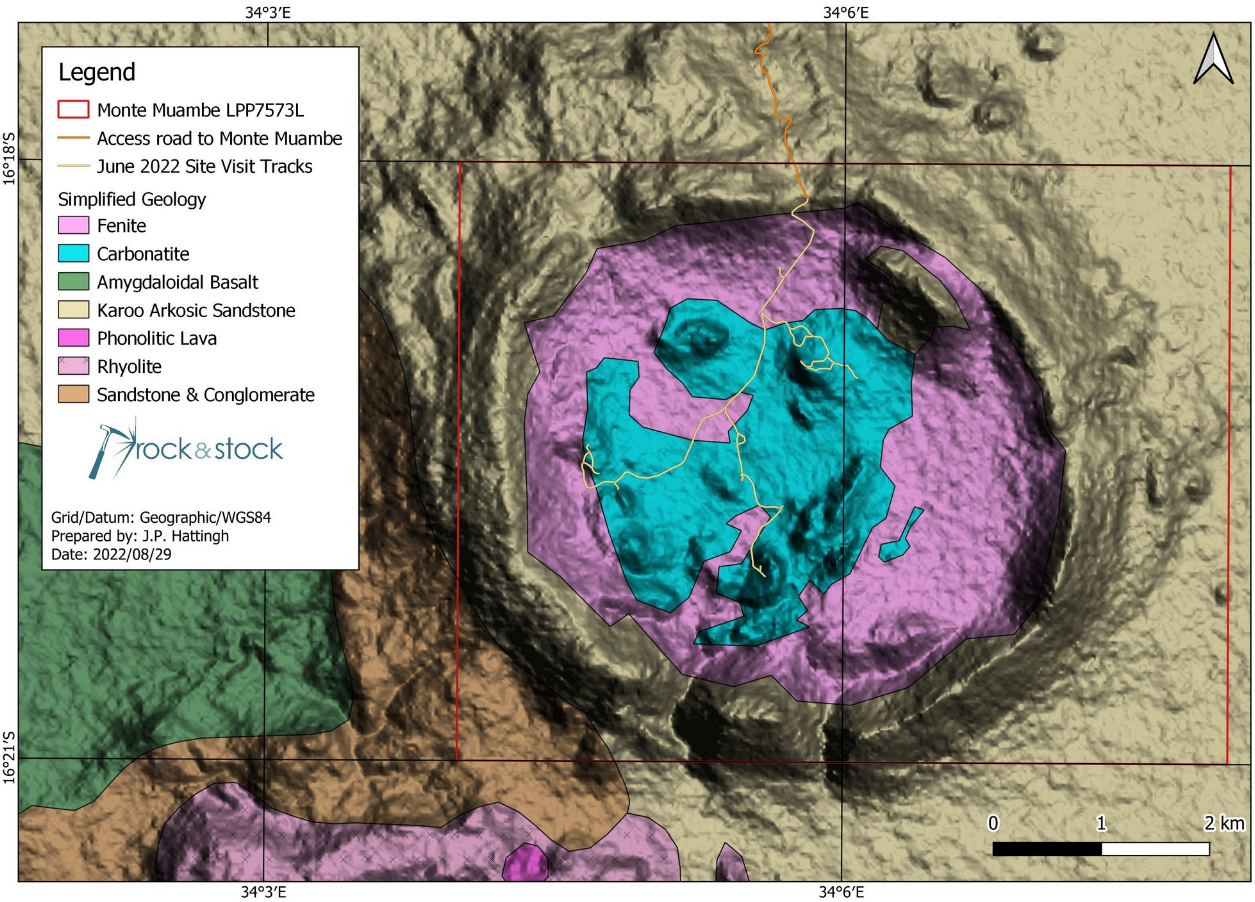


Figure 8: Geological Map of Monte Muambe overlain on SRTM.

Monte Muambe has intruded arkosic sandstones of the Karoo Supergroup, Cádzi Formation. To the south are volcano-sedimentary formations of the Cretaceous Lupata Group (Figure 8).

2.1.1 Lupata Group

Lithologies of the Lupata Group are found immediately to the south of Monte Muambe and do not actually occur within the area of interest. The Group comprises a number of Formations of interlayered sediments (sandstones and conglomerates) with basic volcanics at the base to acidic formations at the top of the Group.

2.1.2 The Chilwa Alkaline Province (CAP)

The widespread CAP is comprised of numerous syenitic to carbonatitic intrusions in Southern Malawi extending south to Monte Muambe in Mozambique. The CAP is located in and around the Shire Rift at the southern end of the East African rift system. The CAP includes 17 carbonatite intrusions and the Monte Muambe carbonatite in Mozambique. The largest intrusions are essentially composed of peralkaline syenite and granite, and form prominent steep-sided mountains. The largest of these is the Mulanje Massif which rises steeply from the Phalombe plain (Woolley, 1991). The CAP can be broadly divided into three igneous rock series: (1) syenites-quartz syenites-granites; (2) nepheline syenites-syenites; and (3) nephelinites-carbonatites-nepheline syenites. The syenites-quartz syenites-granites suite is represented by the Zomba-Malosa and Mpyupyu intrusions in the north and the Chambe, Mulanje, Michese, Machema, and Namangali intrusions to the southeast (Nyalugwe *et al*, 2019). A review of available age data for the CAP by Nyalugwe *et al* places the age of the emplacement to ~140Ma to ~85Ma – that is Cretaceous (see also Figure 5). There is no accurate age determination for Monte Muambe.

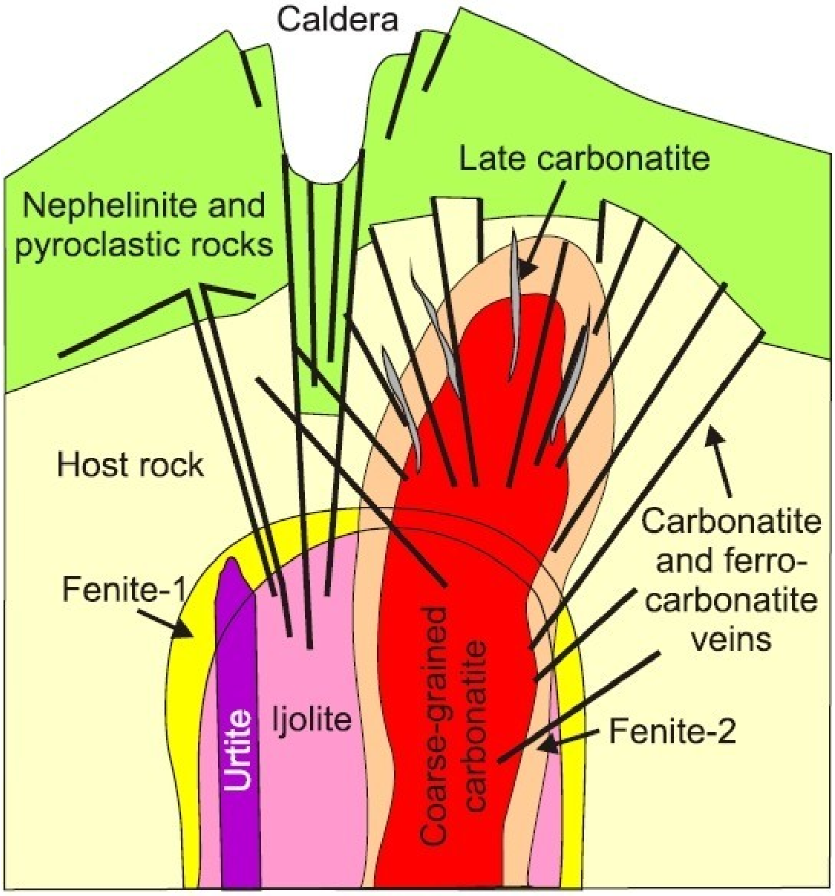


Figure 9: Schematic model of carbonatite intrusion (after Le Bas 1987 in Strekeisen, n.d.)

2.1.2.1 Carbonatite

Carbonatites are defined in the IUGS system of classification as igneous rocks composed of more than 50 modal per cent primary/magmatic carbonate (*sensu lato*) and containing less than 20 weight percent SiO_2 (Le Maitre, 2002). Varieties of carbonatite are named on the basis of the dominate carbonate mineral, for example, calcite carbonatite, dolomite carbonatite, etc. (Woolley & Kempe 1989). Mitchell (2005) proposes a "looser" classification with carbonatite defined as any rock containing greater than an arbitrary 30% by volume primary igneous carbonate regardless of silica content. His classification methodology is done in order to deal with genetically diverse carbonatites and he utilises the concepts/groups being broadly "magmatic" or "carbohydrothermal" on the basis of their mineralogy and their intrusive or extrusive characteristics (he provides further subdivisions based on their mineral constituents). Magmatic carbonatites are described by Le Bas' model as in Figure 9, where the various associated lithologies and features commonly seen at the sites of carbonatite intrusives are both explained and summarised. Broadly the lithologies and features viewed at the specific site can be related back to the schematic, with the erosional level and geomorphology at the site determining the assemblage.

Most carbonatites were emplaced in continental extensional settings and range in age from Archean to recent. They commonly coexist with alkaline silicate igneous rocks, forming alkaline-carbonatite complexes, but some occur as isolated pipes, sills, dykes, plugs, lava flows, and pyroclastic blankets. Cone sheets, ring dykes, radial dykes, and fenitisation-type halos form part of an exploration model for carbonatites and the recognition of associated alkaline silicate igneous rocks increases the footprint of the target. Undeformed complexes typically have circular, ring, or crescent-shaped aeromagnetic and radiometric signatures (Simandl and Paradis, 2018).

2.1.2.2 Fenite

Cooling and crystallising carbonatitic and alkaline melts expel multiple pulses of alkali-rich aqueous fluids which metasomatize the surrounding country rocks, forming fenites during a process called fenitization. These alkalis and volatiles are original constituents of the magma that are not recorded in the carbonatite rock (Elliot *et al*, 2018). Fenites are typically composed of, and characterized by, K-feldspar, albite, alkali pyroxenes and/or alkali amphiboles (Zharikov *et al*., 2007).

2.1.2.3 Agglomerates

Carbonatite agglomerates and breccias are common features of carbonatite volcanoes, generally associated with volcanic vents and interactions between new pulses of magma and older emplacements and cooled wall rocks.

2.1.3 Karoo Sediments

Monte Muambe intrudes Upper Karoo Supergroup sediments, regionally indicated as the Permian-Triassic Cádzi Formation (equivalent chronostratigraphically to the Beaufort Group in South Africa). The Cádzi Formation arkosic sandstones are indurated by the intrusion of the carbonatites and the indurated arkosic sandstones form an erosion resistant high lying rim to the Monte Muambe structure.

2.1.4 Deposit Geology

The Monte Muambe carbonatite is a fine to medium crystalline magmatic, calcic carbonatite with lesser dolomitic portions/contributions identified to date. Martitic to sideritic inclusions are common in the field and in diamond drilled core. The carbonatites are light grey to brown on the weathered surface and dark to light brown on the fresh surface. Greater or lesser degrees of alkali feldspar, brown siliceous material and iron rich martite is observed and is usually entrained parallel to the well-developed igneous banding. The rocks outcrop as flat pavements or frequently with characteristic karstic weathering features (Figure 10).

Figure 10: Typical elephant skin weathering and dissolution features of surface exposures of carbonatite (Target 1).

An important constituent of the complex, fenite occurs along the inner part of the crater in contact with the carbonatites. These rocks are usually light cream to buff in colour although haematite enriched areas are fairly red. The rocks are coarse to pegmatoidal in texture although fine-grained facies are also observed. The fenites are often fractured and fine trellis breccias can sometimes be noted (Siegfried, 2022). The fenites contain appreciable amounts of potassium feldspar and are particularly visible on a potassium plot from the radiometric imaging (Figure 11).

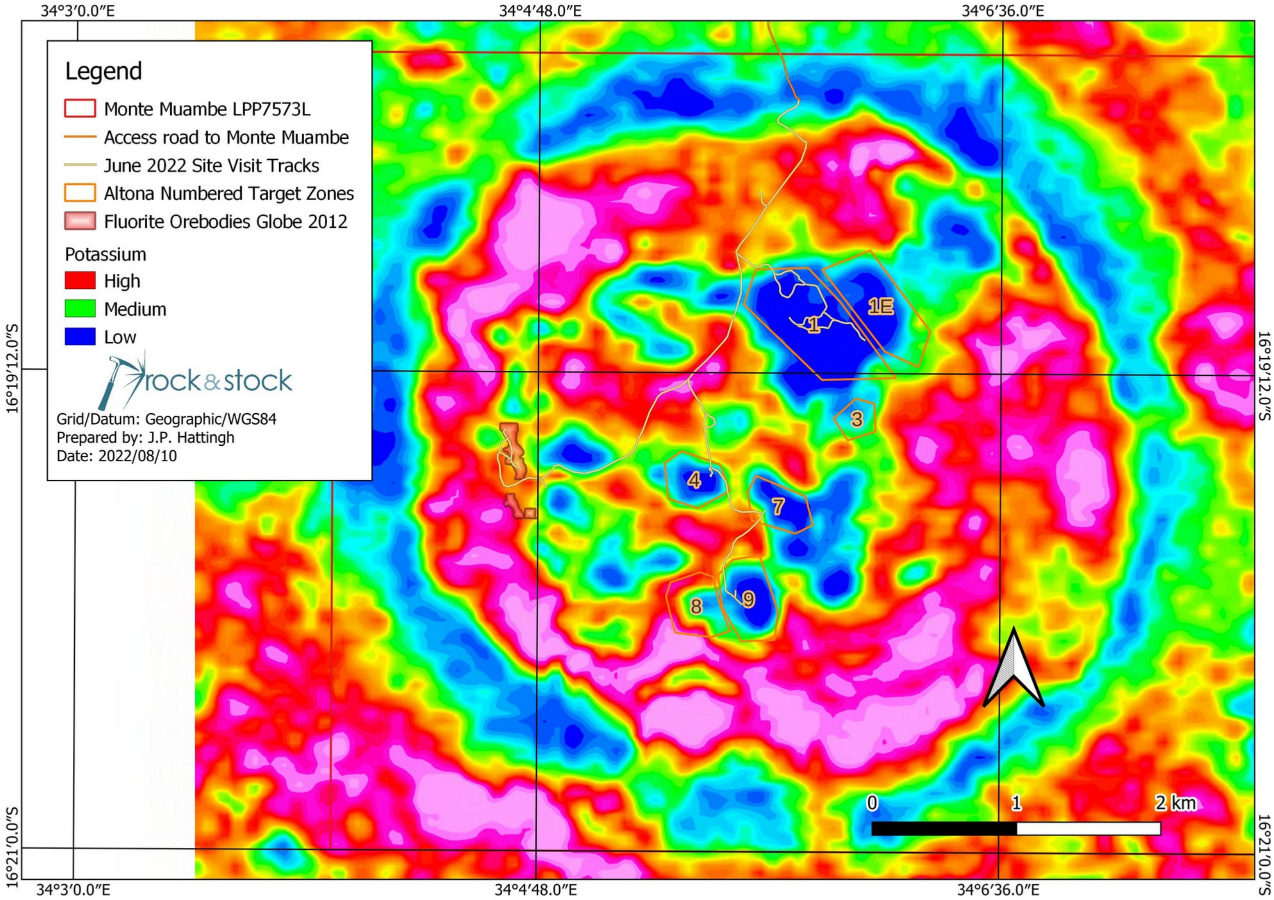


Figure 11: Potassium Plot. Altona REE targets largely confined to Potassium lows (blue) whilst Potassium highs (reds to pinks) describe a Fenite zone with fluorite orebodies at the juncture between highs and lows.

Agglomerates are mapped predominantly in the central south part of Monte Muambe (Figure 6 & Figure 7), and brecciated zones are frequently observed in the diamond cored boreholes.

2.1.4.1 Fluorite Mineralisation

Fluorite mineralisation principally occurs in association with the fenite-carbonatite contact in the western parts of the Monte Muambe crater though is observed throughout the crater area (Figure 12).

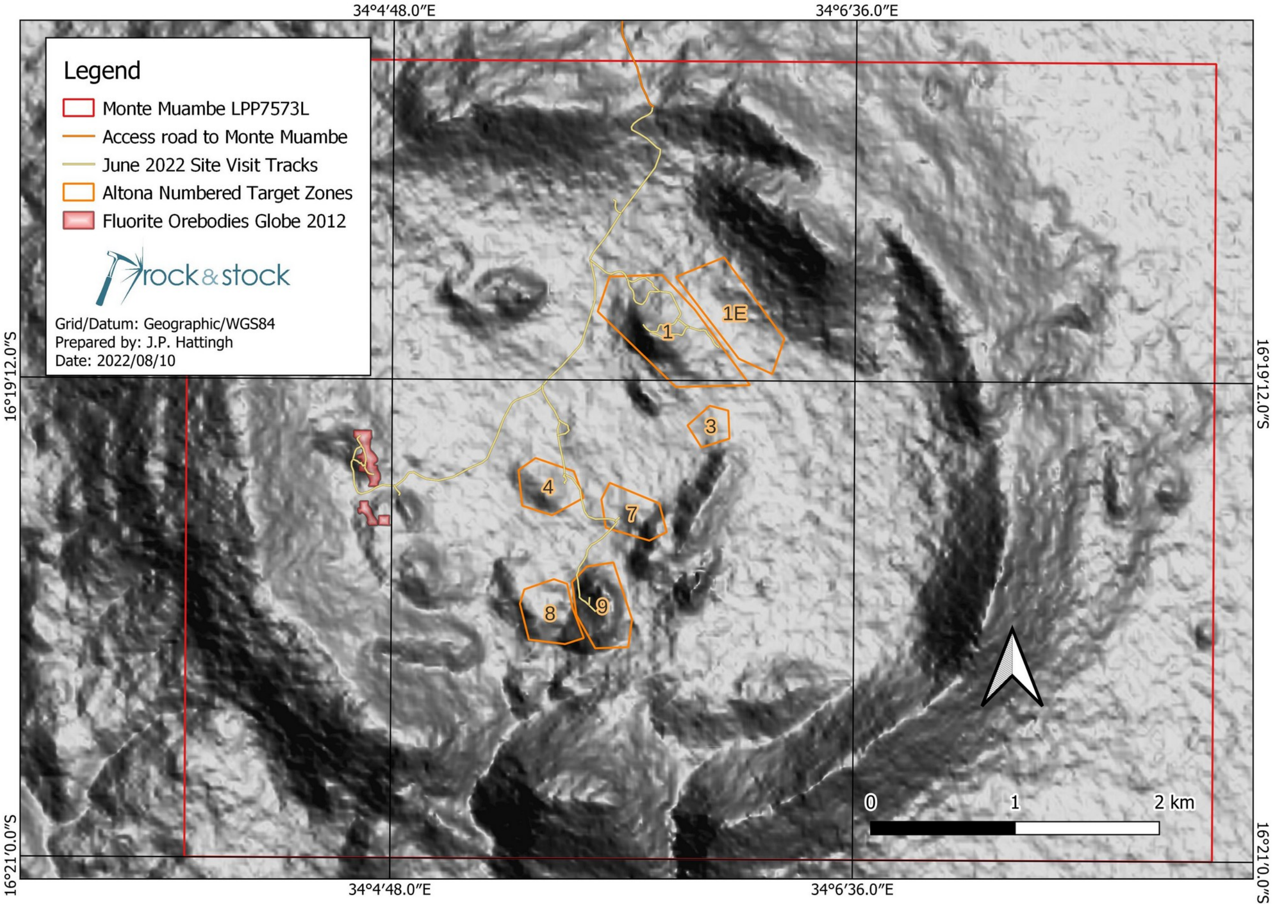


Figure 12: Monte Muambe - Altona Numbered Target Zones and Globe Fluorite Orebodies.

The fluorite forms replacement bodies of irregular yet lenticular shape (Siegfried, 2022). The fluorite appears in forms from blues to yellow with botryoidal yellowish varieties observed in an old trench in the west, purportedly excavated by Beograd (*pers comm* local mature worker) (Figure 13).

Figure 13: Botryoidal fluorite outcrop in trench on main fluorite orebody.

The Quantitative Group who produced a report on the fluorite resources in 2012 and modelled and estimated the main fluorite occurrence at Monte Muambe, reported the fluorite mineralisation to occur within north-striking, sub-horizontal fenite sheets that are above a larger carbonatite body (Journeaux, 2012). On the basis of their modelling, they interpreted three main, north striking mineralised “lodes” extending over 680m in strike length, up to 160m across strike and close to 30m vertically in places with the mineralisation occurring close to, or from, the surface. The mineralisation was reported to occur primarily as horizontal lenticular sheets (Figure 14).

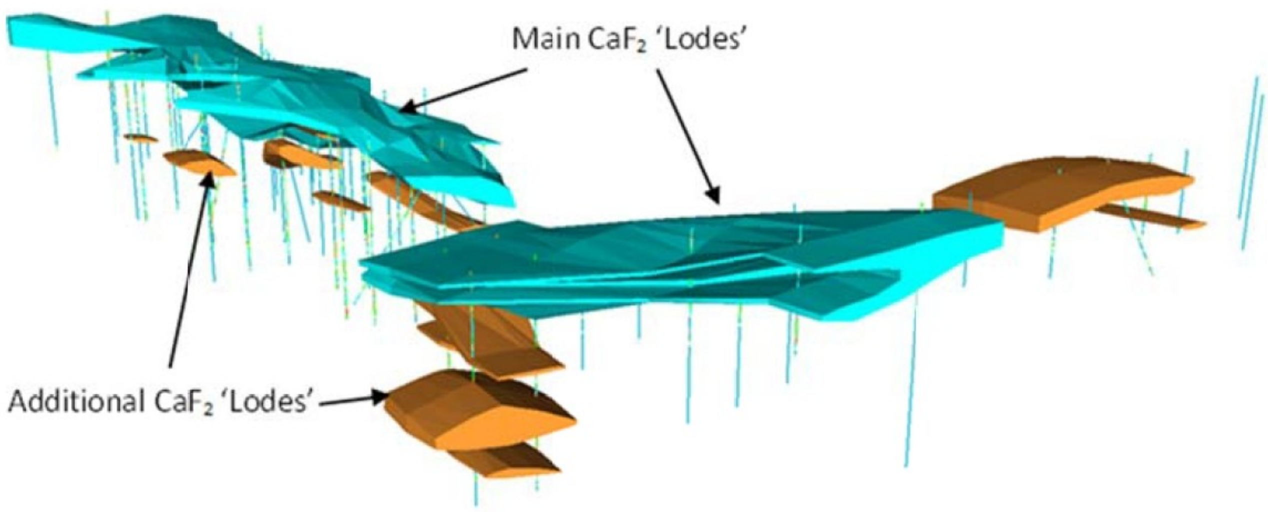


Figure 14: Quantitative Group's 3D model of Fluorite orebody on west side of Monte Muambe crater (Journeaux, 2012).

2.1.4.2 REE Mineralisation

In common with most magmatic REE deposits, mineralisation is not easily recognisable in hand specimen and observation and recognition of mineralisation is primarily by assay. Conspicuous REE mineralisation at Monte Muambe was first reported on by Globe who recognised the anomalous enrichment during their exploration of the fluorite resource. Subsequent drilling by Globe primarily targeted radiometric anomalies. Very limited petrographic studies by both Globe and Altona suggests that REE mineralisation is at least partially associated with Bastnaesite ((La, Ce, Y)CO_3F) (Siegfried, 2022). Initial drilling by Altona also focused on radiometric anomalies whilst a new soil sampling programme proved to be invaluable in delineating REE targets for follow-up drilling.

2.2. Geological Models

2.2.1 Carbonatite Hosted REE Deposits

There are 17 rare earth elements (REE), comprising the lanthanides (atomic number 57-71) and scandium and yttrium. Scandium and yttrium are grouped with the rare earth elements because they tend to occur in the same ore deposits as the lanthanides and exhibit similar chemical properties, but have different electronic and magnetic properties. REE are frequently subdivided into Heavy (HREE) and Light Rare Earth Elements (LREE), though the division is inconsistently applied. The divisions are best applied: La-Nd = LREE; Pm is not stable in nature; Sm-Gd = medium LREE; and Tb-Lu+Sc+Y=HREE.

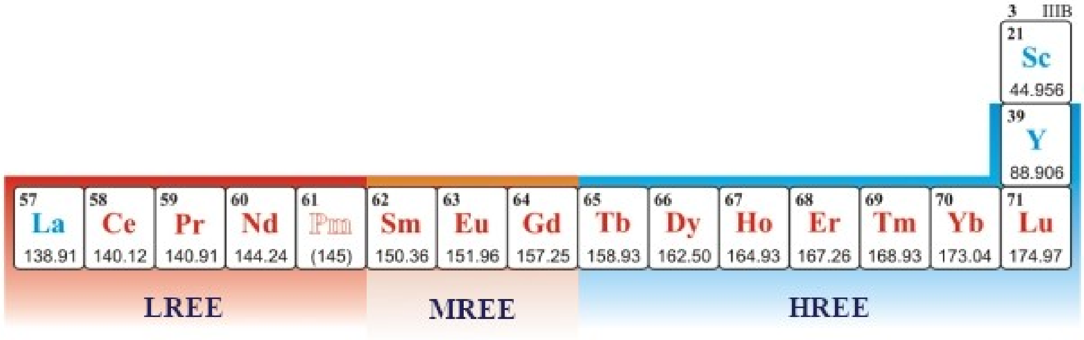


Figure 15: Position of REE on periodic table and LREE - HREE subdivision.

Generally, the most REE-enriched magmatic rocks are carbonatites, followed by peralkaline granites and syenites. As a broad generalisation, enrichment of the REE to ore levels is the consequence of the incompatible behaviour of the REE during magmatic crystallisation and their limited solubility in low temperature aqueous solutions, making the REE largely immobile during weathering. Harmer and Nex (2016) maintain that the enrichment of the REE to potentially-economic ore grades generally requires the action of more than one geological process – these they grouped, on the basis of the temperature range over which they operate, into Primary Magmatic, Magmatic/Hydrothermal and Epithermal Processes. This division is utilised for purposes of the discussion on carbonatite hosted REE deposits.

Primary Magmatic Processes are related to the primary source where carbonatites are the most naturally enriched in REE, though even these are generally seen as having been enriched by further processes. **Magmatic/Hydrothermal Processes** sees late stage enrichment of (generally) carbonatite, where fluids react with the crystallised assemblage causing modification to mineralogy and texture, usually with associated enrichment in the REE. The highest REE concentrations are typically encountered in iron-rich dolomitic carbonatite varieties: those with ferroan dolomite to ankerite as the main carbonate phase, sometimes accompanied by siderite. **Epithermal/Supergene Processes** see REE effectively being concentrated in residual deposits such as laterites produced by prolonged tropical weathering. In carbonatites chemical weathering causes the breakdown of the main carbonatite minerals: dissolution of the carbonate phases and apatite releases the REE, which are subsequently incorporated into new REE supergene phosphate and carbonate minerals such as monazite and/or bastnaesite. REE enrichments achieved in these residual deposits are typically 5-10 times those in the original source rock. Ion-adsorption clays constitute a special type of supergene residual REE deposit. These were first recognised and exploited in southern China, and have made a crucial contribution to China's near-monopolistic domination of the world rare earth market. In the south China deposits, deep weathering of granitic and acid volcanic rocks without significant denudation, has given rise to weathering profiles rich in clays. Rare earths released into solution during the breakdown of REE-bearing accessory phases in the protolith are adsorbed onto kaolinitic and halloysitic clay minerals and retained in the regolith. Intra-element fractionation of the REE occur during this process and relative HREE concentrations tend to increase with depth across the weathering profile (Chi and Tian, 2008; Bao and Zhao, 2008). Ce, the most naturally abundant REE, does not concentrate in the residual clays as a consequence. It has been estimated that residual clay type REE deposits account for 80% or more of the world's HREE resources (Chi and Tian, 2008). The most advanced deposit of this type in Africa is the Tantalus deposit in Madagascar (Harmer and Nex, 2016; Estrade et al., 2019).

The process model applied to the Monte Muambe REE deposit is a magmatic/hydrothermal one where you have a relatively REE enriched primary REE deposit which is further enriched through hydrothermal late stage fluids. The possibility of epithermal/supergene processes have been explored to a limited extent by Altona to date, with the drilling of a fenceline of boreholes in the central flat area between Targets 1 and 4 – boreholes MM025 to MM034. The boreholes however, only intersected very thinly developed, poor mineralised soils.

Chondrite normalised plots for magmatic/hydrothermal carbonatite REE deposits, are provided for 4 African deposits by Harmer and Nex (2016), with Songwe and Kangankunde from those 4 examples both being from the Chilwa Alkaline Province (Figure 16). It is likely that the relative proportions of the rare earth oxides (REO) and shape of a chondrite normalised plot for Monte Muambe, when available, will reflect similar a similar shape and proportions of REO.

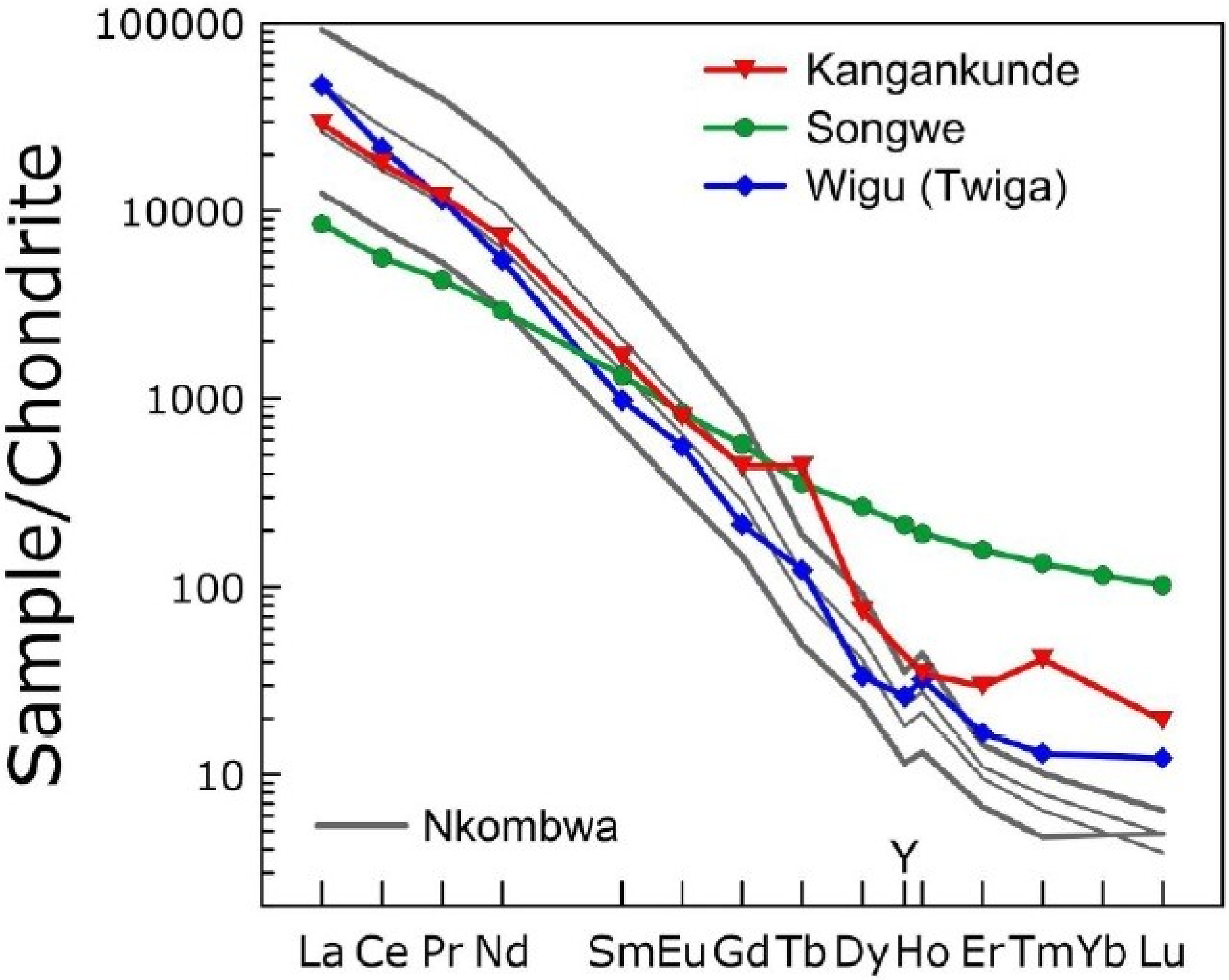


Figure 16: Chondrite normalised plots for 4 magmatic-hydrothermal carbonatite REE deposits in Africa. (Harmer and Nex, 2016).

2.2.2 Carbonatite Hosted Fluorite Deposits

The 2012 Qualitative Group CPR outlining the estimated Fluorite Resources, does not go into any detail with regard to the geology save to describe the general form of the orebodies based on modelling of the available borehole data.

Carbonatite melts generally have anomalously high contents of F, REE, Sr, P, U and other incompatible lithophile elements. One of the most common minerals in carbonatite-related REE deposits worldwide is fluorite (Redina *et al*, 2021). Fluorite mineralisation is however commonly associated with carbonatites and some of the largest fluorite mines are associated with such occurrences (Magotra *et al*, 2017). Economic fluorite deposits associated with carbonatite complexes are contact and late stage hydrothermal deposits. Dean and Powell (1968, cited in Magotra *et al*, 2017) suggested that deposition of fluorite in the carbonatites of Tororo, Uganda and Chilwa Island, Malawi in Africa were associated with late stage emanations from the carbonatitic magma.

Fluorite deposits associated with carbonatites are commonly enriched in LREE concentration relative to HREE concentration with a lack of negative Eu anomaly (Magotra *et al*, 2017).

3 Exploration and Drilling, Sampling Techniques and Data

This competent person's report (CPR) principally reports on the exploration results collected to date by Altona, both from their work and that obtained from previous workers – most notably Globe. Whilst Globe published a JORC compliant fluorite resource in 2012, the deposit/s are not contiguous with Altona's main targets and fluorite is not the principal target of Altona's exploration efforts. The fluorite mineral resource declared by Globe is recorded in the CPR as part of the record of work completed and mineral resources identified.

The focus of this report is on the targeted REE occurrences associated with the Monte Muambe carbonatite complex.

3.1. Globe Exploration Data

The 2012 Qualitative Group CPR and fluorite mineral resource statement prepared on behalf of Globe, only refers to data utilised for the modelling and estimation. In this instance the following is noted as supplied:

1. 97 reverse circulation (RC) boreholes for a total of 6,998 metres, with all but six holes in the resource area drilled vertically. The nominal drill spacing in the area of the modelled resource is 40m x 20m, out to 80m x 20m at most and down to 20m x 20m at best. Data was supplied in a Datamine format comprising collar, downhole survey, assay and lithology data.
2. The bulk of the sampling appears to be done on one metre intervals whilst some compositing of up to 4m intervals is also apparent. No mention is made of sample handling.
3. A Datamine string file representing a cross-sectional interpretation of the main >10% CaF_2 domains was provided.
4. A Surpac string file of the local topography, which was imported and converted into a data terrain model (DTM wireframe) of the topography.
5. Density utilised was defined by Globe for the mineral resource estimate: 2.6 t/m^3 was applied to all background cells in the model and a density of 2.7 t/m^3 was applied to cells in the mineralised domains.
6. QAQC whether done by Globe or not, was not assessed by Qualitative Group.

The Globe programme included the acquisition of Grupo Madal's 1998 airborne radiometric and magnetic data, the data was utilised both by Globe and subsequently Altona for initial target generation (Figure 17).

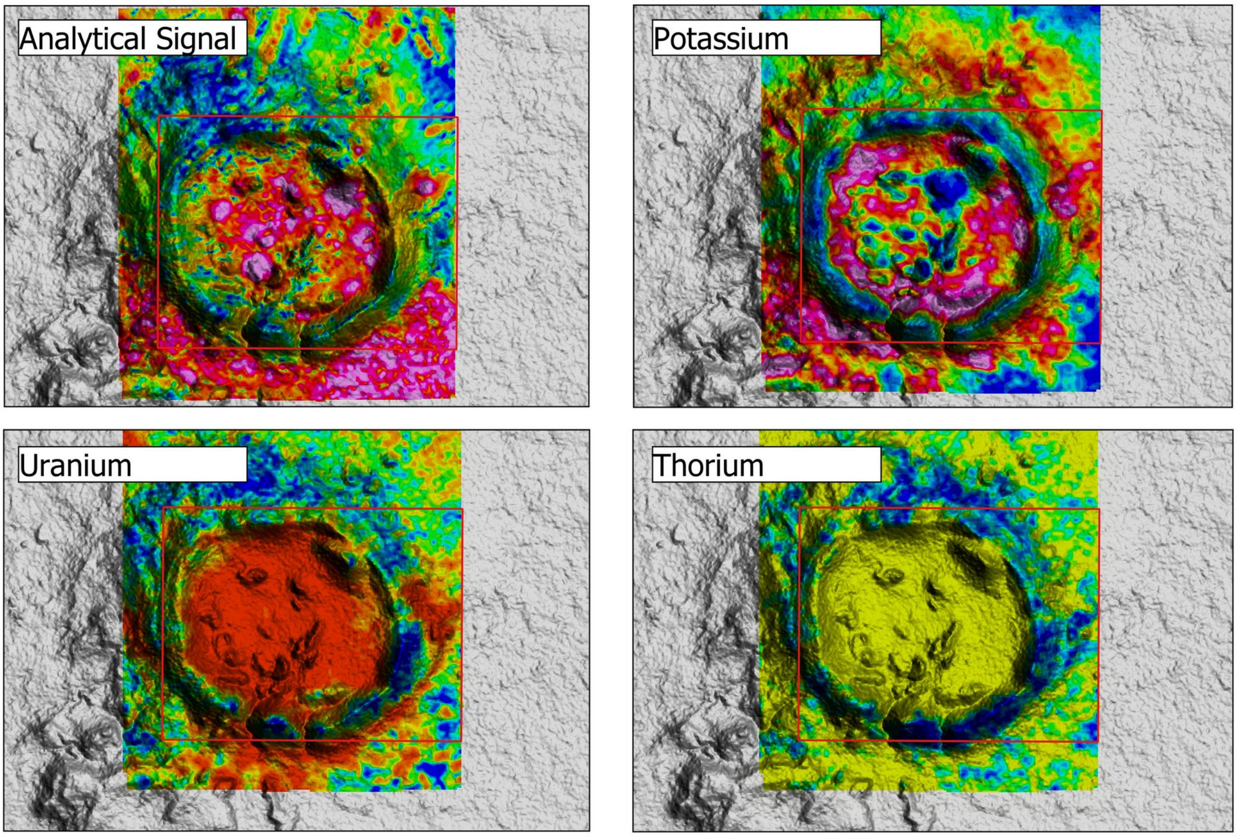


Figure 17: Airborne Geophysics over Monte Muambe Licence, draped over SRTM – Grupo Madal.

The Globe drilling data for the fluorite mineral resources reported does not lie in the same position as the Altona Targets. Globe did however drill 165 boreholes in total (an additional 68 boreholes and 5,589m of drilling not utilised in the fluorite resource estimation) and the data outside of the Globe Fluorite orebodies was utilised for purposes of deposit understanding, REE Target generation and REE Target testing by both Globe and Altona.

Field mapping is known to have been fairly comprehensively completed by Globe as evidenced from their geological map as seen in Figure 7.

3.2. Altona Exploration Data

3.2.1 Soil Sampling

Altona embarked on an extensive soil sampling campaign, gridding the entire crater "floor" with points spaced 100m by 100m, N-S and W-E. The 100m x 100m sampling programme although not yet complete over the entire crater floor, returned extremely encouraging results and on the basis of the positive results, areas with anomalous metalliferous grades were further gridded, filling in points to a final 50m x 50m grid over the highest grade areas (Figure 18). A total of 1684 soil sampling points was provided. The soil sampling programme commenced after Altona's positioning of initial holes based on radiometrics and historical holes alone. Subsequent to the soil sampling programme results becoming available, Altona was able to better define target areas for follow-up drilling and better position exploration boreholes.

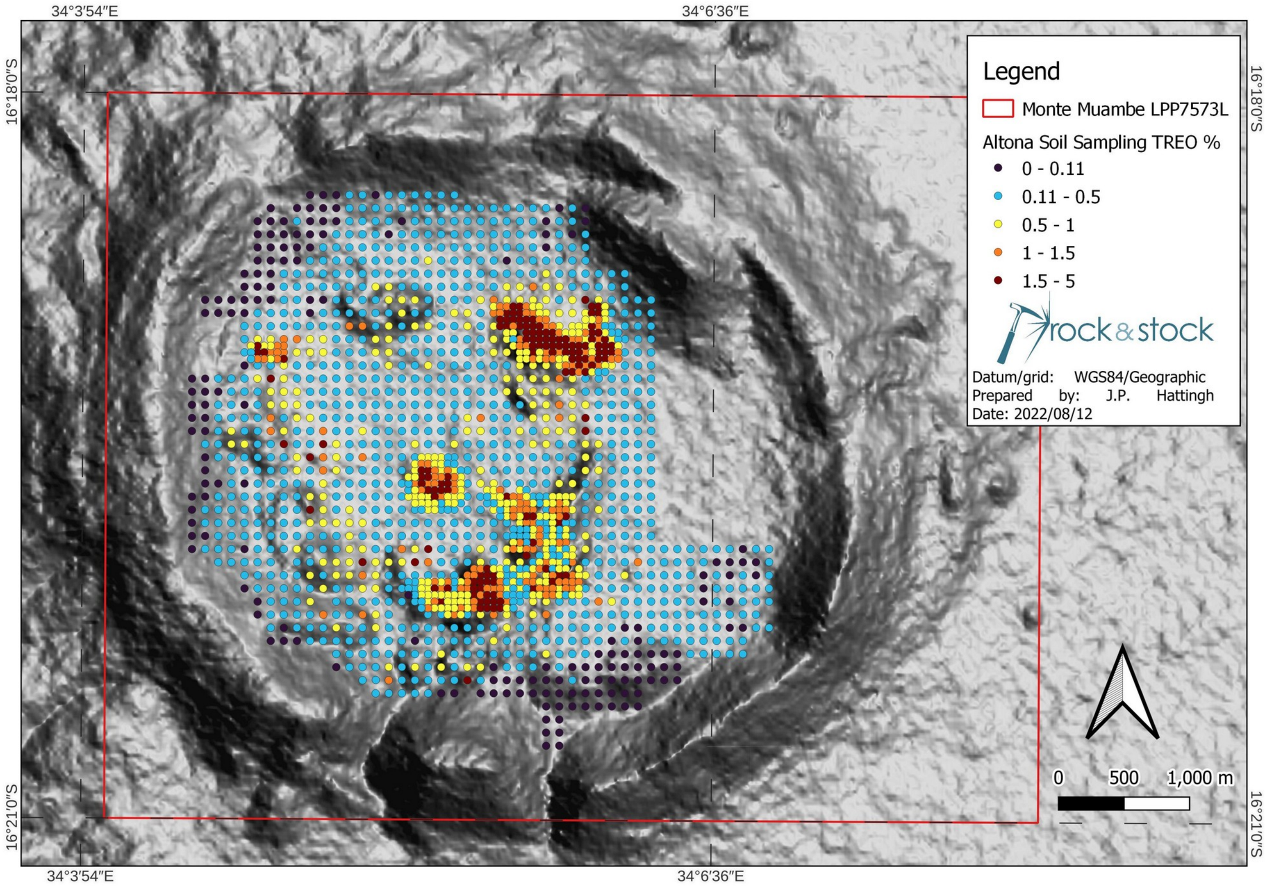


Figure 18: Altona Soil Sampling Grid and %TREO results overlain on SRTM.

The soil samples were tested on site using a portable XRF. The pXRF analyser is an Hitachi X-Met8000 equipped with a 50kv anode and specific programmes to enable the detection and quantification of Nd, Pr, La, Ce and Y, as well as of light elements relevant to carbonatites such as K, Mg and Si.

Soil sampling results provided by Altona from the pXRF were provided already converted from percentage elemental concentrations to percentage oxides and elements in ppm and encompass: TREO %, CeO_2 %, La_2O_3 %, Nd_2O_3 %, Pr_6O_{11} %, Y_2O_3 %, Nb_2O_5 %, Ba %, Sr %, Th in ppm and U in ppm. The TREO % is based on the sum of CeO_2 %, La_2O_3 %, Nd_2O_3 %, Pr_6O_{11} %, and Y_2O_3 %. In this respect the results of Pr_6O_{11} % obtained by pXRF have since been seen to be unreliable. The maximum value given for Pr_6O_{11} % is 0.077%. Accordingly although at times the TREO % reported for the soils may be slightly increased by an unreliable assay for Pr_6O_{11} %, it's contribution to overall TREO % is largely negligible and immaterial with regard to the soil sampling results which are an exploration tool and not utilised for quantifying mineral resources.

The soil sampling data can be utilised to generate various elemental grids and together with other data have been critically important for Altona in terms of defining targets for testing. The thin soils and low mobility of the REE appears to result in a very tight correlation between REE soil anomalies and high grades in boreholes drilled.

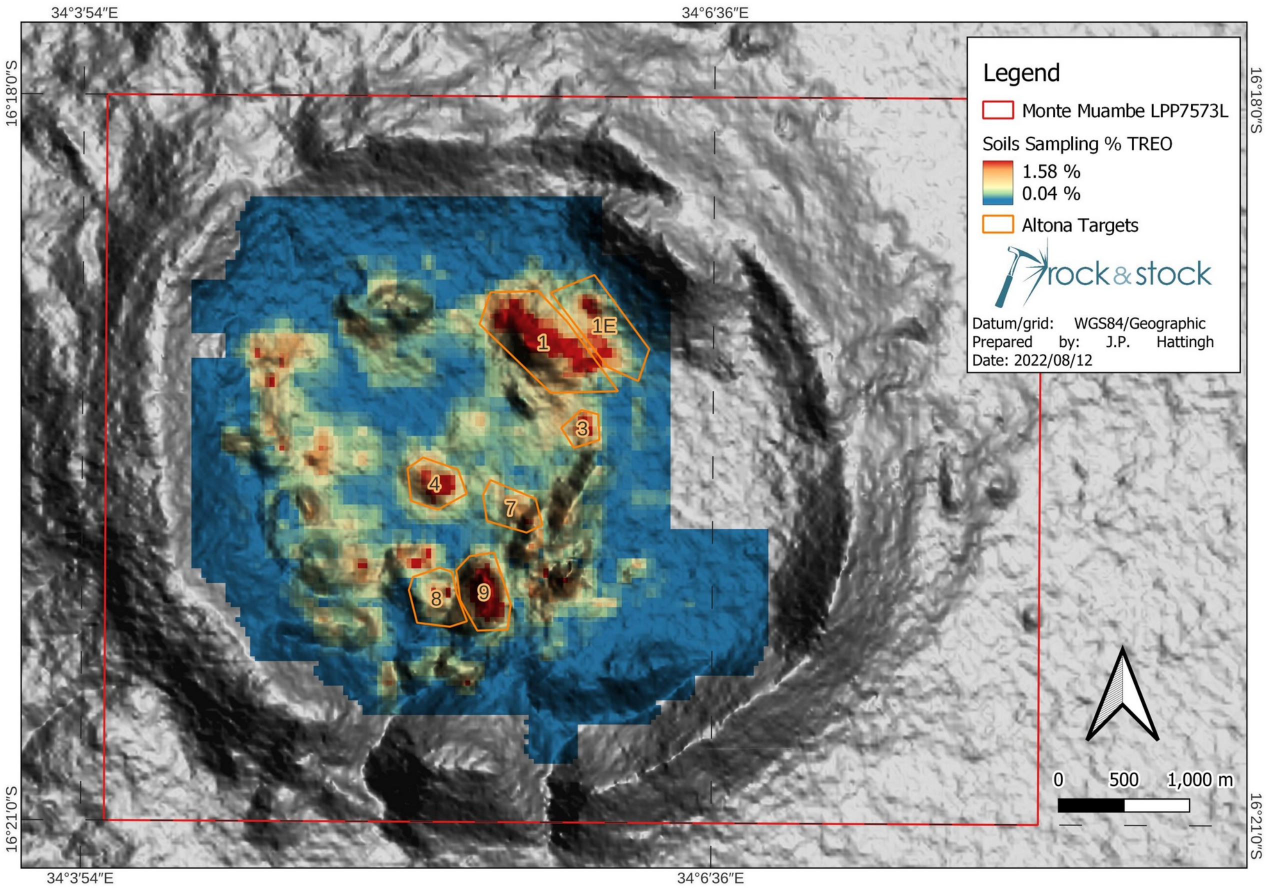


Figure 19: Gridded TREO% from Soil Sampling also indicating Altona's Target Zones.

3.2.2 Drilling

Altona embarked on 3 phases of drilling. Planned positions were given borehole numbers prefixed by MM or MRA, the planned numbers were applied to the drilled boreholes and gaps may exist in the sequence where a planned borehole is not yet drilled or was not drilled. The MM series of boreholes naming is applied to both diamond cored boreholes and reverse circulation drilled boreholes. The MRA prefixed boreholes were originally planned to be drilled by RAB drilling (rotary airblast drilling) but were in fact drilled by reverse circulation – all Altona boreholes drilled to date are therefore drilled either by diamond cored drilling or reverse circulation drilling.

1. Phase 1 Diamond Drilling: 5 diamond cored boreholes (MM001, MM007, MM035, MM039, and MM040) drilled in October and November of 2021 with depths below surface varying between 38.91m and 152.47m. Core diameters of PQ, HQ and NQ (nominally 85, 63.5 and 47.6mm respectively) were utilised (generally with decreasing core size down hole to aid with recoveries and hole stability) with all boreholes drilled vertically down except for MM007 drilled at 55° on an azimuth of 027°. MM035 was abandoned due to poor recovery and redrilled as MM040.
2. Phase 1 Reverse Circulation Drilling: also drilled in October and November 2021, comprised 36 boreholes drilled at -90° or -55° to planned depths of 70m below surface, with MM021 drilled to 90m and MM026 drilled to 42m respectively. The last and highest numbered borehole in this series is MM047.
3. Phase 2 Reverse Circulation Drilling: Commenced in May 2022 and was completed on 28 November 2022. It encompasses 26 MRA prefixed boreholes and 36 boreholes within the numbered series from MM048 to MM101 (including 2 boreholes abandoned due to cavities – MM092 and MM095). The MRA prefixed holes were planned to 25m depths and the MM prefixed RC holes planned to depths of 80m. The MRA holes were completed and incorporated within the borehole database as at the database cut-off date of 05 July 2022. Twenty-one of the 36 boreholes from the MM048-MM101 series were not completed or data not available as at 05 July 2022. As at 23 January 2023, outstanding assay data from the MM048-MM101 borehole series is in the process of being compiled for all boreholes and the exploration targets presented herein, do not incorporate data from those 21 boreholes. The 21 boreholes from Phase 2, MM048 to MM101 which were *not* utilised for purposes of reporting the Exploration Target are listed in Appendix D item 16.2.

3.2.3 Sample Collection, Preparation and Assay Methodology

Drilling, sampling and pXRF SOPs were examined by the CP and the process reviewed in person where possible or discussed with the appropriate responsible personnel. SOPs were found to be appropriate and in keeping with best practise. All logging, sampling and data capture was done using MS Office Excel spreadsheets. A brief, non-exhaustive summary follows:

3.2.3.1 Soil Samples

1. Positions were planned and loaded to GPS – actual position was recorded in field.
2. Approximately 3.5kg of soil sample was collected in field (not sieved). Bagged with an outer tag and aluminium inner tag in the bag.
3. At the core shed wet samples were allowed to dry out in plastic buckets and then samples crushed in original sample bags using a piece of wood where necessary. Only dry samples are used for pXRF analyses.
4. Samples were sieved to 500µm.

5. A sample for analysis was prepared using plastic caps/cups covered by a mylar film with the caps/cups filled to the limit lines using the -500µm material.
6. At the start of an analytical batch, a set of known in-house and commercially available standards/CRMs (certified reference materials) was analyses in order to track any issues with the measurement of the sample batch.
7. The sample batch was then analysed using a preset programme on the pXRF for assay time and elements etc.
8. A senior geologist or the project manager checks all digital results downloaded from the pXRF, as well as the pXRF technician/Operator checking the performance of the known standards per batch and on an ongoing basis.

3.2.3.2 Diamond Drilling and Sampling

1. Planned holes were uploaded to GPS and positioned in the field by GPS and compass (in terms of drilling azimuth and inclination. Actual positions were then recorded.
2. Drilled core was packed into 1m boxes including drilling depth and recovery marking blocks.
3. Core was delivered to the core yard at the field camp on the crater rim for further processing.
4. Completed boreholes were cased using PVC piping for later follow-up downhole survey and all holes were planned to have concrete marker blocks placed on the collar and casings, post site clearance.
5. Geological logging was done relative to the depth markers by use of a tape measure in the core yard. In addition to lithology, mineralisation, alteration and core recovery was also recorded.
6. All borehole core was photographed wet and dry for later reference.
7. Core was split longitudinally with a core saw and then samples collected on an approximately 1m basis with attention to lithological/unit contacts and drill run positions.
8. A blank, standard/CRM and duplicate was inserted approximately every 7th sample.
9. All samples remained in Altona's geological and technical personnel custody until they were collected at the core yard by transporter Bolloré Logistics, who undertook the export of the samples from Mozambique and import into South Africa and delivery to Intertek Genalysis' laboratory in South Africa.

3.2.3.3 Reverse Circulation (RC) Drilling and Sampling

1. Planned holes were uploaded to GPS and positioned in the field by GPS and compass (in terms of drilling azimuth and inclination. Actual positions were then recorded.
2. Samples were collected on a 1m basis and weighed. Weighing, and hole volume on the basis of drill bit diameter, was used for the purposes of establishing RC drilling recovery.

3. A small sub-sample is collected and sieved for placement in a chip tray. This is utilised for purposes of geologically logging the borehole.
4. Wet samples were not split immediately but were sent for drying first before splitting.
5. Completed boreholes were cased using PVC piping for later follow-up downhole survey and all holes were planned to have concrete marker blocks placed on the collar and casings, post site clearance.
6. RC sample bulks were then quarter split using a riffle splitter to collect approximately 3kg per interval.
7. In every batch of 30 samples: one blank, one standard/CRM and one duplicate is collected/added.
8. Samples are tagged using pre-prepared tags.
9. All samples are analysed by pXRF.
10. A sub-sample is sieved to 500µm.
11. A sample for analysis was prepared using plastic caps/cups covered by a mylar film with the caps/cups filled to the limit lines from the RC material collected.
12. At the start of an analytical batch, a set of known in-house and commercially available standards/CRMs (certified reference materials) was analyses in order to track any issues with the measurement of the sample batch.
13. The sample batch was then analysed using a preset programme on the pXRF for assay time and elements etc.
14. Mineralised intersections are then selected by the senior geologist/project manager for submission to laboratory.
15. All samples remained in Altona's geological and technical personnel custody until they were collected at the core yard by transporter Bolloré Logistics, who undertook the export of the samples from Mozambique and import into South Africa and delivery to Intertek Genalysis' laboratory in South Africa.

Assay at Intertek Genalysis was via a number of methods for REE, oxides and elements of interest utilising Intertek Genalysis methods: FB6/OE, FB6/MS, and FC7/SIE. Analyses was not only for purposes of mineralisation identification and quantification but was also used to modify geological and lithological logging. Total suite of analyses included:

Al_2O_3	Ba	Ba	Ca	CaO	Ce	Ce	Cr	Cr	Cs
Dy	Er	Eu	F	Fe	Fe_2O_3	Ga	Gd	Hf	Ho
K_2O	La	La	Lu	Mg	MgO	MnO	Na_2O	Nb	Nd
P_2O_5	Pr	Rb	S	Sc	SiO_2	Sm	Sn	Sr	Ta
Tb	Th	TiO_2	Tm	U	V	W	Y	Yb	Zr

QAQC reporting by Altona was not available at the time of writing and it has been assumed that all assay results Altona provided in terms of this report, have originated from batches where the QAQC process has indicated that the analytical results are suitable for use in terms of modelling and estimation.

Complete assay data from Altona's 2022 drilling is outstanding at the draft date of this CPR.

3.2.4 pXRF Analytical Validation

Whilst Altona's comparisons between their pXRF results and Intertek laboratory assay results for Phase 1 confirmed the reliability of Altona's pXRF results (slight underestimation, R2 = 0.95) (*pers comm* C. Simonet, June 2022)(Figure 20), there existed a query to the precision/repeatability of the method.

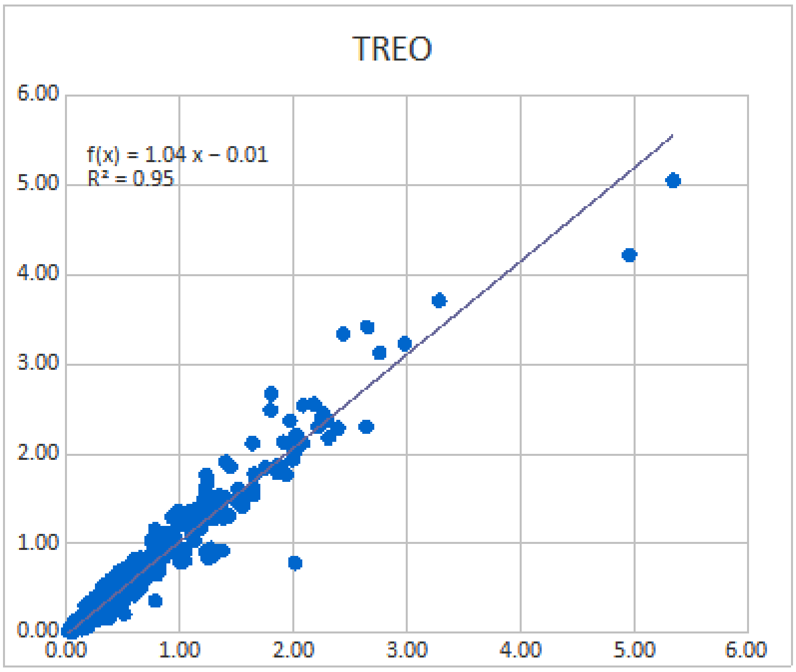


Figure 20: Lab vs pXRF comparison based on 839 sample pairs from Altona Phase 1 Drilling.

To this end a test was done whilst on site in June 2022. 11 Mineralised samples were selected and 5 sub-samples of each created and then assayed over a two-day period for two sets of 55 sample couples. Generally precision is good for both La and Ce with results showing R^2 values of above 0.9 for both La and Ce and 0.80 for Nd. There was only a single sample failure from the above sets of pairs and the method has been deemed acceptable for purposes of field soil sampling for target generation and for initial exploration estimates of mineralisation. The failure likely stems from the fact that the RC samples are not further milled/pulverised and hence a coarse, nuggety RC sample may well generate different results from multiple splits. Further pulverisation of the RC samples could increase the precision of the results.

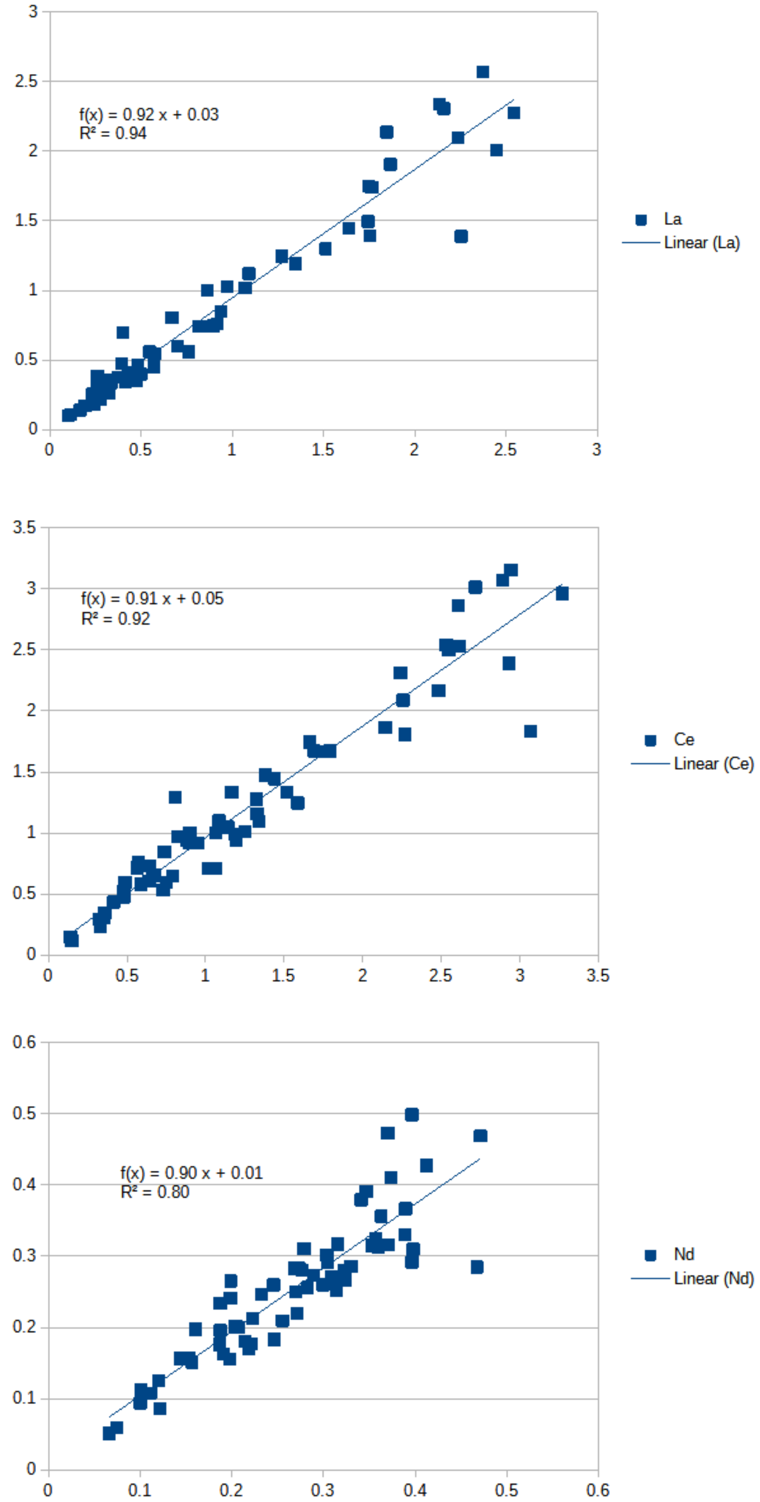


Figure 21: pXRF La, Ce and Nd. 55 sample pair repeats over 2 days.

3.3. Historical Sampling & Verification

3.3.1 Field Observations

A field visit was undertaken over the greater crater area, visiting representative lithologies and the historical fluorite resource area, boreholes drilled before Altona and Altona's boreholes, as well as a number of Altona's Target areas, including Targets 1, 4, 7 and 9 (see field track in Figure 8 and Figure 12). Historical borehole collars were typically well marked with a concrete block with the borehole name/number marked on it and a plastic or steel casing protruding from it. Some of the recent borehole collars for holes recently drilled by Altona were as yet unmarked (Figure 22) at the time of the field visit.

MM058 – Altona RC June 2022

MM021 – Altona RC Nov 2021

MURC028 – Globe RC June 2011

MM039 – Altona DD Nov 2021

Figure 22: Site visit June 2022 – Borehole Collar Observations.

3.3.2 Core Yard Inspection

The core yard was visited both to check on the already drilled diamond cored borehole logging and sampling, and the general storage and handling of the RC sample splitting. None of the historical Globe drilling samples were available for viewing.

3.3.2.1 Diamond Drilled Borehole Core & Sampling

Boreholes MM001, MM007 and MM040 were unpacked and checked against the borehole geological logs and sample logs. In general the core logging was of an adequate standard though it would be preferable to mark metre marks on the core from top to bottom of the borehole as it results in a more accurate borehole log and better recording of any losses (rather than utilising a tape measure to log between drill run marker blocks). In addition metre marks left on the core provide a valuable method of reconciling boreholes and logging especially when the core forms part of the historical record.

Recognition of lithological units was greatly improved by the implementation by Altona of a lithological determination based on geochemistry. It is important to note that purely visually, the differentiation of lithological units and recognition of mineralised zones is extremely difficult. It is apparent that the REE mineralisation within the carbonatite zones and across lithological boundaries within the carbonatite is not visually obvious – one cannot easily rely on visual interpretation of the core to determine lithological nomenclature or mineralisation zones and a geochemical approach to logging and mineralisation identification is seen as vital.

Sample intervals could be better marked on the core, primarily for purposes of future re-conciliation and verification.

Storage of the core and samples was adequate.

3.3.2.2 RC Samples and Splitting

Geological staff were busy completing processing of RC samples from the June 2022 drilling by Altona as well as splitting old bulk samples to generate new 1m samples for some historical boreholes. A brief check was done on the general operation. Bulk samples were in the process of being dried and split.

Figure 23: Riffle Splitting of RC samples in Progress by Altona Staff.

Riffle splitting was being done using a Geo-Explore Store 3-Tier Riffle Splitter which on a single pass should generate a 12.5% to 87.5% split by volume. Procedure was generally to standard though some additional attention to cleanliness of the riffle splitter could be applied. The splitter design was also such that the exit chute had an angle of <45 degrees which promoted the build up of sample in the splitter if staff were not careful with regards to cleaning it after every split. It was also highlighted to the Altona staff that positioning of the riffle splitting relative to other samples (especially samples out in the open drying) should be such that there can be no wind blown contamination from the riffle splitting process.

Storage and marking of the RC samples was adequate.

4 Estimation and Reporting of Exploration Results and Mineral Resources

An inferred mineral resource was defined in accordance with JORC (2004)(Journeaux, 2012) for the fluorite orebodies in the west of the Monte Muambe crater. In this report it is deemed appropriate to provide an estimation of an Exploration Target for the REE mineralisation thus far encountered by Altona where there is sufficient drilling and other information to provide a sense of the type, form and extent of possible orebodies.

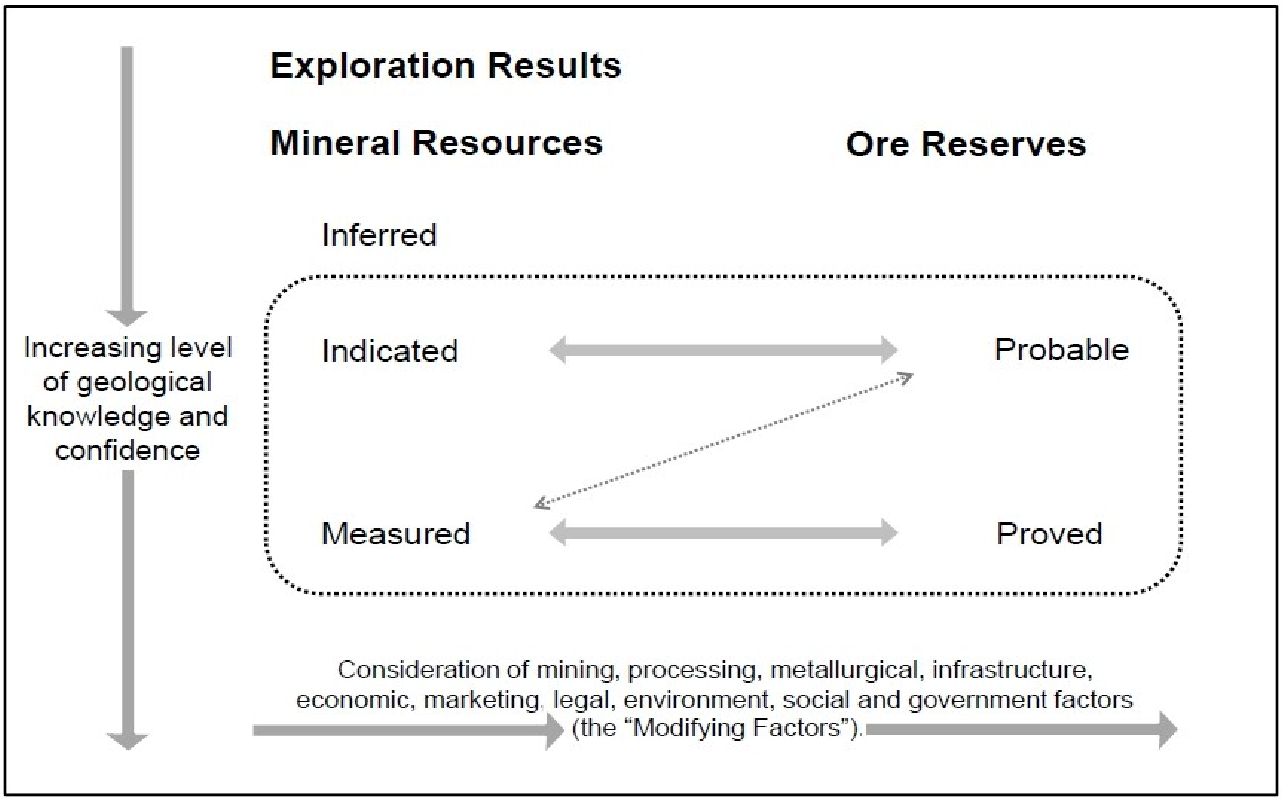


Figure 24: The relationship between Exploration Results, Mineral Resources and Ore Reserves (JORC, 2012).

The reader's attention is drawn to Figure 24 which shows how increasing geological knowledge and confidence result in an increase in reporting category. As per JORC (2012): "An Exploration Target is a statement or estimate of the exploration potential of a mineral deposit in a defined geological setting where the statement or estimate, quoted as a range of tonnes and a range of grade (or quality), relates to mineralisation for which there has been insufficient exploration to estimate a Mineral Resource".

At the time of writing of this CPR (at a database closure/cut-off date of 05 July 2022), a significant amount of drilling has been completed on Altona's Target 1 and Target 4, which is of sufficient quality and detail to allow for the estimation of an Exploration Target. The exploration target reported here is restricted to those two targets and does not include any mineralised intersection outside of those two target areas. An exploration target is reported here rather than a mineral resource, as there is currently insufficient drilling to adequately delineate the orebodies at Target 1 and Target 4. Additionally, the on-site sample preparation and use of the pXRF analytical method for analysing %REO in borehole samples, is not deemed robust enough to provide sufficient confidence in the assay results for purposes of reporting a mineral resource.

4.1. Globe Fluorite Mineral Resources

The Qualitative Group prepared the JORC compliant mineral resource estimate and report for the fluorite deposit/s and declared an inferred fluorite resource of:

Classification	**Mt Muambe Estimate**		
Inferred Mineral Resource	**Tonnes (Kt)**	**Grade (%)**	**Product (Kt)**
	1,630	19	310

The Globe Inferred Fluorite Resource reported *DOES NOT* overlap Altona's Target 1 and Target 4 REE exploration targets which are the main subject of this report.

4.2. Altona Monte Muambe REE Exploration Target

The Exploration Target Estimation for Monte Muambe involved processes of:

- Data preparation,
- Validation,
- Geological (stratigraphical) and Target Zone domain modelling including grade shell domaining using a 0.5% and 1.0% cut-off for TREO (La_2O_3+CeO_2+Nd_20_3+Y_2O_3),
- Naïve statistical analysis,
- Compositing,
- The estimation of assay data into a block model using Ordinary Kriging (OK) and/or Inverse distance to power of 3 (ID^3) methodology,
- Deposit classification in terms of JORC (2012), and
- The production of an Exploration Target Estimate statement.

Altona has identified a number of REE targets on the Monte Muambe Project. Anomalous mineralisation has been intersected in boreholes in several of the target areas. Exploration on the project is still in progress and at the time of reporting, Targets 1 and 4 have sufficient information to make a reasonable assessment of form and mineralisation and are therefore the focus of this report.

Each target has two exploration estimation models, one at 0.5% TREO cut-off and one at 1.0% TREO cut-off. Each of the 4 Exploration estimation models, contain two separate mineralized domains in each model into which grades were estimated. These two domains are inside the

TREO cut-off grade shell and outside this grade shell as hard boundaries. The exploration database utilised was as at the close of business on 05 July 2022.

4.2.1 Borehole Data

The geological database is as at 05 July 2022. Borehole data was supplied for 246 boreholes (Figure 25 and 16 Appendix D) with the records per table being:

- Collar information (239)
- Downhole surveys (23)
- Lithology logs (239)
- Assay logs (211)
- Density (only from Diamond drilling)

For Target 1: 71 of these holes were used for the model (Figure 26).
For Target 4: 25 of these holes were used for the model (Figure 27).

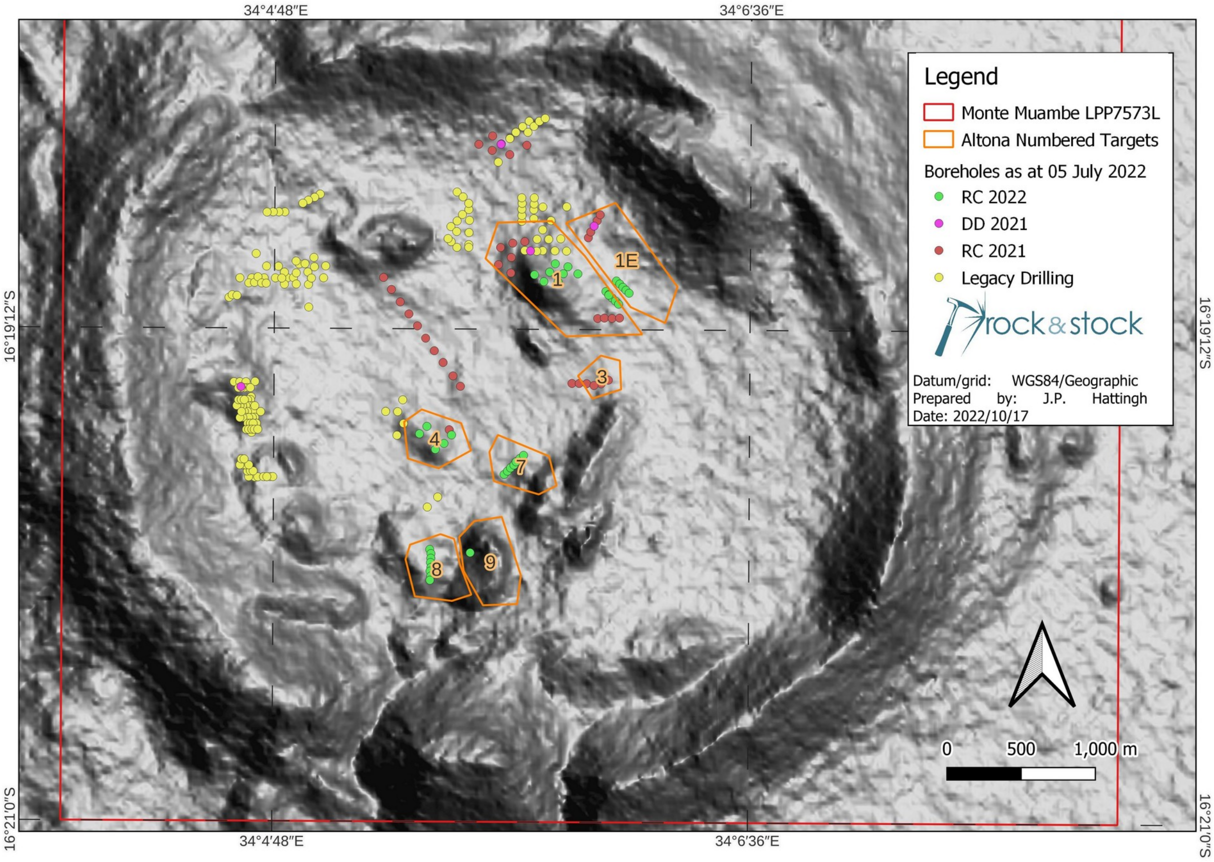


Figure 25: Borehole locations and drilling type by year as at 05 July 2022.

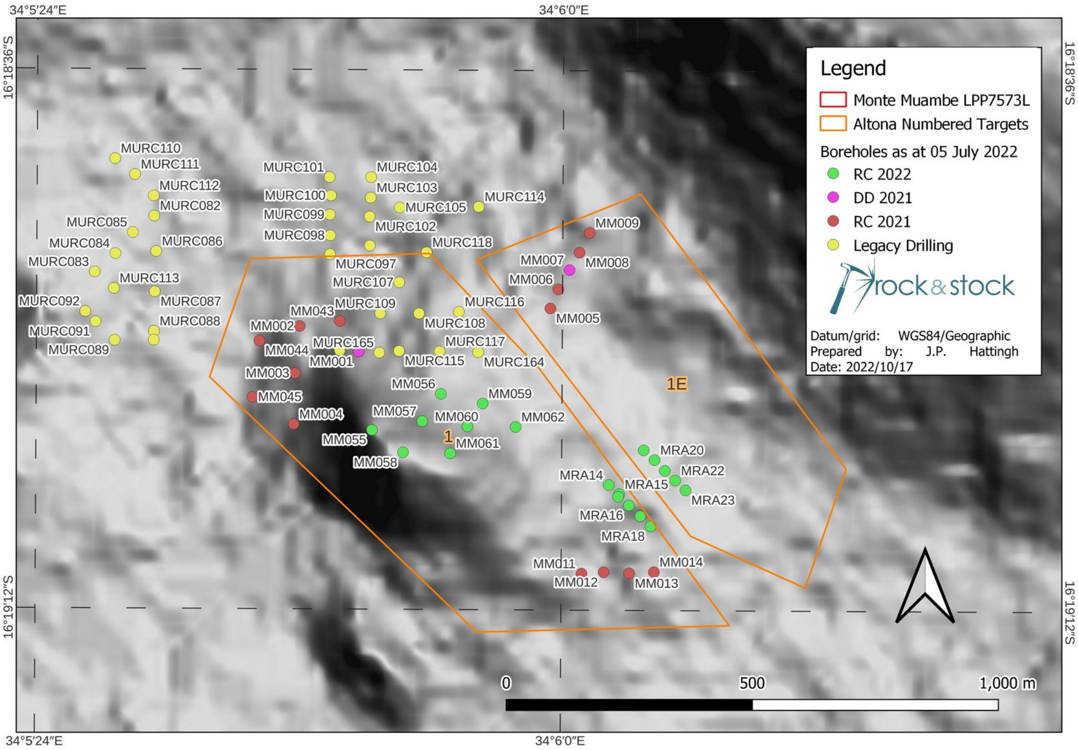


Figure 26: Target 1 showing drilling type and year as at 05 July 2022.

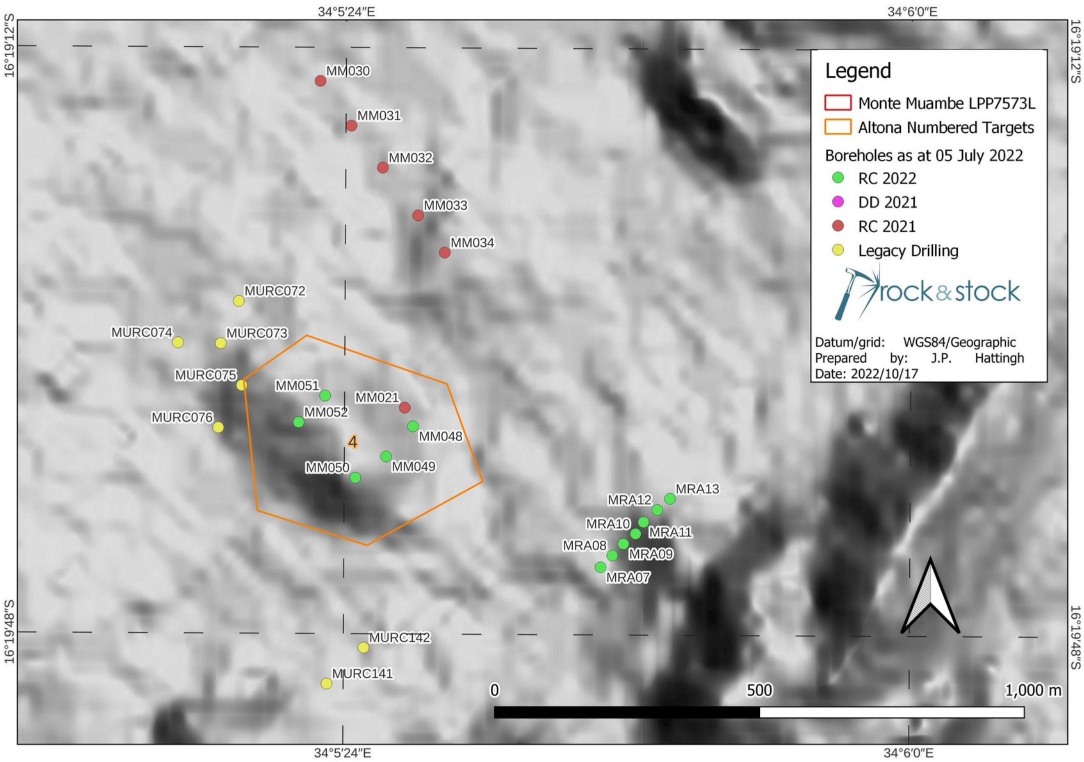


Figure 27: Target 4 showing drilling type and year as at 05 July 2022.

LEGACY		DDRILL	2021	RC2021		RC2022		RAB	2022
LITHO1	COUNT	LITHO	COUNT	LITHO	COUNT	LITHO	COUNT	LIT_1	COUNT
	4	BSL	15		1		1	CCA	580
Agglomerate	687	CAV	2	BSL	30	CAV	1		
Basalt	69	CBR	114	CAV	14	CCA	58		
Carbonatite Undiff	7148	CCA	361	CBR	44	CMG	24		
Cavity	279	CFE	33	CCA	485	FEN	65		
Dolomitic Carbonatite	169	CPY	109	CFE	89	MCA	70		
Fenite	4179	FBR	43	CPY	14	MMG	16		
No Chip / Core Recovery	8	FEN	133	CTP	2				
Sandstone	40	MUD	6	FBR	6				
Soil	1	MUG	1	FEN	44				
		OPY	49	FSY	21				
		RGO	22	OPY	20				
		RHO	3	RGO	2				
		RHY	9	RHY	4				
		SOL	3	SOL	24				
		SST	1	SST	1				
		UO2	1						

Table 3: Lithology logs litho field classification for all drilled data. The tables are the litho coding used per period drilled.

4.2.2 Lithologies

LITHO	Description
CPY	Carbonatite pyroclastics
CMG	Mg Carbonatite
CCA	Carbonatite
CFE	Fe Carbonatite
CBR	Carbonatite Breccia
FEN	Fenite
FBR	Fenite Breccia
BSL	Basalt
RHY	Rhyolite
FSY	KF Syenite
NSY	Nepheline Syenite
CAV	Cavity
NOR	No Chip / Core Recovery
SST	Sandstone or Arkose
CRG	Consolidated Regolith
RGO	Regolith
SOL	Soil

Table 4: Lithology codes and description as listed in standard operating procedure.

4.2.3 Assays

Drilling, sampling, and assay was carried out on the project over a number of years starting in 2011/2012 with the work completed by Globe. Altona commenced drilling, sampling and assay on the project in 2021.

The Altona samples pre-December 2021 where all assayed by an accredited method at a certified laboratory. Following the acquisition of a portable X-Ray Fluorescence analyser (pXRF), Altona has been able to better delineate mineralised zones within boreholes for cost effective laboratory assay of zones of interest. The assay in this report for all samples post-December 2021, are by pXRF.

A comparison was done on 839 samples from 36 boreholes (Table 5) between laboratory assayed results and pXRF assay results for La_2O_3%, CeO_2%, Nd_20_3% and Y_2O_3%, TREO%, Nb2O5%, Th in ppm and U in ppm.

BHID	SAMPLES
MM002	24
MM003	23
MM004	24
MM005	24
MM006	24
MM008	24
MM009	23
MM011	24
MM012	22
MM013	24
MM014	23
MM015	23
MM016	23
MM017	23
MM019	23
MM021	33
MM025	23
MM026	13

BHID	SAMPLES
MM027	24
MM028	23
MM029	24
MM030	23
MM031	24
MM032	23
MM033	22
MM034	23
MM036	24
MM037	23
MM038	23
MM041	23
MM042	23
MM043	23
MM044	24
MM045	23
MM046	23
MM047	24
	839

Table 5: Boreholes and numbers of samples used for Laboratory - pXRF comparison.

The results were compared by QQ plots and linear scatter plots.

The QQ plot is a plot of the quantiles of the first data set against the quantiles of the second data set, where a quantile is defined as the fraction (or percent) of points below the given value.

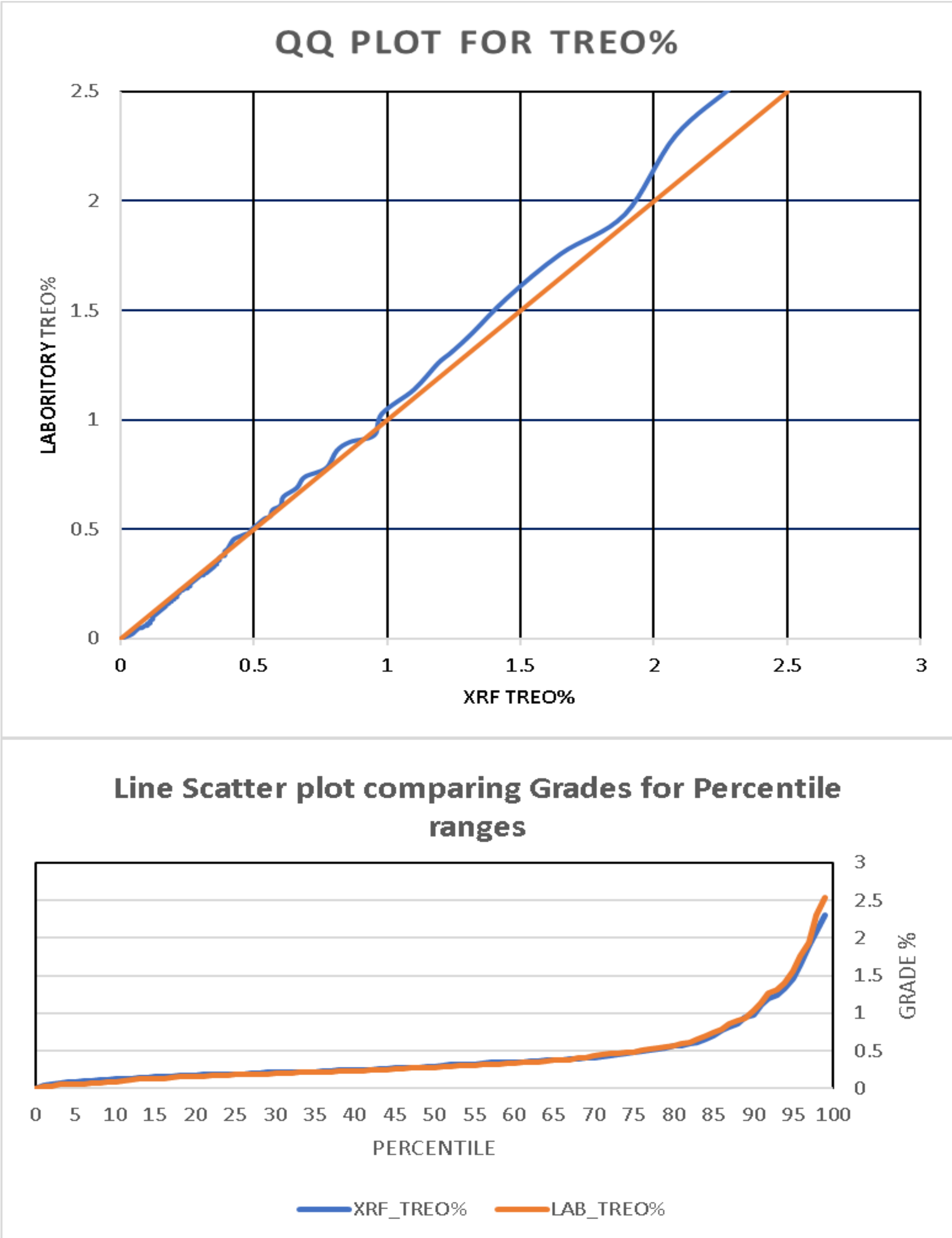


Figure 28: QQ and Line Scatter plots for calculated sum TREO%.

The plots for TREO% (Figure 28) show a good correlation between the calculated sum of the four REE oxides assayed by both methods, with pXRF generally under-evaluating above 1% TREO. Appendix B contains the other graphs per REE oxides, niobium, thorium and uranium.

4.2.4 Compositing and Capping Strategy

Mean and coefficient of variation plot analysis was conducted on the raw data to determine the optimal compositing length and to determine capping of outlier low values as well as high values. The capping was done for the variography only at this stage, to reduce data noise to attempt to improve variogram models. Inflection points in the mean and coefficient of variation plots show where the best cap on data would be so as not to have a significant effect on the mean of the data set (an example is provided in Figure 29). This method was applied to all modelled elements as well as uranium and thorium.

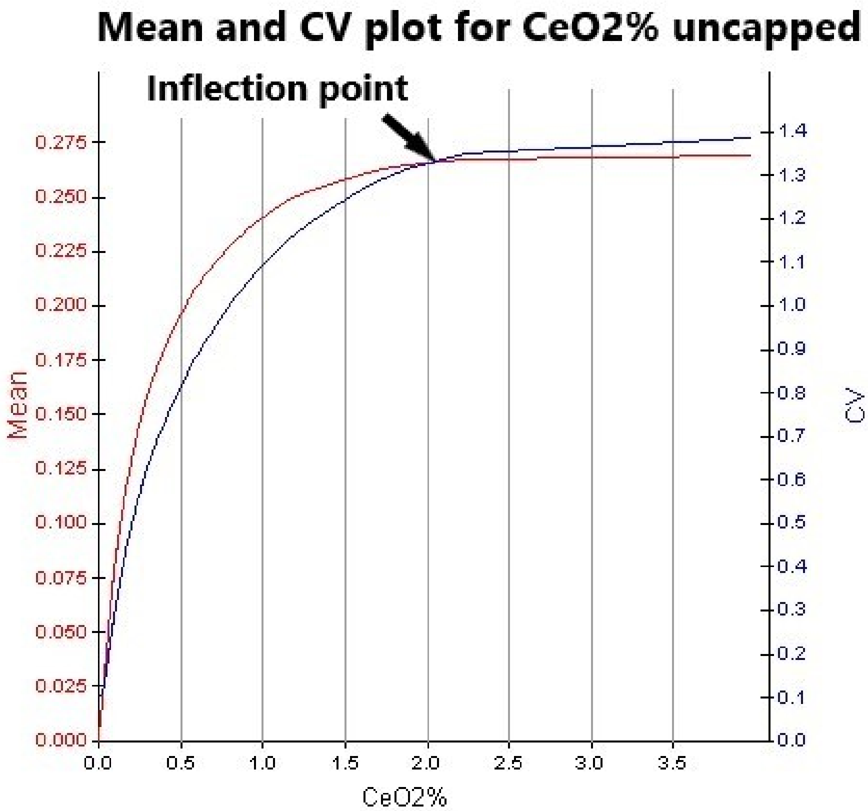


Figure 29: Example of Mean and Coefficient of Variation plot for CeO_2.

	POINTS	MEAN	CAPPED MEAN	LOWER CAP	NO POINTS BELOW	UPPER CAP	NO POINTS ABOVE
CeO_2%	5718	0.269	0.275	0.02	171	2.2	31
La_2O_3%	5572	0.198	0.205	0.02	317	1.6	47
Nd_2O_3	5801	0.099	0.1	0.0075	88	0.5	28
Y_2O_3%	5590	0.038	0.039	0.01	299	0.12	71
Th_ppm	5827	178.936	179.606	0.1	62	1000	25
U_ppm	5889	17.895	17.728	0.2	305	100	44
Nb_2O_5	5889	0.103	0.101	0.01	279	0.75	38

Table 6: Capping statistics used on data while variogram modelling.

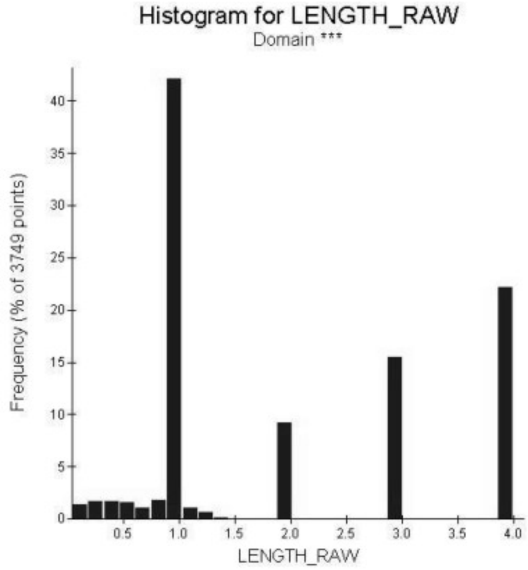


Figure 30 Histogram of raw sample lengths for Target 1 And Target 4.

There are four large populations of raw sample lengths being: 1m, 4m, 3m and 2m, with a mean of 1.813m. The exploration drilling on the project will predominantly collect 1m samples, and as the bin with the highest number is 1 metre, it was decided to composite the drill hole desurveyed file to 1 metre intervals.

4.2.5 Density

To build a geological model it was necessary to successively group lithologies together once it could be seen what the dominant lithology (GLITHO) was. The aim was to get the boreholes in a litho-stratigraphic sequence of Soil, Fenite and then Carbonatite.

An average weighted by the number of density records per GLITHO unit was used for the model (Table 7). This was assigned to the model by wireframe volumes of each GLITHO.

LITHO	RECORDS	MIN	MAX	MEAN	GROUPEDLITHO	MEAN
SOL	1	1.65	1.65	**1.65**	**SOIL**	1.65
BSL	5	2.45	2.59	**2.53**	**CARBONATITE**	2.52
CBR	50	1.95	3.4	**2.42**	**CARBONATITE**	
CCA	219	1.56	4.74	**2.59**	**CARBONATITE**	
CFE	15	2.37	3.1	**2.80**	**CARBONATITE**	
CPY	55	2.2	3.14	**2.42**	**CARBONATITE**	
OPY	23	1.9	2.53	**2.25**	**CARBONATITE**	
RHY	3	2.36	2.43	**2.40**	**CARBONATITE**	
FBR	15	1.86	2.75	**2.29**	**FENITE**	2.08
FEN	47	1.43	2.68	**2.01**	**FENITE**	

Table 7: Weighted density by number of density samples for each GROUPED LITHO unit modelled.

4.2.6 Variography Study

Experimental variograms were calculated and modelled for Target 1 (Table 8). The results were of fair to poor quality due to drilling data spacing. Insufficient data for Target 4 meant variography could not be used for Kriging estimation, so only inverse distance to the power of 3 was used for this target. Ordinary Kriged estimates as well as inverse distance were estimated for Target 1.

VARNUM	ANGLE1	ANGLE2	ANGLE3	AXIS1_Z	AXIS_X	AXIS3_Y	NUGGET	S1	S1PAR1	S1PAR2	S1PAR3	ST1PAR4	S2	S2PAR1	S2PAR2	S2PAR3
1	80	0	0	3	1	2	0.06	1	97.5	97.5	10	0.47	1	196	175	90
2	80	0	0	3	1	2	0.2	1	26.5	80	3.5	0.26	1	187.5	136	27.5
3	80	0	0	3	1	2	0.17	1	96	124.5	29	0.46	1	188	136	102.5
4	80	0	0	3	1	2	0.24	1	69	80	23	0.39	1	200.5	134.5	52.5
5	80	0	0	3	1	2	0.24	1	9.5	9.5	66.5	0.2	1	126	101	109
6	80	0	0	3	1	2	0.15	1	32.5	58	13.5	0.39	1	149.5	140.5	118
7	80	0	0	3	1	2	0.22	1	23	47.5	23	0.2	1	137	74	74

Table 8: Target 1 Variogram model parameters calculated.

4.2.7 Model Definition

4.2.7.1 Grade Shell Definition

Two grade shells were constructed for both Target 1 and Target 4, the first at 0.5% TREO and the second at 1.0% TREO.

A boundary was selected around the data needed for each target separately. The topographic surface was used to trim the shells.

TREO% was selected for grade shell definition and the holes were composited to 1 metre with any residuals of 0.2 metres and less being distributed equally to each composite. A trend plane striking 335° with a vertical dip was utilised. This strike is close to the strike trend of REE soil anomalies and fluorite veins on the property.

Output volumes were set to enclose higher values of a range starting at 0.4% TREO in increments of 0.1 up to 1% TREO and thereafter in steps of 0.5% TREO up to 2.5% TREO.

For the modelling exercise, only 0.5% TREO and 1.0% TREO were used to domain the block model.

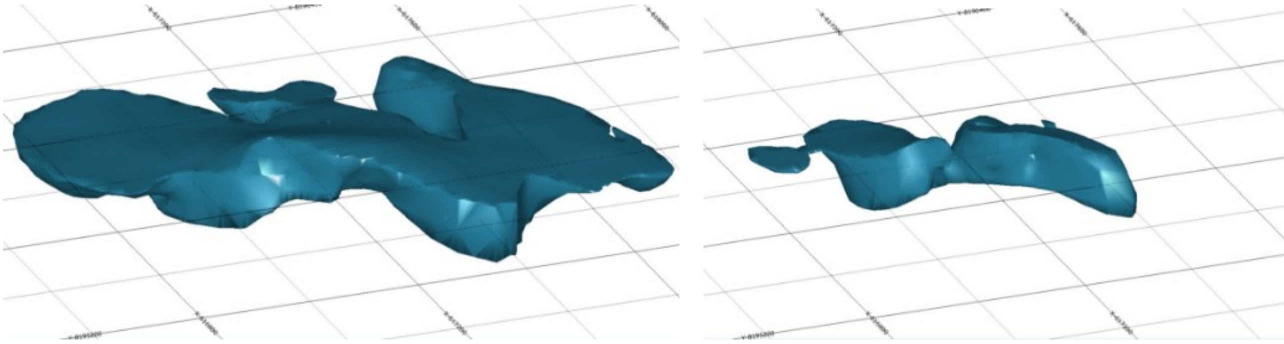


Figure 31: Target 1: Relative size of Grade Shells at 0.5% TREO and 1.0% TREO.

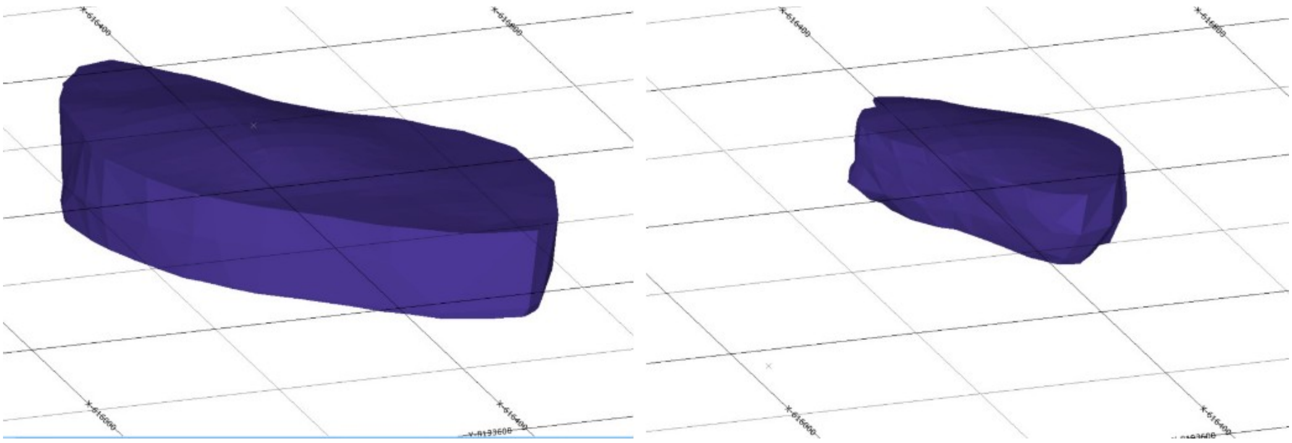


Figure 32: Target 4: Relative size of Grade Shells at 0.5% TREO and 1.0% TREO.

4.2.7.2 Block Model Definition

Two block models were created one for Target 1 and the other for Target 4 (Table 9 and Table 10).

The parent block sizes were set up as: 10 metres in X, 10 metres in Y and 5 metres in Z. No sub-blocking was done on these models.

Domain	Axis	Block Size Parent	Block Size Sub cell	Origin	Number of cells	Rotation Angles	Rotation Axis
All	X	10	n/a	616521	138	0	3
	Y	10	n/a	8195360	92	0	1
	Z	5	n/a	410	48	0	2

Table 9: Monte Muambe Target 1 Block model specifications. Final model base trimmed to topography minus 100m.

Domain	Axis	Block Size Parent	Block Size Sub cell6	Origin	Number of cells	Rotation Angles	Rotation Axis
All	X	10	n/a	616190	45	0	3
	Y	10	n/a	8194460	36	0	1
	Z	5	n/a	420	30	0	2

Table 10: Monte Muambe Target 4 Block model specifications.

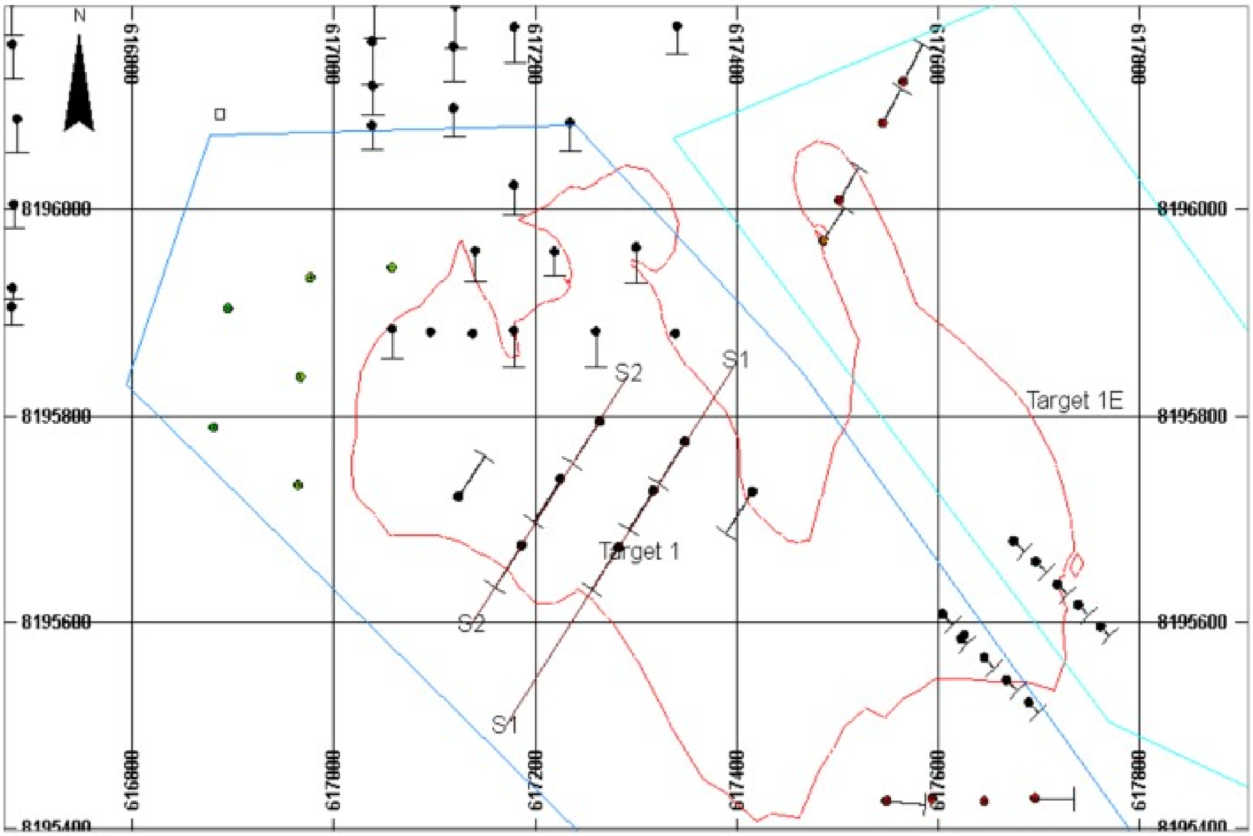


Figure 33: Target 1 and 1E plan and section line positions. Red outline is 0.5% Grade Shell extent.

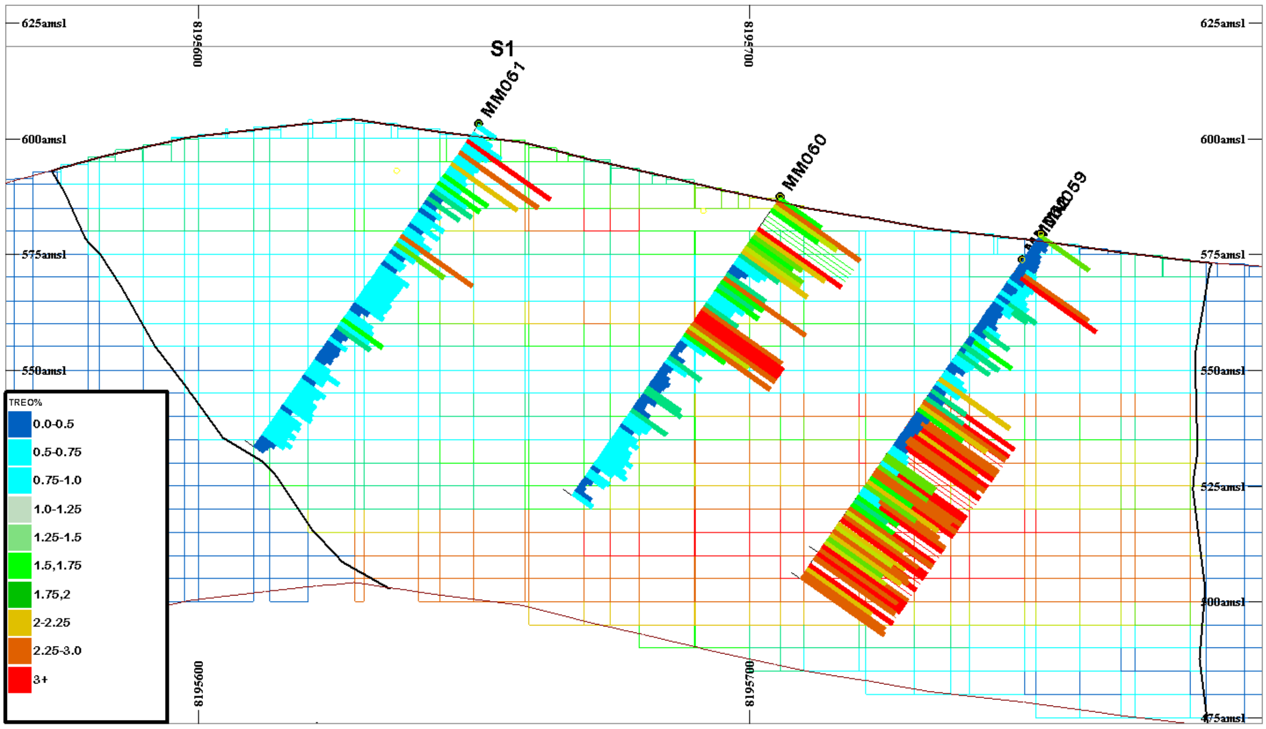


Figure 34: Target 1, Section 1. TREO% grades alongside boreholes. Grade shell 0.5% cut-off in black. Section SW to NE.

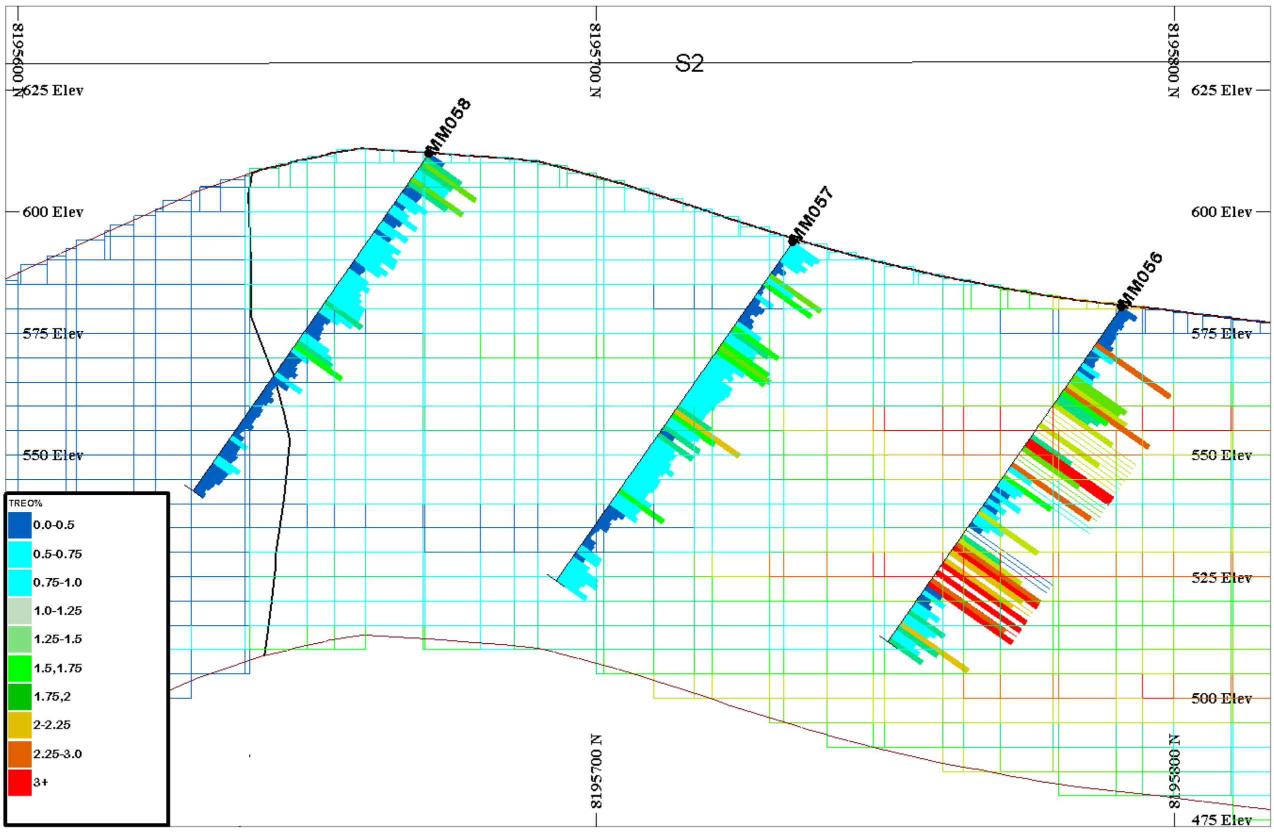


Figure 35: Target 1, Section 2: TREO% grades alongside boreholes. Grade shell 0.5% cut-off in black. Section SW to NE.

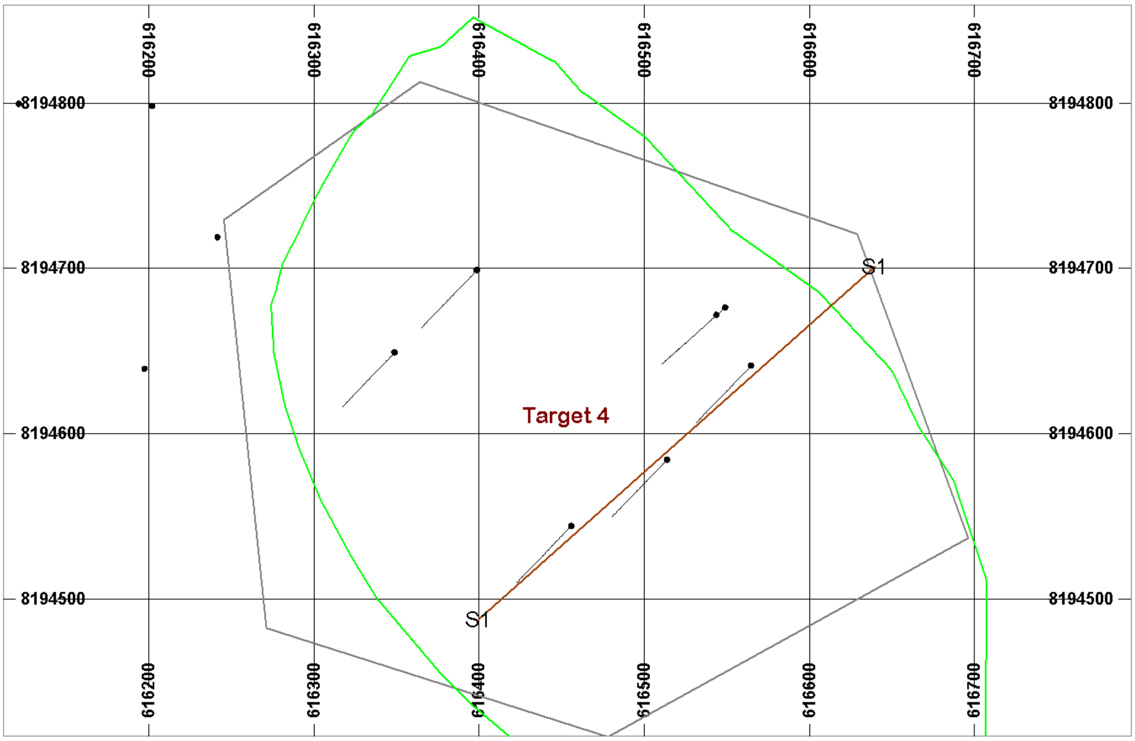


Figure 36: Target 4 location plan and section line position.

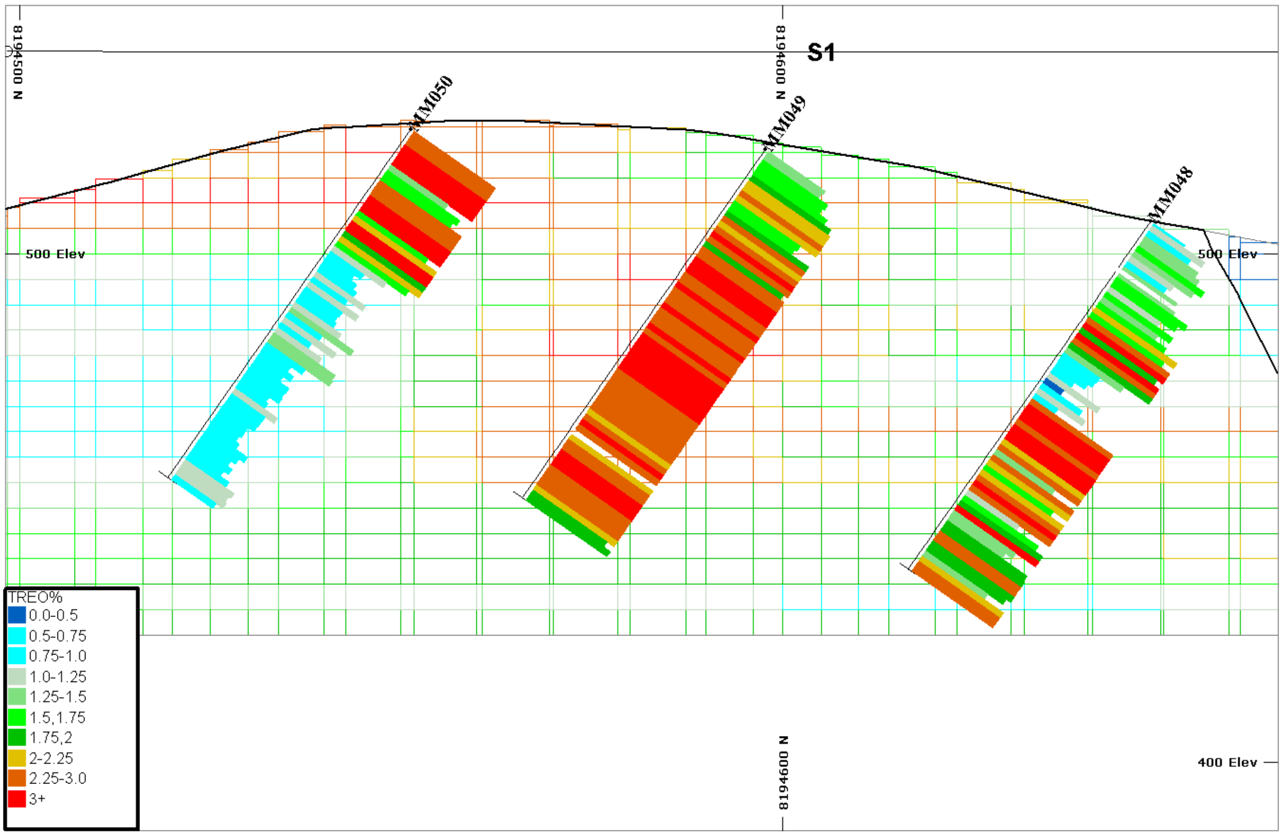


Figure 37: Target 4, Section 1. TREO% grades alongside boreholes. Grade shell 0.5% cut-off in black. Section SW to NE.

4.2.7.3 Geological Model Definition

To build a meaningful geological model, it was necessary to group lithologies by dominant lithological unit. The aim was to get the boreholes in a litho-stratigraphic sequence from the top down of: Soil, Fenite and then Carbonatite. This was to allow implicit modelling of surfaces between these grouped lithological units and then volumes thereafter. This was used to assign densities to a dominant rock group to apply to the block model (Table 7).

This method, though not strictly honouring geology, provides a reasonable method to allow for the low number of reliable density data available and the different geological coding over the periods drilled.

4.2.8 Grade Estimation Strategy

Monte Muambe grades were estimated for La_2O_3%, CeO_2%, Nd_20_3% and Y_2O_3%. These four oxide grades were utilised to calculate a TREO%. Other estimations included were: Nb_2O_5%, and Th and U in ppm.

The model field DOMAIN has two variables INSIDE and OUTSIDE the 0.5 cut-off grade shell. The INSIDE flag can be seen as the Target zone.

Block models were only created for Target 1 and Target 4.

The estimation and search parameters were set up to estimate per domain.

REF_NUM	DATA VALUE FIELD	MODEL VALUE FIELD	SEARCH VOLUME REFERENCE NO	INTERPOLATION METHOD	POWER	DOMAIN	ZONE
1	CeO2%	CeO2%	1	OK		INSIDE	1
2	La2O3%	La2O3%	1	OK		INSIDE	1
3	Nb2O5%	Nb2O5%	1	OK		INSIDE	1
4	Nd2O3%	Nd2O3%	1	OK		INSIDE	1
5	Y2O3%	Y2O3%	1	OK		INSIDE	1
6	Th_ppm	Th_ppm	1	OK		INSIDE	1
7	U_ppm	U_ppm	1	OK		INSIDE	1
10	CeO2%	CeO2%	2	OK		OUTSIDE	0
11	La2O3%	La2O3%	2	OK		OUTSIDE	0
12	Nb2O5%	Nb2O5%	2	OK		OUTSIDE	0
13	Nd2O3%	Nd2O3%	2	OK		OUTSIDE	0
14	Y2O3%	Y2O3%	2	OK		OUTSIDE	0
15	Th_ppm	Th_ppm	2	OK		OUTSIDE	0
16	U_ppm	U_ppm	2	OK		OUTSIDE	0
19	CeO2%	CeO2%ID	1	ID	3	INSIDE	1
20	La2O3%	La2O3%ID	1	ID	3	INSIDE	1
21	Nb2O5%	Nb2O5%ID	1	ID	3	INSIDE	1
22	Nd2O3%	Nd2O3%ID	1	ID	3	INSIDE	1
23	Y2O3%	Y2O3%ID	1	ID	3	INSIDE	1
24	Th_ppm	Th_ppmID	1	ID	3	INSIDE	1
25	U_ppm	U_ppmID	1	ID	3	INSIDE	1
26	CeO2%	CeO2%ID	2	ID	3	OUTSIDE	0
27	La2O3%	La2O3%ID	2	ID	3	OUTSIDE	0
28	Nb2O5%	Nb2O5%ID	2	ID	3	OUTSIDE	0
29	Nd2O3%	Nd2O3%ID	2	ID	3	OUTSIDE	0
30	Y2O3%	Y2O3%ID	2	ID	3	OUTSIDE	0
31	Th_ppm	Th_ppmID	2	ID	3	OUTSIDE	0
32	U_ppm	U_ppmID	2	ID	3	OUTSIDE	0

Table 11: Estimation parameters applied to each DOMAIN. Both interpolation methods applied to Target 1 but only inverse distance (ID) to target 4.

REFNUM	SMETHOD	SEARCH DISTANCE 1	SEARCH DISTANCE 2	SEARCH DISTANCE 3	ANGLE1 Z	ANGLE2 X	ANGLE3 Y	MINSAMP	MAXSAMP	SVOL*2	MINSAMP 2	MAXSAMP 2	SVOL*3	MINSAMP 3	MAXSAMP 3	MAX SAMPLES PER HOLE
1	ELLIPSE	170	130	10	80	0	0	4	20	2	4	20	3	1	20	3
2	ELLIPSE	170	130	20	80	0	0	4	20	2	4	20	5	1	20	3

Table 12: Search Volume Parameters.

Search volume directional parameters were derived from anisotropy investigations before variography modelling using variance contour maps for major, intermediate, and minor (ellipse) directions, also sometimes referred to as continuity of the variogram ranges. Directions are chosen for each based on the direction showing the lowest variance contours for each axis (major, intermediate, and minor). The search distances were based on average maximum distances.

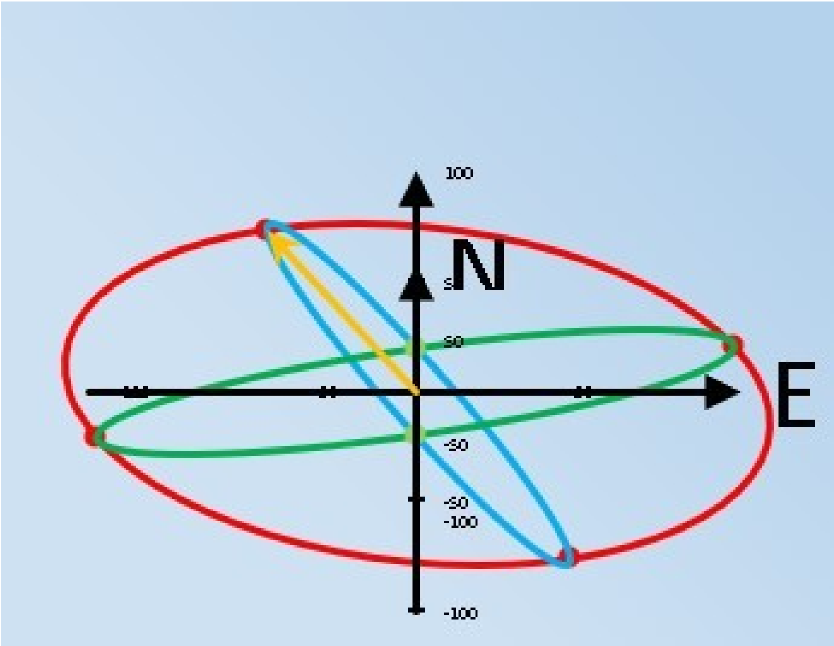


Figure 38: Search ellipse. Major axis strike 340 degrees. Ellipse has no dip or plunge.

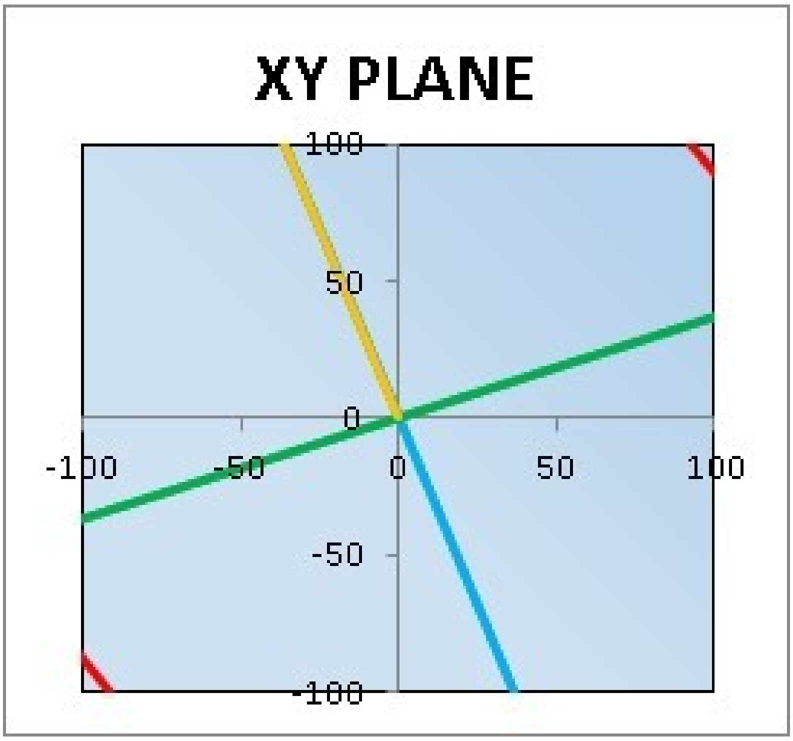


Figure 39: XY plane. Yellow line direction of maximum anisotropy.

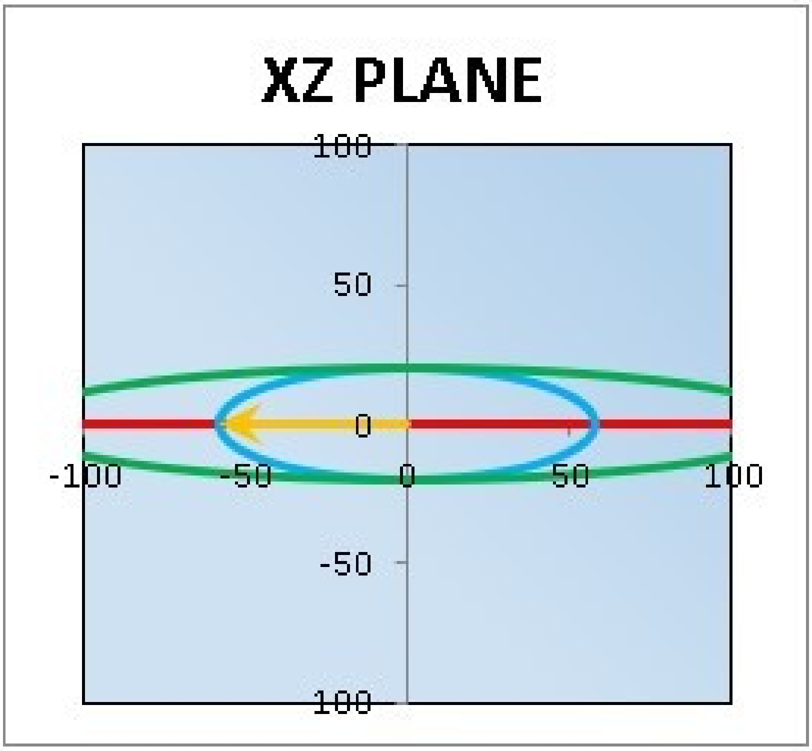


Figure 40: XZ plane of ellipse.

4.2.9 Model Validation

Swath plots were prepared over Target 1 (Figure 41) and Target 4 (Figure 42) to allow for the visualisations of model grades versus sample grades. The Target 1 Swath plot indicates the model is over-evaluating in areas where there is sparse data. Future infill-drilling will assist in correcting this.

Target 4 Swath plot indicates the model over-evaluating and under-evaluating in places, again this is as a result of limited data in this target area. Future infill-drilling will assist in correcting this.

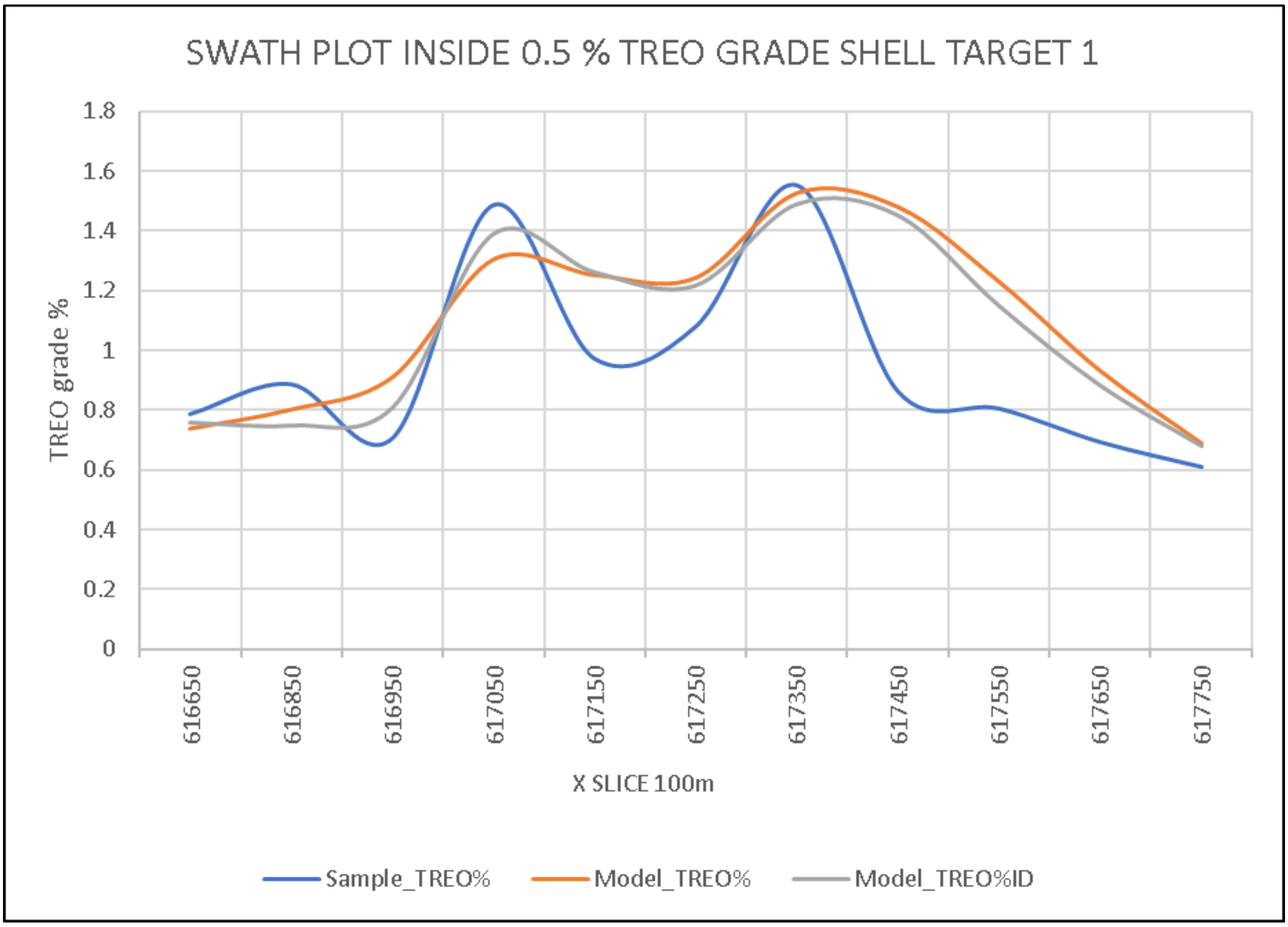


Figure 41: Swath Plot of Target 1. 100m slices along x axis comparing sample average grades in slice to model estimated grades of the same slice.

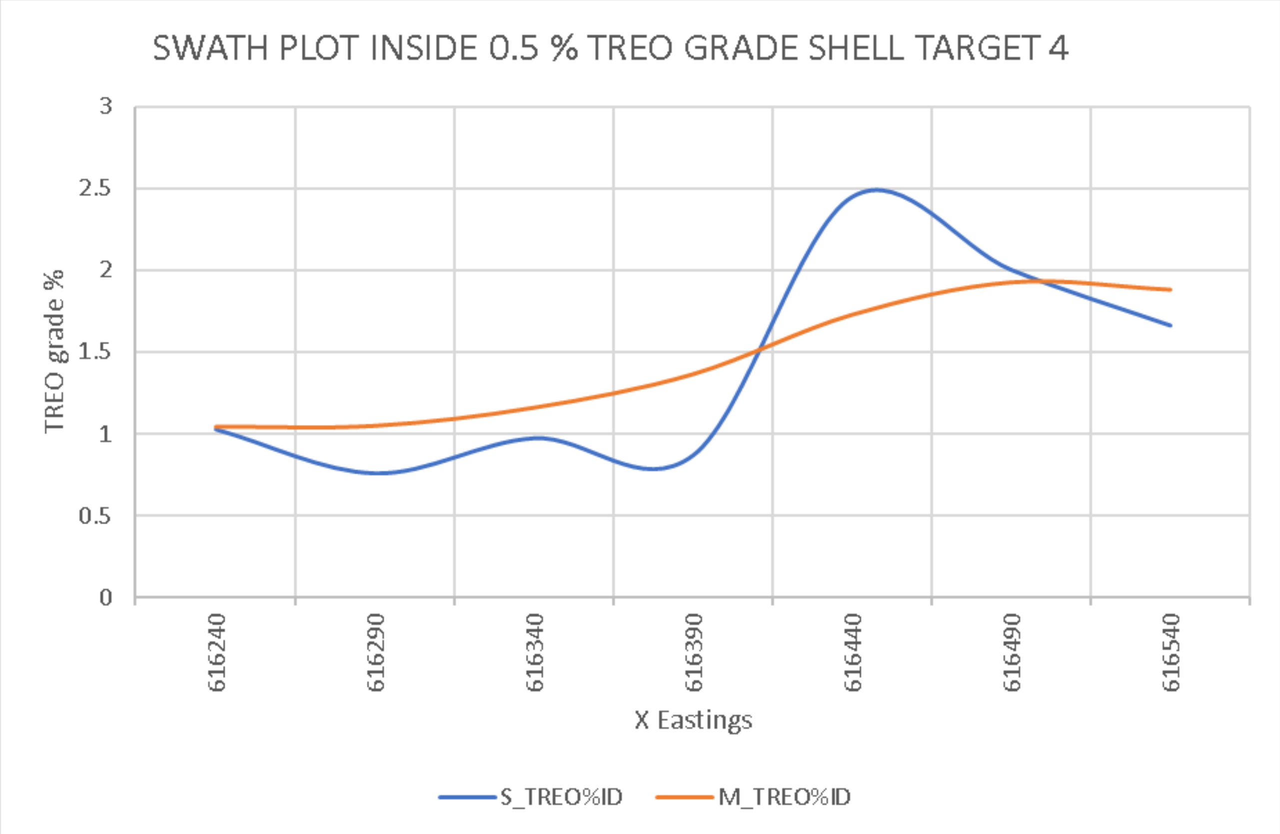


Figure 42: Swath Plot of Target 4. 50m slices along x axis comparing sample average grades in slice to model estimated grades of the same slice

The sparsity of data points (directly related to the amount of drilling and assay points available at the time of reporting) means the confidence in the evaluation is fairly low which is consistent with the highest reporting level for Monte Muambe REE being an Exploration Target. The low confidence in the estimation extends to the volume of the grade shell, as increased drilling density would possibly also reduce the volume.

4.2.10 Exploration Targets

Exploration Targets were generated for both Target 1 and Target 4 using the defined block models constrained by the ground surface, a distance to the nearest borehole, a depth below surface of 100m in the case of Target 1 and between 80m and 100m below surface in the case of Target 4, and TREO Grade Shells: firstly a 0.5% TREO cut-off grade shell and secondly a 1.0% TREO cut-off grade shell for both Target 1 (Figure 43) and Target 4 (Figure 44). Exploration targets have been reported for Targets 1 and 4 for both grade shells at a 1% TREO cut-off and a 2% TREO cut-off within the grade shells.

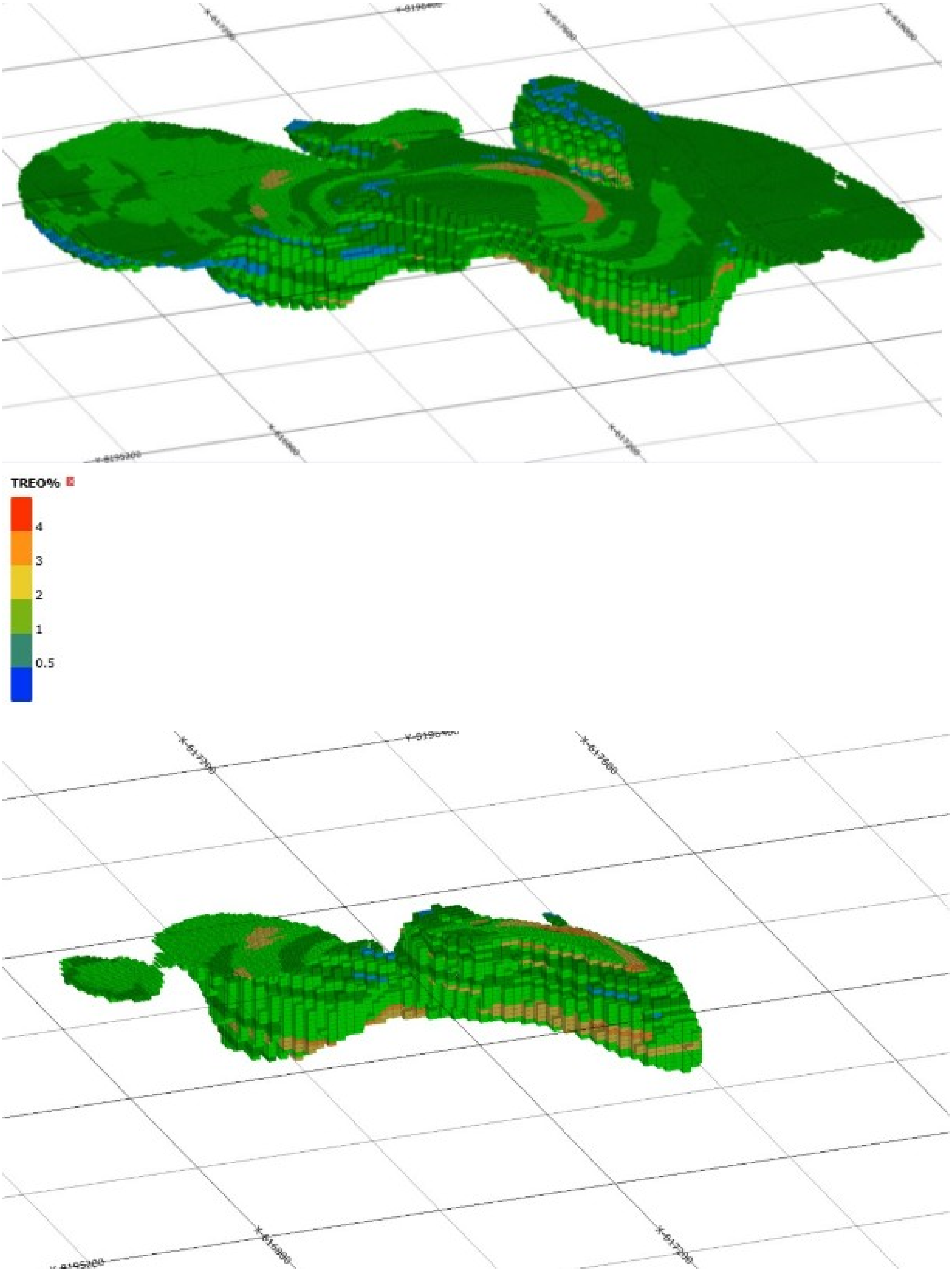


Figure 43: Target 1 Grade Model Clipped with 0.5% TREO Grade Shell (top) and 1.0% TREO Grade Shell (bottom).

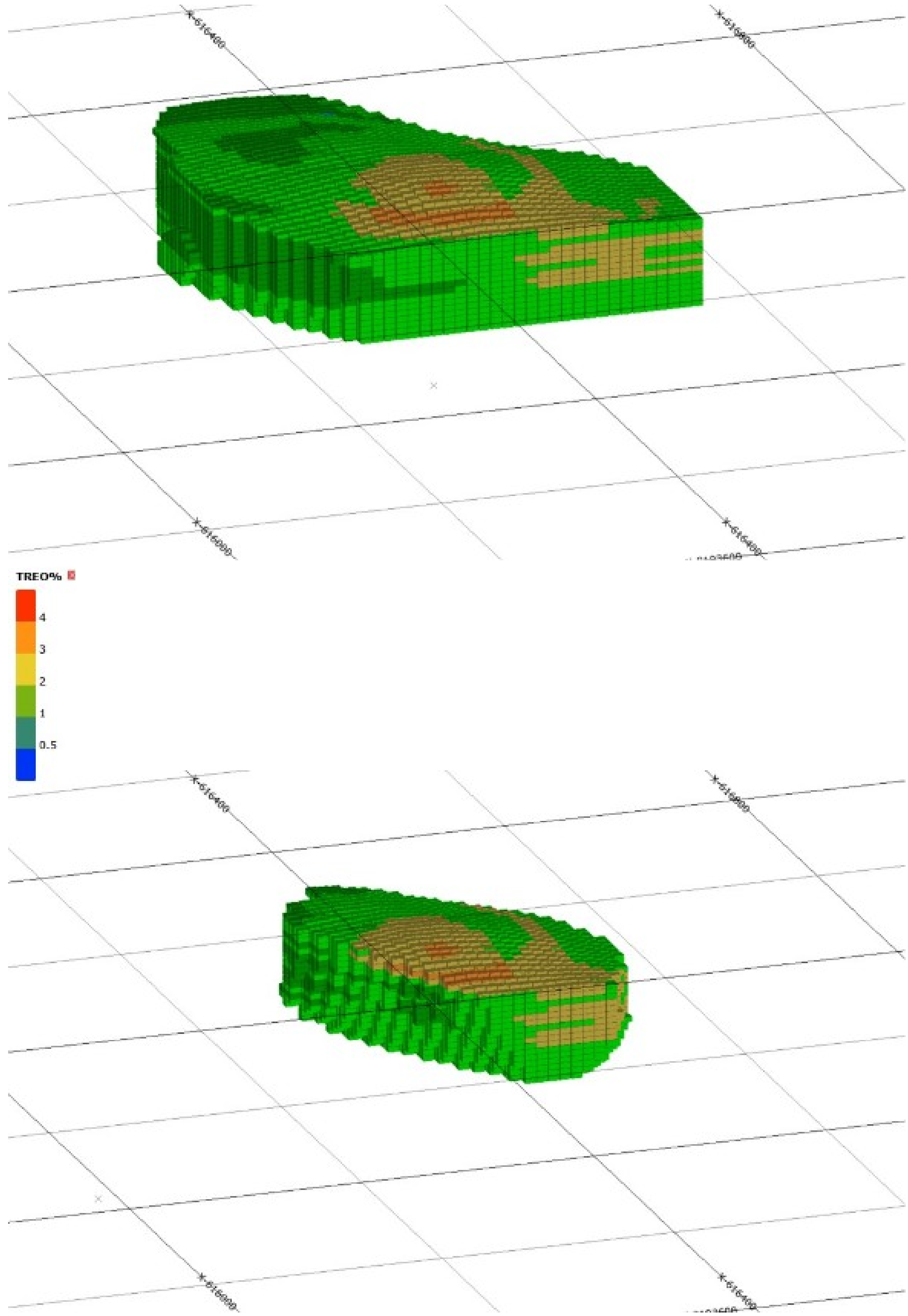


Figure 44: Target 4 Grade Model Clipped with 0.5% TREO Grade Shell (top) and 1.0% TREO Grade Shell (bottom). Straight line clipping in SE related to distance to boreholes.

%TREO Cut-off Applied Within Grade Shell		Tonnes (millions)		TREO%	
	Target	0.5% Grade Shell	1.0% Grade Shell	0.5% Grade Shell	1.0% Grade Shell
1.0%	Target 1	39.1	12.9	1.63	1.75
	Target 4	17.5	8.8	1.69	1.86
	Total	**56.7**	**21.6**	**1.65**	**1.79**
2.0%	Target 1	7.8	3.4	2.47	2.51
	Target 4	3.7	3.0	2.35	2.37
	Total	**11.5**	**6.5**	**2.43**	**2.45**

Table 13: Exploration Targets Across Targets 1 and 4 based on 0.5% and 1.0% grade shells and 1.0% and 2.0% TREO cut-off grades. Any apparent errors in the tables provided are related to numerical rounding of the original data sets.

Details of the target at different cut-off grades for the 0.5% and 1.0% TREO grade shells is contained in Section 15 Appendix C. Uranium and thorium grades are relatively low for the estimated shells being less than 36ppm and 400ppm for U and Th respectively.

The total REO Exploration Target across Targets 1 and 4 is between 56.7 and 6.5 million tonnes at respective TREO grades of between 1.65% and 2.45%. In terms of the estimation, a higher grade, grade shell and a higher cut-off grade will always results in a lower tonnage and higher grade exploration target – the uncertainty in the grade and hence the grade range reported, should not be seen as minimums and maximums to report across the entire tonnage range.

It is important to note that the above statement is an exploration target and that increased exploration will not necessarily translate into the reporting of mineral resources and ore reserves. Exploration and the data availability whilst encouraging and warranting of further exploration work, is at an early stage which is reflected in the category of reporting in this report, the reader's attention is once again drawn to Figure 24 from the 2012 JORC code.

5 Audits & Reviews

No audits or reviews have been performed to date, aside from a review of the sample practise conducted in this visit at the core yard. It's recommended that a regular external audit be implemented as part of standard operational procedure going forward.

No independent samples were collected as part of this reporting process.

6 Proposed Exploration & Recommendations

It's recommended that the highly successful soil sampling programme grid, be completed across the remaining area of the crater floor, and results obtained by the use of the in-house pXRF. The combined use of the airborne radiometric data and soil gridding data will likely show should there be any further possible targets similar to the other's identified by Altona.

The completion of assay of all already drilled and mineralised intersections from Altona's exploration programme by an accredited laboratory and incorporation into the drilling database.

Whilst QAQC protocols are in place with respect to sampling and assay, and tabulations of the QAQC data appear to have been completed, there does not appear to be formal reporting or a sign-off of the data sets provided for reporting purposes. It is recommended that all assay data batches are formally reported on in terms of QAQC and signed off.

The delineation of form and extent of identified targets by sufficient drilling which will at times include the drilling of boreholes in opposite and alternative azimuths to the drilling fences completed to date.

Boreholes completed after the 05 July 2022 database cut-off, comprise an additional 2,183.07m of RC drilling, these holes were drilled on Target 1, Target 4 and Target 9. Altona completed a total of 3,953.94m of RC drilling in their 2022 programme, the final results of this programme are awaited for compilation into the existing drilling database. On the basis of the soon to be updated database, Altona wishes to prepare a maiden mineral resource statement in the first quarter of 2023 where possible. Altona has also started mineralogical testing (by way of XRD and QEMSCAN) with a view to conducting metallurgical testing. It is intended that on successful completion of a mineral resource estimate, that those results and the mineralogical test-work, will be utilised as part of a Preliminary Economic Assessment which is hoped to be published early in the second quarter of 2023.

7 Conclusions

The Monte Muambe volcano in Mozambique is a well documented carbonatite intrusive which falls within the Chilwa Alkaline Province which is known to host anomalous REE mineralisation, including the well known Songwe Hill and Kangankunde REE deposits. Altona's exploration coupled with that from earlier workers has generated a number of REE targets within the floor area of the volcanic crater – these targets are the focus of Altona's exploration programme.

Data thus far gathered by Altona, has allowed for the reporting of an Exploration Target on Targets 1 and 4 of Altona's current Targets. Altona's use of pXRF has allowed for excellent delineation of surface soil anomalies coincident with subsurface mineralisation and the rapid appraisal of results from their drilling programme. The nature of pXRF analyses (incomplete analyses of the REE suite and accuracy and precision constraints) and the sparsity of drilling information available at the date of publication of this report, only allows for the approximation of an Exploration Target in respect of REO mineralisation.

The combined exploration target over Altona's Targets 1 and 4 was estimated using cut-off grades of 1% and 2% on models constrained by ground surface, depth, distance to data points and 0.5% and 1.0% TREO Grade Shells. The **Exploration Target** is between **56.7Mt and 6.5MT at TREO grades ranging from 1.65% to 2.45%** using the described constraints and methodology.

An additional 21 RC boreholes (for 2,183.07m) on Targets 1, 4 and 9, post the Exploration Target presented above, is hoped to allow for the definition of a maiden mineral resource by Altona in 2023.

Exploration results from the Monte Muambe deposit, justifies Altona's ongoing systematic exploration programme and Altona's well conceived exploration programme has evolved in terms of method and application to deliver solid exploration and grade data.

8 Qualifications of Competent Persons and Signature Page

8.1. J.P. Hattingh

This report on Altona's Monte Muambe Project, dated 23 January 2023, was prepared by J.P. Hattingh who has overall responsibility for the sign-off as the Competent Person. J.P. Hattingh is a Fellow of the Geological Society Of South Africa (GSSA) and is registered with the South African Council for Natural Scientific Professions (SACNASP). Both organisations are Recognised Overseas Professional Organisation as defined by CRIRSCO. J.P. Hattingh has acted as a Competent/Qualified Person for submissions in various jurisdictions.

J.P. Hattingh holds a BSc Honours degree in Geology from the University of Natal and has more than twenty years experience in the mining and exploration industries with sufficient experience relevant to the nature of the mineralisation being investigated to qualify as a Competent Person for the purposes of drafting this report. The date of sign-off and effective date is 23 January 2023.

J.P. Hattingh is a director of Rock and Stock Investments (Pty) Ltd. Rock and Stock Investments (Pty) Ltd is an independent geological consultancy which is providing services to Altona Rare Earths Plc and has extensive experience in preparing technical and competent persons' reports for exploration and mining companies. Neither Rock and Stock Investments (Pty) Ltd, nor J.P. Hattingh have any relation to Altona Rare Earths Plc's employees, representatives, and directors. Rock and Stock Investments (Pty) Ltd and J.P. Hattingh are completely unbiased and have no interests in any of Altona Rare Earth Plc's projects.

I, J.P. Hattingh consent to the release of the Report by the directors of Altona Rare Earth Earths Plc.

J.P. Hattingh
BSc (Hons.) Geology
SACNASP membership number 400039/02
FGSSA membership number 963441

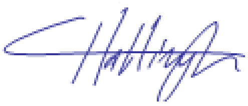
8.2. C. Hattingh

C. Hattingh is registered with the South African Council for Natural Scientific Professions (SACNASP) and is a Fellow of the Geological Society of South Africa (GSSA). Both SACNASP and the GSSA are Recognised Overseas Professional Organisation as defined by CRIRSCO. C. Hattingh was responsible for reviewing this document. C. Hattingh holds a BSc Honours degree in Geology from the University of Pretoria. C. Hattingh has acted as a Competent/Qualified Person for submissions in various jurisdictions. She has more than twenty years of experience in minerals exploration which is relevant to the subject of this report.

For purposes of this report C. Hattingh has provided invaluable review and commentary.

C. Hattingh is a director of Rock and Stock Investments (Pty) Ltd. Rock and Stock Investments (Pty) Ltd is an independent geological consultancy which is providing services to Altona Rare Earths Plc and has extensive experience in preparing technical and competent persons' reports for exploration and mining companies. Neither Rock and Stock Investments (Pty) Ltd, nor C. Hattingh have any relation to Altona Rare Earths Plc's employees, representatives, and directors. Rock and Stock Investments (Pty) Ltd and C. Hattingh are completely unbiased and have no interests in any of Altona Rare Earth Plc's projects.

I, C. Hattingh consent to the release of the Report by the directors of Altona Rare Earth Earths Plc.



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8.3. M.J. Phipps

M.J. Phipps is registered with the South African Council for Natural Scientific Professions (SACNASP) and is a Member of the Geological Society of South Africa (GSSA). M.J. Phipps holds a BSc Honours degree in Geology from the Rand Afrikaans University. He has more than 35 years of experience in mining and exploration industries, the last twenty-six mostly focussed on resource estimation on numerous commodities including precious and base metals, coal and industrial minerals.

M.J.Phipps has extensive experience in preparing technical and competent persons resource reports for mining companies. M.J. Phipps does not have any relation to Altona Rare Earths Plc's employees, representatives, and directors. M.J. Phipps is completely unbiased and has no interests in any of Altona Rare Earth Plc's projects.

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GSSA membership number 56617

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10 Glossary

Alluvium	A general term for all detrital deposits resulting from the operations of modern rivers, thus including the sediments laid down in riverbeds, flood plains, lakes, fans at the foot of mountain slopes, and estuaries.
Anticline	Arch-shaped fold in rocks, closing upwards, with the oldest rocks in the core.
Archaean	The pre-Proterozoic period which represents the oldest known Precambrian rocks.
Assay	The analysis of minerals and mine products to determine the concentrations of their components.
Azimuth	A horizontal angle measured clockwise from north.
Basalt	An extrusive rock composed primarily of calcic plagioclase and pyroxene, with or without olivine.
Basin	A depressed area with no surface outlet where sediment can accumulate.
Bedding planes	The well-defined divisional planes in sedimentary rocks.
Basement	Highly folded, metamorphic, or Plutonic rocks, often unconformably overlain by relatively undeformed sedimentary beds.
Bauxite	A sedimentary rock with a relatively high aluminium content. It is a mixture of hydrous aluminium oxides, aluminium hydroxides, clay minerals, and insoluble materials such as quartz, haematite, magnetite, siderite, and goethite.
Cadastral map	Records showing the extent, value, and ownership (or other basis for use or occupancy) of land
Carbonaceous	Describing a rock or sediment that is rich in carbon.
Carbonatite	Intrusive carbonate rocks which are associated with alkaline igneous intrusive activity.
Channel	A bed of a stream or river in which water is or was flowing.
Channel width	The distance across a channel or a stream. In mining this is the total thickness of all reef bands, including internal waste.
Coarse grained	A clastic sedimentary rock texture in which the individual rock particles have an average diameter greater than 2mm.
Colluvium	A general name for loose, unconsolidated sediments that have been deposited at the base of hillslopes by either rainwash, sheetwash, slow continuous downslope creep, or a variable combination of these processes.
Composited samples	Comprise of X Y Z coordinates, a true width and a cmgt value defining the product of the average gold content and the true width of the orebody (channel width, cm)
Conformably	An unbroken sequence of layers is found one above the other.
Conglomerate	Detrital sedimentary rock composed of rounded to sub-rounded fragments larger than 2mm in diameter, set in a fine-grained sandy matrix and commonly cemented by calcium-carbonate, iron oxide, silica, or clay.
Chlorite	A group of platy, greenish minerals, composed of Mg, Fe, Al, Si, O and H.
Copper	A chemical element with the symbol **Cu** and atomic number 29. It is a

	ductile metal with excellent electrical conductivity and is rather supple in its pure state and has a pinkish lustre. It finds use as a heat conductor, an electrical conductor, as a building material, and as a constituent of various metal alloys.
Craton	A core of stable continental crust within a continent and composed wholly of largely of Precambrian rocks with complex structures.
Cretaceous	A geological period that lasted from about 145 to 66 million years ago. It is the third and final period of the Mesozoic Era.
Data verification	The process of confirming that data has been generated with proper procedures, has been accurately transcribed from the original source, and is suitable for use.
Depletion	Decrease in quantity of ore in a deposit resulting from extraction or production.
Diamond drilling	A rotary drilling method also referred to as diamond cored drilling. The drilling of boreholes using diamond-studded bits, usually for core recovery in exploration.
Dilution	Waste-material that is unavoidably mined during ore extraction, and thereby forms part of the Reserve.
Diorite	A plutonic rock composed essentially of sodic plagioclase (usually andesine) and hornblende, biotite, or pyroxene. Small amounts of quartz, orthoclase and olivine may be present. Zircon, apatite, sphene, magnetite, ilmenite and sulphides occur as accessory minerals.
Dip	The angle at which a stratum or any planar feature is inclined from the horizontal. The dip is at a right angle to the strike.
Dolerite	A dark-coloured hypabyssal igneous rock, the medium-grained equivalent of gabbros, occurring mainly as dykes, sills and plugs.
Dolomite	The name of a sedimentary carbonate rock and a mineral, both composed of calcium magnesium carbonate $CaMg(CO_3)_2$.
Downthrow	The wall of a fault that has moved relatively down-ward.
Dyke	A tabular body of igneous rock that cuts across the structure of adjacent rocks or cuts massive rocks.
Exploration Target	A target which is conceptual in nature and based on exploration results.
Facies	A rock unit defined by its composition, its shape and internal geometry. Generally, a sub-unit of a more extensive rock unit with defining compositional, textural and other characteristics.
Fault	A fracture or fracture zone along which there has been displacement of the sides relative to one another parallel to the fracture.
Feasibility study	An analysis and evaluation of a proposed project to determine if it is technically sound, socially acceptable, and economically sustainable.
Fold	A bend in rock strata or in any planar feature. The feature (e.g. bedding, cleavage, or layering) is deflected sideways and the amount and direction of dip is altered.
Footwall	The wall rock on the lower side of an inclined ore body (the floor).
Formation	Used in stratigraphy to denote a group of rock strata that has a comparable lithology, facies or other similar properties.

Geochemical soil sampling	The process of collecting and analysing unconsolidated soil samples in order to locate geochemical anomalies in the underlying rock and to use these to find ore bodies.
Gold	A chemical element with the symbol Au and atomic number 79. It is a highly sought-after precious metal which, for many centuries, has been used as money, a store of value and in jewellery. A metal occurs as nuggets or grains in rocks, underground "veins" and in alluvial deposits. It is one of the coinage metals. Gold is dense, soft, shiny and the most malleable and ductile of the known metals. Pure gold has a bright yellow colour traditionally considered attractive.
Grade	A reference to elemental concentration in mining and exploration industries. (Units vary but include %, grams per metric tonne or g/t).
Granite	A plutonic rock consisting essentially of alkali feldspar and quartz. Sodic plagioclase, usually oligoclase is commonly present in small amounts of muscovite, biotite, hornblende, or rarely pyroxene may be mafic constituents.
Granitoid	A term applied to the texture of holocrystalline igneous or metasomatic rocks such as granites in which the constituents are mostly anhedral or xenomorphic and of uniform size.
Granophyre	A quartz porphyry or fine-grained porphyritic granite characterized by a groundmass with micrographic (granophyric) texture.
Hangingwall	The overlying side of an ore body, fault or mine working.
Igneous	One of the three main groups of rock types (igneous, metamorphic, and sedimentary) and formed by solidification from a molten or partially molten state.
Indicated Mineral Resource	That part of a Mineral Resource for which tonnage, densities, shape, physical characteristics, grade and mineral content can be estimated with a reasonable level of confidence. It is based on information from exploration, sampling and testing of material gathered from locations such as outcrops, trenches, pits, workings and drill holes. The locations are too widely or inappropriately spaced to confirm geological or grade continuity but are spaced closely enough for continuity to be assumed.
Inferred Mineral Resource	That part of a Mineral Resource for which volume or tonnage, grade and mineral content can be estimated with only a low level of confidence. It is inferred from geological evidence and sampling and assumed but not verified geologically or through analysis of grade continuity. It is based on information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes that may be limited in scope or of uncertain quality and reliability.
Intrusion	A body of igneous rock that invades another older rock. The invading rock may be a plastic solid or magma that pushes its way into the older rock.
Intrusive	A body of rock, usually igneous, that is emplaced within pre-existing rock.

	Intrusions are classified according to their size, their shape, and their geometrical relationship to the enclosing rocks.
Inverse Distance Squared	A method for interpolating spatial sample data and determining values between data points. A value interpolated for any spatial point is determined by applying a weighting factor based on distance between the spatial point and surrounding sample data.
Isotopes	Elements having an identical number of protons in their nuclei but differing in the number of their neutrons. Isotopes have the same atomic number, differing atomic weights, and almost but not quite the same chemical properties.
Kaapvaal Craton	The ancient, proto-continental crystalline basement of northern South Africa.
Kaolinite	A clay mineral produced by the chemical weathering of aluminium silicate minerals like feldspar.
Karoo Supergroup	The rocks that cover approximately two-thirds of the land surface of South Africa and form a thick pile of predominantly sedimentary strata that were deposited over the period 312 to 182 million years ago (late Carboniferous to Middle Jurassic periods).
Kriging	A weighted, moving-average interpolation method, in which the set of weights assigned to samples minimize the estimation variance, which is computed as a function of the variogram model and locations of the samples relative to each other, and to the point or block being estimated.
Lava	Fluid rock such as that which issues from a volcano or a fissure in the earth's surface.
Leucocratic	A term applied to light-coloured rocks, especially igneous rocks, containing between 0 and 30% of dark minerals.
Lithology	The physical character of a rock, generally as determined megascopically or with the aid of a low-power magnifier.
Magma	Molten material found in the Earth's interior, which forms igneous rocks, when it solidifies within the Earth's crust (intrusive rocks) or on the Earth's surface (extrusive rocks). It contains water vapour and volatile gases as well as rock-forming material.
Magnetic survey	A survey along a profile or grid using a magnetometer to determine the strength of the geomagnetic field at particular points.
Measured Mineral Resource	That part of a Mineral Resource for which tonnage, densities, shape, physical characteristics, grade and mineral content can be estimated with a high level of confidence. It is based on detailed and reliable information from exploration, sampling and testing of material from locations such as outcrops, trenches, pits, workings and drill holes. The locations are spaced closely enough to confirm geological and grade continuity.
Mesozoic	The geological era that extended from the end of the Palaeozoic era, about 248 million years ago, to the beginning of the Cenozoic era, about 65 million years ago. It comprises the Triassic, Jurassic, and Cretaceous

	periods.
Metalliferous	Containing metal.
Metamorphic	An aggregate of minerals formed by the recrystallisation of pre-existing rocks in response to a change of pressure, temperature, or volatile content.
Metasediments	Partly metamorphosed sedimentary rocks.
Mica	A mineral group, consisting of phyllosilicates with sheet like structures. Mostly monoclinic, characterized by very perfect basal cleavage.
Micaceous	Consisting of, containing or pertaining to mica.
Mineral	An inorganic substance which occurs naturally and typically has a crystalline structure whose characteristics of hardness, lustre, colour, cleavage, fracture, and relative density can be used to identify it.
Mineral Resource	A concentration or occurrence of material of economic interest in or on the earth's crust in such form, quality and quantity that there are reasonable and realistic prospects for eventual economic extraction. The location, quantity, grade, continuity and other geological characteristics of a Mineral Resource are known, or estimated from specific geological evidence, sampling and knowledge interpreted from an appropriately constrained and portrayed geological model. Mineral Resources are subdivided, and must be so reported, in order of increasing confidence in respect of geoscientific evidence, into Inferred, Indicated or Measured categories.
Ore	The naturally occurring material from which a mineral or minerals of economic value can be extracted profitably, or to satisfy social or political objectives. The term is generally, but not always, used to refer to metalliferous material, and is often modified by the names of the valuable constituent, e.g. iron-ore, gold-ore, ore mineral etc.
Ounce (oz)	Measure of weight equal to 31.10348 grams.
Outcrop	The exposure of bedrock or strata projecting through the overlying cover of detritus and soil.
Potable	Drinkable.
Proximal	Applied to a sediment or sedimentary environment close to the source or origin of the deposit.
Pycnometer	An instrument to measure the specific gravity of material.
QEMSCAN®	An integrated automated mineralogy and petrography solution providing quantitative analysis of minerals, rocks and man-made materials.
Quartzite	A granulose metamorphic rock consisting essentially of quartz.
Quality Assurance & Quality Control	Quality assurance are all of those planned or systematic actions necessary to provide adequate confidence in the data collection and estimation process. Quality control is the use of statistical tools to ensure that the systems are in statistical control.
Radiometric survey	A survey comprising the most precise method of dating rocks, in which the relative percentage of 'parent' and 'daughter' isotopes of a given radioactive element are estimated.
Raise	A vertical or inclined opening in a mine driven upward from a level to

	connect with the level above, or to explore the ground for a limited distance above one level. After two levels are connected, the connection may be a winze or a raise, depending upon which level is taken as the point of reference.
Rare Earth Elements	Elements of the lanthanide group on the periodic table (atomic number 57-71) and yttrium and scandium.
Reverse Circulation Drilling	A rotary-percussion method of drilling where the drilling rock chips are flushed up the inside of the drill rod string. Also referred to as RC drilling.
Reef	A provincial term for a metalliferous mineral deposit.
Rock and Stock	Rock and Stock Investments (Pty) Ltd. A geoscience consultancy.
Rotary Airblast Drilling	A rotary percussion method of drilling where the drilling rock chips are flushed up the outside of the drill rod string. Also referred to as RAB drilling.
Shale	Fine-grained, fissile, sedimentary rock composed of clay-sized and silt-sized particles of unspecified mineral composition.
Silicate	A compound containing an anion in which one or more central silicon atoms are surrounded by electro negative ligands. The term is used to denote types of rock that consist predominantly of silicate minerals.
Sill	An intrusive body of igneous rock of approximately uniform thickness and relatively thin compared with its lateral extent, which has been emplaced parallel to the bedding or schistosity of the intruded rocks.
Shuttle Radar Topography Mission	Refers to a NASA satellite mission responsible for the acquisition of high-resolution topographic data.
Strike	The direction or bearing of a horizontal line in the plan of an inclined stratum, joint, fault, cleavage plane, or other structural plane. It is perpendicular to the direction of the dip.
Stoping	The act of excavating rock, either above or below a level, in a series of steps. In its broadest sense, rock stoping means the act of excavating rock by means of a series of horizontal, vertical, or inclined workings in veins or large, irregular bodies of ore, or by rooms in flat deposits. It covers the breaking and removal of the rock from underground openings, except those driven for exploration and development. The removal of ore from drifts, crosscuts, shafts, winzes and raises, which are excavated to explore and develop an ore deposit, is incidental to the main purpose for which stopes are driven and is not a stoping operation. Exploratory and development openings are driven to prepare a mine for extraction of the ore by stoping.
Subgroup	An occurrence of strata in contact with the under-surface of an inclusive stratigraphic unit that succeeds an important unconformity on which overstep is conspicuous.
Sulphide	Refers to several types of chemical compounds containing sulphur in its lowest oxidation number of -2.

Supergroup	A term that may be used for formal identification of an assemblage of related and adjacent groups or related and adjacent formations and groups.
Surface rights	Access rights and ownership to the land surface.
Syenite	A coarse-grained intrusive igneous rock with a general composition similar to that of granite, but deficient in quartz, which, if present at all, occurs in relatively small concentrations (< 5%).
Syncline	A fold in rocks in which the strata dip inward from both sides towards the axis.
Synform	A basin or trough-shaped fold whose younger strata may be above or below older ones.
Tailing	The materials left over after the process of separating the valuable fraction of ore from the uneconomic fraction (gangue)
XRD	XRD is a nondestructive analytical technique that reveals detailed structural and chemical information about the crystallography of materials. XRD looks at a crystalline material's characteristic X-ray scattering, or diffraction pattern, which reveals the material's atomic structure. Qualitative analysis is possible by comparing the XRD pattern of an unknown material with a library of known patterns.
XRF	A non-destructive analytical technique used to determine the elemental composition of materials. XRF analyzers determine the chemistry of a sample by measuring the fluorescent (or secondary) X-ray emitted from a sample when it is excited by a primary X-ray source.

11 Abbreviations

Au	Gold
CGS	South African Council for Geoscience
Co	Cobalt
CPR	Competent Person's Report
CRIRSCO	Committee for Mineral Reserves International Reporting Standards
DTM	Digital Terrain Model
E	East
EMP	Environmental Management Programme
EMPR	Environmental Management Programme Report
ENE	East-northeast
GIS	Geographical Information Systems
HDSA	Historically Disadvantaged South Africans
HREE	Heavy rare earth elements
IEC	International Electrotechnical Commission
ISO	International Standards Association
LREE	Light rare earth elements
max	Maximum
min	Minimum
NE	Northeast
PC	Personal computer
pXRF	Portable XRF
QAQC	Quality Assurance and Quality Control
QEMSCAN®	Quantitative evaluation of minerals by scanning electron microscopy. A

	registered trademark owned by FEI Company.
QGIS	Open-source geographic information system software that supports most geospatial, vector and raster file types and database formats.
RAB	Rotary Airblast drilling.
RC	Reverse Circulation drilling.
REE	Rare earth elements or the lanthanide group and SC and Y.
REO	Rare Earth Element Oxides
ROPO	Recognised Overseas Professional Organisation
S	South
SAMREC	South African Code for reporting of Mineral Resources and Mineral Reserves
SACNASP	South African Council for Natural Scientific Professions
SANAS	South African National Accreditation System
SG	Specific gravity
SRTM	Shuttle Radar Topography Mission
SW	Southwest
TREE	Total Rare Earth Elements
TREO	Total Rare Earth Element Oxides
USGS	United States Geological Survey
UTM	Universal Transverse Mercator (a plane coordinate grid system based on Transverse Mercator)
WGS84	World Geodetic System 1984
WSW	West-southwest
XRD	X-ray diffraction
XRF	X-ray fluorescence
ZAR	South African Rand

12 Units

%	Percentage
’	Minutes
“	Seconds
°	Degrees
°C	Degrees Celsius
AMSL	Above mean sea level
cm	Centimetre
cmgt	centimetre gram per tonne
g	Grams
g/t	Grams per tonne
Ga	Billion years
Ha	Hectare
kg	Kilogram (equivalent to 1000 grams)
km	Kilometre
l	Litre
M	Million
m	Metre
Ma	Million years
mg/t	Metre gram per tonne
mm	Millimetre
Mm^2	Million square metres
Moz	Million ounces
Mt	Million tonnes
Oz	Troy ounce (~31.10348 grams)
ppb	Parts per billion

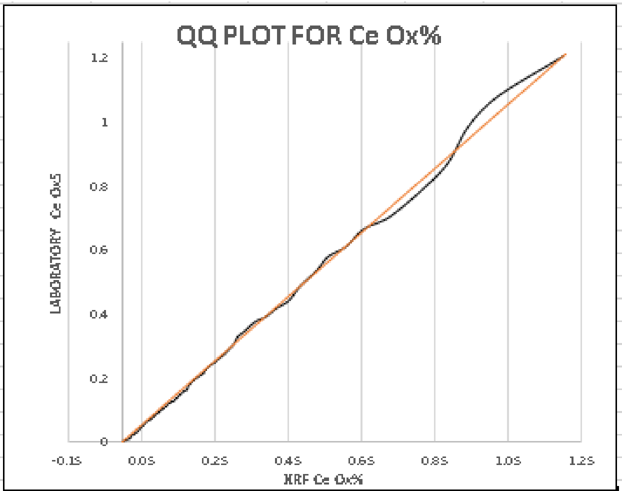
ppm	Parts per million
t	Tonne (a metric tonne equivalent to 1000 kg)
ZARk	A thousand South African Rand
ZARm	A million South African Rand

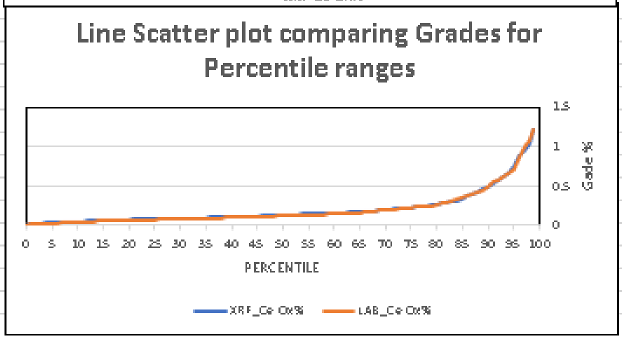
13 Appendix A

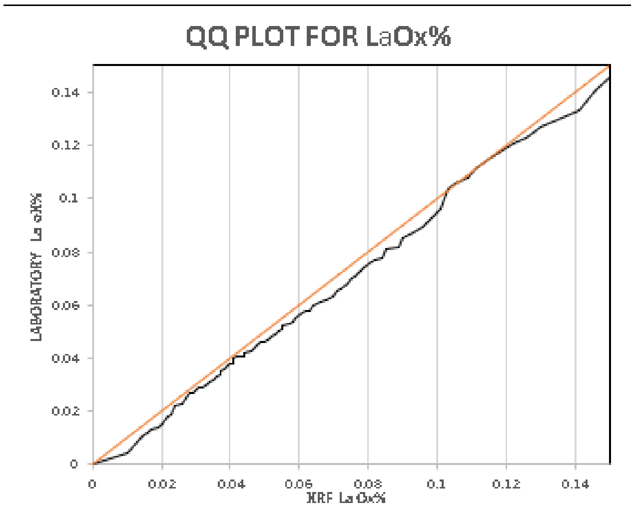
13.1. June 2022 Field Observations

Waypoint	Latitude	Longitude	y_WGS84 UTM36S	x_WGS84 UTM36S	Date	Photo Time	Observation
Field Camp	-16.302812	34.097401	8197253.57	617240.27	2022/06/20		
159	-16.307985	34.095928	8196682.10	617079.81	2022/06/22	11:19	MURC127 inclined borehole with plastic casing.
160	-16.308721	34.094237	8196601.65	616898.71	2022/06/22	11:25	MM035 and MM040. Two -90 boreholes with plastic casings.
161	-16.315232	34.096154	8195880.20	617099.65	2022/06/22	11:45	MM001. -90 borehole drilled between two previous Globe boreholes.
161	-16.315232	34.096154	8195880.20	617099.65	2022/06/22	11:47	View looking from MM001 west towards carbonatite hill with large cavities.
					2022/06/22	11:53	Extremely weathered fenite on surface. Ferruginous with mustard yellow patches.
162	-16.315224	34.098404	8195879.79	617340.04	2022/06/22	11:59	MURC164 Globe borehole -90. Plastic casing but no number or cement marker.
163	-16.316186	34.098489	8195773.31	617348.55	2022/06/22	12:01	MM059 inclined borehole drilled towards S with plastic casing no markings or cement base. Target 1.
164	-16.316606	34.099112	8195726.49	617414.86	2022/06/22	12:07	MM062 inclined borehole with plastic casing but no marker or cement base.
165	-16.317006	34.099754	8195681.87	617483.21	2022/06/22	12:10	Typical elephant skin weathering of carbonatite with ankeritic/sideritic dissolution vugs.
166	-16.317681	34.100924	8195606.51	617607.81	2022/06/22	12:16	MRA14 inclined borehole with plastic casing but no number or cement marker.
167	-16.317885	34.101104	8195583.84	617626.92	2022/06/22	12:18	MRA15 and MRA32 inclined boreholes with casings but no numbers or cement marker blocks.
168	-16.317097	34.097875	8195672.88	617282.41	2022/06/22	12:31	MM061 inclined borehole SW into hill on Target 1. Plastic casing no marker or number.
169	-16.31708	34.09698	8195675.27	617186.80	2022/06/22	12:35	MM058 inclined borehole. Plastic casing no marker or number.
170	-16.316664	34.096391	8195721.64	617124.12	2022/06/22	12:42	MM055 borehole drilled on NE azimuth. Plastic casing no marker or number.
171	-16.316541	34.096275	8195735.31	617111.80	2022/06/22		Target 1 northern end of hill and soil anomaly.
172	-16.316524	34.097358	8195736.57	617227.52	2022/06/22		MM057 inclined borehole. Plastic casing no marker or number.
173	-16.320555	34.089563	8195295.07	616392.33	2022/06/22		MM030 inclined towards SE. Drilled on Target 5. Shallow soils ~5m. Casing with marking in cement block.
174	-16.321306	34.090079	8195211.69	616447.01	2022/06/22		MM031. Casing with marking in cement block.
175	-16.322825	34.091281	8195042.95	616574.53	2022/06/22		MM033 inclined borehole with casing with marking in cement block.
176	-16.326122	34.091089	8194678.29	616552.07	2022/06/22	13:42	MM021 discovery borehole on Target 4. Casing with marking in cement block.
177	-16.326492	34.0912	8194637.29	616563.71	2022/06/22		MM048 inclined borehole. Plastic casing no marker or number.
178	-16.328823	34.094536	8194377.49	616918.71	2022/06/22		MRA07 inclined borehole on Target 7. Plastic casing no marker or number.
179	-16.328631	34.094749	8194398.61	616941.58	2022/06/22		MRA08 Plastic casing no marker or number.
180	-16.331499	34.092365	8194082.68	616685.20	2022/06/22	14:03	Photo looking from road towards cliff on Target 9 carbonatite.
181	-16.333412	34.092244	8193871.10	616671.13	2022/06/22	14:08	Photo from Target 9 looking past Target 4 towards barren hill just right with crater rim in background.
182	-16.333604	34.092414	8193849.76	616689.18	2022/06/22		MRA01 replaced by borehole MM075. Remained in fenite for 85m.
183	-16.325152	34.07778	8194793.17	615130.80	2022/06/23		Trench excavated by Beograd. Trench azimuth ~055.
184	-16.325416	34.078264	8194763.69	615182.35	2022/06/23	13:34	MURC031 -90 borehole with casing and marked base.
185	-16.325779	34.078381	8194723.47	615194.64	2022/06/23	13:41	MURC047 -90 borehole with casing and marked base.
186	-16.325939	34.07865	8194705.61	615223.28	2022/06/23	13:47	1981? Trench excavated NW-SE through fluorite outcrop.
187	-16.325974	34.078804	8194701.65	615239.72	2022/06/23	13:52	Fluorite from excavated hole and trench mostly yellow-green.
188	-16.32509	34.078339	8194799.72	615190.56	2022/06/23	14:03	MURC021 -90 borehole with casing and marked base.
189	-16.324368	34.078137	8194879.71	615169.40	2022/06/23	14:07	MURC028 -90 borehole with casing and marked base.
190	-16.323578	34.077934	8194967.22	615148.17	2022/06/23	14:11	MURC028 -90 borehole with casing and marked base.
191	-16.327211	34.080529	8194563.82	615423.28	2022/06/23	14:32	Solution cavity cave in carbonatite locally called “Tontola”.
192	-16.316919	34.092557	8195695.62	616714.35	2022/06/23	15:11	Views of NW end of Target 1 from road.

14 Appendix B







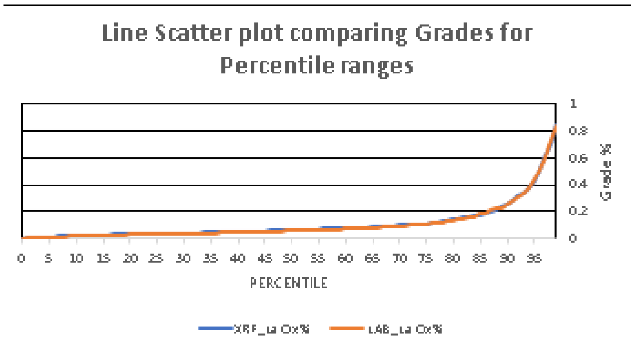


Table 14: CeO_2 % and La_2O_3 % QQ and Linear Scatter Plots.

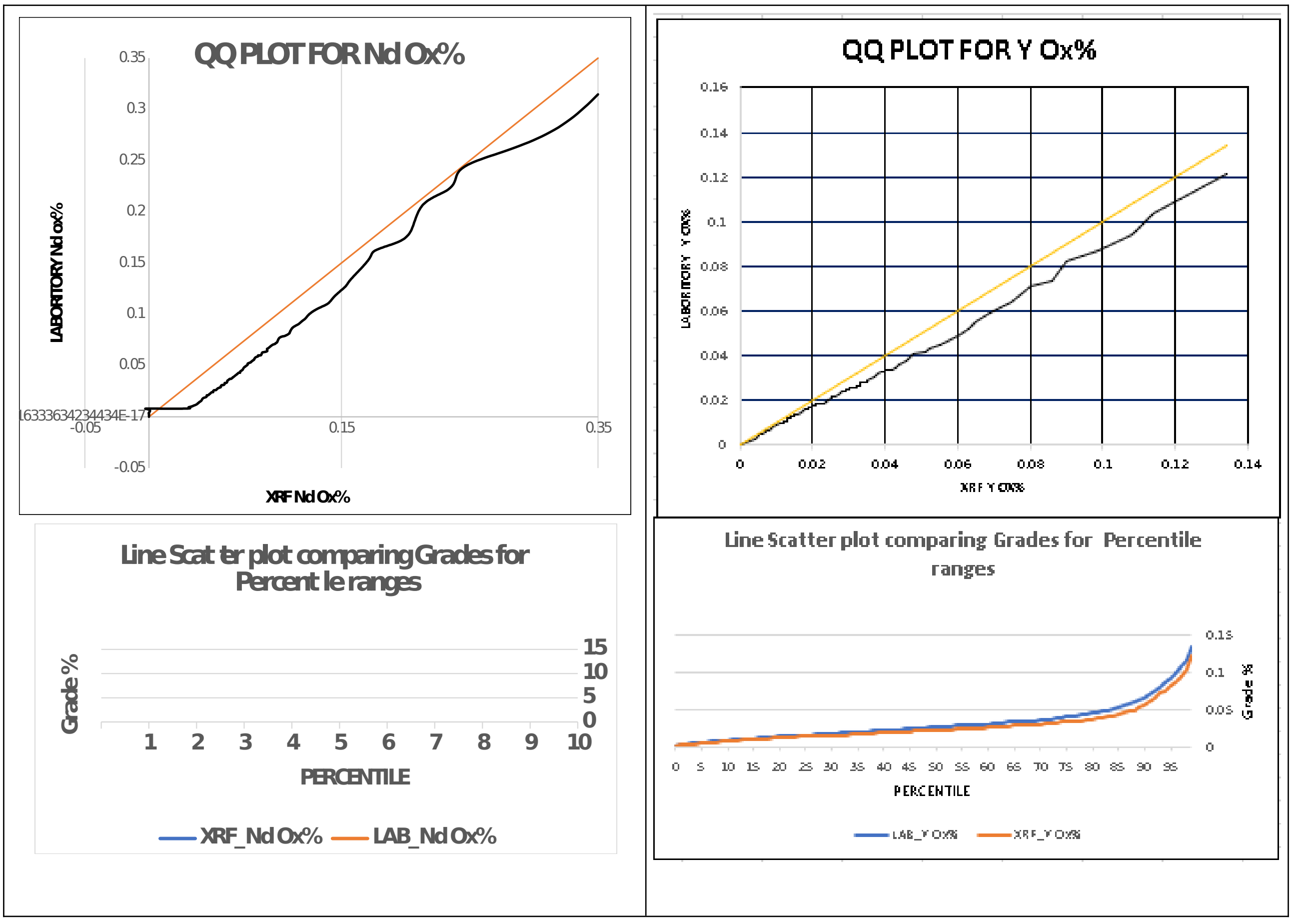


Table 15: Nd_2O_3 % and Y_2O_3 % QQ and Linear Scatter Plots.

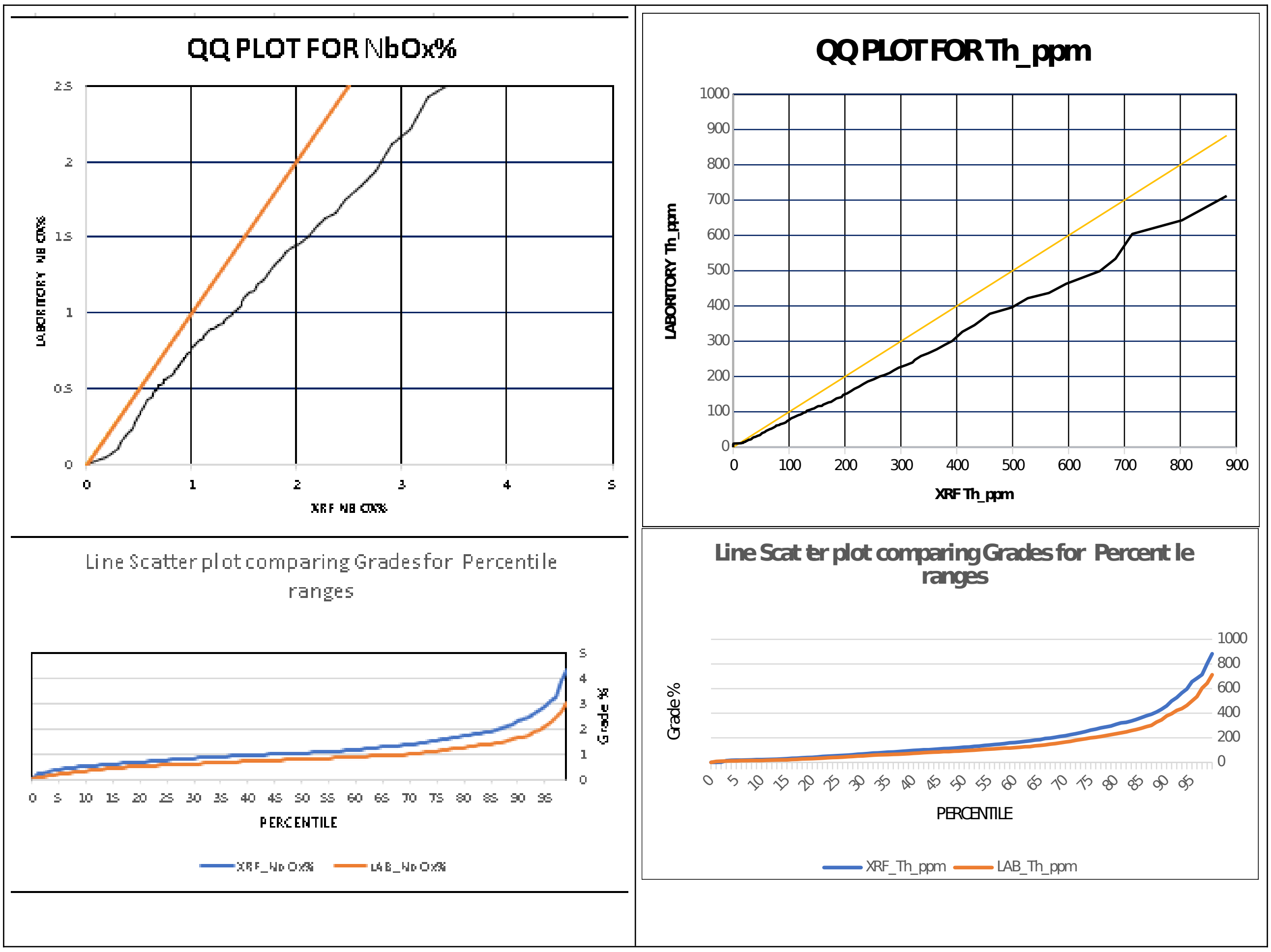
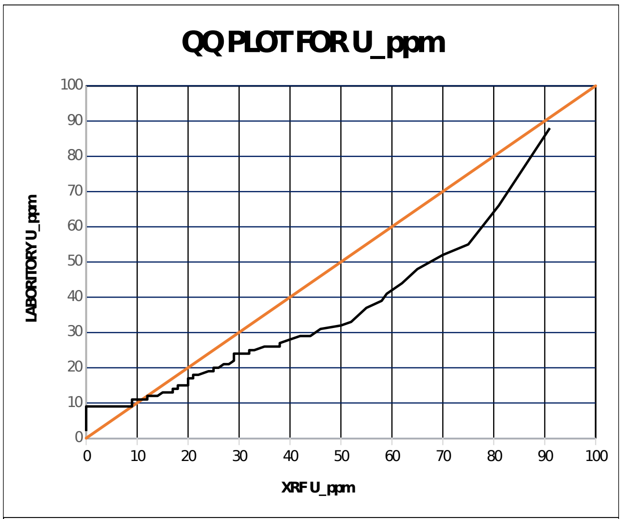


Table 16: Nb_2O_5 % and Th ppm QQ and Linear Scatter Plots.



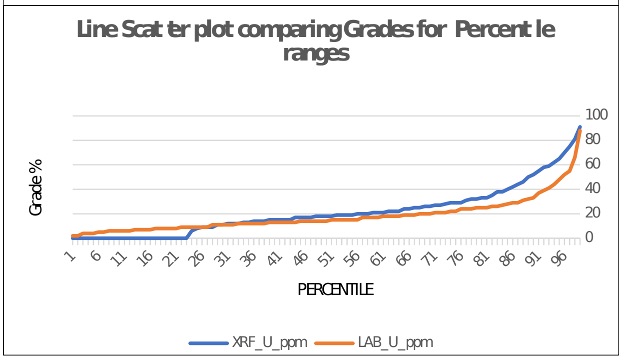


Table 17: U ppm QQ and Linear Scatter Plots.

15 Appendix C

15.1. Details of Exploration Target – Targets 1 and 4

TARGET 1 ORDINARY KRIGED INSIDE 0.5% TREO% GRADE SHELL														
DOMAIN	CATEGORY	DENSITY	TONNES	Mt	VOLUME	TREO%		CeO2%	La2O3%	Nd2O3%	Y2O3%	Nb2O5%	Th_ppm	U_ppm
INSIDE	1.0+	2.47	39,136,847	39.1	15,833,405	1.63		0.76	0.65	0.17	0.04	0.08	198.02	24.09
INSIDE	1.5+	2.50	20,232,302	20.2	8,094,327	1.98		0.93	0.82	0.20	0.04	0.06	205.52	27.38
INSIDE	2.0+	2.50	7,798,568	7.8	3,118,772	2.47		1.17	1.03	0.22	0.04	0.04	194.90	31.31
INSIDE	2.5+	2.50	3,179,675	3.2	1,269,802	2.86		1.36	1.22	0.24	0.04	0.03	185.43	35.72

TARGET 1 ORDINARY KRIGED INSIDE 1.0% TREO% GRADE SHELL														
DOMAIN	CATEGORY	DENSITY	TONNES	Mt	VOLUME	TREO%		CeO2%	La2O3%	Nd2O3%	Y2O3%	Nb2O5%	Th_ppm	U_ppm
INSIDE	1.0+	2.48	12,889,243	12.9	5,204,694	1.75		0.83	0.70	0.18	0.04	0.06	188.22	23.04
INSIDE	1.5+	2.50	7,833,448	7.8	3,137,772	2.06		0.99	0.83	0.20	0.04	0.05	191.54	25.84
INSIDE	2.0+	2.49	3,421,772	3.4	1,371,668	2.51		1.23	1.01	0.23	0.04	0.04	194.85	30.43
INSIDE	2.5+	2.50	1,578,832	1.6	632,321	2.87		1.38	1.19	0.25	0.04	0.03	193.46	33.12

TARGET 4 INVERSE DISTANCE POWER 3 0.5 TREO% GRADE SHELL														
DOMAIN	CATEGORY	DENSITY	TONNES	Mt	VOLUME	TREO%ID		CeO2%ID	La2O3%ID	Nd2O3%ID	Y2O3%ID	Nb2O5%ID	Th_ppmID	U_ppmID
INSIDE	1.0+	2.47	17,542,841	17.5	7,111,837	1.69		0.78	0.60	0.20	0.11	0.08	420.35	27.44
INSIDE	1.5+	2.50	10,802,386	10.8	4,326,790	1.98		0.92	0.72	0.22	0.11	0.05	380.42	28.74
INSIDE	2.0+	2.49	3,736,632	3.7	1,501,749	2.35		1.12	0.90	0.23	0.11	0.04	359.77	32.04
INSIDE	2.5+	2.48	1,987,012	2.0	801,718	2.57		1.23	0.98	0.24	0.12	0.04	376.01	32.35

TARGET 4 INVERSE DISTANCE POWER 3 1.0% TREO% GRADE SHELL														
DOMAIN	CATEGORY	DENSITY	TONNES	Mt	VOLUME	TREO%ID		CeO2%ID	La2O3%ID	Nd2O3%ID	Y2O3%ID	Nb2O5%ID	Th_ppmID	U_ppmID
INSIDE	1.0+	2.50	8,757,178	8.8	3,509,749	1.86		0.87	0.67	0.21	0.11	0.07	399.71	26.44
INSIDE	1.5+	2.50	6,560,675	6.6	2,626,649	2.06		0.97	0.76	0.22	0.11	0.05	381.73	27.56
INSIDE	2.0+	2.49	3,034,236	3.0	1,218,663	2.37		1.13	0.90	0.23	0.11	0.04	372.35	29.80
INSIDE	2.5+	2.47	849,673	0.8	343,826	2.80		1.35	1.08	0.25	0.11	0.03	373.17	33.01

16 Appendix D

16.1. Borehole Database as at 05 July 2022

BHID	XCOLLAR	YCOLLAR	ZCOLLAR	EOH	DATATYPE	DIP	BEARING	LOGS PRESENT	COLLAR	SURVEY	ASSAYS	LITHOLOG	MODEL2022
MM001	617096.99	8195880.88	553.94	149.55	DD2021	-90	84	ALL LOGS	1	24	216	206	T1MODEL
MM002	616977.39	8195933.19	534.51	70.00	RC2021	-89	189	ALL LOGS	1	12	24	34	T1MODEL
MM003	616967.79	8195836.77	536.02	70.00	RC2021	-89	132	ALL LOGS	1	12	23	36	T1MODEL
MM004	616964.88	8195732.12	529.30	70.00	RC2021	-90	102	ALL LOGS	1	12	24	41	T1MODEL
MM005	617486.47	8195969.07	558.70	70.00	RC2021	-59	35	ALL LOGS	1	11	24	15	T1MODEL
MM006	617502.71	8196008.36	558.33	70.00	RC2021	-59	31	ALL LOGS	1	12	24	21	T1MODEL
MM007	617525.57	8196047.85	558.68	149.34	DD2021	-57	22	NO ASSAYS	1	19		225	T1MODEL
MM008	617545.85	8196083.59	560.27	70.00	RC2021	-59	29	ALL LOGS	1	12	24	10	T1MODEL
MM009	617566.48	8196123.86	560.17	70.00	RC2021	-55	27	ALL LOGS	1	1	23	28	T1MODEL
MM011	617549.46	8195425.27	535.50	70.00	RC2021	-57	94	ALL LOGS	1	9	24	18	T1MODEL
MM012	617594.56	8195428.12	531.10	70.00	RC2021	-90	0	ALL LOGS	1	1	24	31	T1MODEL
MM013	617646.47	8195425.63	535.60	70.00	RC2021	-90	0	ALL LOGS	1	1	24	29	T1MODEL
MM014	617696.70	8195428.24	539.00	70.00	RC2021	-57	90	ALL LOGS	1	10	24	24	T1MODEL
MM015	617376.05	8194987.97	512.90	70.00	RC2021	-56	87	ALL LOGS	1	11	24	17	
MM016	617425.09	8194987.70	513.70	70.00	RC2021	-55	85	ALL LOGS	1	11	24	19	
MM017	617475.08	8194986.22	513.60	70.00	RC2021	-56	91	ALL LOGS	1	11	24	18	
MM019	617573.05	8194985.02	518.00	70.00	RC2021	-90	0	ALL LOGS	1	1	23	12	
MM021	616549.38	8194676.20	497.00	96.00	RC2021	-59	229	ALL LOGS	1	11	33	31	T4MODEL
MM025	616107.11	8195702.19	537.70	70.00	RC2021	-55	145	ALL LOGS	1	1	23	17	
MM026	616160.10	8195621.47	533.50	42.00	RC2021	-55	145	ALL LOGS	1	1	13	14	
MM027	616219.27	8195537.52	527.10	70.00	RC2021	-58	145	ALL LOGS	1	12	24	21	
MM028	616277.92	8195456.55	522.70	70.00	RC2021	-55	145	ALL LOGS	1	1	23	17	
MM029	616335.39	8195375.92	518.30	70.00	RC2021	-58	151	ALL LOGS	1	4	25	8	
MM030	616390.40	8195292.98	515.80	70.00	RC2021	-57	135	ALL LOGS	1	3	24	22	T4MODEL

MM031	616448.81	8195208.47	507.70	70.00	RC2021	-55	145	ALL LOGS	1	1	24	18	T4MODEL
MM032	616508.01	8195129.16	504.20	70.00	RC2021	-57	149	ALL LOGS	1	5	24	15	T4MODEL
MM033	616574.62	8195038.96	508.30	70.00	RC2021	-55	145	ALL LOGS	1	1	23	12	T4MODEL
MM034	616624.88	8194968.77	512.10	70.00	RC2021	-55	145	ALL LOGS	1	1	23	19	T4MODEL
MM035	616900.42	8196601.75	539.28	38.91	DD2021	-55	145	COLLAR AND LITHOLOG	1			63	
MM036	616957.51	8196529.75	537.22	70.00	RC2021	-90	0	ALL LOGS	1	1	24	17	
MM037	616841.94	8196655.39	547.82	70.00	RC2021	-88	286	ALL LOGS	1	11	24	21	
MM038	616838.85	8196557.82	546.80	70.00	RC2021	-90	0	ALL LOGS	1	1	24	21	
MM039	615146.57	8194967.46	578.48	100.00	DD2021	-90	351	ALL LOGS	1	12	167	195	
MM040	616899.02	8196599.43	541.20	152.47	DD2021	-90	66	ALL LOGS	1	19	252	216	
MM041	617524.48	8194974.00	516.30	70.00	RC2021	-55	90	ALL LOGS	1	1	24	28	
MM042	617621.04	8195010.21	526.90	70.00	RC2021	-55	90	ALL LOGS	1	1	24	23	
MM043	617058.65	8195943.60	533.70	70.00	RC2021	-89	41	ALL LOGS	1	11	24	35	T1MODEL
MM044	616895.39	8195903.65	521.50	70.00	RC2021	-90	0	ALL LOGS	1	1	25	29	T1MODEL
MM045	616881.09	8195788.00	514.40	70.00	RC2021	-90	0	ALL LOGS	1	1	24	34	T1MODEL
MM046	616748.90	8196598.80	540.00	70.00	RC2021	-90	0	ALL LOGS	1	1	24	28	
MM047	617072.50	8196592.64	538.50	70.00	RC2021	-87	79	ALL LOGS	1	12	24	18	
MM048	616565.00	8194641.00	510.00	84.00	RC2022	-55	224	NO LITHOLOG	1	1	83		T4MODEL
MM049	616514.00	8194584.00	530.00	84.00	RC2022	-55	224	ALL LOGS	1	1	83	34	T4MODEL
MM050	616456.00	8194544.00	532.00	84.00	RC2022	-55	224	ALL LOGS	1	1	84	25	T4MODEL
MM051	616399.00	8194699.00	524.00	85.00	RC2022	-55	224	ALL LOGS	1	1	85	51	T4MODEL
MM052	616349.00	8194649.00	519.00	80.00	RC2022	-55	224	ALL LOGS	1	1	78	40	T4MODEL
MM055	617124.00	8195720.00	611.00	84.00	RC2022	-55	33	NO LITHOLOG	1	1	82		T1MODEL
MM056	617264.00	8195794.00	519.00	84.00	RC2022	-55	213	ALL LOGS	1	1	84	28	T1MODEL
MM057	617226.00	8195738.00	596.00	85.00	RC2022	-55	213	ALL LOGS	1	1	85	36	T1MODEL
MM058	617187.00	8195674.00	619.00	84.77	RC2022	-55	213	NO LITHOLOG	1	1	85		T1MODEL
MM059	617349.00	8195774.00	579.00	84.00	RC2022	-55	213	ALL LOGS	1	1	84	21	T1MODEL
MM060	617318.00	8195727.00	583.00	78.70	RC2022	-55	213	NO LITHOLOG	1	1	79		T1MODEL
MM061	617283.00	8195672.00	600.00	85.00	RC2022	-55	213	NO LITHOLOG	1	1	85		T1MODEL
MM062	617416.00	8195726.00	577.00	84.00	RC2022	-55	213	NO LITHOLOG	1	1	84		T1MODEL

MM075	616690.00	8193848.00	519.00	0.00	RC2022	-55	90	NO LITHOLOG	1	1	85		
MRA07	616919.00	8194375.00	500.00	24.75	RAB2022	-55	45	ALL LOGS	1	1	25	25	T4MODEL
MRA08	616941.00	8194397.00	501.00	24.75	RAB2022	-55	45	ALL LOGS	1	1	25	25	T4MODEL
MRA09	616962.00	8194419.00	500.00	18.75	RAB2022	-55	45	ALL LOGS	1	1	19	19	T4MODEL
MRA10	616985.00	8194438.00	508.00	24.75	RAB2022	-55	45	ALL LOGS	1	1	25	25	T4MODEL
MRA11	617000.00	8194460.00	512.00	24.92	RAB2022	-55	45	ALL LOGS	1	1	25	25	T4MODEL
MRA12	617026.00	8194483.00	511.00	24.00	RAB2022	-55	45	ALL LOGS	1	1	24	24	T4MODEL
MRA13	617050.00	8194504.00	508.00	24.00	RAB2022	-55	45	ALL LOGS	1	1	24	24	T4MODEL
MRA14	617605.00	8195607.00	547.00	25.00	RAB2022	-55	135	ALL LOGS	1	1	25	25	T1MODEL
MRA15	617626.00	8195588.00	540.00	7.00	RAB2022	-55	135	ALL LOGS	1	1	5	5	T1MODEL
MRA16	617646.00	8195565.00	550.00	25.00	RAB2022	-55	135	ALL LOGS	1	1	24	24	T1MODEL
MRA17	617669.00	8195543.00	549.00	25.00	RAB2022	-55	135	ALL LOGS	1	1	24	24	T1MODEL
MRA18	617690.00	8195522.00	548.00	25.00	RAB2022	-55	135	ALL LOGS	1	1	23	23	T1MODEL
MRA19	617676.00	8195678.00	549.00	25.00	RAB2022	-55	135	ALL LOGS	1	1	25	25	T1MODEL
MRA20	617698.00	8195658.00	547.00	25.00	RAB2022	-55	135	ALL LOGS	1	1	25	25	T1MODEL
MRA21	617719.00	8195636.00	548.00	24.37	RAB2022	-55	135	ALL LOGS	1	1	24	24	T1MODEL
MRA22	617740.00	8195616.00	544.00	24.40	RAB2022	-55	135	ALL LOGS	1	1	23	23	T1MODEL
MRA23	617761.00	8195596.00	542.00	24.40	RAB2022	-55	135	ALL LOGS	1	1	23	23	T1MODEL
MRA24	616418.00	8193870.00	509.00	24.75	RAB2022	-55	90	ALL LOGS	1	1	24	24	
MRA25	616426.00	8193842.00	512.00	12.82	RAB2022	-55	90	ALL LOGS	1	1	9	9	
MRA26	616425.00	8193811.00	513.00	24.86	RAB2022	-55	90	ALL LOGS	1	1	25	25	
MRA27	616423.00	8193782.00	516.00	24.46	RAB2022	-55	90	ALL LOGS	1	1	24	24	
MRA28	616426.00	8193749.00	507.00	24.48	RAB2022	-55	90	ALL LOGS	1	1	24	24	
MRA29	616420.00	8193724.00	517.00	24.00	RAB2022	-55	90	ALL LOGS	1	1	23	23	
MRA30	616425.00	8193691.00	519.00	24.62	RAB2022	-55	90	ALL LOGS	1	1	25	25	
MRA31	616419.00	8193663.00	518.00	24.75	RAB2022	-55	90	ALL LOGS	1	1	25	25	
MRA32	617624.00	8195583.00	553.00	13.00	RAB2022	-55	135	ALL LOGS	1	1	13	13	T1MODEL
MURC001	615252.55	8194698.84	531.75	103.00	LEGACY	-55	270	ALL LOGS	1	1	103	103	
MURC002	615217.33	8194658.48	527.94	85.00	LEGACY	-55	90	NO ASSAYS	1	1		82	
MURC003	615237.48	8194817.97	552.54	60.00	LEGACY	-55	270	NO ASSAYS	1	1		60	

MURC004	615202.04	8194781.96	556.27	60.00	LEGACY	-55	90	NO ASSAYS	1	1		60	
MURC005	615177.30	8194820.15	562.48	70.00	LEGACY	-55	270	NO ASSAYS	1	1		70	
MURC006	615182.00	8194859.00	570.00	74.00	LEGACY	-55	270	NO ASSAYS	1	1		74	
MURC007	615207.63	8194859.74	559.69	22.00	LEGACY	-90	0	NO ASSAYS	1	1		22	
MURC008	615197.53	8194860.65	561.40	25.00	LEGACY	-90	0	NO ASSAYS	1	1		25	
MURC009	615207.58	8194842.48	558.97	43.00	LEGACY	-90	0	NO ASSAYS	1	1		43	
MURC010	615208.50	8194820.88	557.97	64.00	LEGACY	-90	0	NO ASSAYS	1	1		64	
MURC011	615208.66	8194800.74	556.48	64.00	LEGACY	-90	0	ALL LOGS	1	1	58	64	
MURC012	615198.66	8194850.59	560.50	120.00	LEGACY	-55	180	NO ASSAYS	1	1		120	
MURC013	615162.83	8194779.04	559.02	100.00	LEGACY	-55	360	ALL LOGS	1	1	99	100	
MURC014	615215.03	8194898.95	561.98	46.00	LEGACY	-55	270	NO ASSAYS	1	1		46	
MURC015	615210.33	8194879.53	561.56	90.00	LEGACY	-90	0	NO ASSAYS	1	1		90	
MURC016	615190.77	8194879.39	564.08	95.00	LEGACY	-90	0	NO ASSAYS	1	1		95	
MURC017	615219.70	8194838.62	556.64	85.00	LEGACY	-90	0	NO ASSAYS	1	1		85	
MURC018	615196.43	8194838.66	560.43	90.00	LEGACY	-90	0	ALL LOGS	1	1	18	90	
MURC019	615179.69	8194838.93	562.36	100.00	LEGACY	-90	0	ALL LOGS	1	1	15	100	
MURC020	615230.96	8194799.74	553.79	86.00	LEGACY	-90	0	ALL LOGS	1	1	36	86	
MURC021	615189.92	8194799.50	559.68	100.00	LEGACY	-90	0	ALL LOGS	1	1	41	100	
MURC022	615168.73	8194799.76	562.48	101.00	LEGACY	-90	0	ALL LOGS	1	1	28	101	
MURC023	615156.77	8194837.82	565.21	61.00	LEGACY	-90	0	NO ASSAYS	1	1		61	
MURC024	615139.74	8194837.94	565.29	18.00	LEGACY	-90	0	NO ASSAYS	1	1		18	
MURC025	615117.82	8194840.08	561.28	88.00	LEGACY	-90	0	NO ASSAYS	1	1		88	
MURC026	615129.44	8194878.60	566.85	103.00	LEGACY	-90	0	NO ASSAYS	1	1		103	
MURC027	615148.24	8194879.22	567.99	100.00	LEGACY	-90	0	NO ASSAYS	1	1		100	
MURC028	615168.90	8194879.12	566.69	55.00	LEGACY	-90	0	NO ASSAYS	1	1		55	
MURC029	615239.05	8194760.58	548.04	95.00	LEGACY	-90	0	ALL LOGS	1	1	17	95	
MURC030	615223.12	8194759.13	549.21	84.00	LEGACY	-90	0	ALL LOGS	1	1	27	84	
MURC031	615179.75	8194759.48	556.95	100.00	LEGACY	-90	0	NO ASSAYS	1	1		100	
MURC032	615198.64	8194758.46	553.71	95.00	LEGACY	-90	0	NO ASSAYS	1	1		95	

MURC033	615158.56	8194759.80	556.30	100.00	LEGACY	-90	0	NO ASSAYS	1	1		100	
MURC034	615139.03	8194757.91	552.99	100.00	LEGACY	-90	0	NO ASSAYS	1	1		100	
MURC035	615149.87	8194799.02	561.72	100.00	LEGACY	-90	0	ALL LOGS	1	1	97	100	
MURC036	615099.71	8194999.69	582.09	90.00	LEGACY	-90	0	ALL LOGS	1	1	87	90	
MURC037	615138.41	8194999.56	583.32	84.00	LEGACY	-90	0	ALL LOGS	1	1	82	84	
MURC038	615179.92	8194999.57	579.55	90.00	LEGACY	-90	0	ALL LOGS	1	1	90	90	
MURC039	615241.34	8195002.15	569.62	74.00	LEGACY	-90	0	ALL LOGS	1	1	74	74	
MURC040	615189.59	8194960.06	574.27	90.00	LEGACY	-90	0	ALL LOGS	1	1	89	90	
MURC041	615168.07	8194959.10	577.77	90.00	LEGACY	-90	0	ALL LOGS	1	1	90	90	
MURC042	615149.35	8194959.19	578.48	90.00	LEGACY	-90	0	ALL LOGS	1	1	90	90	
MURC043	615209.43	8194959.68	569.76	22.00	LEGACY	-90	0	NO ASSAYS	1	1		22	
MURC044	615129.57	8194958.56	577.48	90.00	LEGACY	-90	0	ALL LOGS	1	1	72	90	
MURC045	615239.65	8194838.24	553.51	80.00	LEGACY	-90	0	ALL LOGS	1	1	79	80	
MURC046	615278.90	8194798.91	542.88	70.00	LEGACY	-90	0	ALL LOGS	1	1	70	70	
MURC047	615192.25	8194719.73	545.56	95.00	LEGACY	-90	0	ALL LOGS	1	1	95	95	
MURC048	615209.95	8194720.14	543.06	95.00	LEGACY	-90	0	ALL LOGS	1	1	51	95	
MURC049	615250.40	8194720.47	534.64	94.00	LEGACY	-90	0	ALL LOGS	1	1	92	94	
MURC050	615228.68	8194720.37	539.30	95.00	LEGACY	-90	0	ALL LOGS	1	1	91	95	
MURC051	615182.35	8194678.50	536.30	90.00	LEGACY	-90	0	ALL LOGS	1	1	87	90	
MURC052	615197.69	8194679.11	536.05	95.00	LEGACY	-90	0	ALL LOGS	1	1	88	95	
MURC053	615219.76	8194680.16	533.69	95.00	LEGACY	-90	0	ALL LOGS	1	1	95	95	
MURC054	615236.44	8194679.43	532.04	95.00	LEGACY	-90	0	ALL LOGS	1	1	72	95	
MURC055	615259.32	8194680.03	529.05	90.00	LEGACY	-90	0	ALL LOGS	1	1	82	90	
MURC056	615239.07	8194357.40	555.02	79.00	LEGACY	-90	0	ALL LOGS	1	1	29	79	
MURC057	615259.70	8194359.05	555.62	28.00	LEGACY	-90	0	NO ASSAYS	1	1		28	
MURC058	615298.28	8194360.34	558.77	34.00	LEGACY	-90	0	ALL LOGS	1	1	32	34	
MURC059	615342.06	8194360.80	559.81	28.00	LEGACY	-90	0	ALL LOGS	1	1	25	28	
MURC060	615198.09	8194360.28	552.83	37.00	LEGACY	-90	0	ALL LOGS	1	1	37	37	
MURC061	615360.48	8194360.77	559.66	28.00	LEGACY	-90	0	NO ASSAYS	1	1		28	
MURC062	615320.52	8194360.23	559.71	50.00	LEGACY	-55	90	ALL LOGS	1	1	42	50	
MURC063	615189.50	8194397.93	545.80	60.00	LEGACY	-90	0	ALL LOGS	1	1	33	60	

MURC064	615209.74	8194399.96	546.33	60.00	LEGACY	-90	0	ALL LOGS	1	1	33	60	
MURC065	615228.62	8194399.45	548.62	58.00	LEGACY	-90	0	NO ASSAYS	1	1		58	
MURC066	615160.43	8194439.62	532.71	79.00	LEGACY	-90	0	ALL LOGS	1	1	78	79	
MURC067	615177.80	8194439.70	535.31	43.00	LEGACY	-90	0	ALL LOGS	1	1	24	43	
MURC068	615199.18	8194439.83	539.17	40.00	LEGACY	-90	0	ALL LOGS	1	1	25	40	
MURC069	615139.14	8194439.97	529.93	76.00	LEGACY	-90	0	ALL LOGS	1	1	68	76	
MURC070	615148.86	8194480.01	527.40	46.00	LEGACY	-90	0	ALL LOGS	1	1	46	46	
MURC071	615167.52	8194480.00	530.03	46.00	LEGACY	-90	0	ALL LOGS	1	1	46	46	
MURC072	616236.23	8194877.53	495.53	150.00	LEGACY	-90	180	ALL LOGS	1	1	38	150	T4MODEL
MURC073	616202.00	8194798.00	496.00	150.00	LEGACY	-90	180	ALL LOGS	1	1	38	150	T4MODEL
MURC074	616121.19	8194799.58	491.39	150.00	LEGACY	-90	180	ALL LOGS	1	1	38	150	T4MODEL
MURC075	616241.69	8194718.73	497.25	150.00	LEGACY	-90	180	ALL LOGS	1	1	38	150	T4MODEL
MURC076	616197.36	8194639.12	489.86	150.00	LEGACY	-90	180	ALL LOGS	1	1	38	150	T4MODEL
MURC077	615219.12	8195699.37	556.75	57.00	LEGACY	-55	90	NO ASSAYS	1	1		57	
MURC078	615139.41	8195699.96	565.17	50.00	LEGACY	-55	90	NO ASSAYS	1	1		50	
MURC079	615302.54	8195699.66	543.61	30.00	LEGACY	-55	90	NO ASSAYS	1	1		30	
MURC080	615378.63	8195699.32	532.65	70.00	LEGACY	-55	90	NO ASSAYS	1	1		70	
MURC081	615458.90	8195699.99	525.30	70.00	LEGACY	-55	90	NO ASSAYS	1	1		70	
MURC082	616681.56	8196159.61	509.85	58.00	LEGACY	-55	180	ALL LOGS	1	1	15	58	T1MODEL
MURC083	616560.78	8196045.08	513.20	40.00	LEGACY	-55	180	ALL LOGS	1	1	10	40	T1MODEL
MURC084	616602.89	8196082.83	509.49	30.00	LEGACY	-55	180	ALL LOGS	1	1	8	30	T1MODEL
MURC085	616638.38	8196125.94	510.78	67.00	LEGACY	-55	180	ALL LOGS	1	1	17	67	T1MODEL
MURC086	616685.74	8196087.15	507.79	58.00	LEGACY	-55	180	ALL LOGS	1	1	15	58	T1MODEL
MURC087	616682.71	8196004.24	506.27	40.00	LEGACY	-55	180	ALL LOGS	1	1	9	40	T1MODEL
MURC088	616681.19	8195923.31	508.18	19.00	LEGACY	-55	180	ALL LOGS	1	1	5	19	T1MODEL
MURC089	616601.18	8195904.97	512.44	28.00	LEGACY	-55	180	ALL LOGS	1	1	7	28	T1MODEL
MURC090	616680.75	8195905.29	514.02	31.00	LEGACY	-55	180	ALL LOGS	1	1	7	31	T1MODEL
MURC091	616562.50	8195943.11	515.14	70.00	LEGACY	-55	180	ALL LOGS	1	1	18	70	T1MODEL
MURC092	616541.52	8195964.06	515.54	19.00	LEGACY	-55	180	ALL LOGS	1	1	5	19	T1MODEL

MURC093	615680.22	8196263.79	534.63	72.00	LEGACY	-55	180	ALL LOGS	1	1	18	72	
MURC094	615642.87	8196242.33	535.32	73.00	LEGACY	-55	180	ALL LOGS	1	1	18	73	
MURC095	615600.71	8196222.69	534.31	70.00	LEGACY	-55	180	ALL LOGS	1	1	18	70	
MURC096	615563.32	8196202.40	531.48	66.00	LEGACY	-55	180	ALL LOGS	1	1	17	66	
MURC097	617038.76	8196080.67	529.62	40.00	LEGACY	-55	180	ALL LOGS	1	1	9	40	T1MODEL
MURC098	617039.29	8196119.28	528.87	50.00	LEGACY	-55	180	ALL LOGS	1	1	13	50	T1MODEL
MURC099	617038.66	8196161.88	529.88	70.00	LEGACY	-55	180	ALL LOGS	1	1	18	70	T1MODEL
MURC100	617041.01	8196201.04	531.67	61.00	LEGACY	-55	180	ALL LOGS	1	1	16	61	T1MODEL
MURC101	617038.01	8196238.67	534.31	52.00	LEGACY	-55	180	ALL LOGS	1	1	13	52	T1MODEL
MURC102	617119.42	8196157.80	529.82	59.00	LEGACY	-55	180	ALL LOGS	1	1	15	59	T1MODEL
MURC103	617121.44	8196196.51	532.00	70.00	LEGACY	-55	180	ALL LOGS	1	1	28	70	T1MODEL
MURC104	617122.52	8196238.44	535.75	60.00	LEGACY	-55	180	ALL LOGS	1	1	14	60	T1MODEL
MURC105	617180.42	8196176.39	533.30	60.00	LEGACY	-55	180	ALL LOGS	1	1	15	60	T1MODEL
MURC106	617119.74	8196098.05	529.25	49.00	LEGACY	-55	180	ALL LOGS	1	1	17	49	T1MODEL
MURC107	617179.38	8196022.83	542.26	50.00	LEGACY	-55	180	ALL LOGS	1	1	12	50	T1MODEL
MURC108	617219.63	8195958.89	549.95	40.00	LEGACY	-55	180	ALL LOGS	1	1	10	40	T1MODEL
MURC109	617141.11	8195959.20	545.87	52.00	LEGACY	-55	180	ALL LOGS	1	1	13	52	T1MODEL
MURC110	616602.40	8196277.57	513.41	70.00	LEGACY	-55	180	ALL LOGS	1	1	18	70	T1MODEL
MURC111	616642.72	8196244.99	512.01	70.00	LEGACY	-55	180	ALL LOGS	1	1	18	70	T1MODEL
MURC112	616680.67	8196201.18	510.47	58.00	LEGACY	-55	180	ALL LOGS	1	1	15	58	T1MODEL
MURC113	616599.77	8196011.59	512.26	50.00	LEGACY	-55	180	ALL LOGS	1	1	13	50	T1MODEL
MURC114	617341.11	8196177.63	550.71	49.00	LEGACY	-55	180	ALL LOGS	1	1	13	49	T1MODEL
MURC115	617179.05	8195881.99	559.92	61.00	LEGACY	-55	180	ALL LOGS	1	1	24	61	T1MODEL
MURC116	617300.64	8195962.21	552.15	60.00	LEGACY	-55	180	ALL LOGS	1	1	25	60	T1MODEL
MURC117	617261.31	8195881.10	562.56	61.00	LEGACY	-55	180	ALL LOGS	1	1	21	61	T1MODEL
MURC118	617235.05	8196084.16	540.26	50.00	LEGACY	-55	180	ALL LOGS	1	1	13	50	T1MODEL
MURC119	617058.64	8195883.30	546.84	49.00	LEGACY	-55	180	ALL LOGS	1	1	25	49	T1MODEL
MURC120	615442.10	8196143.96	533.65	64.00	LEGACY	-55	90	ALL LOGS	1	1	16	64	
MURC121	615402.15	8196144.10	537.98	60.00	LEGACY	-55	90	ALL LOGS	1	1	15	60	
MURC122	615364.41	8196144.40	537.00	60.00	LEGACY	-55	90	ALL LOGS	1	1	20	60	
MURC123	615322.18	8196143.09	538.68	60.00	LEGACY	-55	90	ALL LOGS	1	1	15	60	

MURC124	616958.21	8196639.28	546.68	70.00	LEGACY	-55	180	ALL LOGS	1	1	35	70	
MURC125	616998.49	8196679.77	553.54	70.00	LEGACY	-55	180	ALL LOGS	1	1	18	70	
MURC126	617044.21	8196717.48	558.38	60.00	LEGACY	-55	180	ALL LOGS	1	1	15	60	
MURC127	617079.70	8196679.67	554.28	70.00	LEGACY	-55	180	ALL LOGS	1	1	18	70	
MURC128	617088.64	8196754.19	562.47	70.00	LEGACY	-55	180	ALL LOGS	1	1	18	70	
MURC129	617120.51	8196719.94	558.53	70.00	LEGACY	-55	180	ALL LOGS	1	1	18	70	
MURC130	617156.38	8196753.72	560.42	70.00	LEGACY	-55	180	ALL LOGS	1	1	18	70	
MURC131	617196.24	8196773.64	566.19	70.00	LEGACY	-55	180	ALL LOGS	1	1	18	70	
MURC132	615199.42	8195666.00	556.68	70.00	LEGACY	-55	90	ALL LOGS	1	1	25	70	
MURC133	615237.40	8195669.24	552.47	70.00	LEGACY	-55	90	ALL LOGS	1	1	27	70	
MURC134	615261.02	8195707.03	545.33	70.00	LEGACY	-55	90	ALL LOGS	1	1	18	70	
MURC135	615285.67	8195665.52	543.76	70.00	LEGACY	-55	90	ALL LOGS	1	1	18	70	
MURC136	615316.12	8195663.75	539.68	75.00	LEGACY	-55	90	ALL LOGS	1	1	25	75	
MURC137	615066.08	8195569.06	578.23	70.00	LEGACY	-55	90	ALL LOGS	1	1	18	70	
MURC138	615087.36	8195585.90	581.02	80.00	LEGACY	-55	90	ALL LOGS	1	1	20	80	
MURC139	615119.50	8195581.72	576.82	70.00	LEGACY	-55	90	ALL LOGS	1	1	18	70	
MURC140	615602.78	8195502.74	509.44	250.00	LEGACY	-90	0	ALL LOGS	1	1	61	250	
MURC141	616401.56	8194155.49	477.07	200.00	LEGACY	-55	225	ALL LOGS	1	1	55	200	T4MODEL
MURC142	616471.45	8194223.25	475.61	200.00	LEGACY	-55	225	ALL LOGS	1	1	50	200	T4MODEL
MURC143	615717.00	8195780.00	525.00	70.00	LEGACY	-55	90	ALL LOGS	1	1	18	70	
MURC144	615249.00	8195864.00	551.00	73.00	LEGACY	-55	90	ALL LOGS	1	1	18	73	
MURC145	615399.00	8195778.00	543.00	100.00	LEGACY	-55	90	ALL LOGS	1	1	25	100	
MURC146	615319.00	8195779.00	551.00	79.00	LEGACY	-55	90	ALL LOGS	1	1	20	79	
MURC147	615439.00	8195738.00	540.00	70.00	LEGACY	-55	90	ALL LOGS	1	1	18	70	
MURC148	615500.00	8195701.00	535.00	100.00	LEGACY	-55	90	ALL LOGS	1	1	25	100	
MURC149	615519.00	8195733.00	534.00	70.00	LEGACY	-55	90	ALL LOGS	1	1	18	70	

MURC150	615601.00	8195655.00	531.00	80.00	LEGACY	-55	90	ALL LOGS	1	1	20	80	
MURC151	615519.00	8195658.00	534.00	88.00	LEGACY	-55	90	ALL LOGS	1	1	23	88	
MURC152	615539.00	8195793.00	532.00	70.00	LEGACY	-55	90	ALL LOGS	1	1	18	70	
MURC153	615578.00	8195795.00	531.00	82.00	LEGACY	-55	90	ALL LOGS	1	1	21	82	
MURC154	615518.00	8195813.00	536.00	70.00	LEGACY	-55	90	ALL LOGS	1	1	18	70	
MURC155	615638.00	8195837.00	533.00	70.00	LEGACY	-55	90	ALL LOGS	1	1	18	70	
MURC156	615641.00	8195774.00	532.00	70.00	LEGACY	-55	90	ALL LOGS	1	1	18	70	
MURC157	615597.00	8195739.00	532.00	70.00	LEGACY	-55	90	ALL LOGS	1	1	18	70	
MURC158	615621.00	8195698.00	529.00	82.00	LEGACY	-55	90	ALL LOGS	1	1	21	82	
MURC159	615703.00	8195700.00	528.00	70.00	LEGACY	-55	90	ALL LOGS	1	1	18	70	
MURC160	615439.00	8195657.00	536.00	70.00	LEGACY	-55	90	ALL LOGS	1	1	18	70	
MURC161	615421.00	8195698.00	540.00	200.00	LEGACY	-55	90	ALL LOGS	1	1	50	200	
MURC162	616957.77	8196637.62	546.46	150.00	LEGACY	-90	360	ALL LOGS	1	1	42	150	
MURC163	616879.67	8196478.61	532.73	150.00	LEGACY	-90	360	ALL LOGS	1	1	46	150	
MURC164	617339.72	8195879.35	563.70	150.00	LEGACY	-90	360	ALL LOGS	1	1	65	150	T1MODEL
MURC165	617138.86	8195878.78	556.53	187.00	LEGACY	-90	360	ALL LOGS	1	1	93	187	T1MODEL

16.2. Boreholes Completed after 05 July 2022 Cut-off and Not Utilised in Exploration Target

BHID	XCOLLAR	YCOLLAR	ZCOLLAR	DIP	BEARING	EOH
MM053	617,115.0	8,195,853.0	558	-55	213	84.87
MM054	617,171.0	8,195,794.0	572	-55	213	84.85
MM063	617,378.0	8,195,672.0	552	-55	213	84.8
MM065	617,485.0	8,195,691.0	554	-55	213	150.75
MM066	617,454.0	8,195,641.0	570	-55	213	84.75
MM073	617,077.0	8,195,828.0	571	-55	213	84.75
MM074	617,206.0	8,195,847.0	564	-55	213	150.8
MM076	616,710.0	8,193,847.0	525	-55	90	54.8
MM077	616,774.0	8,193,847.0	544	-55	90	84.8
MM078	616,832.0	8,193,852.0	615	-55	90	84.7
MM079	617,149.0	8,195,902.0	553	-55	213	132.7
MM091	617,093.0	8,195,959.0	540	-55	213	132
MM093	617,060.0	8,195,910.0	541	-55	213	84.7
MM094	616,996.0	8,195,952.0	533	-55	213	72.8
MM095	617,441.0	8,195,768.1	575	-55	213	55
MM096	617,381.0	8,195,823.0	580	-55	213	156
MM097	617,297.0	8,195,840.0	593	-55	213	120
MM098	617,244.0	8,195,903.0	529	-55	213	144
MM099	617,188.0	8,195,956.0	557	-55	213	150
MM100	617,451.0	8,195,765.0	579	-55	213	36
MM101	617,428.0	895,795.0	571	-55	213	150

17 Appendix E – Table 1 of JORC 2012 Code

17.1. Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections.)

Criteria	JORC Code explanation	Commentary
Sampling techniques	• *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.* • *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* • *Aspects of the determination of mineralisation that are Material to the Public Report.* • *In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g 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.*	• The available database contained 246 boreholes of which 96 of those boreholes were utilised in the modelling and estimation of Targets 1 and 4. Of the 96 boreholes, 53 (2 diamond drilled boreholes (DD) and 51 reverse circulation boreholes (RC)) were drilled by Altona and 43 RC boreholes by the previous tenement holder – Globe Metals and Mining (16 Appendix D, 16.1 Borehole Database as at 05 July 2022). • Modelling and Estimation. Target 1: 71 boreholes utilised. Target 4: 25 boreholes utilised. • Altona DD core samples were collected over a nominal length of 1m, within lithological contacts and core blocks. • Altona RC cuttings samples were collected over 1m intervals, riffle split, composited into 3m composites, and riffle split to 2.5-3kg. Splitting was done using a 3-tier riffle splitter. • In Altona's programme the entire drilled length was sampled except for lithologies that were not REE bearing (this was confirmed using a pXRF analyser) such as pyroclastics on hole MM007. • Globe RC sampling was mostly done on 1m intervals but were occasionally composited up to 4m intervals.
Drilling techniques	• *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).*	• Altona DD Drilling was done in PQ in weathered zone and HQ in fresh zone, reduced to NQ in the lower part of the holes. The rods had a length of 3 m. • Altona Core orientation was not done. • Altona RC drilling using a 4 ½" hammer with 6m rods. • Globe boreholes were all RC but contain no record of diameter.
Drill sample	• *Method of recording and assessing core and chip sample recoveries and results assessed.*	• Altona drilling: o Hole MM035 was abandoned and repeated (as hole MM040) due to

Criteria	JORC Code explanation	Commentary
recovery	• *Measures taken to maximise sample recovery and ensure representative nature of the samples.* • *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.*	low recovery and measures were put in place to improve recovery. Short DD runs were done to enhance recovery in weathered material when necessary. o Recovery averaged 92.74% in very weathered near-surface rocks, and 98.80% in rocks with a lower degree of weathering. o No correlation was found between TREO% and recovery. o RC sample recovery was appraised on the basis of weight of recovered sample for a known drilling volume. Cavities were recorded. A RC moisture qualitative log was recorded. • Globe historical drilling: o There's evidence that bulk RC bag weights were recorded for most samples but no direct comment is made on recovery.
Logging	• *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.* • *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.* • *The total length and percentage of the relevant intersections logged.*	• Altona drilling: o All intervals for DD holes were lithologically logged including radiometric measurements for U, K and Th. o No structural orientation data recorded. o All core samples were photographed in constant light conditions. o All intervals for RC holes were logged, including recording magnetic susceptibility (using a handheld Kappa meter) and U, K and Th radiometrics (using a handheld spectrometer). o Lithology determinations for both RC and DD were made based on visual examination and verified and amended based on whole rock sample geochemistry obtained by pXRF. o Standard industry descriptors as per a SOP were recorded for all holes including weathering, colour, mineralisation, grain size etc. • Globe drilling: o Qualitative geological logging was undertaken which has also been subsequently improved through reference to SiO_2 and MgO assay data. o Standard industry descriptors were recorded for all holes including weathering, colour, mineralisation, grain size etc.
Sub-sampling	• *If core, whether cut or sawn and whether quarter, half or all core*	• Altona drilling:

Criteria	JORC Code explanation	Commentary
techniques and sample preparation	*taken.* • *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.* • *For all sample types, the nature, quality and appropriateness of the sample preparation technique.* • *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.* • *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.* • *Whether sample sizes are appropriate to the grain size of the material being sampled.*	o Sufficiently fresh PQ and HQ samples were split longitudinally using a diamond saw into 4 equal parts. Fresh NQ samples were split in 2. Samples too weathered to be split with the core saw were bagged, homogenised, and split using a riffle splitter. o RC 1m intervals were split using a 3-tier riffle splitter. Some samples were composited to 3m. o QAQC samples were randomly inserted by Altona in sample batches at the following proportion: ▪ Blanks – 3.6% ▪ CRMs – 3.5% ▪ Field duplicates – 3.7% o Sample size for DD and RC samples is appropriate to the nature of deposit and mineralisation. o Altona reviewed the Laboratory and their own QAQC results and found them to be within acceptable limits. QAQC reporting by Altona was not available at the time of publishing of this document. o No umpire lab assay has taken place. • Globe drilling: o All drilling was RC and only logs are available. o Indications from earlier reporting are that QAQC protocols were observed but none of the QAQC reporting is available.
Quality of assay data and laboratory tests	• *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.* • *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.* • *Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.*	• Altona drilling lab assay: • Sample preparation was done by Intertek Genalysis RSA. Samples were dried, crushed if necessary, split to 300g, pulverized, and split as necessary for analysis. o Samples were analysed by Intertek in Perth. o Major elements, rare earth elements, and selected trace elements were analysed by Li peroxide fusion followed by ICP-MS and ICP-OES. Fluoride was analysed by selective ion electrode. • Altona pXRF analyses: o Altona uses a Hitachi X-Met8000 pXRF analyser equipped with a

Criteria	JORC Code explanation	Commentary
		50kv anode and specific programmes to enable the detection and quantification of Nd, Pr, La, Ce and Y, as well as of light elements relevant to carbonatites such as K, Mg and Si. o Duplicate 1m RC samples are prepared using plastic cups covered by a mylar film and assayed under standard conditions using both the light elements programme (30s assay time) and the rare earths programme (60s assay time). Regular checks and calibration are done using a SiO_2 blank and various CRMs. o Comparisons between Altona pXRF results and Intertek laboratory assay results for Altona's Phase 1 confirmed the reliability of Altona's pXRF results (slight underestimation, R^2 = 0.95). In the current conditions, pXRF results give a very good indication as to the degree to which samples are mineralized and are usable as a decision tool. All mineralized samples are sent to a certified laboratory for assay. • Altona QAQC. As detailed approximately 10% QAQC samples are submitted per batch comprising approximately equal parts blanks, standards/CRMs and field duplicates. The QAQC protocol is in keeping with best practise though adequate QAQC reporting is as yet incomplete. • Globe/legacy QAQC. It is documented as done but no reports are available in this regard.
Verification of sampling and assaying	• *The verification of significant intersections by either independent or alternative company personnel.* • *The use of twinned holes.* • *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* • *Discuss any adjustment to assay data.*	• The verification of significant intersections was done in-house by Altona geological personnel. • Some Altona Phase 1 DD holes were drilled to twin legacy RC holes and were found to be consistent as far as lithology and assay results are concerned. • Field data was logged on paper. Testing equipment raw files as well as scans of paper logs / records are kept. • All paper logs are captured electronically in spreadsheets. • No adjustments have been made to laboratory or pXRF data.
Location of data points	• *Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations*	• The project utilises the WGS84 datum and the UTM36S grid in metres for all positioning. • Borehole collars were surveyed using a handheld Garmin GPS with a

Criteria	JORC Code explanation	Commentary
	used in Mineral Resource estimation. • *Specification of the grid system used.* • *Quality and adequacy of topographic control.*	horizontal accuracy of +/- 3m. All legacy and Phase 1 collars will be resurveyed using a RTK system. • Downhole surveys were carried out on all DD holes and some RC holes using a EZ-TRAC XTF Multi-shot survey kit. Measurements were done at 6m intervals. • A temporary DTM was prepared using elevation data from a 1998 helicopter-borne geophysical survey. • The topographic control is suitable for the reporting of an exploration target and is in the process of being upgraded by means of a RTK survey system.
Data spacing and distribution	• *Data spacing for reporting of Exploration Results.* • *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.* • *Whether sample compositing has been applied.*	• Drill hole spacing within the targets is generally between 60m and 150m between borehole collars. It is not, at 05 July 2022, sufficient to establish geological and grade continuity. • The current drilling plan was designed to test lateral extension of known REE mineralisation and to test geophysical anomalies and topographic features. The final planned drill hole spacing should be adequate to establish geological and grade continuity with the objective of defining a Mineral Resource should one exist. • The majority of RC samples are reported on a 1m basis whilst some were composited into 3 m intervals and in some cases 2m. For purposes of modelling all intervals were modelled on a 1m basis.
Orientation of data in relation to geological structure	• *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.* • *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.*	• Boreholes were generally drilled at an azimuth and dip angle to intersect the targeted orebodies approximately perpendicular to orebody orientation. The assumed geometry of the orebodies was derived from legacy drilling data and surface mapping. • While the geometry of orebodies requires a better understanding, no bias is considered to have been introduced by the orientation of the holes with respect to structures, except for hole MM039 drilled on the historical fluorite deposit.
Sample security	• *The measures taken to ensure sample security.*	• The chain of custody was managed by Altona personnel on site. o Samples were kept in sealed bags in a designated storage on site, collected by transporter Bolloré on site, and delivered to Intertek

Criteria	JORC Code explanation	Commentary
		laboratory in South Africa on a door-to-door basis. o Prepared samples were sent by Intertek's preparation facility to the analytical laboratory's Australian facility by commercial air freight. The laboratory issues reconciliation reports.
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• Sampling techniques and data have not been audited or reviewed independently at this stage. • Formal audits had not formed part of the procedures to date. • During the site visit the collar positioning, geological logging, sampling and pXRF standard operating procedures were reviewed and found to be satisfactory.

17.2. Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	• *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.* • *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.*	• The Monte Muambe project is held under prospecting licence LPP7573L which was originally issued to Ussokoti Investimentos Sociedade Unipessoal Limitada. The National Institute of Mines (INAMI) has since transferred LPP7573L to Monte Muambe Mining Limitada. Altona Rare Earths PLC has a farm-in agreement with Ussokoti Investimentos Lda and Monte Muambe Mining Lda allowing Altona Rare Earths PLC to own up to 70% of the license by spending certain amounts on the project and making cash and share payments to the original quota holders of Monte Muambe Mining Lda (for full details see RNS of 25 June 2021 https://www.aquis.eu/aquis-stock-exchange/for-investors/announcements?view_news_id=3141006). • As at 23 January 2023 Altona holds 20% of Monte Muambe Mining Lda. • Prospecting License LPP7573L is held by Monte Muambe Mining Lda and valid until 22 May 2025. • No habitations, farms, nature reserves, or historical sites exist within the license. • There are no known facts that would impede the grant of a Mining

Criteria	JORC Code explanation	Commentary
		License to Monte Muambe Mining Lda.
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• Exploration for the mineral fluorite was done by Grupo Madal in the late 1990s, including a helicopter borne geophysical (radiometrics and magnetics) survey done by geophysical company Geodass in 1998, at a line spacing of 100m. This dataset is in Altona's possession. • Between 2010 and 2012 Globe Metals and Mining continued fluorite exploration at Monte Muambe, during the course of which the company discovered REE occurrences. Work included a ground Geiger counter survey at a line spacing of 50m over part of the intrusion, as well as 12,587m of RC drilling (165 holes). The drilling database is in Altona's possession, though some holes don't have assay results.
Geology	• *Deposit type, geological setting and style of mineralisation.*	• Monte Muambe is a carbonatite hosted primary REE deposit. • The carbonatite has a diameter of 3 km approximately. Fenitisation is common at the contact of carbonatite and host sandstones, both around the intrusion and above it. The presence of pyroclastics in several parts shows a relatively shallow, sub-volcanic level. Several lithologies and phases of intrusion have been observed. • Mineralisation is magmatic in origin and may have been enriched through magmatic differentiation and hydrothermal processes. REE are not distributed homogeneously throughout the intrusion and the detailed mineralisation controls require a better understanding. • Surface enrichment through weathering seems to be limited in extent as saprolite has been largely eroded away. • Beside REE, the presence of fluorite, niobium, barite, apatite and iron ore has been noted.
Drill hole Information	• *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:* o *easting and northing of the drill hole collar* o *elevation or RL (Reduced Level – elevation above sea level in*	• The database used for the reporting of an Exploration Target Contained 246 boreholes as at 05 July 2022. Of the 246 boreholes, 71 of these were used for modelling Target 1 and 25 boreholes for modelling of target 4, the remainder were outside of these target areas. The combined 96 boreholes in the database utilised for modelling and estimation included both historic/legacy boreholes

Criteria	JORC Code explanation	Commentary
	metres) of the drill hole collar o *dip and azimuth of the hole* o *down hole length and interception depth* o *hole length.* • *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.*	which predate Altona's involvement and new boreholes drilled by Altona. • The database used for modelling Targets 1 and 4 of the Monte Muambe project included 53 Altona boreholes of which 2 were diamond drilled (DD) boreholes and the remaining 51 were reverse circulation (RC) boreholes. The remaining 43 historic/legacy boreholes are all reverse circulation (RC) boreholes. • The collar table including position, inclination, bearing, end of hole depth, drilling type, year and records per database table, is included in 16 Appendix D, 16.1 Borehole Database as at 05 July 2022, and the location of the 246 boreholes as at 05 July 2022, is shown in Figure 25.
Data aggregation methods	• *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.* • *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.* • *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	• Grade is reported as TREO in %. For the diamond drilled (DD) boreholes which have been assayed, it is the sum of all 14 REE and Yttrium, in oxide form; whilst for the pXRF assays it is only the sum of the 4 REE Ce, La, Nd, Pr and Yttrium reported in oxide form. • No clipping of high grades was done. • 0.5% and 1.0% TREO shells were constructed to constrain the block models. • Significant intercepts reported elsewhere, were calculated using the weighted average (by length) of included individual intervals. • No metal equivalents were reported.
Relationship between mineralisation widths and intercept lengths	• *These relationships are particularly important in the reporting of Exploration Results.* • *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* • *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').*	• Except in target 6 and to some extent in target 1, the contact of mineralised orebodies with their host rock is largely subvertical to steeply dipping, but the detailed geometry of orebodies is not yet fully understood. • Intercepts are reported as drilled length. The true width of mineralised intervals is less than the intercept length.
Diagrams	• *Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being*	• Borehole Location Maps: Figure 25, Figure 26 and Figure 27.

Criteria	JORC Code explanation	Commentary
	reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.	• Sections: Figure 34, Figure 35 and Figure 37.
Balanced reporting	• *Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	• Early exploratory drilling which seeks to delineate targets is consistent with not all holes intercepting REE mineralisation. Drilling shows that REE mineralisation within the carbonatite intrusion is not homogeneous. • Significant intercepts are reported on areas warranting follow-up while other areas will not be subject to further drilling and therefore do not justify detailed reporting.
Other substantive exploration data	• *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.*	• 433 density records were utilised to assign densities to the simplified stratigraphic subdivisions of Soil, Fenite and Carbonatite. • Altona collected density of competent rock on the basis of measured volume and mass – the recovered sample was measured by weighing and measuring the length and diameter of sample sawed at right angle from the core axis. For clay-rich very weathered samples which displayed swelling, the nominal inner diameter of the drilling bit and an adjusted sample length were used. • Density ranged from a minimum of 1.43 g/cm3 to 4.74 g/cm3. • Possible contaminants include U and Th, while the presence of Ca, F, Ba, Nb and P may have an impact on recovery and processing flow chart complexity. • As with all carbonatite hosted REE deposits, potential deleterious elements include U and Th. Samples with TREO% above 0.5 have an average grade of 18 ppm U and 232 ppm Th.
Further work	• *The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).* • *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	• The results of exploration work to date, justify further exploration on the Monte Muambe project. The objective of drilling work completed after 05 July 2022 but not yet incorporated into the drilling database, is to collect sufficient borehole data to prove grade and geological continuity where possible, to allow for the preparation of a maiden Mineral Resource Estimate and a Preliminary Economic Assessment. • Identified targets and areas, not limited to only Targets 1 and 4, will see additional soil sampling, ground geophysics, RAB drilling, and RC

Criteria	JORC Code explanation	Commentary
		drilling. First pass metallurgical testwork is also planned.