THIS DOCUMENT IS IMPORTANT AND REQUIRES YOUR IMMEDIATE ATTENTION, if you are in any doubt about the contents of this Document you should consult a person authorised under the Financial Services and Markets Act 2000 who specialises in advising on the acquisition of shares and other securities if you are in the United Kingdom, or from another appropriately authorised independent financial adviser if you are in a territory outside the United Kingdom.

This Document comprises a prospectus relating to Altona Rare Earths Plc (the "**Company**") which has been approved by the Financial Conduct Authority (the "**FCA**"), as competent authority under Regulation (EU) 2017/1129 and as amended by Regulation (EU) 2017/1129 as it forms part of domestic law by virtue of the European Union (Withdrawal) Act 2018. The FCA only approves this prospectus as meeting the standards of completeness, comprehensibility and consistency imposed by Regulation (EU) 2017/1129 and as amended by The Prospectus (Amendment etc.) (EU Exit) Regulations 2019. Such approval should not be considered as an endorsement of the quality of the securities that are, or the Company which is, the subject of this prospectus. Investors should make their own assessment as to the suitability of investing in the securities.

Application will be made to the FCA for the New Ordinary Shares to be to be admitted to the standard segment of the Official List of the FCA (the "Official List") ("Standard Listing") under Chapter 14 of the listing rules published by the FCA under section 73A of FSMA as amended from time to time (the "Listing Rules") and to trading on the London Stock Exchange's Main Market for listed securities (together, "Admission"). No application has been made, or at this time is intended to be made, for the Shares to be admitted for listing or dealt with on any other stock exchange.

As at the date of this Prospectus the Existing Ordinary Shares are admitted to listing on the Standard List. In accordance with United Kingdom Listing Rules Instrument 2024 (FCA 2024/23) and with effect from 29 July 2024, the current Listing Rules will be replaced by the UKLR under which the existing Standard Listing category will be replaced by the Equity Shares (Transition) category under Chapter 22 of the UKLR.

It is expected that Admission will become effective, and that unconditional dealings in the Shares will commence, at 8.00 a.m. on 25 July 2024.

THE WHOLE OF THE TEXT OF THIS DOCUMENT SHOULD BE READ BY PROSPECTIVE INVESTORS. YOUR ATTENTION IS SPECIFICALLY DRAWN TO THE DISCUSSION OF CERTAIN RISKS AND OTHER FACTORS THAT SHOULD BE CONSIDERED IN CONNECTION WITH AN INVESTMENT IN THE SHARES AS SET OUT IN THE SECTION ENTITLED "RISK FACTORS" BEGINNING ON PAGE 12 OF THIS DOCUMENT.

The Directors, whose names appear on page 36 of this Document, and the Company, accept responsibility for the information contained in this Document. To the best of the knowledge of the Directors and the Company the information contained in this Document is in accordance with the facts and this Document makes no omission likely to affect its import.

Altona Rare Earths

ALTONA RARE EARTHS PLC

(Incorporated in England and Wales with company number 05350512)

Issue of 39,400,000 Ordinary Shares pursuant to the Subscription

Issue of 26,300,000 CLN Conversion Shares

Issue of 7,000,000 CCL Conversion Shares

Issue of 3,548,759 Fee Shares

Issue of up to 306,146,561 Ordinary Shares pursuant to the Warrants

Issue of up to 42,000,000 Consideration Shares

Admission of the New Ordinary Shares to the Official List (by way of Standard Listing under Chapter 14 of the Listing Rules) and to trading on the London Stock Exchange's Main Market for listed securities

Joint Broker	Financial Adviser	Joint Broker
OPTIVA SECURITIES THE GLOBAL INVESTOR	NOVUM	Allenby CAPITAL
Optiva Securities Ltd.	**Novum Securities Limited**	**Allenby Capital Limited**

Issued share capital immediately following Admission
163,015,866 Ordinary Shares of 1 pence each

Novum Securities Ltd ("**Novum**") has been appointed by the Company as its Financial Adviser in connection with the Fundraising and Admission of the New Ordinary Shares to trading on the London Stock Exchange's Main Market for listed securities. Novum, which is authorised and regulated by the Financial Conduct Authority in the United Kingdom, is acting exclusively for the Company and no one else in relation to the Fundraising and Admission. Novum will not regard any other person (whether or not a recipient of this Document) as its client in relation to the Fundraising and Admission and will not be responsible to anyone (other than the Company in respect of Admission) for protections afforded to the clients of Novum or for providing any advice in relation to Admission or the Fundraising, the contents of this Document or any transaction or arrangement referred to herein. No liability whatsoever is accepted by Novum for the accuracy of any information or opinions contained in this Document or for the omission of any material information, for which it is not responsible. However, nothing in this paragraph excludes or limits any responsibility which Novum may have under the Financial Services and Market Act 2000 or the regulatory regime established thereunder, or which, by law or regulation cannot otherwise be limited or excluded.

Optiva Securities Ltd ("**Optiva**") has been appointed by the Company as its Joint Broker in connection with the Fundraising and Admission. Optiva, which is authorised and regulated by the Financial Conduct Authority in the United Kingdom, is acting exclusively for the Company and no one else in relation to the Fundraising and Admission. Optiva will not regard any other person (whether or not a recipient of this Document) as its client in relation to the Fundraising and Admission and will not be responsible to anyone (other than the Company in respect of Admission) for protections afforded to the clients of Optiva or for providing any advice in relation to Admission or the Fundraising, the contents of this Document or any transaction or arrangement referred to herein. No liability whatsoever is accepted by Optiva for the accuracy of any information or opinions contained in this Document or for the omission of any material information, for which it is not responsible. However, nothing in this paragraph excludes or limits any responsibility which Optiva may have under the Financial Services and Market Act 2000 or the regulatory regime established thereunder, or which, by law or regulation cannot otherwise be limited or excluded.

Allenby Capital Limited ("**Allenby Capital**") has been appointed by the Company as its Joint Broker in connection with the Fundraising and Admission. Allenby Capital, which is authorised and regulated by the Financial Conduct Authority in the United Kingdom, is acting exclusively for the Company and no one else in relation to the Fundraising and Admission. Allenby Capital will not regard any other person (whether or not a recipient of this Document) as its client in relation to the Fundraising and Admission and will not be responsible to anyone (other than the Company in respect of Admission) for protections afforded to the clients of Allenby Capital or for providing any advice in relation to Admission or the Fundraising, the contents of this Document or any transaction or arrangement referred to herein. No liability whatsoever is accepted by Allenby Capital for the accuracy of any information or opinions contained in this Document or for the omission of any material information, for which it is not responsible. However, nothing in this paragraph excludes or limits any responsibility which Allenby Capital may have under the Financial Services and Market Act 2000 or the regulatory regime established thereunder, or which, by law or regulation cannot otherwise be limited or excluded.

This Document does not constitute an offer to sell, or the solicitation of an offer or invitation to buy or subscribe for, Shares in any jurisdiction where such an offer or solicitation is unlawful or would impose any unfulfilled registration, publication or approval requirements on the Company.

OVERSEAS SHAREHOLDERS

The Shares have not been and will not be registered under the U.S. Securities Act of 1933, as amended (the "**Securities Act**"), or under the securities laws of any state or other jurisdiction of the United States or under applicable securities laws of Canada or Japan. Subject to certain exceptions, the Shares may not be offered, sold, resold, transferred or distributed directly or indirectly, and this Document may not be distributed by any means including electronic transmission within, into, in or from the United States or to or for the account or benefit of persons in the United States, South Africa, the Republic of Ireland, Canada, Japan or any other jurisdiction where such offer or sale would violate the relevant securities laws of such jurisdiction. This Document does not constitute an offer to sell or a solicitation of an offer to purchase or subscribe for Shares in any jurisdiction in which such offer or solicitation is unlawful or would impose any unfulfilled registration, publication or approval requirements on the Company. The Shares may not be taken up, offered, sold, resold, transferred or distributed, directly or indirectly within, into or in the United States except

pursuant to an exemption from, or in a transaction that is not subject to, the registration requirements of the Securities Act. There will be no public offer in the United States, although the Company may sell the Shares in a private placement transaction in the United States pursuant to an exemption from registration.

The distribution of this Document in or into jurisdictions other than the United Kingdom may be restricted by law and therefore persons into whose possessions this Document comes should inform themselves about and observe any such restrictions. Any failure to comply with these restrictions may constitute a violation of the securities laws of any such jurisdiction.

None of the Shares have been approved or disapproved by the United States Securities and Exchange Commission (the "**SEC**"), any state securities commission in the United States or any other regulatory authority in the United States, nor have any of the foregoing authorities passed comment upon or endorsed the merit of the offer of the Shares or the accuracy or the adequacy of this Document. Any representation to the contrary is a criminal offence in the United States.

Application has been made for the New Ordinary Shares to be admitted to the Official List by way of a Standard Listing. A Standard Listing (and, with effect from the Transition Date, the Equity Shares (transition) category, being the new rules applicable to the Company under Chapter 22 of the UKLR) will afford investors in the Company a lower level of regulatory protection than that afforded to investors in companies with Premium Listings on the Official List (and, with effect from the Transition Date, the ESCC), which are subject to additional obligations under the Listing Rules (and, with effect from the Transition Date, the UKLR).

It should be noted that the FCA will not have authority to (and will not) monitor the Company's compliance with any of the Listing Rules that the Company has indicated herein that it intends to comply with on a voluntary basis, nor to impose sanctions in respect of any failure by the Company to so comply. However, the FCA would be able to impose sanctions for non-compliance where the statements regarding compliance in this Document are themselves misleading, false, or deceptive.

This Document is dated 19 July 2024

CONTENTS

SUMMARY

1. Introduction

Name and ISIN of securities

Ticker for the Ordinary Shares: REE. **International Securities Identification Number (ISIN):** GB00BFZNKV91.

Identity and contact details of the issuer

Name: Altona Rare Earths Plc (incorporated in England and Wales with company number 05350512)
Registered office: Eccleston Yards, 25 Eccleston Place, London, SW1W 9NF
Telephone number: +44 7778 866 108, +44 7721 492 922
Legal Entity Identifier (LEI): 2138002A5GU9BFS2I491.

Identity and contact details of the competent authority

Name: Financial Conduct Authority
Address: 12 Endeavour Square, London, E20 1JN

Date of approval of Prospectus

19 July 2024.

Warnings

This summary should be read as an introduction to this Document. Any decision to invest in the securities should be based on a consideration of the Document as a whole by the prospective investor. The investor could lose all or part of the invested capital. Civil liability attaches only to those persons who have tabled the summary including any translation thereof, but only where the summary is misleading, inaccurate or inconsistent, when read together with the other parts of the Document, or where it does not provide, when read together with the other parts of the Document, key information in order to aid investors when considering whether to invest in such securities.

2. Key Information on the Issuer

Who is the issuer of the securities?

Domicile and legal form, LEI, applicable legislation and country of incorporation

The issuer is a public company limited by shares, incorporated on 2 February 2005 under the laws of England and Wales under the Companies Act 1985 with an indefinite life and with company number 05350512 and LEI, 2138002A5GU9BFS2I491.

Principal activities

Altona is a resource exploration and development company with a focus on finding and extracting Critical Raw Materials ("CRM") in Africa.

The Company currently holds an interest in the Monte Muambe Project, located in Mozambique ("Monte Muambe Project"), in which it currently holds a 51% interest and has control of the board of directors of Monte Muambe Mining LDA ("MMM"). Following publication of the Scoping Study in October 2023, the Company increased its stake in MMM to 51%. MMM holds Prospecting Licence 7573L, granted by the Government of Mozambique, to explore for Rare Earth Elements. The Company will increase its current shareholding in MMM from 51% up to 70% pursuant to the terms of a farm-out agreement. On 14 December 2023 MMM applied for a mining licence (Concessao Mineira in Portuguese) in respect of the area covered by Prospecting Licence 7573L. The Minister of Mineral Resources and Energy is required to communicate their decision within 190 days of the application and if granted the mining licence will be valid for 25 years.

The Company is also seeking to undertake additional acquisitions of mining projects (each an "Acquisition") in the CRM sector in Africa, including but not limited to copper and lithium projects.

On 27 March 2024 the Company entered into agreements with Sustineri Group Ltd and with the beneficial owners of Phelps Dodge Mining (Zambia) Limited ("PDMZ") to acquire an exclusive right to acquire the entire issued share capital of Phelps Dodge Mining (Zambia) Limited, the registered holder of Large Scale Exploration Licence 21403-HQ-LEL in Zambia, to explore for copper and associated minerals ("Kabompo South Project").

On 8 April 2024 the Company entered into a binding option agreement with Ignate African Minerals (Pty) Ltd ("IAM") granting the Company an exclusive right to opt to acquire Prospecting Licence PL2329/2023, located in Botswana, to explore for copper, silver, and associated minerals ("Sesana Project").

As at the date of this Document, the Company's principal activities are in relation to the Monte Muambe Project. As at the date of this document, the Company has not yet exercised its option in relation to the Sesana Project

nor completed on the acquisition to acquire exclusive rights to acquire the issued share capital of Phelps Dodge Mining (Zambia) Limited and therefore has no ownership rights in either project or licence. As such the Company will need to raise further funds to complete the acquisitions.

On 24 June 2021, the Company entered into the Monte Muambe Farmout Agreement which gives it an investment in the Monte Muambe Project in the Rare Earth Elements sector in Mozambique. The Company took control of MMM through the appointment of the majority of directors to the board of MMM on 12 August 2021 and an initial 1% interest in the Monte Muambe Project. The Monte Muambe Farmout Agreement sets out a four-year phased work programme and budget which will earn the Company an increasing shareholding in MMM up to 70%. In addition, the Company will be required to issue certain Consideration Shares to the current shareholders of MMM as part of the farm-out arrangements. Following the completion of the Phase 2 publication of the Scoping Study in October 2023, the Company has increased its stake in MMM to 51%.

The Board has also resolved to seek additional investments in the CRM sector and accordingly the Company has signed a binding option agreement, subject to due diligence, to enter into agreements with the relevant sellers and counterparties to acquire the Sesana Project in Botswana and the Kabompo South Project in Zambia and is in early discussions with other parties for other projects. The Directors have strict criteria which will be used when reviewing potential transactions, which include, amongst other things, identifying opportunities with known CRM occurrences or mineral resource, and where the Company has the best chance of successfully proving up the said resource of CRM, and where the Company can take over the management of the business, after conducting thorough due diligence. The Directors believe that their networks, the Company's cash resources and profile following Admission, mean that the Company will be able to target Acquisitions that are commensurate in size to its resources, although there is no limit set. It is intended that any Acquisition will be undertaken mostly by way of share consideration (in whole or part). However, if only part of the consideration is satisfied in shares, the Company will consider whether a further equity raising will be required, and the amount of such raising. This will depend on the nature of the Acquisition opportunity that arises, the form of consideration the Company uses to make the Acquisition (which cannot be determined at this time) and the need for working capital following the working capital period. However, the Company will ensure that any Acquisition will not prevent it from undertaking its obligations in respect of the Monte Muambe Project during the working capital period.

The Company's strategy is to develop the Monte Muambe Project in accordance with the work programme and budget agreed in the Monte Muambe Farmout Agreement, to acquire mining companies, businesses or licences in the CRM sector in Africa and to carry out sufficient exploration work to be able to valorise projects through development into operating mines, joint ventures, or sale. The Monte Muambe, Sesana and Kabompo South Projects (if the Company elects to undertake such acquisitions) and any additional Acquisition will be long-term investments for the Company. The Company will not generate returns from these projects in the short to medium term.

The Company is of the opinion that, taking into account the Net Proceeds of the Fundraising, the working capital available to the Company is insufficient for its present requirements, that is for at least 12 months from the date of this document.

Major Shareholders

The Directors are aware of the following persons, who, as at the date of this Document and at Admission will have a notifiable, direct or indirect, interest in the Company's capital or Voting Rights of three per cent. (3%) or more:

Shareholder	Number of Shares as at the date of this Document	Percentage of Existing Share Capital	Number of Shares on Admission	Percentage of Issued Shares on Admission	Fully Diluted Holding Admission*	Fully Diluted Percentage on Admission*
Optiva Securities Limited	13,329,866	15.36%	18,252,064	11.20%	73,544,064	15.68%
Jub Capital	7,974,460	9.19%	7,974,460	4.89%	7,974,460	1.70%
Christian Taylor-Wilkinson	6,086,844	7.02%	6,271,437	3.85%	8,671,437	1.85%
Jim Nominees Limited[1]	5,688,835	6.56%	5,688,835	3.49%	5,688,835	1.21%
John Story	5,000,000	5.76%	15,000,000	9.20%	29,000,000	6.18%
Individual & Private Clients	4,150,907	4.78%	4,150,907	2.55%	4,150,907	0.88%
Interactive Investor Services Nominees Limited[1]	3,672,623	4.23%	3,672,623	2.25%	3,672,623	0.78%
Remy Welschinger	3,000,000	3.46%	3,000,000	1.84%	3,000,000	0.64%
Mr Mohamed Zafar Quraishi	2,966,015	3.42%	3,966,015	2.43%	6,128,515	1.31%
Hargreaves Lansdown Stockbrokers	2,856,389	3.29%	2,856,389	1.75%	2,856,389	0.61%
Redmayne Bentley LLP	2,818,994	3.25%	2,818,994	1.73%	2,818,994	0.60%
Heiko Thomas	2,655,642	3.06%	2,655,642	1.63%	3,989,142	0.85%
SI Capital Ltd	2,628,812	3.03%	2,628,812	1.61%	2,628,812	0.56%
Catalyse Capital (Richard Jennings)	7,720,000	8.90%	14,720,000	9.03%	112,220,000	23.92%
John Wardle/Tracarta	0	0.00%	30,000,000	18.40%	135,000,000	28.77%

[1]Shares held in a nominee account – no individual holdings over 3%

*Fully Diluted Basis on Admission assumes all Warrants (including Piggyback Options, the New CCL Warrants and the New Loan Facility Warrants) are created and exercised up to the maximum amount and that Shareholders approve the Resolutions. NB: from the date of Admission, all existing CLNs and loans from CCL will either have been converted into Shares, repaid (including accrued interest thereon) or (in the case of loans from CCL) amended so that they are no longer convertible into Shares.

There are no differences between the voting rights enjoyed by the above persons and those enjoyed by the other holders of Ordinary Shares.

Controlling Shareholder, if any

The Company is not aware of any person who, either as at the date of this Document or immediately following Admission, exercises, will exercise, or could exercise, directly or indirectly, jointly or severally, control over the Company.

Directors*:* The directors of the Company are Martin Wood, Cédric Simonet, Louise Adrian, Simon Charles and Audrey Mothupi.

Statutory Auditors*:* PKF Littlejohn LLP of 15 Westferry Circus, Canary Wharf, London, E14 4HD

What is the key financial information regarding the issuer?

The tables below set out selected key financial information for the Group for the period from 1 July 2020 to 31 December 2023. Since the interim financial information to 31 December 2023, there has been no significant change in the financial position and performance of the Group, with the exception of:

- on 20 December 2023, the Company entered into a debt facility agreement with Catalyse Capital Limited, as amended ("**CCL Second Facility**") and has since drawn down £225,000 in total.
- the Company entered into an agreement to convert part of the outstanding debt and reprofile the remaining debt facility with Catalyse Capital Limited. The result being the reduction of this outstanding debt to £200,000.
- the Company entered into debt facility agreements with each of Tracarta Limited and Richard Jennings, enabling the Company to drawdown, in aggregate, up to £900,000. £100,000 had been drawn down from these facilities as at the date of this Document. Each loan facility is to be repaid on 25 October 2025 and carries a fixed interest rate of 12%.
- the holders of the Optiva CLN agreed to amend the terms of the Optiva CLN and 96% of the convertible loan note holders signed conversion notices to convert debt of £263,000 into Ordinary shares of £0.01 at par value, conditional on the publication of this Document.

Summary statement of financial position of the Group

	Unaudited As at 31 December 2023 £'000	**Audited As at 30 June 2023 £'000**	**Audited As at 30 June 2022 £'000**	**Audited As at 30 June 2021 £'000**
Total assets	1,961	2,734	1,441	457
Total liabilities	604	849	391	321
Total equity	1,357	1,885	1,050	136

Summary statement of comprehensive income of the Group

	Unaudited Six months to 31 December 2023 £'000	**Unaudited Six months to 31 December 2022 £'000**	**Audited Year ended 30 June 2023 £'000**	**Audited Year ended 30 June 2022 £'000**	**Audited Year ended 30 June 2021 £'000**
Other income	—	—	—	—	—
Operating loss	616	387	1,116	801	729
Net loss	690	412	1,296	801	733
Earnings per Share	(0.83p)	(1.40p)	(3.23p)	(2.72p)	(7.73p)

Summary statement of cash flows of the Group

	Unaudited Six months to 31 December 2023 £'000	Unaudited Six months to 31 December 2022 £'000	Audited Year ended 30 June 2023 £'000	Audited Year ended 30 June 2022 £'000	Audited Year ended 30 June 2021 £'000
Net cash used in operating activities	(758)	(107)	(648)	(832)	(528)
Net cash used in investing activities	(278)	(279)	(505)	(875)	—
Net cash (outflows)/inflows from financing activities	(21)	148	2,000	1,554	964
Net cash (decrease)/increase	(1,057)	(238)	847	(153)	436
Cash held at the period end	73	45	1,130	283	436

Description of the nature of any qualifications in the audit report on the historical financial information

The Company's auditors included a material uncertainty relating to going concern in their audit report for the year ended 30 June 2023. The opinion is summarised as follows:

"Material uncertainty relating to going concern

We draw attention to note 1 in the financial statements, which indicates that the group's current cash resources are insufficient to enable the group to meet its recurring outgoings for the twelve months from the date of approval of the financial statements. The group incurred a net loss of £1,300k during the year ended 30 June 2023 and is continuing to generate losses subsequently due to the pre revenue nature of the Group. As stated in note 1, these events or conditions, along with the other matters as set forth in note 1, indicate that a material uncertainty exists that may cast significant doubt on the Group's and company's ability to continue as a going concern. Our opinion is not modified in respect of this matter."

The Company's auditors included a material uncertainty relating to going concern in their audit report for the year ended 30 June 2022. The opinion is summarised as follows:

"Material uncertainty relating to going concern

"We draw attention to note 1 in the financial statements, which indicates that the Group is not currently generating revenue and remains reliant on shareholder funding. The Group incurred a net loss of £801,000 during the year ended 30 June 2022. As stated in note 1, these events or conditions indicate that a material uncertainty exists that may cast significant doubt on the company's ability to continue as a going concern. The Group is reliant on a successful fundraise by the Company to fund its operations for the foreseeable future. Management expect this to be post audit completion, following a successful admission to the standard market of the London Stock Exchange. Our opinion is not modified in respect of this matter."

The Company's auditors included a material uncertainty relating to going concern in their audit report for the year ended 30 June 2021. The opinion is summarised as follows:

"Material uncertainty relating to going concern

We draw attention to note 1 in the Financial Statements, which indicates that the company is not currently generating revenue and remains reliant on shareholder funding. The company incurred a net loss of £733,000 during the year ended 30 June 2021. As stated in note 1, these events or conditions indicate that a material uncertainty exists and may cast significant doubt on the company's ability to continue as a going concern. The Company is reliant on a successful fundraise by the company to fund its operations for the foreseeable future. Our opinion is not modified in respect of this matter."

What are the key risks that are specific to the issuer?

- The working capital available to the Company is insufficient for its present requirements, that is for at least 12 months from the date of this document.
- The Licence held by MMM may be subject to undetected defects. If a defect does exist, it is possible that the Company may lose all or part of its interest in the Monte Muambe Project.
- The Kabompo South Project and Sesana Project are presently undergoing due diligence and are subject to the Company entering into final agreements. It is possible that one or both transactions will not be completed.
- In order to undertake mining development and production activities, a Mining Licence must be held by the relevant party looking to conduct the activities. An application for a Mining Licence for the Monte Muambe Project, which will be valid for 25 years, was lodged on the 14 December 2023 and the Minister of Mineral Resources and Energy is required to communicate their decision within 190 days of this. Should the

Exploration Licence holder comply with all the relevant legislation during the exploration phase a Mining Licence is likely to be granted but cannot be guaranteed.

- The Mining Licence for the Monte Muambe Project will be granted under and governed by the laws of Mozambique and will be subject to conditions. Failure to comply with these conditions may result in its forfeiture.
- Future changes in applicable laws, regulations, agreements or changes in their enforcement or regulatory interpretation could result in changes in legal requirements or in the terms of existing permits and agreements applicable to Altona's subsidiaries or their properties, which could have a material adverse impact on the Group's current operations or planned exploration and development projects.

3. Key information on the securities

What are the main features of the securities?

Type, class and ISIN of securities
The securities being admitted to trading on the Main Market of the London Stock Exchange with a Standard Listing are New Ordinary Shares of 1 pence each. The New Ordinary Shares will be registered with ISIN GB00BFZNKV91 and SEDOL number BFZNKV91.

Currency, denomination and par value of securities
The Ordinary Shares are denominated in pounds sterling with a par value of £0.01.

Number of securities issued
The Company has 86,767,107 Ordinary Shares in issue and fully paid as at the date of this Document. 76,248,759 New Ordinary Shares will be issued on Admission.

Rights attached to the securities
Each Ordinary Share ranks *pari passu* for voting rights, dividends and return of capital on winding up. Shareholders will have pre-emption rights which will generally apply in respect of future share issues for cash.

Seniority of the securities in the event of insolvency
There is no class of securities that rank ahead or alongside the Ordinary Shares in the event of an insolvency. In addition to the Ordinary Shares, the Company created deferred shares when the Company undertook sub-divisions of the share capital during 2017 and 2019 (together the "**Deferred Shares**"). On insolvency the Deferred Shares have a right on a return of assets on liquidation or otherwise to receive out of the assets of the Company available for distribution such sum not exceeding the amount paid up on the Deferred Shares (excluding any premium) as may be available after payment to each of the holders of the Ordinary Shares the sum of £10,000 per Ordinary Share.

Restrictions on free transferability of the securities
There are no restrictions in place.

Dividend or payout policy, if any
The Board considers that it is in the best interests of Shareholders for the Company to focus on capital growth at the current time. The Board therefore intends, during the Company's current phase of development, to retain future distributable profits from the business to the extent that they are generated. The Board does not intend to declare or pay a dividend in the immediately foreseeable future, but subject to, *inter alia*, the availability of sufficient distributable profits, intend to commence the payment of dividends when it becomes commercially prudent to do so and intends to adopt a progressive dividend policy thereafter.

Where will the securities be traded?

Application for admission to trading
Application will be made for the New Ordinary Shares to be admitted to trading on the London Stock Exchange's Main Market for listed securities.

Key risks relating to the Company's securities

- If additional funds are raised through the issuance of new equity or equity-linked securities of the Company other than on a *pro rata* basis to existing Shareholders, the percentage ownership of the Shareholders may be reduced, Shareholders may experience subsequent dilution and/or such securities may, subject to Shareholder approval, have preferred rights, options and pre-emption rights senior to the Shares
- The Standard Listing of the Ordinary Shares (and, with effect from the Transition Date, the Equity Shares (transition) category, being the new rules applicable to the Company under Chapter 22 of the UKLR) affords shareholders a lower level of regulatory protection than a Premium Listing (and, with effect from the Transition Date, the ESCC)

- Investors may not be able to realise returns on their investment in Shares within a period that they would consider to be reasonable

4. Key information on admission to trading on a regulated market

Under which conditions and timetable can I invest in this security?

General terms and conditions of the Subscription

The Subscription Shares will be issued pursuant to the Subscription Letters, with such Subscription becoming unconditional on the date of publication of this Document and therefore Subscribers have no withdrawal rights following publication of this Document.

Expected timetable of the Admission

Date of this Document	19 July 2024
Admission and commencement of unconditional dealings in the New Ordinary Shares	8.00 a.m. on 25 July 2024
CREST members' accounts credited	25 July 2024

Details of the admission to trading on a regulated market, if any

The Existing Shares are currently listed on the Standard Listing segment of the Official List and traded on the London Stock Exchange's Main Market for listed securities.

Applications will be made (i) to the FCA for the New Ordinary Shares to be admitted to listing on the Standard Listing segment of the Official List and (ii) to the London Stock Exchange for the New Ordinary Shares to be admitted to trading on the London Stock Exchange's Main Market for listed securities.

With effect from the Transition Date, the Ordinary Shares will be admitted to the Official List by way of a listing on the Equity Shares (transition) category.

Amount and percentage of dilution resulting from the Fundraising

The issue of the New Ordinary Shares will result in the Ordinary Share capital held by the Shareholders at the date of this Document being diluted by 46.77 per cent.

Estimate of total expenses of the Fundraising

Estimated expenses in respect of the Fundraising are expected to be approximately £98,270 (inclusive of irrecoverable VAT). No expenses will be charged to the Investors.

Why is this prospectus being produced?

Reasons for Fundraising and Admission

The objective of the Company is to expand and diversify its portfolio of CRM mining projects while continuing derisking its Monte Muambe rare earths asset. Since the Company was admitted to trading on the Main Market of the London Stock Exchange in June 2023, and considering the positive results of the Scoping Study for the Monte Muambe Project, the Directors have resolved to focus the Monte Muambe Project Prefeasibility Study ("PFS") activities on metallurgical testing, and on obtaining the Mining Licence and associated land rights.

With respect to the Kabompo South and Sesana Projects, the objective of the Company is, after completion of the respective acquisitions, to rapidly undertake grassroot exploration with a view of generating drilling targets by early 2025.

Use and estimated amount of Net Proceeds of the Fundraising

The Company is of the opinion that, taking into account the Net Proceeds of the Fundraising (comprising the proceeds from the Subscription and the New Loan Facility) together with the current cash resources of the Company, the working capital available to the Company is insufficient for its present requirements, that is for at least 12 months from the date of this document.

The estimated Net Proceeds of the Fundraising are approximately £1,195,730, which, together with the Company's current cash resources of approximately £23,980 at the date of this Document, will be used as follows:

Use of proceeds

1.	Monte Muambe Metallurgy and Mining Concession	£255,000
2.	Due diligence and exploration for Kabompo South and Sesana Projects	£265,000
3.	Repayment of CLNs and interest*	£29,000
4.	Directors' fees and salaries	£230,000
5.	Administrative Costs and general Working capital requirements	£435,000
Total		£1,214,000

*At the date of this document, the outstanding balance of the CLNs is £275,000 and the Company has drawn down a total of £225,000 from the CCL Second Loan Facility. On Admission, £29,000 of the Net Proceeds will be used to repay the CLNs (including interest due thereon), the balance of which will be converted at Admission into Ordinary Shares at the Issue Price. In addition, £70,000 of the loan under the CCL Second Facility will be converted into Ordinary Shares (at the Issue Price) at Admission leaving an outstanding balance of £200,000 (including interest due thereon) owing to CCL under the CCL Second Loan Facility. Pursuant to an amendment to the CCL Second Facility dated 27 June 2024, CCL no longer has conversion rights under the CCL Second Facility and its repayment date is now October 2025.

Underwriting

The Subscription is not being underwritten.

Most material conflicts of interest pertaining to the Fundraising or Admission

There are no material conflicts of interest pertaining to the Fundraising or Admission.

RISK FACTORS

The Directors have presented the risks which they currently consider are material to the Group, although additional risks may exist, however the risks presented are those material risks which the Directors are currently aware of. There may be special risks if an investor holds Shares in certain jurisdictions.

An investment in Shares is speculative and may not be suitable for all recipients of this Document. Potential UK investors are accordingly advised to consult a person authorised under the FSMA who specialises in advising in investments of this kind before making any investment decisions. Non-UK investors are advised to consult another appropriately authorised independent adviser who specialises in advising on the acquisition of shares and other securities. A prospective investor should consider carefully whether an investment in the Company is suitable in the light of their personal circumstances and the financial resources available to them.

RISKS RELATING TO FINANCING AND LIQUIDITY/WORKING CAPITAL

The Company is of the opinion that, taking into account the Net Proceeds of the Fundraising, the working capital available to the Company is insufficient for its present requirements, that is for at least 12 months from the date of this document.

The Company expects to have a funding shortfall of approximately £370,000 by February 2025 based on current base case projections ("Shortfall").

In addition, on 30 October 2025, being approximately 16 months following the date of the Prospectus, £1.23m comprising principal and interest under outstanding loan agreements becomes payable. In the event that the Company is unable to refinance these payments, the Shortfall will increase by this amount.

The Company intends to fund the Shortfall by raising further capital through an equity fundraising in advance of February 2025 commencing in Q4 2024, from i) current key shareholders and other potential new investors yet to be identified and ii) seeking a potential new strategic shareholder yet to be identified or securing finance from other sources for the Monte Muambe Project. Each such fundraising will take place concurrently. Furthermore, additional funds may become available from cash received as a result of the exercise of unexercised warrants granted to investors and brokers.

In the event that there is an equity fundraising to fund the amount of the Shortfall at the Issue Price, the Shareholders at Admission would be diluted by approximately 18.50 per cent.

Based on conversations to date both with existing major Shareholders and other potential investors, the Directors are confident that the Company will be able to raise funds to meet the Shortfall by February 2025, however, there is no certainty that the Company will raise sufficient funds to meet the Shortfall either in part or at all.

The Directors will closely monitor the prospects for an equity fundraise during Q4 2024, and will from the beginning of this period proactively take steps (including discussions with potential buyers) to ensure that, in the event of failure to raise additional finance, the Company will be in a position to immediately sell either part (via a farm-out) or all of its interest in the Monte Muambe Project within the required timeframe to fund the Shortfall. The Directors are currently confident that they will be able to find a buyer for this Project and that the proceeds would be sufficient to at least fund the Shortall, as currently the Company's interest in the Monte Muambe Project far exceeds the estimated Shortfall and recent M&A activity in the rare earths sector show that there is an appetite for advanced rare earths projects.

However, although the Directors would use all endeavours to sell an interest in the Monte Muambe Project, in the event that they were unable to do so and had exhausted all other actions to fulfil the Shortfall, the Company would need to wind down its operations, realise its assets and may enter administration, if and to the extent there are creditors of the Company who cannot be paid. In such an event, the Company would no longer manage the affairs of the Company or the realisation of its assets. As a result of either winding down the business or entering into administration, the Ordinary Shares would be cancelled from the Official List and Shareholders may receive little or no value for their Ordinary Shares.

RISKS RELATING TO THE MONTE MUAMBE PROJECT

Title Risk

Monte Muambe:

The Company has investigated the title to, and the rights and interests set out in, the Monte Muambe Licence held by MMM. To the best of its knowledge, such title and interests are in good standing. However, this should not be construed as a guarantee of the same. The Monte Muambe Licence may be subject to undetected defects. If a defect does exist, it is possible that the Company may lose all or part of its interest in the Monte Muambe Project.

MMM has complied, to date, with all conditions of the Licence.

Monte Muambe Project Mining Licence risk

MMM holds the Monte Muambe Licence, which is an existing Exploration Licence which has been renewed by MMM for a period of three (3) years, i.e. to 22 May 2025. In order to undertake mining development and production activities, a Mining Licence must be held by the relevant party looking to conduct the activities, which may or may not be granted. An Exploration Licence holder enjoys a preference in the granting of a Mining Licence, which it has applied for on a timely basis. Should the Exploration Licence holder comply with all the relevant legislation during the exploration phase a Mining Licence is likely to be granted but cannot be guaranteed. The application for a Mining Licence, which will be valid for 25 years, was lodged on the 14 December 2023. The Minister of Mineral Resources and Energy is required to communicate their decision within 190 days of this however, as at the date of this Document, the decision remains pending.

Impact of environmental and social issues affecting the Monte Muambe Project

The Monte Muambe Project is still at an exploration stage of project development and further consideration will need to be given to environmental and social issues affecting the Monte Muambe Project. Environmental and safety legislation (e.g. in relation to reclamation, disposal of waste products, protection of wildlife and otherwise relating to environmental protection) may change in a manner that may require stricter or additional standards than those now in effect, a heightened degree of responsibility for companies and their directors and employees and more stringent enforcement of existing laws and regulations. There may also be unforeseen environmental liabilities resulting from future mining or production activities, which may be costly to remedy. Potential environmental liabilities as a result of unfulfilled environmental obligations by the previous owners may impact the Group. Risks may include on-site sources of environmental contamination such as oil and fuel from the mining equipment and rehabilitation of the site upon expiry of the Licence. Under the laws of Mozambique, MMM is required to decommission and rehabilitate the area affected by the mining activities, accordingly there will be a potential cost associated with undertaking these obligations. MMM will be required to provide a restoration bond in respect of any drilling and other operations. It is currently unknown what this could be but the funding of this could have a material impact on the Group's financial position in the future.

The Group has not purchased insurance for environmental risks (including potential liability for pollution or other hazards as a result of the disposal of waste products occurring from exploration and production) as it is not generally available at a price which the Group regards as reasonable.

Mineral, metallurgical and geological risks

The Monte Muambe Project has seen significant amounts of drilling which has allowed the preparation of a Mineral Resource Estimate and a Scoping Study. Further exploration work and studies are required to prepare a Pre-Feasibility Study and a JORC Ore Reserves Estimate. A Mineral Resource Estimate does not guarantee that a project will be viable, and it is not certain that further work will result in the production of an Ore Reserves Estimate. The Company will need to undertake additional exploration works to establish reasonable grounds for a saleable product and for project viability. Various parameters including Ore Reserves Estimates tonnage and grade, mineralogy, metallurgy, and processing costs may reduce the cost and quantity of saleable product and could have a material impact on the Group's financial position in the future.

Stage of development

The Company has spent the last two years focusing on the exploration of the Monte Muambe Project; however, there can be no assurance that the Licence will be brought into production or that the Monte Muambe Project will ever be profitable. The commercial viability of REE deposits of the

kind located and believed to be located at the Monte Muambe Project area is dependent upon a number of factors, including, but not limited to, the market price of the component REE's, the quality, size and other attributes of the deposits and the proximity to, and availability of, infrastructure necessary to develop, exploit and transport minerals on a commercial scale.

RISKS RELATING TO THE KABOMPO SOUTH PROJECT

Title Risk

At the date of this document, the Company is investigating the title to, and the rights and interests set out in, the licence held by Phelps Dodge Mining Zambia Ltd. The title is not in good standing and requires several actions to be regularised. Even if these actions are completed successfully, this should not be construed as a guarantee that the title will be in good standing. The Licence held by Phelps Dodge Mining Zambia Ltd may be subject to undetected defects. If a defect does exist, the Company would not proceed with the acquisition of the Kabompo South Project and the Company would not incur any further costs in this regard.

Kabompo South Project Mining Licence risk

The Kabompo South licence is a large-scale exploration licence. In order to undertake mining development and production activities, a large-scale mining licence must be held by the relevant party looking to conduct the activities, which may or may not be granted. An Exploration Licence holder enjoys a preference in the granting of a Mining Licence, which it has applied for on a timely basis. Should the Exploration Licence holder comply with all the relevant legislation during the exploration phase a Mining Licence is likely to be granted but cannot be guaranteed. As at the date of this Document, the Company does not have any interest in the issued share capital of Phelps Dodge Mining (Zambia) Limited.

Mineral, metallurgical and geological risks

The Project has seen limited amounts of grassroot exploration and the presence of copper occurrences within the licence has not been confirmed yet. Further exploration work and studies are required to achieve a discovery. There is no guarantee that a discovery will be achieved. If a discovery takes place, it is not certain that Mineral Resource Estimate and an Ore Reserve Estimate will be defined, or that a project will be viable. The Company will need to undertake additional exploration works to establish reasonable grounds for a saleable product and for project viability. Various parameters including Ore Reserves Estimates tonnage and grade, mineralogy, metallurgy, and processing costs may reduce the cost and quantity of saleable product and could have a material impact on the Group's financial position in the future.

Stage of development

The Kabompo South Project is at grassroot exploration stage and there can be no assurance that the Licence will be brought into production or that the Kbompo South Project will ever be profitable. The commercial viability of copper deposits of the kind targeted at the Kabompo South Project is dependent upon a number of factors, including, but not limited to, the nature and the price of copper products, the quality, size and other attributes of the deposits and the proximity to, and availability of, infrastructure necessary to develop, exploit and transport minerals on a commercial scale.

Impact of environmental and social issues affecting the Project

The Kabompo South Project is still at an exploration stage of project development and further consideration will need to be given to environmental and social issues affecting the Kabompo South Project. Environmental and safety legislation (e.g. in relation to reclamation, disposal of waste products, protection of wildlife and otherwise relating to environmental protection) may change in a manner that may require stricter or additional standards than those now in effect, a heightened degree of responsibility for companies and their directors and employees and more stringent enforcement of existing laws and regulations. There may also be unforeseen environmental liabilities resulting from future mining or production activities, which may be costly to remedy. Potential environmental liabilities as a result of unfulfilled environmental obligations by the previous owners may impact the Group. Risks may include on-site sources of environmental contamination such as oil and fuel from the mining equipment and rehabilitation of the site upon expiry of the Licence. Under the laws of Zambia, mining operators are required to decommission and rehabilitate the area affected by the mining activities, accordingly there will be a potential cost associated with

undertaking these obligations. The Company will be required to provide a restoration bond in respect of any drilling and other operations. It is currently unknown what this could be but the funding of this could have a material impact on the Group's financial position in the future.

The Group has not purchased insurance for environmental risks (including potential liability for pollution or other hazards as a result of the disposal of waste products occurring from exploration and production) as it is not generally available at a price which the Group regards as reasonable. As a result, PDMZ would be liable for the full cost of remediating any non-compliance in this regard.

RISKS RELATING TO THE SESANA PROJECT

Title Risk

At the date of this document, the Company is investigating the title to, and the rights and interests set out in, the Sesana Project licence. The title is believed to be in good standing which should not be construed as a guarantee that the title is in good standing. The licence held by Ignate Africa Minerals (Pty) Ltd may be subject to undetected defects. If a defect does exist, the Company would not proceed with the acquisition of the Sesana Project and the Company would not incur any further costs in this regard.

Sesana Project Mining Licence risk

The Sesana Licence is a prospecting licence. In order to undertake mining development and production activities, a mining licence must be held by the relevant party looking to conduct the activities, which may or may not be granted. A prospecting licence holder enjoys a preference in the granting of a mining licence, which it has applied for on a timely basis. Should the prospecting licence holder comply with all the relevant legislation during the exploration phase a mining licence is likely to be granted but cannot be guaranteed. As at the date of this Document, the Company does not own the Sesana licence.

Mineral, metallurgical and geological risks

The Project has seen limited amounts of grassroot exploration and the presence of copper occurrences within the licence has not been confirmed yet. Further exploration work and studies are required to achieve a discovery. There is no guarantee that a discovery will be achieved. If a discovery takes place, it is not certain that a Mineral Resource Estimate and an Ore Reserve Estimate will be defined, or that a project will be viable. The Company will need to undertake additional exploration works to establish reasonable grounds for a saleable product and for project viability. Various parameters including Ore Reserves Estimates tonnage and grade, mineralogy, metallurgy, and processing costs may reduce the cost and quantity of saleable product and could have a material impact on the Group's financial position in the future.

Stage of development

The Sesana Project is at grassroot exploration stage and there can be no assurance that the Licence will be brought into production or that the Sesana Project will ever be profitable. The commercial viability of copper deposits of the kind targeted at the Sesana Project is dependent upon a number of factors, including, but not limited to, the nature and the price of copper products, the quality, size and other attributes of the deposits and the proximity to, and availability of, infrastructure necessary to develop, exploit and transport minerals on a commercial scale.

Impact of environmental and social issues affecting the Project

The Sesana Project is still at an exploration stage of project development and further consideration will need to be given to environmental and social issues affecting the Sesana Project. Environmental and safety legislation (e.g. in relation to reclamation, disposal of waste products, protection of wildlife and otherwise relating to environmental protection) may change in a manner that may require stricter or additional standards than those now in effect, a heightened degree of responsibility for companies and their directors and employees and more stringent enforcement of existing laws and regulations. There may also be unforeseen environmental liabilities resulting from future mining or production activities, which may be costly to remedy. Potential environmental liabilities as a result of unfulfilled environmental obligations by the previous owners may impact the Group. Risks may include on-site sources of environmental contamination such as oil and fuel from the mining equipment and rehabilitation of the site upon expiry of the Licence. Under the laws of

Botswana, mining operators are required to decommission and rehabilitate the area affected by the mining activities, accordingly there will be a potential cost associated with undertaking these obligations. The Company will be required to provide a restoration bond in respect of any drilling and other operations. It is currently unknown what this could be but the funding of this could have a material impact on the Group's financial position in the future.

The Group has not purchased insurance for environmental risks (including potential liability for pollution or other hazards as a result of the disposal of waste products occurring from exploration and production) as it is not generally available at a price which the Group regards as reasonable. As a result, PDMZ would be liable for the full cost of remediating any non-compliance in this regard.

RISKS RELATING TO MOZAMBIQUE

Government regulation and political risk

MMM's operating activities will be subject to laws and regulations governing expropriation of property, health and worker safety, employment standards, waste disposal, protection of the environment, mine development, land and water use, prospecting, mineral production, exports, taxes, labour standards, occupational health standards, toxic wastes, the protection of endangered and protected species and other matters. While the Company believes that MMM is in substantial compliance with all material current laws and regulations affecting its activities, future changes in applicable laws, regulations, agreements or changes in their enforcement or regulatory interpretation could result in changes in legal requirements or in the terms of existing permits and agreements applicable to MMM or its properties, which could have a material adverse impact on the Group's current operations or planned exploration and development projects. Where required, obtaining necessary permits and licences can be a complex, time consuming process and the Company cannot be assured whether any necessary permits will be obtainable on acceptable terms, in a timely manner or at all. The costs and delays associated with obtaining necessary permits and complying with these permits and applicable laws and regulations could stop or materially delay or restrict MMM from proceeding with any future exploration or development of its properties. Any failure to comply with applicable laws and regulations or permits, even if inadvertent, could result in interruption or closure of exploration, development or mining operations or material fines, penalties or other liabilities.

The Muambe Rare Earths Project is located in Mozambique. MMM's activities may be affected in varying degrees by political stability and governmental regulations. Any changes in regulations or shifts in political attitudes in this country or any other countries in which the Group may operate are beyond the control of the Group and may adversely affect its operations.

Legal system and litigation risk

The licence that has been transferred to MMM is granted under and governed by the laws of Mozambique and is granted subject to conditions, including minimum annual expenditure commitments and reporting commitments. Similar conditions may be applied to future mining permits acquired by the Company or its subsidiaries. Failure to comply with these conditions may result in forfeiture of the Monte Muambe Project Licences. Furthermore, the licences that are held by the Group are subject to periodic extension. Whist there is no reason to believe that such extensions will not be granted, the Company cannot guarantee that this will occur. New conditions may also be imposed on the Monte Muambe Project licence (and any additional future mining permits held by the Group) under the renewal process which may adversely affect the Company.

Mozambique may have a less developed legal system than more established economies which could result in risks such as (i) effective legal redress in the courts, whether in respect of a breach of law or regulation, or in an ownership dispute, being more difficult to obtain; (ii) a higher degree of discretion on the part of governmental authorities; (iii) the lack of judicial or administrative guidance on interpreting applicable rules and regulations; (iv) inconsistencies or conflicts between and within various laws, regulations, decrees, orders and resolutions; (v) relative inexperience of the judiciary and courts in such matters and (vi) political interference or corruption in the administration of justice. In certain jurisdictions the commitment of local business people, government officials and agencies and the judicial system to abide by legal requirements and negotiated agreements may be more uncertain, creating particular concerns with respect to the Group's permits and agreements for business. These may be susceptible to revision or cancellation and legal redress may be uncertain

or delayed. There can be no assurance that joint ventures, licences, licence applications or other legal arrangements will not be adversely affected by the actions of government authorities or others and the effectiveness of and enforcement of such arrangements in these jurisdictions cannot be assured.

Terrorism risk

In 2017, terrorist attacks began in the northern side of the country, more particular in the Cabo Delgado province where the liquefied natural gas projects are being developed by TOTAL, Eni and ExxonMobil, to the extent that the onshore projects were halted in March 2021, but the development of the offshore project continued, with first LNG export having taken place in November 2022. A joint Rwanda and SADC member forces (Angola, South Africa, Botswana, Lesotho, Zimbabwe, Malawi and Tanzania) has succeeded in disabling some of the terrorist cells, and recapturing most of the Mocimboa da Praia District in Cabo Delgado.

Despite this, the country continued to attract major investments and major projects established in the country remained in progress, as this risk is localised and only affects a few districts in the Cabo Delgado province.

Transportation infrastructure

Central to MMM's ability to become a commercial mining operation is access to a transportation system through which it can transport future production to a port for onward export by sea. While the Monte Muambe Project does not benefit from close proximity to the nearest port, there are developed transportation infrastructure out of the Tete province where the Monte Muambe Project will be implemented namely the Sena or the Nacala rail line up to Beira or Nacala ports, however, MMM will need to connect to such infrastructure and there is a risk that such infrastructure will not be properly maintained.

RISKS RELATING TO ZAMBIA

Government regulation and political risk

The Company's operating activities will be subject to laws and regulations governing expropriation of property, health and worker safety, employment standards, waste disposal, protection of the environment, mine development, land and water use, prospecting, mineral production, exports, taxes, labour standards, occupational health standards, toxic wastes, the protection of endangered and protected species and other matters. While the Company believes that PDMZ is in substantial compliance with all material current laws and regulations affecting its activities, future changes in applicable laws, regulations, agreements or changes in their enforcement or regulatory interpretation could result in changes in legal requirements or in the terms of existing permits and agreements applicable to PDMZ or its properties, which could have a material adverse impact on the Group's current operations or planned exploration and development projects. Where required, obtaining necessary permits and licences can be a complex, time-consuming process and the Company cannot be assured whether any necessary permits will be obtainable on acceptable terms, in a timely manner or at all. The costs and delays associated with obtaining necessary permits and complying with these permits and applicable laws and regulations could stop or materially delay or restrict PDMZ from proceeding with any future exploration or development of its properties. Any failure to comply with applicable laws and regulations or permits, even if inadvertent, could result in interruption or closure of exploration, development or mining operations or material fines, penalties or other liabilities.

The Kabompo South Project is located in Zambia. PDMZ's activities may be affected in varying degrees by political stability and governmental regulations. Any changes in regulations or shifts in political attitudes in this country or any other countries in which the Group may operate are beyond the control of the Group and may adversely affect its operations.

Legal system and litigation risk

The licence held by PDMZ and currently being renewed is granted under and governed by the laws of Zambia and is granted subject to conditions, including minimum annual expenditure commitments and reporting commitments. Similar conditions may be applied to future mining permits acquired by the Company or its subsidiaries. Failure to comply with these conditions may result in forfeiture of the Kabompo South Licence. Furthermore, the licences that are held by the Group are subject to periodic extension. Whist there is no reason to believe that such extensions will not be granted, the

Company cannot guarantee that this will occur. New conditions may also be imposed on the Kabompo South License (and any additional future mining licences held by the Group) under the renewal process which may adversely affect the Company.

Zambia may have a less developed legal system than more established economies which could result in risks such as (i) effective legal redress in the courts, whether in respect of a breach of law or regulation, or in an ownership dispute, being more difficult to obtain; (ii) a higher degree of discretion on the part of governmental authorities; (iii) the lack of judicial or administrative guidance on interpreting applicable rules and regulations; (iv) inconsistencies or conflicts between and within various laws, regulations, decrees, orders and resolutions; (v) relative inexperience of the judiciary and courts in such matters and (vi) political interference or corruption in the administration of justice. In certain jurisdictions the commitment of local business people, government officials and agencies and the judicial system to abide by legal requirements and negotiated agreements may be more uncertain, creating particular concerns with respect to the Group's permits and agreements for business. These may be susceptible to revision or cancellation and legal redress may be uncertain or delayed. There can be no assurance that joint ventures, licences, licence applications or other legal arrangements will not be adversely affected by the actions of government authorities or others and the effectiveness of and enforcement of such arrangements in these jurisdictions cannot be assured.

Transportation infrastructure

Central to the Kabompo South Project's ability to become a commercial copper mining operation is access to a transportation system through which it can transport future production to a port for onward export by sea. Zambia is a landlocked country, and the Kabompo South Project does not benefit from close proximity to the nearest port. The Kabompo South Project is located 25 km from the M8, a major road linking Western Zambia to the rest of the country. There is a risk that such infrastructure will not be properly maintained.

RISKS RELATING TO BOTSWANA

Government regulation and political risk

The Company's operating activities will be subject to laws and regulations governing expropriation of property, health and worker safety, employment standards, waste disposal, protection of the environment, mine development, land and water use, prospecting, mineral production, exports, taxes, labour standards, occupational health standards, toxic wastes, the protection of endangered and protected species and other matters. While the Company believes that IAM, the current holder of the Sesana licence, is in substantial compliance with all material current laws and regulations affecting its activities, future changes in applicable laws, regulations, agreements or changes in their enforcement or regulatory interpretation could result in changes in legal requirements or in the terms of existing permits and agreements applicable to IAM or its properties, which could have a material adverse impact on the Group's current operations or planned exploration and development projects. Where required, obtaining necessary permits and licences can be a complex, time-consuming process and the Company cannot be assured whether any necessary permits will be obtainable on acceptable terms, in a timely manner or at all. The costs and delays associated with obtaining necessary permits and complying with these permits and applicable laws and regulations could stop or materially delay or restrict IAM from proceeding with any future exploration or development of its properties. Any failure to comply with applicable laws and regulations or permits, even if inadvertent, could result in interruption or closure of exploration, development or mining operations or material fines, penalties or other liabilities.

The Sesana Project is located in Botswana. IAM and the Company's activities may be affected in varying degrees by political stability and governmental regulations. Any changes in regulations or shifts in political attitudes in this country or any other countries in which the Group may operate are beyond the control of the Group and may adversely affect its operations.

Legal system and litigation risk

The licence held by IAM is granted subject to conditions, including minimum annual expenditure commitments and reporting commitments. Similar conditions may be applied to future mining permits acquired by the Company or its subsidiaries. Failure to comply with these conditions may result in forfeiture of the Sesana Licence. Furthermore, the licences that are held by the Group are subject to periodic extension. Whist there is no reason to believe that such extensions will not be

granted, the Company cannot guarantee that this will occur. New conditions may also be imposed on the Sesana Licence (and any additional future mining licences held by the Group) under the renewal process which may adversely affect the Company.

Botswana may have a less developed legal system than more established economies which could result in risks such as (i) effective legal redress in the courts, whether in respect of a breach of law or regulation, or in an ownership dispute, being more difficult to obtain; (ii) a higher degree of discretion on the part of governmental authorities; (iii) the lack of judicial or administrative guidance on interpreting applicable rules and regulations; (iv) inconsistencies or conflicts between and within various laws, regulations, decrees, orders and resolutions; (v) relative inexperience of the judiciary and courts in such matters and (vi) political interference or corruption in the administration of justice. In certain jurisdictions the commitment of local business people, government officials and agencies and the judicial system to abide by legal requirements and negotiated agreements may be more uncertain, creating particular concerns with respect to the Group's permits and agreements for business. These may be susceptible to revision or cancellation and legal redress may be uncertain or delayed. There can be no assurance that joint ventures, licences, licence applications or other legal arrangements will not be adversely affected by the actions of government authorities or others and the effectiveness of and enforcement of such arrangements in these jurisdictions cannot be assured.

Transportation infrastructure

Central to the Sesana Project's ability to become a commercial copper and silver mining operation is access to a transportation system through which it can transport future production to a port for onward export by sea. Botswana is a landlocked country, and the Sesana Project does not benefit from close proximity to the nearest port. The Sesana Project is located 65 km from the A3, a major road linking Botswana to the Walvis Bay port in Namibia. There is a risk that such infrastructure will not be properly maintained.

RISKS RELATING TO ADDITIONAL ACQUISITIONS

Although the Company will seek to evaluate the risks inherent in a particular target business (including geographic region in which it operates), it cannot offer any assurance that it will make a proper discovery or assessment of all of the significant risks. Furthermore, no assurance may be made that an investment in Shares will ultimately prove to be more favourable to Investors than a cash investment, if such opportunity were available, in any target company or business. As the Company does not expect that Shareholder approval will be required in connection with an Acquisition, investors will be relying on the Company's and the Director's ability to identify potential targets, evaluate their merits, conduct or monitor diligence and conduct negotiations.

There is no assurance that the Company will identify suitable Acquisition opportunities in a timely manner or at all which could result in a loss on your investment

The Company's business strategy includes its ability to identify sufficient additional suitable acquisition opportunities. The Company cannot estimate how long it will take to identify suitable acquisition opportunities or whether it will be able to identify any suitable additional acquisition opportunities at all. If the Company fails to complete a proposed acquisition (for example, because it has been outbid by a competitor) it may be left with unrecovered transaction costs, potentially including break fees, legal costs or other expenses. Furthermore, even if an agreement is reached relating to a proposed acquisition, the Company may fail to complete such acquisition for reasons beyond its control. Any such event will result in a loss to the Company of the related costs incurred, which could materially adversely affect subsequent attempts to identify and acquire another target business.

The Company has chosen, in relation to the Projects, and may in respect of additional Acquisitions, choose to use Shares as consideration

The Company is required, in relation to its acquisition of its interests in MMM, and may in respect of additional Acquisitions, issue Shares (and/or cash) as consideration for the relevant Acquisition. There is no guarantee that Shares will be an attractive offer for the shareholders of any company or business which the Company identifies as a suitable Acquisition opportunity. If the Company fails to identify a target company which is willing to accept share consideration, it may have to raise

additional cash funds and may be left with substantial unrecovered transaction costs, potentially including fees, legal costs, accounting costs, due diligence or other expenses.

There is no assurance that any prospecting and development work at the Projects or at subsequent Acquisitions will be successful or, that they will be effective in increasing the valuation of any business acquired

For the Projects and following any additional Acquisition, the Company intends to endeavour to generate Shareholder value through capital adequacy, operational improvements, economies of scale and through an acquisition programme. However, there can be no assurance that the Company will be able to propose and implement effective operational improvements for any company or business which the Company acquires. In addition, even if the Company completes an additional Acquisition, general economic and market conditions or other factors outside the Company's control could make the Company's operating strategies difficult or impossible to implement. Any failure to implement these operational improvements successfully and/or the failure of these operational improvements to deliver the anticipated benefits could have a material adverse effect on the Company's results of operations and financial condition.

The Group may face significant competition for Acquisition opportunities

There may be significant competition in some or all of the Acquisition opportunities that the Company may explore. Such competition may for example come from strategic buyers, sovereign wealth funds, special purpose acquisition companies and public and private investment funds many of which are well established and have extensive experience in identifying and completing Acquisitions. A number of these competitors may possess greater technical, financial, human and other resources than the Group. The Company cannot assure Investors that it will be successful against such competition. Such competition may cause the Group to be unsuccessful in executing additional Acquisitions or may result in a successful Acquisition being made at a significantly higher price than would otherwise have been the case.

Any due diligence by the Company in connection with an Acquisition may not reveal all relevant considerations or liabilities of the target business, which could have a material adverse effect on the Group's financial condition or results of operations

In undertaking future Acquisitions, the Company intends to conduct such due diligence as it deems reasonably practicable and appropriate based on the facts and circumstances applicable to any potential Acquisition. The objective of the due diligence process will be to identify material issues which might affect the decision to proceed with any one particular Acquisition target or the consideration payable for an Acquisition. The Company also intends to use information revealed during the due diligence process to formulate its business and operational planning for, and its valuation of, any target company or business. Whilst conducting due diligence and assessing a potential Acquisition, the Company will rely on publicly available information, if any, information provided by the relevant target company to the extent such company is willing or able to provide such information and, in some circumstances, third party investigations.

There can be no assurance that the due diligence undertaken with respect to a potential Acquisition will reveal all relevant facts that may be necessary to evaluate such Acquisition including the determination of the price the Company may pay for an Acquisition target, or to formulate a business plan. Furthermore, the information provided during due diligence may be incomplete, inadequate or inaccurate. As part of the due diligence process, the Company will also make subjective judgements regarding the results of operations, financial condition and prospects of a potential opportunity. If the due diligence investigation fails to correctly identify material issues and liabilities that may be present in a target company or business, or if the Company considers such material risks to be commercially acceptable relative to the opportunity, and the Company proceeds with an Acquisition, the Company may subsequently incur substantial impairment charges or other losses. In addition, following an Acquisition, the Company may be subject to significant, previously undisclosed liabilities of the acquired business that were not identified during due diligence and which could contribute to poor operational performance, undermine any attempt to restructure the acquired company or business in line with the Company's business plan and have a material adverse effect on the Group's financial condition and results of operations.

The Company may be unable to complete future Acquisitions or to fund the operations of the target business if it does not obtain additional funding

If, in undertaking the Projects or following an Acquisition, the Company's cash reserves are insufficient, the Company will likely be required to seek additional equity. The Company may not receive sufficient support from its existing Shareholders to raise additional equity, and new equity investors may be unwilling to invest on terms that are favourable to the Company, or at all. To the extent that additional equity is necessary to complete the Acquisition or its operations on current assets and remains unavailable or only available on terms that are unacceptable to the Company, the Company may be compelled either to restructure or abandon an Acquisition, or proceed with an Acquisition on less favourable terms, which may reduce the Company's return on the investment.

Even if additional financing is unnecessary to complete an Acquisition, the Company may subsequently require equity financing to implement operational improvements in the acquired business. The failure to secure additional financing or to secure such additional financing on terms acceptable to the Company could have a material adverse effect on the continued development or growth of the acquired business.

The Company will be subject to restrictions in offering its Shares as consideration for Acquisitions in certain jurisdictions and may have to provide alternative consideration, which may have an adverse effect on its operations

The Company may offer its Shares or other securities as part of the consideration to fund, or in connection with, an Acquisition. However, certain jurisdictions may restrict the Company's use of its Shares or other securities for this purpose, which could result in the Company needing to use alternative sources of consideration, including the need to raise additional equity. Such restrictions may limit the Company's available Acquisition opportunities or make a certain Acquisition more costly.

As a UK public company, the City Code may apply to an Acquisition. If the Company were to implement an Acquisition by way of a takeover offer, the City Code, broadly, will apply in connection with an offer for the Company as a UK public company. If the Share consideration were to exceed 30% of the issued shares of the Company, a derogation, to be granted by the Takeover Panel, may be required to implement such consideration structure under the City Code, and such derogation is not certain. Otherwise, the holder(s) of the Share consideration may be required under the City Code to make an offer to all shareholders for the entirety of their Shares. There can be no assurance that the Takeover Panel would grant such a derogation (most particularly where the target has a more than insignificant percentage of US shareholders that are not Qualified Institutional Buyers (as that term is defined by Rule 144A of the Securities Act)). This need to comply with the City Code in a takeover offer may adversely impact the Company's ability to implement the most efficient structure for acquiring a target company or business which is subject to the City Code.

The Company's principal source of operating cash will be income received from the businesses it has acquired or established

The Company is and will be dependent on the income generated by the Projects and additional acquired businesses to meet the Group's expenses and operating cash requirements (if any). The amount of distributions and dividends, if any, which may be paid from any operating subsidiary to the Company will depend on many factors, including such subsidiary's results of operations and financial condition, limits on dividends under applicable law, its constitutional documents, documents governing any indebtedness of the Company, and other factors which may be outside the control of the Company. If the acquired business is unable to generate sufficient cash flow, the Company may be unable to pay its expenses or make distributions and dividends on the Shares.

The Group may be subject to foreign investment and exchange risks

The Company's functional and presentational currency is Pounds Sterling. As a result, the Company's consolidated financial statements will carry the Company's assets in Pounds Sterling. Any business the Group acquires may denominate its financial information in a currency other than Pounds Sterling, conduct operations or make sales in currencies other than Pounds Sterling. When consolidating a business that has functional currencies other than Pounds Sterling, the Company will be required to translate, *inter alia*, the balance sheet and operational results of such business into Pounds Sterling. Due to the foregoing, changes in exchange rates between Pounds Sterling and other currencies could lead to significant changes in the Company's reported financial results from period to period. Among the factors that may affect currency values are trade balances, levels of

short-term interest rates, differences in relative values of similar assets in different currencies, long-term opportunities for investment and capital appreciation and political or regulatory developments. Although the Company may seek to manage its foreign exchange exposure, including by active use of hedging and derivative instruments, there is no assurance that such arrangements will be entered into or available at all times when the Company wishes to use them or that they will be sufficient to cover the risk.

The Company has identified a number of African countries in which it will seek to acquire a target company or business and may be subject to risks particular to one or more countries in which it operates

The Company will focus on acquiring target companies or business in the CRM sector in Africa where there are known CRM deposits. The Company may therefore acquire a target company or business in, or with substantial operations in, a number of jurisdictions, any of which may expose it to considerations or risks associated with a company operating in such jurisdiction, including but not limited to:

(a) regulatory and political uncertainty;

(b) tariffs, trade barriers and regulations related to customs and import/export matters;

(c) international tax issues, such as tax law changes and variations in tax laws;

(d) cultural and language differences;

(e) rules and regulations on currency conversion or corporate withholding taxes on individuals;

(f) currency fluctuations and exchange controls;

(g) employment regulations;

(h) crime, strikes, riots, civil disturbances, terrorist attacks and wars; and

(i) deterioration of relevant political relations.

Any exposure to such risks due to the country in which the Company operates following an Acquisition could negatively impact the Company's operations.

The Company may be unable to hire or retain personnel required to support the Company after an Acquisition

Following completion of an Acquisition, the Company will evaluate the personnel of the acquired business and may determine that it requires increased support to operate and manage the acquired business in accordance with the Company's overall business strategy. There can be no assurance that existing personnel of the acquired business will be adequate or qualified to carry out the Company's strategy, or that the Company will be able to hire or retain experienced, qualified employees to carry out the Company's strategy.

RISKS RELATING TO MINERAL, COMMODITIES AND EXPLORATION

Rare Earth Elements prices

Rare earth elements prices are determined by the supply coming out of China, which currently controls the processing of over 90% of all rare earths used in manufacturing around the world. The Covid-19 pandemic affected prices in the first half of 2020, as manufacturing industries slowed due to the restrictions put in place by China over its lockdown and containment measures, but prices rebounded sharply during H2 2020, when these measures were lifted, and peaked in February 2022. Since then, REE prices have fallen back to their early 2021 level, due to slower than expected demand growth and a supply surplus in 2023.

Long term market fundamentals for REE remain strong. However, the REE market is still relatively immature. The dependence upon China for the supply of these metals, coupled with China's own rising need for rare earths, can and does cause bottlenecks in the supply chain, causing prices to fluctuate significantly. Certain rare earths are needed in critical industries such as the electric vehicle market, or in the manufacture of wind turbine motors, therefore sustained demand is rising.

There is also price risk associated with market speculation regarding possible trade restrictions between China and US, as was seen in late 2020, but which did not materialise.

A risk is present, therefore, until an alternative viable source of rare earth elements is found outside China, to ensure a regular supply of metals to the growing industries which rely heavily upon them.

Copper prices

Copper prices are determined by supply and demand. The main drivers of demand are the general health of the World's economy, as well as the rate of progress of the Green Energy Transition.

Copper prices have peaked at over USD 4.5 per pound in late 2021 and, after falling back to about USD 3.5 per pound in mid-2022, have been relatively stable. Prices are currently rising, as a result of an undersupply of copper concentrates. Long term copper fundamentals are strong, driven by the Green Energy Transition, and as a result of an upcoming supply deficit which is estimated to reach 34 million tonnes by 2050. This deficit is caused by chronic underinvestment in copper exploration and mine development over the past 20 years.

Despite this, there are price risks associated to the general macro-economic context and to speculation, and there is no guarantee that copper prices will follow the current upward trend.

Governmental instability including political, legal and commercial instability in the countries and territories in which the Rare Earth Elements sector operates may affect the viability of the Company's operations

The Group may operate in regions with varying degrees of commercial, legal and political stability. The Monte Muambe Project is based in Mozambique, while the Sesana and Kabompo South Projects are located in Botswana and Zambia respectively. The Company intends to seek additional Acquisitions in Africa with a preference for jurisdictions considered as favourable to mining investment. Regional changes in the political landscape by civil and social pressures could cause regime change, policy reforms or changes in legal or governmental regulations. These changes may result in expropriation or nationalisation of a target's assets. Nullification or renegotiation concerning pre-existing concessions, agreements, leases and permits held by a target business, changes to economic policies, including but not limited to taxes or royalty rates, or currency restrictions are all possibilities. Regional instability due to corruption, bribery and generally underdeveloped corporate governance polices have the potential to lead to similar consequences. These risks could have a materially adverse effect on the profitability, the ability to finance, or in extreme cases, the viability of an operation.

Moreover, political pressures and fiscal constraints could lead governments to impose higher taxes on operations in the rare earth elements sector. These taxes or other types of expropriation of assets could be imposed on the Group by any jurisdiction both before and after any Acquisition. The Company's earnings growth may be constrained by delays or shutdowns as a result of political, commercial or legal instability, and may be constrained if subjected to increased taxation or other expropriation. The ability of the Company to generate long term value for Shareholders could be impacted by these risks.

EXPLORATION AND DEVELOPMENT RISKS

Safety, health and environmental exposures and related regulations may expose the Group to increased litigation, compliance costs, interruptions to operations, unforeseen environmental remediation expenses and loss of reputation

The CRM extraction sector involves mining and ore processing. These endeavours often make the sector a hazardous industry. The industry is highly regulated by health, safety and environmental laws. The Group's operations may be subject to these kinds of governmental regulations in any region in which it operates. Operations are subject to general and specific regulations and restrictions governing drilling and production, mining and processing, land tenure and use, environmental requirements (including site specific environmental licences, permits and remediation requirements), workplace health and safety, social impacts and other laws.

The Group's operations may create environmental risks including dust, noise or leakage of polluting substances from its operations. Failing to adequately manage environmental risks or to provide safe working environments could cause harm to the Company's employees or the environment surrounding the operations site. Facilities are subject to closure by governmental authorities and the Group may be subject to fines and penalties, liability to employees and third parties for injury, statutory liability for environmental remediation and other financial consequences, which may be

significant. The Company may also suffer impairment of reputation, industrial action or difficulty in recruiting and retaining skilled employees. Subsequent changes in regulations, laws or community expectations that govern the Company's operations could result in increased compliance and remediation costs. Any of the foregoing developments could have a materially adverse effect on the Company's results of operations, cash flows or financial condition.

Natural disasters may affect prospecting and mining operations and have a material impact on the productivity of the operations and may not be covered by insurance

Natural disasters, including earthquakes, drought, floods, fire, tropical storms and the physical effects of climate change, all of which are outside the Company's control, may adversely affect the Company's operations. Operating difficulties, such as unexpected geological variations that could result in significant failure, could affect the costs and feasibility of its operations for indeterminate periods. Damage to or breakdown of a physical asset, including as a result of fire, explosion or natural catastrophe, can result in a loss of assets and financial losses. Insurance may provide protection from some, but not all, of the costs that may arise from unforeseen events. Although the Company intends to maintain adequate insurance, the Company's insurance may not cover every possible risk connected with its operations. Adequate insurance at a reasonable cost is not always available. The Company's insurance may not cover its liability or the consequences of any business disruptions such as equipment failure or labour dispute. The occurrence of a significant adverse event not fully covered by insurance could have a material adverse effect on the Company's business, results of operations, financial condition and prospects.

Labour disruptions could adversely affect the Company's results of operations, cash flows and financial condition

Strikes and the potential of conflict with unions or employees may occur at any one of the Group's operations or in any regions in which the Group operates. A significant portion of the Company's workforce may be unionised. Labour interruptions may be employed to advocate labour, political or social goals. Labour interruptions have the potential to increase operational costs and decrease revenues by suspending the business activities or increasing the cost of substitute labour, which may not be available. If such disruptions are material, they may adversely affect the Company's results of operations, cash flows and financial condition.

COMMODITY AND CURRENCY RISK

Currency exchange rate fluctuations may negatively affect the Company after any Acquisition

The Fundraising will raise proceeds denominated in British Pounds Sterling. However, the markets for the commodities produced are typically listed in US dollars. The Net Proceeds will be held in the Company's bank account. The Company does not intend to hedge the Net Proceeds against risks associated with disadvantageous movements in the currency exchange rates until after it has identified additional Acquisition targets. Therefore, currency exchange rate fluctuations from the closing date of the Fundraising until the date it hedges the currency exchange rate in connection with an Acquisition may negatively affect the Company. The Company does not intend to enter into such hedging activities.

Additionally, the Company may be exposed to ongoing currency risk. While the Company's financial statements are stated in British Pounds Sterling, and certain ongoing management costs will be denominated in British Pounds Sterling, the price of its products (and thus its revenues) will be determined by world commodities markets which are typically expressed in US dollars, and depending on the location of an acquired target, the Group may have operating expenses denominated in another currency. Consequently, changes in the exchange rates of these currencies may negatively affect the Company's cash flows, operating results or financial condition to a material extent.

Competition

The CRM sector is competitive in all of its phases. The Company faces strong competition from other companies in connection with any future Acquisitions of mineral producing properties, or which properties are capable of producing, as well as for the recruitment and retention of qualified employees. Larger companies, in particular, may have access to greater financial resources, operational experience and technical capabilities than the Company which may give them a competitive advantage.

RISKS RELATING TO THE SHARES

Dilution of Shareholders' Interests

The Projects require the issue of Consideration Shares to their sellers at various stages and the Company will need to raise additional funds for the operational mining work of the Company, carry out future Acquisitions and/or meet expenditure obligations of the Group. If additional funds are raised through the issuance of new equity or equity-linked securities of the Company other than on a *pro rata* basis to existing Shareholders, the percentage ownership of the Shareholders may be reduced, Shareholders may experience subsequent dilution and/or such securities may, subject to Shareholder approval, have preferred rights, options and pre-emption rights senior to the Shares. The Directors intend that the Company should be able to issue new Shares as consideration for possible Acquisitions and/or raise additional working capital for the Company as required. Insofar as such new Shares are not offered first to existing Shareholders, then their interests in the Company will be diluted.

The pre-emption rights contained in the Act may be disapplied for Shareholders in certain circumstances and the Company may issue securities or incur substantial debt to raise capital or complete a further Acquisition, which may dilute the interests of Shareholders or affect the Company's results of operations (due to increased interest expense) and liquidity.

The Company may in the future issue a substantial number of additional Shares either as noted above or on exercise of any warrants or share options granted by the Company, each of which will have a dilutive effect on the existing Shareholders.

If Shares are issued as consideration for further Acquisitions, where a target company has an existing large shareholder, an issue of Shares as consideration may result in such shareholder subsequently holding a significant or majority stake in the Company, which may, in turn, enable it to exert significant influence over the Company (to a greater or lesser extent depending on the size of its holding).

In the event that all Warrants as granted at or prior to Admission or created subject to the Resolutions are exercised in full (including the Piggyback Options and the New Loan Note Facility Warrants) and on the basis that the Resolution is approved by Shareholders), the Shareholders at Admission will be diluted by 65.25 per cent. details of which are set out below:

Nature of Instrument	No. of Warrants/ Options	Exercise Price	Time Period/ Expiry	Maximum Dilution (%)*
Fundraising Warrants	40,000,000	10p	9 June 2025	19.70
CLN Warrants	11,000,000	5p	31 December 2025	6.32
Piggyback Options	40,000,000	15p	9 June 2026	19.70
New Loan Note Facility Warrants	135,000,000	1.5p	27 June 2028	45.30
CCL Warrants (1 and 2#)	67,500,000	1p	9 June 2026 – 20 December 2027	14.39
Other Warrants and Broker Warrants	12,646,561	5p – 12p	6 October 2024 – 9 June 2026	7.20
TOTAL	**306,146,561**			**65.25**

*dilution figures on an individual basis i.e. that only each single option/warrant is exercised and based on dilution of Shares in issue on Admission.

In the event that all the 42,000,000 Consideration Shares are issued to their sellers in respect of all of the Projects (at the Issue Price), the Shareholders at Admission will in such an event be diluted by 20.49 per cent. Furthermore, as referenced above in relation to working capital, in the event that there is an equity fundraising to fund the amount of the Shortfall (as defined above) at the Issue Price, the Shareholders at Admission would be diluted by 18.50 per cent.

A Standard Listing affords Investors a lower level of regulatory protection than a Premium Listing

A Standard Listing (and with effect from the Transition Date, the Equity Shares (transition) category, being the new rules applicable to the Company under Chapter 22 of the UKLR), affords Shareholders in the Company a lower level of regulatory protection than that afforded to investors in a company with a Premium Listing (and, with effect from the Transition Date, the ESCC), which is subject to additional obligations under the Listing Rules (and, with effect from the Transition Date, the UKLR). A Standard Listing does not permit the Company to gain a FTSE indexation, which may impact the valuation of the Ordinary Shares. Shareholders should note that Chapter 10 of the Listing Rules does not apply to the Company and as such, the Company is not required to seek Shareholder approval for an acquisition under this Chapter (although it may be required to do so for the purposes of facilitating the financing arrangements or for other legal or regulatory reasons).

Further details regarding the differences in the protections afforded by a Premium Listing as against a Standard Listing (and, with effect from the Transition Date, a listing on the Equity Shares (transition) category, against a Company listed as an ESCC) are set out in the section entitled Consequences of a Standard Listing on page 29 of this Document.

The Standard Listing Category has been closed to new applicants

Companies already within the standard listing segment before the new Listing Rules are implemented will join a new Equity Shares (transition) category and will continue to be subject to the same continuing obligations as currently apply to issuers in the standard segment. The FCA have stated that the proposed Equity Shares (transition) category would have no end date at the point of implementation, so there will be no deadline for issuers to transfer out of the category. Instead, they can apply to transfer to the proposed ESCC category, the shell companies category or the secondary listing category as relevant when and if they are ready and eligible to do so. Given the Company's current market capitalisation, the Company is currently not suitable for the ESCC category nor is it suitable for the shell companies category or the secondary listing category. Therefore, there can be no guarantee that the Company will be eligible to transfer to one of the newly proposed listing categories and therefore the Company could remain in the Equity Shares (transition) category indefinitely. The FCA have stated that the Equity Shares (transition) category would have no end date at the point of implementation and no deadline for issuers to transfer out of the category, but instead they would keep it under review. Whilst the FCA will consult if and when they consider removing this category and have confirmed that they would also provide sufficient time for any remaining issuers to consider their options, there is a risk that the Company could remain in the Equity Shares (transition) category because it is not eligible to transfer to another listing category, which is then ultimately wound down, in which case the Company may have no option but to de-list or seek an alternative market.

Investors may not be able to realise returns on their investment in Shares within a period that they would consider to be reasonable

Investments in Shares may be relatively illiquid. There may be a limited number of Shareholders and this factor, together with the number of Shares to be issued pursuant to the Fundraising, may contribute both to infrequent trading in the Shares on the London Stock Exchange and to volatile share price movements. Investors should not expect that they will necessarily be able to realise their investment in Shares within a period that they would regard as reasonable. Accordingly, the Shares may not be suitable for short-term investment. The market price for the Shares may fall below the Issue Price.

Dividend payments on the Shares are not guaranteed

It is the Board's intention during the current phase of the Company's development to retain future distributable profits from the business, to the extent any are generated. Additionally, the Board does not anticipate declaring any dividends in the foreseeable future but may recommend dividends at some future date, depending upon the generation of sustainable profits and the Company's financial position, when it becomes commercially prudent to do so. The Company can therefore give no assurance that it will be able to pay dividends going forward or as to the amount of such dividends, if any.

Continued eligibility for the Official List

If the Company undertook an Acquisition that would be deemed a reverse takeover under the Listing Rules, and the resultant enlarged group had a market capitalisation of less than £30 million,

it would not be eligible for readmission to the Official List and to trading on the Main Market of the London Stock Exchange. In such circumstances, the Company would have to seek admission to an alternative market. However, whilst it is in the Company's strategy to seek additional Acquisitions of mining projects, it is not the Directors' current intention to consider any Acquisition that would result in the Company having to seek admission to an alternative market.

RISKS RELATING TO TAXATION

Taxation of returns from assets located outside of the UK may reduce any net return to Shareholders

To the extent that the assets, company or business which the Company acquires is or are established outside the UK, it is possible that any return the Company receives from it may be reduced by irrecoverable foreign withholding or other local taxes and this may reduce any net return derived by Shareholders from an investment in the Company.

Changes in tax law may reduce any net returns for Shareholders

The tax treatment of Shareholders of Shares issued by the Company, any special purpose vehicle that the Company may establish and any company which the Company may acquire are all subject to changes in tax laws or practices in the UK or any other relevant jurisdiction. Any change may reduce any net return derived by Shareholders from an investment in the Company.

There can be no assurance that the Company will be able to make returns for Shareholders in a tax-efficient manner. It is intended that the Company will act as the holding company to a trading group including the Projects and any company or assets acquired in any Acquisition, to maximise returns for Shareholders in as fiscally efficient a manner as is practicable. The Company has made certain assumptions regarding taxation. However, if these assumptions are not borne out in practice, taxes may be imposed with respect to any of the Company's assets, or the Company may be subject to tax on its income, profits, gains or distributions in a particular jurisdiction or jurisdictions in excess of taxes that were anticipated. This could alter the post-tax returns for Shareholders (or Shareholders in certain jurisdictions). The level of return for Shareholders may also be adversely affected. Any change in laws or tax authority practices could also adversely affect any post-tax returns of capital to Shareholders or payments of dividends (if any, which the Company does not envisage the payment of, at least in the short to medium-term). In addition, the Company may incur costs in taking steps to mitigate any such adverse effect on the post-tax returns for Shareholders.

RISKS RELATING TO THE COMPANY'S RELATIONSHIP WITH THE DIRECTORS AND CONFLICTS OF INTEREST

The Company is dependent upon the Directors to identify potential Acquisition opportunities and the loss of the services of the Directors could materially adversely affect it

The Company relies heavily on a small number of key individuals, in particular the Directors, to execute its exploration programmes and to identify and execute potential Acquisition opportunities. The retention of their services cannot be guaranteed. Accordingly, the loss of any such key individual may have a material adverse effect on the Company's ability to complete its current programme of operations and identify potential Acquisition opportunities and to execute future Acquisitions.

In addition, there is a risk that the Company will not be able to recruit executives of sufficient expertise or experience to identify and maximise any opportunity that presents itself, or that recruiting and retaining those executives is more costly or takes longer than expected. The failure to attract and retain those individuals may adversely affect the Company's ability to execute its exploration programmes or to complete future Acquisitions.

The Directors may allocate their time to other businesses leading to potential conflicts of interest in their determination as to how much time to devote to the Company's affairs, which could have a negative impact on the Company's ability to develop its business

The Non-Executive Directors are engaged in other business endeavours and are not obligated to devote any specific number of hours to the Company's affairs. If the Executive Directors' other business affairs require them to devote more substantial amounts of time to such affairs, it could limit their ability to devote time to the Company's affairs and could have a negative impact on the Company's ability to consummate its strategy or to operate the business and create value for the shareholders. In addition, although the Directors must act in the Company's best interests and owe

certain fiduciary duties to the Company, they are not necessarily obligated to present business opportunities to the Company.

The Directors may enter into related party transactions with the Company, which may give rise to conflicts of interest between the Company on the one hand and the Directors on the other hand

The Directors and one or more of their affiliates may in the future enter into agreements other than related to their engagement or employment with the Company. While the Company will not enter into any related party transaction without the approval of a majority of the non-conflicted Directors, it is possible that the entering into of such an agreement would give rise to a conflict between the interest of the Company and that of the relevant Director and may lead to the Company not achieving the contractual terms that it might otherwise have been able to achieve.

CONSEQUENCES OF A STANDARD LISTING

The Company's Ordinary Shares are admitted to a listing on the standard segment of the Official List pursuant to Chapter 14 of the Listing Rules, which sets out the requirements for Standard Listings, and for such Ordinary Shares to be admitted to trading on the London Stock Exchange's Main Market for listed securities. With effect from the Transition Date, the Company will have its listing transferred to a listing on the Equity Shares (transition) category, and as a result, Chapter 22 of the UKLR will apply to the Company. As a consequence, a significant number of the Listing Rules (or from the Transition Date, the UKLR) will not apply to the Company. Shareholders will therefore not receive the full protection of the Listing Rules associated with a Premium Listing (or, with effect from the Transition Date, an ESCC).

The Company will continue to comply with Listing Principles 1 and 2 as set out in Chapter 7 of the Listing Rules (or Chapter 2 of the UKLR, from the Transition Date), as required by the FCA and (not withstanding that they only apply to companies with a Premium Listing (or to an ESCC)) the Premium Listing Principles set out in Chapter 7 of the Listing Rules.

An applicant that is applying for a Standard Listing of equity securities must comply with all the requirements listed in Chapters 2 and 14 of the Listing Rules (or Chapters 2 and 22 of the UKLR with effect from the Transition Date), which specify the requirements for listing for all securities. Where an application is made for the admission to the Official List of a class of shares, at least 10 per cent. of the shares of the class must be distributed to the public. Listing Rule 14.3 sets out the continuing obligations applicable to companies with a Standard Listing (or UKLR 22.2 with effect from the Transition Date) and requires that such companies' listed equity shares be admitted to trading on a regulated market at all times. Such companies must have at least 10 per cent. of the shares of any listed class in public hands at all times and the FCA must be notified as soon as possible if these holdings fall below that level.

The continuing obligations under Chapter 14 of the Listing Rules (or Chapter 22 of the UKLR with effect from the Transition Date) also include requirements as to:

- the forwarding of circulars and other documentation to the FCA for publication through to the National Storage Mechanism, and related notification to a regulatory information service authorised by the FCA ("RIS");
- the provision of contact details of appropriate persons nominated to act as a first point of contact with the FCA in relation to compliance with the Listing Rules and the Disclosure Guidance and Transparency Rules;
- the form and content of temporary and definitive documents of title;
- the appointment of a registrar;
- notifying an RIS in relation to changes to equity and debt capital; and
- compliance with, in particular, Chapters 4, 5 and 6 of the Disclosure Guidance and Transparency Rules.

As a company with a Standard Listing, the Company is not required to comply with, among other things, the provisions of Chapters 6 and 8 to 13 of the Listing Rules (or from the Transition Date, Chapters 4 and 6 to 10 of the UKLR), which set out more onerous requirements for issuers with a Premium Listing of equity securities (or, from the Transition Date, an ESCC). These include provisions relating to certain listing principles, the requirement to appoint a sponsor, various continuing obligations, significant transactions, related party transactions, dealings in own securities and treasury shares and contents of circulars.

The Company notes that in the case of an Acquisition, the reverse takeover provisions set out in Listing Rule 5.6 (or, with effect from the Transition Date, UKLR 22.3) may be triggered.

The Company will continue to comply with Chapter 5 of the Listing Rules (suspending, cancelling and restoring listing and Reverse Takeovers) (or Chapter 21 of the UKLR with effect from the Transition Date). If the Company undertakes a Reverse Takeover, the Company's listing on the Equity Shares (transition) category will be cancelled but the Company would not be eligible for re-admission to the Equity Shares (transition) category. The Company would therefore need to apply for a listing as an ESCC if its market capitalisation allows it, or a listing on another appropriate securities market or stock exchange. The granting of an ESCC Listing or a listing on another

appropriate securities market or stock exchange following a Reverse Takeover cannot be certain as it would need to meet the relevant eligibility criteria of the ESCC listing category at that time. The Company may have its listing suspended in the event of a Reverse Takeover.

As mentioned above, while the Company has a Standard Listing (or with effect from the Transition Date, a listing on the Equity Shares (transition) category, it is not required to comply with the provisions of, among other things:

- Chapter 6 of the Listing Rules (or Chapter 5 of the UKLR) containing additional requirements for the listing of equity securities, which are only applicable for companies with a Premium Listing (or as an ESCC with effect from the Transition Date);
- Chapter 8 of the Listing Rules (or Chapter 4 of the UKLR) regarding the appointment of a listing sponsor to guide the Company in understanding and meeting its responsibilities under the Listing Rules in connection with certain matters;
- Chapter 9 of the Listing Rules (or Chapter 6 of the UKLR) regarding continuing obligations for a company with a Premium Listing (or as an ESCC), which includes, *inter alia*, requirements relating to further issues of shares, the ability to issue shares at a discount in excess of 10 per cent. of market value, notifications, and contents of financial information;
- Chapter 10 of the Listing Rules (or Chapter 7 of the UKLR) relating to significant transactions meaning any subsequent additional acquisitions by the Company, will not require Shareholder approval under this Chapter (although such approval may be required for the purposes of facilitating the financing arrangements or for other legal or regulatory reasons);
- Chapter 11 of the Listing Rules (or Chapter 8 of the UKLR) regarding related party transactions. However, the Company is obliged to comply with DTR7.3 relating to related party transactions. DTR7.3 requires the Company to establish and maintain adequate procedures, systems and controls to enable it to assess whether a transaction or arrangement with a related party is in the ordinary course of business and has been concluded on normal market terms, and: to (i) make an announcement; (ii) gain Board approval; and (iii) ensure the related party or their associates do not vote on any resolution, relating to material related party transactions;
- Chapter 12 of the Listing Rules (or Chapter 9 of the UKLR) regarding purchases by the Company of its Ordinary Shares; and
- Chapter 13 of the Listing Rules (or Chapter 10 of the UKLR) regarding the form and content of circulars to be sent to Shareholders.

IT SHOULD BE NOTED THAT THE FCA WILL NOT HAVE THE AUTHORITY TO AND WILL NOT MONITOR THE COMPANY'S COMPLIANCE WITH ANY OF THE PREMIUM LISTING (OR ESCC CATEGORY) PRINCIPLES WHICH THE COMPANY HAS INDICATED IN THIS DOCUMENT THAT IT INTENDS TO COMPLY WITH ON A VOLUNTARY BASIS, NOR TO IMPOSE SANCTIONS IN RESPECT OF ANY FAILURE BY THE COMPANY TO SO COMPLY. HOWEVER, THE FCA WOULD BE ABLE TO IMPOSE SANCTIONS FOR NON-COMPLIANCE WHERE THE STATEMENTS REGARDING COMPLIANCE IN THIS DOCUMENT ARE THEMSELVES MISLEADING, FALSE OR DECEPTIVE.

IMPORTANT INFORMATION

In deciding whether or not to invest in Shares prospective investors should rely only on the information contained in this Document. No person has been authorised to give any information or make any representations other than as contained in this Document and, if given or made, such information or representations must not be relied on as having been authorised by the Company or the Directors. Without prejudice to the Company's obligations under the FSMA, Prospectus Rules, Listing Rules and Disclosure Guidance and Transparency Rules, neither the delivery of this Document nor any subscription made under this Document shall, under any circumstances, create any implication that there has been no change in the affairs of the Company since the date of this Document or that the information contained herein is correct as at any time after its date.

Prospective investors must not treat the contents of this Document or any subsequent communications from the Company, the Directors, or any of their respective affiliates, officers, directors, employees or agents as advice relating to legal, taxation, accounting, regulatory, investment or any other matters.

The section headed "Summary" should be read as an introduction to this Document. Any decision to invest in the Shares should be based on consideration of this Document as a whole by the investor. In particular, investors must read the section headed Section D (Risks) of the Summary together with the risks set out in the section headed "Risk Factors" beginning on page 12 of this Document.

Neither the Financial Adviser nor the Joint Brokers and any person acting on its behalf makes any representations or warranties, express or implied, with respect to the completeness or accuracy of this Document nor does any such person authorise the contents of this Document. No such person accepts any responsibility or liability whatsoever for the contents of this Document or for any other statement made or purported to be made by it or on its behalf in connection with the Company, the Shares, the Fundraising or Admission. The Financial Adviser and the Joint Brokers accordingly each disclaims all and any liability whether arising in tort or contract or otherwise which they might otherwise have in respect of this Document or any such statement. Neither Financial Adviser nor the Joint Brokers and any person acting on their behalf accepts responsibility or obligation to update, review or revise the information in this Document or to publish or distribute any information which comes to its attention after the date of this Document, and the distribution of this Document shall not constitute a representation by the Financial Adviser and the Joint Brokers, or any such person, that this Document will be updated, reviewed, revised or that any such information will be published or distributed after the date hereof.

The Joint Brokers and any affiliate thereof acting as an Investor for its or their own account(s) may subscribe for, retain, purchase or sell Shares for its or their own account(s) and may offer or sell such securities otherwise than in connection with the Fundraising. Nor does the Joint Brokers intend to disclose the extent of any such investments or transactions otherwise than in accordance with any applicable legal or regulatory requirements.

This Document does not constitute, and may not be used for the purposes of, an offer to sell or an invitation or the solicitation of an offer or invitation to subscribe for or buy, any Shares by any person in any jurisdiction: (i) in which such offer or invitation is not authorised; (ii) in which the person making such offer or invitation is not qualified to do so; or (iii) in which, or to any person to whom, it is unlawful to make such offer, solicitation or invitation. The distribution of this Document and the offering of Shares in certain jurisdictions may be restricted. Accordingly, persons outside the United Kingdom who obtain possession of this Document are required by the Company and the Directors to inform themselves about, and to observe any restrictions as to the offer or sale of Shares and the distribution of, this Document under the laws and regulations of any territory in connection with any applications for Shares including obtaining any requisite governmental or other consent and observing any other formality prescribed in such territory. No action has been taken or will be taken in any jurisdiction by the Company or the Directors that would permit a public offering of the Shares in any jurisdiction where action for that purpose is required nor has any such action been taken with respect to the possession or distribution of this Document other than in any jurisdiction where action for that purpose is required. Neither the Company nor the Directors accept any responsibility for any violation of any of these restrictions by any person.

This Document is not a prospectus, product disclosure statement or other disclosure document for the purposes of the Australian Corporations Act and is not required to be lodged with ASIC or the

ASX. Accordingly, a person may not (directly or indirectly) offer for subscription or purchase or issue invitations to subscribe for or buy or sell the Shares, or distribute this admission document where such offer, issue or distribution is received by a person in the Commonwealth of Australia, its territories or possessions, except if:

(a) the amount payable by the transferee in relation to the Shares is A$500,000 or more or if the offer or invitation to the transferee is otherwise an offer or invitation that does not require disclosure to investors in accordance with part 6D.2 or part 7.9 of the Corporations Act; or

(b) the offer or invitation does not constitute an offer to a retail client under Chapter 7 of the Australian Corporations Act.

The Shares have not been and will not be registered under the Securities Act, or under any relevant securities laws of any state or other jurisdiction in the United States, or under the applicable securities laws of South Africa, the Republic of Ireland, Canada or Japan. Subject to certain exceptions, the Shares may not be, offered, sold, resold, reoffered, pledged, transferred, distributed or delivered, directly or indirectly, within, into or in the United States, South Africa, the Republic of Ireland, Canada or Japan or to any national, resident or citizen of South Africa, the Republic of Ireland, Canada or Japan.

The Shares have not been approved or disapproved by the United States Securities and Exchange Commission, any federal or state securities commission in the United States or any other regulatory authority in the United States, nor have any of the foregoing authorities passed upon or endorsed the merits of the offering of the Shares or confirmed the accuracy or determined the adequacy of the information contained in this Document. Any representation to the contrary is a criminal offence in the United States.

Investors may be required to bear the financial risk of an investment in the Shares for an indefinite period. Prospective investors are also notified that the Company may be classified as a passive foreign investment company for United States federal income tax purposes. If the Company is so classified, the Company may, but is not obliged to, provide to U.S. holders of Shares the information that would be necessary in order for such persons to make a qualified electing fund election with respect to the Shares for any year in which the Company is a passive foreign investment company.

Data protection

The Company may delegate certain administrative functions to third parties and will require such third parties to comply with data protection and regulatory requirements of any jurisdiction in which data processing occurs. Such information will be held and processed by the Company (or any third party, functionary or agent appointed by the Company) for the following purposes:

- verifying the identity of the prospective investor to comply with statutory and regulatory requirements in relation to anti-money laundering procedures;
- carrying out the business of the Company and the administering of interests In the Company;
- meeting the legal, regulatory, reporting and/or financial obligations of the Company in the United Kingdom or elsewhere; and
- disclosing personal data to other functionaries of, or advisers to, the Company to operate and/or administer the Company.
- Where appropriate it may be necessary for the Company (or any third party, functionary or agent appointed by the Company) to:
- disclose personal data to third party service providers, agents or functionaries appointed by the Company to provide services to prospective investors; and
- transfer personal data outside of the EEA to countries or territories which do not offer the same level of protection for the rights and freedoms of prospective investors as the United Kingdom.

If the Company (or any third party, functionary or agent appointed by the Company) discloses personal data to such a third party, agent or functionary and/or makes such a transfer of personal data it will use reasonable endeavours to ensure that any third party, agent or functionary to whom the relevant personal data is disclosed or transferred is contractually bound to provide an adequate level of protection in respect of such personal data.

In providing such personal data, investors will be deemed to have agreed to the processing of such personal data in the manner described above. Prospective investors are responsible for informing any third-party individual to whom the personal data relates of the disclosure and use of such data in accordance with these provisions.

Investment considerations

In making an investment decision, prospective investors must rely on their own examination, analysis and enquiry of the Company, this Document and the terms of the Admission, including the merits and risks involved. The contents of this Document are not to be construed as advice relating to legal, financial, taxation, investment decisions or any other matter. Investors should inform themselves as to:

- the legal requirements within their own countries for the purchase, holding, transfer or other disposal of the Shares;
- any foreign exchange restrictions applicable to the purchase, holding, transfer or other disposal of the Shares which they might encounter; and
- the income and other tax consequences which may apply in their own countries as a result of the purchase, holding, transfer or other disposal of the Shares or distributions by the Company, either on a liquidation and distribution or otherwise. Prospective investors must rely upon their own representatives, including their own legal advisers and accountants, as to legal, tax, Investment or any other *related* matters concerning the Company and an investment therein.

An investment in the Company should be regarded as a long-term investment. There can be no assurance that the Company's objective will be achieved. At this time, the Company does not intend to make accommodations regarding its financial information to assist any holders with their tax obligations.

It should be remembered that the price of the Shares and any income from such Shares, can go down as well as up.

This Document should be read in its entirety before making any investment in the Shares. All Shareholders are entitled to the benefit of, are bound by and are deemed to have notice of, the provisions of the Memorandum of Association of the Company and the Articles, which investors should review.

Forward-looking statements

This Document includes statements that are, or may be deemed to be, "forward-looking statements", including those contained in Part I of this Document. In some cases, these forward-looking statements can be identified by the use of forward-looking terminology, including the terms "targets", "believes", "estimates", "anticipates", "expects", "intends", "may", "will", "should", "could" or, in each case, their negative or other variations or comparable terminology. They appear in a number of places throughout the Document and include statements regarding the intentions, beliefs or current expectations of the Company and the Board concerning, among other things: (i) the Company's objective, Acquisition and financing strategies, results of operations, financial condition, capital resources, prospects, capital appreciation of the Shares and dividends; and (ii) future deal flow and implementation of active management strategies, including any further Acquisition. By their nature, forward-looking statements involve risks and uncertainties because they relate to events and depend on circumstances that may or may not occur in the future. Forward- looking statements are not guarantees of future performances. The Group's actual performance, results of operations, financial condition, distributions to Shareholders and the development of its financing strategies may differ materially from the forward-looking statements contained in this Document. In addition, even if the Group's actual performance, results of operations, financial condition, distributions to Shareholders and the development of its financing strategies are consistent with the forward-looking statements contained in this Document, those results or developments may not be indicative of results or developments in subsequent periods.

Prospective investors should carefully review the "Risk Factors" section of this Document for a discussion of additional factors that could cause the Company's actual results to differ materially, before making an investment decision. **For the avoidance of doubt, nothing in this Document**

constitutes a qualification of the working capital statement contained in paragraph 9 *"Working Capital"* of Part VII *"Additional Information"* of this Document.

There can be no assurance that the results and events contemplated by the forward-looking statements contained in this Document will, in fact, occur. These forward-looking statements are correct only as at the date of this Document. The Company will not undertake any obligation to release publicly any revisions to these forward looking statements to reflect events, circumstances or unanticipated events occurring after the date of this Document except as required by law or by regulatory authority, including the Listing Rules, Prospectus Rules, DTR and Market Abuse Regulations.

Third party data

Where information contained in this Document has been sourced from a third party, the Company and the Directors confirm that such information has been accurately reproduced and, so far as they are aware and have been able to ascertain from information published by that third party, no facts have been omitted which would render the reproduced information inaccurate or misleading. Where third party information has been used in this Document, the source of such information has been identified. The Company takes responsibility for compiling and extracting, but has not independently verified, market data provided by third parties.

Currency presentation

Unless otherwise indicated, all references in this Document to "£", "Pound Sterling" or "Pounds" are to the lawful currency of the U.K., and to "$" or "US Dollars" are to the lawful currency of the United States.

International Financial Reporting Standards

As required by the Act and Article 4 of the European Union IAS Regulation, the financial statements of the Company for the financial year ending 30 June 2021 were prepared in accordance with International Accounting Standards in conformity with the requirements of the Companies Act 2006 (note 1 of the accounts).

For the year ending 30 June 2022, the financial statements of the Group were prepared in accordance with UK-adopted international accounting standards ("**UK IFRS**").

For the year ending 30 June 2023, the financial statements of the Group were prepared in accordance with UK-adopted international accounting standards ("**UK IFRS**").

No incorporation of website

The contents of any website of the Company or any other person do not form part of this Document.

Definitions

A list of defined terms used in this Document is set out in "Definitions" beginning at page 456.

EXPECTED TIMETABLE OF PRINCIPAL EVENTS

Publication of this Document	19 July 2024
Admission and commencement of dealings in the Enlarged Share Capital	8:00 a.m. on 25 July 2024
Crediting of new Subscription Shares to CREST Accounts	25 July 2024
Certificates for Subscription Shares dispatched	within 10 business days of Admission

All references to time in this Document are to London time unless otherwise stated

STATISTICS

Total number of Existing Shares in issue as at the date of this Document	86,767,107
Total number of Subscription Shares to be issued on Admission	39,400,000
Total number of CLN Conversion Shares to be issued on Admission	26,300,000
Total number of CCL Conversion Shares to be issued on Admission	7,000,000
Total number of Fee Shares to be issued on Admission	3,548,759
Total number of New Ordinary Shares to be issued on Admission	76,248,759
The Enlarged Share Capital in issue on Admission	163,015,866
Maximum number of Consideration Shares to be issued in connection with the Projects	42,000,000
Maximum number of Ordinary Shares to be issued pursuant to the Warrants*	306,146,561
Gross Proceeds of the Subscription	£394,000
Gross Proceeds of the New Loan Facilities	£900,000
Estimated costs in relation to the Fundraising and Admission	£98,270
Net Proceeds of the Fundraise	£1,195,730
Issue Price for the Subscription	1 pence
Market capitalisation of the Company at the Issue Price	£1,630,159

**assuming the passing of the Resolutions and includes the New Loan Facility Warrants and the New CCL Warrants*

DEALING CODES

ISIN	GB00BFZNKV91
SEDOL	BFZNKV91
LEI	2138002A5GU9BFS2I491
TIDM	REE

DIRECTORS, SECRETARY AND ADVISERS

Directors	Martin John Wood (Non-Executive Chairman) Cédric Valéry Gérard Simonet (Chief Executive Officer) Louise Adrian (Chief Financial Officer) Simon Charles (Non-Executive Director) Audrey Mamoshoeshoe Mothupi (Non-Executive Director)
Registered Office and principal place of business	Eccleston Yards 25 Eccleston Place London SW1W 9NF
Company website	www.altonaRE.com
Company Secretary	Orana Corporate LLP
Auditors and Reporting Accountants	PKF Littlejohn LLP 15 Westferry Circus London E14 4HD
Financial Adviser	Novum Securities Limited 2nd Floor, 7-10 Chandos Street London W1G 9DQ
Joint Broker	Optiva Securities Limited 49 Berkeley Square London W1J 5AZ
Joint Broker	Allenby Capital Limited 5 St Helen's Place London EC3A 6AB
Company's Solicitors	Mildwaters Consulting LLP Chestnut Field House Chestnut Field Rugby Warwickshire CV21 2PD
Competent Person	Snowden-Optiro Level 19/140 St Georges Terrace Perth WA 6000 Australia
Registrar	Share Registrars Limited 3 The Millennium Centre Crosby Way Farnham Surrey GU9 7XX
Principal bankers	HSBC Bank Plc 39 Tottenham Court Road London W1T 2AR

PART I

INFORMATION ON THE GROUP'S STRATEGY

1 INTRODUCTION

1.1. The Company was incorporated with limited liability under the laws of England and Wales under the Companies Act 1985 on 2 February 2005 with number 05350512 under the name Altona Resources Plc. The Company changed its name to Altona Energy Plc on 19 December 2008 and then to Altona Rare Earths Plc on 27 February 2021. The principal legislation under which the Company operates is the Companies Act 2006 and the regulations made thereunder. The Company's registered office is located at Eccleston Yards 25 Eccleston Place London SW1W 9NF. The Company's financial year ends on 30 June.

1.2. The Company has one class of ordinary shares (the "**Shares**") and two classes of deferred shares. The Existing Shares are admitted to the Official List (by way of Standard Listing under Chapter 14 of the Listing Rules) and to trading on the London Stock Exchange's Main Market for listed securities. Applications will be made to the Official List and the Main Market in respect the New Ordinary Shares. No application will be made for any of the Deferred Shares to be admitted to trading.

2. HISTORY OF THE COMPANY'S BUSINESS

2.1. Historic Mining Business (2005 to 2018)

The Company was established and has been operating since its incorporation as a mining exploration company. The Company listed on AIM on 10 March 2005. Primarily, until the end of 2019, the focus of the Company's business was in South Australia, where it owned the exploration licences over three coal mining tenements (Wintinna, Westfield and Murloocoppie), 400 miles north of Adelaide, known as the Arckaringa Project. The licences covered an area of 2,500 km^2 and consisted mainly of scrub, desert and hills.

In November 2014, a Chinese consortium of two companies (Sino-Aus Energy Group Ltd and Wintask Limited) expressed an interest to invest in the project, as they had been developing a new technique to extract deep coal with low environmental impact, known as In-Situ Gasification, or Underground Coal Gasification (UCG). Each Chinese investor appointed a representative to the board around this time. In December 2014 a joint venture company was established (Arckaringa Coal Chemical Company Pty Ltd), with Wintask and Sino-Aus to investigate the project more thoroughly. In November 2015 a revised joint venture agreement was signed, where Sino-Aus and Wintask agreed to invest AUD33 million into the project. The Company would retain a 45% holding in the joint venture company, with Sino-Aus holding 45% and Wintask a 10% interest, once all funds had been paid.

In April 2016, Sino-Aus made its first payment to the project of AUD 4.0 million, with a further AUD 1.4 million to follow before the end of the month. However, it was announced in July 2016 that the project was on hold, due to the Company not owning the correct licence for In-Situ gasification. This caused the joint venture partners to delay their investment into the project and the JV returned the initial tranche of AUD 5.4 million to Sino-Aus. Whilst the Company held exploration licences, suitable for coal exploration via traditional drilling methods, it did not own the Petroleum Exploration Licence it needed to conduct hydrocarbon based exploration. This licence, PELA604, was owned by a US mining company, Tri-Star Petroleum Inc. who had other Australian mining interests and who were not inclined to sell PELA604 to the Company. This effectively ended the large-scale coal mining project at Arckaringa, but during 2017 and 2018 the Company continued to search for smaller, shallower deposits in its Westfield tenement which it could mine via traditional extraction methods.

By mid-2018, the Company had failed to find suitable deposits in the Westfield tenement of an economical size and it therefore brought in new investors who introduced the Company to a new sector, pyrolysis, the burning of plastic waste to convert into usable gases. This venture was brief and failed. At the beginning of November 2018, the Company's Nomad, Northland Capital, resigned. Following this event, in January 2019, the majority of the board of directors either resigned or were voted off the board by shareholders, leaving the Company to be run by its two Chinese directors.

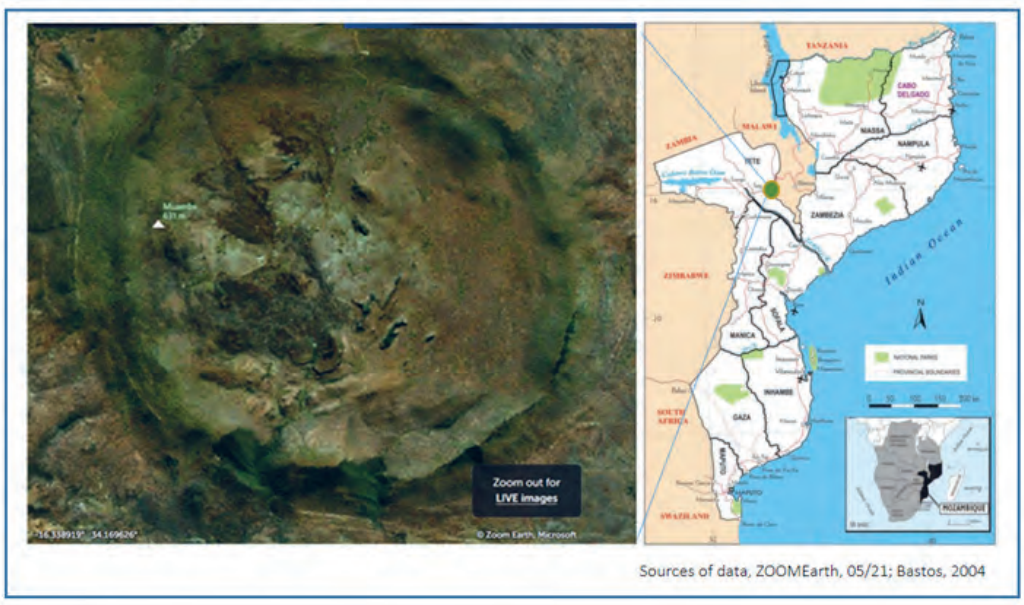
2.2. **New Management and Mining Opportunities (2019 to present)**

On 1 February 2019, Christian Taylor-Wilkinson was appointed to the board as a Non-Executive Director, to ensure that corporate governance and the Company's shareholders were attended to correctly. Mr Taylor-Wilkinson's involvement with Altona began in 2014, when his financial public relations agency, Leander PR Ltd, was appointed by Altona to advise on its shareholder communications. Phillip Sutherland, a long-term Non-Executive Director, who had resigned from the board in November 2018, was re-appointed to the board in March 2019. During the first half of 2019, the Company was introduced to a mining project in China, for the production of Vanadium Pentoxide. In June 2019, the board visited the project in the Xi'an Province and met with the owners. After a full assessment of the project, the board voted against acquiring this asset. Following this decision, the Company agreed to focus its attention outside China and Australia. It did not renew its three exploration licences in South Australia, which lapsed in June 2019. The two Chinese directors resigned from the board during late 2019 and early 2020 to pursue other business interests. Mr Taylor-Wilkinson was appointed Interim CEO in March 2020 and then made full time Chief Executive on 1 December 2020.

The Company appointed a Chairman in October 2020 and a COO in October 2021. It also appointed three new Non-Executive Directors, two in March 2021 and one in November 2021, bringing the number of board members to six. One Non-Executive Director resigned on 7 March 2022.

During the first half of 2020, the Company investigated new avenues of investment and potential revenue generation, researching a variety of mining projects and jurisdictions around the world, before agreeing that Rare Earth Elements mining in Africa could present a high value and scalable business opportunity for the Company and its shareholders. The Company has, to date, made one acquisition in the rare earth element sectors during 2021, which is detailed in this document. The Company incorporated a subsidiary in Uganda on 19 April 2021, Altona Rare Earths (Uganda) Limited, in preparation for any potential Acquisition. However this subsidiary is currently dormant. The Company incorporated another subsidiary in Tanzania on 5 August 2021, Altona Rare Earths (Tanzania) Limited, also in preparation for any potential Acquisition. This company has been registered on the Tanzania Mining Cadastre and is ready to proceed with license applications, but aside from this it is currently dormant. On 27 May 2022 the Company incorporated three subsidiaries in Mozambique, Altona Mozambique Lda, Altona Mozambique II Lda, and Altona Mozambique III Lda, in preparation for any potential new license application in Mozambique. These companies are presently dormant.

The Company has a continuing strategy to acquire majority interests in several REE mining companies, mining projects or licences which it believes will offer a suitable return to investors. The figure below demonstrates the location of the Monte Muambe Project.



On 9 June 2023, Cédric Simonet was appointed Chief Executive Officer and Christian Taylor-Wilkinson stepped down from the Board and took on the role of Business Development Officer. Louise Adrian and Simon Charles joined the Board respectively as Chief Financial Officer and Non-Executive Director.

On 19 February 2024, the Company announced that, after undertaking a careful and thorough review of its corporate strategy, it came to the conclusion that the time was right for the Company to expand and diversify its portfolio of projects in Africa, including in CRM such as copper, lithium and niobium. The Company therefore started actively assessing potential new opportunities with a focus on projects having a low-entry cost with a clear pathway to early results and to majority ownership.

On 27 March 2024 the Company entered into agreements with Sustineri Group Ltd and with the beneficial owners of Phelps Dodge Mining (Zambia) Limited to acquire an exclusive right to acquire the Kabompo South Project (copper) in Zambia, and on 8 April 2024 the Company entered into a binding option agreement with Ignate African Minerals (Pty) Ltd for the acquisition of the Sesana Project (copper and silver) in Botswana.

The Company continues to assess additional CRM projects and licences located in jurisdictions perceived as favourable to mining investment including but not limited to Zambia, Botswana, Namibia and Ivory Coast, with the objective of building a diversified portfolio of quality low-cost CRM projects to diversify its commodity and jurisdiction exposure, as well as to increase valorisation opportunities.

3. MONTE MUAMBE PROJECT ACQUISITION

3.1. Terms of the Acquisition

The Company made its first investment in June 2021 based on the new REE strategy. It entered into a Farmout Agreement with USSOKOTI INVESTIMENTOS SOCIEDADE UNIPESSOAL, LIMITADA ("**UIL**"), a company registered in Mozambique, MONTE MUAMBE MINING, LDA ("**MMM**") and the 3 individuals who initially owned MMM ("**Sellers**") on 23 June 2021. UIL at the time held Prospecting Licence 7573L, granted by the Government of Mozambique on 22 May 2017 for an initial term expiring on 22 May 2022, entitling the holder to prospect for fluorite, rare earths, and associated minerals, covering a surface area of 3,939.96 Ha. It also held certain associated Statutory Licences, including an application for land rights (DUAT) as well as prospecting data, located in Tete Province, Mozambique (together the "**Muambe Licence**"). On 26 October 2022 the Muambe Licence was transferred from UIL to MMM, in accordance with the terms of the Farmout Agreement and was extended for a further three-year term expiring on 22 May 2025. The Licence gives the right to apply, upon completion of a feasibility study, for a Mining Licence. It covers the following commodities: fluorite, rare earths, and associated minerals and covers the entire carbonatite with an extent of 3,939ha (approx. 39 km2.) The Monte Muambe Farmout Agreement sets out a four-year phased work programme and budget which will earn the Company an increasing shareholding in MMM of up to 70% from its initial holding of 1% at completion and is more fully described in paragraph 20.9 of Part VII, including the payment obligations to the Sellers and the obligation for Altona to issue up to 3,000,000 Consideration Shares to the Sellers. Following completion of Phases 1 and 2 of the Monte Muambe Project and the satisfaction of the Group's commitments in respect of this, the Group currently holds a 51% interest in MMM.

Following registration of the new board of directors of MMM, which occurred on 12 August 2021, the Company also has control of the board, through the appointment of two Altona representatives (Christian Taylor-Wilkinson and Cédric Simonet) and one Original Shareholders representative (Pedro Manjate). Cédric Simonet was appointed as Managing Director of MMM to further give control over MMM to Altona.

3.2. In the period between the date on which the Company took control of MMM and the date on which governmental consent was received to the assignment of the Monte Muambe Licence from UIL to MMM ("**Interim Period**"), Altona and MMM had the following rights and obligations:

3.2.1. UIL appointed MMM as its agent as Operator to initiate the undertaking of the operations on the Muambe Licence ("**Monte Muambe Project**"). Governmental

consent to the appointment of MMM and issue of the Operatorship Licence to MMM was duly granted by the competent authority, Direccao Nacional de Geologia e Minas (DNGM) on 2 August 2021 under applicable law and is valid for 5 years, i.e., 2 August 2026;

3.2.2. Altona provided MMM all the personnel, expertise, and finance to enable MMM to act as Operator of the Muambe Licence and carry out the Monte Muambe Project; and

3.2.3. to establish a work programme and budget for MMM to conduct a 3,000m RC drilling programme with the objective of identifying targets of a workable size with a minimum potential of at least 25 million tonnes at 2% total rare earths oxide ("**TREO**") as "**Phase 1**" of the Monte Muambe Project.

3.3. Altona's paying interest in the Monte Muambe Project will be 100%;

3.4. Altona will have control of the management of MMM in order to undertake the Monte Muambe Project.

3.5. The Monte Muambe Project will be undertaken in 3 phases:

3.5.1. during Phase 1, which the Group completed on 13 March 2022, Altona was required to expend US$400,000 in undertaking the Monte Muambe Project. Upon completion of Phase 1 the Group acquired an additional 19% in MMM, to take its holding to 20%;

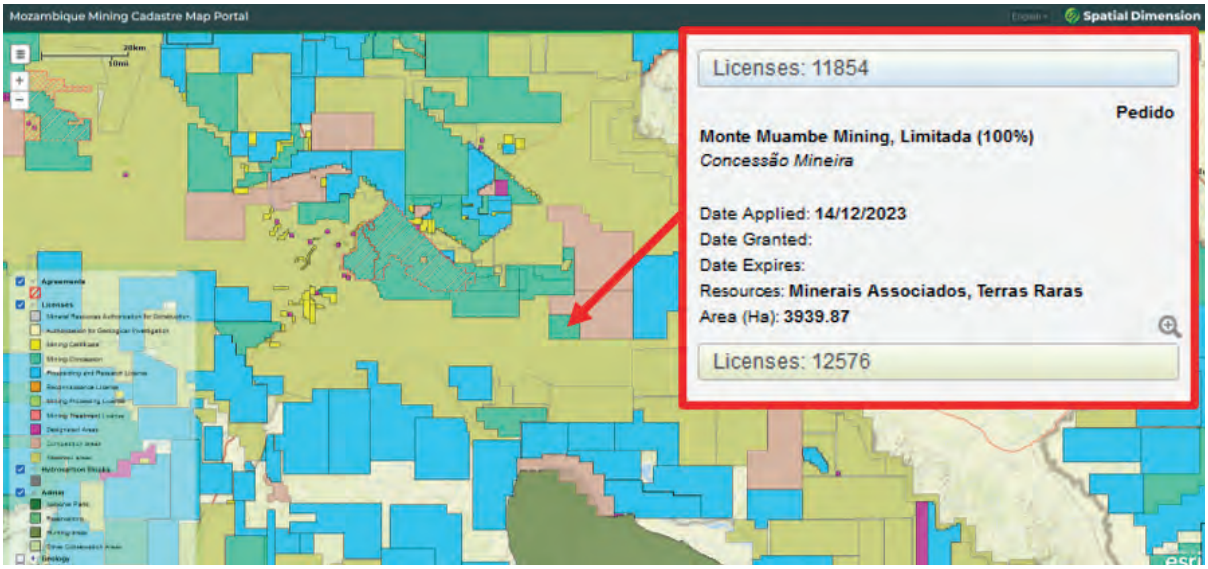
3.5.2. during Phase 2, which the Group completed on 18 October 2023, Altona was required to expend US$700,000 in undertaking the Monte Muambe Project and to prepare a JORC Mineral Resource Estimate ("MRE") and a Scoping Study, and on incurring these costs and completing these deliverables, became entitled to an additional 31% of MMM, to take its holding to its present 51%. At the date of this Document, the Group has completed Phase 2 and has increased its stake to 51%; and

3.5.3. Altona has elected to proceed to Phase 3 and is required, during this Phase, to expend US$2,000,000 and to prepare a Prefeasibility Study in undertaking the Monte Muambe Project and on incurring these costs and completing this deliverable, becomes entitled to an additional 19% of MMM, to take its holding to 70%.

Further details of the Monte Muambe Farmout Agreement are set out in paragraph 20.9 of Part VII.

On 26 October 2022, INAMI formally notified MMM in writing that the Minister, MIREME, approved the renewal of the Monte Muambe Licence and its transfer from UIL to MMM. MMM has since then fulfilled the requirements of the INAMI notification, including the payment of required transfer, registration, and annual surface taxes. The Monte Muambe Licence expires on 22 May 2025.

3.6. The application for a Mining Licence (*Concessao Mineira* in Portuguese), which will be valid for 25 years, was lodged on the 14 December 2023. The Minister of Mineral Resources and Energy is required to communicate their decision within 190 days of this however, at the date of this Document, the decision remains pending. The application number, which now appears on the Mozambique Mining Cadastre Map instead of the prospecting licence number, is 11854C.



Source: Mozambique Mining Cadastre, as at 23 April 2024

3.7. **Monte Muambe Project**

Monte Muambe is a carbonatite intrusion located 38 km southeast of the coal town Moatize in the Tete Province of Mozambique in southern Africa. It is approximately 55 km southeast of the city of Tete itself. The main railway line from Moatize to Beira is approximately 17km to the east of Monte Muambe and the area has tarred and secondary gravel roads. Monte Muambe is located in a zone of intense natural resource-driven infrastructure development, which has attracted most infrastructure investment in the South African development community over the past 10 years. Monte Muambe is located within the Moatize district, near existing coal mines (ICVL, Vale/Mitsui, Jindal), the Baobab iron ore mine and steel plant project, and a mere 17 km away from the Moatize-Beira railway line. It is connected to the Nacala port through the Nacala Corridor railway line, which is used by the coal mines to export coal through the port of Nacala. Monte Muambe to Nacala by rail is approximately 880 km, Monte Muambe to Beira by rail is approximately 500 km and Monte Muambe to Beira by road is 700 to 750 km. The property itself, is readily accessible as an access track has been constructed into the crater itself. The climate is typically a summer rainfall (thunderstorms) area with extremely hot weather experienced at the end of the year (October, November, December). The area has been explored for its mineral potential since the early 1960's with the Portuguese geologist Bettencourt-Diaz having spent two field seasons exploring for REE and U in 1960 and 1961. During the early 1980's fluorite was discovered by Beograd and a number of trenches completed. The company Grupo Madal carried on this work in 1998 and completed geophysical airborne survey, and, later together with BHP, collected a bulk sample of the fluorite mineralisation which was subject to metallurgical bench studies by the group MINTEK in South Africa. In 2008 the Australian listed junior mining company Globe Metals and Mining (Globe) commenced exploration of the known fluorite deposit. This involved the drilling of 97 RC drill holes and an inferred maiden resource for the fluorite mineralisation was delivered in 2012. This company also started to identify REE mineralisation at this time and a reverse circulation ("**RC**") borehole programme, focused on a number of radiometric targets, was completed. Samples indicated highly anomalous REE mineralisation over substantial lengths of drilling. Unfortunately, towards the end of 2012 all operations stopped with Globe having completed 165 holes for a total of 12,587m. Until Altona acquired its interest in the Monte Muambe Project and commenced Phase 1 no further development took place.

Since the Company started Phase 1 in July 2021 it has an established team of up to 26 people on the ground including an experienced Mozambican project manager, junior geologists and field technicians, and support personnel.

In early October 2021, as part of Phase 1, Altona initiated a Diamond Drilling ("**DD**") and RC drilling programme to obtain a better understanding of the REE mineralisation model at Monte Muambe, to test lateral extensions of previously identified REE mineralisation, and to test additional REE targets at Monte Muambe based on existing geochemical and geophysical data. The 2021 drilling campaign included 38 RC holes totalling 2,441 m and 5 D holes totalling 590 m.

The second phase of drilling (Phase 2) took place between 9 May 2022 and 28 November 2022. This involved:

- 36 RC holes for a total of 3,360m, focusing mainly on Targets 1 and 4, and aimed at producing data to support a maiden MRE; and
- 26 short RC holes (25m depth max per hole) totalling 593.83m, aimed at testing other targets.

An Exploration Target estimate based on part of the 2022 drilling data was published in August 2022.

On 22 June 2023 Altona appointed Snowden-Optiro, a reputable geological consultancy company, to prepare the Monte Muambe Project's maiden JORC Mineral Resource Estimate ("JORC MRE") and Scoping Study.

Additional drilling took place between July and August 2023, while the maiden MRE was being prepared. 12 holes were drilled for a total of 819m. These included 10 in-fill holes at Target 4, aimed at better understanding the geometry of the mineralised envelope, and 2 exploration holes at Target 3.

On 25 September 2023, Altona published Monte Muambe's maiden JORC MRE and on 18 October 2023, Altona published an updated CPR (both are included as Part III of this Document) including a Scoping Study for the Monte Muambe Project.

Since January 2024, Prefeasibility Study activities are focused on metallurgical testing. A representative 100kg ore sample from Monte Muambe was sent to SGS Lakefields in Canada and is currently undergoing mineralogical characterisation, ahead of flotation tests. Another representative 70kg was sent to Auralia Metallurgy and will also undergo flotation tests.

3.8. ***Monte Muambe Project Geology***

The Monte Muambe carbonatite makes up one of many carbonatites and alkaline silicate intrusions which together form part of the Mesozoic Chilwa Alkaline Province. A number of economically significant carbonatites occur within this Province including the Kangankunde and Songwe REE deposits in nearby Malawi. Carbonatites mainly occur in rift environments and span a range of intrusive ages from the Archaean through to the present day. Apart from approximately 300 known larger bodies, including Monte Muambe, numerous smaller veins, dikes, and plugs are known worldwide. Often these minor intrusions are themselves related to nearby large igneous carbonatite centres, although some may be related to buried intrusive carbonatites that have not yet been identified. A striking association between carbonatites and under saturated alkaline silicate rocks is noted. As both are generated from the mantle this is unsurprising. Presently there are 28 mines located on carbonatites which are producing mineral commodities such as apatite, REE, niobium, vermiculite, copper, and fluorite. It is noted therefore, that these mineral deposits comprise almost 10% of all the presently known, large, carbonatite complexes. The general prospectivity of finding an economic deposit of some nature in a newly prospected carbonatite complex is about 1 in 10. Very few exploration targets have these odds for successful exploration. A suite of characteristic elements known as the LIL's (large ion lithophile) as well as the HFSE's (high field strength element) is noted to occur within all carbonatites. These elements are almost always enriched relative to the chondrite norm – this enrichment often being of economic grades. The elements P, Nb, F, REE, Zr, Sr, Th and Ba are enriched. Additionally, some carbonatites are significantly enriched in Cu, Fe, U, Y or Ti. The type of crust through which

the carbonatite is emplaced potentially constrains the melt composition and therefore the mineralisation which could be expected. Equally the depth at which the carbonatite melt crystallises will exert control on mineral crystallisation so knowing where one is in the depth is important.

The carbonatite complex itself is approximately 4 km across with a pronounced steep sided circular hill describing a classic crater. The hill is generally composed of Karoo aged sedimentary rock which has been up thrown and altered by fenitisation within interpreted boundary ring faults. To date geological mapping is limited, however, a new map was being completed by Globe Metals and Mining (Figure 3) before activities were halted in 2012. It is possible some of the lithologies mapped, especially towards the south, may rather represent various cemented regolith types.. Surrounding the intrusion to the north are Karoo age sedimentary strata which are generally undeformed with moderate to shallow dips, while in the southern exposures Jurassic age basalt can be recognised. Occasional basic Karoo age dykes and sills cross-cut the area and two nepheline syenite intrusions occur approximately 6km and 8km to the north of Monte Muambe.

Further information on the geology is set out in the CPR in Part III of this Document.

3.9. ***Summary of Exploration work at Monte Muambe***

Exploration work done at Monte Muambe is summarised in the Table below. Since the 1960s, Monte Muambe had been considered a fluorspar prospect. On 9 March 2012, Globe Metals & Mining published a maiden Inferred fluorspar Mineral Resource totalling 1.63 mt at 19% fluorite, for a total of 310,000 t of fluorite contained. The first rare earth occurrences were reported in March 2011.

Year	Company	Activities
1998	Grupo Madal	• Helicopter-borne magnetic and radiometric survey, 100m line spacing • Fluorite extraction metallurgical study
2010-2012	Globe Metals & Mining	• Geological mapping • Ground radiometric survey • 165 Reverse Circulation holes, total 12,587m
2021	Altona Rare Earths	• 5 Diamond Drilling holes, total 591m • 36 Reverse Circulation holes, total 2,518m
2022	Altona Rare Earths	• 35 Reverse Circulation holes, total 3,372m • 26 short Reverse Circulation holes, total 594m • Soil sampling survey (total 2,146 samples) • Exploration Target estimate • Mineralogy (XRD)
2023	Altona Rare Earths	• 11 Reverse Circulation holes, total 789m • Metallurgy sighter tests • Trenching • Mineral Resource Estimate • Scoping study
2024	Altona Rare Earths	• Advanced mineralogy and metallurgy as part of PFS

3.10. ***Maiden JORC Mineral Resource Estimate ("MRE")***

On 25 September 2023, Altona published Monte Muambe's maiden JORC Mineral Resource Estimate, reported in the Table below using a 1.5% TREO cut-off.

Target	Classification	TREO Cut-off (%)	TONNES (Mt)	TREO%	CeO_2 ppm	Pr_6O_{11} ppm	Nd_2O_3 ppm	Tb_4O_7 ppm	Dy_2O_3 ppm	NdPr Oxide (ppm)	Contained TREO (t)
1	Indicated	1.5	8.0	2.38	11,400	910	2,250	15	80	3,160	191,000
	Inferred	1.5	0.8	2.28	10,900	861	2,140	15	78	3,000	18,000
	TOTAL	**1.5**	**8.8**	**2.38**	**11,400**	**905**	**2,240**	**15**	**80**	**3,150**	**209,000**
4	Indicated	1.5									
	Inferred	1.5	4.8	2.50	11,300	872	2,190	26	143	3,060	119,000
	TOTAL	**1.5**	**4.8**	**2.50**	**11,300**	**872**	**2,190**	**26**	**143**	**3,060**	**119,000**
OVERALL	Indicated	1.5	8.0	2.38	11,400	910	2,250	15	80	3,160	191,000
	Inferred	1.5	5.6	2.47	11,200	871	2,190	24	134	3,060	137,000
	TOTAL	**1.5**	**13.6**	**2.42**	**11,400**	**894**	**2,230**	**19**	**102**	**3,120**	**329,000**

Table: September 2023 MRE summary (source: Competent Person's Statement for Monte Muambe Mineral Resources, Project Number JB207282, September 2023)

Notes:

- Million tonnes are rounded to one decimal place. Grades are rounded to two decimal places for % and whole numbers for ppm.
- The MRE has been reported in consideration of reasonable prospects for eventual economic extraction (RPEEE) using a pit shell based on a 1.5% TREO cut-off, revenue of 24.65 USD/kg TREO in Mixed Rare Earth Carbonate (MREC) and average total recovery to MREC of 48%.
- Mineral Resources are reported as dry tonnes on an in-situ basis.
- Rare earth elements are inclusive of the TREO and not additional to it.
- "NdPr Oxide" is the sum of Nd2O3 and Pr6O11.

The MRE was prepared by geological and mining consultancy firm Snowden-Optiro. It is noteworthy that 58% of the MRE tonnage has been classified as Indicated while 42% has been classified as Inferred.

In 2024, the Company intends to increase the tonnage and the level of confidence of the existing MRE through:

- In-fill drilling at Target 1 and Target 4 (to take the MRE on these two mineralized bodies to Measured and Indicated levels);
- Down-dip drilling at Target 1 and Target 4 (to increase the tonnage);
- A re-evaluation of the potential viability of Target 6, which has known high-grade mineralization at a depth of 30 to 50m below the surface;
- Resource drilling at Targets 3, 9 and 11 among others.

3.11. ***Monte Muambe Project Scoping Study***

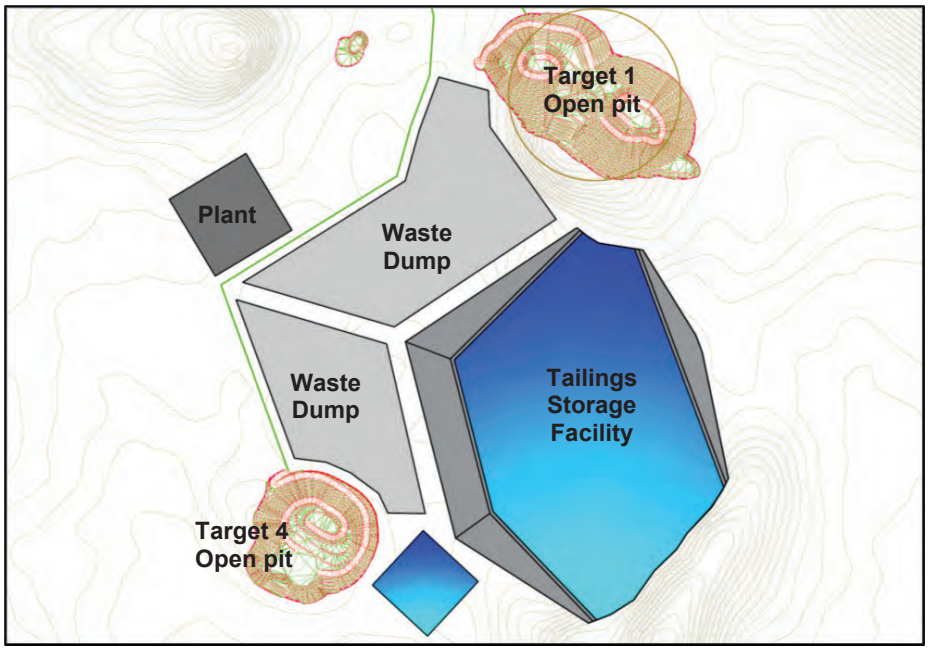
On 18 October 2023, Altona published an updated CPR (included as part III of this Document) including a Scoping Study for the Monte Muambe project.

The Scoping Study was prepared by geology and mining consultancy firm Snowden-Optiro. The Scoping Study was prepared to assess the potential viability of an open pit mining and Mixed Rare Earth Carbonate ("MREC") production operation, to assess project development options, and to give sufficient confidence to the Company to advance to the Prefeasibility Study stage.

The Scoping Study is preliminary in nature and include material assumptions outlined in the CPR, including product price assumptions. Capex estimates qualify as Class 4 estimates as per the Association for the Advancement of Cost Engineering (AACE) Recommended Practice 47R-11. The accuracy of the opex and of the initial capex estimate is assessed at +35% to –30%. The base case includes an indicative life of mine extraction and production

schedule, which is based on a Mineral Resource Estimate, 58% of which classified as Indicated and 42% as Inferred.

The Scoping Study takes into consideration open-pit mining of Target 1 and Target 4, at a Life of Mine ("LOM") strip ratio of 1.6, over a period of 18 years. An anticipated 750,000 tonnes of ore per annum will be extracted and processed through a beneficiation plant to produce a rare earths concentrate. The beneficiation process will include crushing, milling and flotation. The concentrate will then be processed through a hydrometallurgical plant to produce an average of about 15,000 tonnes of MREC per annum. The hydrometallurgical process will involve a weak acid gangue leach, followed by rare earths leaching and purification. The MREC product will be packaged and transported via existing road infrastructure to the port of Beira, in Mozambique, for export.



Schematic layout of the Monte Muambe project

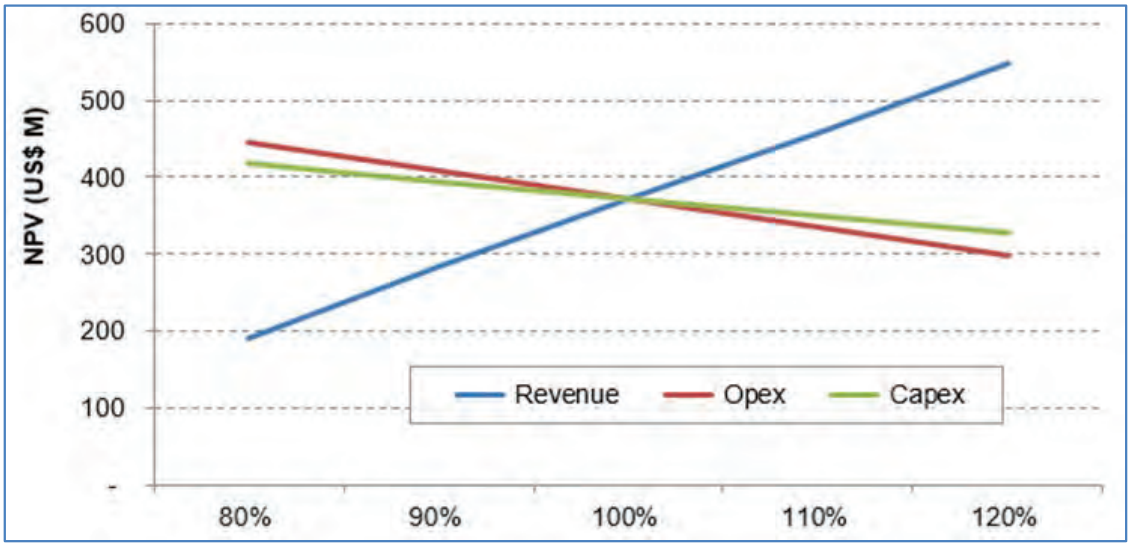
Base Case Technical and Economic parameters are summarised in the table below:

Parameter	Unit	Value
Ore processed	Mt	13.5
Run of Mine TREO grade	%	2.30%
MREC produced	kt	270.7
Initial Capex	M US$	276.3
Sustaining Capex	M US$	63.0
Opex LoM	M US$	1,519.3
Opex per ton MREC	US$/t	5,612.6
Gross Revenue LoM	M US$	3,670.2
Net Revenue LoM	M US$	3,193.1
EBITDA LoM	M US$	1,673.8
Revenue per ton MREC	US$/t	13,558.4
Payback from first MREC	years	2.5

Parameter	Unit	Value
Post tax NPV 8	M US$	283.3
Post tax NPV 10	M US$	207.0
Post tax NPV 8 (Upside Scenario)	M US$	409.9
Post tax IRR	%	25%
Operating margin	%	42%

Sensitivity Analysis

Using an NPV of US$283.3 million with an applied real discount rate of 8%, the Monte Muambe Project is most sensitive to revenue (price, recovery, grade and exchange rates), less sensitive to opex and least sensitive to capex.



Project sensitivity analysis

The Scoping Study demonstrates the potential for Monte Muambe to become a viable mining operation.

Considerable upside potential has been identified in the Scoping Study and will be developed further in the Prefeasibility Study ("PFS"). This includes:

- Increase of the resource base, as well as of the LoM and/or ore extraction rate;
- Mining parameters optimisation;
- Processing and Metallurgy, both for the beneficiation and hydrometallurgical plants;
- Energy sources mix and logistics options;
- Evaluation of the possibility of doing further onsite, in-country or regional separation and refining;
- Setting up Responsible Sourcing systems.

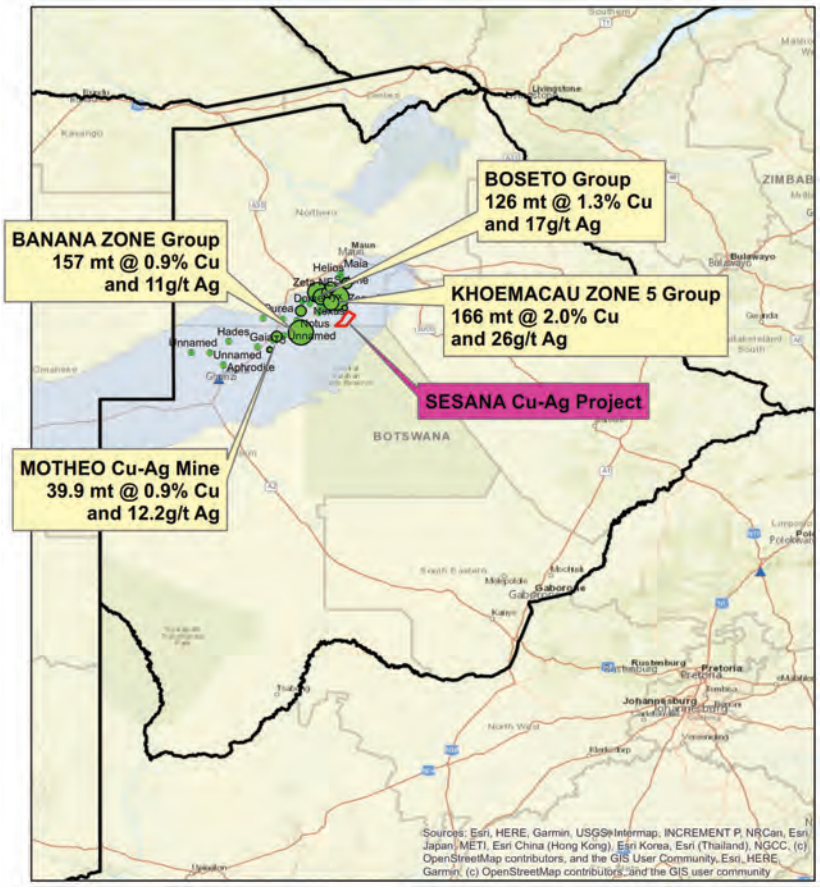
4. SESANA COPPER PROJECT ACQUISITION

4.1. *Tenement*

The Sesana Project is held under Prospecting Licence PL2329/2023 ("Sesana Licence") which is currently owned by IAM, a Botswana-registered company.

The Sesana Licence has a surface area of about 274 km2 and is valid until 31 March 2026, after which it can be renewed twice for periods of up to 2 years each. It is valid for copper, cobalt, gold, silver, lead, zinc, aluminium, chromium, iron, titanium and platinum group metals.

The Sesana Licence is located in the Northern Province of Botswana, about 90 km south of the town of Maun.



Location of the Sesana Project in the KCB (light blue), showing main Cu deposits identified so far.

4.2. ***Terms***

The binding option agreement signed on 8 April 2024 by Altona and IAM ("Sesana BOA") gives Altona an exclusive right to enter into a final agreement with IAM for the acquisition of the Sesana Licence ("Sesana Final Agreement"). The key terms of the Sesana Final Agreement are defined in the Sesana BOA. Upon signing of the Sesana BOA, Altona has paid an exclusivity fee of USD 10,000 to IAM. The exclusivity period, during which Altona will do due diligence on the Sesana Project, had an initial duration of 60 days and was subsequently extended by an additional 30 days in consideration for an additional payment of USD5,000. On 3 July 2024, IAM and the Company signed an addendum to the option agreement extending further the exclusivity period up to 17 July 2024 in consideration of a payment of USD 2,500. On 17 July 2024 the Company and IAM entered into a further addendum extending the exclusivity period to 15 August 2024 upon an additional payment of USD 5,000 to IAM. If Altona decides to exercise the option, the exclusivity period is automatically extended until signature of the Sesana Final Agreement.

If Altona decides to exercise the option, upon signature of the Sesana Final Agreement, a special purpose vehicle ("SPV") will be registered, with Altona holding 51% of the SPV and IAM holding 49%. The board of the SPV will have two directors nominated by Altona and one nominated by IAM. The Sesana Licence will be transferred to the SPV, this event being

a condition precedent to the Sesana Final Agreement. As at the date of this Document, the Company has not yet exercised its option to acquire the Sesana Licence.

Subject to satisfaction of the conditions precedent, the Earn-in will have the following structure.

Phase	Duration	Commercial terms	Minimum expenditure and deliverables commitments
Phase 1	12 months	Upon satisfaction of the conditions precedent, Altona will pay IAM USD 10,000 in cash and USD 50,000 in Altona new ordinary shares, to be issued at the VWAP for the 10 days before the signature of the Sesana Final Agreement	Min expenditure USD 100,000 Deliverables: • Soil geochemistry • Ground and/or airborne geophysics • Drilling targets defined
Phase 2	18 months	Upon start of phase 2 and transfer by IAM to Altona of an additional 19% of the SPV, Altona will pay IAM USD 50,000 in cash and USD 100,000 in Altona new ordinary shares to be issued at the VWAP for the 10 days before the start of phase 2.	Min expenditure USD 400,000 Deliverables: Initial drilling campaign 2,000m min DD or RC
Phase 3	18 months	Upon start of phase 3 and transfer by IAM to Altona of an additional 15% of the SPV, Altona will pay IAM USD 50,000 in cash and USD 100,000 in Altona new ordinary shares to be issued at the VWAP for the 10 days before the start of phase 3.	Min expenditure USD 1,000,000 Deliverables: • JORC MRE • Conceptual Study

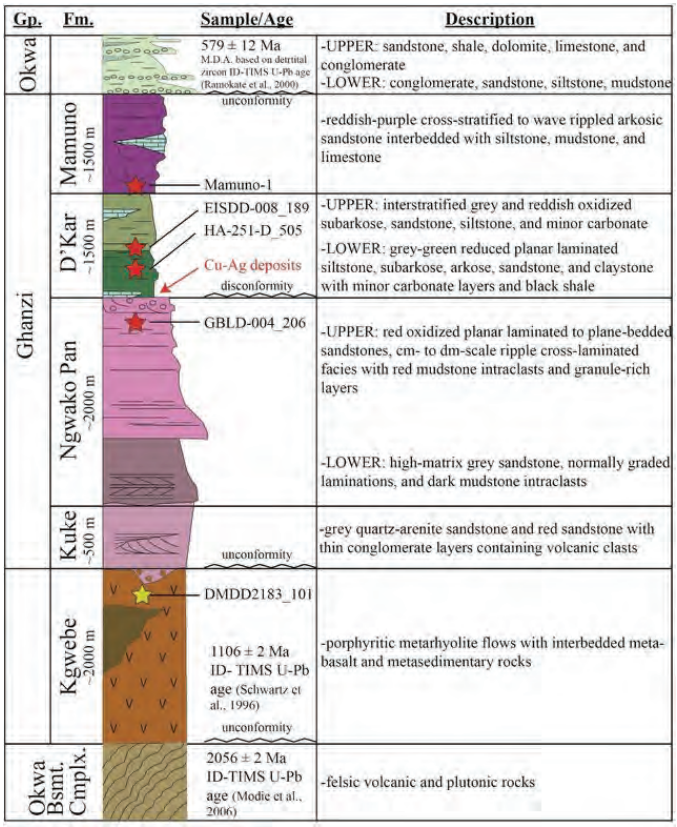
In addition to the above, should a resource of over 20 million tonnes at over 1% Cu equivalent be defined, the original Tenement owner will also be entitled to a one-off payment of USD 250,000 in cash and USD 250,000 in Shares. These Shares will be issued at the VWAP for the 10 days before the announcement of the corresponding resource statement.

Altona shares issued to IAM will be subject to a 6 months lock-up during which the shares will be held in escrow by Altona's broker, followed by a 6 months orderly market provisions period during which IAM will be required to consult with Altona before any sale of shares, and daily sales of shares will be limited to 10% of the total shares held by IAM.

After the end of Phase 3, both parties will be expected to fund the project in accordance with their participation. Non-funding parties will be diluted according to a standard straight line dilution formula and, if their interest falls below 10%, it will be replaced by a 1% Net Smelter Royalty.

4.3. ***Geology***

The Sesana Project is located along the eastern margin of the Kalahari Copper Belt ("KCB"), a continental-scale geological feature stretching in a Southwest-Northeast direction across Namibia and Botswana hosting sedimentary copper-silver deposits. Copper-silver mineralisation typically occurs along the contact between the D'Kar Formation, which is mostly made up of reduced siltstones, and the Ngwako Pan Formation, which consists mainly of oxidised sandstones. The contact is repeated across strike at the favour of isoclinal folds. The position of copper-silver mineralisation is controlled by the permeability and oxidation state contrast along the contact, as well as the presence of folds and associated structures.



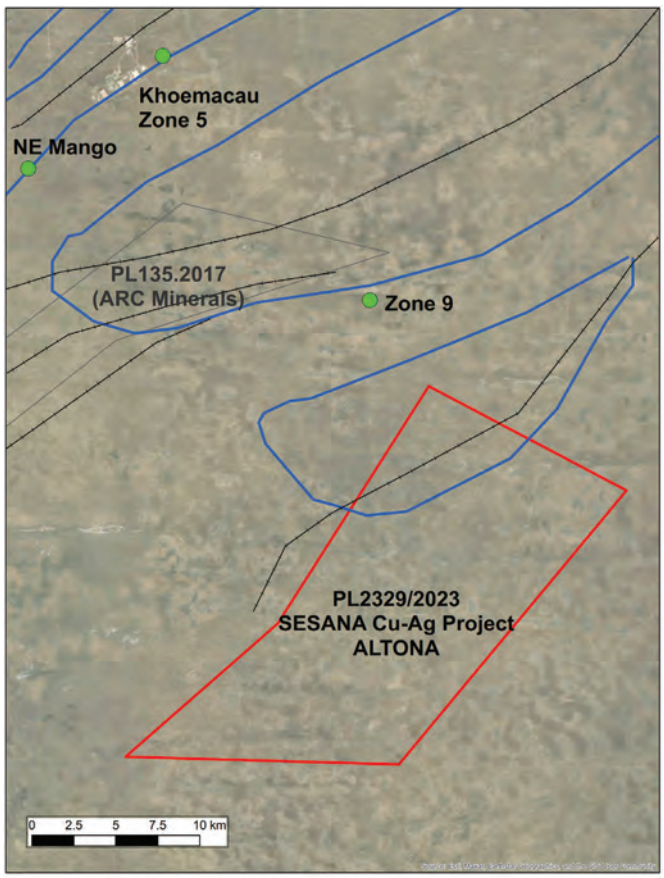
KCB stratigraphic column showing the position of Cu-Ag mineralisation along the disconformable contact between the D'Kar formation and the Ngwako Pan formation. Source: Wesley Hall, 2013, Geology and paragenesis of the Boseto copper deposits, Kalahari Copperbelt, northwest Botswana – MSc thesis, Colorado School of Mines.

The KCB is home to the low-cost Khoemacau copper-silver mine which started production in June 2021. The mine has a production rate of ca. 60ktpa Cu and ca. 1.6Mozpa Ag, extracted from ore from the Zone 5 underground mining operation, which is located about 25 km from the Tenement, and at the date of the Document is planning to double its production capacity. This project's MRE totals 166 million tonnes at 2% Cu and 26 g/t Ag.

The Tenement is located next to Galileo Resources licence PL039/2018 and near ARC Minerals licence PL135/2017 (Virgo Copper-Silver Project), where a 3km long soil geochemical anomaly associated to the D'Kar / Ngwako Pan formations contact has been recently identified.

4.4. ***Exploration***

The Sesana Project area was included in regional airborne magnetic surveys flown between 1995 and 2003. Recent interpretation of regional airborne magnetic data allows to locate the trace of the contact between the D'Kar and Ngwako Pan formations and shows that a 10km long stretch of this contact is passing through the northern part of the Sesana Licence, along the eastern margin of a fold structure, which indicates a high potential for copper-silver mineralisation.



Sesana Project map – Red outline: Sesana Licence outline; blue outline: D'Kar / Ngwako Pan formations contact from regional airborne magnetic survey interpretation; black line: fold axis. Green dots: Cu-Ag deposits (note their position on or next to the D'Kar / Ngwako Pan formations contact.

To the best of the Company's knowledge, no other ground exploration has been done on the Sesana Project so far.

The Company intends to use ground geophysical and geochemical methods including electromagnetics, induced polarization, and ionic leach soil assays to define drilling targets. Reconnaissance drilling will follow.

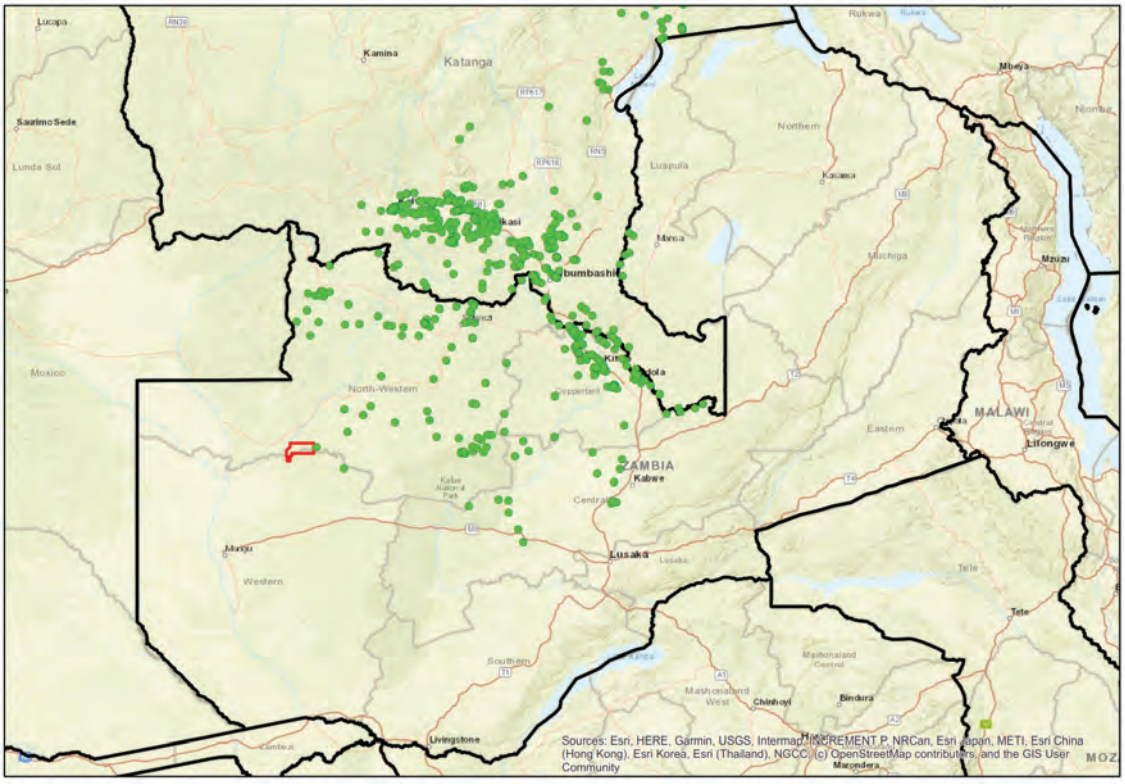
5. KABOMPO SOUTH PROJECT ACQUISITION

5.1. ***Tenement***

Large Scale Exploration Licence 21403-HQ-LEL ("Kabompo South Licence") is located in the Mufumbe District of Northwestern Province of Zambia.

The Kabompo South Licence is located in the Mufumbe District of Northwestern Province, Zambia. It has a surface area of approximately 616 km^2 and is valid for copper, cobalt, nickel, lead, zinc, gold and diamonds. The Kabompo South Licence is located 4 km west of the Kamweji copper occurrence, and 60 km southwest of the Mufumbwe copper mine (22 million tonnes at 1.6% Cu), along strike.

The Kabompo South Licence can be accessed by the Mongu highway (excellent tar), turning north at Kaoma onto dirt road. There is then approximately 150 km of dirt road to the Watipa Ferry, which is 30 km west of the licence.



Location of the Kabompo South Project in Zambia. Green dots: known copper occurrences

5.2. ***Terms***

Altona has entered into agreements with Sustineri Group Ltd ("**Sustineri**") and with the beneficial owners of PDMZ to acquire an exclusive right to acquire the entire issued share capital of PDMZ, the registered holder of the Kabompo South Project. As at the date of this Document, the Company does not have any interest in the issued share capital of Phelps Dodge Mining (Zambia) Limited.

The consideration for the transfer of the exclusivity over the entire issued share capital of PDMZ from Sustineri to Altona was £40,000, and Sustineri utilised this payment to subscribe for 800,000 Ordinary Shares at a subscription price of 5p per share.

The acquisition agreement to be entered into in relation to the acquisition of PDMZ will provide for a consideration payable to the current shareholders by Altona as follows:

- US$ 40,000 on completion, being the later of the date of the acquisition of PDMZ and the date of renewal of the Kabompo South Licence, which the Company may elect to be payable in Ordinary Shares at the 30 day volume-weighted average price, from which will be deducted any costs incurred by Altona to renew the Kabompo South Licence and to transfer PDMZ; and
- US$ 150,000 payable on the later of 12 months after completion and the renewal of the Kabompo South Licence, which the Company may elect to pay in Ordinary Shares at the 30 day volume-weighted average price,

from which in either case, will be deducted any costs incurred by Altona to renew the Kabompo South Licence and to transfer PDMZ.

5.3. ***Geology***

The Kabompo South Project is located in the southern part of the Central Africa Copper Belt, which stretches through Democratic Republic of Congo and Zambia and is host to several Tier 1 copper and cobalt deposits.

The Kabompo South Project area is underlain by Katagan sedimentary rocks forming part of the southwest boundary of the Irumide belt. These sediments are considered as part of the Mines Series, which is host to copper and cobalt mineralisation in the copper belt region. Katangan sediments outcrops are locally blanketed by a cover of Kalahari Sands, except in valleys. Geological mapping as well as interpretation of regional airborne magnetic surveys shows the presence of sandstone and siltstone formations, along which contact copper mineralisation is expected to occur.

Overlying parts of the Katangan sediments are Karoo basalts, generally thin (less than 5 metres) and around 50% of the Kabompo South Licence area is overlain by recent Kalahari cover and some Karoo sediments. However, as this is the far eastern extreme of the Kalahari cover, it is likely to not exceed 10 metres in depth.

5.4. ***Exploration***

The Kabompo South Licence was previously held by copper mining major Freeport McMoRan until this company took a strategic decision to exit Zambia in April 2020. The Kabompo South Licence has seen prior grassroot exploration including 4,000 line kilometre of ground magnetometer survey and a partial leach soil geochemistry survey over a 4 kilometre square grid. This work highlighted the presence of a large copper gold silver anomaly in the Northeastern part of the Kabompo South Licence, overlapping a possible demagnetised zone.

Immediate exploration work will include reprocessing of the magnetometer survey data and an ionic leach soil sampling survey at a reduced sample spacing, ahead of defining drilling targets by the end of the year.

6. ESG Principles

Altona's exploration activities are focused on CRMs which, if some of the Company's current and future projects are developed into mines, will be in large part for applications supporting the decarbonisation of the world's energy sources, and the green energy transition. Conscious about this fact, the Company is committed to producing CRMs that are as net-zero and as less resource-consuming as possible, and that are extracted in a responsible manner. The Board strongly believes that this commitment should start at an early stage of our projects, i.e. during the exploration phase, however small environmental impacts actually are during grass root exploration.

The Board is committed to building a culture of respect for the environment and for communities at all levels of the organisation.

ESG Action Plan

During the next 12 months, the following ESG actions will be taken:

Monte Muambe Project:

- Annual environmental audit on site;
- Integration of key ESG aspects in the Monte Muambe Project PFS including but not limited to:
  - PFS level ESG plan and costing;
  - Product Life-Cycle Assessment ("LCA"): carbon, water and resources foot-prints;
  - Risk assessment and management plan along the Equator Principles framework.
- In the framework of the Monte Muambe Mining Licence process, the Company will start the mining Environmental and Social Impact Assessment process, starting with environmental and social baseline studies.
- As camp facilities will be expanded on side, renewable energy production and storage capacity will also be expanded.

Sesana Project

Upon completion of the transaction, the Company will:

- Start landowners and community consultations with the view of signing land access agreements which are necessary for light exploration activities such as ground geophysics and soil geochemistry.
- Prepare and submit a project brief to the Botswana Department of Environmental Affairs, which is expected to be followed by the preparation and approval of an Environmental Management Plan, a prerequisite to drilling activities.
- Ensure that the drilling contractors selection includes due consideration to ESG performance.

Kabompo South Project

- The Company is currently assessing whether the Environmental Project Brief ("EPB") approval for the Kabompo South Licence has been obtained and is valid.
- In the event that the EPB approval has not been obtained, or has expired, the Company will ensure that a fresh EPB is submitted to the environmental authority and approved prior to undertaking any field activities.

Other projects and general actions

The Company will continue to apply the same ESG principles in all its activities including:

- Ensuring regulatory ESG compliance;
- Train and sensitise its personnel and its contractors;
- Consult on ESG matters with stakeholders, in particular with local communities;
- Integrate ESG in its work programmes and in project studies.

7. MOZAMBIQUE

7.1. *Mozambique geography*

The Republic of Mozambique is located in South-eastern Africa. It covers an area of 799,380 km2, with a coastline approximately 2,470 km long. Mozambique is bordered by the Indian Ocean to the east, Tanzania to the north, Malawi and Zambia to the northwest, Zimbabwe to the west, and Eswatini (Swaziland) and South Africa to the southwest. The capital and largest city of Mozambique is Maputo.

Mozambique is endowed with rich and extensive natural resources. The country's economy is based largely on agriculture, but industry is growing, mainly food and beverages, chemical manufacturing and aluminium and petroleum production. The tourism sector is also expanding. South Africa is Mozambique's main trading partner and source of foreign direct investment, while Belgium, Brazil, Portugal and Spain are also among the country's most important economic partners. Since 2001, Mozambique's annual average GDP growth has been among the world's highest. However, the country is still one of the poorest and most underdeveloped countries in the world, ranking low in GDP per capita, human development, measures of inequality and average life expectancy.

The only official language of Mozambique is Portuguese, which is spoken mostly as a second language by about half the population. Common native languages include Makhuwa, Sena, and Swahili. The country's population of around 29 million is composed of overwhelmingly Bantu people. The largest religion in Mozambique is Christianity, with significant minorities following Islam and African traditional religions. Mozambique is a member of the United Nations, the African Union, the Commonwealth of Nations, the Organisation of the Islamic Cooperation, the Community of Portuguese Language Countries, the Non-Aligned Movement, the Southern African Development Community, and is an observer at La Francophonie.

7.2. *History*

Mozambique became independent in 1975, after 10 years of guerrilla war led by the Front for the Liberation of Mozambique (FRELIMO), the current ruling party. The general exodus of

Portuguese settlers at independence resulted in a critical shortage of skilled labour in the country.

War returned to Mozambique shortly after independence. The Government's application of United Nations sanctions against the government of neighbouring Zimbabwe (then Rhodesia) led to cross-border raids. Later, with Rhodesian and South African assistance, the RENAMO guerrilla movement took form. RENAMO and Government forces fought a civil war until 1992 in the course of which thousands of lives were lost and much of the country's limited economic infrastructure was destroyed. In addition, Mozambique was the subject of an experiment in central planning since 1975, which aggravated the destruction of the already feeble local economy. As a result, Mozambique became, and remains, one of the poorest countries in the world.

In 1984, Mozambique joined the International Monetary Fund (IMF) and the World Bank, and in 1987 began to implement a structural adjustment programme and a market economy. In 1992, a cease-fire between the Government and RENAMO was finally reached and the first multiparty elections were held in 1994. Since then economic growth has been robust. Four further rounds of national elections have been held since, with the FRELIMO party returning to power each time for consecutive five-year mandates. In October 2014, the FRELIMO party won a majority of seats in the Parliament and Hon. Filipe Jacinto Nyusi was elected President of the Republic. Nyusi was re-elected in 2019 for one last term of five years.

Mozambique is a multi-party democracy under the 1990 constitution. The executive branch comprises a President, Prime Minister, and Council of Ministers. There is a National Assembly and municipal assemblies. The judiciary comprises a Supreme Court and provincial, district, and municipal courts. Suffrage is universal at eighteen. Since its formation in 1994, the National Assembly has made progress in becoming a body increasingly more independent of the executive. By 1999, more than one-half (53%) of the legislation passed originated in the Assembly.

More recently, in 2018, the country has experienced moments of military tension in the centre of the country, perpetrated by a residual armed wing of the RENAMO, in protest for the election of a new RENAMO leader which negotiated a truce with the Government. The new RENAMO leader signed a new peace deal with the Government in 2019 and the residual army was demilitarised and reintegrated in the national army or in civilian life. Despite flares of sporadic attacks the situation in the centre of the country seems calm and controlled.

In 2017, terrorist attacks began in the northern side of the country, more particular in the Cabo Delgado province where the liquefied natural gas projects are being developed by TOTAL, Eni and ExxonMobil, to the extent that the onshore projects were halted in March 2021, but the development of the offshore project continued, with first LNG export having taken place in November 2022. A joint Rwanda and SADC member forces (Angola, South Africa, Botswana, Lesotho, Zimbabwe, Malawi and Tanzania) has succeeded in disabling some of the terrorist cells, and recapturing most of the Mocimboa da Praia District in Cabo Delgado.

Despite this, the country continued to attract major investments and major projects established in the country remained in progress, as this risk is localised and only affects a few districts in the Cabo Delgado province.

The Company's project is located over 800km from the affected areas.

7.3. ***Mozambique population***

According to information published by the Institute of Social and Economic Studies and the National Institute of Statistics, in 2021, the Mozambican population was estimated to be 30,8 million. Current population growth rates are estimated at 2.7%, and life expectancy at birth is approximately 55 years. The majority of the Mozambican population is of Bantu origin. Within this group, several smaller groups are distinguishable. Of these, the most numerically significant are the Emakua, the Shangana, the Chisena and the Lomwe. There are also minorities of Asian and European descent.

7.4. ***Government and Political system***

Mozambique is a presidential democracy, where the President is both the Head of State and the Head of Government. The 2004 Mozambican Constitution as amended in 2018 provides for the separation of the legislative, executive and judicial powers. Two hundred and fifty members of parliament are elected for five- year intervals by universal adult suffrage. The Mozambican State is unitary. Provincial governors are now directly elected while provincial State Secretaries are appointed by and serve the President.

Provincial governments, led by the Governor, are composed of directors who exercise local powers and perform the duties of the Ministries to which they belong. Thus, provincial directors are answerable to both the Governor, as the leader of the Provincial Government, and to the Minister, which overlooks their activities.

Mozambique has 43 municipalities whose governments are elected by universal adult suffrage by their residents. Municipal governments exercise their limited powers under the primary tutelage of the Ministry of State Administration.

The next general election has been scheduled for 9 October 2024.

7.5. ***Economy***

At the end of the civil war in 1992 Mozambique was ranked as the poorest country in the world, with a GDP per capita of US$110. Since then, the economy has expanded rapidly: between 2006 and 2010, GDP grew yearly by an average of 7.24% and, in 2014, estimated growth was 7.4%. The report of the World Economic Forum (2010) notes that Mozambique has a level of macroeconomic stability of 4.18 points above the average of 0.23 points in SADC.

Mozambique has also made rapid improvements in key social indicators over recent years. In the period between 1990 and 2007, Mozambique saw the fastest increase in the Human Development Index (HDI) in the world. Over the said 17- year period, HDI increased by almost 50%, albeit partly due to the catch-up effect from its low initial standpoint. Although Mozambique's HDI evolution has been irregular since 2007, overall its evolution has been positive since 2000. In fact, in 2013, Mozambique was acknowledged as one of the 14 countries in the world with the greatest improvements in HDI since 2000 (over 2% annual increase). Nevertheless, Mozambique remains among the four countries of the African continent with highest rate of incidence of poverty.

According to the National Statistics Institute (INE), in 2016, Mozambique recorded a monthly inflation of 3.47% in December and accumulated 25.26%, one of the highest in recent years, against 10.55% in 2015. However, the financial and foreign exchange situation is gradually recovering the stability as a result of some measures introduced by the Central Bank to control inflation, and in 2017 Metical remained stable in relation to the main currencies traded in the Mozambican exchange market.

8. BOTSWANA

8.1. ***Botswana Geography***

The Republic of Botswana is a landlocked country in central Southern Africa, sharing a border with northern South Africa. Its territory spans 581,730 km2, bordering Namibia to the west and Zimbabwe to the northeast. Its largest city and capital is Gaborone. Botswana is topographically flat, with its landscape dominated by the Kalahari Desert. Zambia, Botswana, Zimbabwe, and Namibia meet at a single point mid-stream of the Zambezi River.[1]

Climate

The climate of Botswana is semi-arid, hot, and dry for much of the year. Summer begins in November and ends in March, with temperatures reaching 44°C. During the winter season, running between May and August, evening and night temperatures can drop below freezing point, especially in the southwest. The rain season, which peaks during January and February, tends to be erratic and unpredictable. The Botswanan climate is also prone to dry seasons, where almost no rainfall occurs.[2]

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1 About Our Country | Government of Botswana

2 Ibid.

Energy

Botswana is almost 100% dependant on fossil fuel electricity production. In 2021, 96% of electricity was generated through coal-fired power stations, leaving 3.8% to be generated by oil, and a mere 0.2% generated by solar PV.[3]

Resources

Over the past five decades, the mining sector has helped to secure Botswana's rapid economic development, accounting for a quarter of the country's GDP.[4] Not only does Botswana rank first in Africa for investment attractiveness, it is also regarded as a globally leading country for policy perception in the minerals industry.[5] Diamonds have been the leading component of the mineral sector since large-scale production began in 1972. Copper, nickel, coal, soda ash, gold, silver, semi-precious stones, and granite production have also held important roles in the economy.

8.2. ***History***

The Republic of Botswana gained its independence from British colonial rule in 1966, remaining financially dependent on Britain for its first five years to cover administration and development costs. With the renegotiation of its customs union with South Africa, ensuring state revenue could benefit from rising capital imports and exports, Botswana's economy developed significantly between 1967-71 off the back of the discovery of diamonds at Orapa.[6]

The 1970s and 80s in Botswana were marked by rapid economic expansion. In 1974, Botswana positioned itself as one of the 'Frontline States' along with Zambia and Tanzania, later including Mozambique and Angola. This led to the formation of the Southern African Development Coordination Conference in 1980, aiming to promote mutual development among the partnered states.[7]

Quett Masire succeeded Seretse Khama as the second president of Botswana after his death in 1980. He faced the tasks of tackling high unemployment and a widening gap between the urban rich and rural poor. In addition, between 1984 and 1990, international security was significantly threatened by upheavals of South African troops raiding the Frontline States. Full diplomatic relations were restored in 1994 following internal political changes in South Africa, following Namibian independence in 1990.[8]

Slight domestic unrest continued into the 1990s with the socioeconomic divide yet to be addressed, as well as the impact of the AIDs epidemic. The government responded robustly, becoming the first African country to provide free HIV antiretroviral medication to all its citizens.[9]

Masire retired in 1998 and was succeeded by Festus Mogae. The management of Namibian refugees and relocation of the Baswara led to fractured relations with the related parties. After Mogae's retirement in April 2008, Ian Khama, the son of Botswana's first president, ascended to power.

Internal discontent within the BDP led to several members leaving the party to form the Botswana Movement for Democracy (BMD) in 2010. Various opposition parties mobilised to form the Umbrella for Democratic Change (UDC) in preparation for the 2014 elections. Despite the efforts of the UDC, the BDP maintained its majority in the National Assembly having garnered 37 seats.

Recent Botswanan politics have been coloured by the soured relationship between Ian Khama and his successor, Mokgweetsi Masisi. 1 month into his inauguration, Masisi dismissed intelligence chief Isaac Kgosi, a key ally to Khama. On multiple occasions, he continued to demonstrate his divergence from his predecessor, resulting in Khama's

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3 Botswana – Countries & Regions – IEA
4 Ibid.
5 Fraser Institute Annual Survey of Mining Companies 2022
6 History of Botswana | Events, People, Dates, Maps, & Facts | Britannica
7 Ibid.
8 Ibid.
9 Ibid.

departure from the BDP and his alliance with the newly formed Botswana Patriotic Front in 2019. Ultimately, the BDP have continued to maintain public favour.[10]

8.3. ***Botswana Population***

According to information published by the United Nations Population Fund, Botswana's population stood at approximately 2.7 million in 2024, with an average life expectancy at birth of 66.5 years.[11] The majority of the Botswanan population is aged between 15-64 (64%), with 32% aged between 0-14, and only 4% aged 65 and older. According to the World Bank, its annual population growth rate was 1.6% in 2022.[12]

8.4. ***Government and Political system***

Since its independence in 1966, the Republic of Botswana has enjoyed a stable political environment, establishing itself as a democratic multiparty republic. Nevertheless, the Botswana Democratic Party has maintained power since independence. The government comprises three arms: the Executive, Legislature, and Judiciary.[13] The judiciary consists of a High Court, a Court of Appeals, and several Magistrate Courts. The House of Chiefs (Ntlo ya Dikgosi) advises on legislative matters related to tribal law and custom. It is composed of permanent members who represent each of the eight Tswana 'tribes', and members selected to serve a five-year term.

The president is limited to 10 years in office, serving as head of state and government. The National Assembly is composed of elected members, several ex-officio members and appointed members nominated by the ruling political party. All members of the National Assembly, including the president, serve five-year terms. Local councils are elected simultaneously with parliamentary elections.[14]

8.5. ***Economy***

Owing to the success of its diamond industry, relatively uncorrupted bureaucracy, small population size and pragmatic economic policies, the World Bank reports that Botswana has positioned itself as an upper-middle-income country. However, as one of the most unequal countries in the world, it faces significant developmental issues. [15]

Macroeconomic policy has traditionally centred itself around the management of diamond revenue, given that diamonds contribute over 90% of total exports. However, the over-reliance on diamonds and its public-sector driven model have made the economy vulnerable to external shocks.[16] Namely, the growing material impact of climate change, including higher temperatures and changes in precipitation, have increasingly disrupted output in the minerals sector, underscoring the need to diversify and strengthen the country's economic resilience. Consequently, despite Botswana's relatively high-income level, poverty remains high, job creation is lagging, unemployment is structurally high at 25.9% (2023Q3), and the level of inequality (Gini index of 53.3) is among the highest in the world.[17]

Nevertheless, Botswana aspires to reach high-income status by 2036. Increased mining production and robust manufacturing and construction output facilitated a strong recovery of almost 12 per cent. in 2021, and economic growth by 5.8 per cent. in 2022; significantly above the long-run average of 4 per cent.[18]

9. ZAMBIA

9.1. ***Zambia Geography***

Zambia is a landlocked country and consists mostly of high plateau (900 to 1,500 m), with some hills and mountains, dissected by river valleys. Major relief features occur where river valleys and rifted troughs, some lake-filled, dissect its surface. The highest elevations occur

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10 Ibid.
11 World Population Dashboard -Botswana | United Nations Population Fund (unfpa.org)
12 Population growth (annual %) – Botswana | Data (worldbank.org)
13 About Our Country | Government of Botswana
14 Botswana – Precolonial, Colonial, Independence | Britannica
15 Botswana Overview: Development news, research, data | World Bank
16 Ibid.
17 Ibid.
18

in the east, where the Nyika Plateau on the Malawian border is generally over 1,800 m, rising to more than 2,100 m in the Mafinga Hills. The alluvial plains in the south of the country, with altitudes around 300 m, form the lowest and hottest parts of the country.

Climate

Zambia enjoys a sunny climate with three distinct seasons namely a cool dry season in May to August; a hot dry season in September to November; and a warm rainy season in the months of December to April. The modifying influence of altitude gives the country pleasant subtropical weather conditions for most of the year. The distinction between rainy and dry seasons is marked with very little rainfall during the months of June, July and August. Much of the economic, cultural and social life of the country is dominated by the onset and end of the rainy season, and the amount of rain it brings.

Zambian Resources

Zambia's economy is heavily dependent on mining, in particular the mining of copper (Cu) and cobalt (Co). Reserves of Cu ore at some mines are almost depleted, costs of production have increased, and income has fluctuated depending on the price of the metal on the world market, accentuating the need for Zambia to broaden its economic base. Agriculture is relatively poorly developed, and major investment in the manufacturing industry did not take place until after independence. Out of a total of 7.5 million hectares of land, 4.2 million hectares (58%) are classified as medium to high potential for agricultural production; 12% is suitable for arable production, with only an estimated 14% currently cultivated (United Nations, 2015). Some 67,300 km2 of Zambia are classified as forest reserves, although the greater part of the country is wooded but not protected in this way. The main commercial timber areas are on the Copperbelt, where there have been plantings of exotic softwoods to supply the needs of the mining industry, and in the southwest, where there are extensive areas of Zambezi teak. Zambia has relatively rich fisheries based on its many lakes, swamps, and seasonally inundated floodplains. Of particular importance is the Luapula valley, which supplies the Copperbelt. Lake Tanganyika is famous for Nile perch and kapenta, a deep-feeding freshwater sardine caught at night using special lamps to direct its movements. Lusaka is supplied mainly from the Kafue Flats and the Lukanga Swamp. Of lesser importance is the fishery on the upper Zambezi. There has been a revival of fishing on Lake Kariba, which was interrupted by the conflict with Zimbabwe during the 1970s (AQUASTAT Zambia, 2005; United Nations, 2015).

9.2. ***History***

Zambia gained independence from British colonial rule on 24 October 1964, with Kenneth Kaunda and the United National Independence Party (UNIP) leading the nation to freedom. In its early years, Zambia faced economic challenges due to its heavy reliance on copper exports and fluctuating global copper prices.[19]

During the 1970s and 1980s, Zambia experienced economic hardships, exacerbated by falling copper prices and droughts. Kaunda's policies of nationalization and socialist development were not entirely successful in addressing these challenges, leading to increased external debt.

In 1991, Zambia transitioned to multi-party democracy, ending Kaunda's 27-year rule. Frederick Chiluba of the Movement for Multi-Party Democracy (MMD) won the presidential elections and initiated some economic liberalization and attempts to address the country's debt crisis.[20]

Levy Mwanawasa succeeded Chiluba in 2001 and focused on anti-corruption measures and economic reforms. His efforts were praised by international donors, leading to improved economic growth during his tenure.

Since then, Zambia has faced challenges such as declining copper prices, energy shortages, and political tensions. Despite these challenges, Zambia remains a multi-party democracy with a rich cultural heritage and natural resources that offer potential for economic growth and development.

[19] https://www.britannica.com/topic/history-of-Zambia/Independent-Zambia
[20] Ibid.

In recent years, Zambia continues to face a severe debt crisis and in 2020, it became the first African country to default on its debt during the COVID-19 pandemic. This crisis threatens economic stability and growth, making debt restructuring and economic reforms urgent priorities for the government.[21]

9.3. ***Zambia Population***

According to information published by the United Nations Population Fund, in 2023, the Zambian population was estimated to be 20.6 million.[22]

Current population growth rates are estimated at 2.8%, and life expectancy at birth is approximately 63 years.[23] The majority of the Zambian population is aged between 15-64 years (56%), however 42% of the population is aged between 0-15 years, with only 2% over 65 years.

9.4. ***Government and Political system***

Zambia is a multi-party democracy with a republican presidential system of government. The President is both the head of state and government, elected by popular vote for a five-year term. The National Assembly is Zambia's legislative body, comprising 156 members who are elected to represent constituencies and additional members appointed by the President. The judiciary is independent, consisting of a Supreme Court, Court of Appeal, and subordinate courts.[24] Zambia has a constitution that outlines the structure of government, separation of powers, and fundamental rights and freedoms. While Zambia has a history of peaceful transitions of power and regular elections, the political landscape has been characterized by competition between major parties and occasional tensions. Recently, the 2021 presidential election marked a significant political change with the opposition party winning the presidency, signalling a shift in Zambia's political dynamics.

9.5. ***Economy***

Zambia's economy is largely dependent on copper mining, which accounts for a significant portion of its export earnings and government revenue. However, the economy faces challenges due to fluctuations in global copper prices, leading to vulnerability and economic instability.[25] Agriculture also plays a crucial role, employing a large portion of the population and contributing to food security.[26] In recent years, Zambia has grappled with economic challenges such as high external debt, inflation, and fiscal deficits. The country has sought assistance from international financial institutions like the IMF to address these challenges through economic reforms and debt restructuring.[27]

10. ADDITIONAL ACQUISITIONS

10.1. In addition to the Projects acquisition, the Company is considering acquiring additional CRM projects in Africa. The Company is running a target-generation program, and constantly reviewing new opportunities through strict criteria. New Acquisitions may take the form of fresh licence applications (individually or as part of a consortium), joint ventures, or purchase of existing tenements or projects. There is no specific expected target value for any Acquisition. Consideration for a project acquisition may be paid wholly or partly in shares, which will leave cash available for working capital purposes. In assessing an acquisition opportunity, the Company will consider whether a further equity raising will be required, and the amount of such raising. This will depend on the nature of the Acquisition opportunity that arises, the form of consideration the Company uses to make the Acquisition (which cannot be determined at this time) and the need for working capital following the working capital period.

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21 https://www.amnesty.org/en/latest/campaigns/2023/06/on-zambia-health-and-public-debt-alternatives-to-austerity/

22 https://www.unfpa.org/data/world-population/ZM

23 https://www.worldometers.info/world-population/zambia-population/

24 https://zambiahighcommission.ca/wp/government-of-zambia-hdr/about-zambia/

25 https://www.scirp.org/journal/paperinformation?paperid=115816#:~:text=Zambia's economy is primarily reliant,revenue (Chipili%2C 2019).

26 https://www.trade.gov/country-commercial-guides/zambia-agriculture#:~:text=Agriculture contributes about 19 percent,as well as horticultural produce.

27 https://www.imf.org/en/News/Articles/2023/12/20/pr23468-zambia-imf-exec-board-completes-2nd-rev-ecf-approves-us187m-disbursement#:~:text=The IMF Executive Board completed,challenging domestic and global environment.

10.2. The objective of the Company in respect of the Projects, and any additional Acquisition will be to operate the acquired business and implement an operating strategy with a view to generating value for its Shareholders through operational improvements as well as potentially through additional complementary acquisitions. The ownership of the Projects and any future Acquisition will be long-term investments for the Company. As the Projects are in the exploration phase, the Company will not generate returns in the short to medium term, unless a future Acquisition has production assets and so is income generating, in which event, the Company will have returns in the medium term, the level of which will be dependent on the quantum of production.

10.3. In assessing a future CRM project Acquisition, the Board will pay particular attention to the following overriding factors:

- the existence of production and/or potential production and the potential timeline to valorisation through cash flow or sale of the project;
- the geological and technical merits of the project;
- the acquisition and initial exploration costs of the project;
- the pathway to majority ownership; and
- the ease of doing business in the proposed acquisition jurisdiction.

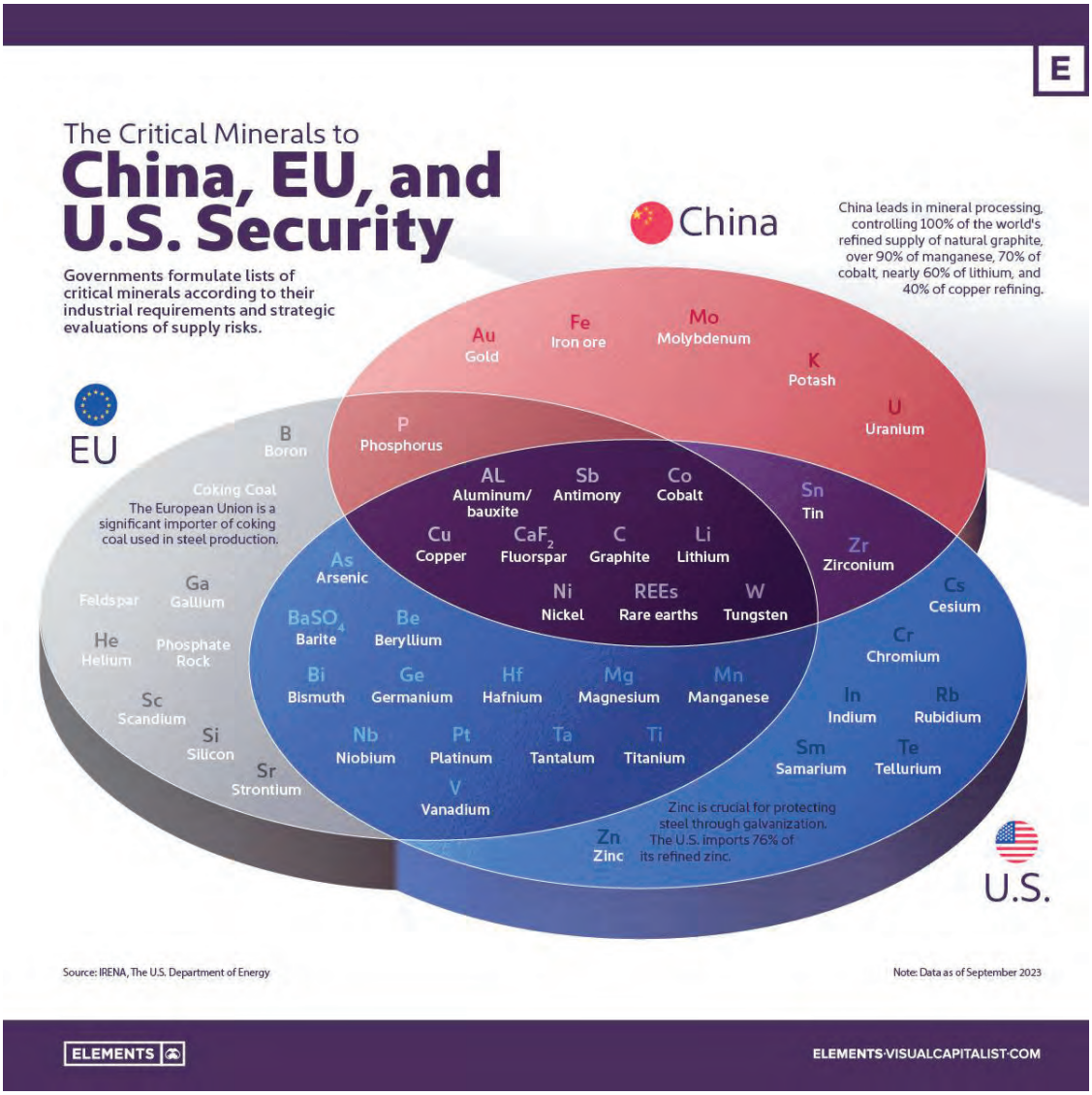
10.4. Any evaluation relating to the merits of a particular Acquisition will be based, to the extent relevant, on the above factors as well as other considerations deemed relevant to the Company's business objective by the Directors. In evaluating a prospective target company or business, the Company expects to conduct a due diligence review which will encompass, among other things, meetings with incumbent management and employees, document reviews, inspection of facilities, as well as a detailed review of financial and other information which will be made available.

10.5. The Company expects that any future Acquisition will be to acquire a controlling interest in a target company or business. The Company may consider acquiring a controlling interest constituting less than the whole voting control or less than the entire equity interest in a target company or business if such opportunity is attractive; provided, the Company (or its successor) would acquire a sufficient portion of the target entity such that it could consolidate the operations of such entity for applicable financial reporting purposes. Future complementary acquisitions may be non-controlling.

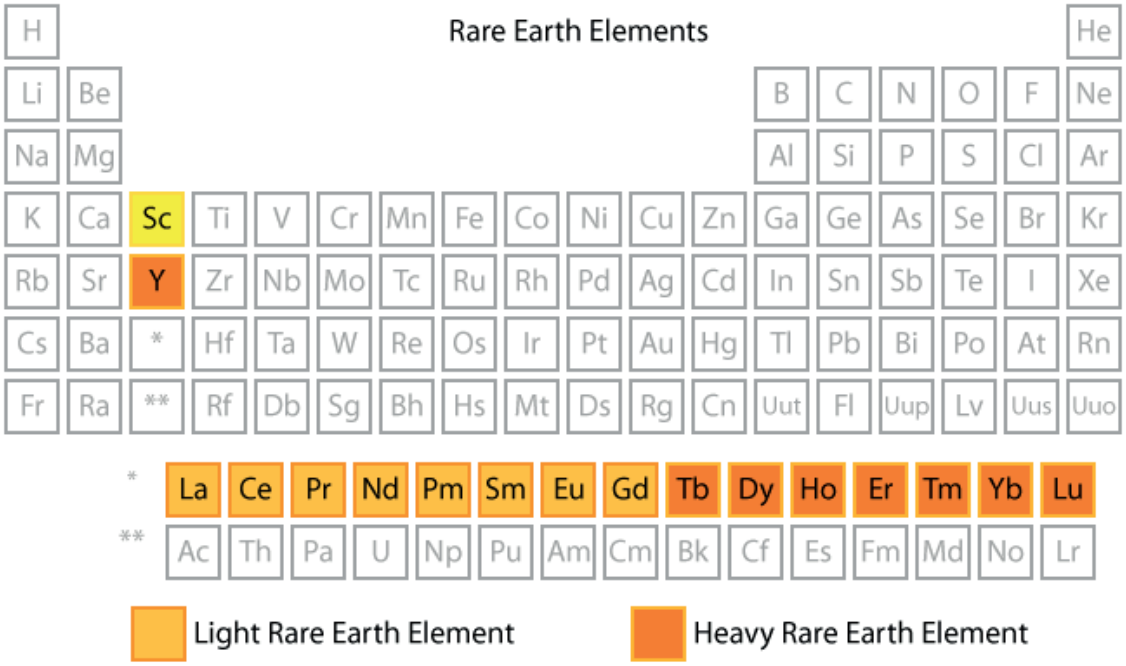
10.6. The Directors are responsible for procuring investment and acquisition opportunities to be considered by the Company. The Company has established a Board it believes is well suited for the purposes of implementing its business strategy mixing a strong track record of growing diversified business groups in both the natural resources sector and financial sector (including, *inter alia*, the mining and Rare Earth Elements sectors, and corporate finance), considerable public company experience and a wide network of global contacts. The Company also has Directors based in Africa with experience of working in various African jurisdictions. Based on the Directors collective experience in growing such businesses in the natural resource sector, including precious and base metals, the Directors consider that there are opportunities to create value for Shareholders in the rare earths sector. The Company will utilise outside consultants and advisers as the situation demands, at the Board's discretion. While shareholder risk is reduced by owning a larger portfolio of assets (for the reasons stated above), the Board is cognisant that this strategy in itself may raise other issues, those mainly being raising sufficient funds to conduct mining work at each project and being responsible for working multiple mining programmes simultaneously. The Board believes that the Company's listing on the Main Market of the London Stock Exchange gives it access to the funds required, whilst the experience of the Board and the engagement with local partners addresses the second issue.

11. CRITICAL RAW MATERIALS

11.1. CRM represent a group of metals and minerals which are essential to the economy of industrialised nations, and to the on-going decarbonisation of the World's energy sources, i.e. to the implementation of the Green Energy Transition. The list of CRMs varies from one country to another, with overlaps for key commodities including REE, copper, graphite, lithium, nickel, cobalt and fluorspar. The term Critical Raw Materials is the one used by the European Union. Equivalent terms used by other countries and groups of countries include Technology Metals, Critical Metals and Critical Minerals, and have largely equivalent definitions and scope.



11.2. Rare Earth Elements have been mined for decades and are not, in fact, rare as most of the 17 elements which make up the classification are abundant in the earth's surface. What makes them "rare" is the ability to find sufficient quantities in a single, specific area which will allow a company to extract them economically. The Rare Earth Elements comprise a series of 17 elements known as the Lanthanides and include Yttrium and Scandium. They are further divided into Heavy and Light Rare Earths depending on their atomic weight. Pm and Sc are absent at Monte Muambe.



Source: Sciencenotes

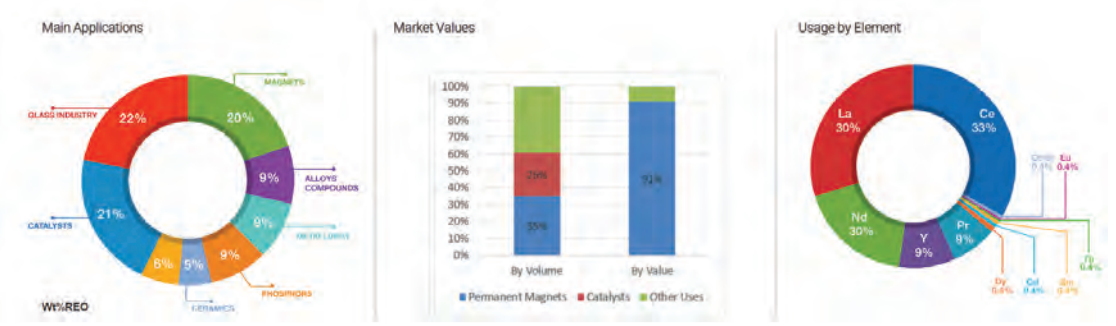
11.3. Importantly, for the many key industries around the world which rely on a steady supply of these metals, such as the electric vehicle and the wind turbine markets, only a few REE are needed, these being primarily, Neodymium and Praseodymium, Dysprosium and Terbium, which are the CRM used in permanent magnets. Yttrium, which sits apart from the main group of rare earths, but shares the same properties, is used as an additive in alloys to increase strength.

11.4. REE are found in very specific geological environments and Africa is blessed with several carbonatite provinces along the East African Rift System and along its continental margins. In addition to this, Africa also has the right climatic conditions to raise the concentration of the carbonatites, and make them more easily mineable, through weathering. Analysis has shown that Carbonatite deposits should be able to provide a long-term supply of REE, once a deposit has been developed. However, the capital expenditure and operating costs to achieve production is high, due to the size of these deposits and the process of extraction. Monte Muambe is a Carbonatite formation.

11.5. More recently, the presence of Ionic Clay REE deposits have also been established in Africa. These tend to be smaller ore bodies, with the metals more loosely held than in rock formations and occurring at lower concentrations, but access to them and processing of the aggregate is both quicker and less expensive, allowing the project to remain economically viable, especially if the presence of "Critical Metals" are abundant. Another positive for Ionic Clay extraction is low levels of radioactive elements (such as Thorium and Uranium), which are sometimes found in Carbonatites and have to be dealt with during processing.

Presently, China controls between 90-95% of the REE supply chain and crucially, also controls the refining and processing sectors, creating a worldwide bottleneck. Despite China's dominance, Rest of the World ("RoW") supply chains are rapidly developing in Europe, North America, Australia and Asia. Future REE supply chains are expected to involve integration of China and RoW supply chains rather than a separation. When looking at key future industries

such as the electric vehicle market, world governments are aware that the only way to increase the number of electric cars on the road is to price vehicles suitably. With China controlling more than 70% of EV permanent magnet manufacturing, this could cause a major delay to the "Green Solution", should it choose to hold supply back, thereby forcing up global prices. Currently, there are no viable alternatives to provide the huge quantities of REE, including the "Critical Metals" and other "Technology Metals" needed for the manufacturing of items such as permanent magnets (used in the power plant of EVs and wind turbines), lasers, superalloys, ceramics, fuel cells, catalytic converters, glass making and a whole raft of other industries. The diagrams below outline the market values and uses for REE.



Source: Diagram 1: Nick Hatch Mining Advisory (based on CRU data), diagrams 2 & 3: Rare Earth Magnet Market Outlook to 2030 Adamas Intelligence

11.6. Africa is considered one of the best alternative geographies for mining rare earths, as its jurisdictions are considered to be politically benign, globally speaking, and have a long history in dealing with international mining companies. So much so, that the US government has now been making inroads into the continent's rare earths supply for the past two years and a number of UK and Australian rare earth mining companies have established a presence.

11.7. Copper (symbol Cu) is a soft, malleable and red coloured metal used as a conductor of heat and electricity. Copper has been mined and used by mankind n a native form since c. 8000BC, smelted from sulphide ore since c. 5000 BC, and alloyed with other metals such as tin to form bronze since c. 3500 BC. Copper is currently mostly used to produce electrical wires (60%), roofing and plumbing (20%), and industrial machinery (15%). Other uses include nutritional supplements and fungicides for agriculture. Copper plays an important role in the production of renewable energy systems including solar, wind, tidal, hydro and biomass based, and is therefore essential to the Green Energy Transition.

11.8. The World's copper production reached 22 million tonnes in 2023.[28] Top copper producing regions in 2023 included the Andes in South America (Chile 5 Mt, Peru 2.6 Mt), the Central Africa Copper Belt (DRC 2.5 Mt, Zambia 760 kt), China (1.7 Mt), the United States (1.1 Mt), Russia (910 kt), Indonesia (840 kt), Australia (810 kt) and Mexico (750 kt).[29]

11.9. In Africa, the most important copper provinces are the Central Africa Copper Belt, which runs from Southern DRC to Zambia and is home to numerous Tier 1 copper deposits, and the emerging Kalahari Copper Belt, which extends through Namibia and Northwest Botswana. The Company is present in both provinces through the Kabompo South and the Sesana Projects respectively.

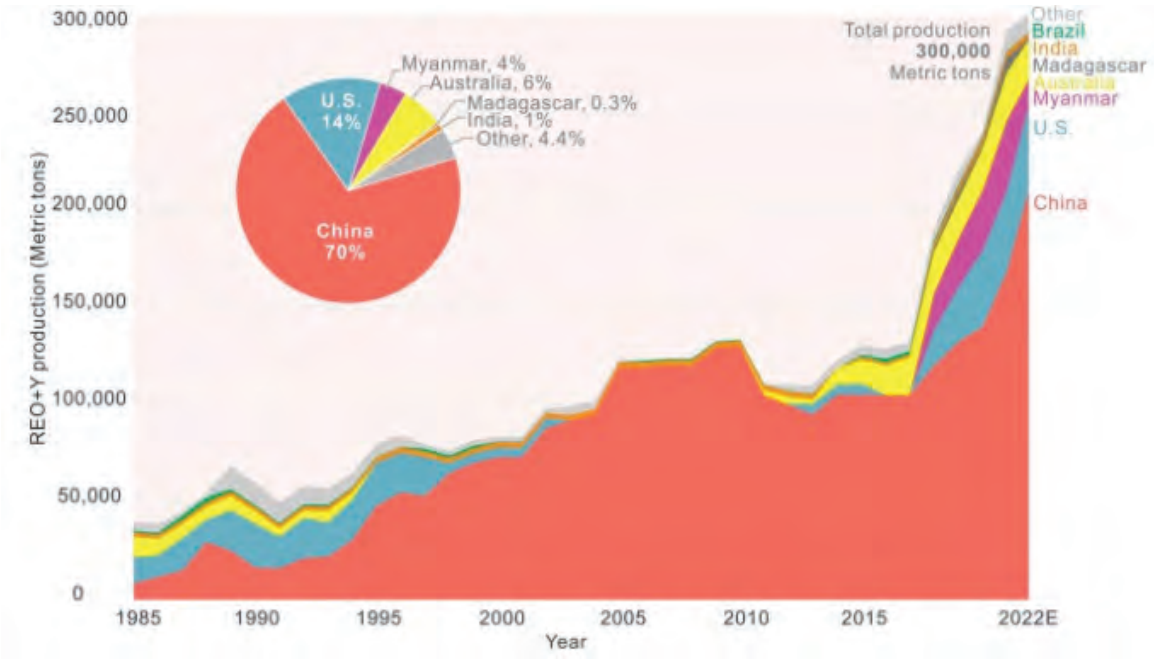
12. CRITICAL RAW MATERIALS MARKET

12.1. REE

While historically REE have been and are still extracted from a wide range of geological environments (carbonatites, hydrothermal deposits and rare elements pegmatites), Ionic Clay hosted deposits have taken, over the past years, an increasing importance in REE production. These deposits were first recognised in South China in the 1970s and have become a major source of REE, in particular Heavy REE, with a current production of about

[28] https://www.usgs.gov/centers/national-minerals-information-center/copper-statistics-and-information
[29] https://www.nasdaq.com/articles/top-10-copper-producers-by-country-updated-2024

210,000 tons Total Rare Earth Oxide ("**TREO**") per year from China and 12,000 tons from Myanmar.[30] The rest of China's production comes from other types of deposits, mostly from the giant Bayan Obo hydrothermal polymetallic REE deposit in Mongolia.



Source: Science Direct: Ore Geology Reviews 2023

Currently, Ionic Clay REE deposits are exploited mostly in Southern China, Myanmar and Vietnam. Other occurrences of such deposits have been discovered in Southeast Asia and in Brazil, as well as in Africa. There are no Ionic Clay REE deposits currently mined in Africa, but the potential of this continent for this type of REE deposits has been well proven by the discovery and exploration of two major deposits:

- The Makuutu deposit in Uganda, which is presently being explored by Ionic Rare Earths Ltd (ASX: IXR) and has an existing resource statement of 78.6 Mt at 840 ppm TREO (Indicated and Inferred, using a cut-off of 300 ppm TREO-Ce). It is expected production will commence in 2024.[31]
- The Tantalus deposit in Northern Madagascar, which has a resource of 197.7 Mt at 897 ppm TREO (Measured and Indicated, using a cut-off of 300 and 500 ppm TREO-Ce respectively).

12.2. **REE Supply – main Ionic Clay deposits parameters**

REE vs REO – Grades may be reported on an element basis (e.g. Praseodymium – Pr) or on an oxide basis (e.g. Pr2O3). The conversion between the two is done using a constant factor which is different for each element (1.1703 in the case of Pr vs Pr2O3). It is important to check which reporting standard is used when comparing data from different projects or sources. Grades for Ionic Clay deposits are usually reported in ppm.

Grade – Grades in the range 500+ ppm TREO are usually considered economic (usually a cut-off grade of 300 ppm TREO-Ce is used for resource estimations), subject to recovery. Grade is measured by preparing and analysing samples in such a way that all REE present in the sample are reported individually, whether they are contained in residual minerals (not leachable) or adsorbed onto clay minerals (leachable in certain conditions).

Leachability – Not all REE contained in a sample are leachable. Leachability indicates what proportion of the REE contained in an Ionic Clay sample can be dissolved using standard reagents for this type of REE deposit. Leachability varies from one element to the other. Leachability is also not constant across an Ionic Clay deposit, both horizontally and vertically.

[30] https://www.sciencedirect.com/science/article/pii/S0169136823001439

[31] https://www.nsenergybusiness.com/projects/makuutu-rare-earths-project/#:~:text=The Makuutu Rare Earths Project is an ionic adsorption clay,and operates the Makuutu project.

In some cases, leachability must be assessed on a sample-by-sample basis and resource models must include not only TREE grade but also leachability. Last, leachability represents only part of the extraction process and is not necessarily equal to recovery, which includes precipitation and concentrate refining.

Geometry and thickness – Ionic clay deposits are actually part of the soil profile and therefore tend to follow the topography of the site. This can be greatly influenced by the slope. The thickness of the orebody (leachable REE enriched part of the soil profile) is important because a thicker orebody means larger resources per unit of surface area.

Conditions favourable to the development of Ionic Clay REE Deposits – Ionic Clay REE deposits form through deep weathering of rocks containing lower quantities of REE, and concentration in parts of the soil profile. The concentration factor from the parent rock to the Ionic Clay deposit typically ranges from 3 to 10. Ionic Clay REE deposits are more likely to form where:

- There is a parent rock enriched in REE (whether HREE or LREE) – REE-enriched granites, syenites, or rocks derived from these.
- The climatic conditions are favourable to weathering (in Southern China – subtropical humid climate, but worldwide these conditions can be encountered in other climates).
- The topography is favourable to the formation of large, continuous orebodies (gentle slopes, low density drainage system).

12.3. **REE Supply – main carbonatite parameters**

REE vs REO – Grades may be reported on an element basis (e.g. Praseodymium – Pr) or on an oxide basis (e.g. Pr2O3). The conversion between the two is done using a constant factor which is different for each element (1.1703 in the case of Pr vs Pr2O3). It is important to check which reporting standard is used when comparing data from different projects or sources. Grades for carbonatite deposits are usually reported in %.

Grade – For Mineral Resource Estimates, grades in the range 2.5% TREO or over are usually considered potentially economic (usually a cut-off grade of 0.5 or 1% TREO is used for resource estimations), subject to recovery. Carbonatite deposits may contain other valuable minerals in addition to REE such as Niobium, Phosphates, Baryte and the grade of these potentially recoverable elements or minerals may also have to be taken into consideration.

Metallurgy – REE can be contained in a wide range of minerals hosted in a different types of host rocks having different degrees of weathering. This means that the production of a saleable REE concentrate is subject to different parameters which need to be assessed and understood at an early stage in the project. This is done through metallurgical studies, which aim is to assess what are the possible processes and ensuing costs to produce a concentrate (or several concentrates if there are several minerals of interest).

Geometry and thickness – Carbonatite deposits form igneous bodies which may have different shapes and sizes but which are usually rooted to great depths into the Earth's crust (over 200 m). In many cases, the upper part of carbonatite bodies is weathered, which usually causes an increase in their grade compared to that of unweathered bodies. This weathered layer usually has a thickness of 30 to 100 m, and constitutes the higher grade part of carbonatite resources.

Conditions favourable to the development of Carbonatite Deposits – Economically viable carbonatite deposits are more likely to form where:

- The regional geological environment is favourable to alkaline and carbonatitic melts formation (rift systems, or former rift systems such as continental margin);
- Large carbonatite bodies, or part of these bodies, have high concentrations in REE, and possibly associated elements;
- Local current or past climatic conditions have caused intense weathering of the upper part of the carbonatite bodies; and

- REEs are contained in minerals which are easy to extract and concentrate, and which are regarded as easier to process (for example bastnaesite as opposed to monazite).

12.4. **REE Demand**

The annual demand for REE is expected to reach 466,000 tonnes by 2035, up from 170,000 tonnes in 2022,[32] driven by increasing uptake in green technologies and advancing electronics. This is creating enormous pressure on global production. China is predicted to exhaust its supply of Heavy REEs by 2028, providing an opportunity for other mining companies to fill the massive void this will leave.

Indispensable for production of smart phones, wind turbines and electric vehicles (EV), REEs have significantly increased in importance as demand for electronics and EVs continue to surge. In addition, REEs play an essential role in national security and commercial applications. For smart phones to vibrate or EV motors to provide power, they need powerful magnets, and REEs are critical to the manufacture of these powerful permanent magnets. Factors expected to increase demand include:

- REEs are crucial for production of clean energy, electric vehicles, consumer electronics, military systems.
- End-user manufacturers (in US, Europe) are increasingly demanding an alternative source outside China, and Africa has become the most promising location for competitively sized Carbonatite and Ionic Clay REE deposits.

The global rare earth element permanent magnet market reached $17.5 billion in 2022[33] and is expected to see a significant increase in demand. Several rare earth elements, such as neodymium, praseodymium and dysprosium, are critical to the motors used in EVs and offshore wind turbines. Beyond EVs, the demand for REEs is high across multiple sectors. REEs are instrumental components in a myriad of high-tech devices such as smartphones, cameras, computer hard disks, fluorescent and LED lights, batteries, flat screen TVs, computer monitors and more. Large quantities of some REEs are also crucial for defence technologies, such as missile guidance systems and laser weaponry; an F35 jet fighter, for example, contains approx. 400 kg of REEs.

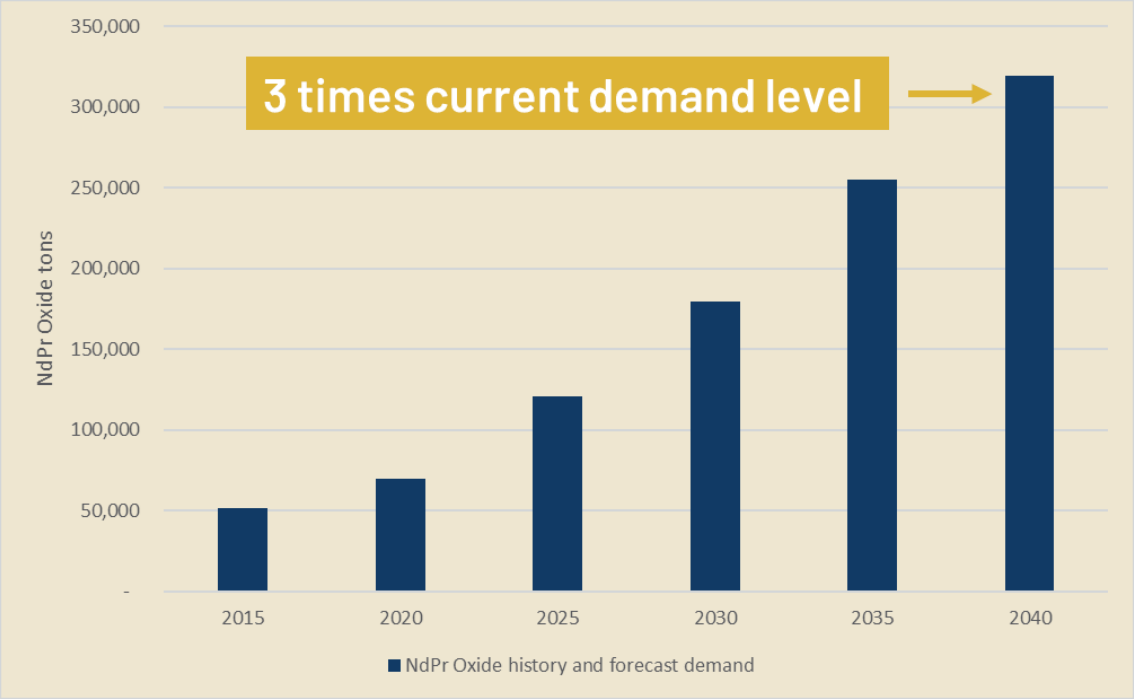
Demand for REEs is currently outstripping supply by about 3,000 tons per year. Demand is likely to accelerate further and constrain access since the EV market alone is projected to increase nearly tenfold over the next ten years. Exacerbating the situation, the prices of all major Chinese-sourced rare earths have recently spiked, especially those used in permanent magnets.

The record high prices in 2021 and subsequent demand growth are underpinned by the 'Green Agenda' and results of the COP-26 Conference which is being targeted by many Governments and international bodies looking to reduce carbon-emissions. REE products are widely used in the generation of renewable energy and in zero-low emissions transport, as mentioned above, via the use of rare earth permanent magnets in wind turbines and in the drive train of hybrid and electric vehicles.

[32] https://www.bcg.com/publications/2023/five-steps-for-solving-the-rare-earth-metals-shortage

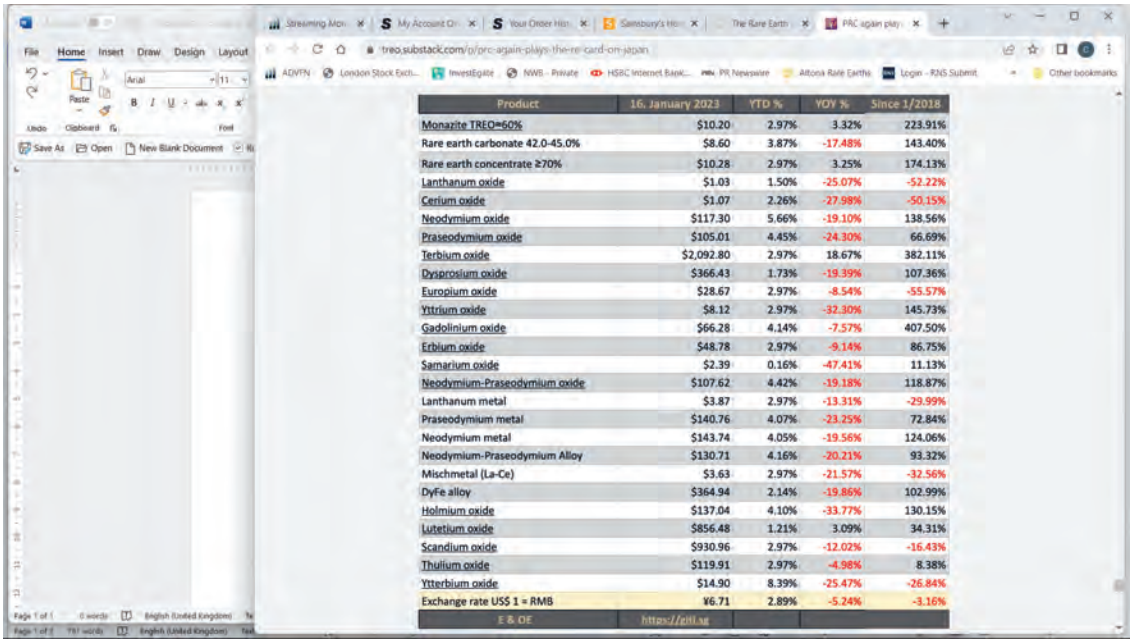
[33] https://www.imarcgroup.com/rare-earth-magnet-manufacturing-plant#:~:text=Market Overview%3A,US%24 17.5 Billion in 2022.

Prices for neodymium and praseodymium oxide (NdPr), which are the most common rare earths used in making magnets, increased by 138% between January 2021 and January 2023.[34] Permanent magnet applications formed close to 30% of total rare earth demand in 2022.[35] It is estimated that by 2040 the NdPr Oxide demand will exceed 300,000 tpy, about 3 times the current c. 100,000 tpy level.



Forecasted NdPr Oxide demand. Source: Adamas Intelligence

The table below outlines the year end prices for rare earth metals in China, highlighting the high prices seen since 2018.



Product	16. January 2023	YTD %	YOY %	Since 1/2018
Monazite TREO≈60%	$10.20	2.97%	3.32%	223.91%
Rare earth carbonate 42.0-45.0%	$8.60	3.87%	-17.48%	143.40%
Rare earth concentrate ≥70%	$10.28	2.97%	3.25%	174.13%
Lanthanum oxide	$1.03	1.50%	-25.07%	-52.22%
Cerium oxide	$1.07	2.26%	-27.98%	-50.15%
Neodymium oxide	$117.30	5.66%	-19.10%	138.56%
Praseodymium oxide	$105.01	4.45%	-24.30%	66.69%
Terbium oxide	$2,092.80	2.97%	18.67%	382.11%
Dysprosium oxide	$366.43	1.73%	-19.39%	107.36%
Europium oxide	$28.67	2.97%	-8.54%	-55.57%
Yttrium oxide	$8.12	2.97%	-32.30%	145.73%
Gadolinium oxide	$66.28	4.14%	-7.57%	407.50%
Erbium oxide	$48.78	2.97%	-9.14%	86.75%
Samarium oxide	$2.39	0.16%	-47.41%	11.13%
Neodymium-Praseodymium oxide	$107.62	4.42%	-19.18%	118.87%
Lanthanum metal	$3.87	2.97%	-13.31%	-29.99%
Praseodymium metal	$140.76	4.07%	-23.25%	72.84%
Neodymium metal	$143.74	4.05%	-19.56%	124.06%
Neodymium-Praseodymium Alloy	$130.71	4.16%	-20.21%	93.32%
Mischmetal (La-Ce)	$3.63	2.97%	-21.57%	-32.56%
DyFe alloy	$364.94	2.14%	-19.86%	102.99%
Holmium oxide	$137.04	4.10%	-33.77%	130.15%
Lutetium oxide	$856.48	1.21%	3.09%	34.31%
Scandium oxide	$930.96	2.97%	-12.02%	-16.43%
Thulium oxide	$119.91	2.97%	-4.98%	8.38%
Ytterbium oxide	$14.90	8.39%	-25.47%	-26.84%
Exchange rate US$ 1 = RMB	¥6.71	2.89%	-5.24%	-3.16%
E & OE	https://gfil.sg			

[34] https://strategicmetalsinvest.com/praseodymium-prices/#:~:text=The current price of Praseodymium,contact us for a quotation.

[35] https://www.ceps.eu/wp-content/uploads/2022/12/CEPS-In-depth-analysis-2022-07_Supply-chain-for-recycled-rare-earth-permanent-magnets.pdf

12.5. Copper Market Fundamentals

Copper demand, and prices, are generally tied to the macro-economic factors, including the economic health of high-consuming countries, including in particular China and the United States.

The copper market driving factors are generally considered to be:[36]

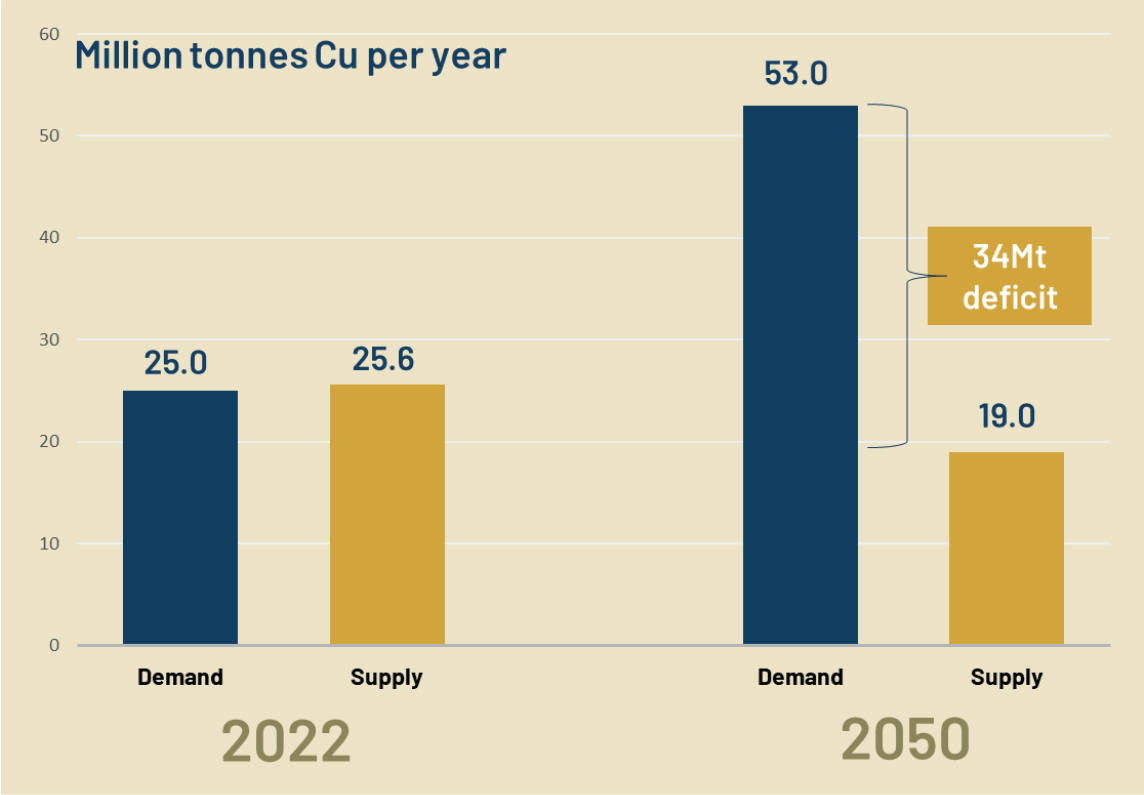
- The US Dollar strength. A weaker dollar generally supports copper prices increases by incentivising demand and disincentivising production
- Oil Prices, energy costs representing a significant part of copper extraction, smelting and refining prices
- The use of copper as collateral in China
- The general health of the World's economic activity, including China GDP Growth, and to a lesser extent USA and EU GDP Growth
- Copper mine supply which can be affected by geopolitical instability, regulatory framework changes, worker strikes and natural catastrophes
- The copper refining activity
- China Government stockpiles
- Copper scrap availability
- Speculation
- Market copper stocks levels

While abundant copper resources exist in the world, mining it economically and efficiently is a challenge. Chile and Peru, the world's top copper producers, are currently facing worker strikes and protest.

Copper supply is expected to tighten in the short and long term due to a chronic underinvestment in copper exploration and copper mine development over the past decades coupled to the fact that the proceed to turn a copper discovery into a producing mine is lengthy, averaging 16.5 years.[37] Ore grades are also declining.

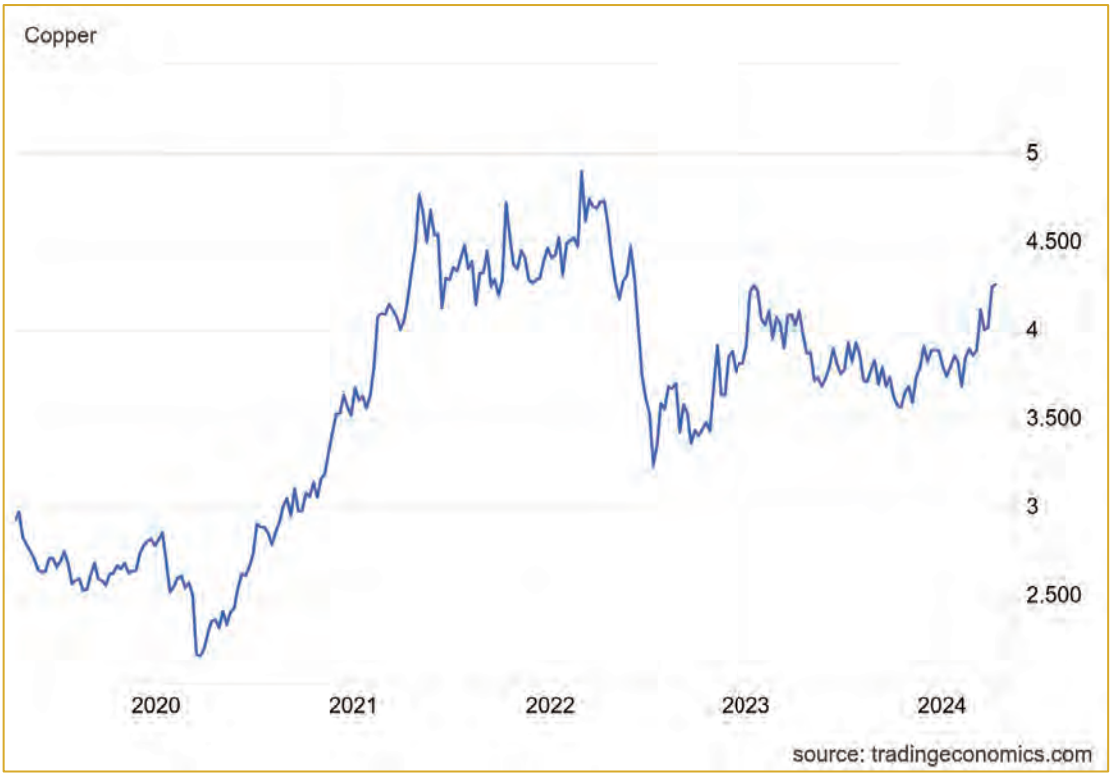
The Green Energy Transition is increasing the demand for copper and is expected to continue doing so for the decades to come. It is expected that by 2035, copper usage arising from the Green Energy Transition will double. In the absence of economically viable substitutes for electrification applications, and considering the above-mentioned supply limitations, the supply deficit is expected to grow to 34 Mtpy by 2050.

[36] https://materials-risk.com/copper-prices-top-10-important-drivers/
[37] IEA, The Role of Critical Minerals in Clean Energy Transitions, May 2021.



Current and forecast (2050) copper supply and demand.

Source: https://resourcecapitalfunds.com/wp-content/uploads/2023/10/RCF-Copper-Infographic.pdf



5 years copper prices history (USD per pound)

Copper prices have peaked at over USD 4.5 per pound in late 2021 and, after falling back to about USD 3.5 per pound in mid-2022, have been relatively stable. Prices are currently rising, as a result of an undersupply of copper concentrates.

While long term prices will ultimately be the result of many factors, and analysts estimates vary, there is a general consensus that copper is entering a bull market and that an increase of copper prices will be observed on the long term.

13. COMPETITIVE ADVANTAGES

13.1. There are many copper exploration projects and operating mines in Africa, in particular in Botswana and Zambia where the Company is now operating. Due to the long term forecasted supply deficit, the competition risk associated to future copper sales is low. Locally, copper exploration projects may compete for exploration resources including trained and experienced human resources and exploration and drilling services contractors. Copper mining operations may compete for access to processing, export and smelting infrastructure. However, the Directors see the proximity of other copper exploration projects and copper mining operations as a source of opportunities rather than of competition threats. Such opportunities include:

13.1.1. Valorisation avenues for the Company's projects, including the possibility to set-up joint ventures or to sell a Company's project to larger copper players in the region;

13.1.2. Cooperation with neighbouring exploration companies including data exchange and resources sharing;

13.1.3. Lobbying for the improvement of maintenance of the regulatory framework;

13.1.4. Access to or joint set-up of shared infrastructures including transport infrastructure, ore processing plants and smelters.

13.2. The REE market being a fast-developing niche market, competition between projects, for funding and for limited off-take opportunities in particular, is more tangible than for copper. The Directors believe that due to their current business and operations, Pensana Plc, Rainbow Rare Earths Limited, and Mkango Resources Limited, each in the REE sector, are the current and expected market competitors to the Group as each may in the future undertake additional acquisitions, internationally, including in the geographic areas in which the Company anticipates seeking acquisitions. However, the Directors believe this will not prevent the Company from carrying out its strategic objectives set out above and that sufficient acquisition targets exist for the Company. The table below shows the Company's main REE competitors:

Company	Altona Rare Earths	MKANGO	RAINBOW	io	Peak Rare Earths	PENSANA Plc
Project	Monte Muambe (Mozambique)	Songwe (Malawi)	Phalaborwa (South Africa)	Makuutu Phase 1 (Uganda)	Ngualla (Tanzania)	Longojo (Angola)
Type of REE Deposit	Carbonatite	Carbonatite	Phospho-gypsum tailings	Ionic Clay	Carbonatite Residuals	Carbonatite Residuals
Project Stage	Scoping Study	DFS	PEA	DFS	BFS	DFS (unpublished)
Size	13.6mt @2.42% TREO (IIR)	18.1mt @1.16% TREO (PP)	30.7mt @0.43% TREO (IR)	172.9mt @848% TREO and 30ppm Sc2O3 TREO (Probable)	18.5mt @4.80% TREO (PP)	30.1mt @2.55% TREO (PP)
Life of Mine (years)	18	18	14	35	24	20
Initial Capex (million US$)	276	311	296	121	305	321
NdPr Oxide production capacity (tons per year)	1,141	1,475	538	300	3,613	4,400
Market Capitalisation (as at 21 April 2024#)	£3m	£16m	£62m	£37m	£35m	£63m

** Contained in product. Depending on the project – concentrate, MREC, partly separated product.*

Comparison between Altona Rare Earths and some of its Africa-based competitors. (PP) Proven + Probable Reserves; (IR) Inferred Resources; (IIR) Indicated and Inferred Resources. Source: respective company websites.

13.3. The Company believes that its main competitive advantages are as follows:

13.3.1. Experienced board and senior management – The Company has an advantage of starting its CRM strategy from scratch, meaning it has been able to agree upon, and execute, the best approach to reducing risk for shareholders. A key part of this is the composition of its board of directors. The Company's board and senior management comprises a blend of professionals who each bring their own unique talents, including: mining experts – both on the geology side and from, historically, running mining companies in Africa; people with substantial UK PLC experience and who have worked with shareholders, investors and investment banks which will allow easier access to capital; African residents who understand the cultural environment, knowledge of the local systems and how governments work and who have created a network of industry and political allies; and communications experts who know how to deliver clear and concise news to shareholders and the broader market; Africa based – Two of the Company's Director are based in Africa, including the Company's CEO Cédric Simonet, who has over 25 years' experience working as a geologist and a business manager in over 15 African countries. Through them, and through its consultants, the Company has access to extensive business networks and competence in many African jurisdictions.

13.3.2. Monte Muambe site location – The use of the port of Beira (as opposed to Nacala) is expected to be less of an issue for Altona's projects than it is for the coal mines as

bulk handling at the port is not required, since the concentrate will be transported in containers. The project therefore has a competitive advantage compared to most of the other Eastern Africa rare earth elements projects in terms of distance to the closest port and logistics options. The Monte Muambe Project is located in Moatize district, in an area where active coal mines, major iron ore and steel project, and lots of smaller mines (gold in particular) are located. The district, and the nearby provincial capital Tete, have good road infrastructure, an international airport, abundant qualified workforce, equipment and service suppliers for the mining industry, as well as electricity generation capacity (Cahora Bassa hydropower plant).

14. LEGAL, REGULATORY AND ENVIRONMENTAL ISSUES

14.1. *MOZAMBIQUE*

14.1.1. *Rights to Mineral Resources*

In Mozambique, mineral resources located in and beneath the soil are the property of the State. Under certain conditions, the State may grant rights with respect to mineral resources to private persons as long as such rights are exercised in accordance with the industry's best practices, environmental legislation, and for the benefit of the national economy. Such rights include, among others, exploration, mining, treatment, processing, and trade or other forms of disposal of mineral products. These rights of use and enjoyment of mineral resources are granted by the State by means of the following relevant licences:

(i) Exploration Licence (Licença de Prospecção e Pesquisa);

(ii) Mining Licence (Concessão Mineira);

(iii) Mineral Treatment Licence (Licença de Tratamento Mineiro);

(iv) Mineral Processing Licence (Licença de Processamento Mineiro); and

(v) Mineral Products Trade Licence (Licença de Comercialização de Produtos Minerais).

MMM holds an Exploration Licence.

14.1.2. *Mining Legislation*

The primary sources of law for mining in Mozambique are the following:

- Constitution of the Republic of Mozambique of 2004 (the "**Constitution**") as amended;
- Law no. 20/2014, of 18 August (the "**Mining Law**") as amended;
- Law no. 15/2017 of 28 December, (the "Specific Taxation Regime for Mining Activity" or "Mining Tax Law") as amended;
- Law no. 15/2011, of 10 August (the "**Megaprojects Law**");
- Ministerial Diploma no. 8/2017 of 16 January (the "**Guidelines for Implementation of the Corporate Social Responsibility Policy for the Mineral Resources Extractive Industry**");
- Decree no. 16/2012, of 4 July (the "**Megaprojects Regulations**);
- Decree no. 20/2011, of 1 June (the "**Regulation on Trade of Mineral Products**");
- Decree no. 31/2015, of 31 December (the "**Mining Law Regulation**") as amended;
- Decree no. 28/2015, of 28 December, Regulation of Specific Taxation Regime for Mining Activity, as amended
- Decree no. 63/2021, of 1 September (the "**Regulation on Trade of Diamonds, Metals and Precious Gems**");
- Decree no. 5/2008, of 9 April (the "**Regulation of Mining Tax Law**");
- Decree no. 61/2006, of 26 December (the "**Regulation on Mine Work Safety**");
- Decree no. 31/2015 of 31 December (the "**Mining Regulations**");
- Resolution no. 89/2013, of 31 December (the "**Mining Policy**");

- Decree no. 26/2004 of 20 August (the Environmental Regulation for Mining Activities);
- Ministerial Diploma no. 91/2023 of 16 June (Reference Price Regulation for establishing the value of mineral products); and
- Ministerial Diploma no. 65/2022 of 15 June (Review of licensing and authorisation fees).

14.1.3. ***Mining Law 2014***

The 2014 Mining Law referred to above became effective on 18 August 2014 and, together with its associated Regulation, which is effective from 31 December 2015, forms the basis of the legislation that govern the mining sector. The key highlights are as follow:

- Prior approval from the Government is necessary for direct and indirect transfer of shares and interests in mining undertakings even if such a transaction does not entail the change of control in such mining undertakings.
- Holders of exploration licences must report "the discovery of any mineral" to MIREME before any public announcement.
- Holders of exploration licences for minerals other than construction materials have preference rights to apply for a distinct exploration licence for construction materials in their areas. Prospecting for construction materials is separately licenced.
- Coal bed methane (CBM), oil, natural gas and associated natural gas is regulated under Petroleum Law.
- Holders of exploration licence have preference rights to apply for a distinct CBM exploration licence in their areas. CBM exploration is separately licenced.
- The grant of mining rights under a mining title does not necessarily means the grant of rights of use and enjoyment of land or other pre-existing rights, which remains in the ownership of the State.
- The State may buy the minerals at the market price for the use by the local industry, based on commercial interest.
- Job vacancies for mining sector must be published in the newspaper with the widest readership.
- The foreign exchange regime such as the right to transfer funds abroad is no longer regulated as agreed by the Government and the private investor but rather that it is regulated in accordance with the terms of foreign exchange legislation.
- Holders of a Mining Concession shall start production within 48 months from the date of issuance of the licence failing to which, is a statutory ground to revoke the mining licence.
- Rights vested under mining contracts and agreements entered into and mining licences that were granted under the former Mining Law remain in force.
- The 2014 Mining Law introduces new mining titles, namely, the Mineral Treatment Licence, the Mineral Processing Licence, and the Mineral Products Trade Licence and eliminates the Reconnaissance Licence.
- A fraction of the revenue generated by the State from mining extraction must be channelled into the development of the local communities of the areas where the relevant mining operations are carried out.
- Introduction of imprisonment penalties for breach of the Mining Law.
- It creates the High Authority of the Extractive Industry and the National Mining Institute.

14.1.4. ***Types of Mining Titles***

Exploration Licence

An exploration licence allows the holder to conduct prospecting and research operations in a designated area, which must not exceed 198 hectares for construction materials and

19.998 hectares for the exploration of other mineral resources. The licence is valid for a period of 2 (two) years for construction materials renewable once for an equal period and valid for 5 (five) years for other mineral resources including mineral water, renewable once for a period of 3 (three) years.

Holding an Exploration Licence

An exploration licence may be held by any legal person incorporated and registered according to Mozambican law, with the relevant capacity to carry out the exploration activities allowed for under this licence, subject to payment of the applicable fee. Neither natural persons nor legal persons established in other jurisdictions may apply for or hold exploration licences.

Rights and Obligations of holders of an Exploration Licence

Holders of an exploration licence are permitted to:

- access the area subject to exploration;
- collect, remove, transport and export samples and specimens not exceeding acceptable limits and volumes for laboratory analysis, according to patterns and criteria set out in specific legislation (the legislation is yet to be approved);
- conduct sampling and trial processing of the mineral resources not exceeding acceptable limits (which are not clearly established in the legislation) in order to determine the mining potential;
- occupy land, open access roads and erect any temporary installations, campsites, structures or buildings necessary to carry out exploration activities;
- use water, timber and other necessary materials in the licenced area for exploration activities, subject to the applicable laws (i.e. those governing the domains indicated and environmental laws) and the observance of good mining and socio-environmental practices;
- apply, with a preference right, for the licence that authorises the exploration and prospecting of construction materials identified in the area; and
- apply with a preference right, for a licence to explore and exploit the coalbed methane gas occurring in the exploration licence area.

Under the terms of an exploration licence, the holder is required to:

- undertake exploration activities in accordance with applicable legislation and the best mining, social and environmental practices;
- respect local communities and contribute to their socio-cultural preservation;
- comply with the approved work programme;
- present an annual report of the activities and investments undertaken in the previous year, by 28 February;
- present an annual work programme, including the investment report detailing operations and investment planned for the following year, by 30 March;
- pay the specific taxes for the mining activity;
- compensate land users for damages caused to their land or property as a result of exploration and prospecting activities in the licenced area;
- observe health and safety rules for geological and mining activities in accordance with the applicable law;
- restore the environment in the area subject to the exploration licence in accordance with environmental legislation;
- repair damages caused by the exploration and prospecting activities in accordance with environmental legislation;

- communicate the discovery of minerals to the Government in accordance with the applicable regulations and prior to any public announcement; and
- execute the plan to relocate and compensate affected populations, where applicable.

Extension of an Exploration Licence

An exploration licence may be extended for a further period of up to 2 (two) years for construction materials and up to 3 (three) years for other mineral resources. To extend a licence, the holder must submit an application to the Minister at least 60 (sixty) days before the expiry of the current licence and pay the relevant fee.

The request for extension shall contain the following:

- indication of the intended extension period;
- the portions of the area that is intended to remain outlined in the updated topographic map;
- exploration activities report conducted in the initial period including the respective investments;
- exploration activities programme for the extension period and the respective budget;
- proof of payment of the taxes specific to mining activities;
- updated environmental management instrument, if applicable.

Transfer of an Exploration Licence

Exploration licences are transferrable subject to the prior approval of the Government. The same requirement applies for transfer of shares or quotas of the company holding the exploration licence.

To transfer an exploration licence an application must be submitted to the Minister via INAMI or the Provincial Directorate specifying the conditions of the transfer and including the legal instrument or document by which the transfer will be made. In addition, applicants must demonstrate that:

- the transferee has accepted the terms and conditions of the exploration licence in writing;
- the parties have legal capacity;
- the transferee has technical and financial resources as well as experience in managing and undertaking exploration activities; and
- Required fees have been paid (see paragraph 14.1.6 below).

If the conditions are met, the Minister will authorise the transfer of the licence within 180 (one hundred and eighty) days from the date of request.

14.1.5. ***Performance Bond***

The Mining Regulations require that mining titleholders provide a bank guarantee established in Mozambique or a money deposit, unconditional and irrevocable, in favour of the MIREME, in a bank account open exclusively for that purpose equivalent to 2% of the budget foreseen in the work programme, for the exploration.

This guarantee is aimed at ensuring that the terms and conditions of the mining titles are upheld. The guarantee may be cancelled by the titleholder after the presentation of the geological report of the second year, verification of the compliance of the work programme presented and after the start of the mining production. Conversely, the guarantee may be called on by the State for any breach that would otherwise entitle it to repeal the mining title.

14.1.6. ***Licensing and Regulatory Fees***

The costs associated with exploration licences can be categorised into three groups: fees, fees for amendments, and surface tax.

(i) The fees related to an application for an exploration licence are set out below.

Table 1: Fees for Exploration Licences

PROCESS	VALUE (MZN)	VALUE (US$)[38]
Fee for registration of application ("processing fee")	50,000	790.50
Fee for issuance of the title	50,000	790.50
Fee for late submission of the application for extension	150,000	2,371.50
Fee for extension	10,000	1,581.00

(ii) The fees related to amendments of exploration licences titles are set out below.

Table 2: Fees for Amendments to Exploration Licences

PROCESS	VALUE (MZN)	VALUE (US$)
Fees for application of transfer of title	1,920,000	30,355.73
Fees for registration of transfer of titles	1,500,000	23,715
Fees for application for extension of area	1,920,000	30,355.73
Fees for registration of extension of area	150,000	2,371.54

(iii) The annual surface tax due for exploration licences is set out below and is valid for all types of mineral resources.

Table 3: Surface Tax for Exploration Licences

RATE (MZN)	RATE (US$)
1st and 2nd year: 17.50 MZN/ha	80.24/ha
3rd year: 43.75 MZN/ha	0.61/ha
4th and 5th year: 91.00MZN/ha	1.28/ha
6th year: 105.00 MZN/ha	1.48/ha
7th year and 8th year: 210.00 MZN/ha	2.96/ha

14.1.7. ***Environmental Law***

Legislation

The Environmental Law (Law No. 20/1997 of 1 October) prohibits the act of polluting as well as activities that contribute to accelerated erosion, desertification, deforestation or any other form of environmental degradation, unless otherwise permitted by law. The Environmental Law further prohibits the importation of hazardous waste, unless otherwise permitted by specific legislation.

The Environmental Law also provides that the Government may establish environmental quality standards, defined as the admissible levels of pollution prescribed by law. The Environmental Quality and Effluent Emission Norms regulate atmospheric, water and soil quality for industrial purposes, effectively establishing standards for air pollution and effluent emissions.

Environmental Regulations for Mining Activities

The Mining Law and the Environmental Regulation for Mining Activities classify mining activities into three levels (Level A, Level B and Level C, specified below). Each activity is classified according to the scope of the operation and the relative complexity of equipment used. Each activity is attributed certain environmental obligations as a function of its classification.

[38] $1/63.25MZN.

Level A activities and EIA

Level A activities include all mining activities carried out under a mining licence. Such activities require a full environmental impact assessment ("**EIA**").

An EIA is a technical and scientific study of the environmental consequences of the implementation of a mining project. EIAs must be undertaken by an environmental specialist licenced by Ministry of Land and Environment ("**MITA**") and carried out during the feasibility stage of the project. The EIA process aims at producing a project-specific environmental licence, which enables the concessionaire to carry out a mining project.

The project proponent first submits to MITA the terms of reference of the EIA, which must include and state the timing and procedures for the related public consultation process, a risk and emergency management plan; and an environmental management plan, analysed below. The EIA is scrutinised by MITA and the Ministry of Mineral Resources and Energy ("**MIREME**"). If the EIA is approved, MITA issues an environmental licence within 10 (ten) days from the date of approval. The licence is valid for the same period as the mining title but must be reviewed every 5 (five) years.

In addition to the requirement to review the environmental licence every 5 (five) years, the holder of the licence must submit an environmental management report annually at the end of each calendar year. The annual environmental management report must cover the findings arising from the environmental, biophysical, socio-economic and cultural monitoring of the mining project. This monitoring process may be carried out either by the concessionaire or by a private auditor.

The Environmental Management Plan

The environmental management plan is a study of the environmental, biophysical, social, economic and cultural aspects of the project. The environmental management plan includes a section on environmental monitoring and a mine closure plan. The environmental management plan must cover a period of at least 5 (five) years, at the end of which a new plan must be submitted for approval.

The environmental management plan must be presented together with an application for the issuance of the relevant Mining Licence. Where a Mining Licence has been issued without an environmental management plan (for example, in cases where the initial exploration programme did not involve the use of mechanised equipment), such a plan must be submitted and approved, together with an updated exploration work plan, when the exploration programme advances to a stage that requires mechanised equipment.

The submission of the environmental management plan must be preceded by verification of the initial natural conditions of the area in which the mining activity is to take place, which must be signed by the proponent in the form of assumption of environmental liability.

The environmental management plan must include the following:

- location and basic description of the project;
- methods and procedures to be used during the project;
- expected impact on the environment and mitigating actions;
- monitoring programme;
- rehabilitation programme for the affected area.

The environmental management plan is firstly considered by MIREME, which recommends the approval, amendment or rejection of the plan within 30 (thirty) days. If the plan is recommended for approval, it will then be passed on to the provincial level of MITA (specifically, to the Direcção Provincial do Ambiental) for final evaluation and decision. Activities that involve mechanised equipment cannot start until the approval of the environmental management plan by MITA.

Technically, according to the terms of the Environmental Regulation for Mining Activities, if MITA does not approve the environmental management plan within 90 (ninety) days from the date of issuance of the mining title, the mining title automatically becomes null. In practice, however, MIREME coordinates with MITADER during the evaluation process of the

environmental management plan, and hence the initial approval by MIREME usually results in approval by MITA.

Once approved, the environmental management plan is valid either for the life of the Mining Licence or for a period of 10 (ten) years, whichever is shorter.

Level B Activities

Level B activities include quarrying activities, pilot projects of exploration activities, and activities carried out under a mining certificate. Such activities require a simplified environmental impact assessment (simplified EIA). The content of the simplified environmental impact assessment is yet to be regulated.

Level C activities

Level C activities consist of mining activities carried out under a mining pass or an exploration licence, which do not involve mechanised methods. Level C activities require an environmental management plan.

14.1.8. *Restoration Bond*

Persons undertaking Level A and B activities are required to provide an environmental bond to cover the costs of restoration of the environment during the closure of the mine. The bond may take the form of an insurance policy, a bank guarantee or a deposit in cash in a bank account provided by MIREME.

The value of the bond is based on an estimate of the costs of such restoration, which will be calculated during or after the active life of the project. The value of the bond is set by MIREME and reviewed every 2 (two) years. In the case of Level A activities, the value of the bond is calculated on the basis of the terms of the relevant EIA, whereas in the case of Level B activities it is calculated on the basis of the terms of the relevant environmental management programme.

Persons engaged in activities involving a high risk of environmental degradation must obtain insurance to cover such liability. Environmental damage caused by mining operations are the responsibility of the titleholder or the operator. In respect of legal persons, the legal representative of such person or the person otherwise in charge is jointly and severally liable with his principal unless he proves that he was unaware of or did not consent to the act or omission that caused the damage.

14.1.9. ***Cost of an Environmental Licence***

The fee for obtaining an environmental licence for activities in category A+ is 0.30 of the value invested in the activity. For the activities in Levels A and B it is 0.20% of the value invested in the activity. The fee for activities in Level C is 0.2% of the value invested in the activity. The value invested is normally determined by the sponsor of the activity.

The fees for renewing environmental licences after 5 (five) years are the following:

- MZN 80.000 for the activities in category A+;
- MZN 60.000 for the activities in category A;
- MZN 30.000 for the activities in category B; and
- MZN 5.000 for the activities in category C.

The applicant for an environmental licence is also responsible for the travel costs and out of office expenses of technical staff of MITADER (calculated according to the standard civil service rates) as well as costs related to correspondence, consultancy fees for the environmental consultants, costs arising from public consultations and other fees related to the production of the documents required for the licensing process.

14.1.10. ***Archaeological Heritage Protection***

The titleholder of a mining right must take the necessary measures so as to preserve geo-sites, geological patrimony and archaeological findings in the area under title. Archaeological heritage is defined by the Archaeological Heritage Protection Regulation as "fixed and moveable assets of archaeological, paleontological, anthropological or geological value,

related to past generations, discovered by accident, through prospecting or archaeological excavation, as well as that which has not yet been discovered". That Regulation imposes a number of relevant obligations described below.

Any project involving excavation, large-scale earth moving or the removal of semi-buried or buried items (from under land or sea) must provide for preliminary archaeological prospecting and salvage archaeology (i.e. the study of discovered archaeological elements under threat of destruction) in the event of a discovery. For this purpose, the project budget must reflect a line item in an amount not less than 0.5% of the total cost of the works.

14.2. ***BOTSWANA***

14.2.1. ***Mineral Licensing***

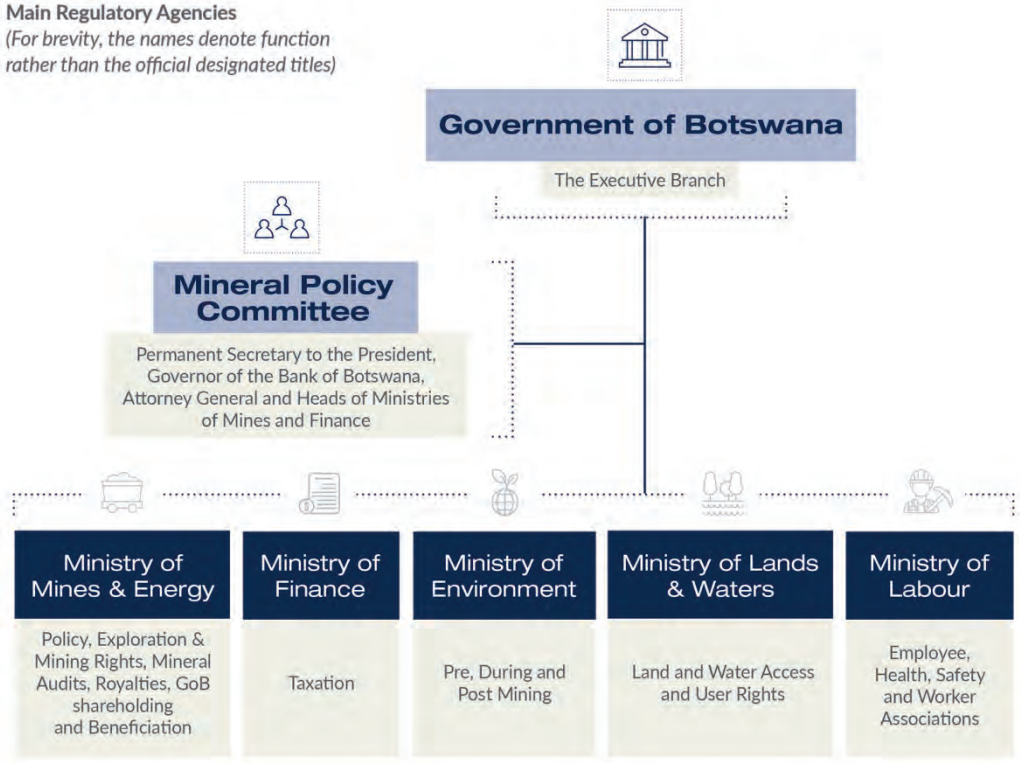
Mineral rights in Botswana are owned by the State. The Ministry of Mineral Resources, green technology and energy security oversees the operations and development of the energy, water and minerals sector in Botswana. Mining activities are chiefly administered under the Mines and Minerals Act, 1999 (the "Act"). The Act consists of 14 parts and two schedules. The legislation allows the government to acquire a minority stake (generally 15 percent) in mining projects as a partner and seek participation in the mining projects by having representation on their boards. The Act regulates the issuance of exploration and mining licences and endeavours to reach a balance between mining activity and environmental impact. The Act states the following:

- All rights of ownership of minerals are vested in the Republic of Botswana subject to the provisions of mineral rights in the Tribal Territories Act;
- The right to prospect or to mine minerals can be acquired and held only in accordance with the provisions of this Act, and no person is allowed to prospect or mine minerals except as provided in this Act;
- The Minister of Mineral Resources, Green Technology and Energy Security is responsible for the most efficient, beneficial and timely investigation and exploitation of mineral resources of the country; and
- No right to explore or produce petroleum (as defined in section 2 of the Petroleum Exploration and Production Act) may be granted or exercised under this Act. The following are the licences and permits granted under this Act.

To give effect to the policy and laws, starting at the exploration phase, the Government grants mining companies the right to search for minerals. At this stage, the goal is to entice companies by giving them exclusive rights to search for a specific mineral in a specific area in the hope that the company will make a discovery.

Diagram 1 illustrates the main ones in Botswana. An important arm for the strategic and oversight work of government is an ex officio body known as the Minerals Policy Committee (MPC). According to the 2022 Minerals Policy, its mandate is to provide strategic direction for minerals development at high and national level.

Diagram 1:
Main Regulatory Agencies
(For brevity, the names denote function rather than the official designated titles)



A prospecting licence enables the holder to intentionally look for minerals in the prospecting area and determine their extent and economic value. A prospecting licence is valid for such period as the applicant has applied for and cannot exceed three years. The holder of a prospecting licence can apply for a renewal three months before the expiry of his licence and specify the period for which the renewal is sought. An applicant is entitled to the granting of not more than two renewals, each for the period applied for and not exceeding two years in either case.

A retention licence provides a right of retention over a prospecting area. The holder of a prospecting licence can apply for a retention licence in relation to the area and a mineral covered by his licence.

The holder of a prospecting licence, retention licence or a waiver (issued by the minister once being satisfied that the area over which a mining licence is required has been sufficiently prospected and that no other person has exclusive rights to that area) can apply for a mining licence for an area in respect of which the waiver has been issued or for an area within his prospecting area or retention area. A mining licence is valid for a period not exceeding 25 years. The government has the option of acquiring up to 15 per cent. working interest participation in the proposed mine upon the issuance of a mining licence.

A person wishing to conduct small-scale mining operations may apply for a minerals permit for any mineral other than diamonds over an area not exceeding 0.5km2 per permit. The holder of a minerals permit has to demarcate the area covered by such permit in the prescribed manner within three months of the issue of the permit. A minerals permit is valid for a period not exceeding five years as determined by the minister and may be renewed for further periods not exceeding five years each.

14.2.2. ***Licensing Fees***

According to Section 70 of the Mines and Minerals Act of the Republic of Botswana, the prospecting license holder is required to pay to the Office of the Director of Department of Mines, an annual charge equal to five Botswana Pula (BWP5.00) (1 USD = approximately BWP 13.7) multiplied by the number of square kilometres in the Licence Area subject to a minimum annual charge of One Thousand Pula (BWP 1,000).

14.3. ***ZAMBIA***

14.3.1. ***Rights to Mineral Resources***

The primary law governing the mining sector in Zambia is the Mines and Minerals Development Act No. 11 of 2015 of the Laws of Zambia (MMDA) as read together with the Mines and Minerals Development (Amendment) Act No. 14 of 2016. The following are the three types of licenses that are available for large-scale operators).

- Prospecting licence — This licence confers the right to prospect for any mineral over any size of area for a period of 2 years and are renewable. The requirements are as follows:
  - (i) Duly completed Form I with geographical coordinates of the area of interest which should fit the predefined cadastral grid as per form I
  - (ii) Environmental commitment plan
  - (iii) Articles of association
  - (iv) Program of intended mining operations (should include proposals for the proper conservation and use of mineral resources in mining area in the national interest)
  - (v) Proposed programme for mining operations (Should include an estimate of the investment commitment in the approved format)
  - (v) Proposals for employment and training of citizens of Zambia.
  - (vi) Proposal for promotion of local business development.
  - (vii) Environmental commitment plan
  - (viii) NRC/ Passport copy (ies) for all Shareholders / Cooperative registered under Cooperatives societies act 1998
  - (ix) Valid Tax clearance certificate (Issued under Income Tax Act Cap 323)
  - (x) Any other information which the Director of Mining Cadaster may require.
- Retention licence — This licence confers the right to retain an area subject to the Minister's agreement, over which feasibility studies have been completed, but market conditions are unfavourable for development of a deposit at that time. Size of area may be that covered by a prospecting license or smaller, as redefined by the license holder.
- Large-scale mining licence — This licence confers exclusive rights to carry out mining operations and other activities reasonably incidental to that in the area, for a maximum of 25 years. The area to be held should not exceed the area required to carry out the proposed mining operations. The process requires the following:
  - (i) Duly completed Form I with geographical coordinates of the area of interest which should fit the predefined cadastral grid.
  - (ii) A Compressive Statement of the Mineral Deposits in the area over which the licence is sought (Should include details of all known minerals proved, estimated or inferred, ore resources and mining conditions).
  - (iii) Feasibility Study for Mining Operations (Should include forecast of capital investment, the estimated recovery rate of ore and mineral products, and the proposed treatment and disposal of ore and minerals recovered).
  - (iv) Approved Environmental Impact Statement (EIA from ZEMA).
  - (iv) Details of expected infrastructure requirements.

(v) Proposals for employment and training of citizens of Zambia.

(vi) Proposals for promotion of local business development.

(vii) Detailed geographical report on the Area'.

(ix) Pegging Certificate.

(xi) Valid Tax clearance certificate (Issued under Income Tax Act Cap 323).

(xii) Plan of Proposed Mining Area.

(xiii) In the case of Gemstones, a Plan for Cutting, Polishing and Faceting of Gemstones in Zambia.

(xiv) Statement of duration for which licence is sought (should not exceed 25 years).

(xv) Articles of Association, Certificate of Incorporation, Certificate of Share Capital.

(xvi) NRC/ Passport copy (ies) for all Shareholders.

(xvii) Any other information which the Director of Mining Cadaster may require.

Applications need to be accompanied by environmental protection plans and proposals for employment and training of Zambian citizens.

Similar rights are available to smaller operators, but on a reduced scale.

- Prospecting permits — These permits relate to areas of 10 square kilometres, are valid for 2 years and are non-renewable.
- Small-scale mining license — These relate to areas not exceeding 400 hectares, are valid for 10 years and are renewable. The requirements are as follows:

  (i) Duly completed Form I with geographical coordinates of the area of interest which should fit the predefined cadastral grid.

  (ii) Copy of relevant prospecting permits and prospecting reports.

  (iii) Proposed programme for mining operations (Should include forecast of capital investment, the estimated recovery rate of ore and mineral products, and the proposed treatment and disposal of ore and minerals recovered).

  (iv) Description of the mineral deposit in the area over which the licence is sought.

  (v) Statement of duration for which licence is sought (should not exceed 10 years).

  (vi) Valid Tax clearance certificate (Issued under Income Tax Act Cap 323).

  (vii) Approved Environmental Project Brief (EBP from ZEMA).

  (viii) Proposals for employment and training of citizens of Zambia.

  (ix) Proposals for promotion of local business development.

  (x) Pegging Certificate.

- Artisans' mining rights — These give local people the right to mine on an artisanal basis in an area not exceeding 5 hectares, are valid for 2 years and are non-renewable. Requirements are:

  (i) Duly completed Form I with geographical coordinates of the area of interest which should fit the predefined cadastral grid as per form I.

  (ii) Environmental commitment plan.

  (iii) Program of intended mining operations (should include proposals for the proper conservation and use of mineral resources in mining area in the national interest).

  (iv) Proposed programme for mining operations (Should include an estimate of the investment commitment in the approved format).

  (v) Proposals for employment and training of citizens of Zambia.

(vi) Proposal for promotion of local business development.

(vii) Environmental commitment plan.

(viii) NRC/ Passport copy (ies) for all Shareholders / Cooperative registered under Cooperatives societies act 1998.

(ix) Valid Tax clearance certificate (Issued under Income Tax Act Cap 323).

(x) Any other information which the Director of Mining Cadaster may require.

- Gemstone license — Holders of this license may carry mining operations over an area not exceeding 400 hectares, for a period of not more than 10 years.

Minerals Economics Unit in the Mines Development Department issues the following types of trading permits/ licences.

A trading permit can be issued to an indigenous Zambian and can also be issued to a registered limited Company. The trading permit can be used for buying and selling of various minerals.

Types of trading permits:

- Precious Metals (Gold, Silver and Platinum)
- Gemstones (These are Emaralds, Clear Quartz and Amesthyst stones)
- Base Metals (These include; Copper, Cobolt, Managanese, Lead, Zinc, Tin e.t.c)
- Industrial minerals (These include; Coal, Gypsum, Aluminium, Feldspar, Fluorine-Fluorite e.t.c)

The government of the Republic of Zambia has also created a framework for responsible development through publication of the Environmental Protection and Pollution Control (Environmental Impact Assessment) Regulations, 1997. It also has a number of sector-specific laws and regulations related to the environment regulated through the Zambia Environmental Management Agency (ZEMA).

14.3.2. ***Licensing Costs***

The Prospecting License holder is required to pay an annual charge equal to 10 Zambian Kwacha (ZK10.00) (1 USD = approximately ZK 24.32) for large scale exploration licenses (postfix LEL) multiplied by the number of square kilometres in the Licence.

Zambia also has minimum annual expenditure per hectare defined in the table below (The Mines and Minerals Development Regulations, 2016).

Minimum annual exploration expenditure per hectare (one fee unit equals 0.3 Zambian Kwacha) for exploration licenses in Zambia

Minimum annual exploration expenditure per hectare										
Type of licence	Fee units per hectare per year									
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Exploration Licence	40	40	40	40	120	120	120	160	160	160

Source: *The Mines and Minerals Development Regulations (2016)*

15. TAX REGIME FOR MINING ACTIVITIES

15.1. MOZAMBIQUE

Certain specific taxes apply to mining activities. These are:

- Mining Production Tax (Imposto sobre a Produção Mineira, sometimes referred to as royalties);
- Surface tax (Imposto sobre a Superfície); and

- Mineral Resource Rent Tax (Imposto sobre a Renda de Recurso Mineiro).

15.1.1. ***Mining Production Tax***

Mining Production Tax is levied on the extracted mineral product, the concentrates and the mineral water, arising from mining activity within Mozambican territory, with or without the mining title and shall be paid monthly. In general, the value of the product is determined according to the price of the last sale undertaken by the taxable person, which should correspond to the reference price of the international market. The Tax Authority may alter the taxable amount reported by the taxpayer if the relevant sale price is below the normal market price or if the sale of the product was not made on a commercial basis.

The applicable rates of production tax are set forth below.

Table 4: Production tax (percentage of the value of the mineral product)

Mineral resource	**Percentage**
Diamonds	8
Precious metals (gold, silver and platinum), precious stones and Semi-precious stones	6
Base minerals, coal and other mineral products not included in other categories	3
Sand and stones	1,5

In June 2023, the Government of Mozambique through a joint Ministerial Order by the Ministers of Mineral Resources and Energy and Economy and Finance enacted a "Reference Price Regulation for establishing the value of mineral products" in order to regulate the mineral product export price. This Reference Price Regulation provides that at the beginning of each month, the Revenue Authority will issue on the first business day of the month a Reference Price Bulletin to be used as a reference when calculating the royalty for payment to the state.

The price of the mineral product on the tax filling shall be obtained based on the reference prices as published on the Reference Price Bulletin on the first business day of each month. Furthermore, the price of the mineral product declared by the mining operator/trader may be adjusted based on the reference prices in the international market in practice on the dates the tax is due. In case any mineral product reference price is not included in the Bulletin the Government joint team that sets the reference prices may adopt other criteria based on publicly available, reliable data as independently published in relation to commodities prices in the international market.

Lastly, the mining operator/trader shall subject the mineral products to quality testing and submit the result to the mining regulatory authority in Mozambique. The Revenue Authority may at its discretion counter-test the quality of the mineral should it has doubts on the quality certificate submitted by the mining operator/trader.

15.1.2. ***Surface Tax***

Surface tax is an annual tax levied on the area of mining activity and in case of mineral water, on each mining title. The tax obligation arises from the moment of awarding of the area subject to exploration licences, mining licences and mining certificates.

Surface tax is calculated on the basis of the number of hectares or square kilometres of the area under licence. Rates vary according to the type of the mining title, the nature of the mineral resources present in the relevant area and the period the licence has been held.

Payment of surface tax exempts holders of mining titles from paying the DUAT fee, insofar as the DUAT coincides with the area under title.

Type of mining title	**Mineral resource**	**Rate (per km^2 or hectare)**
Exploration licence	All mineral resources	1st and 2nd year: 17.50 MZN / ha 3rd year: 43.75 MZN / ha 4th and 5th year: 91.00 MZN / ha 6th year: 105.00 MZN / ha 7th and 8th year and: 210.00 MZN / ha
Mining Concession	All other mineral products	1st up to 5th year: 30.00 MZN /ha 6th year onwards: 60.00 MZN / ha
	Mineral water	85.000 MZN/mining title
Mining Certificate	All mineral resources	1st up to 5th year: 30.00 MZN /ha 6th year onwards: 60.00 MZN / ha

15.1.3. ***Mineral Resource Rent Tax***

The Mineral Resource Rent Tax ("**MRRT**") is a tax on the net cash flow under a mining title, from the moment when such flow originates an internal return rate equal or above 18%, before IRPC. The MRRT applies to mining projects that have accrued net revenues (cash gains) during a fiscal year. MRRT is due when there are net cash gains at the end of the fiscal year at the tax rate of 20%.

15.1.4. ***Tax Benefits for Mining Activities***

The Mining Tax Law establishes fiscal incentives for mining activities. During the first 5 (five) years since the commencement of the mining activities, the new mining projects are exempt from:

- customs duties payable on importation of equipment that is classified as class K of the Customs Schedule (Pauta Aduaneira), whether for exploration or for mining; and
- customs duties payable on importation of certain equipment (other than that classified as class K goods), which is listed in Annex A of the Mining Tax Law.

In order to be eligible for the benefits listed above, the taxpayer must:

- have been authorised to undertake mining activities;
- hold a Taxpayer Identification Number (Número Único de Identificação Tributária or NUIT);
- maintain accounting in accordance with the General Plan of Accounts (Plano Geral de Contabilidade), the CIRPS or the CIRPC, as applicable; and
- not have committed tax offenses or offenses of any other nature recognised by the Tax Authority.

Mining investors with tax benefits granted before the entry into force of the Tax Benefits for Mining continue to enjoy their acquired benefits in accordance with the law.

15.2. ***BOTSWANA***

Botswana has a source-based taxation system. Corporate income tax (CIT) is charged at a single flat rate of 22%. Manufacturing companies having the approval from the Minister of Finance for a special tax rate will be charged at the rate of 15%. Mining profits, other than profits from diamond mining, are taxed according to the following formula:

Annual tax rate = 70 minus (1,500/x), where x is taxable income as a percentage of gross income.

The tax rate shall not be less than the flat CIT rate of 22%. The royalties payable in Botswana shall be the following percentages of gross market value as set out below:

- 10% for Precious stones
- 5% for Precious metals
- 3% for Other minerals or mineral products

The term "gross market value" shall for the purposes of calculation of royalties be defined as the sale value receivable at the mine gate in an arm's-length transaction without discounts, commissions or deductions for the mineral or mineral product on disposal in terms of section 66 (3) of the Mines and Minerals Act.

15.3. ***ZAMBIA***

A non-Zambian resident enterprise that has a permanent establishment ("PE") in Zambia will be subject to corporate income tax ("CIT") on its Zambian-source income. If there is no PE, Zambian source income of the non-Zambian resident may still be subject to WHT, which is generally deducted at source. The standard rate of CIT applicable on taxable income of corporate entities (other than individuals) is 30% on taxable corporate income (2017-2924 PwC). The mineral royalty tax regime in Zambia has undergone a number of changes since 2015. However, with effect from 1 January 2023, the following mineral royalty rates apply:

Zambia mineral royalties in 2020

Description	Rate (%)
For the holder of a mining licence	
On the norm value of the base metals produced or recoverable under the licence, except where the base metal is copper	5.0
On the norm value of the base metals produced or recoverable under the licence, when the base metal is cobalt	8.0
On the norm value of the base metals produced or recoverable under the licence, when the base is a precious metal	6.0
On the gross value of the energy and industrial minerals producedor recoverable under the licence	5.0
On the gross value of the gemstones produced or recoverable under the licence	6.0
On the norm value of the precious metals produced or recoverable under the licence	6.0
Where the base metal produced or recoverable under the licence is copper	
On the norm value when the norm price of copper is less than USD 4,500 per tonne	5.5
On the norm value when the norm price of copper is USD 4,500 per tonne or greater, but less than USD 6,000 per tonne	6.5
On the norm value when the norm price of copper is USD 6,000 per tonne or greater, but less than USD 7,500 per tonne	7.5
On the norm value when the norm price of copper is USD 7,500 per tonne or greater, but less than USD 9,000 per tonne	8.5
On the norm value when the norm price of copper is USD 9,000 per tonne or greater	10.0

Note: *Mineral royalty tax is not deductible in determining the taxable income of a mining company*

16. GENERAL REGULATORY AND ENVIRONMENTAL ISSUES FOR REE PROJECTS

16.1. The regulatory framework applicable to prospecting and mining in Africa varies considerably from one country to another. Most countries have a relatively recent (5 to 20 years old) set of laws and regulations covering mining, and not all have achieved maturity in their regulatory framework. Usually, Prospecting Licences are exclusive and are given on a first-come-first-served basis for a determined duration (with options to renew). Licences include work and expenditure commitments, and give a preferential right to apply for a Mining Licence once mineable deposits have been identified and proven, usually through a feasibility study. Mining Licences are granted over a period of time covering the mine life or a fixed period (usually between 15 and 25 years), and are often renewable ("Mining Licence"). The fiscal regime of mining activities usually includes royalties (for example, as a percentage of sales) and corporate tax. Mineral rights are usually separate from land rights and may have to be

acquired separately. African countries all have recent environmental legislation and different types of environmental licences are required for different activities.

16.2. REE production from Ionic Clay deposits typically require leaching of the orebody using very mild solutions such as 1 mol/l sodium chloride (table salt) or 1 mol/l ammonium sulphate solutions. Leaching can be done dynamically (agitated tanks), statically (heap-leaching), or in-situ (injection of leaching solution into the ground and subsequent recovery through wells).

Orebodies are relatively thin and shallow (foot wall less than 20m below the surface) and flat lying, which means that (unless the in-situ method is chosen), strip mining with gradual rehabilitation of the ground can be done, thus minimising the surface area of open ground at any given time. The nature of the orebody (clay) means that no blasting is required. Both mining and processing consume a lot less energy, and milder reagents, than for hard rock REE deposits mining, meaning that they can have a considerably lower environmental footprint when done properly.

Leaching solutions, however, do require careful handling as they can cause significant damage to the environment, as the unregulated exploitation of some ionic clay REE deposits in Southern China has shown.

The main environmental concerns associated to Ionic Clay REE deposits mining are:

- The management of leaching solutions, in order to ensure that no contamination of the soils or of the aquifers takes place;
- Excavations (where applicable) rehabilitation, to ensure that mined areas can be returned to their previous use post-mining, and that no erosion takes place.

In China, in-situ leaching extractions have become the standard to reduce environmental damage due to lack of rehabilitation after batch or heap leaching.

17. DIVIDEND POLICY

The Company is primarily seeking to achieve capital growth for its Shareholders.

It is the Board's intention during the current phase of the Company's development to retain future distributable profits from the business, to the extent any are generated. The Board does not anticipate declaring any dividends in the foreseeable future but may recommend dividends at some future date after the completion of the Acquisition and depending upon the generation of sustainable profits and the Company's financial position.

The Board can give no assurance that it will pay any dividends in the future, nor, if a dividend is paid, what the amount of such dividend will be. The Company will only pay dividends to the extent that to do so is in accordance with all applicable laws.

18. SHARE OPTIONS

There are no share options in issue as at the date of this Document.

19. EXISTING WARRANTS

As at the date of this Document, the Company has granted warrants over 130,646,561 Shares in the Company to certain Directors, Shareholders and others, (the "**Existing Warrants**") which shall represent approximately 80.14 per cent. of the Enlarged Share Capital at Admission. The details of the Existing Warrants issued by the Company as at the date of this Document are set out in paragraph 20.7 of Part VII (Additional Information) of this Document.

20. LOCK-IN AGREEMENTS

The Directors and the Senior Manager, in aggregate, hold 14,924,478 Ordinary Shares, representing 9.16 per cent. of the Enlarged Share Capital. Each Director and the Senior Manager entered into lock-in and orderly marketing agreements with the Company and Optiva dated 30 May 2023 pursuant to which each agreed, except for certain standard exceptions, not to dispose of any interest in the Ordinary Shares held by them (or subsequently acquired by them) for a period of 12 months following the Listing Date (Lock-In

Period) and then for the following 12 months not to dispose of their Ordinary Shares without first consulting the Company and Optiva in order to maintain an orderly market for the Shares. The Lock-In Period has now expired and so the holdings of the Directors and the Senior Manager are subject only to the orderly marketing requirements as set out in paragraph 20.10 of Part VII (Additional Information) of this Document.

21. THE FUNDRAISE AND ADMISSION

The Subscription

Subscribers have agreed to subscribe for 39,400,000 Subscription Shares at an Issue Price of 1 pence per Subscription Share on the terms of the Subscription Letters details of which are set out in paragraph 20.13 of Part VII of this document.

The Directors believe that raising funds by way of a subscription (as opposed to a rights issue or open offer) will provide the certainty required for the Company's funding requirements and is more cost effective than a rights issue or open offer.

The New Loan Facilities

The Company has had committed facilities made available to it in an aggregate of £900,000 through a loan facility comprising £600,000 under the terms of the Tracarta Loan Facility Agreement and £300,000 under terms of the Jennings Loan facility Agreement further details of which are set out in paragraphs 20.16 and 20.17 of Part VII of this Document. Under the terms of the New Loan Facility Agreements, each of Tracarta Limited and Richard Jennings are to be granted 105,000,000 and 30,000,000 Warrants respectively, conditional upon passing of the Resolutions.

The total gross amount raised via the Fundraise is therefore £1,294,000. Of this amount, £900,000 will be provided by Tracarta Limited, of which £300,000 formed part of the Subscription and £600,000 has been made available as a loan facility.

The Subscription Shares will, when issued as fully paid, rank *pari passu* in all respects with the existing issued Shares, including the right to receive all dividends or other distributions declared, made or paid after the date of their issue and in respect of Voting Rights. The Shares and the Subscription Shares are denominated in Pounds Sterling.

A summary of the material terms of the Subscription Letters and the New Loan Facility Agreements are set out in paragraph 20 of Part VII of this Document.

Additional Share Issuance

In addition to the Subscription Shares, the following New Ordinary Shares are being issued pursuant to this Document:

- 26,300,000 CLN Conversion Shares
- 7,000,000 CCL Conversion Shares
- 3,548,759 Fee Shares (of which 2,241,968 Shares have been issued to PDMRs and the balance to other creditors in satisfaction of fees and other debts owed to them by the Company).

Application will be made for the New Ordinary Shares to be admitted to listing on the Official List and to trading on the London Stock Exchange's Main Market. It is expected that Admission will become effective and dealings in the New Ordinary Shares will commence at 8.00 a.m. on 25 July 2024. No such application will be made in respect of the Deferred Shares. If the Fundraising is not completed, no application will be made.

Copies of this Document and other documents the Company is required to make available for inspection will be available to the public, free of charge, from the Company's registered office for a period of 12 months from the date of dealings. Such documents will also be made available on the Company's website at www.altonaRE.com from the date of publication of this Document.

The Company and the Directors have ensured that the Company shall have sufficient Shares in public hands, as defined in the Listing Rules. 43.01% of the Shares in issue at Admission

are held by Shareholders that fall within the Listing Rule 14 definition of shares in public hands.

22. PAYMENT FOR THE SUBSCRIPTION SHARES

Each Subscriber must pay the Issue Price for the Subscription Shares issued to the Subscriber in the manner directed by the Company.

If any investor fails to pay as so directed by the Company, the relevant investor's application for Subscription Shares may be rejected.

If Admission does not occur, subscription monies will be returned to the Subscribers without interest at the risk of the applicant.

23. CREST

CREST is a paperless settlement procedure enabling securities to be evidenced otherwise than by a certificate and transferred otherwise than by written instrument. The Articles permit the holding of Shares under the CREST system. The Shares were eligible for CREST with effect from the Company's admission to trading on AIM in 2005. Accordingly, settlement of transactions in the Shares following Admission may take place within the CREST system if any Shareholder so wishes.

CREST is a voluntary system and investors who wish to receive and retain certificates for their securities will be able to do so. Except as otherwise described herein, the Subscribers may elect to receive Shares in uncertificated form if such Shareholder is a member (as defined in the CREST Regulations) in relation to CREST.

24. TRANSFERABILITY

The Company's Shares are freely transferable, free from all liens and tradable and there are no restrictions on transfer.

25. DEALING ARRANGEMENTS AND ADMISSION

Application will be made to the FCA for the New Ordinary Shares to be listed on the Official List and application has been made to the London Stock Exchange for these Shares to be admitted to trading on the London Stock Exchange's Main Market for listed securities.

It is expected that Admission will take place and unconditional dealings in the New Ordinary Shares will commence on the London Stock Exchange at 8.00 a.m. on 25 July 2024. This date and time may change. It is intended that settlement of Shares allocated to Subscribers will take place by means of crediting relevant CREST stock accounts on Admission. Dealings in advance of crediting of the relevant CREST stock account shall be at the risk of the person concerned.

26. LIQUIDITY AND CAPITAL RESOURCES, CASH USES, USE OF PROCEEDS, AND USE OF NET PROCEEDS

Sources of cash and liquidity

The Company is of the opinion that, taking into account the current cash balance and the Net Proceeds of the Fundraising, the working capital available to the Company is insufficient for its present requirements, that is for at least 12 months from the date of this document

The Group had a cash balance of approximately £23,980 at the date of this Document which is retained in the Group's bank accounts and the Net Proceeds of the Fundraising will be placed in the Company's bank account.

Cash Uses and Use of Fundraising Proceeds

As set out below, the Company's intention is to use its current cash resources and the Net Proceeds of the Fundraise to fund the Monte Muambe metallurgy and mining concession and due diligence and exploration for the Kabompo South and Sesana Projects. Proceeds will also fund general working capital requirements, pay ongoing corporate costs, and expenses (including Directors' fees and other internal costs), which are estimated to amount to in

aggregate £665,000 for the next 7 months and the repayment of £29,000 of CLNs (including interest due thereon). The remaining balance of £263,000 relating to the CLNs are due to be converted into New Ordinary Shares on Admission at the Issue Price. It is noted that of the £225,000 drawn down under the CCL Second Facility, £70,000 is due to be converted into New Ordinary Shares at the Issue Price on Admission with the balance of £200,000 (including interest) due for repayment in October 2025, unless repaid prior thereto (although pursuant to an amendment to the CCL Second Facility dated 27 June 2024, CCL no longer has conversion rights of the CCL Second Facility).

As the Company does not intend to generate revenue from its business operations in the foreseeable future, it does not anticipate declaring any dividends in the foreseeable future.

The Board intends to be prudent so as to preserve Company funds as far as possible and will keep costs within the Company's cash reserves at all times, for example, the Board is unlikely to commence detailed due diligence without first having agreed capped fees with its advisers in order that total transaction fees are ascertainable.

Use of Net Proceeds of Fundraise

Conditional on Admission, the Company has raised £1,294,000 Gross Proceeds in the Fundraising resulting in net proceeds of the Fundraising of £1,195,730 ("Net Proceeds"). Total expenses incurred by the Company in connection with the Fundraising and Admission are approximately £98,270 (exclusive of VAT). None of the Fundraising costs will be charged to the Subscribers or to any Shareholders.

It is anticipated that the Net Proceeds of £1,195,730 being the Gross Proceeds of the Fundraising less the associated costs of the Fundraising and Admission not yet paid, together with the Company's aggregate cash resources of £23,980 at the date of this Document, will be used as follows:

Use of Cash Resources and Net Proceeds of the Fundraising within 12 months from Admission	**£**
Monte Muambe Metallurgy and Mining Concession	**£255,000**
Due diligence and exploration for Kabompo South and Sesana Projects	**£265,000**
Repayment of part of the CLNs and interest*	**£29,000**
Directors' fees and salary	**£230,000**
Administrative costs and General Working capital requirements	**£435,000**
	£1,214,000

*At the date of this document, the outstanding balance of the CLNs is £275,000 and the Company has drawn down a total of £225,000 from the CCL Second Loan Facility. On Admission, £29,000 of the Net Proceeds will be used to repay the CLNs (including interest due thereon), the balance of which will be converted at Admission into Ordinary Shares at the Issue Price. In addition, £70,000 of the loan under the CCL Second Facility will be converted into Ordinary Shares (at the Issue Price) at Admission leaving an outstanding balance of £200,000 (including interest due thereon) owing to CCL under the CCL Second Loan Facility Pursuant to an amendment to the CCL Second Facility dated 27 June 2024, CCL no longer has conversion rights under the CCL Second Facility and its repayment date is now October 2025.

The Company anticipates that, based on current base case projections it will have to raise funds to cover a working capital shortfall of approximately £370,000 in February 2025.

27. FURTHER INFORMATION

The attention of prospective investors is also drawn to the remaining sections of this Document, which contain further information on the Company and the Group.

PART II

DIRECTORS, SENIOR MANAGEMENT, CONSULTANTS AND CORPORATE GOVERNANCE

Details of the Directors, Senior Manager and Consultants and their backgrounds are as follows:

DIRECTORS

Martin John Wood (Non-Executive Chairman), aged 55

Martin is the founder and Managing Director of Vicarage Capital Limited, an FCA registered, full service brokerage house which provides assistance to junior and mid-cap resources companies. Martin established Vicarage Capital in 2003 and has advised many companies on their AIM listings and long-term mining strategies.

Martin was the CEO of ASX listed, Kogi Iron Limited between 2017 and 2019, where he secured a community development agreement with key stakeholders, arranged indicative offers for full bank debt-based project financing, as well as completing various on-going milestones, including a Scoping Study and metallurgical test work, as part of the definitive feasibility study. Martin is a non-executive director of Royal Helium Limited and Tungsten West Limited.

Between 1993 and 2003, Martin worked in corporate finance at NM Rothchild & Sons, Standard Bank, London and Benfield Advisory, providing services to resources companies. Martin has an MBA from Exeter University which he gained in 1993.

Cédric Valéry Gérard Simonet (Chief Executive Officer), aged 51

Cédric Simonet holds a PhD in Geology from University of Nantes and has 25 years' experience exploring, developing and mining mineral deposits in Africa and in France. He was Head Geologist and Open Pit Manager at SOGEREM fluorspar mine (Alcan, France) and Africa Region Manager with IGE Resources AB. He was the Head of Drilling at AAA Drilling Ltd and General Manager of NuEnergy Gas Ltd during the same period between 2013 and 2014, before holding the role of General Manager at NuAfrica Gas between 2014 and 2017. He is a co-founder of Akili Minerals Services Ltd., a Nairobi based exploration services company, and has been involved in several exploration projects on REE-carbonatites in Kenya including Ruri, Homa Mountain, Buru and Mrima. He is also a former Chairman of the Kenya Chamber of Mines, and well experienced in operating in this and many other African countries.

Cédric is a member of the European Geologists Federation (Eur Geol no 739). He is qualified to act as a Competent Person (JORC) and as a Qualified Person (NI43-101) on REE-carbonatite as well as on a variety of commodities exploration projects.

Cédric was appointed as a Non-Executive Director on 24 December 2020 as Chief Operating Officer on 1 October 2021, and as Chief Executive Officer on 9 June 2023.

Louise Adrian (Chief Financial Officer), aged 51

Louise Adrian has worked as Altona's accountant for over 2 years helping to strengthen both the accounting and corporate governance reporting. She graduated from Oxford University with an MA in Theology and is a member of the Institute of Chartered Accountants in England and Wales. She started her career at Arthur Andersen in London where she gained experience with global energy companies, auditing accounts, reviewing financial and budgetary controls, and critiquing operational strategies. Since 2020 Louise has been a consultant for Orana Corporate LLP ("Orana"), a corporate advisory and services practice, where she has worked with established and newly listed companies, creating corporate governance protocols, producing annual report and accounts, group consolidations and cash flow analysis. Louise also holds a PGCE in secondary education and is a Finance Trustee for a Multi Academy Trust where she has helped to establish a framework for good governance and risk management.

Simon Charles (Non-Executive Director), aged 53

Simon is a solicitor and is a senior partner at City solicitors Marriott Harrison LLP, having joined the firm in 2004. He specialises in company law, with a particular emphasis on acquisitions and disposals, directors' duties, equity and debt fundraises and shareholders' rights, in each case in

relation to private and public companies. He has previously worked at Dechert LLP and a US law firm in the City. Immediately prior to joining Marriott Harrison LLP he spent a number of years in the corporate finance department of Numis Securities Limited (now Deutsche Numis) where he advised private and public companies on debt and equity fundraises, acquisitions and restructurings.

Audrey Mamoshoeshoe Mothupi (Non-Executive Director), aged 54

Audrey Mothupi brings over 20 years of business experience. She is the Chief Executive Officer of the South African based SystemicLogic Group – a global financial innovation, data, and technology company with a proven track record for delivering practical solutions to clients across a disparate range of industries and geographies.

Having worked in the public broadcaster, wealth insurance, banking, and now fintech, data and innovation sector, her experience spans across various business domains including group strategy, talent design, marketing and communications strategy as well as data, technology and innovation, integrated with strong corporate relationship management.

Prior to SystemicLogic, Audrey served as the CEO of Group Strategic Services at Liberty Holdings and Head of Inclusive Banking at Standard Bank. She served as an Independent Non-Executive Director at EOH Holdings LTD an African Technology company as well as Arden Capital. She currently serves as independent Non-Executive Director on the boards of Pick 'n Pay, Life Healthcare Group, as well as Altona Plc. She is also the Chair of the board at Roedean School (SA), G100 Global–Chair – AI/Data and Cybersecurity, and was Chairperson of Orange Babies of South Africa, as well as sitting on the boards of Nordic Female Business Angel Network and the Numeric Board of South Africa. Audrey is a Fellow of the Africa Leadership Initiative (ALI), a board member of the International Women's Forum of South Africa (IWFSA), a member of the International Women's Forum (IWF) and has been named one of Africa's 1,000 most powerful women.

SENIOR MANAGEMENT

Christian Taylor-Wilkinson, Business Development Officer

Christian has been closely associated with Altona since 2014, as the financial PR adviser to the Company, through his agency, Leander PR, which he founded in 2009. He has spent his professional career in the City and has over 25 years' experience advising and working alongside companies of differing sizes and across many sectors, which has given him a broad perspective in the capital markets sector. Christian was instrumental in assisting the Company in its move away from being a coal mining company to one which engaged in the Rare Earth Elements sector.

His background spans investment banking (as a corporate broker at UBS, Merrill Lynch and CSFB), before moving into investor relations and financial PR in 2001. He is also a non-executive director of GCM Resources Plc, a mining and power company listed on AIM.

Christian was appointed to the board of Altona in March 2019 and made Chief Executive on 1 November 2020. He stepped down from the role on the Listing Date and remains with the Company carrying out the role of Business Development Officer.

Pedro Jeremias Manjate, Non-Executive Chairman of MMM

Pedro is an experienced and reputable Maputo-based businessman involved in supplies for the Oil and Gas industry and mineral exploration. He is Non-Executive Chairman of Monte Muambe Mining Lda, Altona's subsidiary holding the Monte Muambe prospecting license.

Luis Veloso Francisco, Project Manager of MMM

Luis is a geologist with 15 years' experience in mineral exploration in Mozambique for a wide range of commodities, and a member of the Associação Geológica Mineira de Moçambique.

CONSULTANTS

Gavin Beer, Consultant Metallurgist

Gavin Beer is a metallurgist with more than 30 years' experience in technical and operational roles and has spent the past 13 years exclusively working within the rare earth and energy materials sector. He has been employed by or has consulted to over 12 rare earth companies including Arafura Resources, Peak Resources, Hastings Technology Metals and Pensana Metals. He is

presently engaged by Neometals in the role of General Manager Metallurgy and has been retained by RareX and Hexagon Resources as a Technical Advisor.

Gavin is a Member and Chartered professional of the Australian Institute of Mining and Metallurgy. He is recognised as a Competent Person for JORC and as a Qualified Person for NI 43-101 with respect to his metallurgical expertise and is globally recognised as a leading metallurgical expert in the rare earth industry.

CORPORATE GOVERNANCE

3.1 Corporate Governance

As a Company with a Standard Listing (and with effect from the Transition Date, as a company with a listing on the Equity Shares (transition) category), the Company is not required to comply with the provisions of the UK Corporate Governance Code. The Directors are committed to maintaining high standards of corporate governance and propose, so far is practicable given the Company's size and nature, to adopt and comply with the QCA Code.

3.2 Voluntary compliance with Listing Rules

The Company will continue to comply with the Listing Principles set out in Chapter 7 of the Listing Rules at Listing Rule 7.2.1 which apply to all companies with their securities admitted to the Official List. In addition, the Company will also continue to comply with the Listing Principles at Listing Rule 7.2.1A notwithstanding that they only apply to companies which obtain a Premium Listing on the Official List. Therefore, the Company shall continue to:

- take reasonable steps to enable its directors to understand their responsibilities and obligations as directors;
- act with integrity towards its shareholders and potential shareholders;
- ensure that each class of shares that is admitting to trading shall carry an equal number of votes on any shareholder vote. The Company currently has only one class of Shares that will be admitted to trading and the Articles which are summarised in Part 7.3, section VII confirms that each Share carries the right to vote;
- ensure that it treats all holders of the same class of shares equally in respect of the rights attaching to those shares; and
- communicate information to its shareholders and potential shareholders in such a way as to avoid the creation or continuation of a false market in those shares.

BOARD COMMITTEES

The Board is committed to the principles underpinning good corporate governance, applied in a manner which is most suited to the Company, and to best addressing the Directors' accountability to security holders and other stakeholders. The Company publishes its Corporate Governance Statement on its website at www.altonaRE.com.

Compliance committee

Simon Charles is the chair of the Compliance Committee and Louise Adrian and Martin Wood are members of the committee.

The principal purpose of the Compliance Committee is to ensure that the Company complies with its obligations under the Listing Rules for Companies of the London Stock Exchange plc (the "**Listing Rules**") and, in particular, makes timely and accurate disclosure of all information that is required to be disclosed to meet its disclosure obligations arising from the admission of its shares to trading on the Standard Segment of the Main Board of the LSE. The Compliance Committee will meet at least three times a year and is responsible for ensuring that the Group's compliance is proactive and properly monitored, controlled and undertaken. The Compliance Committee is responsible for the scope and effectiveness of the compliance by the Group with statutory and regulatory requirements. The Company Secretary will prepare the minutes and circulate agendas for meetings.

The main responsibilities and duties of the Compliance Committee shall be to:

- ensure that sufficient procedures, resources and controls are in place to ensure Listing Rules and Disclosure Guidance and Transparency Rules ("**DTR**") compliance;
- ensure each meeting of the Board includes a discussion of Listing Rules and DTR matters;
- ensure that the Executive Directors and members of the Committee are communicating as necessary regarding ongoing compliance with the Listing Rules in relation to proposed or potential transactions;
- ensure that each of the directors of the Company from time to time fully understands the requirements of the Listing Rules and DTR;
- ensure that the Company has in place sufficient procedures to approve any share dealing by directors or employees of the Company and to ensure that all share dealings are disclosed without delay in accordance with the Listing Rules and DTR;
- ensure that all announcements made have been verified by the Company's legal advisers on all material announcements to Regulatory News Service ("**RNS**");
- monitor press coverage to ensure that no price sensitive information is being included in any press briefings;
- question the Board to ascertain the reasons for any unusual, substantial movement in the Company's share price;
- ensure that the Directors are supplied with information on the Company's financial condition on a regular and timely basis and of any other key developments in the Company from time-to-time;
- assess whether the Board are aware of their Listing Rules responsibilities from time-to-time and, where any deficiencies are noted, arrange for the Company's lawyers to brief the Director(s) concerned;
- circulate any changes (together with an explanation) to the Listing Rules or DTR to the Board;
- meet with the Board at least every 6 months to discuss and confirm that the Listing Rules have been complied with in the period. Keep minutes of these meetings;
- in the event that any meeting with the Board has identified any actual or possible non-compliance issues then discuss those issues immediately with the Company's lawyers to determine the course of action to be taken;
- be responsible for any investigation launched by LSE or FCA into the Company's affairs; and
- approve a statement on Listing Rule Compliance for inclusion in the Company's interim statement and annual financial statements.

Audit Committee

Simon Charles is the chair of the Audit Committee and Audrey Mothupi is a member of the committee.

The Audit Committee will receive and review reports from management and from the Company relating to the interim and annual accounts and to the system of internal financial control.

The Audit Committee is responsible for assisting the Board's oversight of the integrity of the financial statements and other financial reporting, the independence and performance of the Company, the regulation and risk profile of the Group and the review and approval of any related party transactions. The Audit Committee may hold private sessions with management and/or without management present. Further, the Audit Committee is responsible for making recommendations to the Board on the appointment of the Company's auditors and the audit fee, and reviews reports from management on the financial accounts and internal control systems used throughout the Company and the Group.

The Audit Committee will meet at least two times a year and is responsible for ensuring that the Group's financial performance is properly monitored, controlled and reported. The Audit Committee is responsible for the scope and effectiveness of the external audit and compliance by the Group

with statutory and other regulatory requirements. The Company Secretary will prepare the minutes and circulate agendas for meetings. The auditors will be invited to meetings when required, at least once annually ahead of the approval of the annual financial statements.

With respect to the Audit Committee:

- monitors in discussion with the Company the integrity of the financial statements of the Company and the Group, any formal announcements relating to the Company's and Group's financial performance and reviews significant financial reporting judgments contained in them;
- reviews the Group's internal financial controls and reviews the Group's internal control and risk management systems;
- considers annually whether there is a need for an internal audit function and makes a recommendation to the Board;
- makes recommendations to the Board for it to put to the shareholders for their approval in the general meeting, in relation to the appointment, re-appointment and removal of auditors and to approve the remuneration and terms of engagement of auditors;
- reviews and monitors the auditor's independence and objectivity and the effectiveness of the audit process, taking into consideration relevant professional and regulatory requirements;
- develops and implements policy on the engagement of auditors to supply non-audit services, taking into account relevant external guidance regarding the provision of non-audit services by the auditor; and
- reports to the Board, identifying any matters in respect of which it considers that action or improvement is needed and making recommendations as to the steps to be taken.

The Audit Committee is provided with details of any proposed related party transactions in order to:

- consider and approve the terms and conditions of such transactions or to avoid breaches of the FCA Rules; and
- consult with the FCA where the relevant percentage is breached (either in isolation or cumulatively).

The Audit Committee is also to review arrangements by which the staff of the Company and the Group may, in confidence, raise concerns about possible improprieties in matters of financial reporting or other matters and ensure that arrangements are in place for the proportionate and independent investigation of such matters with appropriate follow-up action.

Where necessary, the Audit Committee obtains specialist external advice from appropriate advisers.

Remuneration Committee

Audrey Mothupi is the chair of the Remuneration Committee and Simon Charles is also a member of the committee.

The Remuneration Committee is responsible for considering all material elements of remuneration policy, the remuneration and incentivisation of Executive Directors and senior management (as appropriate) and to make recommendations to the Board on the framework for executive remuneration and its cost. The role of the Remuneration Committee is to keep under review the Company's remuneration policies to ensure that the Company attracts, retains and motivates the most qualified talent who will contribute to the long-term success of the Company. The Remuneration Committee also reviews the performance of the CEO and CFO and sets the scale and structure of their remuneration, including the implementation of any bonus arrangements, with due regard to the interests of shareholders.

The Remuneration Committee will also be responsible for granting options under the Company's Share Option Plan and, in particular, the price per share and the application of the performance standards which may apply to any grant, ensuring in determining such remuneration packages and arrangements, due regard is given to any relevant legal requirements, the provisions and recommendations in The QCA Corporate Governance Code 2018.

The committee will meet up to twice per annum. Appointments to the committee will be made by recommendation of the Board. No further appointments are expected until the number of non-executive directors on the Board increases.

The Remuneration Committee:

- determines and agrees with the Board the framework or broad policy for the remuneration of the CEO and CFO;
- determines the remuneration of Non-Executive Directors;
- determines targets for any performance-related pay schemes operated by the Company and the Group;
- ensures that contractual terms on termination and any payments made are fair to the individual, the Company and the Group, that failure is not rewarded and that the duty to mitigate loss is fully recognised;
- determines the total individual remuneration package of the CEO and CFO, including bonuses, incentive payments and share options;
- is aware of and advises on any major changes in employees' benefit structures throughout the Company and the Group;
- ensures that provisions regarding disclosure, including pensions, as set out in the (Directors' Remuneration Policy and Directors' Remuneration Report) Regulations 2019, are fulfilled; and
- is exclusively responsible for establishing the selection criteria, selecting, appointing and setting the terms of reference for any remuneration consultants who advise the Remuneration Committee.

Nominations Committee

Audrey Mothupi is the chair of the Nominations Committee and Simon Charles is a member of the committee.

The Nominations Committee shall be responsible for considering all criteria for new Executive and Non-Executive Director appointments, including experience of the industry in which the Group operates and professional background. Specifically, the Nominations Committee:

- is responsible for identifying and nominating for the approval of the Board, candidates to fill Board vacancies as and when they arise;
- evaluates the balance of skills, knowledge and experience on the Board and, in the light of this evaluation, prepares a description of the role and capabilities required for a particular appointment;
- reviews annually the time required from the Non-Executive Directors and assess whether each Non-Executive Director is spending enough time to fulfil their duties;
- considers candidates from a wide range of backgrounds;
- gives full consideration to succession planning in the course of its work, taking into account the challenges and opportunities facing the Group, and the skills and expertise therefore needed on the Board, reporting to the Board regularly;
- regularly reviews the structure, size and composition (including the skills, knowledge and experience) of the Board and make recommendations to the Board with regard to changes;
- keeps under review the leadership needs of the Group, both executive and non-executive, with a view to ensuring the continued ability of the Group to compete effectively in the marketplace;
- makes a statement in the annual report about its activities, the process used for appointments and explains if external advice or open advertising has not been used, the membership of the Nominations Committee, number of Nominations Committee meetings and attendance over the course of the year;
- ensures that on appointment to the Executive and Non-Executive Directors receive formal letters of appointment setting out clearly what is expected of them in terms of time commitment, committee service and involvement outside Board meetings;
- considers and makes recommendations to the Board about the re-appointment of any Non-Executive Director at the conclusion of their specified term of office or retiring in accordance with the Company's Articles of Association; and

- considers and make recommendations to the Board on any matter relating to the continuation in office of any Director at any time.

GROUP POLICIES

Anti-bribery and Anti-corruption Policy

It is the Company's policy, as set out in the Anti-bribery and Anti-corruption Policy, to conduct all of its business in an honest and ethical manner and to take a zero-tolerance approach to bribery and corruption. The Company is committed:

- to acting professionally, fairly and with integrity in all of its business dealings and relationships wherever it operates; and
- to implementing and enforcing effective systems to counter bribery and corruption, including the adoption of this Policy.

The purpose of the Policy is to set out the Company's responsibilities, and the responsibilities of those working for the Group, in observing and upholding its position on anti-bribery and anti-corruption and to provide information and guidance to those working for the Group on how to recognise and deal with bribery and corruption issues.

Share Dealing Policy

The Company has adopted a share dealing policy regulating dealing in securities of the Company by the Board and other persons discharging managerial responsibilities (and their persons closely associated) which contains provisions appropriate for a company whose shares are admitted to trading on the LSE and subject to MAR. The Company will take all reasonable steps to ensure compliance by the Board and any relevant employees with the terms of that share dealing policy. The Directors consider that this share dealing policy is appropriate for a company whose shares are admitted to trading on the LSE.

Whistle Blowing Policy

It is the Company's policy, as set out in the whistle blowing policy, to provide an internal mechanism for reporting, investigating, and remedying any wrongdoing in the workplace. The aims of the policy are:

- To encourage staff to report suspected wrongdoing as soon as possible, in the knowledge that their concerns will be taken seriously and investigated as appropriate, and that their confidentiality will be respected.
- To provide staff with guidance as to how to raise those concerns.
- To reassure staff that they should be able to raise genuine concerns in good faith without fear of reprisals, even if they turn out to be mistaken.
- The policy takes account of the Whistleblowing Arrangements Code of Practice issued by the British Standards Institute and Public Concern at Work.
- The policy does not form part of any employee's contract of employment and it may be amended at any time.

PART III

COMPETENT PERSONS REPORT

Report for Altona Rare Earths Plc
Monte Muambe Competent Person's Report and Scoping Study
Project Number JB207282
April 2024

This report has been prepared by Datamine Australia Pty. Ltd ('Snowden Optiro') for use by Altona Rare Earths Plc, pursuant to an agreement between Snowden Optiro and Altona Rare Earths Plc only and not for any other purpose.

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1 EXECUTIVE SUMMARY

1.1 Background

This Competent Person's Report (CPR) and Scoping Study document has been prepared by Snowden Optiro, a business unit of Datamine Australia Pty Ltd (Snowden Optiro) for Altona Rare Earths Plc (Altona, the Company or the Client). This CPR has been prepared to provide compliant disclosure on all material mining assets and liabilities of Altona's Monte Muambe Rare Earth Element (REE) project (Monte Muambe or the Project), located in western Mozambique, in accordance with relevant Financial Conduct Authority (FCA) guidelines (FCA Technical Note 619.1 of May 2022, Appendix II), and the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves, 2012 edition (JORC Code, 2012).

The Company is a UK London Stock Exchange (LSE) listed mining company focused on the supply of rare earth metal oxides for the catalyst, laser, glass, polishing and magnetic materials industries for the anticipated growth in the wind turbine and electric vehicle sectors.

The Project is an advanced exploration and pre-development project. Altona's interest in the Prospecting Licence (Licença de Prospecção e Pesquisa) LPP7573L (the Licence) is through a Farm Out Agreement dated 23 June 2021 between Ussokoti Investimentos, Altona, Monte Muambe Mining Lda (MMML) and its original shareholders. The Farm Out Agreement gives Altona the right to earn up to 70% of MMML in a phased manner, subject to the completion of certain conditions and milestones.

In this CPR and Scoping Study all references to dollars ($) refer to American United States dollars.

1.2 Project description, location and ownership

The Project is located in Niculunga Locality, Cambulassisse Administrative Post, Moatize District, Tete Province, Mozambique (Figure 1.1). Access from the provincial capital Tete is through the tarred road leading to the Malawi border (Zobue), through Moatize town, and to the village of Cateme. The distance from the Zambezi bridge in Tete to the Cateme turn-off is about 40 km. From the Cateme turn-off, an ungraded 43 km track leads from to the Monte Muambe camp through the villages of Mualadzi and Djendje. Figure 1.2 shows the location of Target 1 and Target 4 in relation to the Monte Muambe geology and structure and the proposed open pit outline (black).

Figure 1.1 Project location in Mozambique

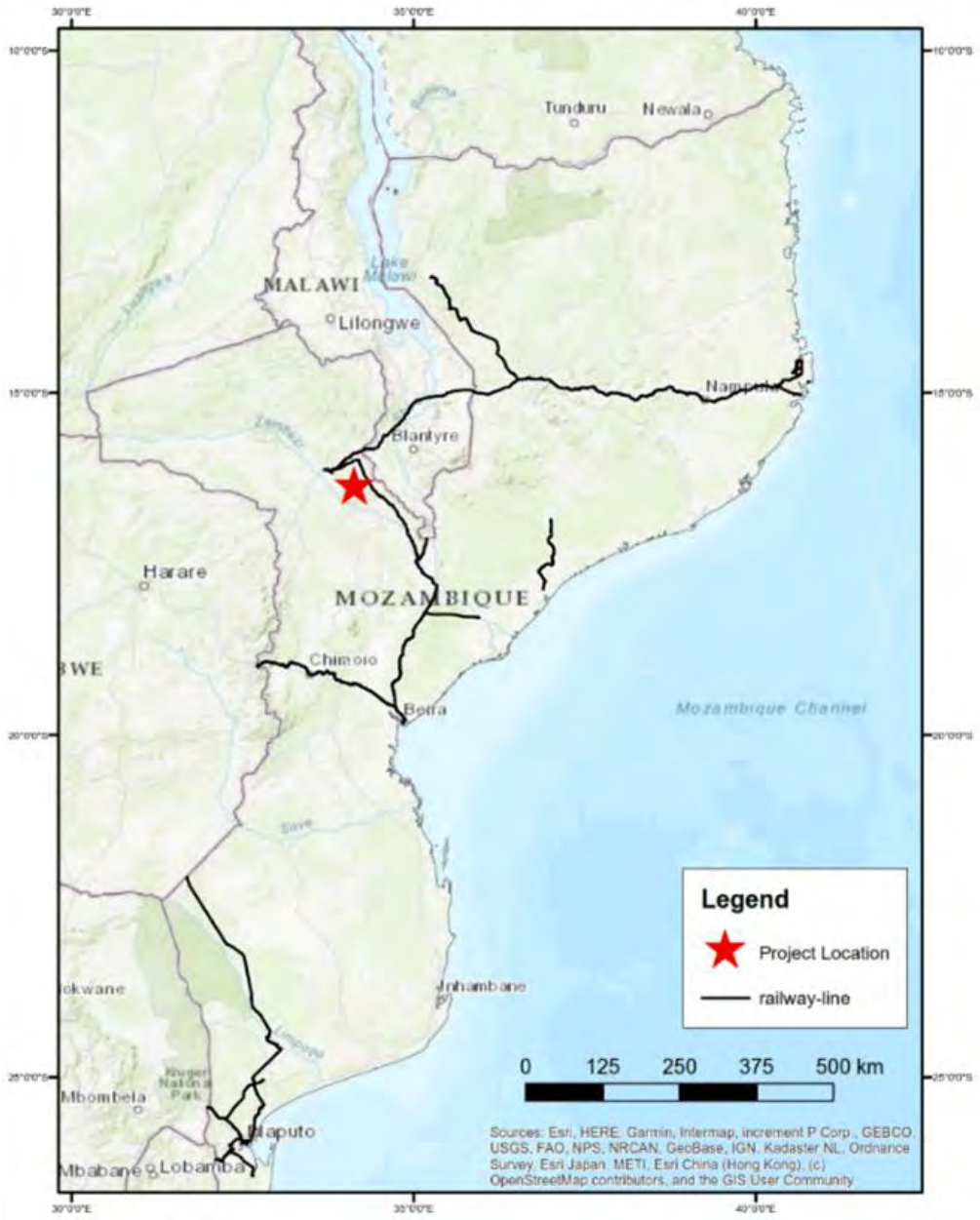
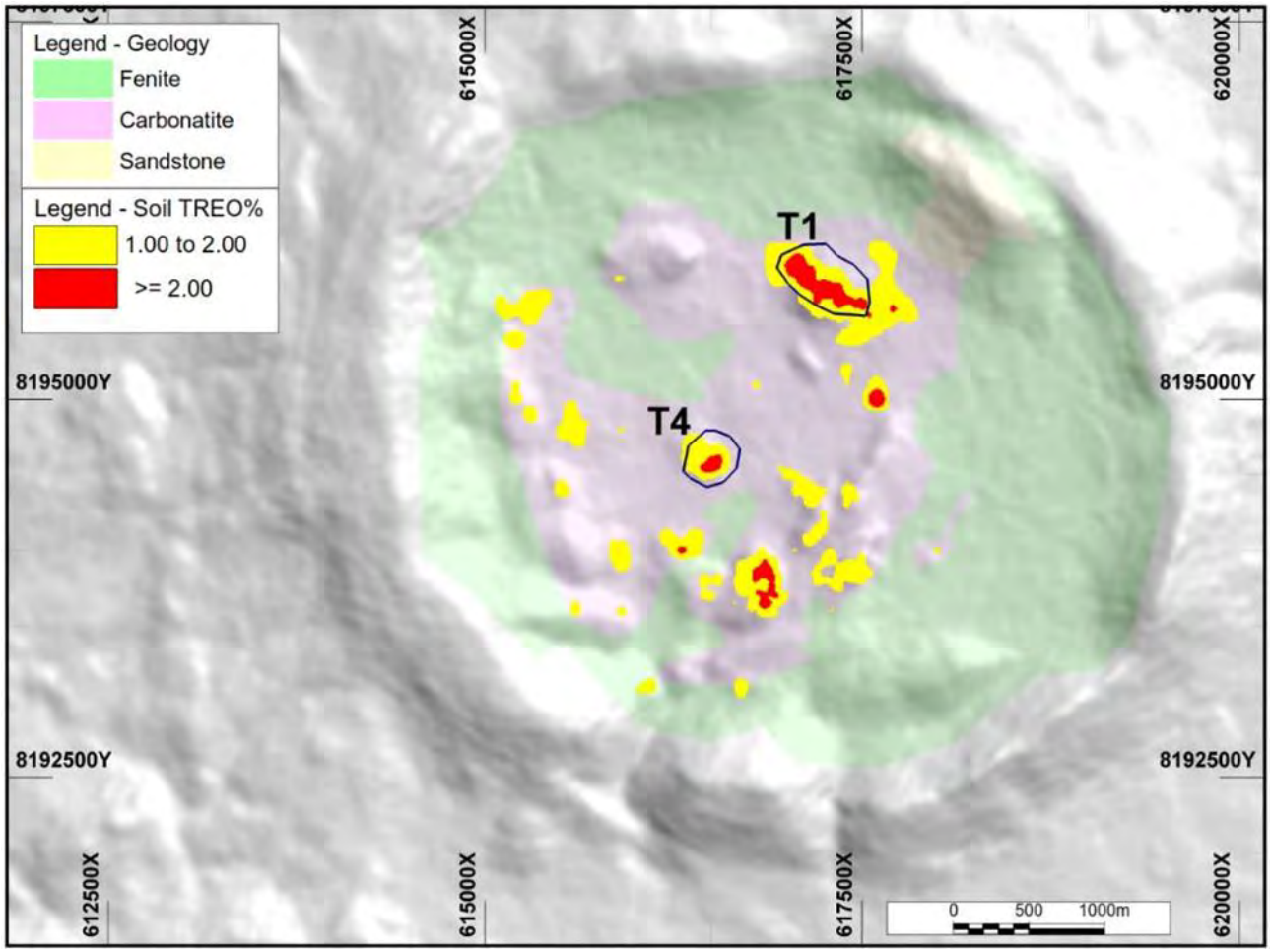


Figure 1.2 Location of Target 1 and Target 4 in relation to the Monte Muambe structure and geology



1.3 Geology and Mineral Resources

Monte Muambe is located in the central part of the Karoo Moatize-Minjova coal basin, which corresponds to the eastern part of the Zambezi Graben. The Monte Muambe carbonatite intrusion is hosted by Upper Karoo Sandstones of the Cádzi Formation. The age of the intrusion is presently unknown.

While the Monte Muambe structure resembles a ring-dyke, or a volcanic edifice, the outer ridge consists of sub-horizontal indurated Upper Karoo sandstones and is the product of differential erosion (Figure 1.2). The basin formed by the inner part of the structure consists chiefly of fenites, various types of carbonatites, breccias, as well as pyroclastics. The diameter of the carbonatite intrusion at surface level is about 3.3 km. Carbonatites tend to outcrop in the form of small hills rising above the floor of the basin. Fenites are often deeply weathered at near-surface levels and rarely outcrop, though float can be encountered on slopes.

Fenites form a circular zone lining the contact between carbonatites and host sandstones, but the detailed relationships between fenites and carbonatites are a lot more complex, involving faulting during and after the emplacement of the intrusion, as well as the incorporation of xenoliths of various size (centimetre to decimetre size). Drilling in various parts of the intrusion shows that fenite outcrops often cover carbonatites. This, as well as the presence of pyroclastics, suggests that the present erosion level may corresponds to the roof of the carbonatite intrusion, immediately under the base of the volcanic edifice.

The Mineral Resource outline is shown for Targets 1 and 4 (Figure 1.2). Mineral Resource Estimates for Targets 1 and 4 are provided in Table 1.1 and are reported in accordance with the JORC Code (2012).

Table 1.1 Monte Muambe Indicated and Inferred Mineral Resource September 2023 reported using a 1.5% TREO cut-off

Target	Classification	TREO Cut-off (%)	TONNES (Mt)	TREO%	CeO_2 ppm	Pr_6O_{11} ppm	Nd_2O_3 ppm	Tb_4O_7 ppm	Dy_2O_3 ppm	NdPr Oxide (ppm)	Contained TREO (t)
1	Indicated	1.5	8.0	2.38	11,400	910	2,250	15	80	3,160	191,000
	Inferred	1.5	0.8	2.28	10,900	861	2,140	15	78	3,000	18,000
	TOTAL	**1.5**	**8.8**	**2.38**	**11,400**	**905**	**2,240**	**15**	**80**	**3,150**	**209,000**
4	Indicated	1.5									
	Inferred	1.5	4.8	2.50	11,300	872	2,190	26	143	3,060	119,000
	TOTAL	**1.5**	**4.8**	**2.50**	**11,300**	**872**	**2,190**	**26**	**143**	**3,060**	**119,000**
OVERALL	Indicated	1.5	8.0	2.38	11,400	910	2,250	15	80	3,160	191,000
	Inferred	1.5	5.6	2.47	11,200	871	2,190	24	134	3,060	137,000
	TOTAL	**1.5**	**13.6**	**2.42**	**11,400**	**894**	**2,230**	**19**	**102**	**3,120**	**329,000**

Notes:

- *Million tonnes are rounded to one decimal place. Grades are rounded to two decimal places for % and whole numbers for ppm.*
- *The MRE has been reported in consideration of reasonable prospects for eventual economic extraction (RPEEE) using a pit shell based on a 1.5% Total Rare Earth Oxide (TREO) cut-off, revenue of 24.65 $/kg TREO in Mixed Rare Earth Carbonate (MREC) and average total recovery to MREC of 48%.*
- *Mineral Resources are reported as dry tonnes on an in-situ basis.*
- *Rare Earth Elements are inclusive of the TREO and not additional to it.*
- *"NdPr Oxide" is the sum of Nd_2O_3 and Pr_6O_{11}.*

1.4 Mining

The mining method is based on conventional open pit using truck and shovel, and drill and blast, coupled to a ROM stockpile. Although the rock is largely classified as weathered, ore and waste rock will require drilling and blasting.

Both ore and waste will be excavated in 5 m flitches following mark-out by grade control. Ore will be hauled to either the ROM pad and tipped onto a designated ore finger or a designated low-grade stockpile. All mine waste will be hauled directly from the pit and placed onto a designated location of the tailings storage facility (TSF) dam wall; there are no other external waste dumps.

The mining fleet will comprise 40 – 60 t capacity articulated dump trucks (such as a Caterpillar 745) loaded by a 90-t excavator (such as a Caterpillar 395). A 30-t front-end loader (Caterpillar 980M) capable of loading the 41-t dump trucks, will be used as back-up for the primary loading unit and to make up shortfalls in periods where additional material movement is required. Other ancillary support will be supplied by a Cat D9R dozer, Cat 14M grader, and Cat 745 watercart. Maintenance will be conducted on site. Contract-mining is selected as the operating strategy at the Project.

1.4.1 Pit optimisation

Optimization parameters used for the Scoping Study are summarised in Table 1.2 below. For Target 4 area the pit shell chosen was using the price increment of 102% which provided the highest undiscounted NPV as summarised in Figure 1.6. For Target 1 and 6, the chosen price increment was 98% which provided the highest undiscounted NPV (Figure 1.4).

The mine life is planned at 18 years. There is no pre-stripping period. Based on the selected pit shells a high-level pit design was produced.

Table 1.2 Parameters used in optimization

Item	Unit	Value
Total Rare Earth Oxide (TREO)	$/t	24,651
Royalty	%	3.0
Mining costs	$/t	3.28
Ore – free dig	$/t	4.26
Ore – drill and blast	$/t	2.51
Waste – free dig	$/t	3.53
Waste – drill and blast	$/t	3.28
Processing cost	$/t ore	25.00
Downstream processing cost	$/t TREO	66.00
Recovery from run of mine (ROM)	%	60
Recovery from refining	%	80
Throughput rate	Tonnes per year	750,000
Discount rate	%	10
Overall slope angle (OSA) T4	°	47
OSA T1 and 6	°	43

Figure 1.3 T4 optimisation result

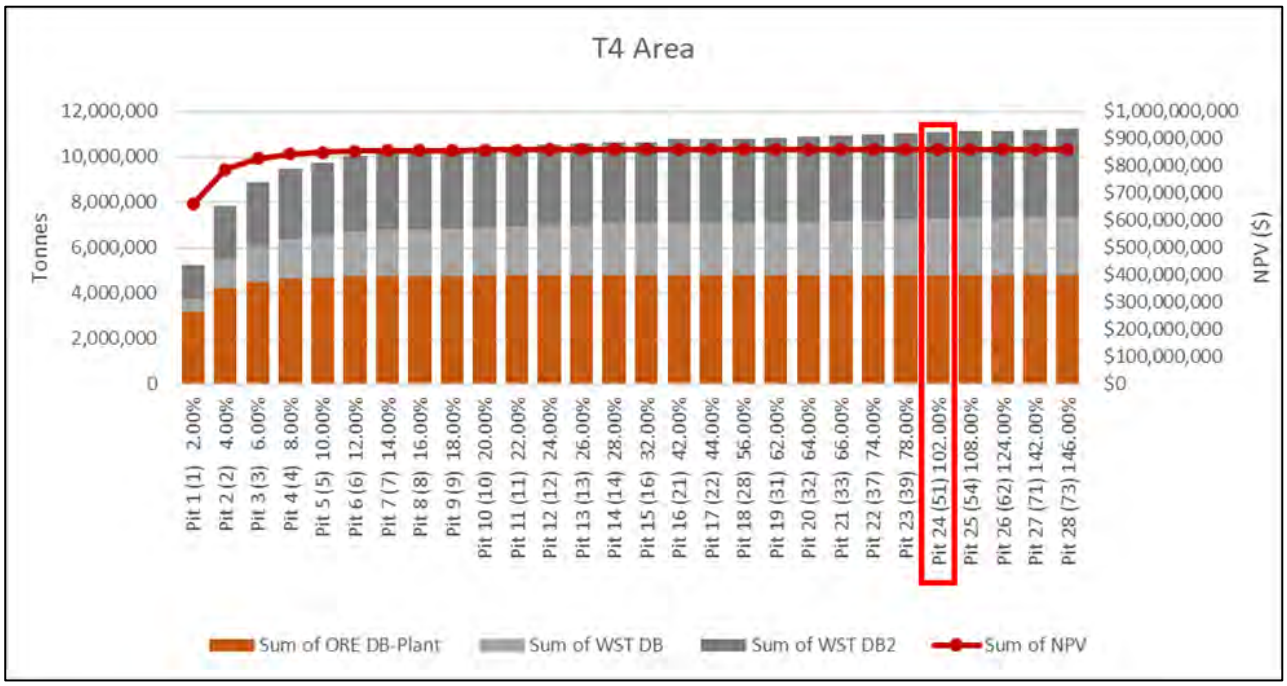
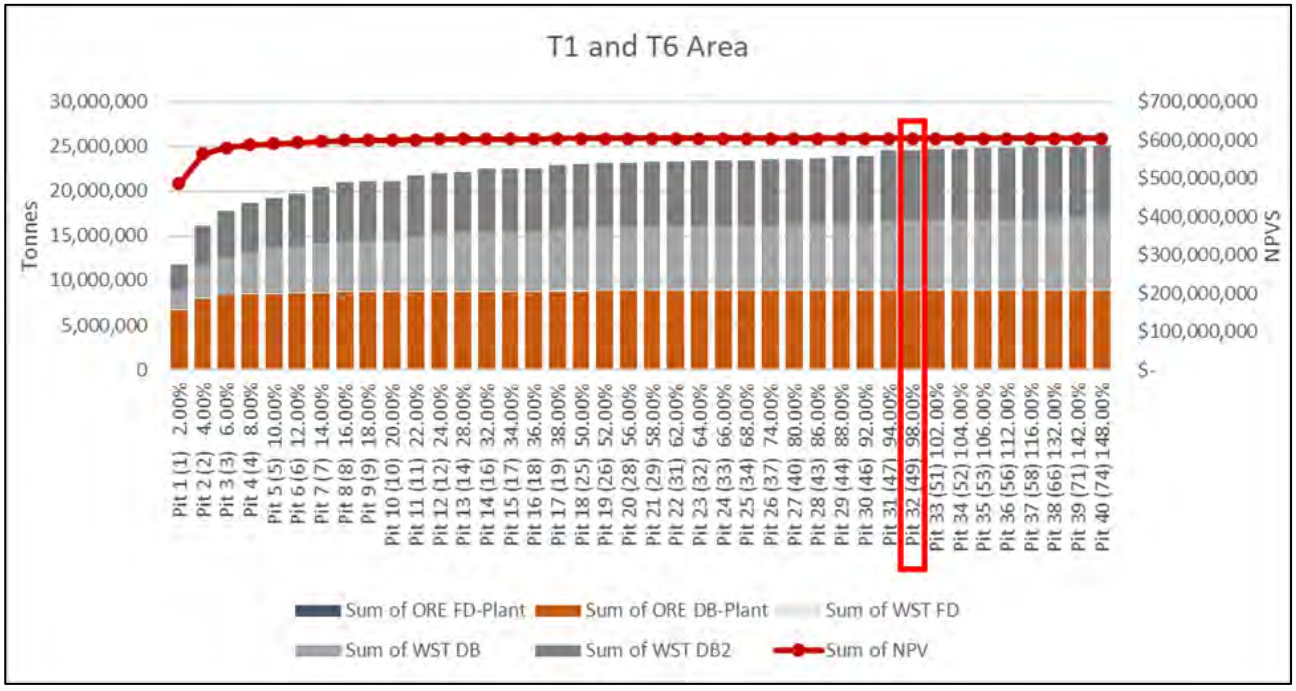


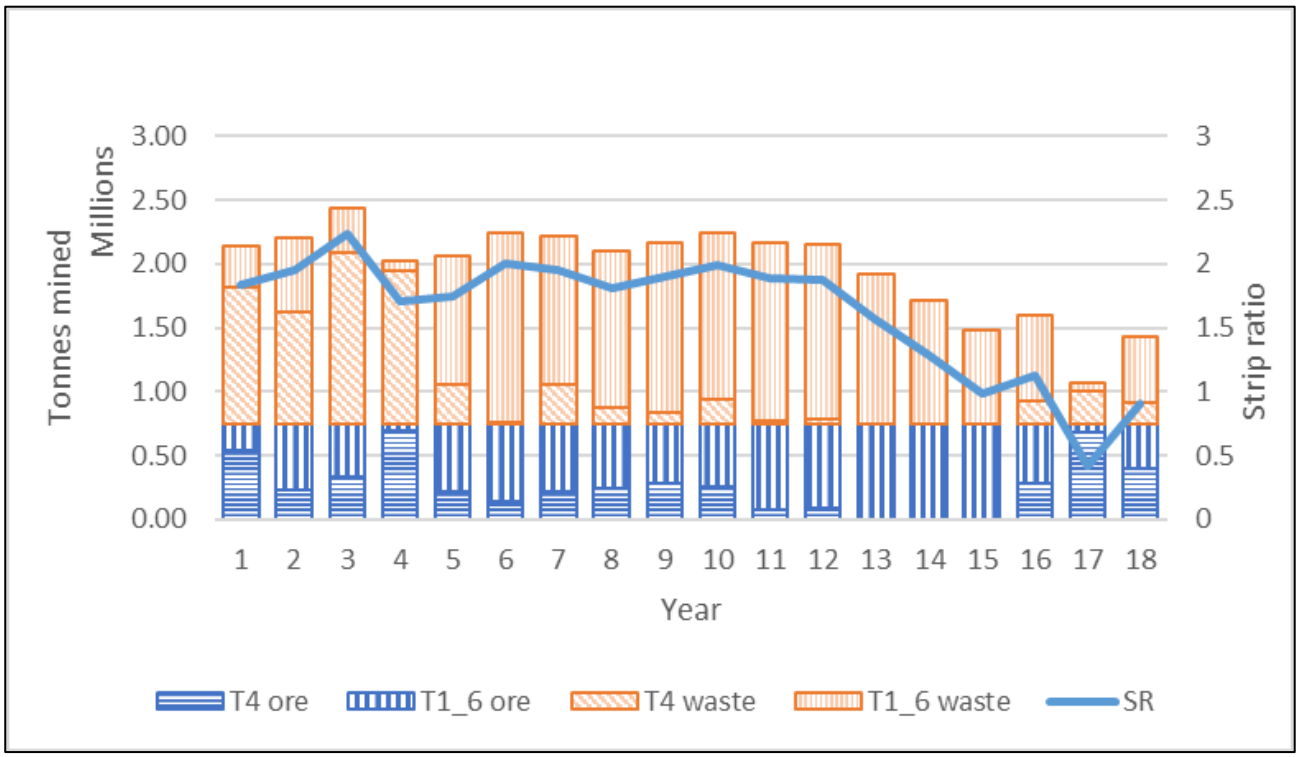
Figure 1.4 T1 and 6 optimisation result



1.4.2 Indicative schedule

An indicative life of mine (LOM) schedule was prepared for the mining of the two open pits as shown in Figure 1.5. Throughput rate is maintained at 750,000 t/a at a total mining rate of between 2.0 to 2.5 Mt/a. The average strip ratio is 1.67 (waste: ore). A pre-stripping period is not required but may be used to generate sufficient waste for the first TSF lift.

Figure 1.5 Monte Muambe annual LOM mining schedule



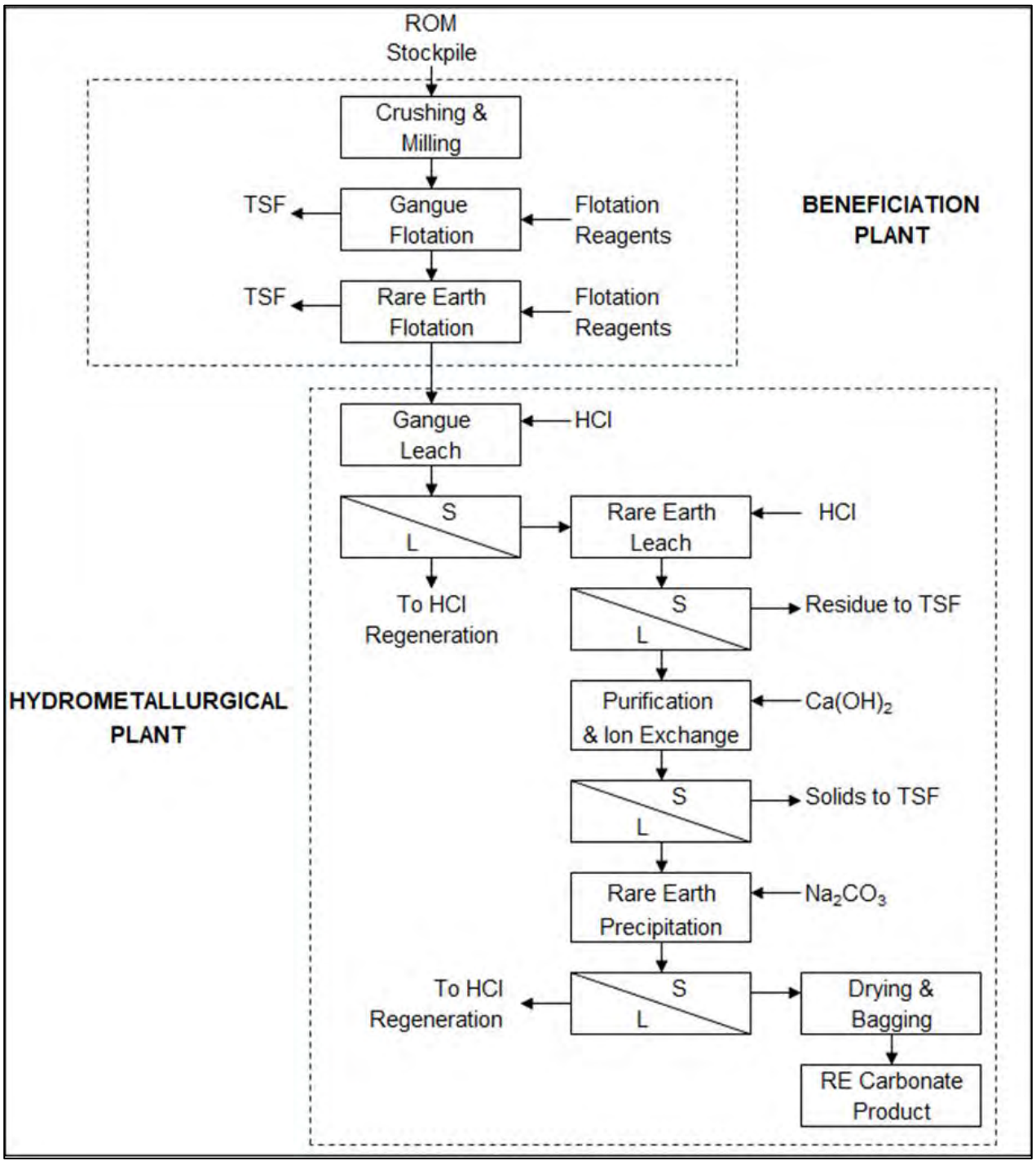
1.5 Metallurgy and processing

The proposed process flow sheet includes a beneficiation plant and a hydrometallurgical plant (Figure 1.6).

The beneficiation plant comprises of the comminution and flotation circuits. The purpose of the comminution circuit is to reduce the size of solid rock particles and thus increase the surface area of solids to enable the liberation of valuable materials that are locked within the gangue minerals. This is achieved by means of crushing and milling. Flotation is a method of separation, which uses the differing surface properties of the various minerals in the carbonatite. It involves the selective attachment of mineral particles to air bubbles generated in the flotation cell which float to the surface of the slurry and then flow over the lip of the cells into the launders. A two-stage selective flotation reagent regime is used; the first stage being a gangue flotation to selectively target the calcium bearing gangue minerals (calcite, fluorite and ankerite) and the second stage being a rare earth flotation targeting the host mineral bastnaesite.

The recovery process flow sheet comprises a two-stage selective hydrochloric acid leach process. The first stage being a calcite gangue leach in a weak (pH 4) acid solution and the second stage being a strong acid leach (20% HCl) at ~80°C. The hydrochloric acid is recycled via calcium sulphate precipitation with sulphuric acid which is produced on site via a commercial sulphur burner plant. The process flow sheet also includes purification and Mixed Rare Earth Carbonate (MREC final product) precipitation. This approach offers advantages, including a significant reduction in acid costs as well as a further concentration of the rare earths thus providing a reduction in downstream capital and operating costs.

Figure 1.6 Proposed process flow sheet



1.6 Project infrastructure

All required infrastructure, the accommodation camp, process buildings, stockpiles, water resources, and tailings storage facility (TSF) are located within the current mineral tenement boundaries. Site infrastructure is required both inside the crater and outside to service these facilities.

A conceptual site block plan (SBP) locates the main accommodation camp outside of the crater to minimize dust, noise and radiation exposure, whereas the process plant, mining contractors' workshops, TSF and associated infrastructure are deployed inside the crater, arranged to minimize the physical footprint and in close proximity to the two main pits.

The mine infrastructure and process areas are, as far as practical, consolidated to reduce materials handling distances, including that of run of mine (ROM) mineralisation. The SBP arrangement has

considered the topography as well as accommodating future expansion of selected process units and exploitation of new pits.

Diesel generators will be used during construction and commissioning, and as backup for infrequent events of grid failure. It is assumed that the appointed bulk diesel supplier will install its own diesel storage tank(s) at site. Process, mine and office diesel storage tanks will be connected to the primary diesel storage tank(s).

The 18 MW electrical power maximum demand of the Monte Muambe site will be provided at 11 kV, 50 Hz by a hybrid power generation plant. The plant will comprise a diesel-powered electrical generator station and solar photovoltaic (PV) power station supported by a battery energy storage system. Cables will link the power station substation to the process plant substation.

Solar PV generation is expected to contribute approximately 25% to the overall generation. The solar PV power station will be contained in a separate area, 800 m upwind from the process plant.

Management consider that a bore well-field will be the most optimal solution for the Project's water supply. The water demand for the Monte Muambe site will be supplied by on-ground overland pipelines from the bore field. Various sites for bore water have been identified and well tested. The bore field selected will provide water to the accommodation camp, process plant and camp. Dewatering from the open pits is also expected to increasingly contribute to the plant's water supply during the life of the mine. A water demand forecast will be designed as part of the PFS.

Wastewater and overall water management will be achieved by suitably planned drainage channels and site layout. Waste will be collected in a landfill.

The Project is primarily accessed from the northern side. A tarred, single carriageway (N7) extends from Tete, passed Moatize coal mine in a north easterly direction, a total distance of 70 km. There is a right turn onto a tarred single carriageway extending in a southeasterly direction for 10 km to Cateme. From Cateme, a 35 km gravel road is used to access the Project site; this road passes through the villages of Mwaladzi and Dezemge (Figure 1.7).

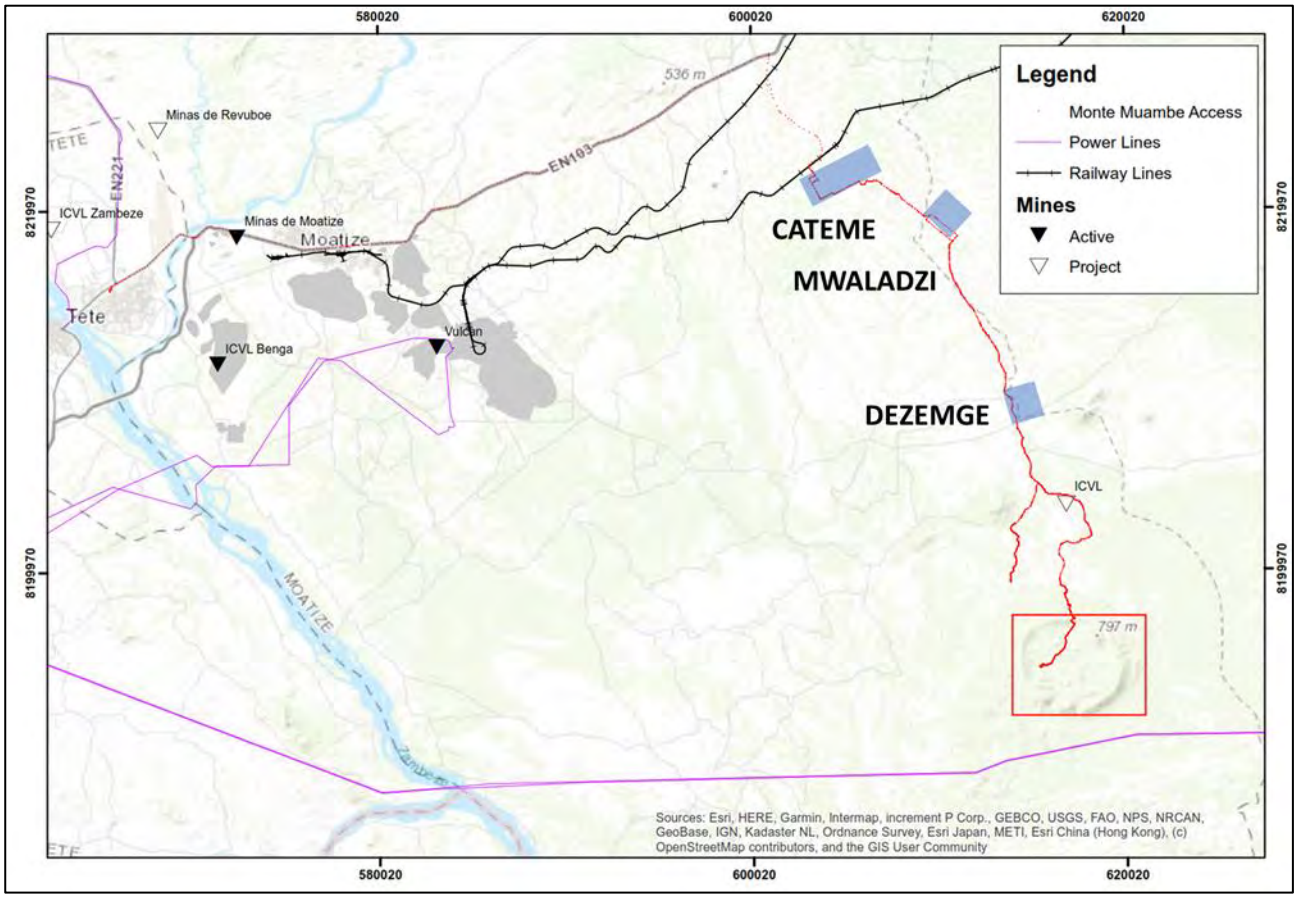
The road from Dezemge to the Project site will require upgrading, including by-passes around villages. The road climbing from the foot of the mountain to the existing camp and into the basin will need to be redesigned to ensure a maximum slope of 10 percent. Inside the basin, where the planned mining infrastructure and plant facilities will be located, the topography is gentle. Existing dirt tracks will require widening and upgrading using locally sourced road metal.

The Tete International Airport (Chingozi) or TET, is 110 km by road to the Project, along the N7. Beira is the closest port to the Project site, approximately 730 km by road. A detailed cost-benefit of the various logistical options both for inbound and outbound freight cargo will need to be done as part of the PFS.

An integrated information system will be provided by the Company, including the latest operating systems enabling effective telephonic and digital communications.

For product transport, it is proposed that stockpiled MREC will be placed in 1 t polypropylene, double-lined woven bulk bags at Project site, and then placed on pallets or loaded directly into containers. Containers will be trucked to Beira port and warehoused, prior to shipment. These transport arrangements are expected to result in approximately 745 truck journeys per annum (equivalent to 62 trips per month) of bagged concentrate product to Beira. The containerised bags will be offloaded at Beira and then re-containerised at Beira or report straight to ocean going vessels.

Figure 1.7 Location of the Project, licence LPP7573L in Tete Province, Mozambique



Source: Altona, 2023

The approximate infrastructure size and costs for the Project have been estimated. Primary infrastructure costs include:

- Power ($7.5 million)
- Access road ($7.0 million)
- Accommodation ($4.0 million)
- Sewage treatment ($2.0 million)
- Raw water dam ($2.0 million)
- Wellfield ($2.0 million)
- Stormwater ($1.0 million)
- Water treatment ($1.0 million)
- Other surface infrastructure (including gatehouse, changehouse, laundry, clinic, canteen, office buildings), of $2.8 million.

The approximate footprint of the ten primary surface infrastructure/ buildings is 10,915 m^2. As the Project advances, greater accuracy and footprint size will be estimated.

Design details will be required as the project advances to PFS stage; this will include as a priority:

- Power demand
- Water demand
- Detailed plans for site location
- Detailed access road plans.

1.7 Tailings and waste

1.7.1 Tailings storage facility

All process plant waste products will likely be disposed of onto a single fully contained tailings storage facility. Pre-stripping over the mining area will provide the initial waste rock required for the containment embankment walls. As more waste is stripped over the mining areas, these waste rock embankments will be raised always above the tailings level to provide solid rock embankment walls. The intention is to, where possible, use the existing topography and outcropping areas to buttress the final TSF walls.

The tailings will be placed on a 2 mm high density polyethylene (HDPE) lined facility with suitably constructed underdrainage systems. Despite the low acid generating potential and also the presence of carbonate rock, there will be a component of plant waste containing residual thorium and radio-active elements, which will require safe disposal in the TSF.

A preliminary site was chosen for a storage capacity of 13.3 Mt, with a full-containment facility in line with the Global Industry Standards for Tailings Management (GISTM). The design also took cognisance of the potential seismic nature of the area with the full waste containment and has 1V:3H outer perimeter waste rock side-slopes.

The capital expenditure estimate (capex) was factorised from a database of costs into 2023 prices. The overall TSF has an estimated capex of $54 million over the 18-year mine life. It may be possible to divide the capex over various design phases with further design work, to reduce the initial capital and to increase the sustaining capital over the subsequent tailings dam lifts.

1.7.2 Waste rock disposal

The waste rock excavated from the Monte Mumbe open pit mining activities will be loaded and hauled to a permanent disposal site or waste rock dump (WRD). The waste rock will partly be used in the construction of the TSF containment embankments. The balance of the waste will be deposited in designated waste rock dumping between the Target 1 and Target 4 pits. The TSF embankment will require approximately 3.6 Mm^3 or 6.5 Mt of waste rock, with the WRDs requiring a collective capacity of 8.7 Mm^3 or 15.7 Mt.

The WRD is expected to be non-acid forming with limited release of contaminants over the long term. The waste rock contact water is however expected to be high alkalinity (due to the carbonatites) with minor concentrations of REEs. The WRD footprints are not expected to be lined, but an engineered (compacted) basal area is proposed to rescue seepage and protect ground- and surface water resources.

The WRDs will be located adjacent to each respective pit, and adjacent to the TSF. The development of the waste rock dumps will be in 10 m vertical lifts, with 15 m wide benches and 1V:1.5H intermediate side slopes. The overall outer side slope profile will be 1V:3H for rehabilitation. The WRDs will cover a total footprint (natural ground) of approximately 40 ha, with a final downstream height of approximately 50 m.

The capex for the WRDs has been determined through the factorisation of database costs into Y2023 terms and has been estimated at $2.72 million, inclusive of 30% preliminary and general costs. The capex is primarily comprised site clearance and earthworks with selected concrete works and drainage material.

Future recommended work includes a geotechnical investigation and geochemical characterisation of the waste rock.

1.8 Social and environmental matters

Exploration activities on LPP7573L are carried out under an environmental management plan (EMP) prepared by local environmental consultancy GeoAmbiente Lda. The Company's activities were subjected to an independent Environmental Audit which was validated by the National Agency for Environmental Quality Control (AQUA) of Tete Province on 24 October 2022.

The Licence is not located in any environmentally protected area.

As part of its Mining Concession application, the Company will prepare an EMP covering the proposed mining operations, and subsequently a Level A environmental impact assessment (EIA).

A Level A EIA covers mining activities carried out on a Mining Concession. These activities require a full EIA, which must be prepared by an environmental specialist licensed by the Ministry of Land and Environment (MITA). The EIA process aims at producing a project-specific environmental licence.

The EIA licensing process involves:

- The preparation and submission to MITA of a set of Terms of Reference (ToR), which must include the timing and procedures for public consultation, a risk and emergency management plan, and an EMP.
- The review of the ToR by MITA and the Minister, Ministry of Mineral Resources and Energy (MIREME).
- If the EIA is approved, MITA issues an Environmental Licence within 10 days from the date of approval. The Environmental Licence is valid for the duration of the Mining Concession but must be reviewed every 5 years.

The holder of a Level A Environmental Licence must also submit an annual environmental management report, with the monitoring process carried out either by the concessionaire or by an independent consultant.

Level A activities also require the provision of an environmental bond to cover rehabilitation activities during the closure of the mine. The bond may take the form of an insurance policy, a bank guarantee, or a deposit in cash in a bank account provided by MIREME. The value of the bond is based on an estimate of the costs of such restoration, which will be calculated during or after the active life of the project. The value of the bond is set by MIREME and reviewed every two years.

1.8.1 Radiation management

The Project ore contains low levels of thorium (Th) and uranium (U). The LOM average concentrations for the bastnaesite ore are 200 ppm Th and 20 ppm U at Target 1 and 330 ppm Th and 7 ppm U at Target 4, which is favourably low compared with other rare earth deposits. The Project's flotation tailings will contain lower levels of radioactivity because thorium and uranium are mostly associated with the rare earth minerals (and hence removed from the tailings).

The mineral concentrate produced from the Project, whilst having an upgraded Th and U content, is expected to have a specific activity well below the trigger point of 10 Bq/g and will therefore not be deemed as Class 7 Dangerous Goods for transportation purposes. Note that this concentrate does not leave the site; it is fed directly to the hydrometallurgical plant.

Radionuclides (Th, U and the decay nuclides) will be removed during the hydrometallurgy refining stage to produce a radionuclides-free MREC.

Altona will develop a comprehensive radiation management plan and undertake regular monitoring and regulatory compliance of radioactivity levels of all activities including exploration, mining, processing and tailings disposal.

1.8.2 Closure and remediation

The intent for closure planning at the Project is that disturbed areas will be rehabilitated and closed in a manner to make them physically safe to humans and animals, geotechnically stable, and geochemically non-polluting/ non-contaminating. It is the Company's intent that a sustainable solution is agreed upon for post-mining land use, without unacceptable liability to stakeholders.

In addition, environmental rehabilitation will be ongoing throughout the LOM. Decommissioning activities are likely to include the following:

- Dismantling of buildings and infrastructures.
- Rehabilitating haul roads and hard stand areas.
- Ensuring access to the void left from open pit mining is restricted.
- Reprofiling slopes and top surfaces of waste rock dumps, stockpiles and TSF to ensure stable landforms.

- Revegetation of previously disturbed areas with indigenous vegetation.

1.9 Project costs and economic analysis

Snowden Optiro has undertaken a real financial model for the Project. The base date for all financial inputs is 1 September 2023. All values reported in this section are real; and all diagrams and tables have been generated from the financial model. ROM material and mineralisation are used interchangeably in this section.

A basis of estimate and exclusions are referenced in Section 11.2 and 11.3 respectively, for capex and opex.

A mine schedule has been undertaken by Datamine and reviewed by Snowden Optiro. Proposed ROM steady state production of 0.75 Mt/a is reported for a mine life of about 20 years. A tail-cut has reduced the Project mine life to 18 years and is referenced accordingly as the LOM in this report. Planned steady-state is reached in Year 1 of mining production.

Long-term CIF (China) metal prices calculated as the average of Adamas Intelligence forecast (Adamas Intelligence, 2023) for the period 2024-2040 low case scenario have been applied as follows:

- Praseodymium oxide price of $148,000/ t
- Neodymium oxide price of $156,000/ t
- Terbium oxide price of $1,937,000/ t
- Dysprosium oxide price of $440,000/ t.

Gross revenues total $3,670 million over LOM. Neodymium and praseodymium comprise the bulk of planned gross revenues (86%) along with dysprosium and terbium (14%); no value has been ascribed to the other 13 REOs, primarily cerium and lanthanum. A payability of 90% on the four primary elements in the sold MREC has been applied.

Net revenues include a State royalty of 3% on gross revenues; and payabilities of 90% on MREC product sold. Total MREC produced is 270.7 kt over LOM or 15.0 kt p/a, with an equivalent contained TREO volume of 148.9 kt over LOM or 8.3 t p/a. Net revenues total $3,193 million over LOM.

The planned LOM opex and unit opex is shown in Table 1.3. Process opex accounts for 74% of total opex over LOM.

Table 1.3 Planned LOM opex for the Project

Opex item	Value ($ M)	Unit cost ($/t ROM)	Unit cost ($/t MREC)
Mining	152	11.3	563.0
Process	1,127	83.7	4,164.3
Overheads/ shared services	160	11.9	591.0
Off-mine	80	5.9	294.3
Total	**1,519**	**112.8**	**5,612.6**

Note: MREC – Final Mixed Rare Earth Carbonate product

The total initial and sustaining capital for the Project was estimated to be $339.3 million, which includes project execution;, engineering, procurement construction management (EPCM), contingency and sustaining capital costs. Initial capital is estimated to be $276.3 million and includes all capex over the period October 2023 to December 2028. The initial capital is summarised in Table 1.4.

Table 1.4 Initial capital summary

Initial capital item	Value ($ M)
Project mobilisation and camp construction	4.0
Bulk and other infrastructure	31.3
Direct plant costs	150.0
Indirect plant and EPCM costs	35.0
Tailings dam	18.0
Waste rock dump	2.0
Mining infrastructure, pre-production and mobilisation	14.0
Exploration, evaluation, Owners Team and sterilisation drilling	22.0
Total initial capital	**276.3**

Note: EPCM – Engineering, procurement, construction management; rounding has been applied to select initial capital items.

For the LOM, debtors days of 30 days has been applied, creditors of 30 days (mining and process opex) and 15 days on inventories (select mining and process opex).

A production tax or royalty is payable based on the value of the mineral extracted, with an applicable royalty of 3% for other minerals. Total State royalties over LOM is $110.1 million and have been included under net revenues.

A corporate tax of 32% on cashflows (after the applied WPT) has been applied in the financial model. Total corporate tax over LOM is $372.5 million.

Provision has been made under Owners costs, for customs and duties; although there is a strong likelihood that no customs will be payable during the initial years of construction, ramp-up and first two years of steady-state production.

No government free carry has been applied to the financial model.

No capital gains, withholding or transaction tax has been applied.

Snowden Optiro is not aware of any municipal fees or rates that are to be applied.

1.9.1 Net present value (NPV) and internal rate of return (IRR)

The NPV of the Project is $283.3 million, based on a real discount rate of 8%. An NPV of $149.6 million is reported using a real discount rate of 12%. A post-tax IRR of 25% and a payback from the construction start date of 4.5 years, and a payback from first TREO production of 2.5 years is reported. An operating cashflow margin of 42% is noted. Project earnings before interest, tax, depreciation and amortisation (EBITDA) would effectively be operating cash flows (no capital expenditure, tax, interest, depreciation nor amortisation expenses have been included). Operating cashflows would include all realisation costs, on- and off-mine expenses and royalties. The planned LOM EBITDA will be $1,674 million; and planned annual EBITDA is $93 million.

1.9.2 Sensitivity analysis

Using an NPV of $283.3 million with an applied real discount rate of 8%, the Project is most sensitive to revenue (price, recovery, grade and exchange rates), less sensitive to opex and least sensitive to capex (Figure 11.6). The sensitivity analysis shows that the Project is more sensitivity to capital than other benchmarked projects.

1.9.3 Summary of key Project parameters

A summary of key Project parameters is shown in Table 1.6.

Table 1.5 Forecast key Project parameters

Parameter	Unit	Value
Ore processed	Mt	13.5
TREO ROM grade (after dilution)	%	2.30%
MREC produced	Kt	270.7
Initial capex	$ M	276.3
Sustaining capex	$ M	63.0
Opex LOM	$ M	1,519.3
Opex per sold MREC	$/t MREC	5,612.6
Gross revenue LOM	$ M	3,670.2
Net revenue LOM	$ M	3,193.1
EBITDA LOM	$ M	1,673.8
Gross revenue per tonne MREC	$/t	13,558.4
Net revenue per tonne MREC	$/t	11,795.8
Payback from first MREC	Years	2.5
Post-tax NPV_8	$ M	283.3
Post-tax NPV_{10}	$ M	207.0
Post-tax IRR	%	25%
Operating margin	%	42%

Note: TREO – Total Rare Earth Oxide; ROM – Run of mine; MREC – Mixed Rare Earth Carbonate; EBITDA – Earnings before interest tax, depreciation and amortisation; opex – operating expenditure.

1.9.4 Upside scenario

An upside scenario with higher long-term metal prices has been undertaken. No changes in production, opex, capex or discount rates were made to the financial model. The long-term metal prices applied are as follows:

- Praseodymium oxide price of $174,000/ t.
- Neodymium oxide price of $183,000/ t.
- Terbium oxide price of $2,083,000/ t.
- Dysprosium oxide price of $474,000/ t.

Total gross revenues of $4,258 million are reported over LOM for the upside scenario; with planned net revenues of $3,704 million.

The NPV of the upside scenario is $409.9 million, based on a real discount rate of 8%. An NPV of $231.3 million is reported using a real discount rate of 12%. A post-tax IRR of 32% and a payback from the construction start date of 4.0 years, and a payback from first TREO production of 2.0 years is reported. An operating cashflow margin of 50% is noted.

1.10 Project execution

A high-level planned schedule has been undertaken for the overall Project. Key milestones are highlighted in the Level 1 schedule (Table 1.6). The schedule was based on industry benchmarking, scope of work and a general deliverables list. Snowden Optiro assumes a seamless advancement between the various phases, as the Project advances. The overall schedule is five years to first TREO being produced, which includes 18 months for a PFS, one year for a FS, two years construction and a six-month production ramp-up. Project financing will be applied for, for pre-production funding and Project construction.

An engineering, procurement, construction management (EPCM) execution strategy has been recommended for the Project.

Table 1.6 Planned milestones for the Project

Milestone	Milestone date/ duration
Submission of Mining Concession application	Q4 2023 (achieved)
Prefeasibility study	18 months to March 2025
Feasibility study	12 months to March 2026
Value engineering, FEED and financing	Nine months to December 2026
EPCM tendering	November 2026
Early works commencement	December 2026
EPCM award	January 2027
Construction commences	Two years to December 2028
First TREO to be produced	December 2028
Production ramp-up	Six months to June 2029
Steady state of 187.5 kt per quarter (750 kt/a)	Q3 2029

Note: FEED – Front end engineering design; EPCM – Engineering, procurement, construction management; TREO – Total Rare Earth Oxide

Source: Snowden Optiro, 2023

1.11 Recommendations

It is expected that Altona will undertake a prefeasibility study (PFS) as the next stage of project development, based on the positive outcome of this CPR and Scoping Study.

1.11.1 Exploration

Snowden Optiro's recommendations for continued exploration include:

- Use the improved mineralisation model to attempt identifying new targets, including blind targets.
- Continue improving mineralisation model through mapping as well as academic research.
- Exploration drilling at T3, T9, T11, and any other potential high-grade target
- MRE update
- Data centralisation

The resource update should cover tonnage increase, as well as improve the level of confidence within the pits to Measured and Indicated.

1.11.2 Geometallurgy / processing

Geometallurgy and process flowsheet design will be a priority activity during the PFS. The Scoping Study sighter testwork forming part of this Scoping Study provides a preliminary assessment based on a possible flowsheet. Ongoing work includes:

- Mineralogical and geo-metallurgical assessment.
- Beneficiation flowsheet development.
- Hydrometallurgical flowsheet development.

Further detailed metallurgical studies for Monte Muambe are underway and currently focused on advanced metallurgical testwork. A 70 kg representative ore sample is with Auralia Metallurgy in Perth (Australia), and another 100 kg ore sample has been received by SGS Lakefields in Canada. The sample at SGS Lakefields will first undergo extensive feed characterisation including electron microprobe analysis and TIMA-X analysis. TIMA-X is designed to provide quantitative mineral speciation and distribution, as well as characterisation, grain size attributes, degree of liberation and associations of minerals of interest.

Following feed characterisation, test work will focus on producing a high-grade Rare Earth concentrate in order to improve the economics of the Mixed Rare Earth Carbonate production process.

1.11.3 Mining

Snowden Optiro's recommendations include:

- Geotechnical studies:
  - Drilling program
  - Geotechnical logging of core
  - Off-site testing of core
  - Structural interpretation
  - Slope stability assessment
- Mine planning and ore reserve:
  - Pit optimisation and schedule
  - Scenario analyses
  - Cost assessments
  - Ore reserve development

Once adequate testwork has been completed to reliably inform geotechnical models, recovery and process cost parameters, more detailed work can be carried out.

1.11.4 Environmental studies

This will involve starting baseline studies as soon as possible and planning to reach environmental compliance as part of the Mining Concession application (EMP, ESIA). This will include environmental, social and governance (ESG) planning to a World Bank level. Minimisation of the carbon footprint of the proposed product can be minimised through locally available sourcing.

1.11.5 Infrastructure studies

This will involve multiple trade-off studies; including logistics optimisation (road vs different rail options), and power sources mix optimisation (based on capex, opex and carbon footprint).

1.11.6 Tailings / waste management

The PFS study will require a detailed site selection and associated surface geotechnical investigations. A key requirement will be to conduct geochemical static and kinetic leach testing on the types of ore / tailings / waste to determine the future design / lining of the TSF. The planned PFS will identify several options and determine the best site or sites for tailings disposal.

For waste rock disposal, the prefeasibility scope will include hydrogeological testing, site selection, geotechnical and chemical testwork. Both tailings and waste rock will require detailed design criteria and opex / capex costings.

1.11.7 Marketing

As part of the PFS, Altona will join a Responsible Sourcing organisation and integrate Responsible Sourcing processes. The Company plans to develop marketing side of business as part of PFS, which may include offtakes and integration with rest of world supply chains (existing and projects).

1.11.8 Project economics

Relevant studies need to be undertaken to improve granularity and accuracy of the opex and capex estimates, production, payabilities and planned recoveries.

2 INTRODUCTION AND TERMS OF REFERENCE

2.1 Background

This Competent Person's Report (CPR) and Scoping Study document has been prepared by Snowden Optiro, a business unit of Datamine Australia Pty Ltd (Snowden Optiro) for Altona Rare Earths Plc (Altona, the Company or the Client). This CPR has been prepared to provide compliant disclosure on all material mining assets and liabilities of Altona's Monte Muambe Rare Earth Element (REE) project (Monte Muambe or the Project), located in western Mozambique, in accordance with relevant Financial Conduct Authority (FCA) guidelines (FCA Technical Note 619.1 of May 2022, Appendix II), and the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves, 2012 edition (JORC Code, 2012).

2.2 Reporting currency

In this CPR and Scoping Study all references to dollars ($) refer to American United States dollars.

2.3 Principal sources of information

In the compilation of this CPR and Scoping Study, Snowden Optiro used data and documents as provided by Altona via dataroom and direct file transfer. Mr Cedric Simonet, CEO of Altona was the primary contact for data. The primary information sources were the drilling, survey and exploration data provided by Altona, along with studies, internal reports and correspondence prepared by the Altona team.

2.4 Site visits

A site visit was conducted by the Competent Person's representative, R.N. Barnett from 7 to 10 August 2023 (two days at Project site). RC drilling and sampling procedures were inspected, check tests conducted on core density samples and a project review conducted using a checklist.

2.5 Effective date

The effective date of this report is 24 April 2024. The authors are not aware of any material change in the status of Altona's Project in the period between receipt of data and completion of the CPR.

2.6 Independence

At the date of this CPR and Scoping Study, Snowden Optiro had no association with Altona or its individual employees, or any interest in the securities of Altona or any other interests that could reasonably be regarded as capable of affecting its ability to give an independent unbiased opinion in relation to Altona's assets.

Snowden Optiro will be paid a fee for the preparation of this CPR and Scoping Study based on a standard schedule of rates for professional services, plus any expenses incurred. This fee is not contingent on the outcome of the CPR or Scoping Study, and Snowden Optiro will receive no other benefit for the preparation of this report.

2.7 Qualifications of the consultants and Competent Persons

The Competent Person and principal author responsible for preparation of this of this CPR and Scoping Study is Mr Julian Aldridge of Snowden Optiro.

The contributions and responsibilities of each of the co-authors to this CPR are detailed in Table 2.1

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Table 2.1 Responsibilities of each co-author

Author	Qualifications	Responsible for section/s
Dr Andrew Scogings	*PhD Geology, MAIG, RPGeo (Industrial Minerals)*	Competent Person (MRE), Section 4 Geology and Mineral Resources
Mr Kahan Cervoj	*BAppSci (Geology), Post Graduate Certificate (Geostatistics), MAusIMM, MAIG*	Section 4 Geology and Mineral Resources
Mr Robert Barnett	*BSc Eng. (Mining Geology) MSc Industrial Mineralogy*	Section 4 Geology and Mineral Resources
Mr Vince Agnello	*BSc (Hons) Geology, GDE, M Eng (Min Econ), MSAIMM, MGSSA, Pr Sci Nat*	Section 11 Costs and economic evaluation, Section 12 Project execution
Mr Julian Aldridge	*MSc Mining Geology (MCSM), MESci (Oxon), CGeol FGS, MIMMM*	Overall Scoping Study CP and project management
Mrs Beatriz Zanoli Sato	*BSc Mining Engineering*	Section 5 Mining
Mr Allan Earl	*FAusIMM, WASM*	Section 5 Mining
Mr Peter Theron	*BEng (Civil), GDE, MSAIMM, PrEng*	Section 8 Tailings and waste management
Mr Stephan Geyer	*BEng (Civil)*	
Mr James Norton	*BSc(Eng)(Civil), GDE(Civil), MEng*	Section 7 Project infrastructure
Mr Gavin Beer	*BSc (Metallurgy), MAusIMM (CP)*	Section 6 Metallurgy and processing

2.8 Reliance

Snowden Optiro is responsible for this CPR document and included Scoping Study. Snowden Optiro declares that it has taken all reasonable care to ensure that the information contained in this report is, to the best of its knowledge, in accordance with the facts and contains no material omissions.

In preparing the contained MRE, Snowden Optiro and the authors have relied on information collated by other parties. Snowden Optiro and the co-authors have critically examined this information, made their own enquiries, and applied their general mineral industry competence to conclude that the information presented in this MRE is done in accordance with the definitions and guidelines of the JORC Code (2012).

Snowden Optiro insists that its opinions must be considered as a whole, and that selection of portions of the analysis or factors considered by it, without considering all factors and analyses together, could create a misleading view of the process underlying the opinions presented in this Scoping Study and CPR. The preparation of a Scoping Study and CPR is a complex process and does not lend itself to partial analysis or summary.

2.9 Limitations

Altona has confirmed in writing to Snowden Optiro that, to its knowledge, the information provided by it (when provided) was complete and not incorrect or misleading in any material respect. Altona has agreed to indemnify Snowden Optiro from any liability arising as a result of or in connection to the information provided by or on behalf of Altona being incomplete, incorrect or misleading in any material respect.

3 PROJECT DESCRIPTION AND LOCATION

The Project is an advanced exploration and pre-development project for which a Scoping Study and CPR have been prepared by Snowden Optiro in October 2023. Altona's interest in the Prospecting Licence (Licença de Prospecção e Pesquisa) LPP7573L (the Licence) is through a Farm Out Agreement dated 23 June 2021 between Ussokoti Investimentos, Altona, Monte Muambe Mining Lda (MMML) and its original shareholders. The Farm Out Agreement gives Altona the right to earn up to 70% of MMML in a phased manner, subject to the completion of certain conditions and milestones.

The Project is a proposed greenfield operation. The direct environmental liabilities of Altona are therefore limited to the closure and rehabilitation of previous and current exploration sites as required by an Environmental Management Plan (EMP) that must comply with the provisions of the Environmental Law (Law no 20/1997 of 1 October), the Mining Law (Law no 20/2014 of 18 August 2014), and the Environmental Regulations for Mining Activities (Decree no 26/2004 of 20 August 2004).

3.1 Project location and Infrastructure

The Project is located in Niculunga Locality, Cambulassisse Administrative Post, Moatize District, Tete Province, Mozambique (Figure 3.1). Access from the provincial capital Tete is through the tarred road leading to the Malawi border (Zobue), through Moatize town, and to the village of Cateme. The distance from the Zambezi bridge in Tete to the Cateme turn-off is about 40 km.

From the Cateme turn-off, an ungraded track leads from to the Monte Muambe camp through the villages of Mualadzi and Djendje. The distance is approximately 43 km. Access can become difficult during severe rain episodes.

Figure 3.1 shows the Project location in terms of primary infrastructure.

The shortest road from Tete to Moatize is currently not usable due to the collapse of the Rio Revuboe bridge in 2022 as a result of cyclone Ana. The alternative route involves crossing the Zambezi through the Kassuende bridge, located about 5 km southeast of Tete, and joining the Moatize road through a road passing south of the Rio Revuboe. An international airport is available in Tete, with twice-daily flights to Maputo and four flights a week to Johannesburg.

Tete is a logistics hub connecting Mozambique to Malawi, Zambia and Zimbabwe, as well as to the Indian Ocean. Two railway lines connect Moatize to the Indian Ocean (Figure 3.1), namely the Sena line to the port of Beira (560 km) and the Nacala Corridor to port of Nacala (910 km). The Sena line passes about 20 km to the NW of the Project site. The distance from the Project site to the nearest railway siding in Moatize is about 65 km.

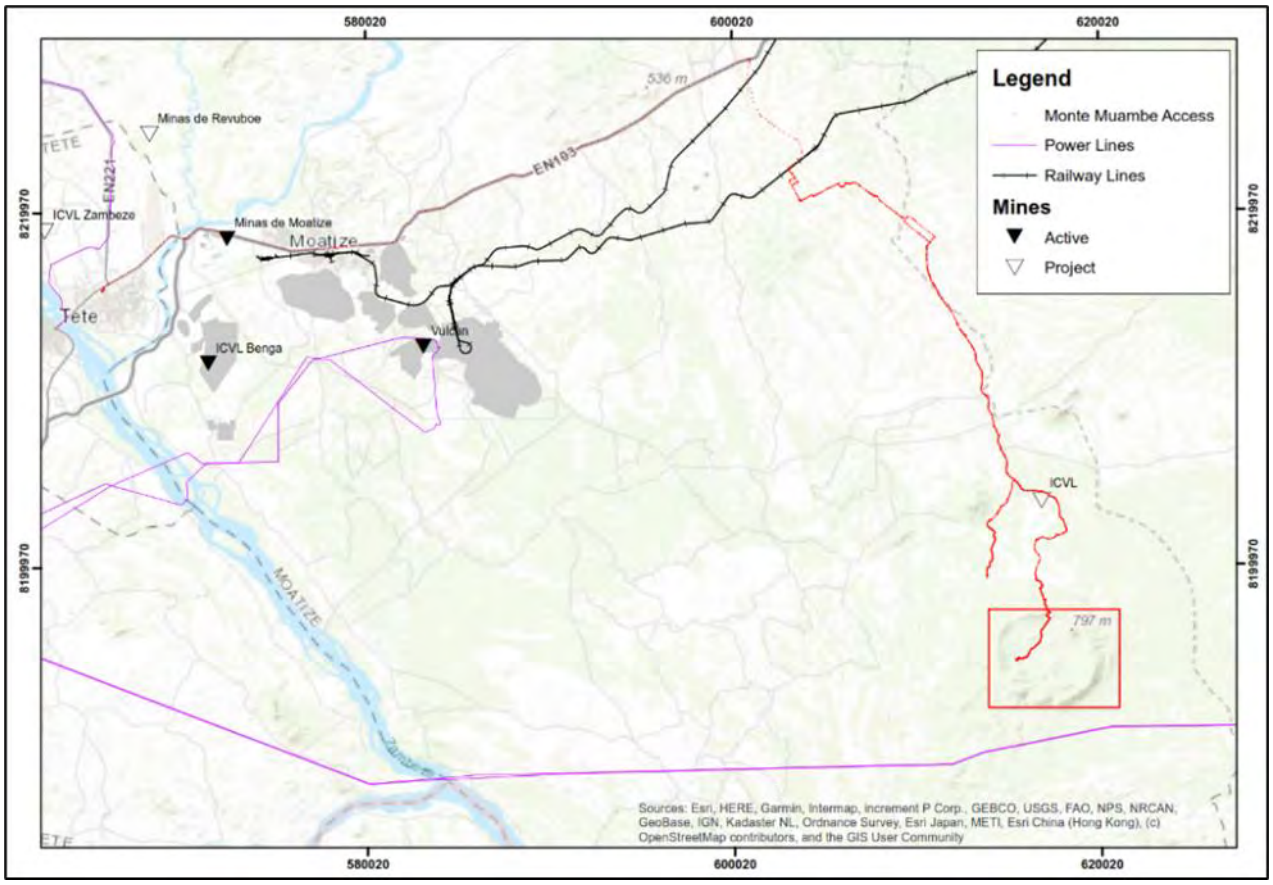
The Tete Province is host to several large coal mines (Jindal, ICVL and Vulcan), a major iron and steel project (Baobab Steel), as well as several coal and coal-based power generation projects (Figure 3.2). In 2016 the Mozambique government set up the Revuboe Industrial Free Zone in Chiuta District, near the Baobab Steel project location, on an area covering about 4,800 ha.

The Project is located about 165 km from the 1,450 MW Cahora Bassa hydroelectric plant. In December 2022, the company operating the plant secured a $125 million loan to rehabilitate and modernize the plant. The renovations are expected to take the plant's power generating capacity to 2,075 MW and to be concluded in 2025.

Access to cell phone networks at Monte Muambe is presently limited to the Camp area (Vodacom and Movitel operators). The Company is in discussions with Vodacom to instal a repeater on site, which will allow good cell phone coverage in the entire Project area, and which will also benefit neighbouring communities. Internet access for the camp is presently provided through a 3 mbps microwave connection.

Exploration boreholes have encountered water in several areas of the Project site and water for the camp is presently drawn from one of these boreholes.

Figure 3.1 Project infrastructure map



3.2 Physical environment

Monte Muambe forms a circular ridge, with a diameter varying from 4.8 to 5.4 km. While the structure resembles a volcanic crater, the ridge consists of indurated sandstones and the structure is a differential erosion feature (Figure 3.2).

The elevation of the top of the ridge ranges from 600 m to 735 m above mean sea level (amsl), with the surrounding plain having an elevation of 400 m to 425 m amsl. On the southern side, the ridge is incised by two narrow valleys which act as drainages for the inner part of the structure. Drainage is in a southerly direction, towards the Zambezi gorge, about 35 km to the south (Figure 3.3).

The inner part of the basin is about 3.5 km in diameter and forms a relatively level surface oscillating between 550 and 580 m amsl, with isolated carbonatite hills. Carbonatites outcrops have undergone karstification, with caves visible at the surface, and cavities also encountered in some of the drill holes.

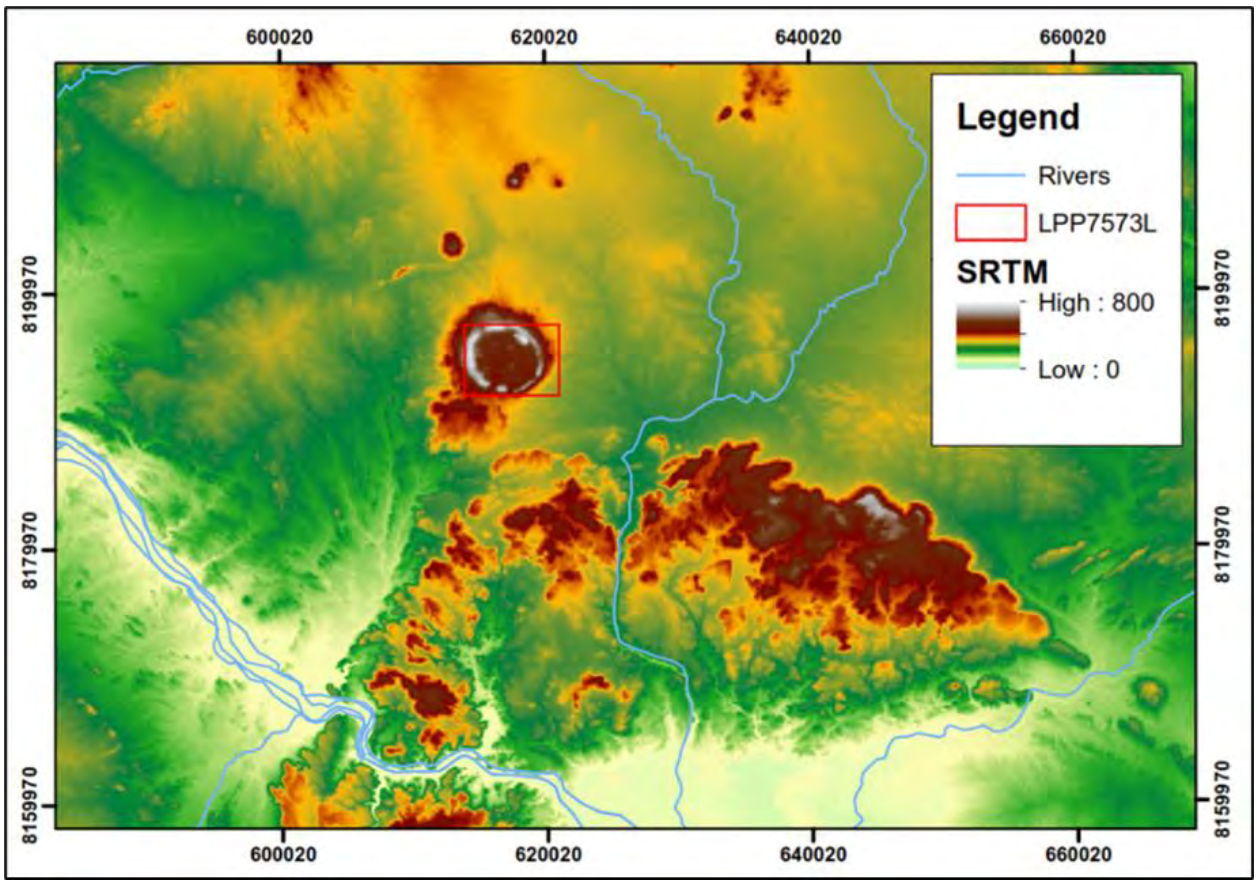
The outer part of the ridge shows a step profile corresponding to paleosurfaces at 550 m, 610 m and 630 m amsl in particular. Soil in the basin and on the ridge slopes are thin, typically less than 1 m.

Beside the Company's camp, there are no human settlements within the Licence. Human activity within the Licence area is limited to neighbouring community honey harvesting, logging and hunting.

There are five villages located around the Licence, namely Djendje (1 and 2), Chincolo, Cachenga 1 and 2. The majority of the Company's employees come from these villages. The population density around the Project area is 15 people per km^2 in average. Vegetation on the slopes of the ridges consists of a dense forest. In the basin, the vegetation density varies based on the topography.

Figure 3.2 Aerial view of Monte Muambe, looking south

Figure 3.3 SRTM DTM of the Lupata area and Monte Muambe

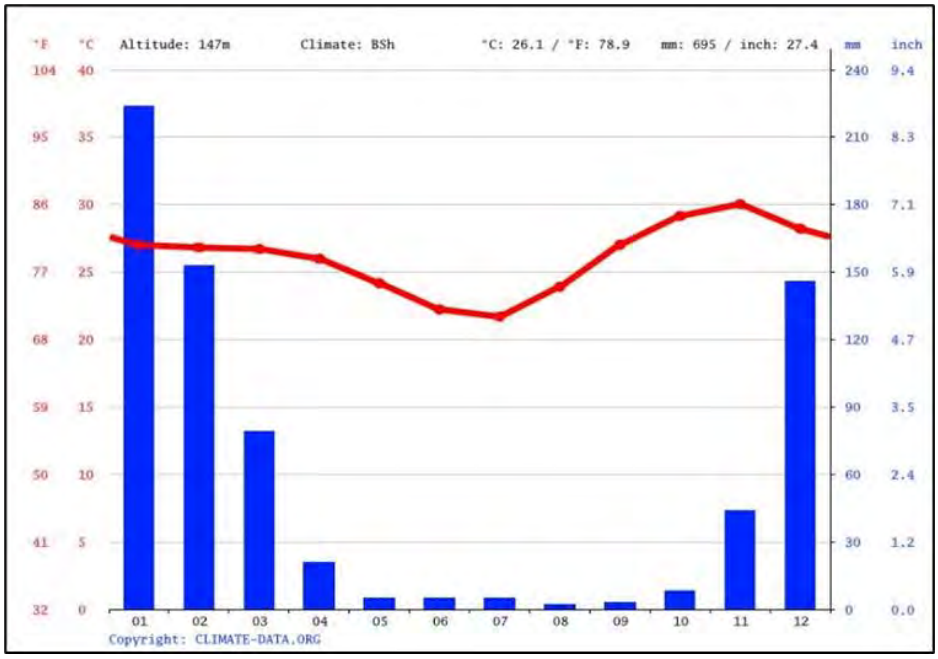


3.3 Climate

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 600 m on the crater rim and 400 m inside the crater. The climate of Tete is tropical semi-arid, with a hot, rainy and mostly cloudy period from December to March (rainy season) and a long dry windy and mostly clear season from April to October (dry season), within which there is a relatively cool period from June to August. Tete, being located in central-western Mozambique at a low altitude along the Zambezi River, is the hottest area of the country (Figure 3.4). 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.

From December to February rains can affect exploration activities (and planned mining operations), and access conditions can become difficult during rainy episodes; however, the Company has so far been able to carry out activities during the months of February and March.

Figure 3.4 Tete annual climate data



3.4 Ownership structure

Altona's interest in the Licence (Table 3.1) is through a Farm Out Agreement dated 23 June 2021 between Ussokoti Investimentos (the original owner of the licence), Altona, MMML and its original shareholders. The Farm Out Agreement gives Altona the right to earn up to 70% of MMML in a phased manner, subject to the completion of certain conditions and milestones. Each transfer of shares requires the approval of the Minister, Ministry of Mineral Resources and Energy (MIREME).

Altona currently has a holding of 51% in MMML after receiving formal regulatory approval from the Mozambique Minister of Mineral Resources and Energy on 15 January 2024.

Table 3.1 Summary of the Monte Muambe Farm Out Agreement of 23 June 2021

Phase	Conditions for completion of each phase**	Altona holding in MMML on completion of each phase
Phase 1 (8 months, completed)	GBP40,000 in cash 1 million Altona shares Minimum Expenditure $400,000	20%
Phase 2 (12 months, completed upon submission of MRE and Scoping Study on 18 October 2023).	GBP40,000 in cash 1 million Altona shares Minimum expenditure $700,000 Production of a JORC Code (2012) MRE & Scoping Study	51%
Phase 3 (24 months)	GBP160,000 in cash (in instalments) 1 million Altona shares Minimum expenditure $2 million Production of a feasibility study	70%

*Note: ** Payments in cash and shares are to the original shareholders of Monte Muambe Mining Lda. Altona – Altona Rare Earths Plc; MMML - Monte Muambe Mining Lda*

Source: Altona, 2023

Post Phase 3 the original shareholders of MMML will remain with a 20% free carried interest and a 10% participating interest. Altona can buy all or part of original shareholders' participation. Altona controls MMML through the appointment of two out of three Directors (as per the Farm Out agreement), and the appointment of the Managing Director.

3.5 Project tenure

The Project is held under the Licence issued in accordance with the Mining Law 2014 by the Ministry of Mineral Resources and Energy (MIREME). The Licence LPP7573L covers a surface area of 3,940 Ha (39.40 km^2), and is valid for fluorspar, rare earths, and associated minerals (Table 3.2 and Figure 3.5). The Licence was granted to Ussokoti Investimentos Sociedade Unipessoal for an initial five year term, 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 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 five years and renewed for an additional three year period.

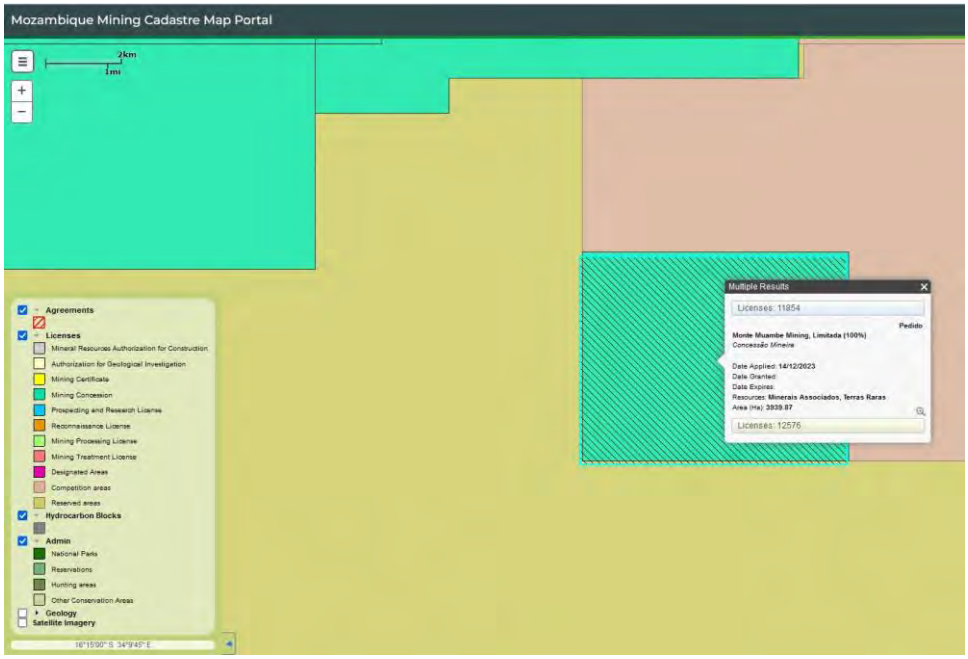
On 26 October 2022, INAMI notified MMML that the licence had been transferred to it from Ussokoti and renewed for a further three-year term, up to and including 22 May 2025. As at the date of this report, the Mozambique Mining Cadastre Portal indicates that the Licence LPP7573L is held by MMML, and expires on 22 May 2025 (MMCMP, 2023).

MMML has lodged an application for a Mining Concession (Mining Licence). The application follows the successful completion of Phase 2 of the Project. The requested duration for the Mining Concession is 25 years. The Mining Regulations (Decree no. 31/2015 of 31 December) require the Minister of Mineral Resources and Energy to communicate their decision to the applicant within 190 days.

Table 3.2 Mining Concession corners for LPP7573L as granted.

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

Figure 3.5 Screenshot from the Mozambique Mining Cadastre map



3.6 Altona commitments

As of 15 January 2024, MMML is held 51% 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 shown in Table 3.1.

Beside exploration rights, the Prospecting Licence gives the licensee a preferential right to an application for a Mining Concession. The Company lodged a Mining Concession (Mining Licence) application on 14 December 2023.

Mining Concessions have a validity of up to 25 years, renewable once for an equal period. Mining activities on a Mining Concession also require the obtention of Land Rights (Direito de Uso e Aproveitamento da Terra – DUAT), and an Environmental Impact Study for Category A activities.

The work and minimum expenditure commitments are as follows:

- Phase 1 (8 months): 3,000 m exploration drilling programme, with a minimum expenditure commitment of $400,000. This is complete.
- 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 $700,000. This is complete.
- Phase 3 (2 years): Preparation of a feasibility study (FS), with a minimum expenditure commitment of $2 million. The Mining Concession application of 14 December 2023 forms part of the FS objective.

3.7 Servitudes

There are no known servitudes (communication, water, road), current or required, within the Project area.

3.8 Mozambique mineral law

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 Licence (Licença de Prospecção e Pesquisa or LPP), ◦ Up to a maximum area of 19,998 ha for non-construction minerals (such as REE) and 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 and confers the right to extract, develop and process mineral resources discovered under an LPP.
- 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).
- Mining Processing Licence (Licença de Processamento Mineiro).
- 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), large scale mining must be carried out under a Mining Concession.

Royalties and taxes which will 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.
- Any other taxes required by law.

Mining activities 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.

3.9 Surface rights

Under Mozambican law, the land is property of the State. Investors in mining activities cannot, therefore, buy or own land being used for the implementation of a mining project. Mining investors may be granted the right to use and exploit the land, known as Direito do Uso e Aproveitamento da Terra (DUAT).

A DUAT provides its holder with legal certainty that it will be authorised to use a certain area of land for the purposes for which the DUAT was granted, such as mining activities. DUAT holders may also be owners of buildings, facilities or other immovable assets built on the land covered by their DUAT. When mining rights are awarded over an area of land subject to an existing third-party DUAT, the holder of the mining rights must pay compensation to the respective DUAT holder.

In cases where a mining right is awarded over a populated area and the population must be resettled, a relocation plan must be drawn up and due compensation paid. The DUAT application will be made once the Mining Concession application has been submitted.

3.10 History

One of the first references on the geology of Monte Muambe is the February 1930 issue of the Geological Magazine (Dixey, 1929). Dixey describes Monte Muambe as consisting of high ridges of hard grits enclosing crystalline limestone rich in iron ores.

Initial exploration work at Monte Muambe took place in the early 1960s and is reported by Dias (1961). Work done by the Bulgargeomin brigade in 1983 focused on fluorite occurrences and is reported in Cilek (1986).

Grupo Madal carried out exploration for fluorspar at Monte Muambe in 1998. This included a helicopter borne magnetometer and gamma spectrometer survey, flown mean terrain clearance of 35 m and 60 m respectively, with a line spacing of 100 m and a tie line spacing of 500 m. Several trenches were also dug on outcropping fluorspar mineralisation. According to Siegfried (2021), a fluorite bulk sample was also collected and submitted to South African metallurgical company Mintek for beneficiation test work.

In 2009 Globe Metals & Mining Ltd, an ASX-listed company, entered into an agreement with the then owner of the licence (Bala Ussokoti) under which Monte Muambe was held at the time to acquire and explore the project. Exploration work was initially focused on fluorspar. On 9 March 2012, Globe Metals & Mining published a maiden Inferred fluorspar Mineral Resource totalling 1.63 mt at 19% fluorite, for a total of 310,000 t of fluorite contained. Globe Metals & Mining discovered REE occurrences during fluorspar exploration, initially in rock chip samples, and in 2011 in reverse circulation (RC) boreholes. On 14 March 2011, Globe Metals & Mining announced multiple REE discoveries at Monte Muambe over 3 distinct zones (AA, BB, and DD) of the Monte Muambe basin.

Intercepts reported at the time included:

- 46 m at 2.6% TREO including 20 m at 3.3% TREO from 24 m (Zone AA).
- 49 m at 2.5% TREO including 20 m at 3.5% TREO from 20 m (Zone BB).
- 60 m at 2.1% TREO including 24 m at 2.6% TREO from 20 m (Zone DD).

Further drilling in 2012 continued to yield REE intercepts of up to 96 m at 2.2% TREO. Globe Metals & Mining drilled 165 RC holes for a total of 12,587 m.

While Globe Metals & Mining announced plans to carry out metallurgical testing, no such test results were reported. In its June 2013 annual report Globe Metals & Mining announced that after spending Australia $5.1 million, it was impairing the mineral asset due to an ongoing legal dispute with the JV partner over the legal right to the tenement.

On 22 May 2017, Ussokoti Investimentos Sociedade Unipessoal, a Mozambican company, secured the Licence, and carried out limited exploration for rare earths and guano. On 23 June 2021, Ussokoti Investimentos Sociedade Unipessoal and Altona entered into the Farm Out Agreement described in section 3.3 of this report.

Rare earths exploration resumed in August 2021. Since then, Altona has invested about GBP£1.85 million in exploration. This includes:

- 5 diamond drill hole (DD) holes (total 590.7 m) drilled in 2021.
- 82 RC holes (total 6,678.8 m) drilled over 3 phases in 2021, 2022 and 2023.
- 26 short (25 m deep) (total 593.83 m) RC holes drilled in 2022.
- 2,960 samples assayed by Intertek Genalysis in Perth for major and trace elements including REE and fluoride.
- A soil sampling survey over the entire inner part of the Monte Muambe basin, for a total of 2,146 samples which were assayed using the Company's portable XRF (pXRF) on site.
- Mineralogical and metallurgical testing.

4 GEOLOGY AND MINERAL RESOURCES

4.1 Regional geology

The geology of Tete Province was extensively mapped as part of the Mineral Resource Management Capacity Building Project (MRMP) between 2002 and 2006 by a consortium led by the Geological Survey of Finland (Geologian TutKimuskeskus, abbreviated as GTK), for the Ministry of Mineral Resources. The geology of the area around Monte Muambe is described in the Tambara Sheet no 1634 (GTK Consortium, 2006) shown in Figure 4.1.

Monte Muambe is located in the central part of the Karoo Moatize-Minjova coal basin, which corresponds to the eastern part of the Zambezi Graben. The basin is separated from the central Sanângoè-Mfidezi Basin by the Cahora Bassa Horst. In the Monte Muambe area, Karoo sediments are bound to the Southwest by a normal fault marking the edge of the Zambezi Graben. To the north, they are bound by the discordance between the Lower Karoo Matinde Formation and the underlying Mesoproterozoic Tete gabbro suite. The Matinde formation is coal bearing, and coal occurrences are known immediately north of Monte Muambe. Phanerozoic formations around Monte Muambe dip gently towards the south.

South of Monte Muambe, the Karoo sediments are covered by the Lupata Group volcanics and sediments, in the following sequence (from base to top):

- Tchazica Formation (sandstones and conglomerates).
- Monte Palamuli formation (rhyolites) and contemporaneous Monte Mazambulo Formation (conglomeratic sandstones).
- Monte Linhanga Formation (phonolites).

The Monte Muambe carbonatite intrusion is hosted by Upper Karoo Sandstones of the Cádzi Formation. The age of the intrusion is presently unknown. It is usually assumed that the intrusion is Cretaceous and forms part of the Chilwa Alkaline Province.

Isolated trachyte intrusions form small hills located 8 to 11 km to the north, and 22 km to the northwest of Monte Muambe. They are considered by GTK Consortium (GTK Consortium, 2006) to be contemporaneous of the Monte Muambe carbonatite. Other Post-Karoo alkaline and carbonatite intrusions in the region include the Salambidue syenite, about 50 km to the north-northeast of Monte Muambe (mostly in Malawi), as well as Cone Negose, located 315 km to the west-northwest of Monte Muambe along the northern margin of the Zambezi Graben.

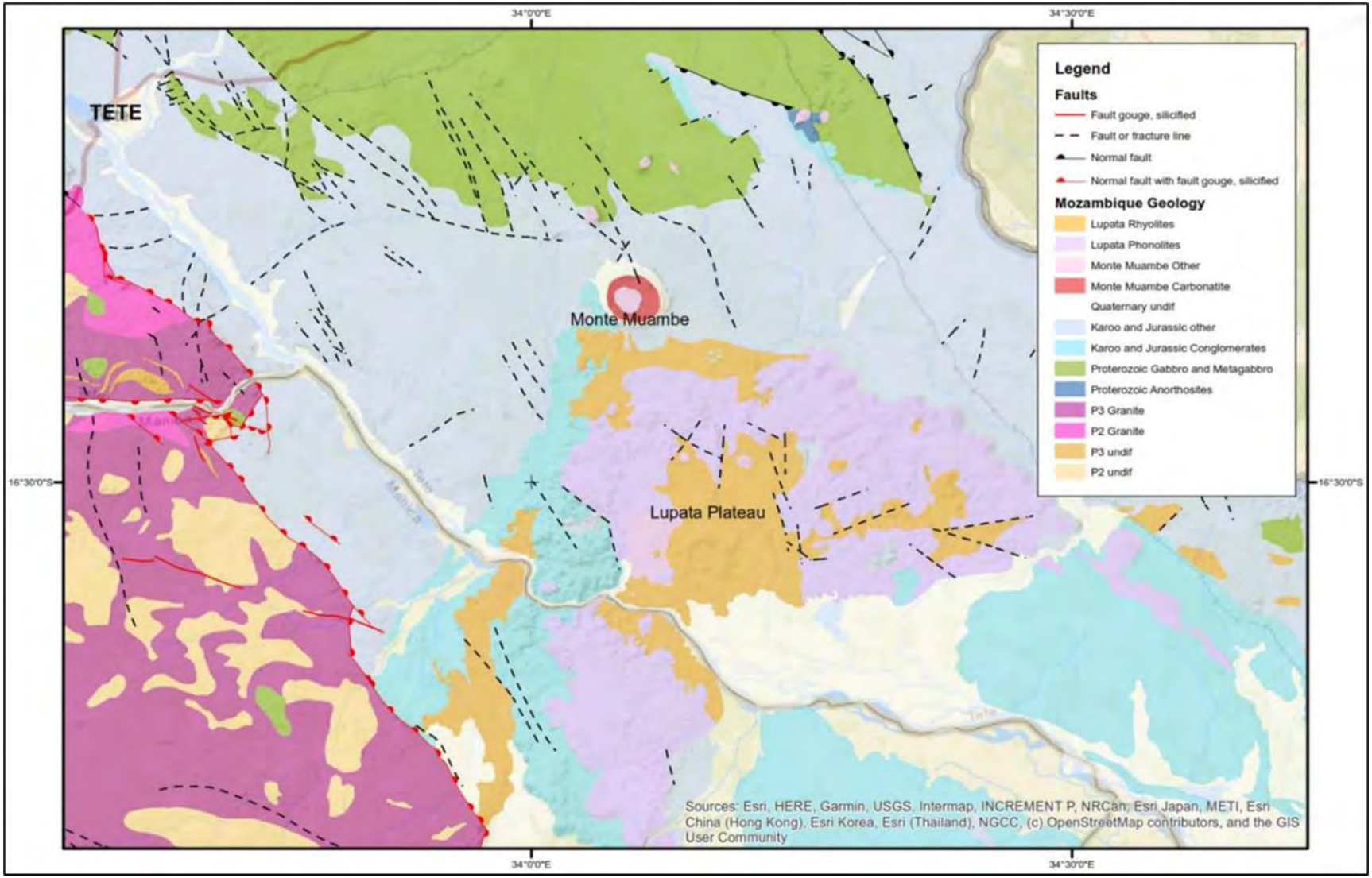
4.2 Local geology

4.2.1 Description

While the Monte Muambe structure resembles a ring-dyke, or a volcanic edifice, the outer ridge actually consists of sub-horizontal indurated Upper Karoo sandstones and is the product of differential erosion (Figure 4.2). The basin formed by the inner part of the structure consists chiefly of fenites, various types of carbonatites, breccias, as well as pyroclastics. The diameter of the carbonatite intrusion at surface level is about 3.3 km. Carbonatites tend to outcrop in the form of small hills rising above the floor of the basin. Fenites are often deeply weathered at near-surface levels and rarely outcrop, though float can be encountered on slopes.

Fenites form a circular zone lining the contact between carbonatites and host sandstones, but the detailed relationships between fenites and carbonatites are a lot more complex, involving faulting during and after the emplacement of the intrusion, as well as the incorporation of xenoliths of various size (centimetre to decimetre size). Drilling in various parts of the intrusion shows that fenite outcrops often cover carbonatites. This, as well as the presence of pyroclastics, suggests that the present erosion level may corresponds to the roof of the carbonatite intrusion, immediately under the base of the volcanic edifice.

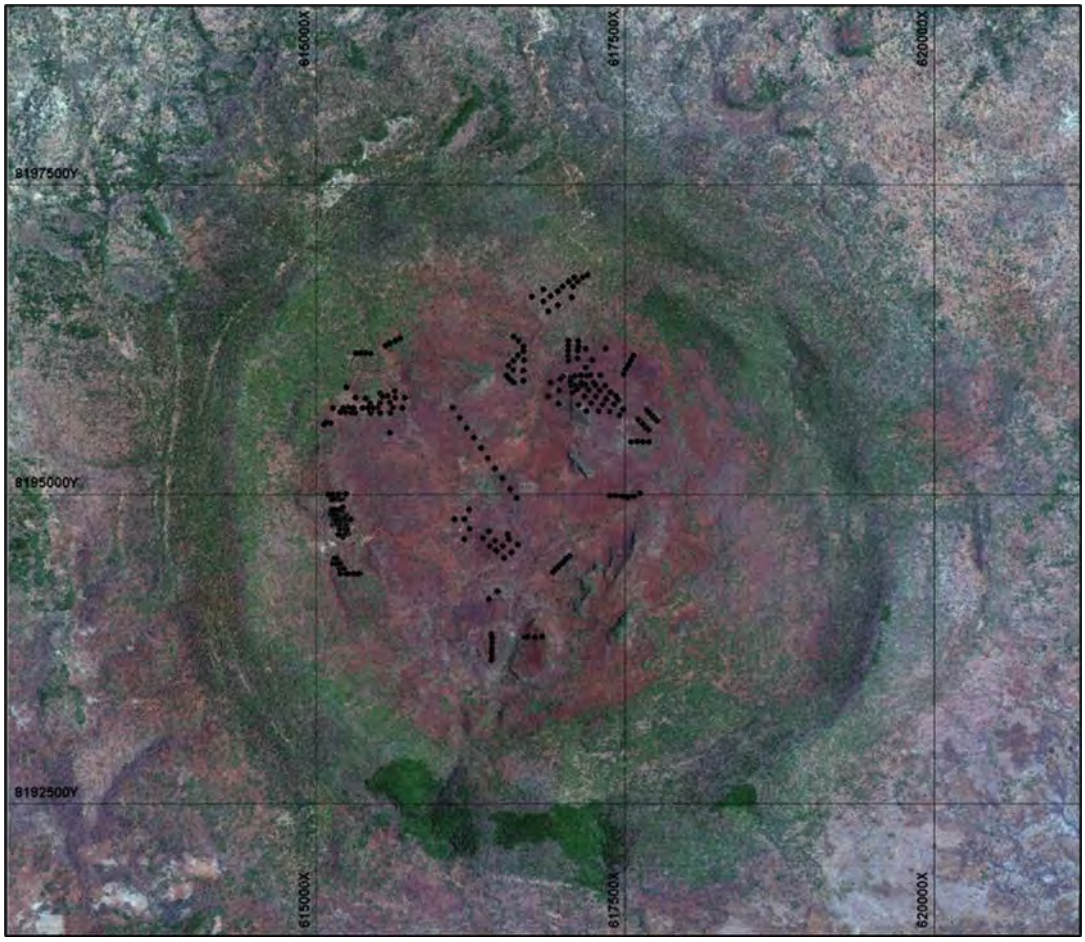
Figure 4.1 Regional geology map



Source: Tambara Sheet no 1634 (GTK Consortium, 2006)

Airborne gamma spectrometry data was useful to support geological mapping, with fenites outcrops corresponding to K anomalies, carbonatites to U and Th anomalies, and sandstones having a very low radiometric response.

Figure 4.2 Satellite image of Monte Muambe, showing the sandstone ridge surrounding the carbonatite/ fenite complex



Note: Drill collars (black dots) are as at time of reporting. Map grid 2.5 x 2.5 km
Source: Altona, 2023

4.2.2 Lithology

Carbonatites

The Monte Muambe carbonatites are fine to medium grained and range from white (fresh) to orange (oxidised) and brown in colour (Figure 4.3), sometimes green. Outcrop surfaces tend to be grey or yellow-brown. Various mineral segregations, including apatite and Fe minerals forming pseudomorphs after magnetite, are locally visible. Karstic weathering features are common.

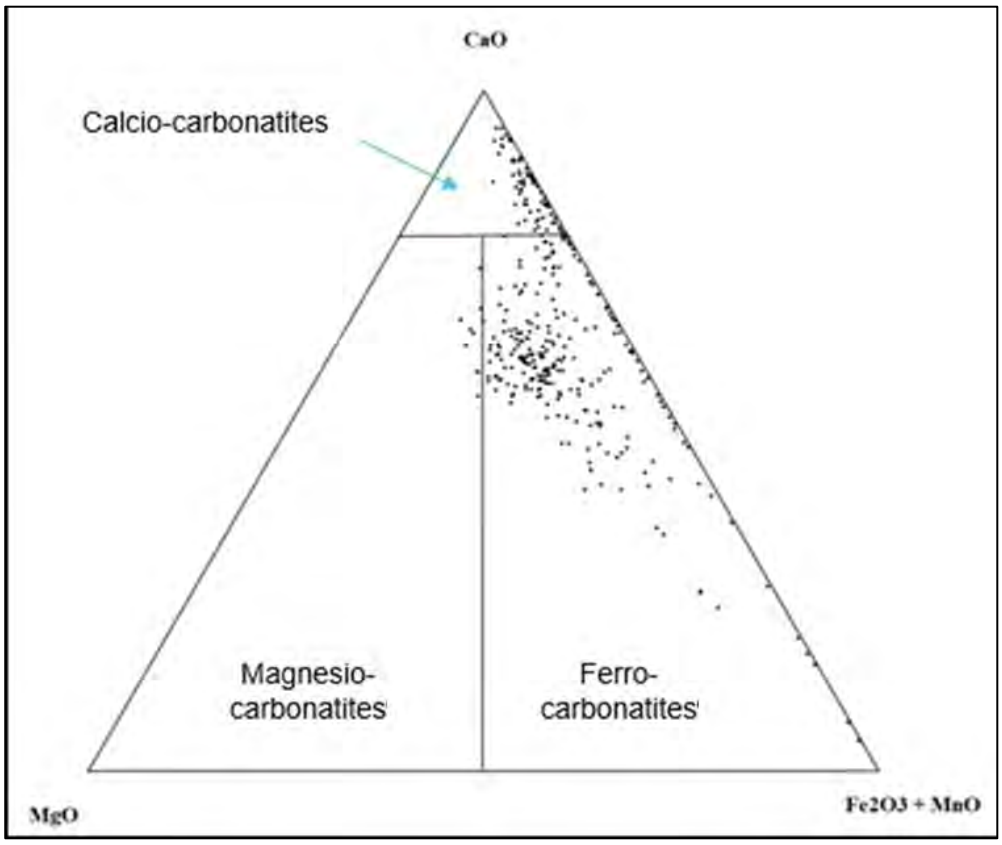
Figure 4.3 Yellow fine grained carbonatite vein intersecting a grey coarse-grained carbonatite

Source: Altona, 2023

The classification of carbonatites is not well established, with one of its latest reviews being that of Yaxley et al (2022). Some descriptive classifications involve geochemical characteristics (Le Bas, 1991) and others the modal percentage of primary (magmatic) carbonate minerals, with varying thresholds (Mitchell, 2005). The grain size has also been traditionally used to distinguish, for example, sövites from alvikites (Kresten, 1983). Most recent publications on carbonatite classification agree that descriptive classifications are strongly limited compared to emerging genetic classifications.

Using the geochemical classification of Le Bas (1991), the Monte Muambe carbonatites are mostly calcio-carbonatites and ferro-carbonatites (Figure 4.4). The applicability of this classification at Monte Muambe has its limitations though, as beside carbonates, carbonatites contain a wide variety of accessory minerals including apatite (average 8 wt%, up to 32 wt%), baryte (average 9 wt%, up to 29 wt%), fluorite (average 11wt%, up to 28wt%) and REE minerals. As a result, the sum of the oxides used for the geochemical classification (Fe_2O_3, MnO, MgO and CaO) usually ranges from 50 to 60 wt%.

Figure 4.4 Ternary IUGS carbonatites classification diagram. DD samples having <7wt% SiO_2



Source: Altona, 2023

While few Monte Muambe samples fall within the magnesio-carbonatite field of the IUGS ternary diagram of Figure 4.4, the same diagram shows that there are two distinct carbonatite suites, one having a very low MgO content (average 0.3wt% MgO), and the other one having a MgO content of up to 12.5 wt% (av. 6.1 wt% MgO).

The cut-off between both suites is at about 1wt% MgO. There are no visible differences between the two suites. For logging purposes, the suites were named Ca-carbonatite and Mg-carbonatite respectively. Preliminary assays using the Company's portable X ray fluorescence machine (pXRF) on site allowed the logging geologist to identify both suites and to log them accordingly. Ca-carbonatites were logged as CCA and Mg-carbonatites as CMG.

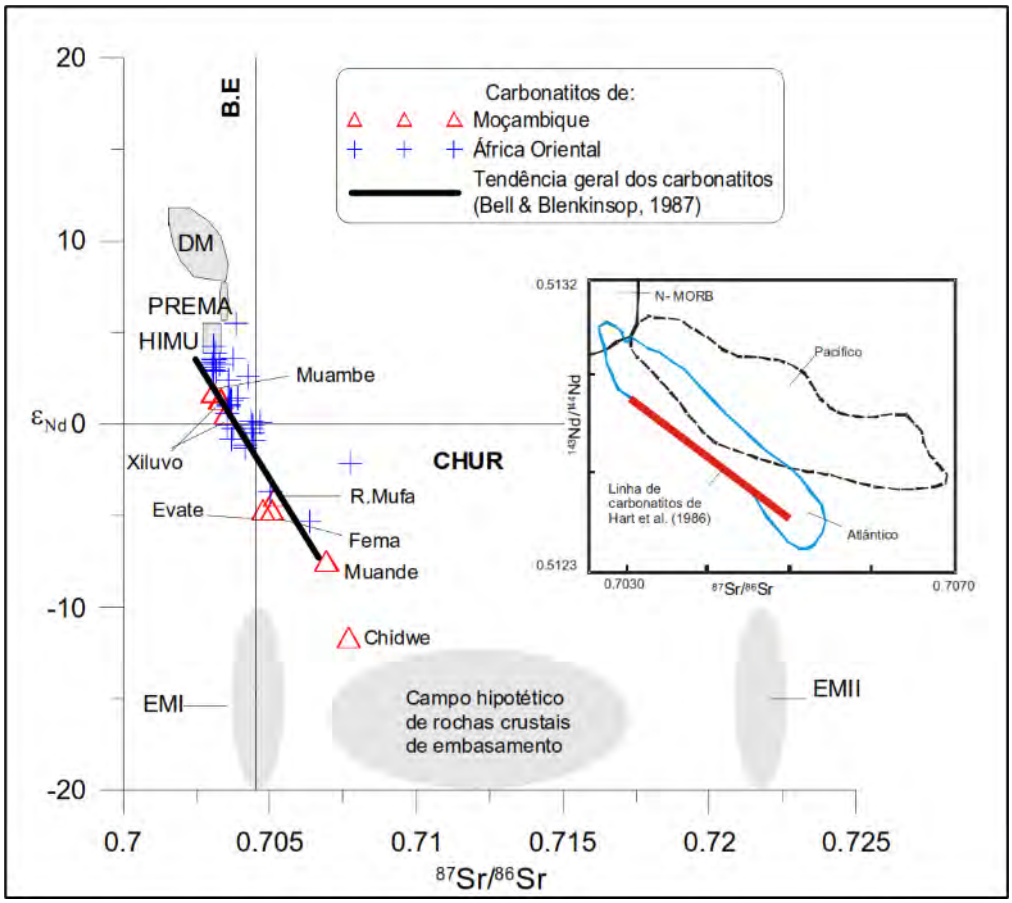
X-ray diffraction (XRD) analysis results show that the main carbonate in Ca-carbonatites is calcite, whereas in Mg-carbonatites it is ankerite.

Chauque (2008) reports stable isotope data for one sample from Monte Muambe (Table 4.1). This data is typical of continental shield Phanerozoic carbonatites and consistent with data from other Mozambican carbonatites (Figure 4.5)

Table 4.1 Stable isotope data for Monte Muambe

ID	$^{87}Sr/^{86}Sr$	$^{143}Nd/^{144}Nd$	$\varepsilon_{Nd(0)}$
Sample 010/06	0.703062	0.512256	1.77

Figure 4.5 Stable isotope data for select carbonatites



Note: Select carbonates from Mozambique and Eastern Africa regions, including Monte Muambe are presented above
Source: Chauque, 2008

Fenites

Fenites are rocks formed through metasomatic interactions between carbonatites and their host rocks (Elliott et al, 2018), and are characterized by a relative enrichment in alkali and silica compared to their protolith. At Monte Muambe, fenites form a 600 to 1,200-m wide aureole along the contact between the carbonatite intrusion and its host Karoo sandstones. Blocks of fenites also occur as xenoliths of various sizes in the carbonatite.

Fresh fenite is buff in colour and coarse grained. It consists mainly of K-feldspar, goethite, and phlogopite. XRF data show that accessory minerals include gorceixite (a Ba-Al phosphate), fluorite, Mn minerals, pyrochlore, apatite and REE minerals. Weathered fenite is typically orange in colour and friable. K-feldspar is replaced by clay minerals, and fine-grained phlogopite aggregates are more visible than in fresh fenite.

Fenites were logged as FEN. For logging purposes, typical fenites are considered to have SiO_2>20wt%.

Carbonatite-fenite relations, and mixed lithologies

Due to the intimate association of both types of rocks, geochemical assays of drilling samples often correspond to a mix of carbonatites and fenites.

This happens in the following situations:

- Contact between carbonatite and fenite (RC samples).
- Stockwork of cm or mm size carbonatite veins in fenite (both DD and RC samples).
- Fenite xenoliths in carbonatite (both DD and RC samples).

Many entries in the RC assay logs correspond to an actual mixture of carbonatite and fenite. The distinction between the two suites of the carbonatite component can still be made based on the MgO content. Mixed lithologies were therefore logged as MCA and MMG respectively.

Sandstones

Sandstones forming the Monte Muambe ridge belong to the Cádzi formation, a full description of which is available in GTK Consortium (2006). The sandstones are immature, arkosic, and sometimes present cross-stratifications. The grains are moderately sorted and subangular to rounded.

Outcrops are relatively rare except in stream beds, but the slopes of the Monte Muambe ridge are covered in sandstone blocks. On the northern side of Monte Muambe, the dip the sandstones appear to be sub-horizontal, as evidenced by horizontal paleo-surfaces and outcrops. On the southern side of the mountain, based on the regional geological map, the dip is expected to be about 10° to 15° in a southerly direction. Sandstones were not encountered in drill holes.

Agglomerates

The term agglomerate has been used in previous maps, based on observations of outcrops. True agglomerates (rocks consisting of large, coarse rock fragments associated with lava flows ejected during volcanic eruptions) have not been observed at Monte Muambe and it is thought that the term has actually been used for various types of breccia and for pyroclastic deposits (see below).

Breccia

Various types of breccia are encountered at Monte Muambe. During logging DD cores a distinction was made between breccias having a fenite matrix (FBR) and breccia having a carbonatite matrix (CBR). Hydraulic breccia with fenite and/or carbonatite clasts can be observed in various parts of the intrusion.

Pyroclastics

Pyroclastic deposits outcrop in the southern part of the Monte Muambe basin. They were also encountered in DD hole MM007 in the northern part of the basin. Particles vary in size from a few mm to a few cm, with occasional dm size igneous and crustal xenoliths, and are often heterogeneous. The matrix is very fine grained. These pyroclastic deposits therefore consist of a mix of ashes and lapilli. They were probably preserved in downward faulted blocks at the base of the now eroded volcanic edifice. Pyroclastics were logged as CPY and OPY depending on whether a carbonatite component is present or not.

Mafic dykes

Mafic dykes were occasionally intersected by drill holes and are also observed on outcrops. Core samples are weathered to very weathered, and it is therefore difficult to identify these rocks on the basis of their geochemistry. The rock is very fine grained, with white phenocrysts in some samples. The SiO_2 content typically ranges from 40% to 50%, and $Na_2O + K_2O$ from 7 to 12% (with some samples being as low as 2%). The Nb/Y ratio is high (3 to 10). This places these rocks in the field of basanites and nephelinites.

4.3 Mineralisation

4.3.1 Carbonatite-hosted REE mineralisation model

REE deposits typically occur in the following geological contexts (Wang, 2013):

- Carbonatites, and residual deposits resulting from the in-situ weathering of carbonatites.
- Alkaline intrusions.
- Ionic clay deposits forming from the weathering of a REE-bearing source rock (typically REE enriched igneous rocks, but sometimes also sediments).
- Placer heavy mineral sands deposits containing REE minerals such as monazite or xenotime.

- Iron oxide copper gold (IOCG) deposits.

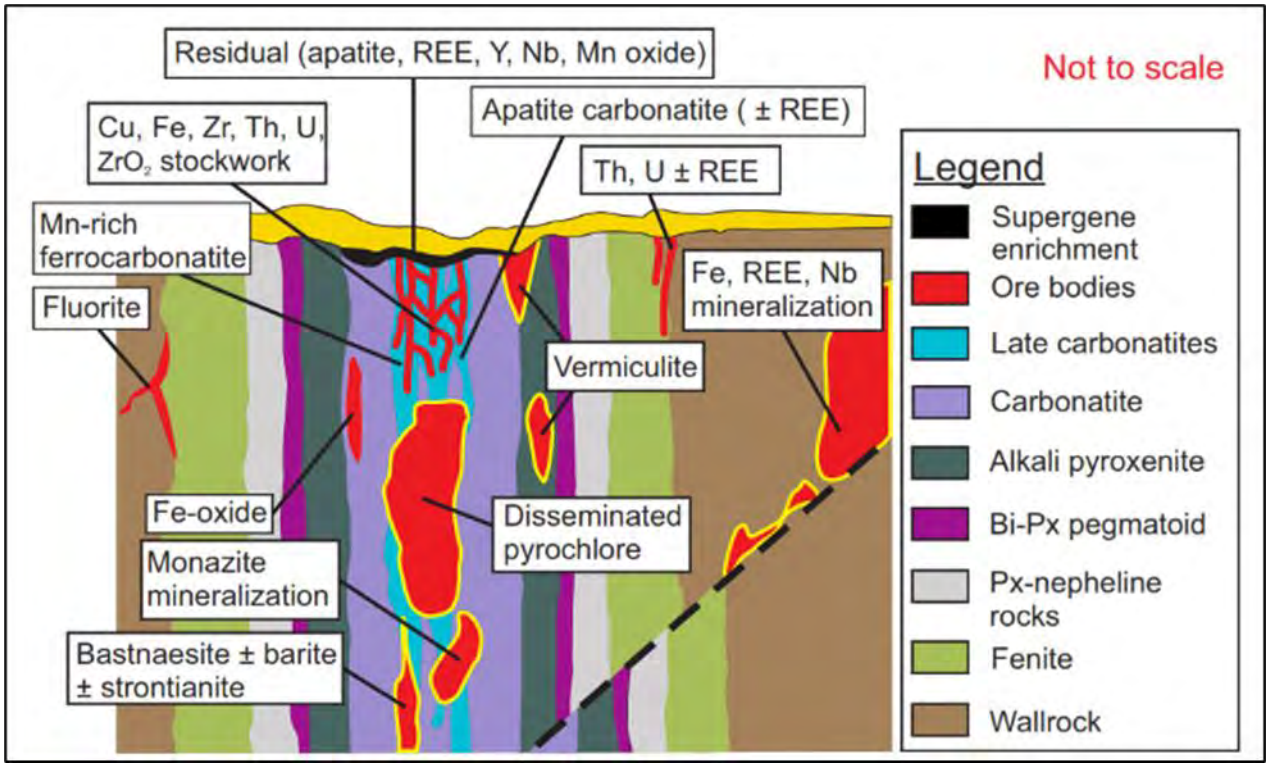
The carbonatite REE deposit model is described by Verplanck et al (2014) and Simandl (2015). It is important to note that while most of the World's REE production originates from a small number of carbonatite-hosted REE deposits, not all carbonatites host potentially exploitable REE mineralisation. Additionally, REE mineralisation is typically the result of various metallogenic processes starting from the magmatic stage, continuing in late and post magmatic hydrothermal stage, and ending with supergene alteration processes (Harmer and Nex, 2016, Anenburg 2020). As a result, the characteristics of carbonatite-hosted REE deposits vary significantly from one to the other, and it is fair to say no two deposits are identical. Even within the same province (for example the Chilwa REE Province – see next section of this report) variations in size, geometry, petrology, REE and other accessories mineralogy, weathering and metallurgy are observed (see a review of Southern and Eastern Africa carbonatite-hosted REE deposits in Harmer and Nex, 2016). This ultimately results in significant differences in mining and processing methods for REE mines.

In practice, there is a notable difference between:

- Primary carbonatite deposits, originating from magmatic and hydrothermal processes, as well as in-situ weathering – these deposits can extend vertically to depths of several hundred metres below the surface (ex Kangankunde and Songwe in Malawi, as well as Monte Muambe).
- Residual deposits resulting from the deep weathering of an underlying primary carbonatite, and forming a blanket over it, typically 10 to 50 m in thickness (e.g., Mrima in Kenya, Nguala in Tanzania, Longojo in Angola and Mt Weld in Australia).

A conceptual model of a carbonatite-hosted REE deposit is presented in Figure 4.6.

Figure 4.6 Vertical section of a hypothetical carbonatite mineralizing system



Source: Simandl, 2015

The most significant REE minerals in carbonatite-hosted REE deposits are bastnaesite, monazite, synchisite, florencite and apatite (Table 4.2). Carbonatites can host other minerals and metals of economic interest, including niobium, copper, barite, fluorite, vermiculite, phosphates, iron and manganese.

Table 4.2 Main REE minerals in African carbonatite deposits

Mineral name	Formula	Contained REO% (typical)
Bastnaesite	$RECO_3F$	76
Florencite	$REAl_3(PO_4)_2(OH)_6$	32
Monazite	$(RE,Th)PO_4$	71
Synchisite	$CaRE(CO_3)_2F$	51

4.3.2 Regional Chilwa REE Province

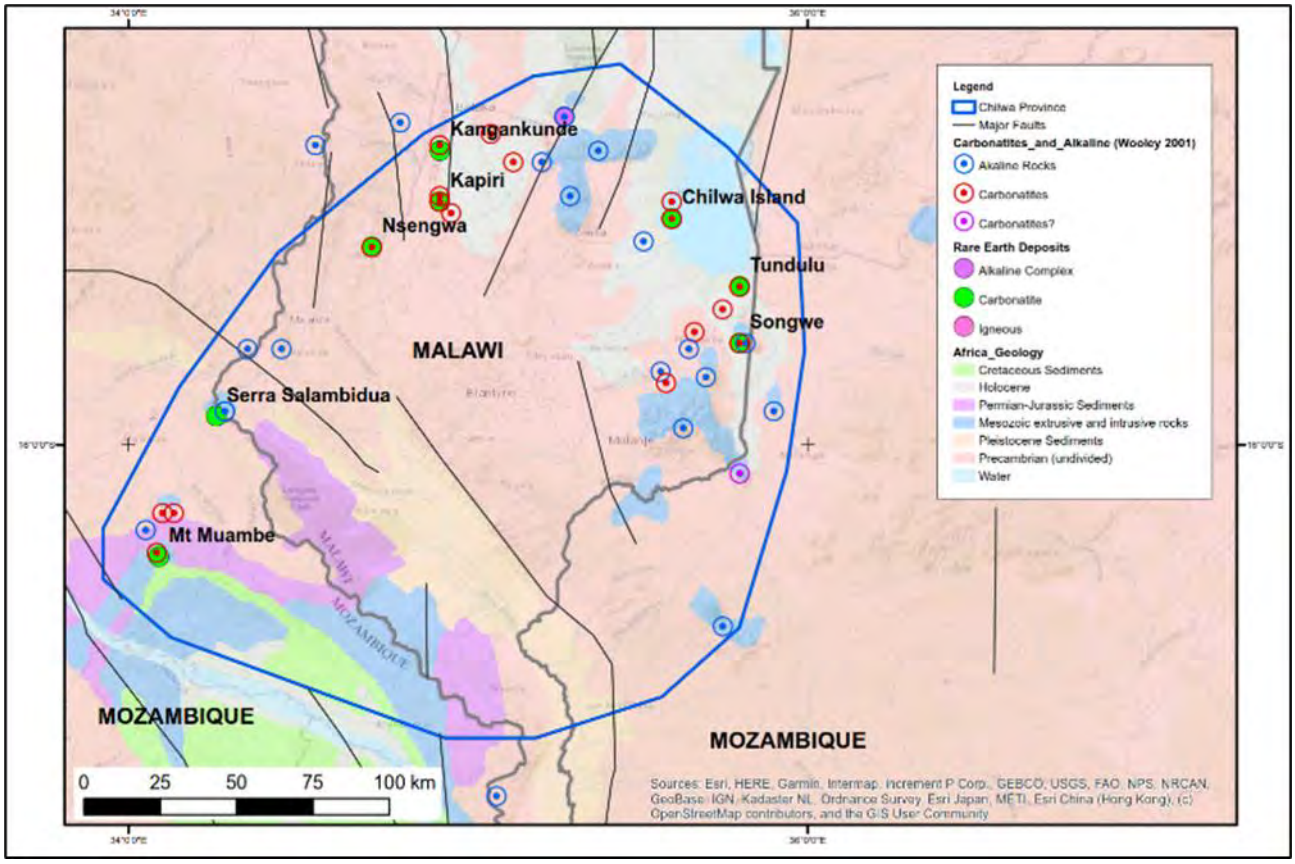
Regionally, intra-continental carbonatite provinces are associated with large igneous provinces and rift systems (Ernst, 2010, Harmer and Nex, 2016). Most carbonatites in Africa are Cretaceous or more recent, but several periods of carbonatite formation are noted in the Neoproterozoic, Mesoproterozoic and Paleoproterozoic (Chauque, 2008).

The Monte Muambe carbonatite has not been dated yet. Geological evidence shows that it is post Upper Karoo. It is usually considered as being a part of the Chilwa Alkaline Igneous Province (Woolley, 1991) (Figure 4.7) which encompasses a considerable number of occurrences of alkaline rocks and carbonatites, while mafic rocks are extremely scarce. It is in this province that carbonatites were recognized and described in Africa for the first time (Woolley, 1991).

The age of the Chilwa Alkaline Province intrusions ranges from 111 to 137 My (Eby et al, 2004), which corresponds to the lower part of the Cretaceous.

The province is characterized by a relative abundance of REE deposits, including the Monte Muambe carbonatite in Mozambique, the Kangankunde and Songwe carbonatites in Malawi, as well as the Chambe clay-associated deposit, also in Malawi.

Figure 4.7 Map of the Chilwa REE Province



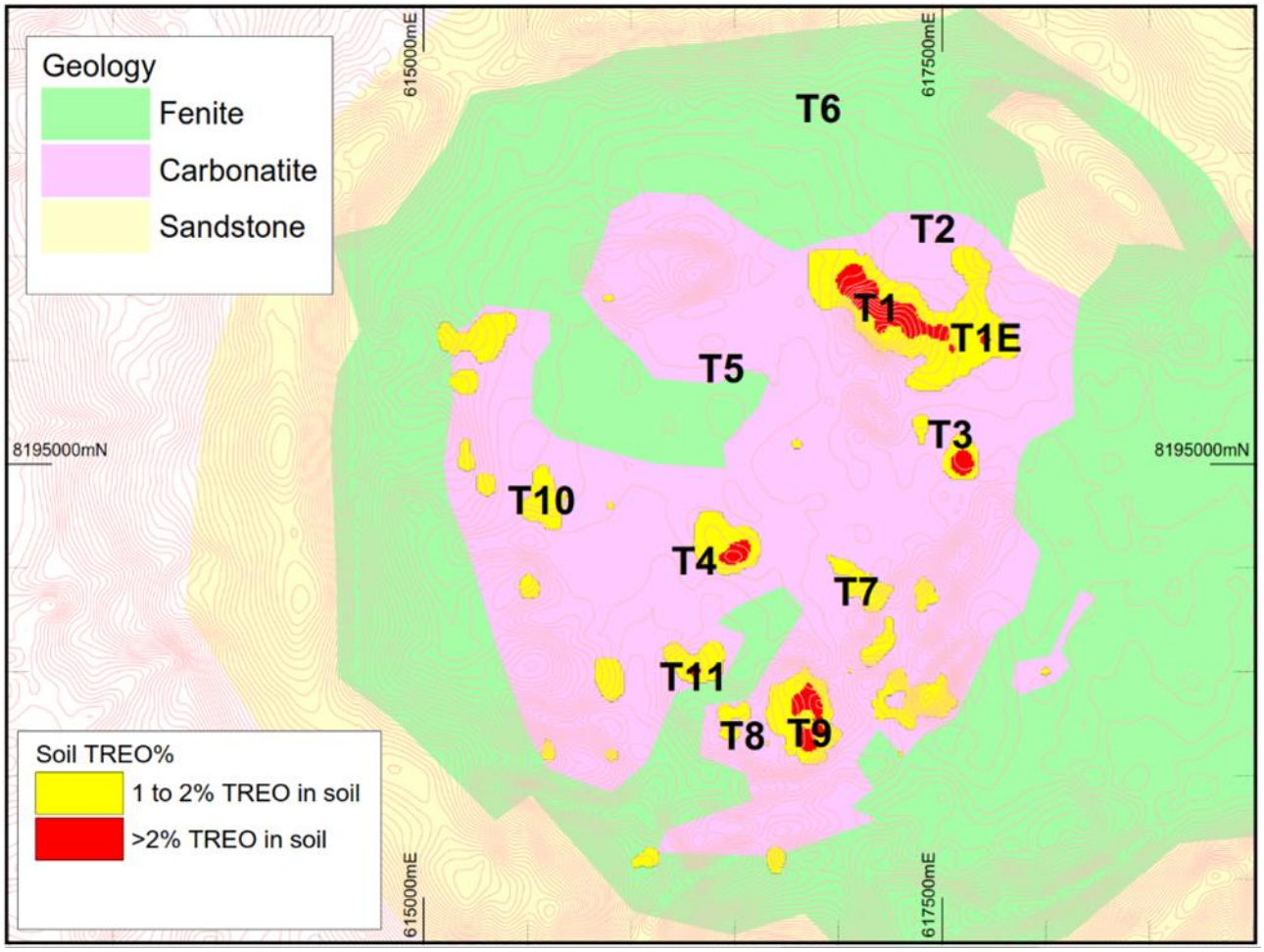
4.3.3 Monte Muambe REE mineralisation

Not all carbonatites carry REE mineralisation at Monte Muambe. Both low grade (0.5 to 1% TREO) and high grade (>1% TREO) mineralisation, as defined further below in this section, are encountered in

specific REE-enriched parts of the carbonatite intrusion. Outcropping REE mineralisation is relatively easily identified using the soil sampling survey results, as the soil geochemistry largely reflects the bedrock geochemistry due to the limited thickness of the soil cover (typically 50 cm to 2 m). This does not apply to blind mineralisation such as that of Target 6.

The map of Figure 4.8, therefore, gives a good idea of the repartition of REE mineralisation at the scale of the Monte Muambe carbonatite intrusion. The position of REE mineralisation reflects both primary (magmatic) and secondary (hydrothermal and supergene) processes. Areas with 1 to -2% TREO in soil (yellow), and with >2% TREO in soil (red), roughly correspond to areas with low grade and high grade mineralisation, respectively, in the bedrock.

Figure 4.8 Monte Muambe soil sampling survey results map



Lithology and geochemistry

REE mineralisation at Monte Muambe has been encountered in both Ca-carbonatites and Mg-carbonatites, as well as in fenites. In the fenites, REE mineralisation is likely to be largely carried by small carbonatite veinlets or stockworks, or to originate from hydrothermal remobilization of REE from carbonatites. The later process has been documented at the Songwe carbonatite in Malawi (Broom-Fendley et al, 2021), but more petrological studies will be necessary to ascertain this.

Usually, carbonatite-hosted REE mineralisation in carbonatite complexes tend to occur preferentially in magnesio-carbonatites and ferro-carbonatites (see for example Harmer and Nex, 2016); however, this does not appear to be the case at Monte Muambe based on current data (Figure 4.9).

Additionally, Ca-carbonatites and Mg-carbonatites show substantially the same range of TREO% (Figure 4.9, left), including a marked break around 2.5% TREO between two grade populations (Figure 4.10).

However, two distinct geochemical domains were identified based on their REE and Nb grades (all laboratory assay results) based on their NdPrOx/TREO ratio and of their Nb content (Figure 4.11):

- High grade mineralisation (HGM), with over 1% TREO (av. 2.381%), and a low level of Nb (typically below 500 ppm Nb).
- Low grade mineralisation (LGM), with 0.5% to 1% TREO (av. 0.729%), and a high level of Nb (typically above 500 ppm Nb).

These two domains show a relatively good consistency at the scale of the intrusion and are often juxtaposed. On a ternary map from the airborne geophysical survey data, areas underlain by HGM tend to be associated to thorium anomalies, and areas underlain by LGM tend to be associated to uranium anomalies. This is particularly true at Target 1 and Target 4.

The geochemical characteristics of both domains are summarized in Table 4.3.

Figure 4.9 TREO% vs MgO% (left) and TREO% vs Fe2O3% (right) – all laboratory assay results

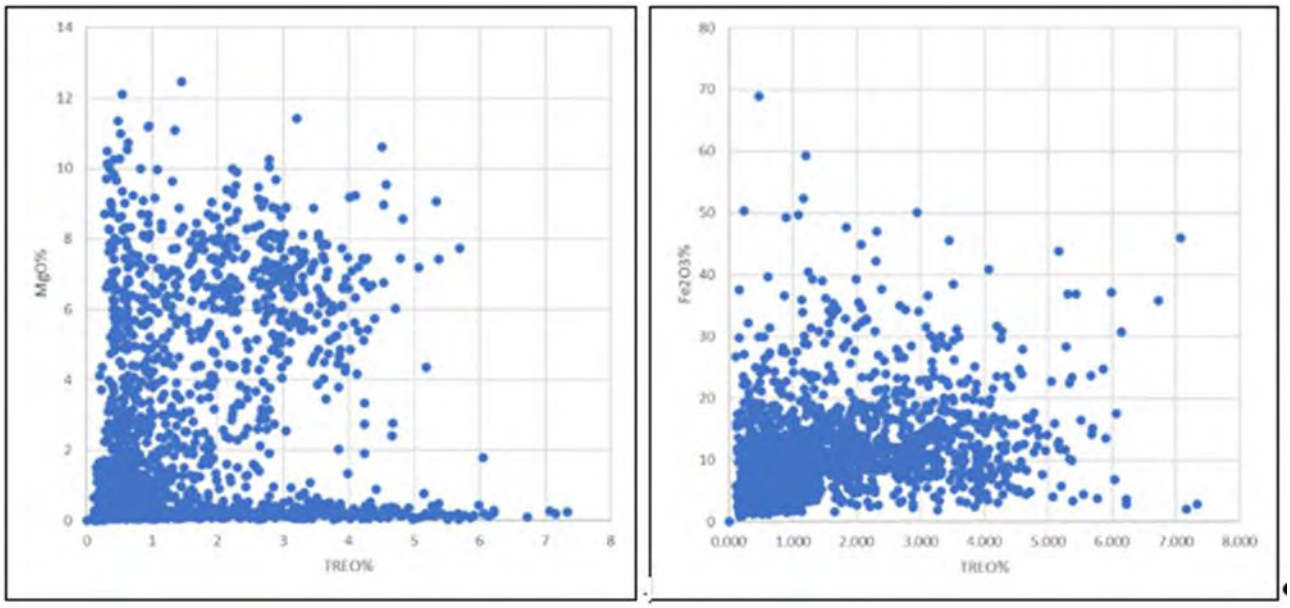
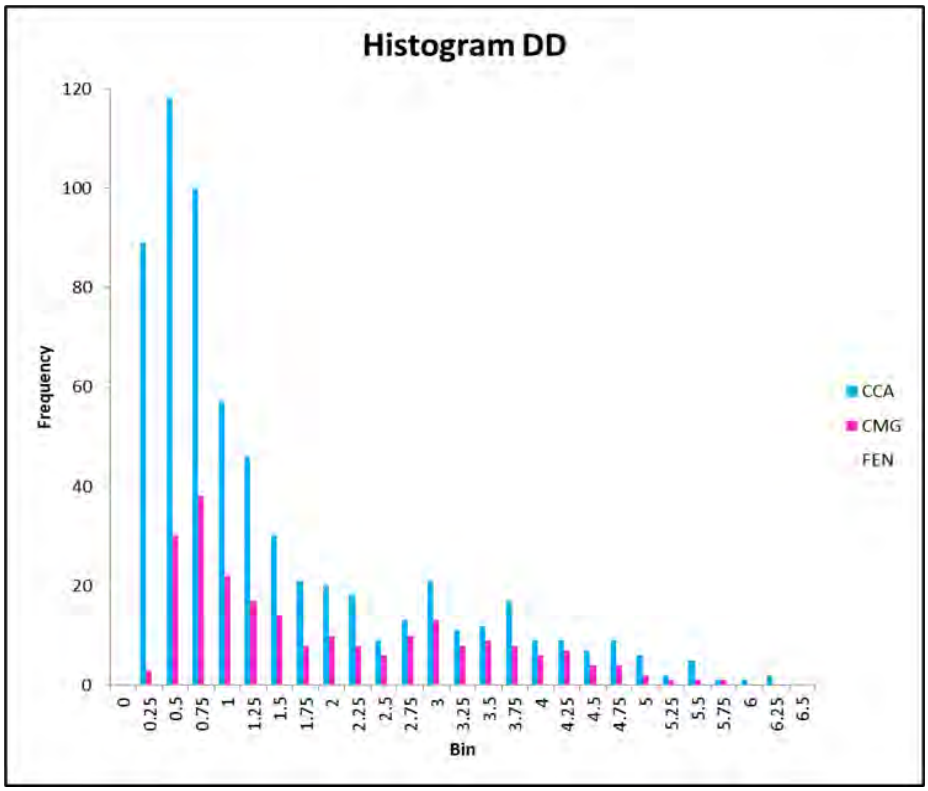


Table 4.3 Average REE, Nb, Th and U content of HGM and LGM domains (all laboratory assay results)

		TREO%	Ce_ppm	Dy_ppm	Er_ppm	Eu_ppm	Gd_ppm	Ho_ppm	La_ppm	Lu_ppm	Nd_ppm	Pr_ppm	Sm_ppm	Tb_ppm	Tm_ppm	Y_ppm	Yb_ppm	Nb_ppm	Th_ppm	U_ppm
HG >1% TREO	Min	1.000	3122	16	8	16	39	3	807	1	704	272	69	4	1	89	4	6	18	2
	Max	7.333	29323	460	284	179	479	98	20439	36	7578	2719	721	66	42	3095	244	5266	1662	168
	Mean	**2.381**	**9215**	**91**	**44**	**55**	**134**	**16**	**6570**	**5**	**2109**	**782**	**221**	**17**	**6**	**499**	**36**	**497**	**290**	**20**
	SD	1.197	4926	47	24	23	60	9	3942	3	1033	398	95	8	3	285	19	597	206	15
LG 0.5-1% TREO	Min	0.500	1369	13	7	11	21	3	399	1	384	142	43	2	1	91	5	4	14	1
	Max	0.999	4288	258	123	98	258	48	3056	1448	2399	609	341	46	15	1267	102	6902	722	150
	Mean	**0.729**	**2614**	**72**	**33**	**38**	**98**	**13**	**1495**	**6**	**879**	**268**	**133**	**13**	**4**	**359**	**25**	**780**	**164**	**16**
	SD	0.148	587	32	15	14	40	6	459	59	240	63	46	6	2	173	12	656	117	13

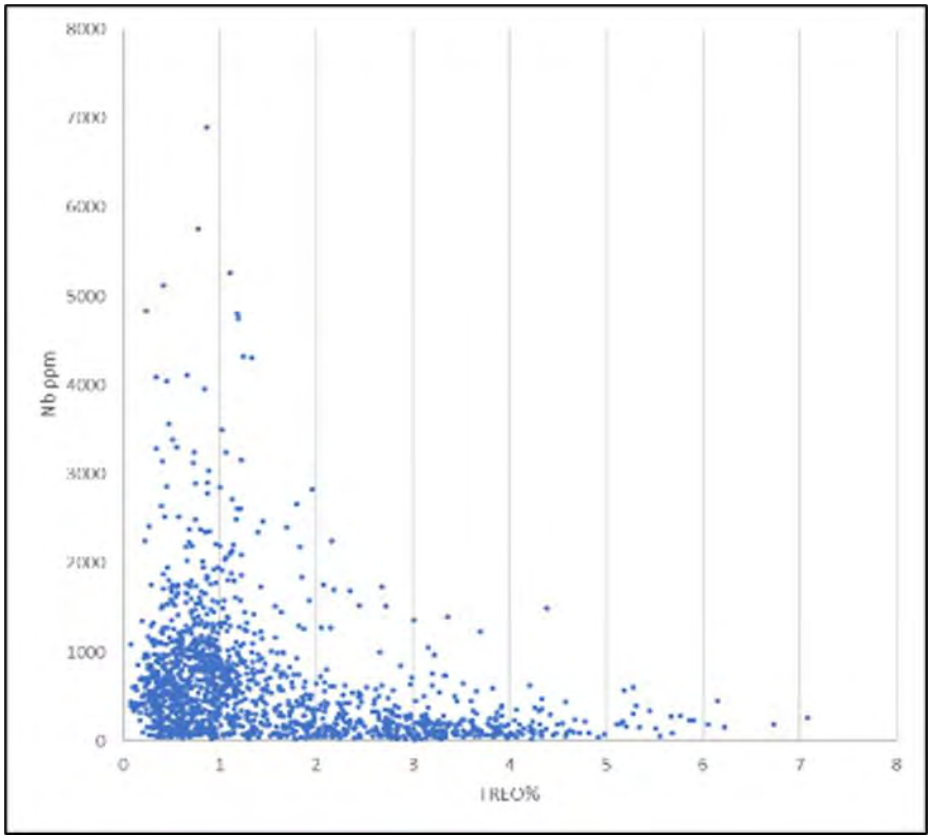
Note: SD – Standard deviation; TREO – Total Rare Earth Oxide

Figure 4.10 TREO% histogram for CCA and CMG carbonatites



Note: These are DD assay results. There is a break between two grade populations at 2.5% TREO.
Source: Snowden Optiro, 2023

Figure 4.11 TREO% vs Nb ppm, 2 m RC composites



Source: Snowden Optiro, 2023

REE mineralogy

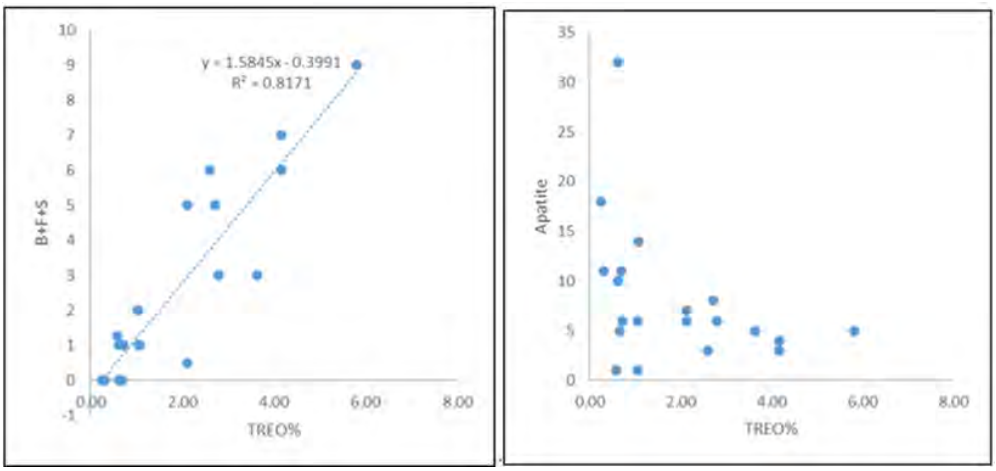
In 2022, the Company submitted 20 samples to Intertek Laboratory in Perth for XRD analysis and geochemical analysis. The samples were selected to cover a range of TREO content, lithology, weathering, and chemical composition. Results are summarized in Table 4.4.

These results show that REE are contained in three minerals at Monte Muambe, namely bastnaesite (the most common), florencite and synchisite. There is a good correlation between the sum of these three minerals expressed as wt% and the TREO% from geochemical assays of the same samples (Figure 4.12), and no correlation between Apatite wt% and TREO%, indicating that no or little REE are contained in apatite. The sample is a carbonatite containing 1.549 wt% TREO. REE mineral form agglomerates ranging in size from 0.5 to 2 mm. This is confirmed by observations on core X-ray fluorescence (XRF) maps (see below).

The two samples containing synchisite as the only REE mineral have a high proportion of Nd and Pr, with a NdPrOx/TREO ratio of 0.44. For comparison, the NdPrOx/TREO ratio for samples containing bastnaesite and/or florencite is 0.17. Of the three samples containing florencite, two belong to the fenite domain. Niobium in LGM is contained in pyrochlore (Table 4.4).

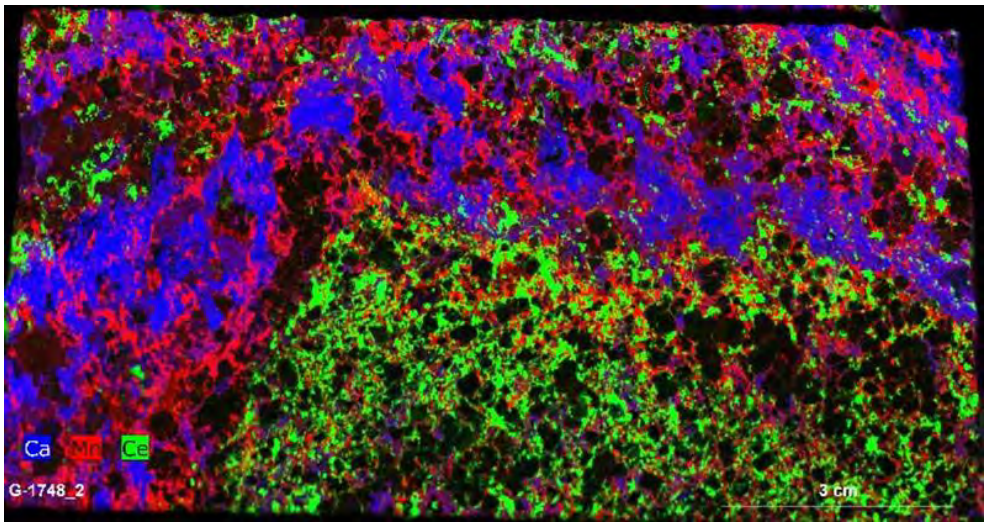
Several core samples were submitted to Dr Hamed Pourkhorsandi of the Université Libre de Belgique in Brussels for mineralogical studies. As part of this work, XRF mapping of half core samples was undertaken. The results are preliminary in nature but give an idea of the distribution of REE minerals in these samples (Figure 4.13 and Figure 4.14). Core sample G1746 (drill hole MM001, 16.62 to 17.54 m) is a carbonatite containing 0.682 wt% TREO. REE mineral form agglomerates ranging in size from 200 µ to 1.3 mm, as well as fissure fillings.

Figure 4.12 TREO% vs bastnaesite + florencite +synchisite wt% (left); TREO% vs apatite wt% (right)



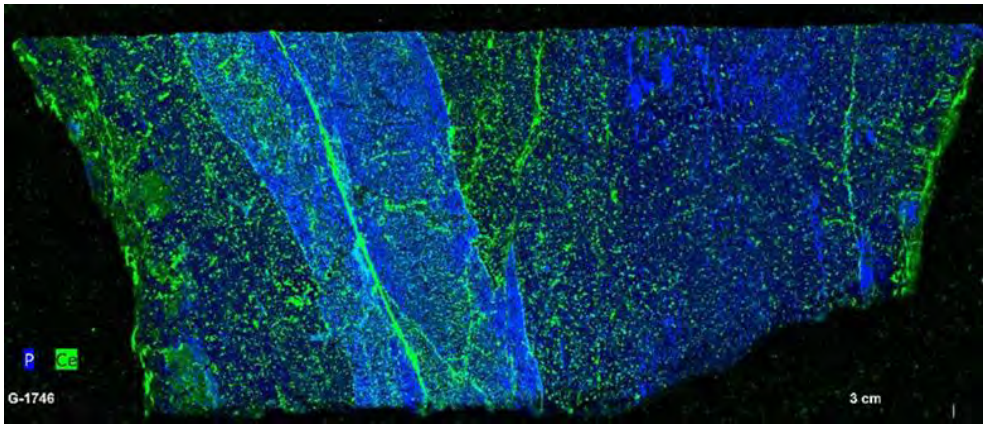
Source: Snowden Optiro, 2023

Figure 4.13 Example of XRF map (Ca, Mn, Ce) of core sample G1748



Note: XRF map for drill hole MM001, 63.43 to 63.64 m.
Source: Altona, 2023

Figure 4.14 Example of XRF map (P Ce) of core sample G1746



Note: XRF map for drill hole MM001, 16.62 to 17.54 m
Source: Altona, 2023

Table 4.4 2022 XRD Analysis results summary (results in wt%)

Sample ID	Domain	LITHO	TREO %	NdPrOx %	Apatite	Bastnaesite	Florencite	Synchysite	Pyrochlore	Amorphous Content*	Ankerite	Calcite	Dolomite	Fluorite	Barite	Celestite	Gorceixite	Goethite	Hematite	Magnetite	Pyrite	Cryptomelane	Pyrolusite	Expanding clay**	Mica**	Opaline Silica	Potassium Feldspar	Quartz	Siderite	Strontianite
B8201	HG	FEN-Weath	2.12	0.37	7	0.25	0.25		<0.5	30	<0.5	2		9				11	2			2	<0.5	6	18		10	1		<0.5
B8202	HG	CCA-Weath	4.16	0.59	3	6				19		38		16				9	1			4	<0.5					1		
B8203	HG	CCA	0.69	0.15	11				<0.5	14		59		5				9							<0.5			<0.5		
B8204	HG	CCA	0.61	0.11	10				<0.5	15		53		15				5							1			<0.5		
B8205	HG	CMG	2.12	0.22	6	5			<0.5	19	6	1		2	1	1		1	14	5			3		<0.5			<0.5	34	
B8206	HG	CMG	0.31	0.05	11				<0.5	17	28	3		14				9	15			1						1		<0.5
B8207	HG	CMG	0.72	0.15	6	1			<0.5	18	29	2		19				13	7									<0.5		
B8208	HG	CMG	1.04	0.16	6	2				16	48	2		14		5		3	1									<0.5		<0.5
B8209	LG	CMG	0.25	0.04	18					17	23	16		2	1	1		12	2			2						2		3
T8156	LG	CCA	1.06	0.21	14	1			1	15		55		7				1	3						1			<0.5		
Z8218	HG	FEN	2.60	0.34	3	6				19		5		21	7			9	2		<0.5	3						25		
Z8281	HG	CCA	5.81	0.63	5	8	1			22		2		23	29			3	1			3						2		
Z8526	HG	CMG	4.16	0.52	4	7				22		10	20	17	3			9	3		1	2	2					<0.5		
Z8563	Waste	FEN	2.80	0.44	6	1	2		2	28	<0.5			4			6	16	2			2	1		10	5	11	1		
Z8569	Waste	FEN	0.58	0.10	1	0.25	1		<0.5	22				8			2	6	2			2	1	<0.5	5	4	45	1		
Z8763	**HG**	**CCA**	**2.72**	**0.33**	**8**	**5**			**<0.5**	**29**		**<0.5**		**28**	**5**			**12**	**6**		**1**	**4**			**<0.5**			**1**		
Z8820	**LG**	**CMG**	**0.65**	**0.14**	**5**				**1**	**16**	**4**	**50**		**2**				**1**	**2**	**1**		**2**			**1**			**1**	**11**	**1**
Z8926	**LG**	**CCA**	**3.64**	**1.57**	**5**			**3**		**31**				**2**	**19**			**18**	**6**			**4**	**9**				**2**	**1**		
Z8955	**LG**	**CCA**	**1.05**	**0.46**	**1**			**1**		**30**		**1**		**3**	**12**			**27**	**11**			**4**	**8**				**1**	**1**		
Z8989	**LG**	**CCA**	**0.62**	**0.15**	**32**	**1**			**1**	**20**		**19**	**2**	**3**	**1**			**7**	**6**	**<0.**		**1**		**<0.5**	**1**		**1**	**<0.5**	**1**	**<0.5**
Average HG	**HG**		**2.25**	**0.30**	**7**	**4**	**1**			**20**	**28**	**16**	**20**	**15**	**9**	**3**		**8**	**5**	**5**	**1**	**3**	**3**	**6**	**10**		**10**	**5**	**34**	
Average LG	**LG**		**1.21**	**0.43**	**13**	**1**		**2**	**1**	**22**	**14**	**28**	**2**	**3**	**8**	**1**		**11**	**5**	**1**		**3**	**9**		**1**		**1**	**1**	**6**	**2**

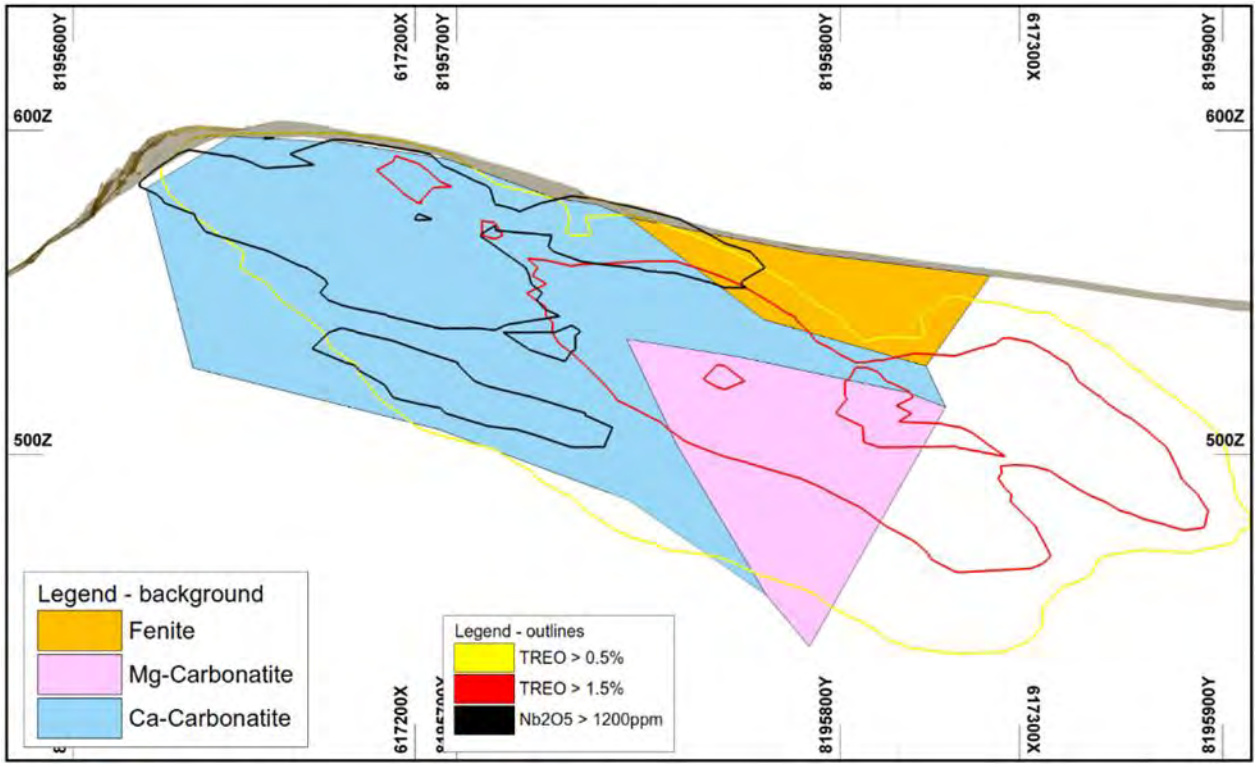
REE mineralisation geometry – Target 1

The core part of Target 1 consists of a 500 m long HGM zone, 40 to 80 m thick, and dipping towards the NE. The dip angle varies from 35° (central part) to 50° (NW and SE parts).

The following observations can be made (Figure 4.15 and Figure 4.16):

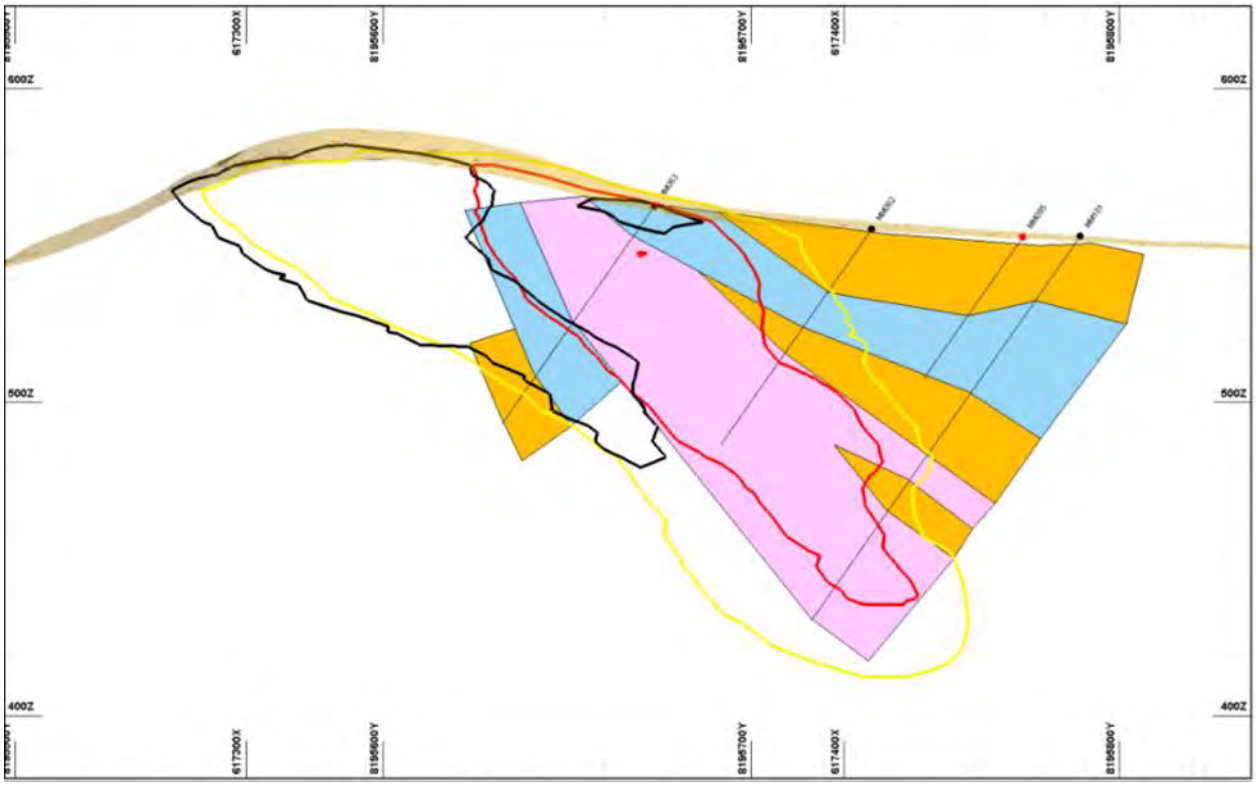
- The hanging wall of the HGM zone, where it does not outcrop, often corresponds to or is close to the foot wall of overlying fenites.
- HGM occurs in both Ca-carbonatite and Mg-carbonatite and across the boundary between these two lithologies.
- LGM (Nb_2O_5> 1,200 ppm and TREO <1%) occurs mostly in Ca-carbonatite and forms a 20 to 60 m thick zone at the footwall of the HGM zone. LGM is also more rarely present at the hanging wall of the HGM, especially in the SE part of Target 1.
- In Figure 4.15 the cross-section passes through drill holes MM058 and MM097. Grade outlines correspond to grade shells from the block model (red polygons = 1.5% TREO cutoff; black polygon = 1,200 ppm Nb_2O_5 cutoff). In Figure 4.16 the cross-section passing through drill holes MM063 and MM101.

Figure 4.15 SW-NE cross section of the central part of Target 1



Source: Snowden Optiro, 2023

Figure 4.16 SW-NE cross section of the southern part of Target 1

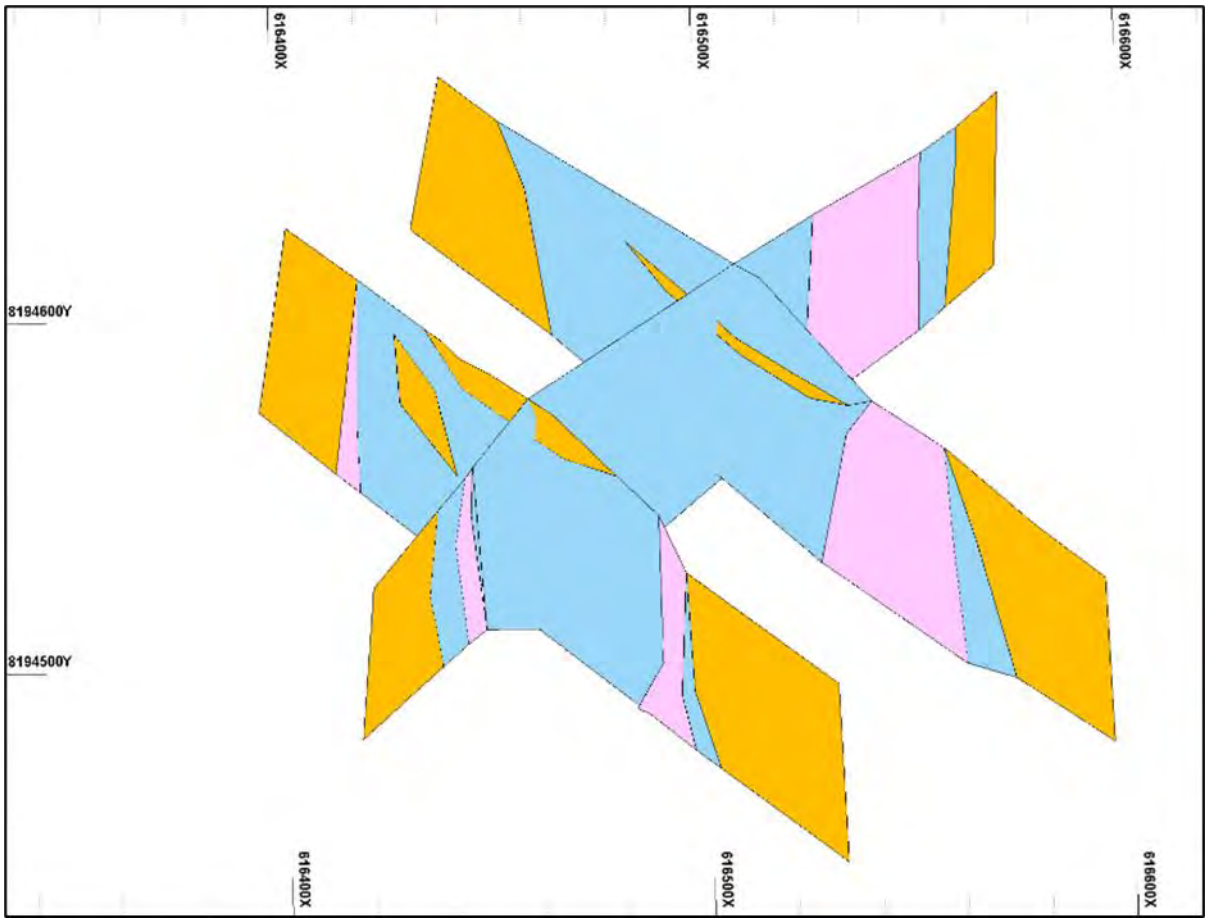


Source: Snowden Optiro, 2023

REE mineralisation geometry – Target 4

REE mineralisation at Target 4 is associated to a sub-vertical carbonatite pipe hosted in fenite and having a diameter of 130 to 170 m at surface level. The pipe consists mostly of Ca-carbonatite, with a ring-shaped Mg-carbonatite dike close to or at the contact between the pipe and the host fenite and pinching out on the NW side (Figure 4.17). As can be seen in Figure 4.18, high grade intercepts are not bound by lithological contacts. HGM forms a zone which is largely associated to the carbonatite pipe, but which does not follow exactly its boundaries.

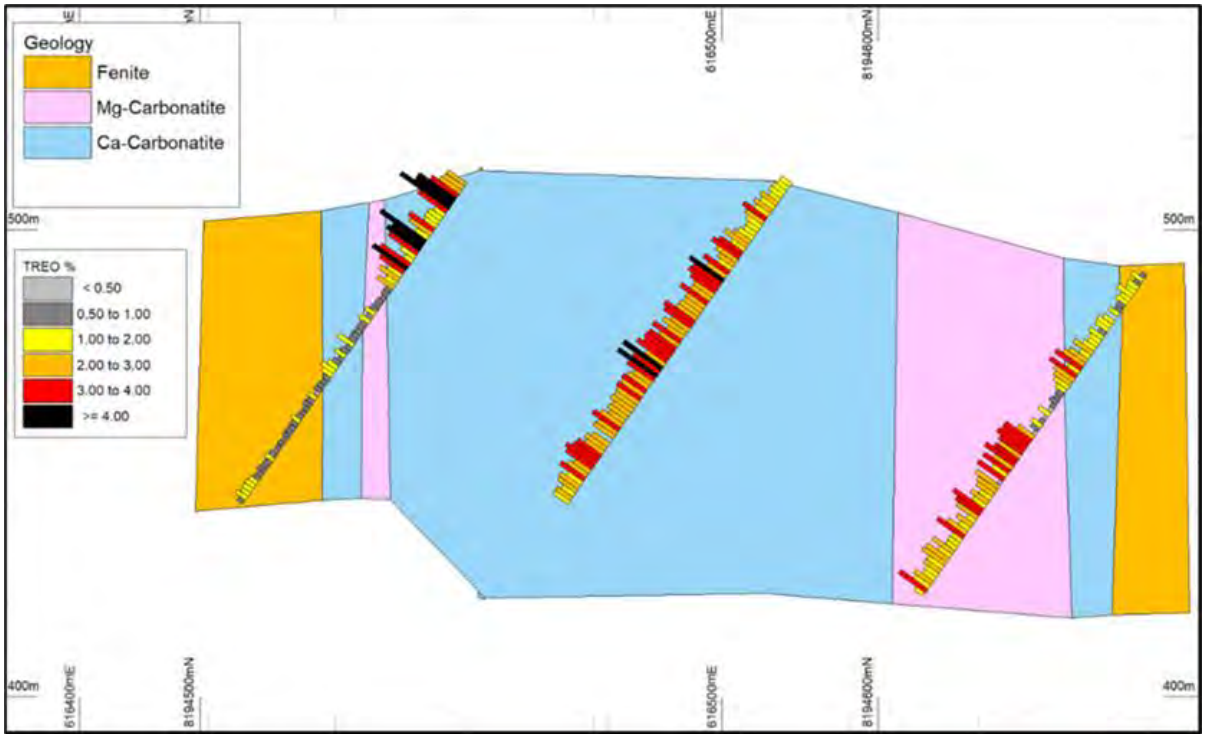
Figure 4.17 Block diagram of Target 4, looking north



Note: Orange: fenite, blue: Ca-carbonatite and mixed Ca-carbonatite/fenite, pink: Mg-carbonatite and mixed Mg-carbonatite/fenite

Source: Snowden Optiro, 2023

Figure 4.18 SW-NE section of Target 4 with borehole logs (TREO%)



Source: Snowden Optiro, 2023

REE mineralisation controls

As observed at Targets 1, 4 and 6:

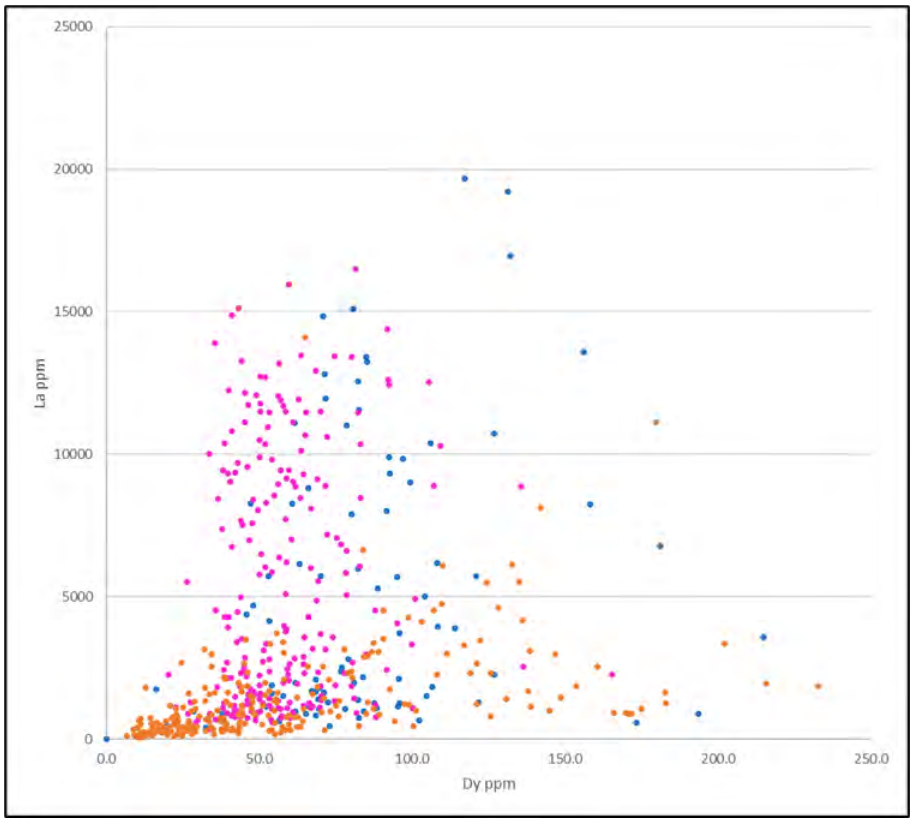
- LGM is mostly associated with Ca-carbonatites.
- HGM is associated with both Ca-carbonatites and Mg-carbonatites, and often extends across boundaries between these two lithologies. This suggests that lithology is not the sole control for HGM, and that the current geometric distribution of REE at Monte Muambe may be the result of post-magmatic remobilisation and redeposition across geological boundaries.
- At Target 1 and at Target 6, HGM seems to be preferentially developed immediately below the contact between carbonatites and overlying fenites (see Figure 4.15 and Figure 4.16), which has a low dip angle, suggesting that the fenites may have acted as a conduit and/or as a cap during remobilisation and redeposition of REE.
- Variations of the NdPrOx /TREO ratio as well as comparisons between light REE and heavy REE; for example La and Dy (Figure 4.19) may indicate that REE fractionation occurred during the process resulting in the currently observable mineralisation. This could involve:
  - Selective remobilisation of light REE (La and Ce in particular)
  - HREE enrichment in fenites (similar to occurrences described in Malawi by Broom-Fendley et al, 2021).
- The 3D inversions of the 1998 helicopter-borne magnetic survey prepared by Altona's consulting geophysicist Joseph Komu in 2021 showed the presence of several Analytical Signal (AS) anomalies (Figure 4.20). Five of these anomalies are relatively shallow, extending from 100 to 700 m below the surface. The other two are much larger and extend down to 2 km below the surface. It is noteworthy that two of the shallow anomalies are located immediately below Target 1 and Target 4 respectively, and that another four targets from the soil sampling survey (Targets 8, 9, 10 and 11) are located immediately above AS anomalies. These anomalies could be related to Fe-carbonatites that may have acted as a source of REE at the scale of the whole intrusion. Testing this hypothesis would require deep drilling below Target 1 and Target 4, although using the location of the anomalies as a prospecting guide and successfully identifying new HGM would also prove it.

Available information therefore points towards HGM resulting from the remobilisation of magmatic REE mineralisation through hydrothermal or supergene processes. Similar processes have been documented and described in other carbonatite associated REE occurrences, for example at the Okurusu fluorspar deposit in Namibia (Cangelosi et al, 2019). This remobilisation would involve fractionation of La and Ce (with a decrease of the NdPrOx/TREO ratio) and would occur in a pervasive manner across different types of carbonatites, with overlying fenites acting as a capping and guiding the geometry of the final mineralisation.

Source carbonatites may correspond to proximal LGM, or to deeper-seated REE mineralisation possibly linked to the AS anomalies mentioned above.

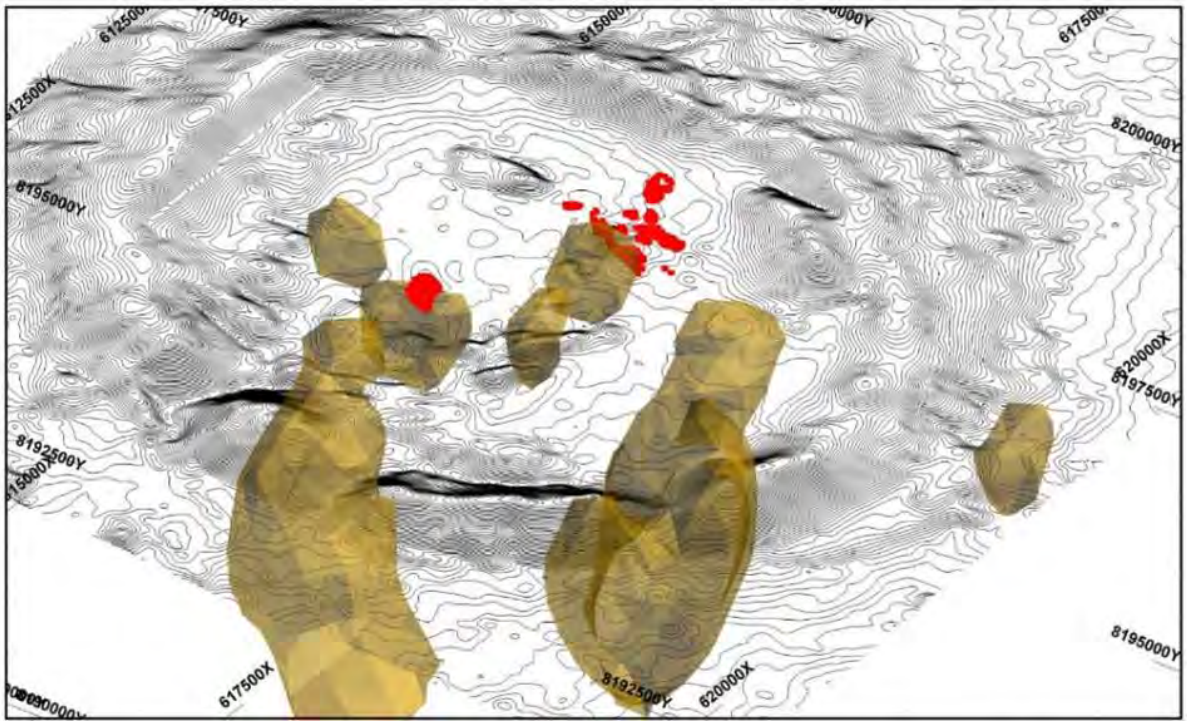
Additional petrological, mineralogical and geochemical work will be necessary to fully understand the REE mineralisation controls at Monte Muambe.

Figure 4.19 Lanthanum vs dysprosium scattergram



Note: DD holes only. Orange: fenite, blue: Ca-carbonatite, purple: Mg-carbonatite
Source: Snowden Optiro, 2023

Figure 4.20 Oblique view of Monte Muambe, looking NNW



Note: Position of AS anomalies is shown in brown. Block models for Target 1, Target 4 and Target 6 (red– TREO>1 %).
Source: Snowden Optiro, 2023

4.3.4 Fluorite mineralisation

Monte Muambe was originally considered as a fluorspar (or fluorite) project, and fluorspar exploration has taken place from the 1960s to the 2010s. The occurrence of fluorspar (CaF_2) in some carbonatite deposits is well documented (Hagni, 2015), and fluorspar is mined from carbonatites in several parts of the world, including the Okorusu mine in Namibia.

Exploration for fluorspar at Monte Muambe culminated with the publication by Globe Metals of an Inferred Mineral Resource (JORC, 2004) of 1.63 Mt of fluorite mineralisation with a grade of 19% fluorite with a cut-off of 10% CaF_2.

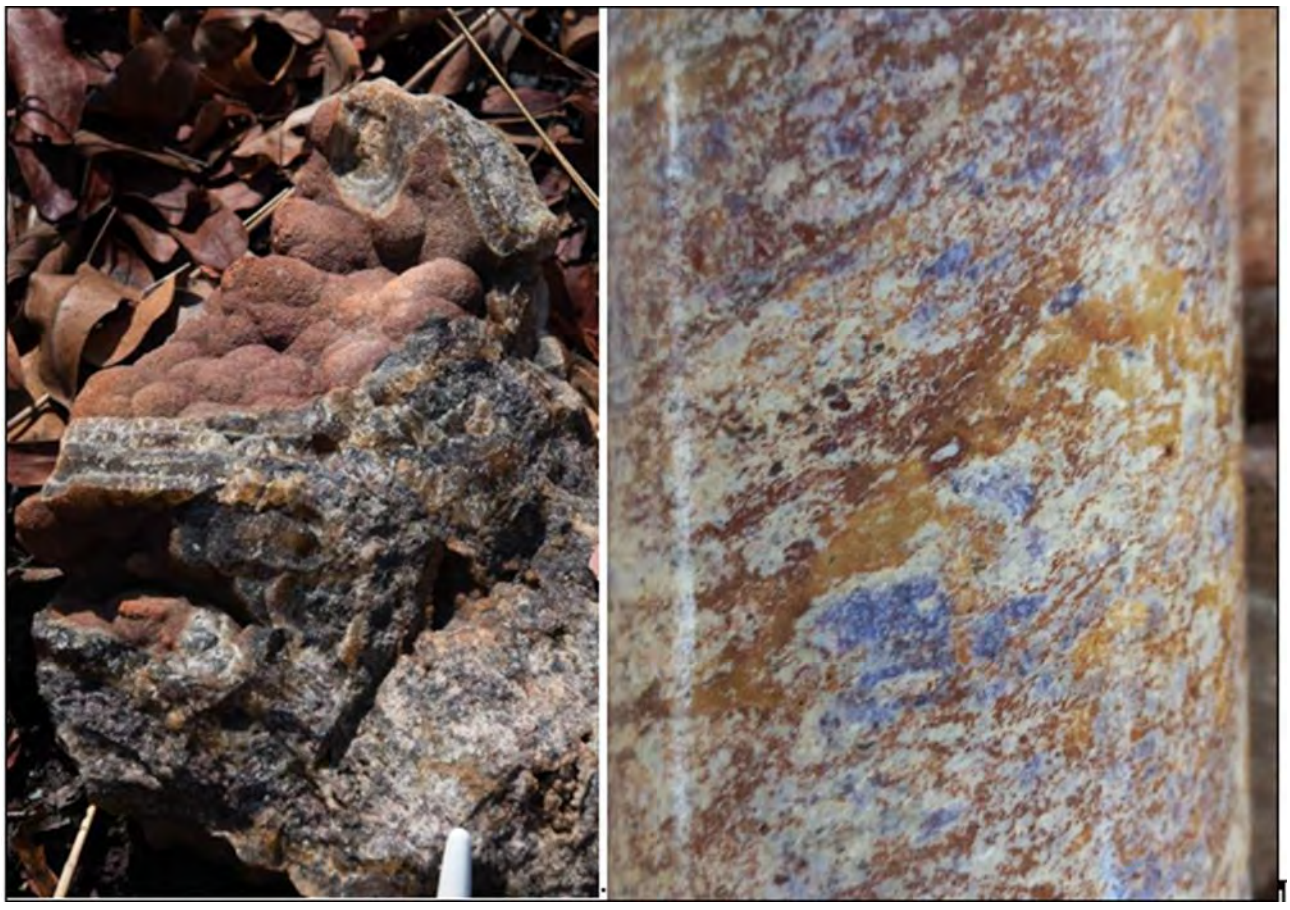
Fluorspar occurs in two types of geological contexts at Monte Muambe (Figure 4.21):

- As an accessory mineral in carbonatites.
- As late hydrothermal veins cutting across carbonatites and fenites.

Fluorspar in hydrothermal veins has a botryoidal habit, which is relatively unusual for this mineral.

No hydrothermal fluorspar mineralisation has been observed during resource drilling at Target 1 and Target 4, although disseminated fluorspar is common. XRD analysis show an average fluorspar content of 15 wt% in the high-grade mineralisation. This is consistent with a 6.52 wt% average fluorspar content in HGM, which corresponds (assuming all the fluorspar contained in fluorite) to 13.4 wt% fluorspar.

Figure 4.21 Botryoidal honey-coloured fluorite from hydrothermal veins (left); anhedral blue fluorite in carbonatite (right)



4.4 Snowden Optiro site visit

The Competent Person's representative, R.N. Barnett, visited the Monte Muambe prospecting site from 7 to 10 August 2013 (two days physically onsite). Key aspects addressed during the site visit were inspection of RC drilling and sampling procedures and density retests. In addition, the survey method, QC sample insertions and assay results, and database control were discussed with the General Manager.

Findings were as follows:

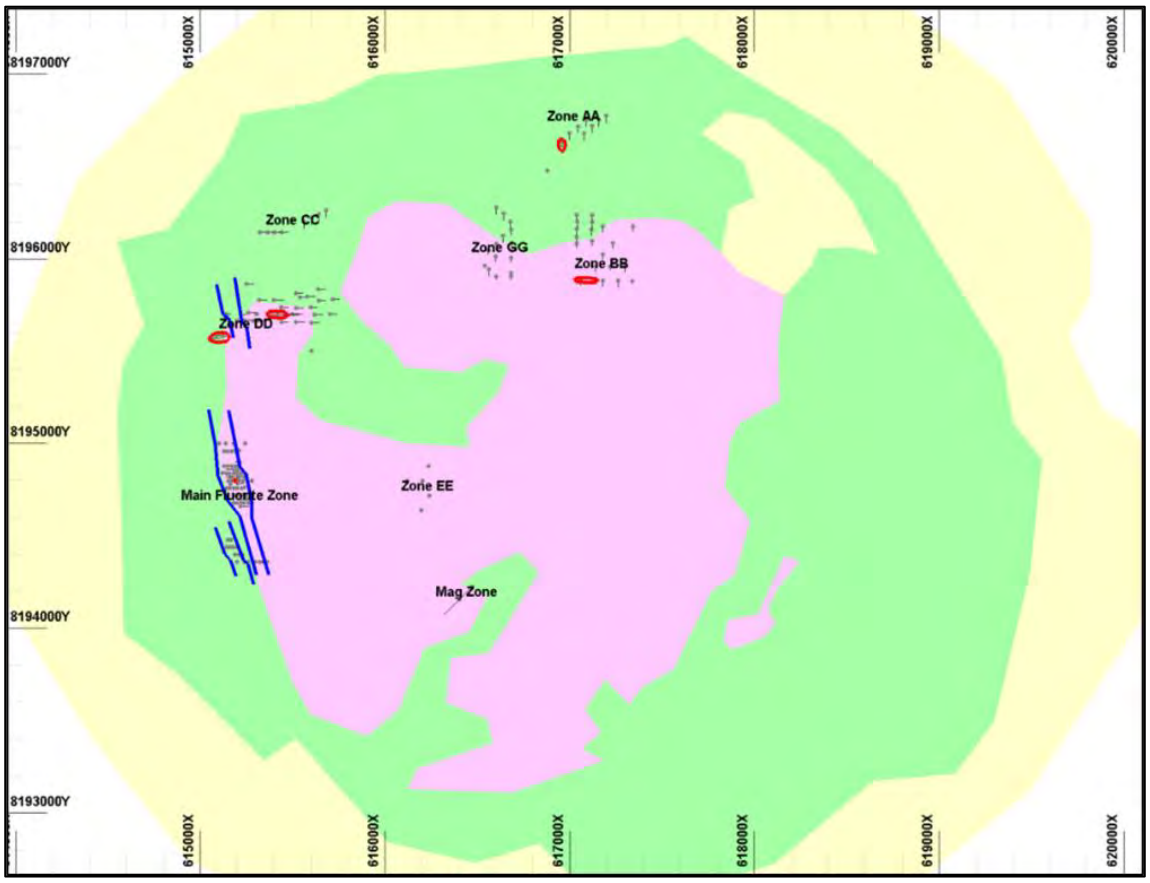
- RC sampling was well controlled and conducted according to the standard operating procedure.
- Density check measurements were conducted on seven core pieces using the standard operating procedure for density adapted for half core and using check weights to check the scale calibration. The retest results were within 2.5% of the original density measurements which is deemed acceptable for resource estimation.
- The survey method used for both borehole co-ordinates and surface digital terrain model uses an internal beacon for control with co-ordinates established using a DGPS system operated by a trained technician.
- Analytical QC insertion rates for both DD and RC samples average at 3.5 to 3.7% which is deemed by the Competent Person to be lower than the generally applied 5% insertion rates for resource estimation. Internal checks comparing 2 m and 3 m composites are deemed, by the Competent Person, to adequately address this issue.
- Core and RC sample storage was inspected with some shortfalls in standards, especially regards RC sample storage. This is not deemed to have impacted on sample security to date, but recommendations were made to improve storage to an acceptable level.
- Database control was inspected. To date the database uses MS Excel spreadsheets controlled by the General Manager with backup on the Company's server. While this has been an acceptable level of control to date it was recommended that improved systems and controls be put in place for future prospecting work.

4.5 Historical and recent exploration

4.5.1 Historical exploration

A detailed discussion of historical exploration is described in section 3.6 of this report. Note that the Globe drilling data from 2009 – 2013 for the fluorite Mineral Resources reported does not lie in the same position as the Altona REE targets (Figure 4.22). These exploration targets were assessed during fluorspar and REE exploration between 2010 and 2012; Globe drilled 165 boreholes in total (including 68 borehole and 5,589 m of drilling not utilised in the fluorite MRE) and the data outside of the fluorite Mineral Resource was utilised for purposes of understanding the deposits, REE target generation and REE target testing by both Globe and Altona. Field mapping is known to have been comprehensively completed by Globe as evidenced from their geological map as seen in Figure 4.1.

Figure 4.22 Exploration targets assessed by Globe Metals and Mining



Note: Grey dots: drill hole collars. Red outlines: collars with REE intercepts. Blue lines: fluorite zones
Source: Altona, 2021

4.5.2 Recent exploration

2021

Altona secured the Monte Muambe as a REE project in June 2021. Initial exploration work was designed to:

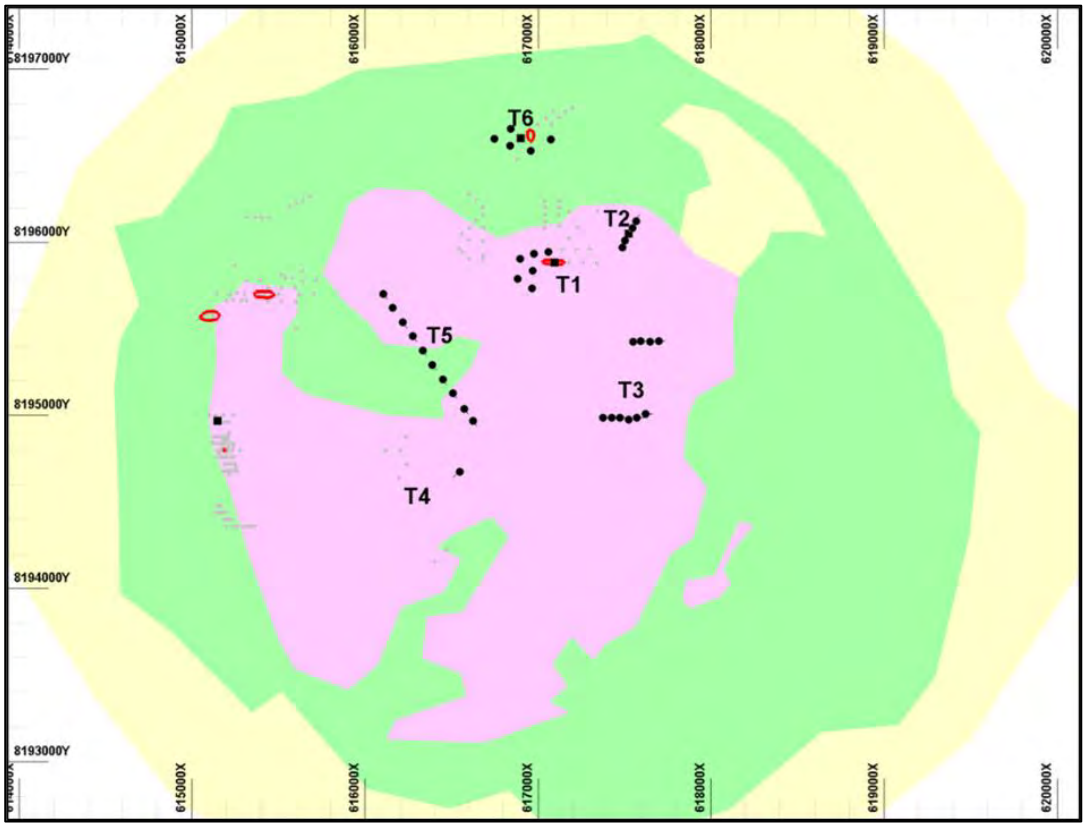
- Test the lateral extension of the most promising REE intercepts from legacy drilling at Target 1 and Target 6 (Figure 4.23).
- Test the possible presence of residual REE deposits in a topographically low part of the Monte Muambe basin (Target 5).
- Test targets based on limited legacy outcrop sampling and soil lines, as well as from legacy (1998) helicopter-borne geophysical survey data (Targets 2, 3 and 4).
- Carry out a DD campaign to help understanding better the geological characteristics and controls of REE mineralisation, and to collect core samples for density measurements.

In total in 2021, five diamond core boreholes were drilled (590.7 m) and 36 RC boreholes (2,518 m). The 2021 drilling campaign showed:

- That Target 1 was not extending towards the west but was potentially extending towards the east.
- That Target 6 was potentially too deep (50 m below surface) to be mineable – it was therefore removed from subsequent exploration plans.
- That no residual REE deposits exist at Monte Muambe – they seem to have been eroded and removed at some point in the history of the deposit.

- The presence of high-grade REE mineralisation (long intercepts with > 2% TREO) at Target 3 and Target 4 (both new discoveries).

Figure 4.23 Altona 2021 REE exploration summary



Note: Black dots are RC collars; black squares are DD holes collars; grey dots are legacy hole collars
Source: Altona, 2021

2022

In February 2022, Altona acquired a portable XRF (pXRF) analyser with the capacity to analyse for La, Ce, Nd, Pr and Y. The use of the pXRF analyser allowed for quasi real time (within 24 hours) geochemical assessment of samples by using the sum of the above five REEs as a proxy for Total Rare Earth Oxides (TREO) per cent. Due to the non-visual occurrence of REEs within rock and soil, the pXRF allowed for real time prospecting decisions and planning to be made.

The first use of the pXRF in 2022 was to carry out a comprehensive soil sampling survey over the Monte Muambe basin, covering carbonatite and fenite outcrops (Figure 4.25). This was carried out initially on a 100 m x 100 m grid, with infill follow up sampling on a 50 m x 50 m and, where required, 25 m x 25 m. A second use for the pXRF is to analyses borehole RC chips and diamond core.

The soil sampling results allowed to define better the outline of Targets 1 and 4, as well as to identify five new targets. The geochemical characteristics of the soil samples allowed for the recognition of the presence of low-grade or high-grade REE mineralisation. The newly identified targets were Target 1E (low-grade), Target 7 (low-grade), Target 8 (low-grade), Target 9 (high-grade), and Target 10 (low-grade).

The use of the pXRF on RC samples allowed the identification of the two relatively consistent types of mineralisation described in section 4.3.3 of this report, i.e. a low-grade mineralisation between 0.5 and 1% TREO with about 0.25% Nb, and a high grade mineralisation with low (less than 500ppm) Nb and an average of 2.5% TREO. The pXRF results also show that there are two carbonatite suites (see section 4.2.2 of this report); i.e., a low Mg (<1% Mg) and a higher Mg (>1% Mg).

In 2022, the Company's exploration drilling strategy was:

- To focus on resource drilling at Target 1 and Target 4, which seemed (and were confirmed to be) the most promising in terms of tonnage and grade. This was initially carried out through drilling 70 m

inclined RC holes and, once the dip angle of Target 1 mineralisation was understood, through drilling 120 to 160 m inclined RC holes to explore down-dip. Shallow drilling (25 m deep inclined RC holes) on the low-grade Targets 1E, 7 and 8 was undertaken to test their potential for niobium.

- To test other potential high-grade targets. Reconnaissance work at Target 9 in 2022 (four RC drill holes) was not very successful, with the thickness of the only high-grade intercept being disappointingly low in relation to the size of the soil anomaly. This target still requires additional exploration work.

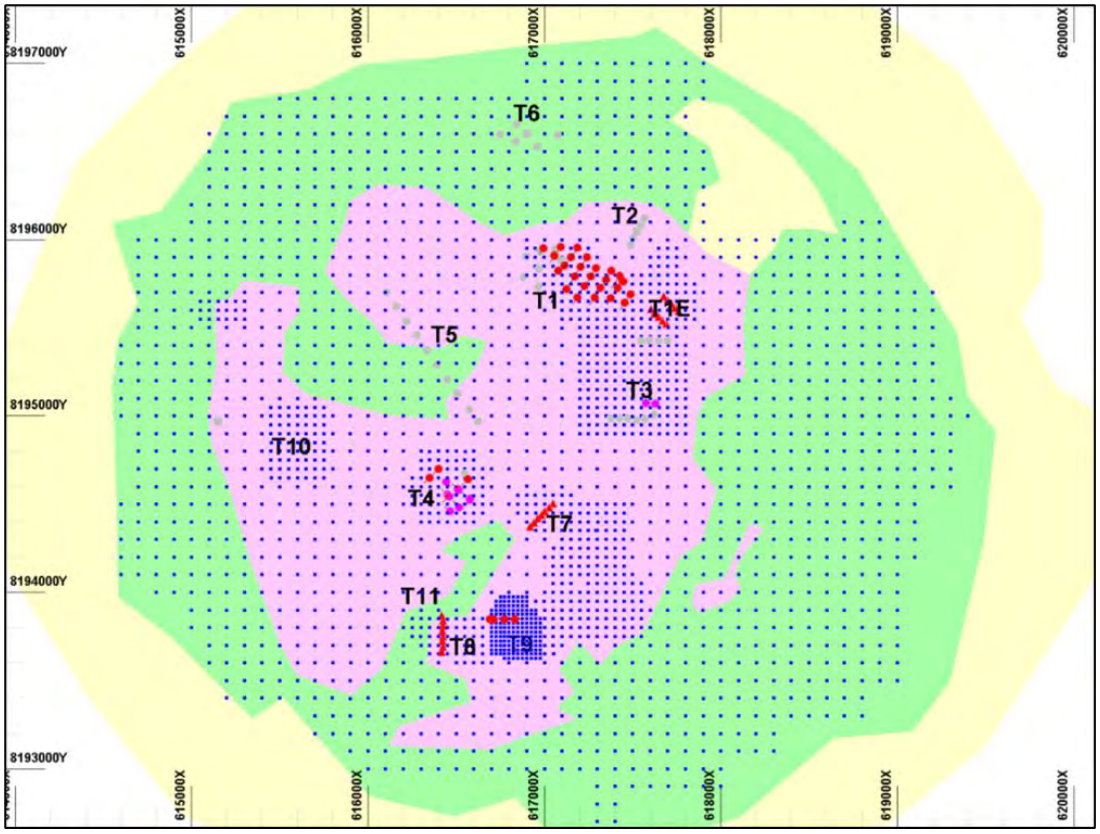
2023

From the start of 2023 to present, Altona's exploration work consists of:

- An additional 11 RC holes (total 752.39 m) were drilled between July and August 2023.
- The aim of these drill holes was to understand better the geometry of REE mineralisation at Target 4, and to follow up on the 2021 discovery at Target 3. At Target 3, drill hole MM110 intersected 2.735% TREO from surface to 30 m, open at depth, confirming that Target 3 warrants additional exploration.
- In-situ pXRF assays on cleaned outcrops in shallow trenches were also carried out at Target 3, Target 4, and newly identified Target 11. Results are currently being processed.

A plan view/ summary of Altona's 2022 and 2023 REE exploration campaigns is shown in Figure 4.24. Red dots are 2022 RC holes collars; red triangles are 2022 Short RC collars; purple dots are 2023 RC collars; grey dots and squares are 2021 holes collars (RC and DD respectively); blue dots are the soil sampling locations.

Figure 4.24 Altona 2022 and 2023 REE exploration summary



Source: Altona, 2021

4.5.3 Historical exploration target (Hattingh et al, 2022)

An Exploration Target estimate based on drilling samples assayed by pXRF was prepared in 2022 to guide future exploration (Hattingh et al, 2022; https://www.altonare.com/investors/reports/; https://www.altonare.com/investors/documents/). This was released publicly by Altona in 2022.

Exploration Targets were generated for both Target 1 and Target 4 using the defined block models constrained by the ground surface, distance to the nearest borehole, a depth below surface of 100 m in the case of Target 1 and between 80 m and 100 m 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 and Target 4. Exploration inventories 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.

The total REO Exploration Target across Targets 1 and 4 is between 6.5 and 56.7 Mt at respective TREO grades of between 2.45% and 1.65% (Table 4.5).

Table 4.5 Historical Exploration Target range summary

Percent 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**

Snowden Optiro has been provided with the report but has not reviewed the veracity of the data or estimation method. Snowden Optiro is not responsible for the information contained within the 2022 Hattingh report. This is a historic exploration target and therefore has no bearing on the resources reported in this MRE.

4.6 Sampling, sample preparation, analysis and security

4.6.1 Drilling and logging

The drilling campaigns at Monte Muambe are shown in Table 4.6 below. These are split by year and drilling type.

Table 4.6 Summary of Monte Muambe drilling programmes

Programme	Number of holes	Metres drilled
2010-2012 Legacy RC	165	12,587
2021 DD	5	591
2021 RC	36	2,518
2022 RC	35	3,372
2022 short RC	26	594
2023 RC	11	789
TOTAL	**278**	**20,451**

Diamond drilling

Diamond boreholes were positioned by the Project Manager using a handheld GPS. All holes were vertical, except hole MM007 (Target 2) which was angled at 55°. Drill core was packed in 1 m length boxes with core blocks to mark depth and recovery. Core was delivered to the core yard at the project field camp.

Completed boreholes were surveyed using the company DGPS system, using the survey beacon at the field camp as a reference. The location of camp survey beacon was initially acquired by the base station

(GPS measurement) and was not tied to the local grid. Snowden Optiro is of the opinion that the internal survey co-ordinate and height system is adequate for estimation of Inferred and Indicated Mineral Resources. Further detail of the internal survey system is presented in the Internal Survey System section below.

Completed boreholes were cased with poly-vinyl chloride (PVC) piping for subsequent downhole surveying. Concrete marker blocks were placed on the borehole collars PVC casing with the borehole ID imprinted into the concrete.

Five DD core boreholes were drilled in the 2021 exploration programme with a total meterage of 590.7 m. A trailer mounted Atlas Copco CS14 rig was used. Diamond drill holes were started in PQ diameter (85 mm), with the diameter reduced to HQ (63.5 mm) and if necessary, NQ (47.6 mm) as dictated by ground conditions. Approximately 15.5% of diamond drilling was carried out in PQ diameter, 63.9% in HQ and 20.6% in NQ. Because of the disseminated nature of the mineralisation, it was not considered necessary to do core orientation.

The DD cores were checked against the driller's core blocks and recovery was recorded. The presence of cavities was recorded based on information provided by the driller and observations on the core. DD core recoveries varied from 17% to 100%, with an average of 83%. Short runs were used to maximize sample recovery when necessary. The entire length of each drill hole was logged by trained geologists. Lithology, mineralogy, colour, weathering, grain size, texture, fabric and alterations were logged using codes for each aspect as per Altona's standard operating procedure. Gamma spectrometer logging was carried out using a hand-held gamma spectrometer to do spot readings at 50 cm intervals of cores.

All DD core trays were photographed in standard conditions and white-balanced.

RC drilling

RC boreholes were positioned by the Project Manager using a handheld GPS. Borehole azimuth and inclination were planned by the Project Manager. Drill chips were collected via a cyclone in 1 m bags with each bag being weighed and the weight recorded. During drilling the drill string and cyclone were regularly flushed out with air. Splitting of 1 m samples was done at the drill site. A sample of chips was wet screened on site with the coarse chips being placed in chip boxes for logging purposes.

Completed boreholes were cased with PVC piping for follow up downhole surveying. Downhole surveys were conducted at 4 m intervals to the bottom of each borehole except where sidewall collapse prevented the full survey tool penetration. However, downhole survey data has not been incorporated into the company database records. Concrete marker blocks were placed on the borehole collars PVC casing with the borehole ID imprinted into the concrete.

Completed boreholes were surveyed using the Company's DGPS system, with the survey beacon at the field camp as a reference. The location of camp survey beacon was initially acquired by the base station (GPS measurement) and was not tied to the local grid. Snowden Optiro is of the opinion that the internal survey co-ordinate and height system is adequate for estimation of Inferred and Indicated Mineral Resources. Further detail of the internal survey system is presented under the Internal Survey System header below.

RC drilling was undertaken in both the 2021, 2022 and 2023 drilling programmes with 36 boreholes (2,518 m) in 2021, 31 boreholes (2,943 m) in 2022, and 11 boreholes in 2023 (752.39 m) with the latter boreholes not incorporated in the Mineral Resource estimate as laboratory assay results were not available at the reporting cut-off date.

The RC drill rigs were a truck mounted Smith Capital 14R6H with a 21 bar compressor (2021 and 2023 drilling campaigns) and a track mounted Hanjin Power 7000SD (2022 drilling campaign). The RC bit has a 4½ inch (114.3 mm) diameter.

The entire length of each drill hole was logged by trained geologists, using chip boxes. Lithology, colour, weathering, grain size, texture, fabric and alteration were logged using codes as per Altona's standard operating procedure.

The REE mineralisation is not visually evident related to lithology RC logging. From early 2002 onwards, the Hitachi X-MET8000 portable XRF (pXRF) analyser with a 50 kV anode design was used to assay Ce, La, Nd, Pr and Y.

For RC samples, a 50 g sub-sample was split from each 1 m sample using a 1-tier riffle splitter. Each sub-sample was split further and placed in an XRF capsule for assay. The pXRF was set up in bench top mode. Preparation and assay were done in standard conditions. The sum of the five aforementioned elements was calculated as oxide percent. Orientation, QC and comparisons with laboratory results show that this sum provides a reliable proxy of the actual TREO%. Accordingly, pXRF logging results were used to guide the day-to-day implementation of the drilling programme and to select mineralized samples (TREO>0.5%) to be sent to the laboratory for assay. The pXRF assay results were not used for the Mineral Resource estimation.

Lithology determinations on RC chips were supported by the preliminary pXRF assays done on site, with SiO_2 being used to distinguish fenite from carbonatite and from mixed lithologies, and MgO to distinguish two geochemically different suites of carbonatites.

Gamma spectrometer logging was carried out using a hand-held gamma spectrometer to do one reading in each RC cutting bag (RC samples). No geophysical tools were used to determine element grades. Geology logging was qualitative and pXRF logging was quantitative. RC chip trays were photographed in standard conditions and white-balanced.

Internal survey system

Altona procured a new Kolida K20S RTK/GNSS set and imported it in April 2022. The General Manager, who was already familiar with the use of dGPS systems, received equipment-specific training from the supplier in Kenya, and subsequently trained one of Monte Muambe's field technicians to operate the survey equipment. Operation of the RTK survey equipment is covered by SOP 2023-02.

The RTK system has internal controls, the most important being horizontal standard deviation and vertical standard deviation (in essence the horizontal and vertical accuracy). Both should be below 10 mm, and preferably below 5 mm. This can only happen if the Base Station and the Rover are communicating correctly. These parameters are displayed during data recording and are saved in raw report files.

All borehole collars are systematically RTK-surveyed. All accessible legacy collars (meaning most of those existing) were RTK-surveyed by Altona. For each borehole collar, the actual position measured is that of a point at the top of the cement slab and on the edge of the protruding casing. This position is corrected in X and Y post-survey so that the collar position recorded in the collar file corresponds to the centre of the casing.

Drone-borne photogrammetry surveys were carried out by Altona on Targets 1, 4 and 9. The surveys were carried out between 28 September 2022 and 5 October 2022, at a time when the vegetation cover was at its minimum (height of the dry season, after grass fires swept through the work area).

The surveys were undertaken using a Mavic Air 2 drone, with the flight plans prepared on Drone Link software. Surveys were prepared and flown by a licensed drone pilot. The Mavic Air 2 is a non-RTK drone. Surveys were therefore georeferenced using visible hole collars (cement slabs with protruding casing), for which RTK-surveyed coordinates were available, as ground control points (GCP). Raw data for drone photogrammetry consists of folders of photographs each containing camera, flight and GPS information. These are archived in the project database, together with processed data and final products.

The data used for the MRE (Target 1 and Target4), however, was processed by Mr Kalumba Bwale of Snowden Optiro. Altona supplied raw data, raw photographs folders and a CSV table with GCPs to Snowden Optiro. The processing procedure involved loading the provided LAS files and generating a digital terrain model (DTM) from the points. This DTM was then smoothed using a function in DM Studio. The smoothed DTM was translated vertically by a nominal value above the loaded points (0.3 m in the document). All the original points below the smooth DTM were coded and kept and all the points above the smoothened DTM were deleted. This process was repeated as needed, until only the ground classified points remained. These points were not spatially manipulated in anyway. The resulting files contained fewer points and were filtered to a point density of 3 m.

4.6.2 Sampling

Diamond drill core sampling

Diamond core was cut with a diamond saw into quarter core (PQ and HQ) and half core for NQ core. All core was sampled using cut quarter or half core. All core was sampled at nominal 1 m lengths with adjustments made for lithological contacts. Actual sample lengths varied from 0.04 m to 3.36 m with an average of 0.62 m. Samples that were not competent enough to be split with the core cutter were bagged, homogenised and split using a riffler splitter.

Samples were collected by or under the guidance of the Project Manager with the cut half or quarter core placed in plastic sample bags with tag book ID markers stapled at the top of each sample bag. All samples were stored at the camp site sample store under the control of the Project Manager until collection by contract transporter, Bollore Logistics, which transported the samples to Intertek Genalysis laboratory near Johannesburg in South Africa.

Sampling was conducted in accordance with the project standard operating procedures (SOPs) which are in line with good industry practice.

RC sampling

The RC drill chips were first collected in 1 m plastic bags via a cyclone. These were weighed and then taken by the Company's sampling team to be split, using a 4:1 riffle splitter, to 6 kg. A second riffler splitter was then used to top up the 6 kg sample to the exact 6 kg weight. From 2022 onwards, a third splitter was then used to split a 50 g sample from the 6 kg sample. The Competent Person's representative observed the RC sampling procedure during his August 2023 site visit. The sampling team was both well trained and motivated with minimal spillage, and with the equipment cleaned between samples. The sampling was undertaken according to Altona's standard operating procedure which is in line with industry RC sampling standards.

In the 2021 RC drilling campaign, all 1 m intersections were sampled with a 6 kg sampled split onsite with a riffler splitter. These were then made into 3 m composites from the original split 1 m samples (6 kg). In 2022, after assay results were received the original 1 m samples were then made into 2 m composites based on samples with >0.5% TREO and these 2 m composites were resubmitted for analysis.

For the 2022 and 2023 RC drilling programmes, the pXRF was used to analyse each 1 m sample with the analytical results being used to select samples to be combined into 2 m composites. The pXRF sample for analysis was 50 g in weight which was split from each 1 m 6 kg. Only samples with a pXRF assay result of >0.5% TREO were selected for compositing.

The 2 m composite samples were made up using a riffler splitter at the camp sample store with the sample for analysis being 3 kg in weight with the 9 kg balance packed in a plastic bag for storage. The decision to make up 2 m composites was based on feedback from early modelling done as part of the 2022 Exploration Target estimation assignment (Hattingh et al, 2022).

Samples were collected by or under the guidance of the Project Manager and placed in plastic sample bags with tag book ID markers stapled at the top of each sample bag. All samples were stored at the camp site sample store under the control of the Project Manager until collection by contract transporter, Bollore Logistics, which transported the samples to Intertek Genalysis laboratory near Johannesburg in South Africa.

Sampling was conducted in accordance with Altona's SOPs which are in line with good industry practice.

Analysis

Samples for analysis were submitted to the independent analytical laboratory Intertek Genalysis (accreditation status ISO/IEC 17025); where sample preparation was undertaken at their laboratory at Bapsfontein (near Johannesburg) in South Africa as per the drying, crushing and pulverising procedures in Table 4.7. Pulps were then despatched by airfreight to Intertek Genalysis in Perth Australia.

Neither laboratory was inspected by the Competent Person, but Snowden Optiro is of the opinion that the accredited status of the laboratory together with QC sample results is adequate for the analytical results to be used in Mineral Resource estimation.

Table 4.7 Intertek Genalysis sample preparation codes

Soil, rotary air blast and reverse circulation samples	
Description	**Code**
Dry, pulverise up to 300 g	SP01
Dry, pulverise 300 g up to 1.2 kg	SP02
Additional wt>1.2 kg: dry, split, pulverise up to 1.2 kg, retain coarse reject	SP66
Drill core and rock	
Description	**Code**
Dry, crush ~10 mm, pulverise up to 300 g	SP11
Dry, crush ~10 mm, pulverise 300 g up to 1.2 kg	SP12
Additional wt>1.2 kg: dry, crush ~2 mm, split, pulverise up to 1.2 kg, retain coarse reject	SP67

At the Intertek Genalysis Perth laboratory, the procedures that were applied are discussed in Table 4.8:

- All samples were assayed for Al, Ba, Ca, Ce, Cr, Cs, Dy, Er, Eu, F, Fe, Ga, Gd, Hf, Ho, K, La, Lu, Mg, Mn, Na, Nb, Nd, P, Pr, Rb, S, Sc, Si, Sm, Sn, Sr, Ta, Tb, Th, Ti, Tm, U, V, W, Y, Yb, Zr, LOI.
- Major elements and some trace elements (including Ce and La) were assayed by Li Borate fusion followed by ICP-OES.
- Trace elements (including all REE, U, Th and Nb) were assayed by Li Borate Fusion followed by ICP-MS.
- Fluoride was assayed by alkaline fusion in a nickel crucible followed by specific ion electrode (SIE) analysis.

Table 4.8 Analysis types and included elements used at Intertek Genalysis Perth laboratory

LITH/203

WHOLE ROCK LI BORATE FUSION / ICP-OES

ELEMENT	RANGE %	FINISH	ELEMENT	RANGE %	FINISH	ELEMENT	RANGE %	FINISH
SiO2	0.01 - 100	OES	MgO	0.01 - 100	OES	Ba	0.005 - 5	OES
TiO2	0.01 - 100	OES	CaO	0.01 - 100	OES	Cr	0.002 - 5	OES
Al2O3	0.01 - 100	OES	Na2O	0.01 - 100	OES	S	0.01 - 30	OES
Fe2O3	0.01 - 100	OES	K2O	0.01 - 100	OES	LOI 1000°C	0.01 -100	
MnO	0.01 - 100	OES	P2O5	0.01 - 100	OES			

REE LI BORATE FUSION / ICP-MS

ELEMENT	RANGE PPM	FINISH	ELEMENT	RANGE PPM	FINISH	ELEMENT	RANGE PPM	FINISH
La	0.2 - 20%	MS	Eu	0.05 - 5%	MS	Er	0.05 - 5%	MS
Ce	0.5 - 30%	MS	Gd	0.05 - 5%	MS	Tm	0.05 - 1%	MS
Pr	0.05 - 10%	MS	Tb	0.02 - 2%	MS	Yb	0.05 - 5%	MS
Nd	0.1 - 20%	MS	Dy	0.05 - 5%	MS	Lu	0.02 - 1%	MS
Sm	0.05 - 10%	MS	Ho	0.02 - 2%	MS			

HFSE LI BORATE FUSION / ICP-MS

ELEMENT	RANGE PPM	FINISH	ELEMENT	RANGE PPM	FINISH	ELEMENT	RANGE PPM	FINISH
Hf	0.1 - 5%	MS	Ta	0.1 - 5%	MS	Y	0.5 - 50%	MS
Nb	0.1 - 5%	MS	Th	0.05 - 2%	MS	Zr	1 - 50%	MS

MINOR & TRACE LI BORATE FUSION / ICP-MS

ELEMENT	RANGE PPM	FINISH	ELEMENT	RANGE PPM	FINISH	ELEMENT	RANGE PPM	FINISH
Ba	0.5 - 5%	MS	Rb	0.1 - 5%	MS	U	0.05 - 30%	MS
Cr	20 - 5%	ICP- OES	Sc	10-5%	OES	V	10 - 5%	OES
Cs	0.05 - 1%	MS	Sn	1 - 5%	MS	W	1 - 5%	MS
Ga	0.1 - 1%	MS	Sr	0.2 - 20%	MS			

LITH/203 **$60.70**

FLUORIDE ANALYSIS BY SELECTIVE ION ELECTRODE

ELEMENT	DESCRIPTION	DL	CODE	PRICE
F	Carbonate fusion / SIE	50ppm	FC7/SIE	$26.00

4.6.3 Snowden Optiro comments

Although there was concern that the QC field sample insertion rate (3.6 to 3.7%) is less than the industry standard (5%), this was addressed by the comparative exercise between 3 m 2021 composites and 2 m composites. Snowden Optiro recommends that future QC insertion rates be brought into line with accepted industry practices.

Previously, anomalous QC results were not followed up immediately; therefore, Snowden Optiro recommends that during future analytical programmes the QC results should be assessed, and anomalous values or trends addressed immediately.

Notwithstanding the above concerns, Snowden Optiro is of the opinion that the sample analytical results are suitable for estimation of Mineral Resources to Inferred and Indicated categories.

4.7 Data verification/ QAQC

4.7.1 Data verification

Altona implemented a series of routine verifications to ensure the collection of reliable exploration data. All work was conducted by appropriately qualified personnel under the supervision of qualified geologists. Core logging, surveying and sampling were monitored by qualified geologists and verified routinely for consistency. Electronic data was captured and managed using MS Excel sheets stored in a Dropbox folder backed-up on an off-site server in real-time. Assay results were delivered electronically to Altona geologists by the primary laboratories and were examined for consistency and completeness.

The database was regularly backed up on a second Dropbox account, and on the Company's Sharepoint backup system. Scans of all paper documents (driller's daily reports, logs etc) are stored digitally in the database. Digital data were checked and validated against the original field sheets.

Significant drill hole intersections were verified by Altona's CEO. No twin DD-RC holes were drilled.

Prior to resource estimation, Snowden Optiro completed a phase of data validation on the digital sample data that included the following:

- Search for sample overlaps, duplicate or absent samples, checks for anomalous assay or survey results. No material issues were found by Snowden Optiro in the final database.
- Snowden Optiro noted that although not material, geological logging codes for the historical Globe drilling had not been converted to the Altona logging codes.

4.7.2 QAQC

QC samples were inserted into both DD core samples and RC samples in the form of CRMs (OREAS), Blanks (local quartzite) and field duplicates (quarter core and split RC chip composites). A selection of pulp samples was submitted to Nagrom in Perth, for external (umpire) analysis.

The internal QC samples and external sample analytical samples are summarised in Table 4.9. It is evident that the internal QC sample insertion at between 3.6 and 3.7%, expressed as % original samples, is lower than industry standards. The actual QC results will be discussed in detail to address this concern and, as well, the 3 m composite RC samples in 2021 are compared to the 2 m RC samples also from the 2021 drilling campaign in order to add to confidence in the analytical results.

Table 4.9 Altona's internal QC sample insertion / selection

	Batch	Samples	Blanks	Standards	Duplicates	Umpire
2021	MMM001	878	32	27	32	
	MMM002	635	23	23	24	37
2022	MMM004	1,232	44	45	45	72
	MMM005	215	8	8	8	13
	Total	**2,960**	**107**	**103**	**103**	**122**
	% Total		3.65	3.5%	3.7%	
	% MMM004 and MMM005		3.6%	3.7%	3.7%	5.9%

REEs include 17 different chemical elements, 15 of which are present at Monte Muambe. To simplify the QC review the elements used to assess this aspect were La and Ce, which are the most abundant, Nd, Pr, Dy and Tb, which are the most important in term of economic value, and Th and U, which are the most important potentially deleterious elements.

Blanks

A fine grained silica rock (Figure 4.25) was used as a blank material. Unfortunately, it is not free of REEs and U and Th. However, the levels of these elements present are too low to significantly affect assessment of contamination from a QC point of view.

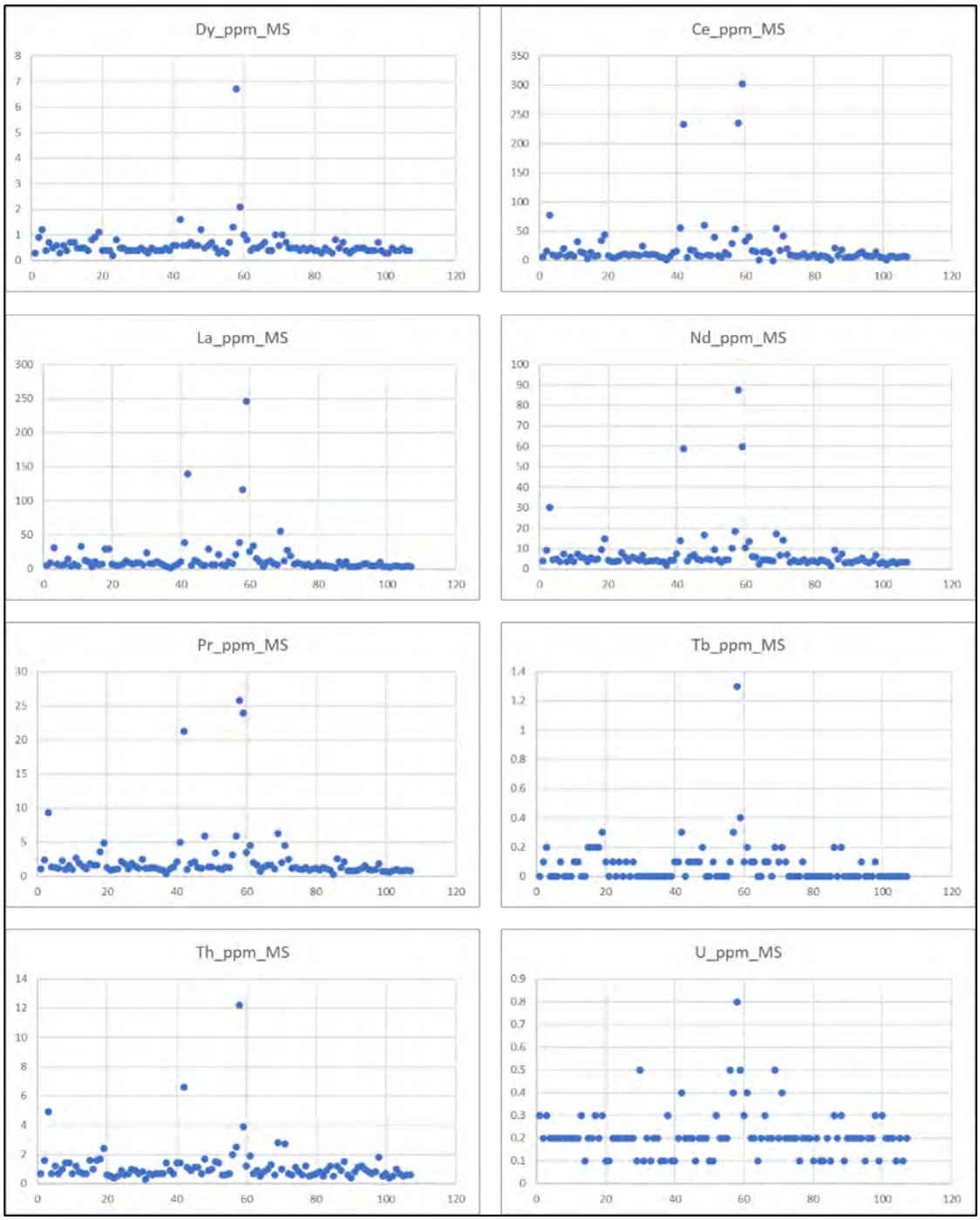
Table 4.10 gives a statistical summary of the QC blank sample results while Figure 4.26 shows the results in graphical format. It is evident that some results show higher levels of REE elements than expected which does indicate contamination, probably in sample preparation. However, the low level of the anomalous results does not, in the opinion of Snowden Optiro, affect the integrity of the original sample analytical results.

Figure 4.25 Silica rock used for QC blanks

Table 4.10 QC blank results statistics

Element	Mean	Standard Deviation	Min	Max
SiO_2 %	88.63	3.66	63.07	93.69
Al_2O_3 %	4.18	0.93	2.33	5.79
CaO %	0.53	0.25	0.24	2.57
Fe_2O_3 %	1.79	0.31	1.27	2.47
MgO %	0.51	0.10	0.29	0.71
MnO %	0.03	0.03	0.02	0.31
P_2O_5 %	0.02	0.03	0	0.27
Ce ppm	21	43	0	302
Dy ppm	0.62	0.65	0.20	6.70
La ppm	15	29	2	246
Nd ppm	8	11	2	87
Pr ppm	2.36	3.88	0.30	25.80
Tb ppm	0.07	0.15	0	1.30
Nb ppm	3.15	6.08	0	61.30
Th ppm	1.20	1.37	0.30	12.20
U ppm	0.21	0.11	0.10	0.80

Figure 4.26 QC blank sample assay results



Duplicates

Duplicates were inserted into the sample stream at the Project site. In the case of core quarter or half core was used for this purpose. In the case of RC samples duplicate samples were prepared during the preparation of composite 2 m samples. In all cases the duplicate samples were inserted into the sample stream adjacent to the original sample. No reject duplicates were selected to be inserted into the sample steam at Intertek Genalysis. In Snowden Optiro's opinion the core duplicates act more as an indication of short distance variation rather than true duplicates. The RC duplicate samples are deemed by Snowden Optiro to be true duplicates. The statistical and graphical analyses of the core and RC duplicates support the discussed differences in definition.

The duplicate QC insertion rates are low by industry standards. To compensate for this, to some degree, a comparison is made between the original 3 m assay results (not used for resource estimation) from the 2021 drilling programme and the 2 m samples (used for resource estimation) assay results.

Diamond core duplicates

DD field duplicates were inserted at a rate of 1 in 27.43 (3.65%) original samples. Scattergrams are shown in Figure 4.28 to Figure 4.30. R^2 varies from 0.94 to 0.98. Overall, it is the opinion of Snowden Optiro that these results are in line with expected short distance geochemical variation. To support this statement Figure 4.27 illustrates the chemical variability of REE bearing carbonatite.

Figure 4.27 XRF map showing Ce content variability in a core sample

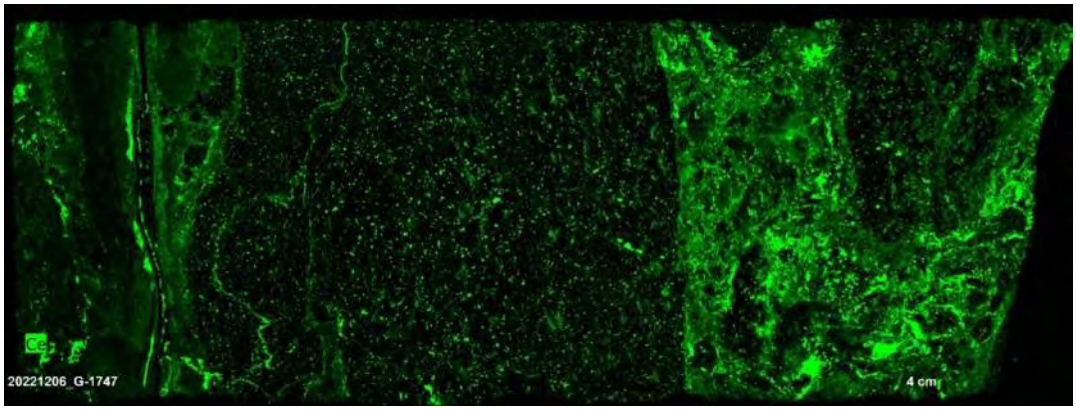


Figure 4.28 DD duplicate vs original sample assay results (Left Ce, right Dy)

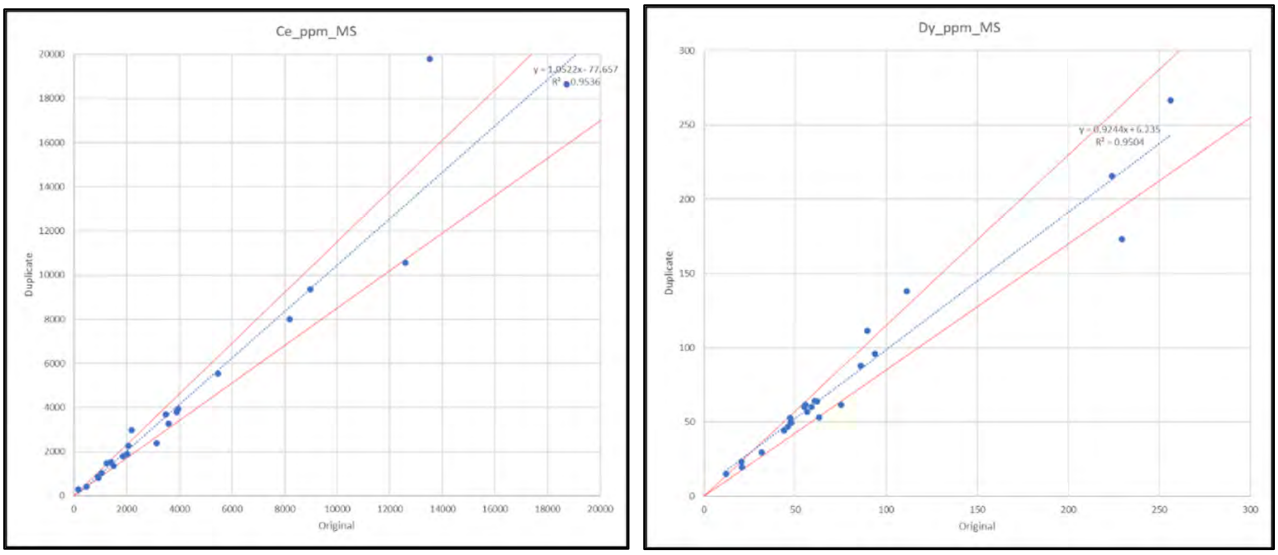


Figure 4.29 DD duplicate vs original sample assay results (Left La, right Pr)

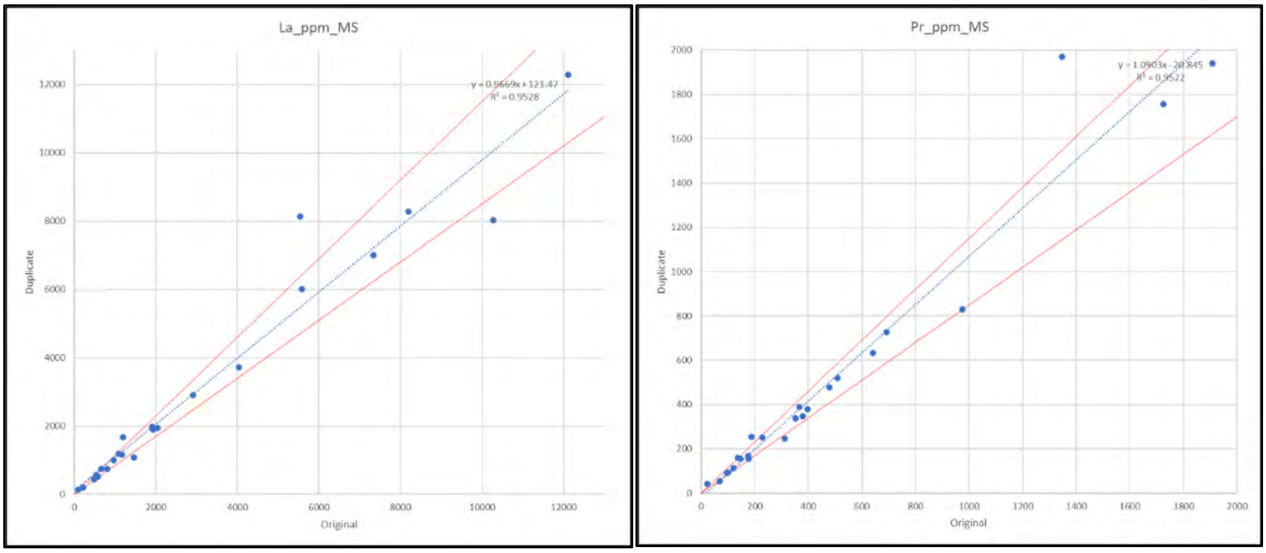
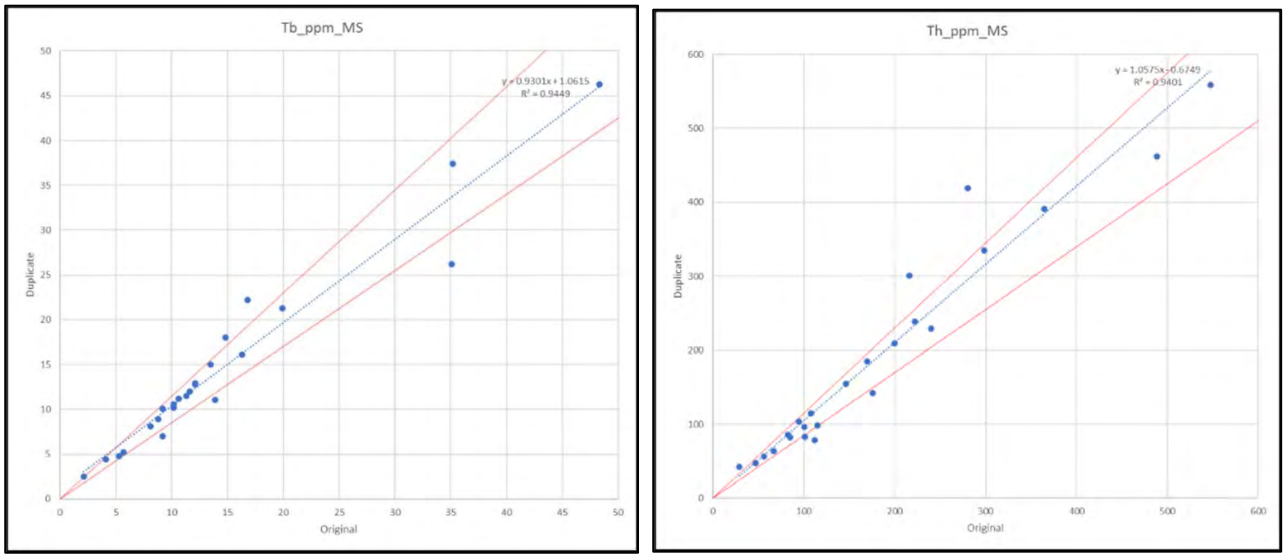


Figure 4.30 DD duplicate vs original sample assay results (Left Tb, right Th)



RC duplicates

RC field duplicates were produced by splitting a second sample from the selected 1 m RC cuttings bag using the same procedure as the original sample. The duplicates were inserted in the sample stream adjacent to the original samples in a ratio of 1 in 27.43 original samples.

Scattergram graphs for selected elements are shown in Figure 4.31 and Figure 4.33. All results, except for one U result, are well aligned with R^2 between 0.97 to 0.98. The singular U anomaly is not deemed significant and in Snowden Optiro's opinion the results show excellent correlation.

Figure 4.31 RC Ce duplicate vs original assays (Left Ce, right Dy)

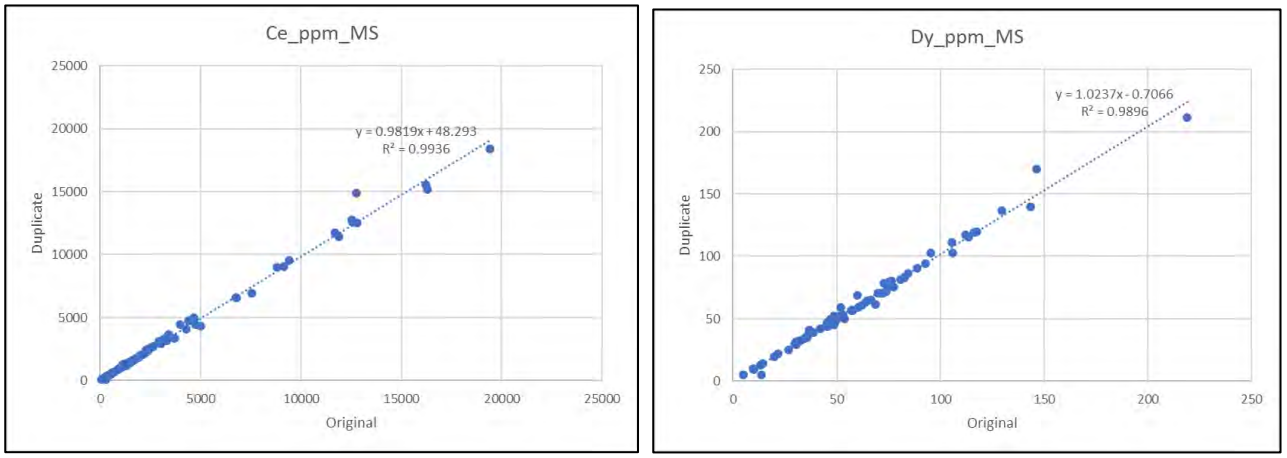


Figure 4.32 RC La duplicate vs original assays (Left La, right Pr)

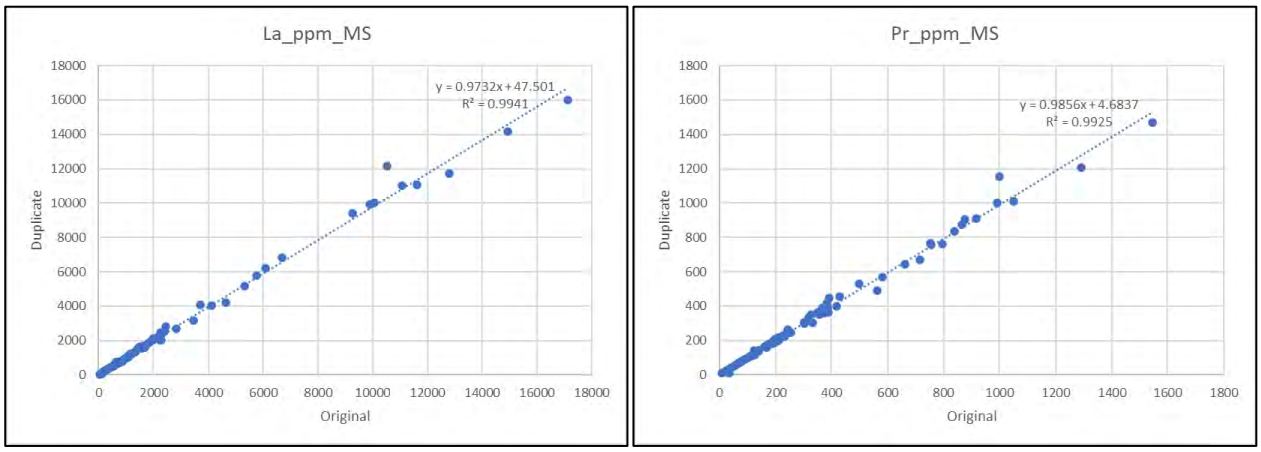
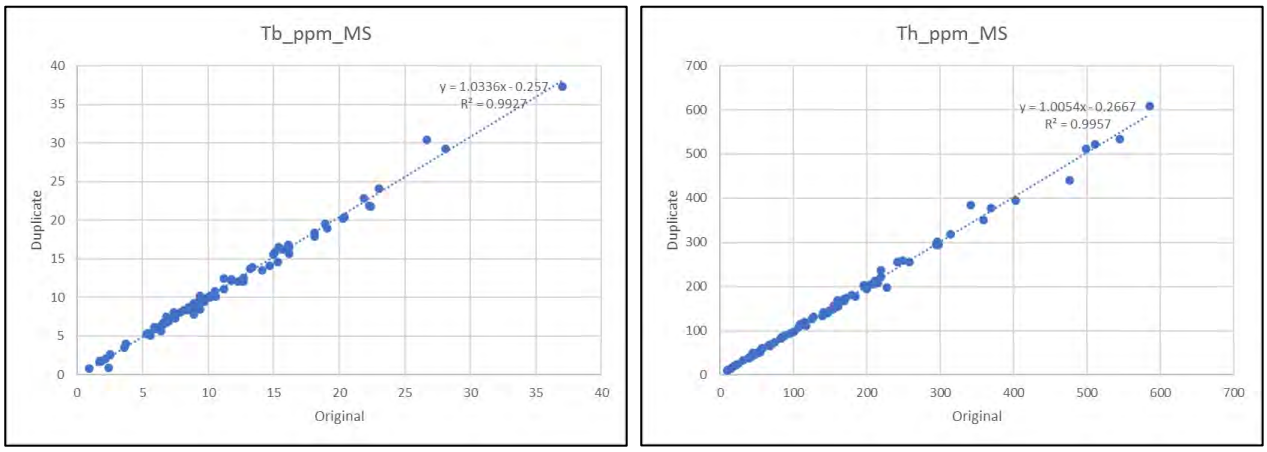


Figure 4.33 RC Tb duplicates vs original assays (Left Tb, right Th)



Comparison between 3 m and 2 m 2021 composites

RC drilling samples from the 2021 drilling campaign were initially assayed as 3 m composites to identify which intercepts justified more detailed (shorter intervals) assays and to save on assaying costs. Samples having TREO>0.5% were subsequently re-assayed as 2 m composites, together with the 2 m composites from the 2022 drilling campaign.

The two datasets therefore provide an opportunity to compare the original laboratory TREO results with the re-assay TREO results.

To prepare data for this comparison:

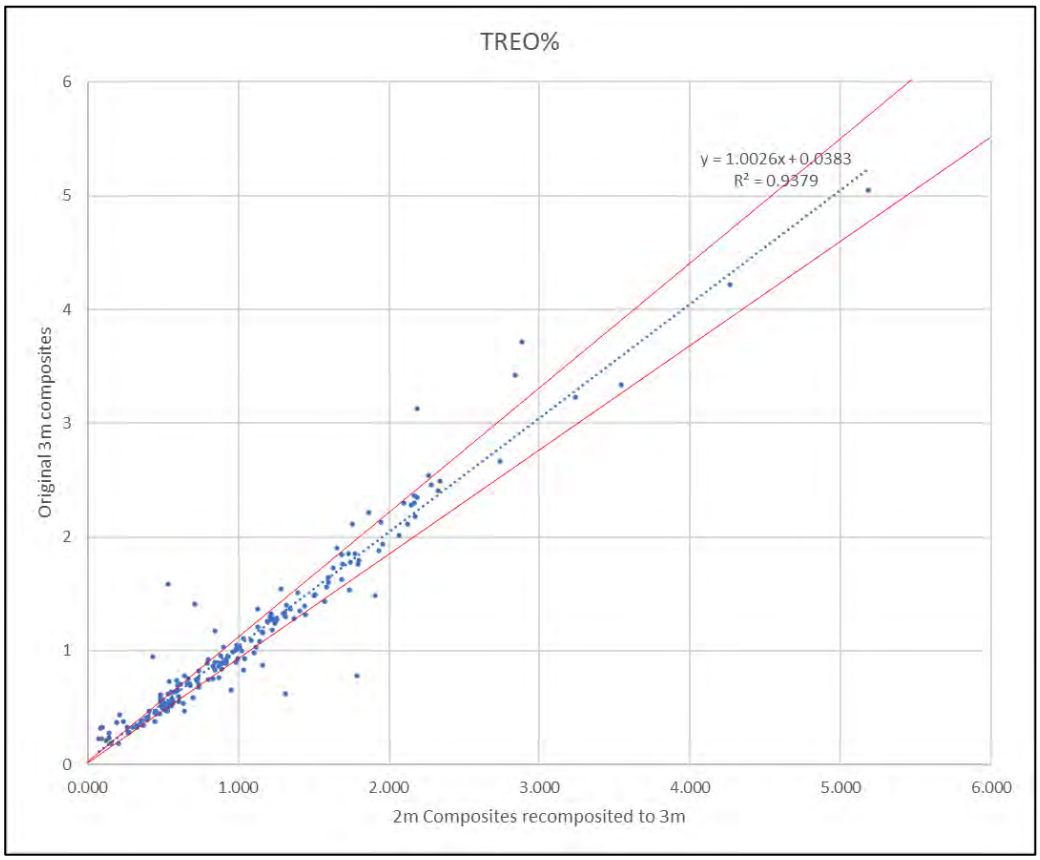
- The 2 m composites log file was re-composited using Micromine software so that From and To matched those of the 3 m composites log file.
- Both datasets were merged into the same MS Excel table.
- Entries for which results were available for only one of the two datasets were removed. This included all the samples which were not re-assayed.
- The correspondence of the Hole ID, From and To for each entry was checked and confirmed.
- Scattergrams for various elements were prepared.

The exercise has its limitations, because the preparation method for the 3 m composites in 2021 involved preparing each of the three 1 m sample so that their weight was within 200 g of each other (for 1 m sample weights ranging from 2 to 3 kg), while the preparation method for the 2 m composites in 2021 involved weighting each of the two 1 m sample so that its weight was identical to that of the other.

As described above, the 2 m composite database was re-composited to 3 m. In a situation where grade variations often occur at a short distance (from one 1 m sample to the other), discrepancies between the two datasets are more likely to be due to the compositing method rather than to a problem with the laboratory's operation.

In the opinion of Snowden Optiro, the comparison between the two samples sets related to TREO values supports the validity of the overall 2 m analytical results.

Figure 4.34 Comparison between 3 m and 2 m composite sample %TREO assay results



External (umpire) laboratory sample pulp duplicates

A total of 122 pulps from batches MMM002 (DD 2021), MMM004 (RC 2021 2 m composites) and MMM005 (RC 2022 2 m composites) was retrieved by Intertek under instruction from the Altona General Manager and sent to NAGROM laboratory in Perth for external (umpire) assays. This corresponds to a rate of 1 umpire sample to 17 original samples (5.88%).

A statistical analysis of the two sets of sample assay results is shown in Table 4.11. Overall, the two sets of results show good comparative values with the exception of dysprosium which was followed up with Intertek and NAGROM. Both laboratories are of the opinion that the difference in dysprosium results is due to minor differences in analytical procedure.

Table 4.11 Statistical summary of comparison between Intertek and NAGROM analyses

	Trendline Equation	R^2	Outliers -15% +15%
La	y = 0.9826x + 53.636	0.991	0
Ce	y = 0.9462x + 128.98	0.991	1
Nd	y = 0.9762x + 43.625	0.987	0
Pr	y = 0.9551x + 15.337	0.988	0
Dy	y = 1.0900x – 1.3264	0.986	8
Tb	y = 0.9828x + 0.0434	0.984	0
Th	y = 1.0241x + 2.1929	0.997	1

	Trendline Equation	R^2	Outliers -15% +15%
U	y = 0.9906x + 0.4922	0.989	4

CRM QC results

OREAS CRMs were used as standards for QC insertion into both the 2021 and 2022 drill sampling programmes:

- OREAS 46 and OREAS 47 (glacial tills, low rare earth levels). Beside their role as standards, these CRMs also act as blanks.
- OREAS 460, 461, 462 and 463 (REE-Nb carbonatite ore, Mount Weld, diluted with barren siltstone from the Melbourne area).

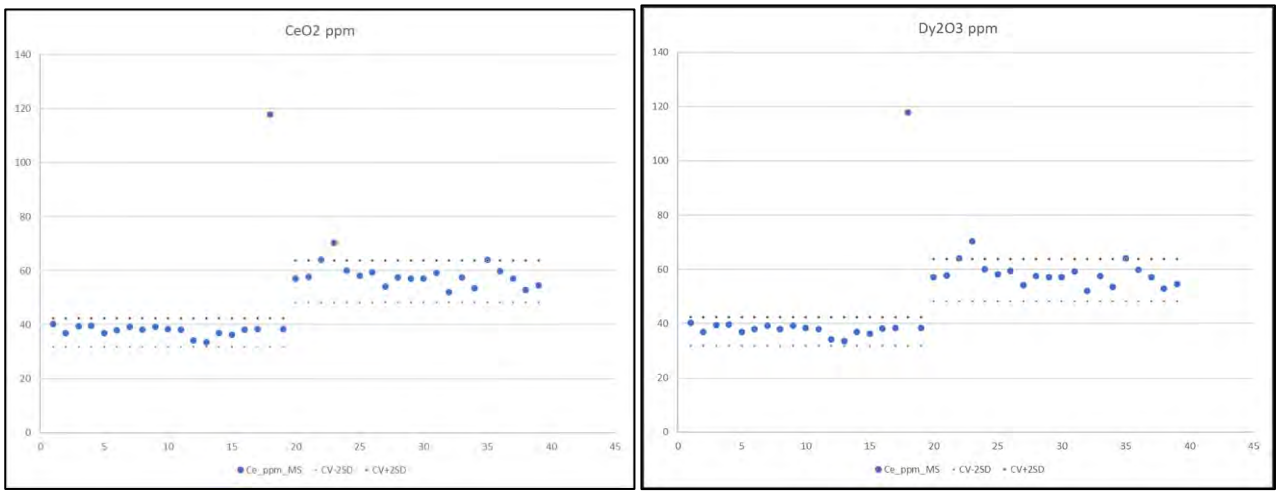
Standards were inserted at rate of 1 to 28.7 (3.48%) samples in average (1 to 27.3 (3.66%) for batches MMM004 and MMM005).

The control charts for selected REE elements are shown below, the first two for OREAS 46 and 47 with low REE values followed by combined control charts for OREAS 460, 461, 462 and 463 with progressively increasing REE contents.

As detailed under the relevant control chart there was only one CRM result that was significantly outside the control limits (certified value ± 2 x standard deviations). The remaining CRM results were mainly within the control limits and those outside being within 3 x standard deviations.

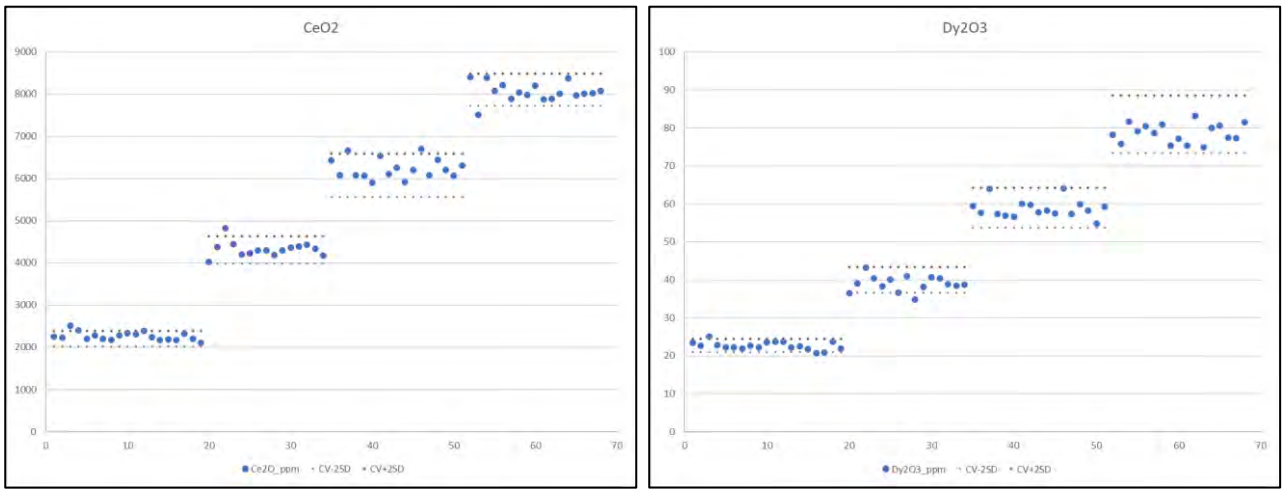
One OREAS 46 CRM sample (Z0687) result was significantly outside the control chart range (Certified Value ± 2 x standard deviations). The sample has been re-assayed by Intertek on request of the Company, with the new result falling within the control chart range (36.5 ppm Ce).

Figure 4.35 Control chart for CRMs OREAS 46 (left) and 47 (right)



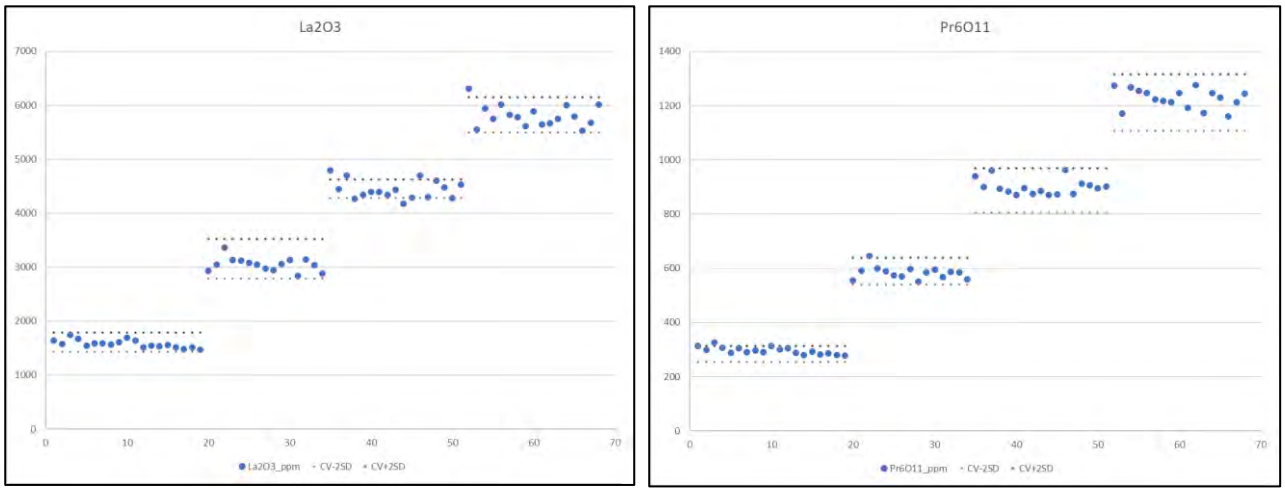
Note: CeO_2 left graph, Dy_2O_3 right graph.

Figure 4.36 Control charts for CRMs OREAS 460, 461, 462 & 463 (left to right)



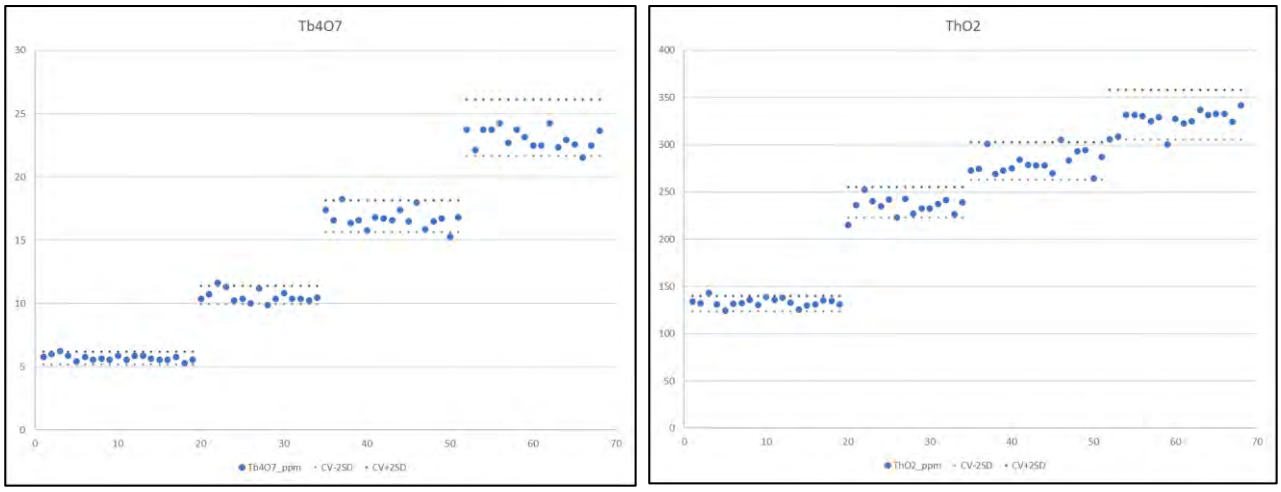
Note: CeO_2 left graph, Dy_2O_3 right graph.

Figure 4.37 Control Charts for CRMs OREAS 460 461 462 & 463 (left to right)



Note: La_2O_3 left graph, Pr_6O_{11} right graph.

Figure 4.38 Control charts for CRMs OREAS 460, 461, 462 & 463 (left to right)



Note: Tb_4O_7 left graph, ThO_2 right graph.

4.7.3 Snowden Optiro comments

Although there was concern that the QC CRM, Blanks and duplicate field sample insertion rate (3.6 to 3.7%) is less than the industry standard (5%), this was addressed to a degree by the comparative exercise between 3 m 2021 composites and 2 m composites. Snowden Optiro recommends that future QC insertion rates be brought into line with accepted industry practices.

External laboratory pulp analyses were conducted on a selection of pulps representing 5.9% of original pulp samples. Results were mainly in line with original analytical results with a minor difference in dysprosium results which was not deemed significant regarding resource estimation.

Previously, anomalous QC results were not followed up immediately; therefore, Snowden Optiro recommends that during future analytical programmes the QC results should be assessed, and anomalous values or trends addressed immediately. Anomalies that did occur with blank QC samples were not deemed to be significant regards resource estimation.

Notwithstanding the above concerns, Snowden Optiro is of the opinion that the sample analytical results are suitable for estimation of Mineral Resources to Inferred and Indicated categories.

4.8 Mineral Resource estimate

4.8.1 Data verification

The available data was supplied as a series of comma-separated variable (CSV) collar, lithology logging, assay, and sample/core recovery data, with the files grouped by year and drill hole method (2021 RC, 2021 DDH, 2022 RC and 2023 RC). In addition, the diamond drill hole data had down hole survey and density data.

Except for the assay data, each type of data (collar, logging and recovery data) was compiled into a single CSV file and imported into Datamine before any further processing. The assay data was imported into Datamine as individual tables to then be combined into a single assay file.

The surveyed collar coordinates surveyed using real-time kinematic - global positioning tool (RTK-GPS) which were supplied in a separate file. There was a total of eight drill holes which did not have RTK-GPS coordinates supplied, seven from the previous Globe data set and one from the Altona data set (MM092 which was abandoned at a depth of 6 m. These final RTK-GPS coordinate data were imported into Datamine and then merged with the collar data to create a single collar file with the correct coordinates, which were then validated against the available photogrammetry topography. No material discrepancies were identified. There are 26 Altona drill holes which are prefixed SRC*, which are the prefix for the short RC drill holes. Table 4.12 below shows the survey type split by drilling method.

Only the diamond drilling had downhole survey data, which was completed using a north-seeking gyro. All of the RC drilling used the design dip and bearing from the collar files were used for the downhole desurveying of the drilling. All of the RC drilling had the design bearing and azimuth applied to the collar and end of hole locations for desurveying of the drilling in three dimensional space.

Table 4.12 Monte Muambe collar survey type by drilling method

Company	Hole type	Collar survey method	No. holes	Metres drilled (m)
Globe	RC	Uncertain	7	498
		RTK-GPS	158	12,089
	Total Globe RC		**165**	**12,587**
Altona	RC	Uncertain	1	6
		RTK-GPS	82	6,520
	SRC*	RTK-GPS	26	594
	Total Altona RC		**109**	**7,120**
	Total Altona DDH		**5**	**591**
	Total Altona RC + DDH		**114**	**7,710**
Total drilling			**279**	**20,297**

Assay data

A total of 10,347 sample and assay records were available for the 2023 MRE update (Table 4.13). Both the Altona and historical Globe assay data contained multiple records with an assay value of '0' and/or comments indicating that these intervals were not sampled. In addition, the last tranche of handheld XRF data had duplicated intervals. All non-assayed and duplicated assays were extracted to a separate file for checking and then removed prior to desurveying. All of the Altona analytical data for the MRE were assayed by Intertek Australia, Maddington premises in Perth Western Australia. Analysis was by induced coupled plasma, either optical emission spectroscopy (ICP-OES) or mass spectroscopy (ICP-MS), as outlined in Table 4.14.

Table 4.13 Available assay data by target, source and hole type

Target	Source	Hole type	Handheld XRF		Laboratory assay	
			Nos	Length (m)	Nos	Length (m)
1	Globe	RC	-	-	653	2,060
	Altona	RC	246	248	1,136	2,210
		DDH	-	-	225	154
		Sub-total	**246**	**248**	**1,361**	**2,364**
	Total T1		**246**	**248**	**2,014**	**4,424**
4	Globe	RC	-	-	295	1,147
	Altona	RC	1,282	1,279	256	508
		DDH	-	-	-	-
		Sub-total	**1,282**	**1,279**	**256**	**508**
	Total T4		**1,282**	**1,279**	**551**	**1,655**
6	Globe	RC	-	-	246	838
	Altona	RC	-	-	55	106
		DDH	-	-	252	150
		Sub-total	**-**	**-**	**307**	**256**
	Total T6		**-**	**-**	**553**	**1,094**
Other	Globe	RC	-	-	3,448	5,584
	Altona	RC	-	-	-	-
		DDH	-	-	167	100
		Sub-total	**-**	**-**	**167**	**100**
	Total Oher		**-**	**-**	**3,615**	**5,684**
Total	Globe	RC	-	-	4,642	9,629
	Altona	RC	1,528	1,527	1,447	2,824
		DDH	-	-	644	404
		Sub-total	**1,528**	**1,527**	**2,091**	**3,227**
	Total		**1,528**	**1,527**	**6,733**	**12,856**
Not sampled '0' values**	Globe	RC	-	-	1,818	2,958
	Altona	RC	-	-	201	378
		DDH	-	-	-	-
		Sub-total	**-**	**-**	**2,019**	**3,336**
Duplicate records**	**Altona**	**Total**	**67**	**67**	**-**	**-**

*Note: ** removed prior to desurveying; RC – reverse circulation; DDH – Diamond drill hole*

Table 4.14 Analytical methods

Analytical method	Variables
ICP-OES	Al_2O_3 (0.01 %), Ba (50 ppm), CaO (0.01 %), Ce (0.5 ppm), Cr (20 ppm), Fe_2O_3 (0.01 %), K_2O (0.01 ppm), MgO (0.01 %), MnO (0.01 %), Na2O (0.01 %), P_2O_5 (0.01 %), S (0.01 %), Sc (10 ppm), SiO_2 (0.01 %), TiO_2 (0.01 %), V (10 ppm)
ICP-MS	Ba (0.5 ppm), Cr (20 ppm), Cs (0.1 ppm), Dy (0.1 ppm), Er (0.1 ppm), Eu (0.1 ppm), Ga (0.1 ppm), Gd (0.1 ppm), Hf (0.1 ppm), Ho (0.1 ppm), La (0.2 ppm), Lu (0.1 ppm), Nb (0.1 ppm), Nd (0.1 ppm), Pr (0.1 ppm), Rb (0.1 ppm), Sm (0.1 ppm), Sn (1 ppm), Sr, 0.2 (ppm), Ta (0.1 ppm), Tb (0.1 ppm), Th (0.1 ppm), Tm (0.1 ppm), U (0.1 ppm), W (1 ppm), Y (0.5 ppm), Yb (0.1 ppm), Zr (1 ppm)
Selective ion electrode (SIE)	F (50 ppm)
Thermo-gravimetric @ 1,000)	LOI-1000 (0.01 %)

The TREO values were supplied by Altona as part of the assay data, represents the sum of the rare earth oxide values (CeO_2, Dy_2O_3, Er_2O_3, Eu_2O_3, Gd_2O_3, Ho_2O_3, La_2O_3, Lu_2O_3, Nd_2O_3, Pr_6O_{11}, Sm_2O_3, Tm_2O_3, Tb_4O_7, YwO_3 and Tb_2O_3). Snowden Optiro checked the TREO values.

The sample REE and REO values were converted to parts per million (multiplied by 10,000) to ensure the fidelity of the assay grade during estimation and the various major elemental oxide assays (Fe_2O_3, SiO_2, TiO_2, Al_2O_3, etc) were kept as percent values.

As the Globe data had multiple element/oxide value combinations, all element and stoichiometric oxide values were calculated if absent. For the major element/oxide values the conversion factors were sourced from the AusIMM Monograph 9, Table 4.3. The REE /oxide conversion, the factors were sourced from the James Cook University Advanced Analytical Centre (JCU-AAC) website Advanced Analytical Centre - Element-to-stoichiometric oxide conversion factors - JCU Australia, with the key conversion factors presented in Table 4.15.

Table 4.15 Element/oxide conversion factors

Element	Oxide	Factor	Element	Oxide	Factor
Ce	Ce_2O_3	1.1713	Pr	Pr_2O_3	1.1703
	CeO_2	1.2284		Pr_6O_{11}	1.2082
Dy	Dy_2O_3	1.1477	Sm	Sm_2O_3	1.1596
Er	Er_2O_3	1.1435	Tb	Tb_2O_3	1.151
Eu	Eu_2O_3	1.1579		Tb_4O_7	1.1762
Gd	Gd_2O_3	1.1526	Tm	Tm_2O_3	1.1421
Ho	Ho_2O_3	1.1455	Yb	Yb_2O_3	1.1387
La	La_2O_3	1.1728	Nb	Nb_2O5	1.4305
Lu	Lu_2O_3	1.1371	Sc	Sc_2O_3	1.5338
Nd	Nd_2O_3	1.1664	Yb	Y_2O_3	1.2699

It was noted that for barium oxide (BaO) there was a single value in the supplied data of >5 (drill hole MM055, 34 - 36 m, sample B8790) – this value was re-set to a value of 5.75 to reflect a grade greater than 5.00 (the detection limit) and greater than the highest returned assay of 5.58 but not excessively high. The final imported assay dataset was then cross-checked against the available assay certificates where the only discrepancies identified were related to rounding of values during oxide-elemental conversions.

Lithological data

There are effectively 4 sources of geological logging/rock descriptions in the available data:

- Globe Metals logging ('LITH 1' and 'Lith 2').
- Altona geological logging ('LITHO').
- Altona REE logging derived from the available geochemistry ('REV_L').
- Altona REE logging derived of the available Globe available geochemistry (file 'MMDB_LITHO_FROM_ASSAYS.XLS ', field 'LITHO').

As a function of the different file structures, it was noted that some data captured the presence of cavities/voids in the 'LITHOLOGY' fields, some by way of a VOID field, and others in the 'COMMENT' field. If either the LITHOLOGY or COMMENT fields noted the presence of a void a value of '-99' was added to the 'VOID' field to denote the presence of a potential cavity not identified during logging, that could then be reviewed and used as required. In reviewing available core photographs (Figure 4.39), it was noted that the voids were millimetre to centimetre scale features.

Density data

Density determinations was only available for the diamond drilling and determined using a calliper method (weight of an interval / nominal core volume). Due to the limited number of density determinations available and the risk of an errant determination unduly influencing the outcome, only 416 of the 454 available density determinations were deemed valid, and 38 records were viewed as being unreliable:

- MM040 had six replicated samples – single duplicates for SB203, SB201 and SB202, and S204/ SB204 replicated three times.
- Thirty-one samples which had the hole diameter estimated because the recovered material was highly weathered or used a nominal core diameter.
- A single sample (MM001, 48.32 to 48.57 m returned a density value of 4.74 t/m^3 which as noted as dubious, as the near identical looking material either side of this interval had density values of 2.63 and 2.65 t/m^3.

Figure 4.39 MM040 box 36 106.35 to 110.95 m showing typical void presentation

Data preparation

All available data was imported into Datamine Studio RM Pro (v1.12.113.0) for subsequent desurveying and preparation. The collar coordinate data was updated with the final RTK-GPS coordinates and validated spatially.

For the geological logging data, there were nine drill holes with maximum interval depths less than either the collar drill hole depth or the maximum assay depth (e,g MM051 was drilled to 84.5 m depth, the assay data recorded a maximum depth of 84.5 m but the maximum depth for the geological logging was recorded as 85.0 m). The discrepancies were all less than 0.5 m, with the geological logging interval being rounded to the nearest metre drilled. After consultation with Altona and a review of the available data, for these nine drill hole, the end of hole interval depth for the geological logging data was re-set to the maximum depth recorded in the collar and assay tables.

The available assay data was captured in four groups of files:

- Altona diamond assay data.
- Altona RC drilling campaigns were assayed using ICP at Intertek Laboratories in Perth.
- Altona RC drilling completed in August 2023, assayed with handheld XRF data.
- Assay data from Globe Metals and Mining Ltd.

The Altona and Globe geology data employed different rock and weathering code legends and although there is broad correlation between the two, there are also some minor differences. Currently there is no translation table available between the two data sources. The weathering code for the Globe data use identical weathering codes as the Altona legend (fresh – FR and soil – SO as well as sap rock SR which matched spatially the Altona slightly weathered). However, after a spatial review of the weathering codes, the Globe logging codes SP (saprolite) and TR (transitional) had no identifiable translation to the Altona weathering codes.

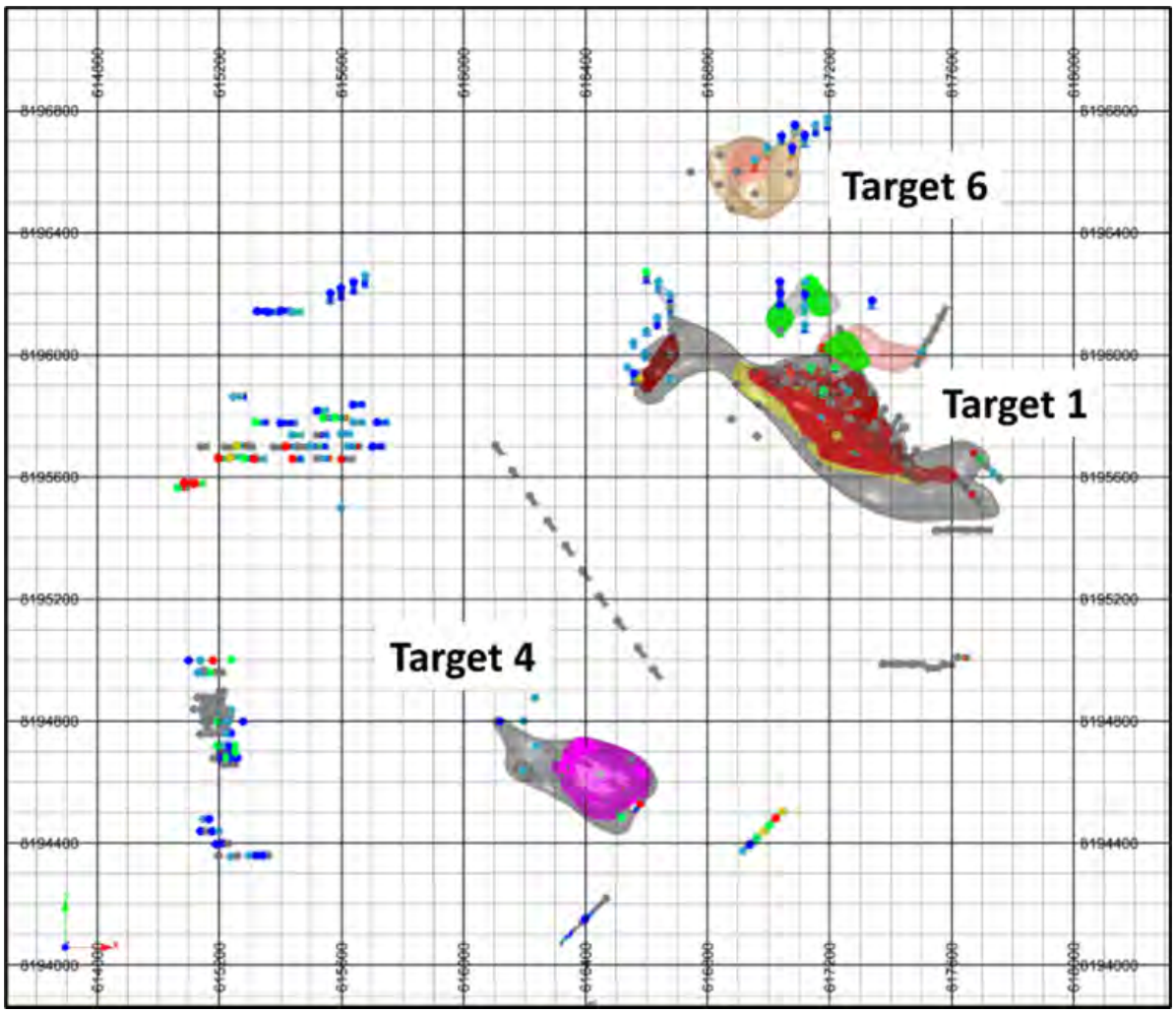
It was noted that some of the drill hole recovery data had the drilled interval metres equal to the cavity metres (implying 0% total recovery), but the recorded recovery was calculated as 100%. To fully assess the core recovery, the total recovered core (TRC%) was calculated excluding any cavity length. Note that

the diamond core is recorded as length of recovered core, but the RC recovery is recorded as weight of sample.

4.8.2 Mineral Resource estimation

Snowden Optiro was requested to prepare interpretations in support of a Mineral Resource estimate (MRE) for the Monte Muambe mineralisation for Targets 1 and 4 (Figure 4.40). As a function of the proximity of Target 1 to Target 6, interpretations were also completed for Target 6. Interpretation and estimation modelling at Target 6 was prepared with the aim of providing a possible exploration opportunity and scenario planning information only, not for reporting as a Mineral Resource.

Figure 4.40 Plan view mineral inventory areas



Exploratory data analysis

Initial exploratory data analysis was undertaken comparing the global statistics for the separate target areas (combined Target 1 and Target 4). Target 1 has substantially more data compared to target 4 and the analysis was primarily conducted using the Target 1 data, and tested for Target 4, which exhibited similar patterns. For the exploratory data analysis, length weighted statistics were prepared using Snowden Supervisor software.

Box and whisker plots were prepared examining the logged rock and weathering codes against the TREO grades. It was observed that lower TREO grades were associated with material logged as fresh material compared to the more weathered material (Figure 4.41, Figure 4.42 and Figure 4.43).

Figure 4.41 TREO% box and whisker plot global Monte Muambe by logged weathering

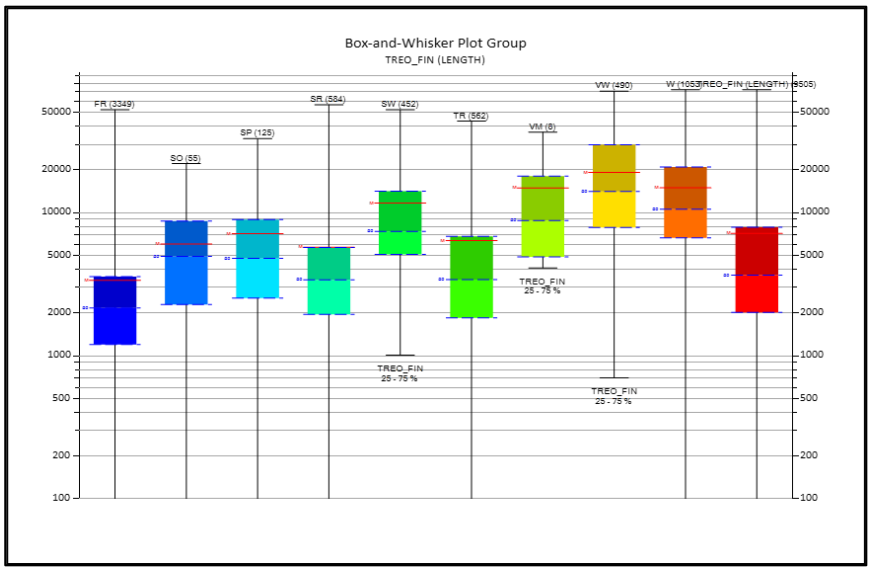


Figure 4.42 TREO% box and whisker plot Target 1 by logged weathering

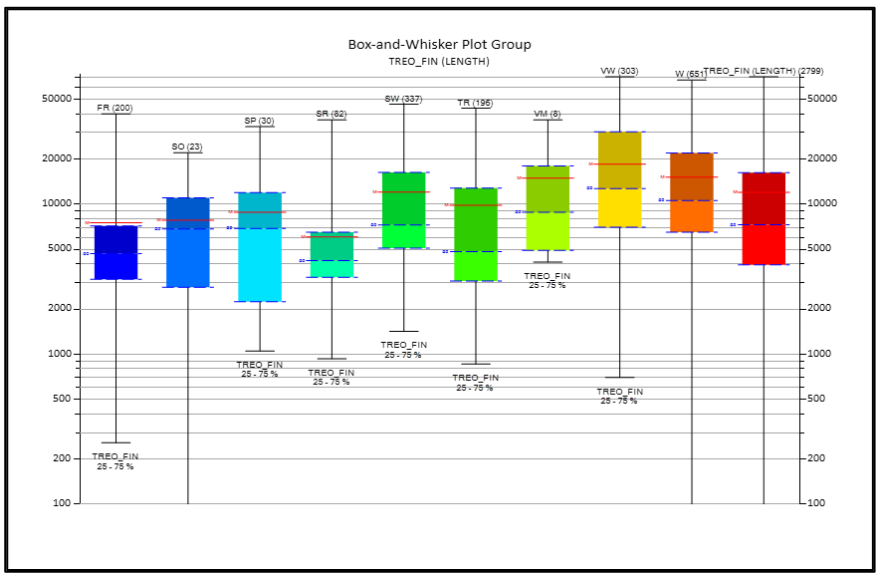
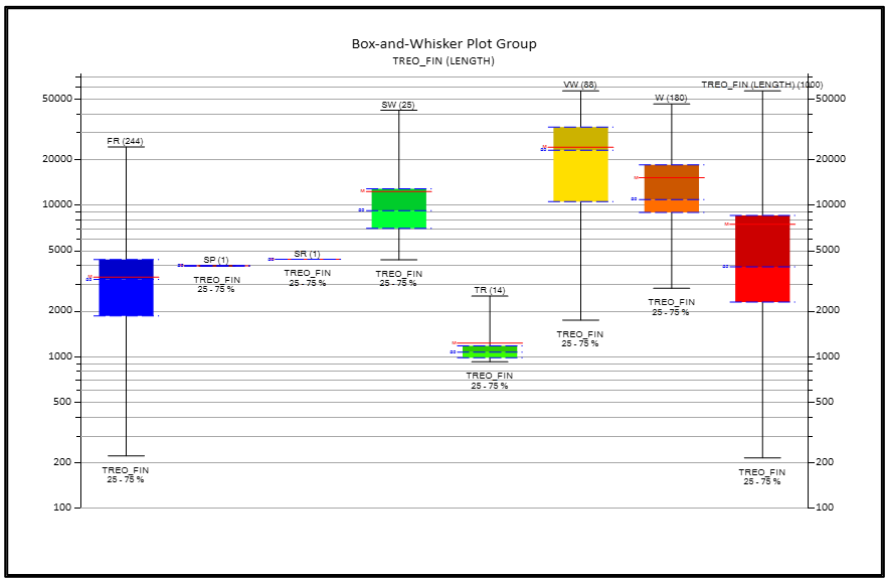


Figure 4.43 TREO% box and whisker plot Target 4 by logged weathering



Box and whisker plots were also prepared by logged lithology (Figure 4.44), where it was noted that:

- The undifferentiated and magnesium rich lithologies (CAR, CMG and MMG) had an overall higher average TREO grade compared to the other rock types.
- Globally, material logged as fenite had a lower average grade of 0.47% TREO compared to the carbonatite lithologies, but some were still mineralised (Figure 4.45). For the finites, 30% of the data exceed 0.5% TREO, and 10% of the fenite have grades exceeding 1.0% TREO.

Figure 4.44 TREO% box and whisker plot by logged lithology global Monte Muambe

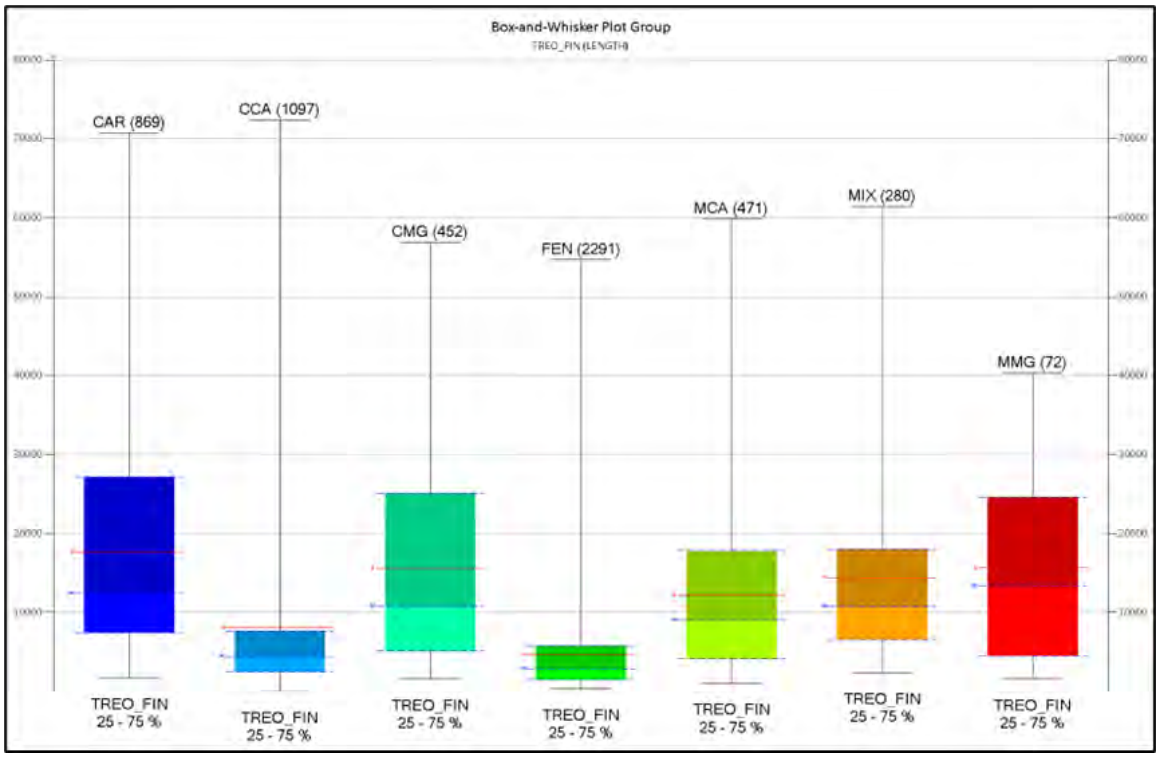
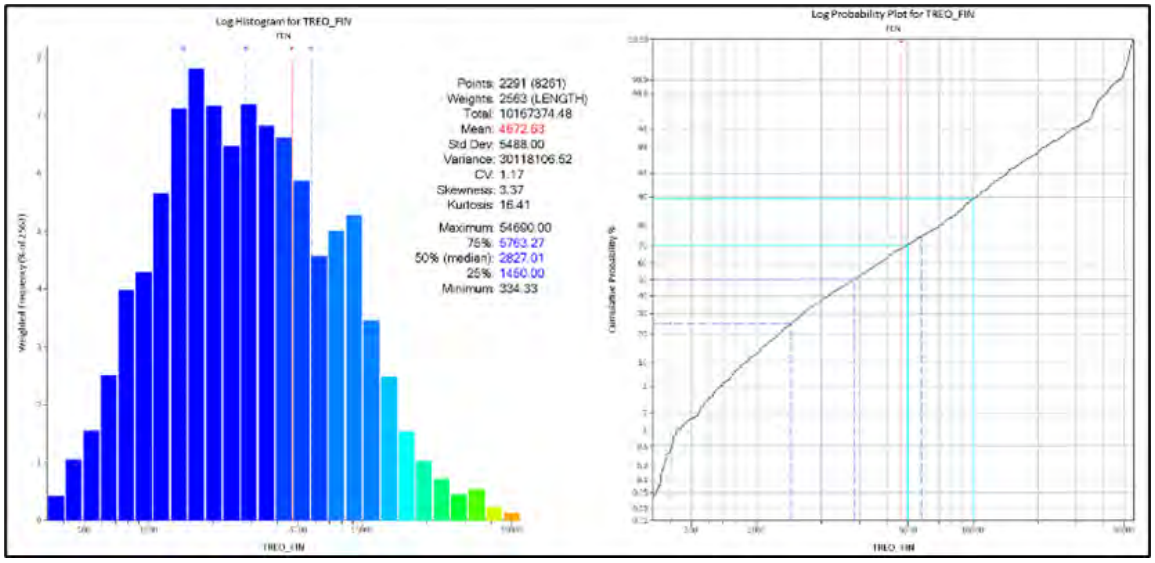


Figure 4.45 Global length-weighted TREO grades for material identified as fenite



Note: Log-histogram (left); log-probability plot showing 0.5 and 1.0% TREO cut-offs (right)

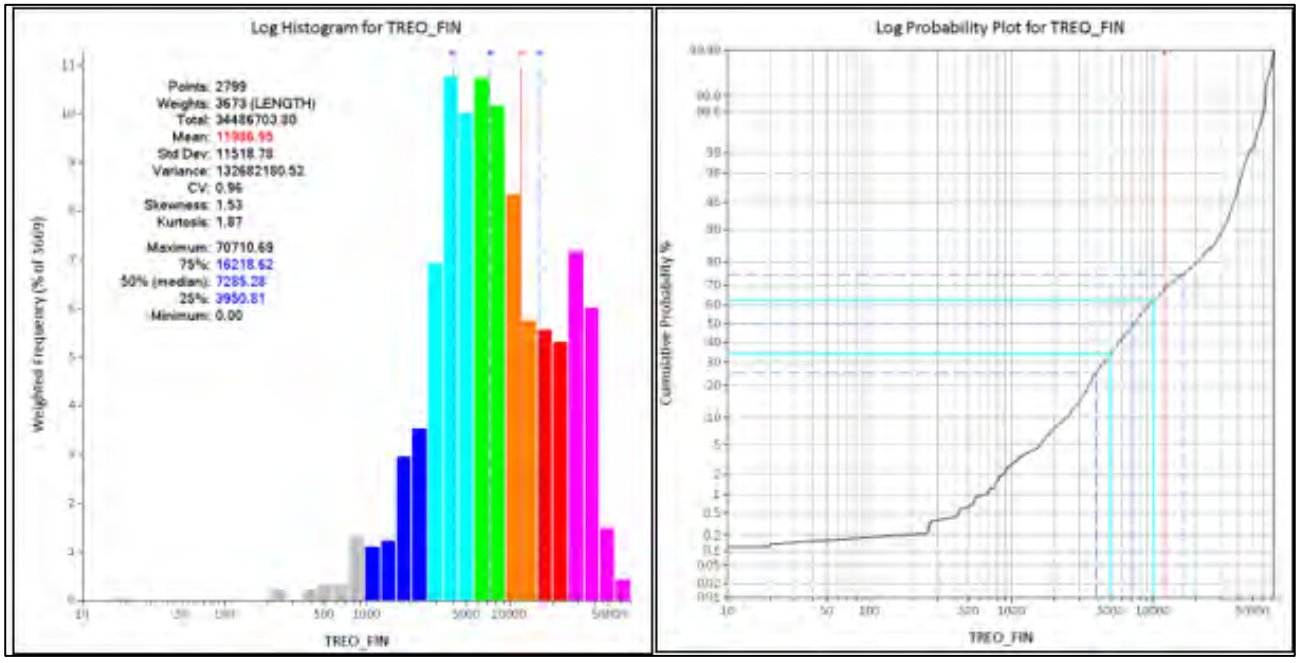
The length-weighted TREO grade distributions for Targets 1 and 4 were then reviewed. It was noted that there were multiple subtle grade inflections within the grade distribution, in reviewing all of the available information TREO grade cut-offs at 0.5% and 1.0% TREO were selected because:

- The inflection points of the grade distributions across Target 1 and 4 (Figure 4.46).

- Test work using TREO horizontal indicator variography for Target 1 assessing the impact of different TREO grade cut-offs. Below 0.5% TREO, the continuity fans all display similar patterns. However above 0.5% TREO, the grade continuity ranges start to reduce and there are subtle changes to the direction of maximum continuity. Above 1.0% TREO the larger scale continuity is significantly reduced, and the preferred continuity direction steepens.
- When reviewing the available data spatially, the rate of change in TREO grades incrementally increases across the 0.5% and 1.0% TREO grades.
- At these grade cut-offs, along strike and down dip continuity exists and these cut-offs overwhelmingly capture the mineralised samples.

Multiple mineralised shells at a variety of grade cut-offs were created initially using omni-directional interpolation parameters in Leapfrog. The 0.5% TREO cut-off provided the optimal cut-off to define the on-set of mineralisation, while the 1.0% cut-off defined spatially consistent high-grade domain along strike and down dip.

Figure 4.46 Target 1 TREO global grade distribution



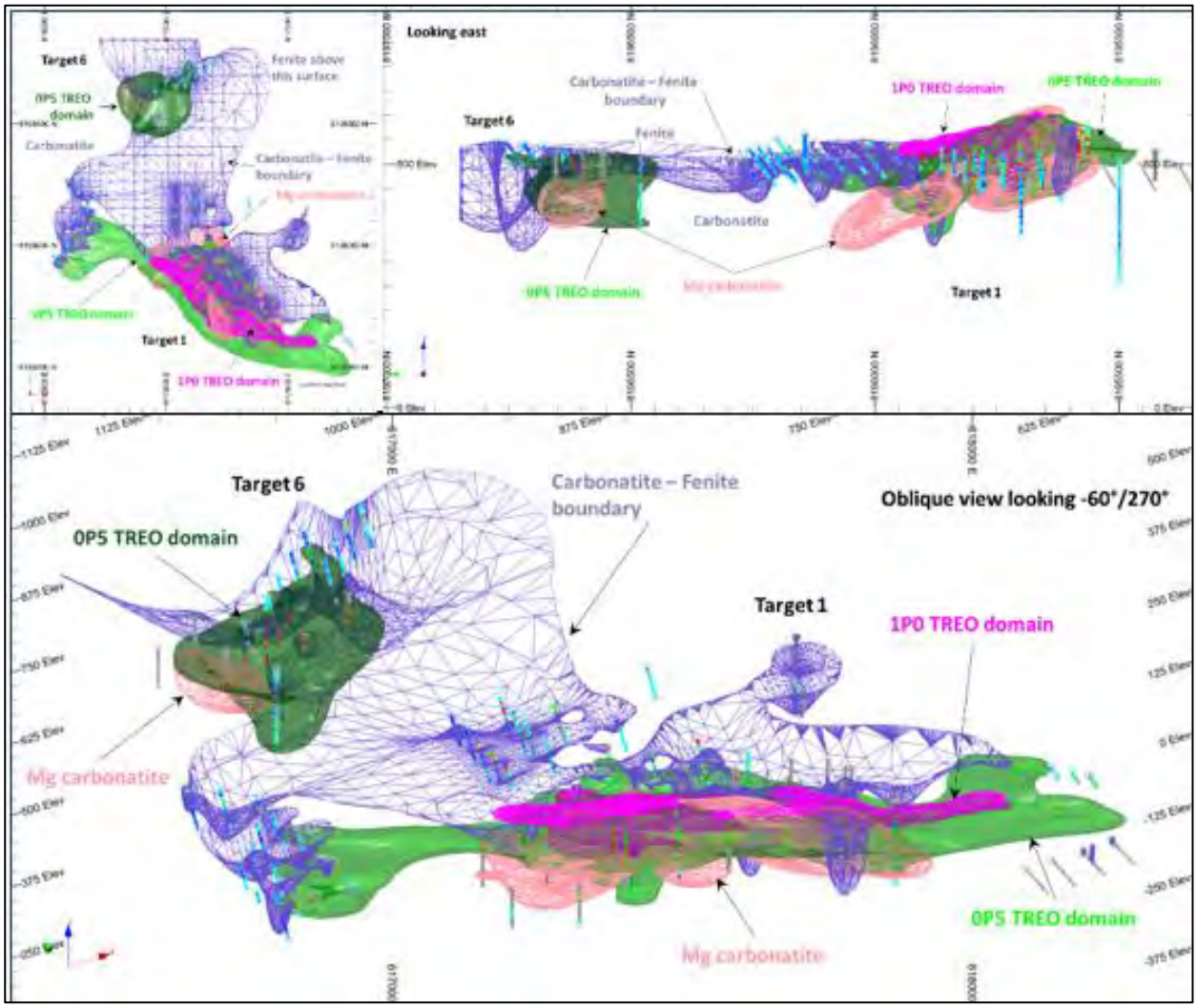
Note: Log-histogram (left); log-probability plot showing significant grade increments (right)

Geological modelling

All drill hole geological as well as the combined laboratory and handheld XRF assay data was used to model the geology and weathering, Geological and mineralisation modelling was undertaken using Leapfrog Geo (v2022.1) software. Initial geological interpretations were made to interpret a full rock model for both Target 1 and 4 (Figure 4.47). However, a combination of the drilling being clustered around the mineralisation, the lithologies being highly weathered, the available logging and the intrusive geological emplacement of the local geology combined to make producing consistent and robust geological interpretations extremely difficult. Hence, only generalised interpretations for the key rock types were undertaken being restricted to:

- A combined magnesium rich (>1% MgO) carbonatite (CMG) and mixed rocks (MMG).
- A carbonatite-fenite boundary surface.

Figure 4.47 Target 1 geological and main mineralisation interpretations



Note: Plan view (top left), section looking east (top right); oblique view looking down the mineralisation (bottom)

Final mineralisation interpretations were prepared at a 0.5% TREO and 1.0% TREO cut-off, using Leapfrog software, with a total of sixteen mineralised domains across all three target areas as listed in Table 4.16. This was completed by initially coding all samples with a ≥0.5% and ≥1.0% TREO indicators. If a sample was lower than the indicator cut-off it was flagged with a T*_0, and exceeded or equalled the indicator cut-off, it was flagged with a T*_1value (note the * refers to the respective target identity). This allowed the use of the more sophisticated geological modelling tools in Leapfrog Geo. Target 1 and 4 mineralised interpretations were created using the following workflow:

- Initially interpretations were created using generalised isotropic orientations.
- A variety of dip and dip direction anisotropies were then tested until relatively consistent 3-dimensional shapes was derived. The anisotropy was initially guided by the available indicator variography orientations, but then adjusted to provide a better local fit.
- The various shape editing tools in Leapfrog were used to refine the final and finalise triangulations to better reflect the data locally.
- Mineralisation at Target 6 was modelled using a simplistic horizontal trend because of the spatially limited data, with the available drill hole intersections being drilled at Target 6.
- In addition to the ESTDOM field, a DOMAIN field was included to facilitate the reporting of the 0.5 to 1.0% and ≥1.0% populations.

Table 4.16 Interpreted mineralised domains and estimation domains (ESTDOM and DOMAIN) coding

Target	Identifier	≥0.5% (DOMAIN = 0P5)		≥1.0% (DOMAIN = 1P0)	
		Wireframe	ESTDOM*	Wireframe	ESTDOM*
1	Main	wf_t1_0p5_main_2308	T1_01	wf_t1_1p0_mainclip_2308 wf_t1_1p0_hw_2308 wf_t1_1p0_fwclip_2308 wf_t1_1p0_nhgclip_2308	T1_11 T1_13 T1_14 T1_15
	Horizontal near surface	wf_t1_0p5_nth2308	T1_02	N/A	
		wf_T1_0P5_SG1_2308	T1_03	wf_t1_1p0_SG1aclip_2308 wf_t1_1P0_SG1bclip_2308	T1_16 T1_17
		wf_T1_0P5_SG2_2308	T1_04	wf_t1_0p5_sg2_2308	T1_18
4	T4 mineralisation	wf_t4_0p5_2308_1	T4_01	wf_t4_1p0_2308_1	T4_11
6	T6 mineralisation	wf_t6_0P5_2308	T6_01	wf_t6_1P0_1_2308 wf_t6_1P0_2CLIP_2308	T6_11 T6_12

Target 1

At Target 1, a total of four 0.5 to 1.0% TREO low grade and seven ≥1.0% TREO high grade mineralised domains were modelled (Figure 4.48). The main 0.5% TREO mineralised domain (T1_01) strikes towards 300-310° with dips ranging from sub-horizontal in the north-west, steepening to -35° in the south-east direction which coincides with the on-set of higher-grade mineralisation. The main low-grade domain has approximately 1,300 m strike length, with a maximum dip extent of 320 m and a maximum vertical extent of 220 m, narrowing down-dip. Within the main lower grade domain, there is development of four ≥1.0% TREO mineralised domains:

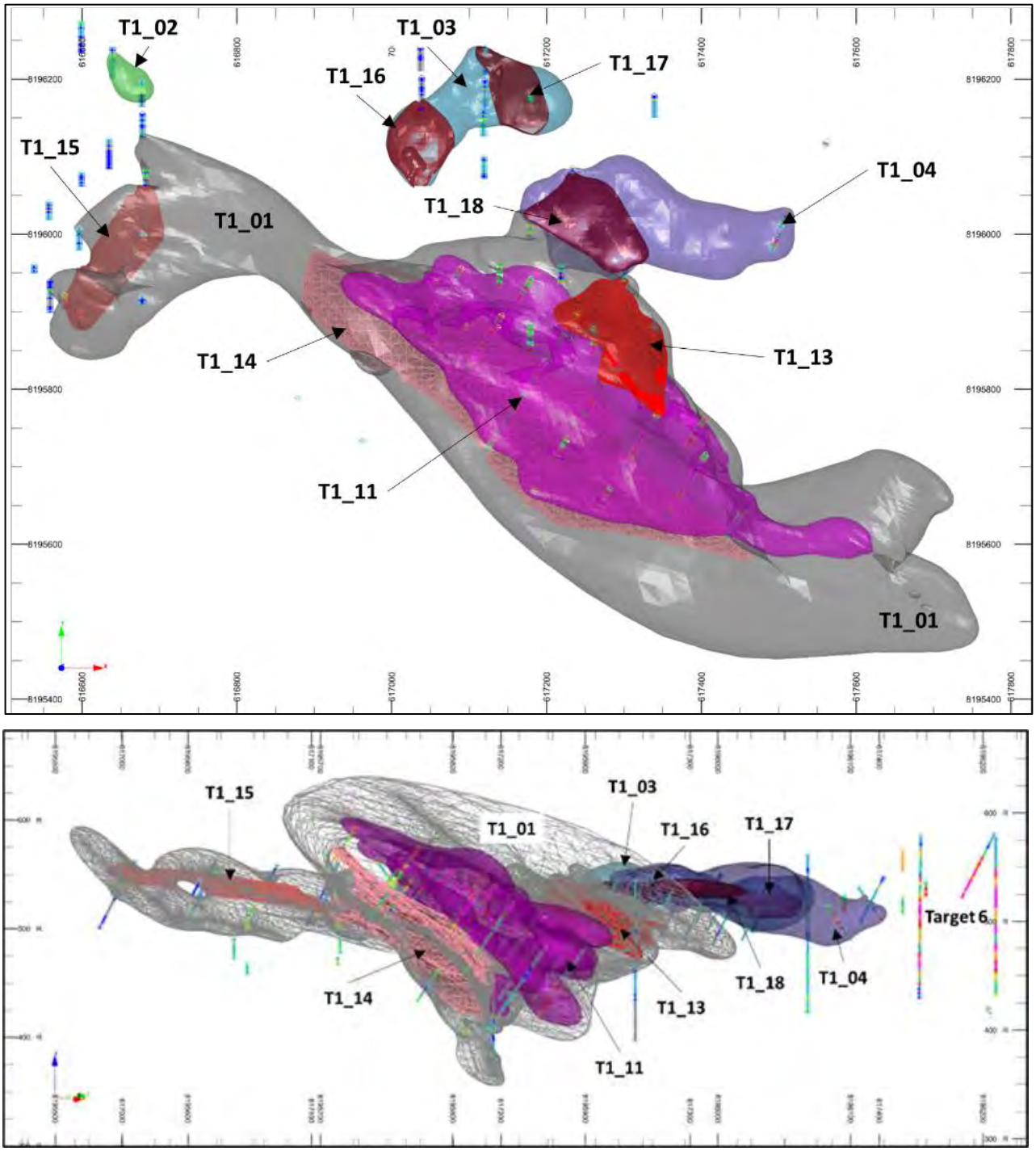
- The main high-grade domain (T1_11) presenting a higher-grade core to the enveloping low grade mineralisation, with a strike length of 775 m, pinching approximately 270 m down dip (220 m vertically) below surface.
- A small hangingwall mineralised position (T1_13) sub-parallel to the lower grade mineralised domain, with a strike length of 190 m, pinching approximately 115 m down dip, (100 m vertically) below surface.
- A narrow but consistent foot-wall mineralised position (T1_14) sub-parallel to the lower grade mineralised domain, with a strike length of 690 m, pinching approximately 200 m down dip (115 m) vertically.
- In the north-west margin of the low-grade mineralisation, there is development of a small flat lying ≥1.0% TREO mineralised domain sub-parallel to the local low-grade domain.

In addition to the northwestern extent of the main 0.5% TREO mineralisation domain, three additional sub-horizontal 0.5% TREO domains have been interpreted.:

- To the immediate north of the northwest margin of the main 0.5% grade domain, is a small mineralised low-grade domain (T1_02).
- Immediately north of the main 0.5% TREO domain is a moderate size low grade domain (T1_03), within which two small ≥1.0% TREO mineralised domains are interpreted (T1_16 and T1_17).
- To the northeast and adjacent to the main 0.5% TREO domain is a moderate size low grade domain (T1_04), within which a small ≥1.0% TREO mineralised domain (T1_18).

These flatter lying domains were interpreted to provide potential exploration targets and project scenario options going forward. The flatter lying orientations at Target 1 may reflect a spectrum of purely supergene or a combination of supergene and hypogene processes, but currently this is uncertain.

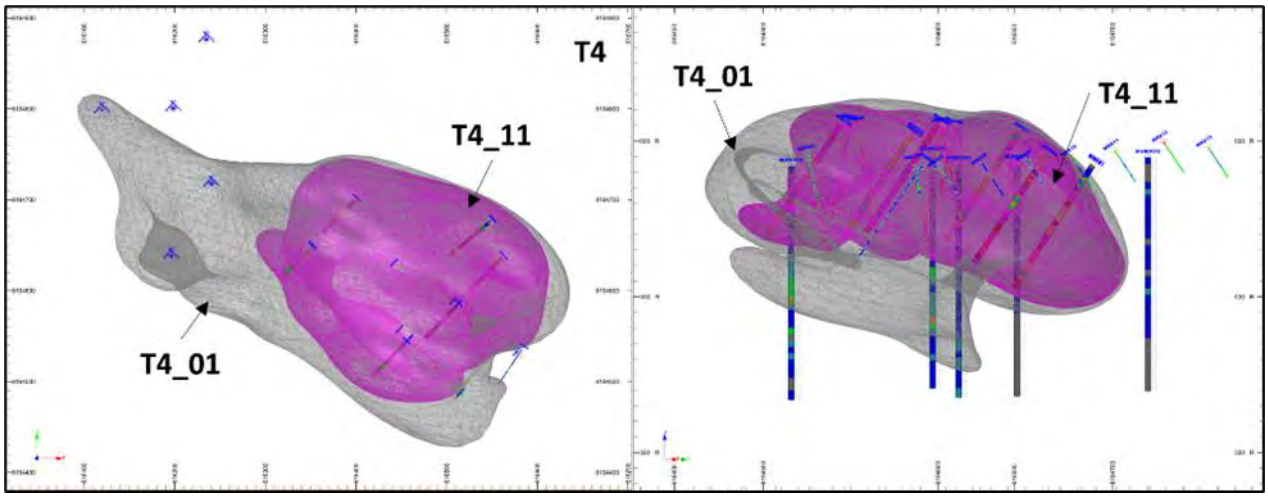
Figure 4.48 Target 1 interpreted mineralisation (top plan view, bottom section looking towards 305°)



Target 4

Target 4 consisted of a single broad 0.5 to 1.0% TREO low grade (T4_01), surrounding a single ≥1.0% TREO high grade mineralised domain (T4_11), presented in Figure 4.49. The Target 4 mineralisation boundaries are not well defined spatially, but within the boundaries the grades exhibit little variability. The mineralisation has been interpreted with a similar orientation as Target 1 (-25° towards 295°), primarily because it provided the best fit against the available data. The 0.5 to 1.0% TREO domain has a sub-horizontal lozenge shape, with a strike length of 585 m, and horizontal widths of 50 to 275 m across strike. It has a nominal down dip extent of 270 m, extending 110 m below surface, substantially thinning out and deepening towards the northwest. The ≥1.0% TREO mineralised domain has a strike length of 300 m and a down dip extent of 240 m, extending 230 m horizontally, and up to 95 m vertically from surface.

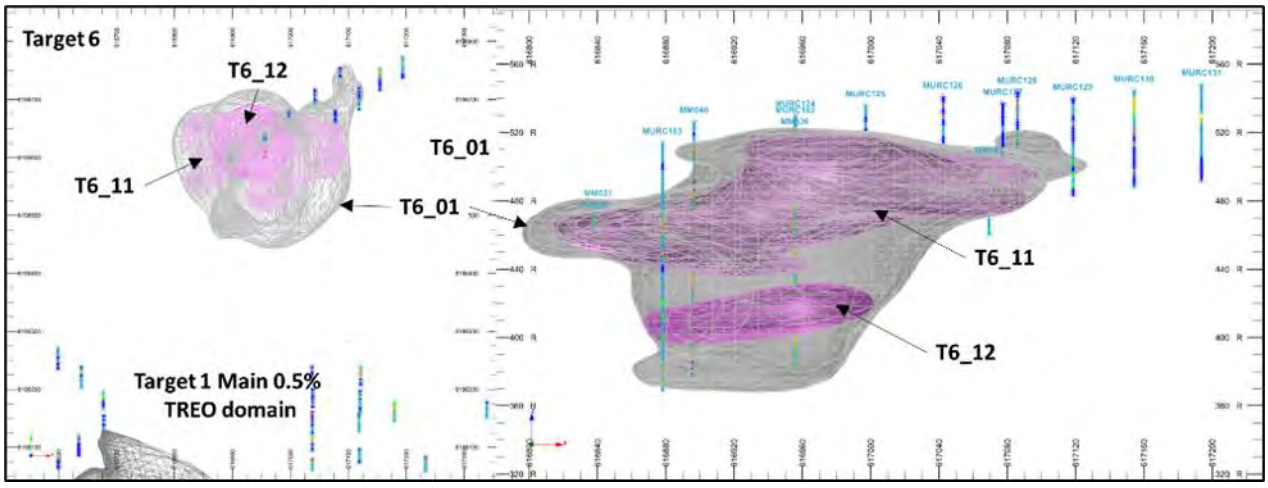
Figure 4.49 Target 4 interpreted mineralisation (left plan view, right section view looking towards 300°)



Target 6

Target 6 consists of a single 0.5 to 1.0% TREO low grade domain and two ≥1.0% TREO high grade mineralised domains (Figure 4.50). The ≥1.0% TREO are informed effectively by a single line of drilling which makes determining the mineralised geometry difficult with limited along strike information. The mineralisation is considered open in the northwest-southeast direction. Given the depth of the mineralisation at Target 6, it is likely to have similar controls as Target 1, however, this has not been confirmed. The 0.5 to 1.0% TREO low grade domain is approximately circular in shape, with horizontal length of 320 m in the northeast direction and 250 m towards the southeast. The vertical depth is approximately 380 m extending from approximately 10 m below surface. The ≥1.0% TREO domains are both similarly circular in shape and are separated by approximately 9 m of low TREO grade material.

Figure 4.50 Target 6 interpreted mineralisation (left plan view, right section view looking 000°)



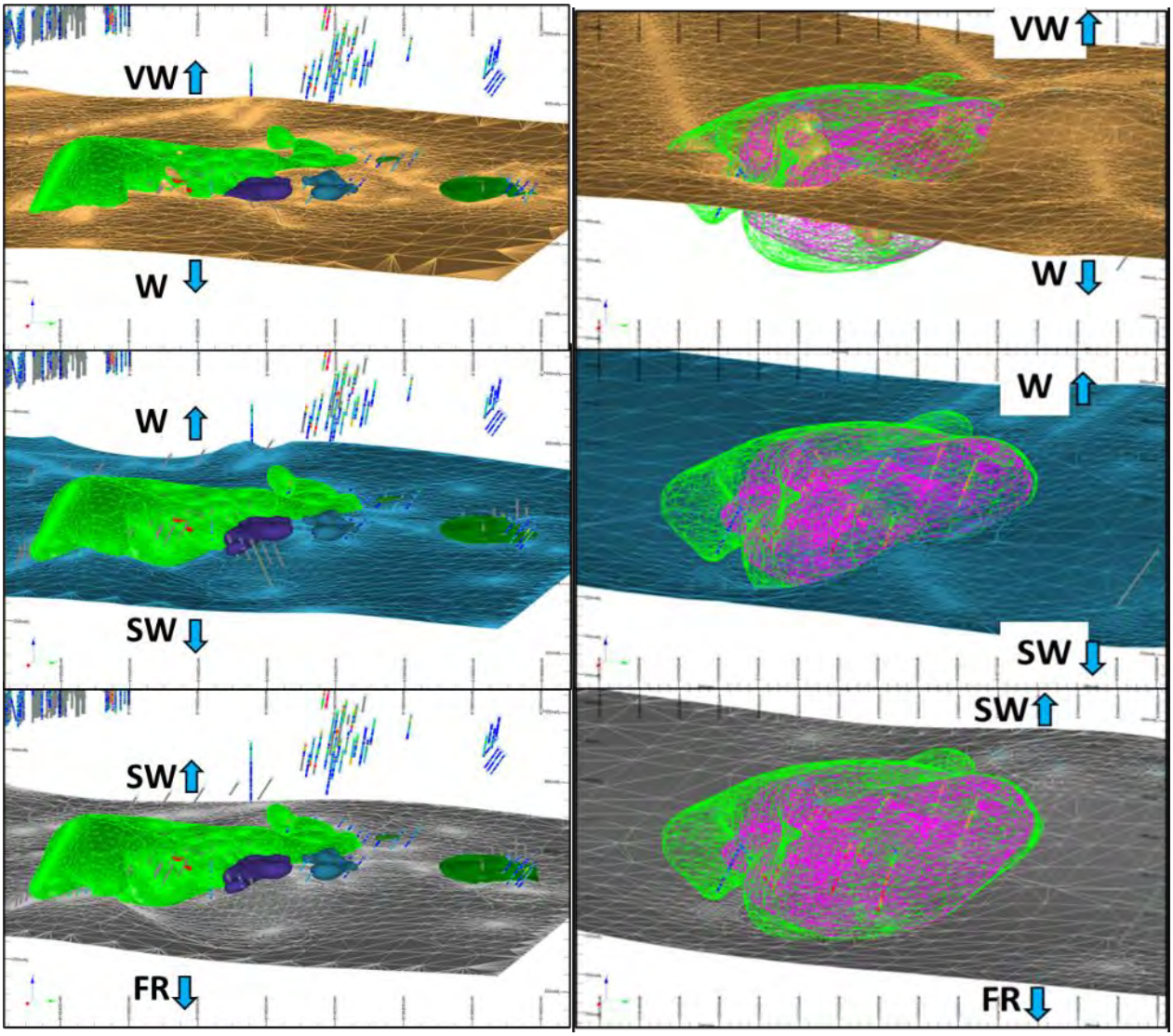
Weathering

Due to the need to define weathering for possible pit wall locations, the weathering was modelled well outside from mineralisation and encompassed most of the Project area. The Altona weathering code criteria was used to construct the interpretations (Table 4.17), using all available logging but ignored the Globe weathering data logged as either SP (saprolite) or TR (transitional). The logged weathering codes exhibited significant local variability and involved the grouping of different adjacent logged codes to generate interpretable shapes. However, the resultant shapes are broadly consistent in 3D (Figure 4.51).

Table 4.17 Interpreted weathering codes (WEATH)

Weathering codes	
WEATH Code	**Description**
FR	Fresh
SW	Slightly Weathered – weathered patches
W	Weathered
VW	Very Weathered – crumbling or loose
SO	Soil

Figure 4.51 Target 1 and 6 interpreted weathering surfaces (excluding SO) – oblique looking east



To test the veracity of the weathering interpretations, a series of box and whisker plots were generated for each of the mineralised and weathering domains. These confirmed that the weathering suitably captured different weathering geochemistry between the different weathering domains, Broader patterns identified included that transitioning from fresh to very weather, the TREO increased, while MgO and SO_3 decreased.

The depth of weathering combined with the magnesium depletion through the weathering profile makes modelling the carbonatite lithologies solely based on an MgO grade difficult. The apparent volume/ occurrence of MgO rich lithologies near surface will be reduced if solely using a MgO only grade criteria. This pattern is observed in the attempts to model the magnesium rich carbonatites where they appear to be domal structures that are not strictly expressed at surface. Hence it is almost certain that the interpreted MgO rich lithologies reflect an artefact of the weathering. Empirically the Monte Muambe REO mineralisation represents a relatively higher-grade central core (the ≥1.0% domains) which have been remobilised by weathering to create a lower grade halo around the higher-grade portions. Development of the sub-horizontal mineralisation at Target 1 and Target 6 may represent a dominantly supergene processes to create the patterns observed.

Data conditioning

Only laboratory assay data were used for the estimation at Monte Muambe. The sample data was flagged by respective ESTDOM and DOMAIN fields (Table 4.14) and the respective weathering codes (Table 4.15). Once validated all composite samples were created using the Datamine compdh composite function, controlled by the ESTDOM, DOMAIN and WEATH codes and using the parameters presented in Table 4.18. The resultant composites were then checked against the input statistics which suitably reflected the input statistics (Table 4.19).

Table 4.18 Composite creation parameters

Parameter	Value
Control fields	ESTDOM, WEATH, DOMAIN
Composite interval	2.0
Minimum length	0.5
Minimum gap	0.001
Maximum gap	0.0
Mode	Best fit (Mode = 1)

Table 4.19 Sample versus composite key statistics

Field	Target	Type	Domain	No. samples	Min.	Max.	Total	Mean	Standard deviation	Skewness	CoV
Length (m)	T1	Samples	0P5	583	0.15	4.00	1,229	2.11	0.82	0.96	0.39
			1P0	815	0.05	4.00	1,492	1.83	0.72	0.30	0.40
			WAST	588	0.27	4.00	1,649	2.80	1.16	-0.19	0.41
		Composite	0P5	624	0.93	2.65	1,229	1.97	0.12	-4.71	0.06
			1P0	754	1.00	2.11	1,492	1.98	0.08	-5.86	0.04
			WAST	837	0.85	2.35	1,649	1.97	0.12	-5.21	0.06
	T4	Samples	0P5	122	2.00	2.03	244.50	2.00	0.011	2.3	0.01
			1P0	182	1.50	2.00	362.00	1.99	0.061	-6.5	0.03
			WAST	525	1.80	2.00	1048.00	2.00	0.021	-7.8	0.01
		Composite	0P5	122	2.00	2.03	244.50	2.00	0.011	2.3	0.01
			1P0	182	1.50	2.00	362.00	1.99	0.061	-6.5	0.03
			WAST	525	1.80	2.00	1048.00	2.00	0.021	-7.8	0.01
	T6	Samples	0P5	147	0.08	4.00	216	1.47	1.30	1.01	0.88
			1P0	173	0.10	4.00	278	1.61	1.17	0.85	0.73
			WAST	233	0.04	4.00	600	2.57	1.60	-0.38	0.62
		Composite	0P5	108	1.00	2.18	216	2.00	0.11	-6.09	0.06
			1P0	140	1.75	2.05	278	1.99	0.06	-2.46	0.03
			WAST	301	1.00	2.43	599	1.99	0.08	-7.41	0.04
TREO %	T1	Samples	0P5	583	0.07	4.06		0.73	0.40	3.89	0.55
			1P0	815	0.00	7.07		2.19	1.18	0.68	0.54
			WAST	588	0.00	1.52		0.30	0.16	1.77	0.55
			0P5	624	0.08	4.06		0.73	0.39	3.97	0.53

Field	Target	Type	Domain	No. samples	Min.	Max.	Total	Mean	Standard deviation	Skewness	CoV
		Composite	1P0	754	0.19	6.47		2.20	1.16	0.71	0.53
			WAST	837	0.00	1.52		0.30	0.16	1.63	0.54
	T4	Samples	0P5	122	0.41	1.46		0.74	0.203	0.8	0.27
			1P0	182	0.28	5.68		2.13	1.221	0.8	0.57
			WAST	525	0.02	2.43		0.27	0.187	3.1	0.68
		Composite	0P5	122	0.41	1.46		0.74	0.203	0.8	0.27
			1P0	182	0.28	5.68		2.13	1.221	0.8	0.57
			WAST	525	0.02	2.43		0.27	0.187	3.1	0.68
	T6	Samples	0P5	147	0.13	5.37		0.75	0.56	4.32	0.75
			1P0	173	0.29	6.24		2.17	1.20	0.95	0.55
			WAST	233	0.08	2.88		0.33	0.18	1.63	0.54
		Composite	0P5	108	0.27	3.28		0.76	0.47	3.82	0.62
			1P0	140	0.53	5.68		2.16	1.10	0.97	0.51
			WAST	301	0.08	1.11		0.33	0.17	1.30	0.51

Note: CoV – Coefficient of variation

Statistics

Naïve statistics were reported by ESTDOM and are summarised in Table 4.20. Except for the Target 1 T1_11 population, samples exhibit low variability (coefficient of variation less than 1) and low coefficient of skew. The anomalous statistics for T1_11 domain in individual REEs (Not TREO) are the result of a single sample with very extremely high grades across most of the rare earth oxide variables.

Table 4.20 TREO composite statistics by ESTDOM

ESTDOM	No. samples	Min.	Max.	Mean	Standard deviation	Skew	CoV	Percentiles		
								25th	50th	75th
T1_01	532	820	36,544	7,104	3,189	3.2	0.45	5,382	6,638	8,457
T1_02	14	5,709	9,978	7,488	1,507	0.3	0.20	5,734	7,261	8,585
T1_03	42	1,822	14,465	5,917	2,794	1.1	0.47	3,732	5,896	6,884
T1_04	36	2,193	40,638	11,549	9,075	2.0	0.79	6,412	7,610	11,704
T1_11	584	1,895	61,393	23,174	11,439	0.4	0.49	13,381	22,278	31,361
T1_13	40	9,010	64,664	29,418	14,229	0.6	0.48	17,512	28,371	36,444
T1_14	68	6,792	51,810	14,934	7,459	2.4	0.50	10,239	12,828	17,054
T1_15	20	9,869	27,121	15,560	5,874	1.0	0.38	11,162	12,917	17,622
T1_16	20	5,174	23,574	13,468	5,475	0.6	0.41	10,300	11,828	16,959
T1_17	14	4,909	14,110	11,292	2,984	-1.1	0.26	10,408	11,020	13,813
T1_18	8	10,253	14,969	12,453	1,683	0.3	0.14	10,253	12,295	12,536
T1_W	837	0	15,244	3,019	1,624	1.6	0.54	1,890	3,001	3,803
T4_01	122	4,123	14,577	7,384	2,030	0.8	0.27	5,514	7,222	8,688
T4_11	182	2,834	56,756	21,270	12,211	0.8	0.57	10,842	17,662	29,575
T4_W	525	216	24,279	2,747	1,867	3.1	0.68	1,074	2,919	3,802
T6_01	108	2,681	32,760	7,560	4,698	3.8	0.62	5,253	6,409	8,449
T6_11	115	8,431	56,824	21,026	10,642	1.2	0.51	12,405	17,670	26,895
T6_12	25	5,271	47,335	24,397	12,372	0.3	0.51	12,642	19,283	34,501
T6_W	301	827	11,080	3,261	1,677	1.3	0.51	1,950	3,141	4,085

Note: CoV – Coefficient of variation

The grade distribution plots for the T1_01, T1_11, T4_01 and T4_11 mineralised domains are presented Appendix D. A total of thirteen composites had top-cuts applied, to reduce the impact of extreme grades for a very limited number of composites as presented in Table 4.21.

Table 4.21 Applied top-cuts

ESTDOM	Variable	Samples	Uncut samples				Top-cut samples				
			Max.	Mean	Std. devn.	CoV	Value	No. of cut	Mean	Std. devn.	CV
T1_11	CE_2O_3	584	539,234	11,474	22,510	1.96	**32,000**	1	10,606	5,444	0.51
	DY_2O_3	584	19,573	112	807	7.22	**2,500**	1	83	105	1.27
	TB_2O_3	584	390	16.0	16.8	1.05	**150**	1	15.5	8.4	0.54
T6_01	TREO	108	32,760	7,560	4,698	0.62	**20,000**	3	7,230	3,134	0.43
	CE_2O_3	108	16,529	3,152	2,432	0.77	**9,000**	3	2,959	1,511	0.51
	PR_2O_3	108	1,512	346	210	0.61	**1,100**	3	338	168	0.50
T6_12	NB_2O_5	25	1,466	306	300	0.98	**750**	1	278	208	0.75

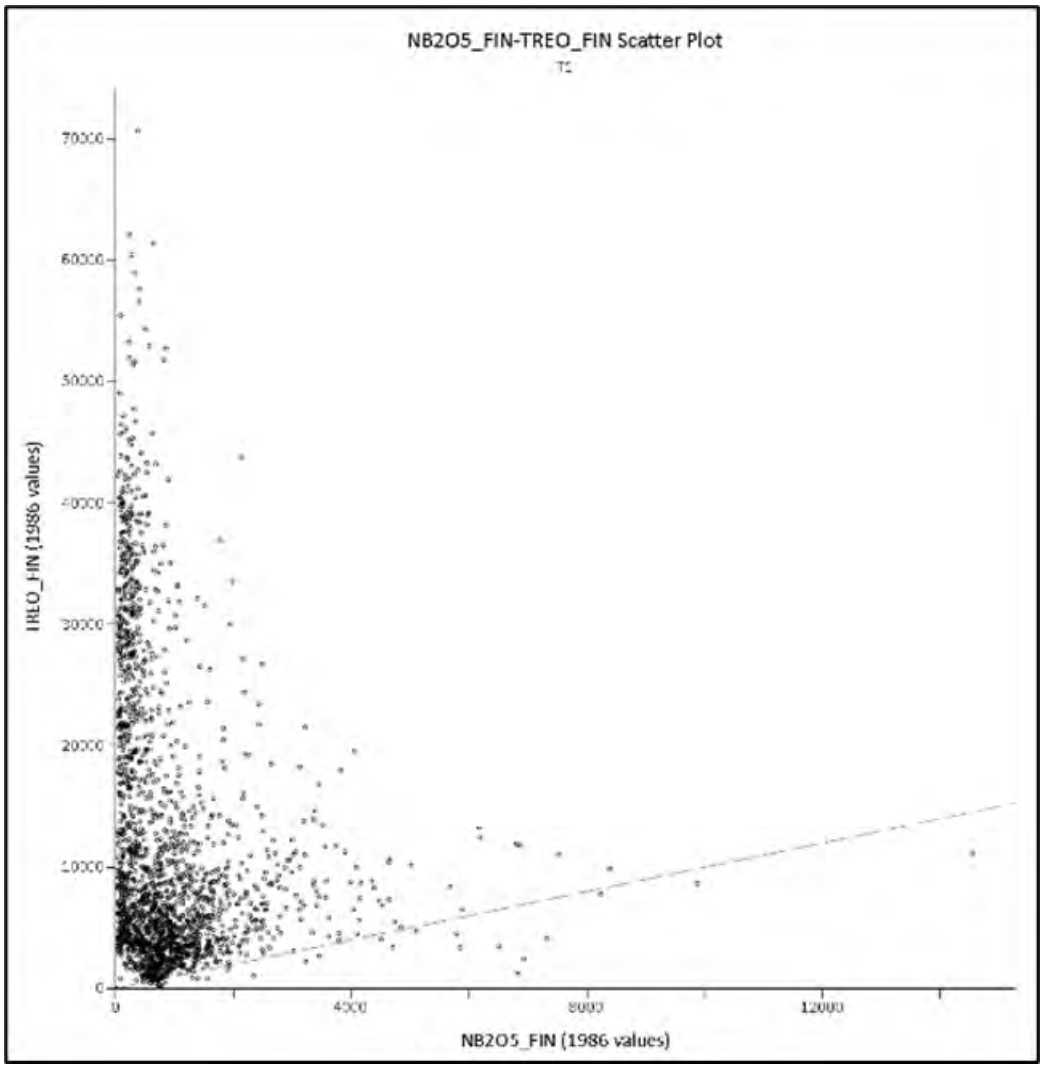
Note: CoV – Coefficient of variation; Std devn. – Standard deviation

Pearson correlation coefficients were derived for the key variables at Monte Muambe. For all target-domain combinations the correlations are similar. However, there some key differences:

- At Target 1, Ce_2O_3 behaves differently in the two domains. For TREO there is good correlation in the lower grade domain, but a poor correlation with TREO in the higher-grade domain. The correlation with Ce_2O_3 are different between the two domains.
- Target 4 does not exhibit the same correlation patterns as Target 1. Ce_2O_3 is strongly correlated with TREO in both the lower and higher-grade domains, while Nb_2O_5 exhibits the most significant difference compared to Target 1. Within the lower grade domain there are no significant Nb_2O_5 correlations, however, in the higher-grade domain, Nb_2O_5 exhibit weak to moderate correlations with TREO and Pr_2O_3. Both domains exhibit moderate to good correlations between Tb_2O_3 and Th.
- Target 6 exhibits similar correlation patterns between the lower and higher-grade domains, with the exception of the behaviours of Dy_2O_3 and Nb_2O_5, Dy_2O_3 and U as well as Nb_2O_5 and U. Target 6 exhibits similar correlations as Target 4 and does not reflect the discrepancy observed at Target 1 between the lower and higher grade domains for Ce_2O_3. Target 6 and Target 4 exhibit similar correlation patterns between Tb_2O_3 and Th which are absent from Target 1. At Target 6, Nb_2O_5 exhibits better correlation with U than observed at Target 4.

Further to these observations, a scatterplot was prepared for Nb_2O_5 and TREO (Figure 4.52) that highlights the two sub-populations within the mineralisation; a low Nb_2O_5-high TREO sub-population, and a high Nb_2O_5-low TREO sub-population.

Figure 4.52 Nb_2O_5 – TREO scatter plot for target 1 (combined mineralised domains)



These correlation observations highlight differences between the respective targets, which is likely to represent differences in the primary genesis of the mineralisation, and subsequent impact of weathering at Monte Muambe.

Variography

Variography was completed using Snowden Supervisor v8.15.0.3 software. Variogram modelling was prepared for the two major 0.5 - 1.0% and ≥1.0% domains at target 1, and the two estimation domains at target 4 (T1_01, T1_11, T4_01 and T4_11 respectively) as these were the key domains, as well as being the only domains with sufficient samples. The variography for all variables were modelled separately, although efforts were made to align the variogram directions.

For TREO at Target 1, the 0.5 - 1.0% estimation domain horizontal plane had three potential directions that could be selected: 010°, 050° and 320°. Although the 320° direction approximated the interpreted mineralised domain but had a shorter range (130 m compared to 190 m) than the other two directions, and for the 320° the subsequent across-strike and dip plane variography were very poorly structured. The 010° direction was selected as it provided variograms which were better structured in the across strike and dip plane directions and with longer ranges. The nugget structure for the back-transformed variograms were variable, with TREO and Ce_2O_3 having elevated nuggets greater than 60%, Tb_2O_3 had a nugget of 43%, while the rest all had low nuggets less than 15%.

The ≥1.0% estimation domain had single preferred orientation along 105°/285°, broadly sub-parallel but somewhat oblique to the interpreted ≥1.0% estimation domain. The Target 1 variogram models were moderately to well structured, with nugget structures less than 37% for all variables except Ce_2O_3 and Nd_2O_3 with nuggets of 66% and 47% respectively.

For Target 4, the horizontal variogram fans were poorly structured, such that the selected variogram directions were primarily based on the geological interpretations and the modified to best fit the respective variogram fans. The final selected orientations were broadly similar for each domain, with a relatively flat dip planes.

The nugget structures for the 0.5-1.0% are mixed, with TREO, Ce_2O_3, Pr_2O_3 and Nb_2O_5 having elevated nuggets of between 26 to 54% of the sill, with the rest having low nuggets less than 20%. For the ≥1.0% estimation domain the nugget structures were uniformly low (less than 20%) with the exception of Nd_2O_3.

The different variogram patterns between the 0.5-1.0% and the ≥1.0% estimation domain indicate the presence of different controls of mineralisation at Monte Muambe between the two estimation domains.

No variography was undertaken for the Target 6 mineralisation because of the limited number of samples.

The modelled variograms are contained in Appendix E.

Block model and resource estimation

A single block model prototype was used for both Target 1 and Target 4 block models, allowing the two models to be easily combined if required. The parent block size was derived from kriging neighbourhood analysis (KNA) for the target 1 TREO ≥1.0% estimation domain.

Equal easting and northing parent block sizes was preferred with the selection of a 20 mE x 20 mN x 5 mRL block size. This is a compromise between obtaining good estimation performance, suitable block filling of the interpretation and suitable resolution for mine design/mine planning purposes.

The final selected block configuration is presented in Table 4.33. The comparison between the wireframe and block model volumes (Table 4.22) demonstrates that the block model has suitably captured the interpreted volumes for both estimation domains.

Table 4.22 Monte Muambe Target 1 and Target 4 block model configuration

Item	Easting (mX)	Northing (mY)	Elevation (mRL)
Origin	615,900	8,194,200	335
Extent	617,800	8,197,000	665
Parent block size	20	20	5
Nos parent blocks	95	140	66
Minimum sub-cell	2.0	2.0	0.5

Table 4.23 Wireframe – block model fill comparison (not clipped to topography)

ESTDOM	Wireframe volume (m^3)	Block model (m^3)			Percent difference (%)
		0.5 – 1.0% TREO	≥1.0% TREO	Total	
T1_01	22,614,617	17,643,788	4,957,713	22,601,501	-0.06%
T1_02	21,778	21,798		21,778	0.00%
T1_03	548,407	394,730	154,004	548,734	0.06%
T1_04	1,235,054	1,118,674	117,015	1,235,689	0.05%
T4_01	7,487,217	4,226,631	3,260,772	7,487,403	0.00%
T6_01	4,625,022	3,398,174	1,227,588	4,625,762	0.02%
0.5 – 1.0% TREO	**36,532,095**	**26,803,795**	**9,717,092**	**36,520,888**	**-0.03%**
T1_11*	4,170,432			4,170,350	0.00%
T1_12*	15,010			14,984	-0.18%
T1_13*	303,048			302,990	-0.02%
T1_14*	347,293			347,266	-0.01%
T1_15*	136,939			136,822	-0.09%
T1_16	86,291			86,288	0.00%
T1_17	67,713			67,660	-0.08%
T1_18	117,015			117,020	0.00%

ESTDOM	Wireframe volume (m^3)	Block model (m^3)			Percent difference (%)
		0.5 – 1.0% TREO	≥1.0% TREO	Total	
T4_11	3,260,875			3,260,772	0.00%
T6_11	968,209			968,150	-0.01%
T6_12	259,379			259,416	0.01%
≥1.0% TREO	**9,732,206**	**-**	**-**	**9,731,718**	**-0.01%**
Total	**46,264,301**	**26,803,795**	**9,717,092**	**46,252,605**	**-0.03%**

Contact analysis

Contact analysis was undertaken to test the boundary conditions for estimation, which demonstrates that for estimation purposes, the boundaries should be treated as hard boundaries. Contact analysis was also performed by estimation domain for the weathering boundaries, with all boundaries behaving as soft or no boundaries.

Grade Interpolation and estimation parameters

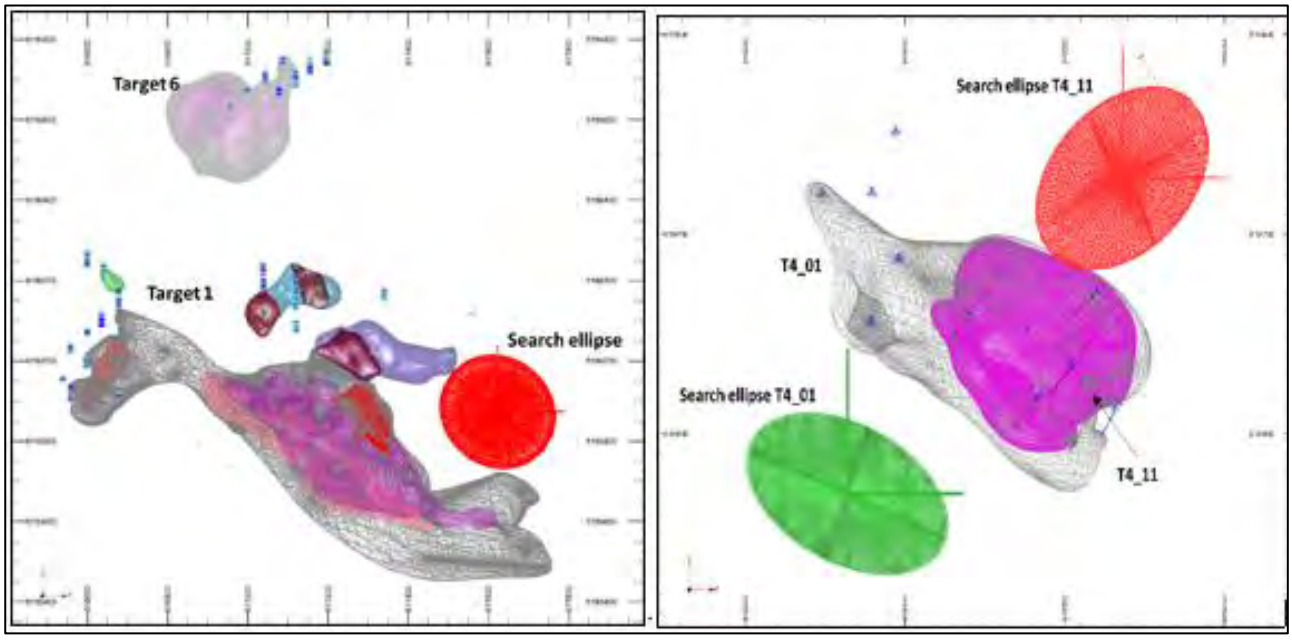
As a function of the low-grade variability, ordinary kriging of the 2.0 m composites was selected as the most appropriate grade estimation technique, using the top-cut values where applied. The 0.5-1.0% and ≥1.0% TREO boundaries were treated as hard boundaries, with estimation into parent blocks.

All variables within a mineralised domain used identical search parameters to ensure the cross-correlation between variables were maintained. The final search directions were based on a combination of:

- The final search orientation approximated the average interpreted geometry in combination with the average modelled variogram directions.
- The first and second search ranges were kept identical in the plane of the mineralisation to manage the different variogram orientations of individual variables.

The search ellipses used for estimation are presented in Figure 4.53.

Figure 4.53 Search ellipse Target 1 and 6 (left) and Target 4 (right)



Three search passes were used for estimation to ensure all blocks received an estimate.

For T1_01 and T1_11 domains, a maximum of four samples per drill hole was applied to ensure more than one drill hole informed the estimate. The other target/domain combinations did not have sufficient drilling to warrant using these criteria.

The search parameters are summarised in Table 4.24.

Initial review of the block model estimation passes:

- The estimation domain pass volume comparison confirms the majority of the mineralisation was informed by search pass 1 (Table 4.26).
- 84% of the block model by volume was informed in the first pass, an additional 13% informed in the second pass, and 2% being informed by the third pass. This also confirmed that small proportion the T1_01 and T1_04 estimation domains did not receive an estimate (Figure 4.54). This was a function of:
  - The interpretation of the southeastern lobe of T1_01 was informed by portable XRF assay data, which was removed from the estimation data set, resulting in no estimate
  - At T1_04, the available drilling is too sparse to inform this area of the domain.

Unestimated cells were assigned default grades lowest value from the most appropriate search pass average, and the respective search pass re-set to 99 (Table 4.25).

Figure 4.54 Target 1 model coloured by search pass

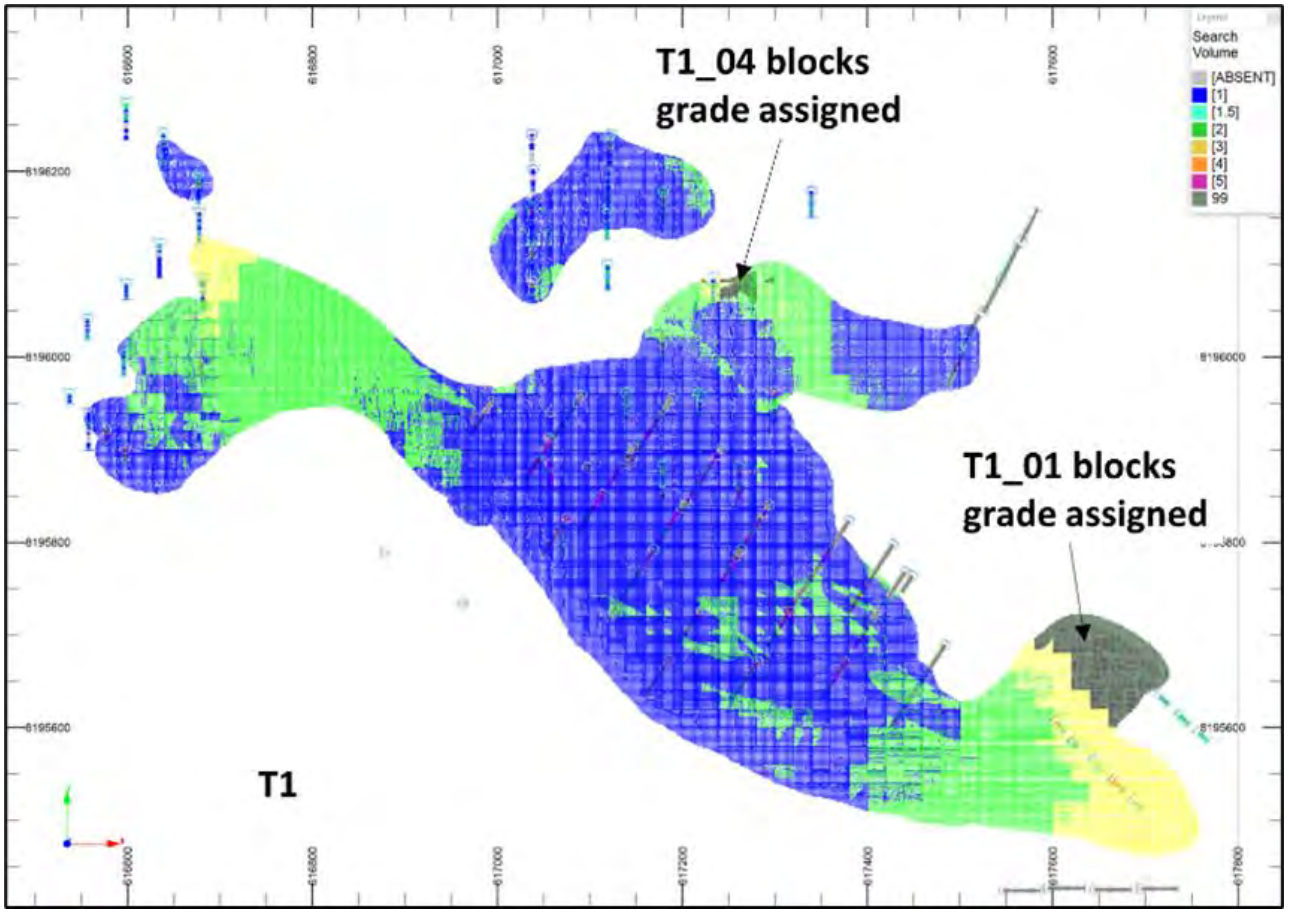


Table 4.24 Search parameters for estimation

Target	Domain	ESTDOM	Search reference	Search type	Datamine		Search pass 1		Search pass 2		Search pass 3		Samples / drill hole
					Rotation	Axis	Distance	No. of samples	Distance	No. of samples	Distance	No. of samples	
1	0.5 - 1.0%	T1_01	1	2	-140 -25 0	3 1 3	150 150 15	8-24	300 300 30	8 – 24	450 450 45	4-12	4
1	≥1.0%	T1_11, T1_13, T1_14	11	2	-140 -25 0	3 1 3	150 150 15	8 – 24	300 300 30	8 - 24	450 450 45	4-12	4
1 and 6	Minor domains	T1_02, T1_03, T1_04, T1_15, T1_16, T1_17, T1_18, T6_01, T6_11, T6_12	20	2	-140 -25 0	3 1 3	150 150 15	4-20	300 300 24	4-20	300 300 24	2-12	N/A
4	0.5 - 1.0%	T4_01	1	2	0 0 110	3 1 3	90 165 60	8-20	180 230 120	8-20	270 495 180	8-12	NA
4	≥1.0%	T4_11	11	2	-60 160 -30	3 1 3	150 100 80	8-20	300 200 160	8-20	450 300 240	8-12	N/A

Table 4.25 Grades assigned to blocks not estimated after three search passes

ESTDOM	TREO ppm	Ce_2O_3 ppm	Dy_2O_3 ppm	Nd_2O_3 ppm	Pr_2O_3 ppm	Tb_2O_3 ppm	Nb_2O_5 ppm	Th ppm	U ppm
T1_01	6,700	2,780	75	955	285	15	870	195	20
T1_04	5,700	2,300	60	675	220	10	760	225	9

Table 4.26 m_ m_t1_t6_2309and m_ m_t4_2309 estimation pass volume comparison

ESTDOM	Pass 1		Pass 2		Pass 3		Pass 4		Total volume (m^3)
	Volume (m^3)	%	Volume (m^3)	%	Volume (m^3)	%	Volume (m^3)	%	
T1_01	7,120,348	71.6%	2,137,144	21.5%	550,002	5.5%	131,884	1.3%	9,939,378
T1_02	21,790	100.0%	8	0.04%	-		-		21,798
T1_03	280,630	94.8%	15,332	5.2%	-		-		295,962
T1_04	346,056	46.6%	345,756	46.5%	48,114	6.5%	3,036	0.4%	742,962
T1_11	3,723,614	98.0%	71,408	1.9%	5,572	0.1%	-		3,800,594
T1_13	302,566	99.9%	424	0.1%	-		-		302,990
T1_14	214,532	61.8%	130,690	37.6%	2,044	0.6%	-		347,266
T1_15	98,902	77.5%	28,700	22.5%	-		-		127,602
T1_16	78,278	100.0%	22	0.03%	-		-		78,300
T1_17	66,924	98.9%	736	1.1%	-		-		67,660
T1_18	70,380	77.8%	20,070	22.2%	12	0.0%	-		90,462
T1 total	**12,324,020**	**77.9%**	**2,750,290**	**17.4%**	**605,744**	**3.8%**	**134,920**	**0.9%**	**15,814,974**
T4_01	3,508,544	93.1%	261,658	6.9%	-		-		3,770,202
T4_11	3,113,842	100.0%	-		-		-		3,113,842
T4 total	**6,622,386**	**96.2%**	**261,658**	**3.8%**	**-**		**-**		**6,884,044**
T6_01	2,840,572	83.6%	557,380	16.4%	-		-		3,397,952
T6_11	968,150	100.0%	-		-		-		968,150
T6_12	257,710	99.3%	1,706	0.7%	-		-		259,416
T6 total	**4,066,432**	**87.9%**	**559,086**	**12.1%**	**-**		**-**		**4,625,518**
Total	**23,012,838**	**84.2%**	**3,571,034**	**13.1%**	**605,744**	**2.2%**	**134,920**	**0.5%**	**27,324,536**

Block model validation

Initial validation of the estimate was by visual comparison between the input composites and the estimate in section and plan view (Figure 4.55 and Figure 4.56), and there is a good correlation between the composite and estimated grades spatially.

Figure 4.55 Target 1 visual validation in section and plan view

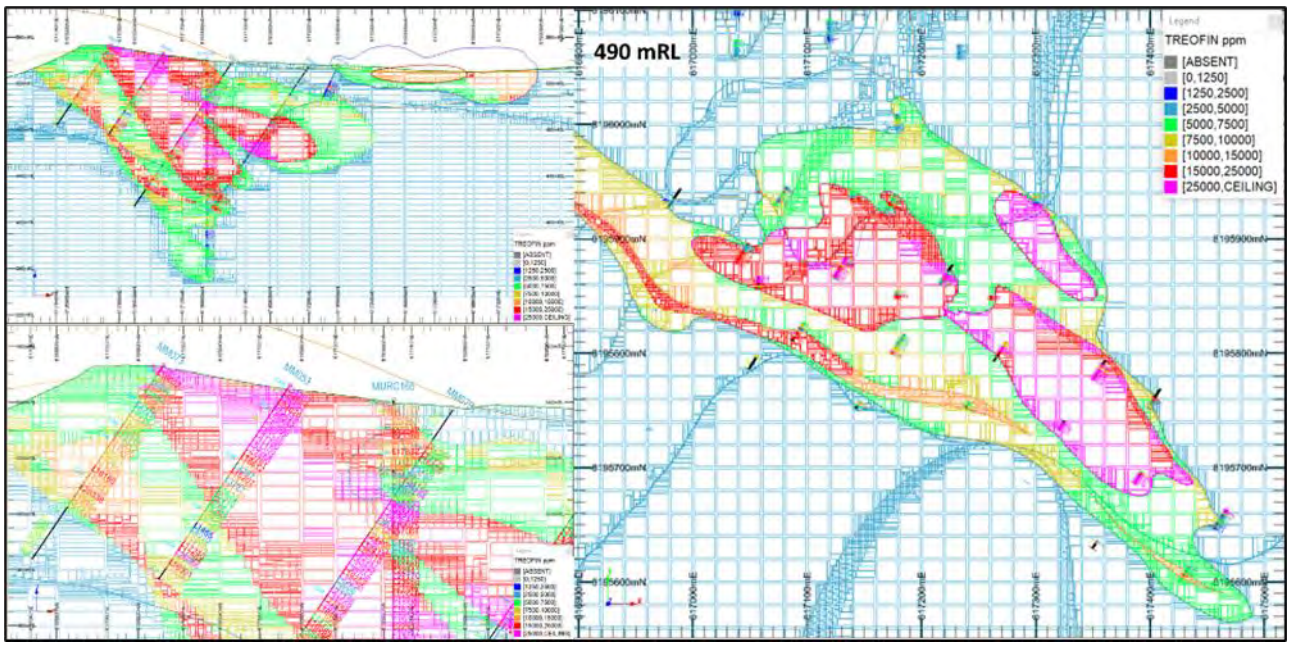
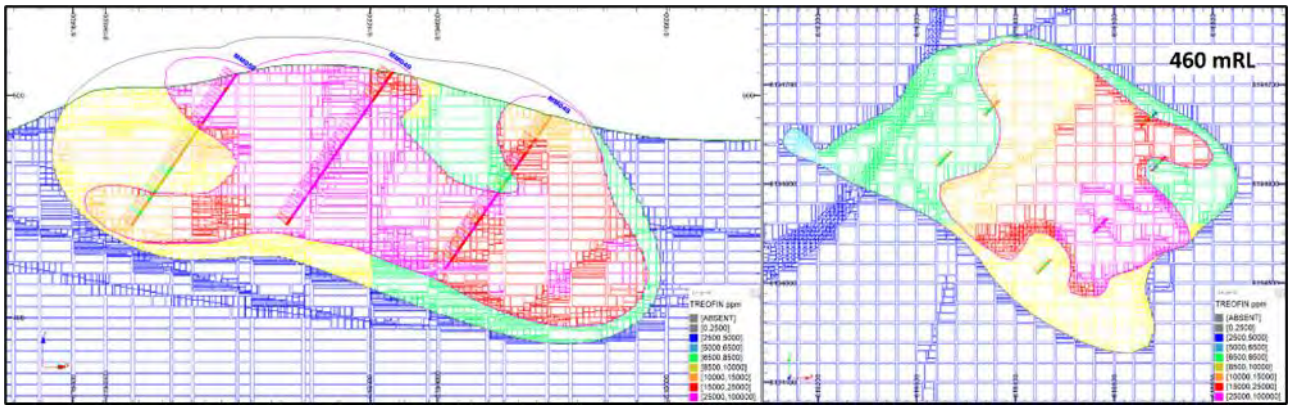


Figure 4.56 Target 4 visual validation in section and plan view



The whole of domain average naïve and declustered grades were then compared with the block model average grades and there was also good correlation between the composites and estimated grades (Appendix F).

Trend plots were then prepared for the naïve and declustered composite grades and the block model averages. An inverse distance cubed (ID^3) test estimate was also prepared for validation purposes using identical estimation parameters as the ordinary kriged estimate. There is good correlation between the composite samples, the ID3 test estimate and the ordinary kriged estimate (Appendix F).

4.8.3 Density

The diamond drilling programme in 2021 (five boreholes) had as one of the prime objectives the recovery of core for in situ density measurement. Due to the variable porosity of the carbonatite and weathered nature of much of the rock intersected several different density measurement methods were investigated.

Rock intersected in the diamond boreholes was interpreted as comprising 4 types from a density aspect:

- Type 1 - samples with low to high porosity and no cavities.
- Type 2 - samples with low to high porosity, with cavities outcropping at the surface of the cores.
- Type 3 - weathered cores with cracks, largely made of clay and/or limonite, still holding, but that would crumble in water or during cutting using a core cutter.
- Type 4 - crumbling cores with no integrity or competency.

The following density measurement methods were considered and, in some cases, tested:

- The gas pycnometer method was discarded due to the high porosity of many samples.
- The cling film immersion method was tried and discarded as a lot of air was getting trapped between the sample and the film.
- The wax immersion method was discarded due to its complexity and the equipment involved.
- The saturated immersion method was tried and was found to work well for Type 1 samples, but posed difficulties for samples having cavities outcropping at the surface of the drill holes.
- The calliper method was found to be suitable for Type 1 and Type 2 samples and was used as the main density measurement method. Cylinders were cut using the core saw. Several measurements of the diameter and the length of each cylinder were taken and averaged, and the cylinders were weighed.
- For Type 3 samples, a variation of the calliper method was used. A cylinder as perfect as possible was cut using a knife, and (due to some swelling of the core), the density calculation used the nominal inner diameter of the bit as opposed to the measured diameter of the core.
- For Type 4 samples, no density measurements were possible. The core tray method was considered but it was discarded because of the difficulty of ascertaining the actual core length in the tray.

Weights were measured using a newly purchased density measurement scale with an accuracy of 0.1 g. No QC system was in place when the measurements were made.

The density measurement procedure is covered by SOP 2021-03. In total, 371 density readings were taken from 590 m of core prior to cutting with a diamond saw. Each core piece used for density measurement was marked and replaced in the core tray. All density measurements were carried out on air dried core. In August 2023, at the request of the visiting Snowden-Optiro CP representative, a number of checks were carried out to verify the 2021 measurements and compensate for the lack of QAQC at the time of the original density measurements in 2021.

A set of reference weights was purchased and used to check the scale used for the density measurements. Certificates have been requested from the supplier and will be forwarded to the CP when received. Results of the checks are summarized in Table 4.27 below:

Table 4.27 Check weight scale results

Check weight (g)	Weight measured by scale (g)
200	200.0
500	500.1
1,000	1,000.2
2,000	2,000.5

While a drift was noted (and will be corrected in future uses of the scale), it is not significant in relation to the core sample weights concerned. For a 2 kg sample with a density of 2.5 g.cm^3, a 0.5 g error on the weight would correspond to a 0.025% error on the density.

The density of 20 samples was rechecked. It must be noted that the samples had been split and were now half-cores, and that some chipping on the edges of some samples had occurred.

Two density measurements were used:

- The calliper method, with several measurements of the length, diameter, and thickness of each sample.
- The saturated immersion method.

Half-core calliper method summary

- For each half-core:
  - The diameter (d) of the half-core was measured using a calliper in 3 different points, and its mean was calculated.
  - The thickness (t) of the half-core was measured using a calliper in 3 or 4 different points, and its mean was calculated.
  - The length (l) of the core of the half-core was measured with a tape measure along three different lengths, and its mean was calculated.
  - The weight (w) was measured on a scale with a 0.1 g accuracy.

Where thickness was > radius, the following formula was used to calculate the density:

$$\frac{w}{((\Pi \times (d/2)2/2) + (d \times (t-d))) \times l}$$

Where thickness was < radius, the following formula was used to calculate the density:

$$\frac{w}{((\Pi \times (d/2)2/2) - (d \times (d-t))) \times l}$$

The above calculation method takes into consideration slight asymmetries and irregularities in the core cutting method, the half-core not being an exact half-core due to the thickness of the blade and to the sometimes imperfect orientation of the blade against the core axis. A key assumption in the above density formula is that the sliver of rock cut by the diamond saw has straight sides so forming a quadrilateral polygon (Figure 4.57). In fact the two short sides will have a slight curve which are assumed in the above half core density equation to have straight sides so simplifying the half core volume section of the density formula. The error introduced by this assumption is deemed to not be significant in the overall volume, and hence density, calculation.

The difference between original calliper densities and recheck calliper densities was for most samples below 2.5% (10 negative and 10 positive). One sample (S229) showed a -4.7% difference.

The difference between the original calliper densities and the recheck saturated immersion densities was for most samples below 2.4% (7 negative and 12 positive). Sample S229 showed a -4.2% difference.

These checks confirm the reliability of the density database produced in 2021 (Figure 4.58). A repeat density measurement using the calliper method was undertaken on sample S229. It still showed a -4.7% difference with the original calliper measurement. This difference is deemed to be simply due to core heterogeneity as the original sample was a full core and the recheck sample a half core.

Figure 4.57 Schematic illustration of parameters used for volume calculation for half core originally cut to a cylindrical shape

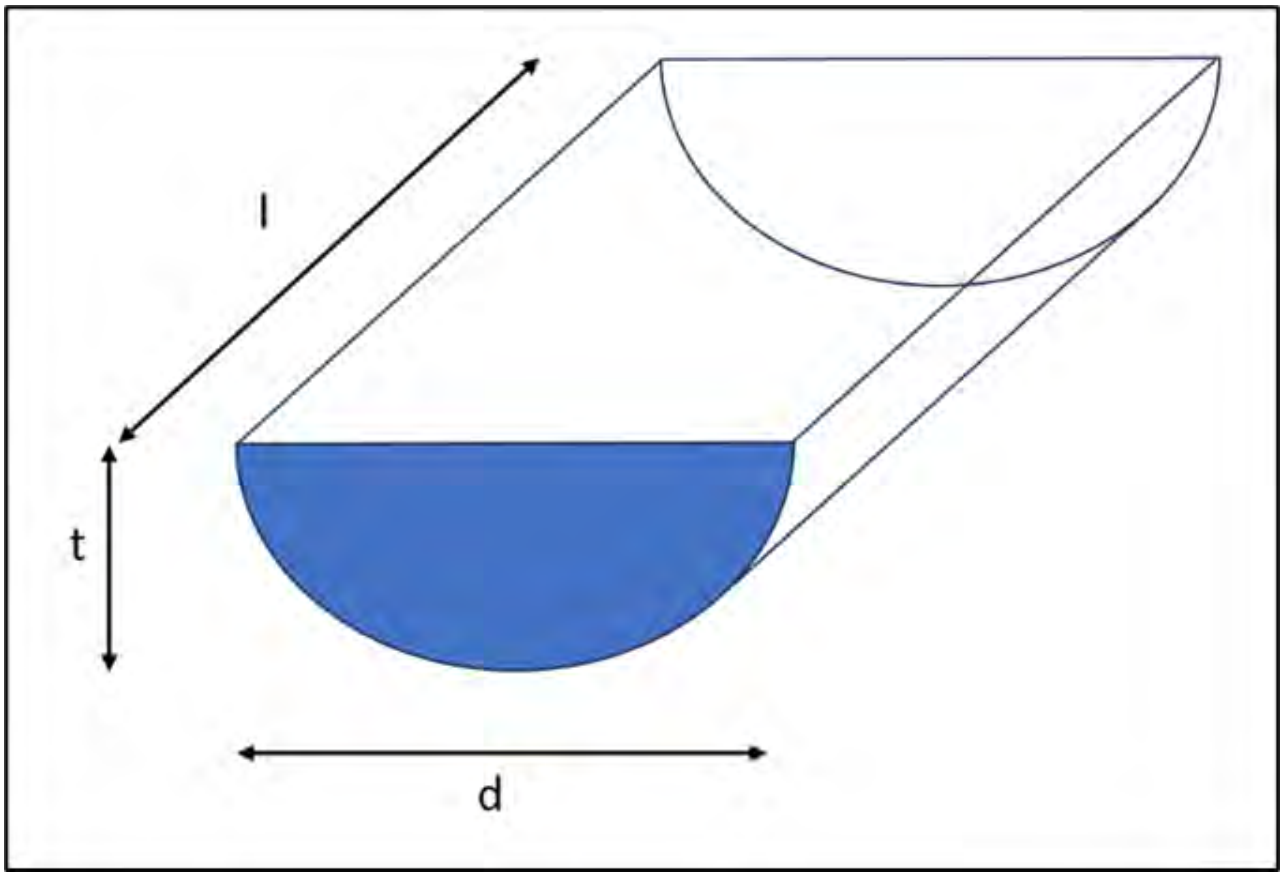
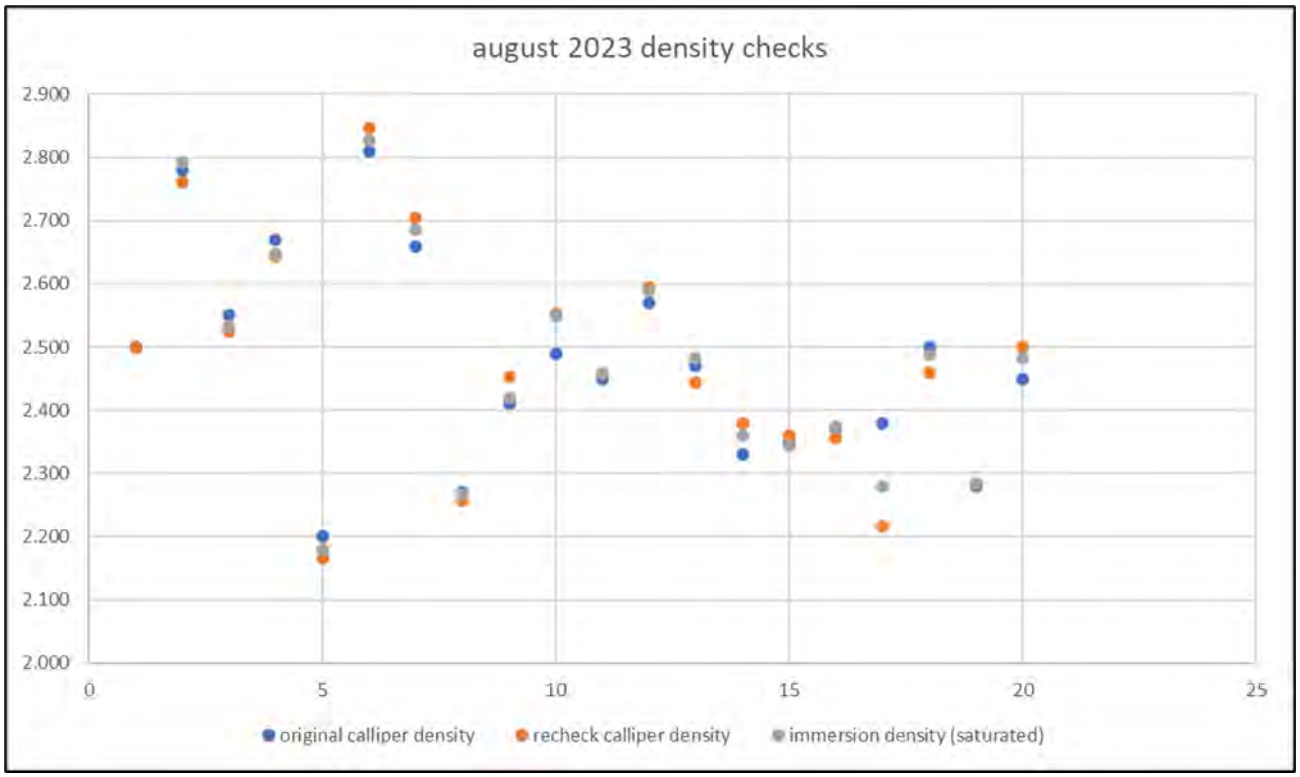


Figure 4.58 Density check measurements August 2023 summary



In the opinion of Snowden Optiro, the density checks conducted in August 2023 are suitable for estimation of Inferred and Indicated Mineral Resources. Snowden Optiro does, however, recommend that for future resource estimation further diamond core be obtained to measure density with appropriate QC procedures being applied.

Densities applied

The available density data was initially reviewed against the TREO grade, but there was no correlation between the two variables (Figure 4.59, Figure 4.60 and Figure 4.61).

The available density data was reviewed, and any low confidence density readings were excluded/ filtered. The mean naïve and length weighted density values were calculated, grouped by the interpreted weathering domain, grouped globally and the grouped by target area (Table 4.28). The final assigned density was assigned based on the available conditional mean (e.g. Target 4 has no density information and was assigned the Target 1 density values).

As there are no density measurements for material flagged as soil (WEATH=SO), and as a function of the limited volume this material represents (approximately 1.7% of the total mineralisation), an assumed density value of 1.8 t/ m^3 was assigned, which was derived by reducing the lowest measured density by 5%.

Figure 4.59 TREO – density grade relationship for fresh material types

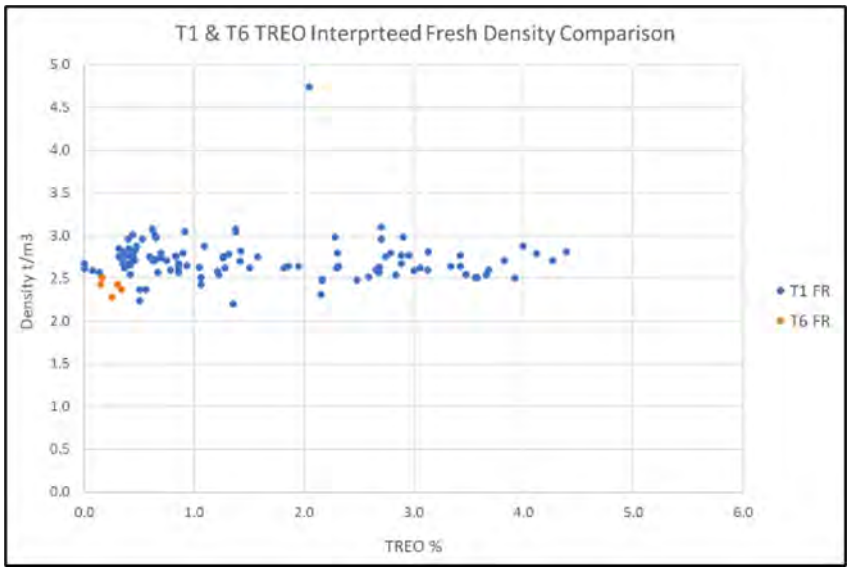


Figure 4.60 TREO – density grade relationship for slightly weathered material types

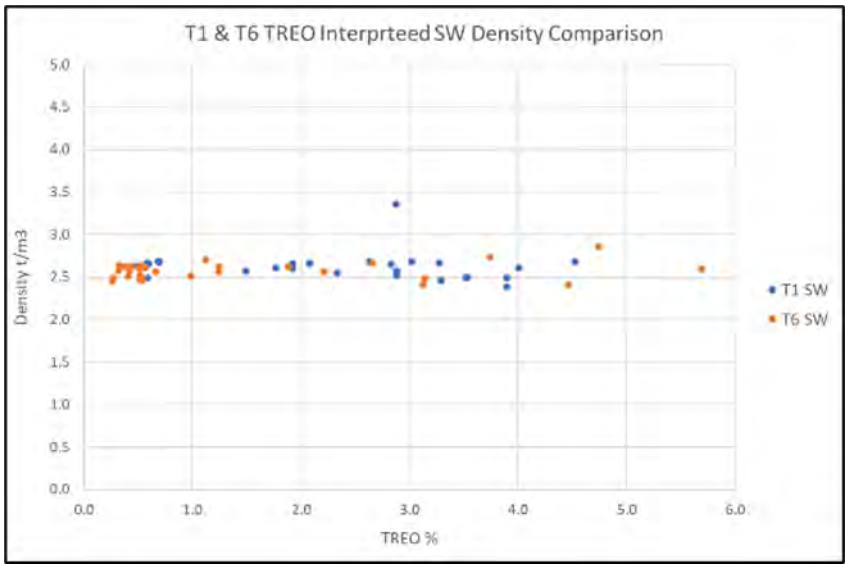


Figure 4.61 TREO – density grade relationship for weathered material types

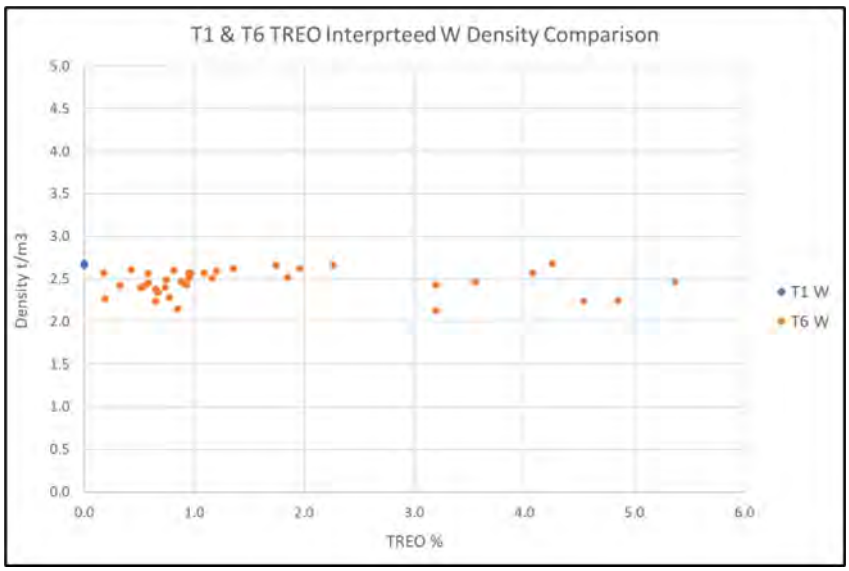


Table 4.28 Monte Muambe density data and model density values

Target	Interpreted weathering	Global filtered density data			Reported by target – filtered			Assigned density	
		No. of samples	Naïve average	Length-weighted average	No. of samples	Naïve average	Length-weighted average	Density (t/m^3)	Comment
1	SO							1.80	Assumed based on lowest measured density
	VW	23	2.12	2.08	5	2.69	2.68	2.10	Derived from global density
	W	40	2.47	2.46	2	2.67	2.67	2.55	Average of all density data
	SW	57	2.60	2.61	28	2.62	2.64	2.60	Derived from T1 density, rounded down
	FR	115	2.68	2.67	110	2.70	2.68	2.70	Derived from T1 density, rounded down
6	SO							1.80	Assumed based on lowest measured density
	VW	23	2.12	2.08	18	1.96	1.88	2.10	Derived from global density
	W	40	2.47	2.46	38	2.46	2.44	2.45	Derived from T6 density
	SW	57	2.60	2.61	29	2.58	2.58	2.60	Derived from global density
	FR	115	2.68	2.67	5	2.40	2.40	2.70	Derived from global density
4	SO							1.80	
	VW							2.10	
	W							2.55	All derived from T1 values
	SW							2.60	
	FR							2.70	

4.9 Mineral Resource classification

The Monte Muambe 2023 Mineral Resource has been classified and reported in accordance with the JORC Code (2012). The classification is based on the following:

- Confidence in the available geological and sample data.
- Confidence in the geological knowledge and interpretations.
- Confidence in the demonstrated geological and grade continuity.
- Confidence in the resultant Mineral Resource estimate.
- Spatial distribution of the available drill hole data.
- Satisfying the RPEEE requirements.

4.9.1 Joint Ore Reserve Committee Reporting Code (2012 edition)

The current JORC Code (2012) is an internationally recognised guideline for the reporting of Mineral Resources and Ore Reserves. The JORC Code (2012) provides specific definitions. Clause 20 of the reporting guidelines outlines the criteria for reporting a Mineral Resources with the key considerations being:

- The material of interest of economic interest is in such form, grade (or quality) and quantity that there are reasonable prospects for eventual economic extraction, regardless of the classification. Portions of a deposit that do not meet the RPEEE criteria, must not be included in a Mineral Resource.
- The location, quantity, grade (or quality), continuity and other geological characteristics of a Mineral Resource are known, estimated, or interpreted. This relates to the confidence in the available data, knowledge of the deposit as well as the confidence in the MRE. This will determine the MRE classification.

4.9.2 Monte Muambe September 2023 model

The mineralisation at Monte Muambe is defined by a 0.5 to 1.0% TREO domain, and a ≥1.0% TREO domains. The grade criteria reflect what is currently understood about the mineralisation and do not reflect any economic consideration – this approach is broadly considered best practice. Although there is a reasonable understanding of the geology, understanding the geology is an on-going process and is always a function of the available data.

In the broader Target 1 area, there are multiple mineralised intersections and positions, of varying confidence. Two options exist when preparing the mineralisation interpretation. Mineralised positions (i.e. external to the main 0.5% TREO mineralisation) could be ignored and not interpreted/ modelled, or they can be included and then the confidence/classification field used to assist in ranking their value to the Project, which was carried out. However, this results in a volume of mineralisation which currently has little opportunity of being classified as a Mineral Resource.

Confidence/resource classification

Classification of the 2023 Monte Muambe Mineral Resource was a multi-stage process:

- The data was reviewed both during loading and desurveying of the data as well as during the construction of the interpretations. Importantly construction of the wireframes informs the understanding spatial distribution of data and the confidence in the interpretations in a 3D space.
- The sample data was flagged by the estimation domain (domain) and weathering flags, which was the basis for subsequent geological/statistical analysis and variography (variography is a spatial statistic informing the continuity of grade).
- Post-estimation several estimation metrics are reviewed to assess the quality of the estimate. These metrics include:
  - Number of informing samples and drill holes

  - Kriging variance (a measure of the quality of the relationship between the modelled variogram and the spatial arrangement of data)
  - Search pass and distance to nearest sample
  - Kriging efficiency and slope of regression – two summary variables measuring the quality of the estimate.
- The informing drill holes in combination with the various estimation metrics were used to delineate area of moderate, low, and very low confidence (CONFID), but which has no RPEEE consideration. The CONFID field is coded into the block model.
- The open pit optimisation is then run using the model. This is used to specify material that it supports positive cash flows from mining and processing.
- All blocks that are outside of the optimised pit shell are flagged as being unclassified (UNCL) – failing to meet the RPEEE criteria. For blocks inside the pit shell (and having met the RPEEE criteria) are then classified with the RESCAT field:
  - Any MOD confidence blocks are flagged as Indicated (IND)
  - Any LOW confidence blocks are flagged as Inferred (INF)
  - Any VLOW confidence blocks are flagged as unclassified (UNCL).

The Monte Muambe 2023 Mineral Resource has been classified and reported in accordance with the JORC Code (2012). The classification reflects:

- Confidence in the available geological and sample data.
- Confidence in the geological knowledge and interpretations.
- Confidence in the demonstrated geological and grade continuity.
- Confidence in the resultant Mineral Resource estimate.
- Spatial distribution of the available drill hole data.
- Results of the open pit optimisation.
- Finally with the reporting of the Mineral Resource, a grade cut-off of 1.5% TREO is applied to reflect material that will meet the RPEEE criteria.

Applying the confidence and economic consideration, blocks within the pit shells informed with a minimum drill hole spacing approaching 80 m along strike by 80 m across strike, in addition to demonstrated geological and grade continuity, and where the grade has been extrapolated no more than 35 m across strike, was classified as an Indicated Mineral Resource. Where informed by wider spaced drilling and/ or where geological and grade continuity was assumed, the Mineral Resource was classified as an Inferred Mineral Resource. The grade – tonnage tables for Target 1 and Target 4 are shown in Table 4.29 and Table 4.30 below.

Table 4.29 Grade tonnage table for Target 1

Target	CONFID	TREO cut (%)	Volume (Mt)	TREO %	Ce_2O_3	$Dy2O_3$	Nd_2O_3	Pr_2O_3	Tb_2O_3	Nb_2O_5	Th	U	CeO_2	Pr_6O_{11}	Tb_4O_7
		0.00	28.89	1.24	5,535	74	1,410	491	14	1,040	159	18	5,805	507	14
		0.25	28.89	1.24	5,535	74	1,410	491	14	1,040	159	18	5,805	507	14
		0.50	28.87	1.24	5,537	74	1,410	492	14	1,039	159	18	5,807	507	14
		0.75	15.21	1.75	7,943	77	1,805	670	15	830	177	19	8,330	692	15
		1.00	9.91	2.24	10,256	82	2,170	836	16	728	195	20	10,756	863	15
		1.25	9.10	2.34	10,725	81	2,228	867	15	623	197	20	11,248	895	15
1	**Indicated & Inferred**	**1.50**	**8.82**	**2.37**	**10,855**	**80**	**2,244**	**876**	**15**	**592**	**196**	**20**	**11,384**	**905**	**15**
		1.75	8.20	2.43	11,064	80	2,277	895	15	559	196	20	11,603	924	15
		2.00	6.87	2.54	11,449	80	2,352	934	15	530	199	21	12,007	964	15
		2.25	5.13	2.67	11,957	82	2,462	987	16	510	203	22	12,540	1,019	16
		2.50	3.51	2.81	12,424	83	2,561	1,036	16	490	207	23	13,029	1,070	16
		2.75	1.73	3.01	13,048	84	2,698	1,103	16	461	211	23	13,684	1,139	16
		3.00	0.67	3.24	13,688	90	2,899	1,194	18	484	226	25	14,356	1,232	18

Table 4.30 Grade tonnage table for Target 4

Target	CONFID	TREO cut (%)	Volume (Mt)	TREO %	Ce_2O_3	Dy_2O_3	Nd_2O_3	$P_{r2}O_3$	Tb_2O_3	Nb_2O_5	Th	U	CeO_2	Pr_6O_{11}	Tb_4O_7
		0.00	16.32	1.34	5,519	139	1,371	473	25	979	367	12	5,788	488	25
		0.25	16.32	1.34	5,519	139	1,371	473	25	979	367	12	5,788	488	25
		0.50	16.32	1.34	5,519	139	1,371	473	25	979	367	12	5,788	488	25
		0.75	12.62	1.53	6,396	142	1,510	534	26	910	353	12	6,707	552	26
		1.00	7.27	2.03	8,624	142	1,869	695	26	712	344	12	9,044	718	26
		1.25	5.10	2.43	10,443	144	2,151	824	26	508	334	7	10,952	850	26
4	**Inferred**	**1.50**	**4.80**	**2.50**	**10,734**	**143**	**2,189**	**843**	**26**	**481**	**330**	**7**	**11,258**	**870**	**26**
		1.75	3.85	2.71	11,678	140	2,298	902	25	420	319	4	12,247	931	25
		2.00	2.88	3.00	12,984	134	2,436	979	24	336	298	1	13,616	1,010	24
		2.25	2.53	3.12	13,552	134	2,515	1,016	24	304	296	1	14,212	1,049	24
		2.50	2.09	3.28	14,286	137	2,644	1,070	25	280	302	0	14,983	1,104	25
		2.75	1.55	3.51	15,358	148	2,855	1,153	27	270	324	0	16,107	1,190	27
		3.00	1.36	3.60	15,790	150	2,934	1,185	27	262	331	0	16,559	1,224	27

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Cut-off grade considerations

A grade cut-off of 1.5% TREO was applied to the reporting of the Mineral Resource to reflect the likely/ expected profitable material to be mined. There are multiple options to identify material that can be profitably mined and hence dictate the reporting cut-off including:

- How the mineralisation presents (i.e., can a spatially consistent block be identified for mining).
- Likely mining and processing costs as well as revenue considerations.
- Corporate considerations including process and mining rates, financing decisions and governance criteria. Options including stockpile strategies are then available to maximise the value of the operation.

Many of the grade considerations are the result of numerous scenarios and development iterations of the available parameters.

4.9.3 Depletion of resource model

The Monte Muambe 2023 maiden Mineral Resources have not been previously mined and there is no depletion.

4.9.4 Comparison to previous estimates

As a maiden Mineral Resource, there are no previous estimates for the Target 1 and Target 4 Mineral Resource.

4.10 Mineral Resource statement

The Mineral Resource Estimate is provided in Table 4.31. The Mineral Resource is reported in accordance with the JORC Code (2012).

Table 4.31 Monte Muambe Indicated and Inferred Mineral Resource September 2023 reported using a 1.5% TREO cut-off

Target	Classification	TREO cut-off (%)	Tonnes (Mt)	TREO (%)	CeO_2 (ppm)	Pr_6O_{11} (ppm)	Nd_2O_3 (ppm)	Tb_4O_7 (ppm)	Dy_2O_3 (ppm)	NdPr Oxide (ppm)	Contained TREO (t)
1	Indicated	1.5	8.0	2.38	11,400	910	2,250	15	80	3,160	191,000
	Inferred	1.5	0.8	2.28	10,900	861	2,140	15	78	3,000	18,000
	TOTAL	**1.5**	**8.8**	**2.38**	**11,400**	**905**	**2,240**	**15**	**80**	**3,150**	**209,000**
4	Indicated	1.5									
	Inferred	1.5	4.8	2.50	11,300	872	2,190	26	143	3,060	119,000
	TOTAL	**1.5**	**4.8**	**2.50**	**11,300**	**872**	**2,190**	**26**	**143**	**3,060**	**119,000**
OVERALL	Indicated	1.5	8.0	2.38	11,400	910	2,250	15	80	3,160	191,000
	Inferred	1.5	5.6	2.47	11,200	871	2,190	24	134	3,060	137,000
	TOTAL	**1.5**	**13.6**	**2.42**	**11,400**	**894**	**2,230**	**19**	**102**	**3,120**	**329,000**

Notes:

- *Million tonnes are rounded to one decimal place. Grades are rounded to two decimal places for % and whole numbers for ppm.*
- *The MRE has been reported in consideration of reasonable prospects for eventual economic extraction (RPEEE) using a pit shell based on a 1.5% Total Rare Earth Oxide (TREO) cut-off, revenue of 24.65 $/kg TREO in Mixed Rare Earth Carbonate (MREC) and average total recovery to MREC of 48%.*
- *Mineral Resources are reported as dry tonnes on an in-situ basis.*
- *Rare Earth Elements are inclusive of the TREO and not additional to it.*
- *"NdPr Oxide" is the sum of Nd_2O_3 and Pr_6O_{11}.*

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4.10.1 Reasonable prospects for eventual economic extraction

RPEEE was applied through the constraint of an optimised pit shell. The optimised pit shell was developed using parameters developed for the project and provided by Altona to Snowden Optiro. Where direct parameters have not been developed, benchmarking from similar projects has been used. The TREO price used is $24,651/ t. The inputs used for the pit optimisation are shown in Table 4.32.

Table 4.32 September 2023 Mineral Resources reported at a cut-off grade of 1.5% TREO

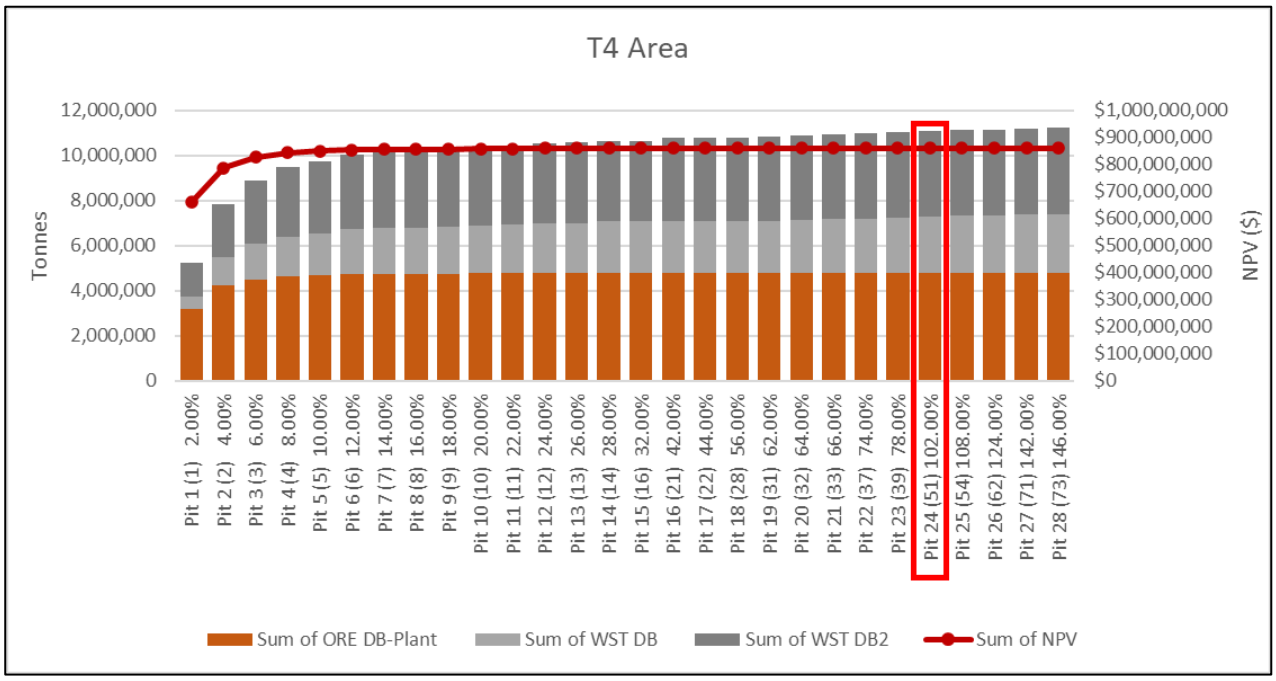
Price	Value	Unit
TREO	24 651	$/t TREO in MREC
Royalties	3	%
Mining costs		
Ore – Free dig	3.28	$/t
Ore – Drill and blast	4.26	$/t
Waste – Free dig	2.51	$/t
Waste – Drill and blast	3.53	$/t
Process cost	**25**	**$/t of ROM**
Other ore costs (G&A and incremental ore mining)	**66**	**$/t of TREO**
Recovery		
Process recovery	60	% Recovery
Hydrometallurgical plant recovery	80	% H Plant
Ore production	**750,000**	**t p/a**
Discount rate	**10**	**%**
Slope angles		
T4 overall angle	47	
T1 T6 overall angle	43	

The estimation of the TREO final price was based on the long-term prices for the contained products, praseodymium, neodymium, terbium and dysprosium and the proportion they report on the resource model.

The cut-off grade of 1.5% of TREO was agreed with the Client, based on the grade and tonnage curve. Also, the CONFID attribute defined which confidence of material would be used for the optimization: MOD and LOW. These are equivalent to Indicated and Inferred classification respectively. Two distinct mining approaches were delineated based on rock competency, namely free dig and drill and blast. Given the limited precision of lithology data at this stage, materials categorized as ‘soft’ (roughly equivalent to soil cover) would be allocated to the free dig operation, while all other materials would undergo the drill and blast method.

The resource model was divided into the two different areas, one containing Target 1 and 6, and another for Target 4. The ultimate pit results are also split between them. For Target 4 area the pit shell chosen was using the price increment of 102% which provided the highest NPV for the case. For Target 1 and 6, the chosen price increment was 98% which also provided the highest NPV result (Figure 4.62 and Table 4.33).

Figure 4.62 NPV graphs for all target areas



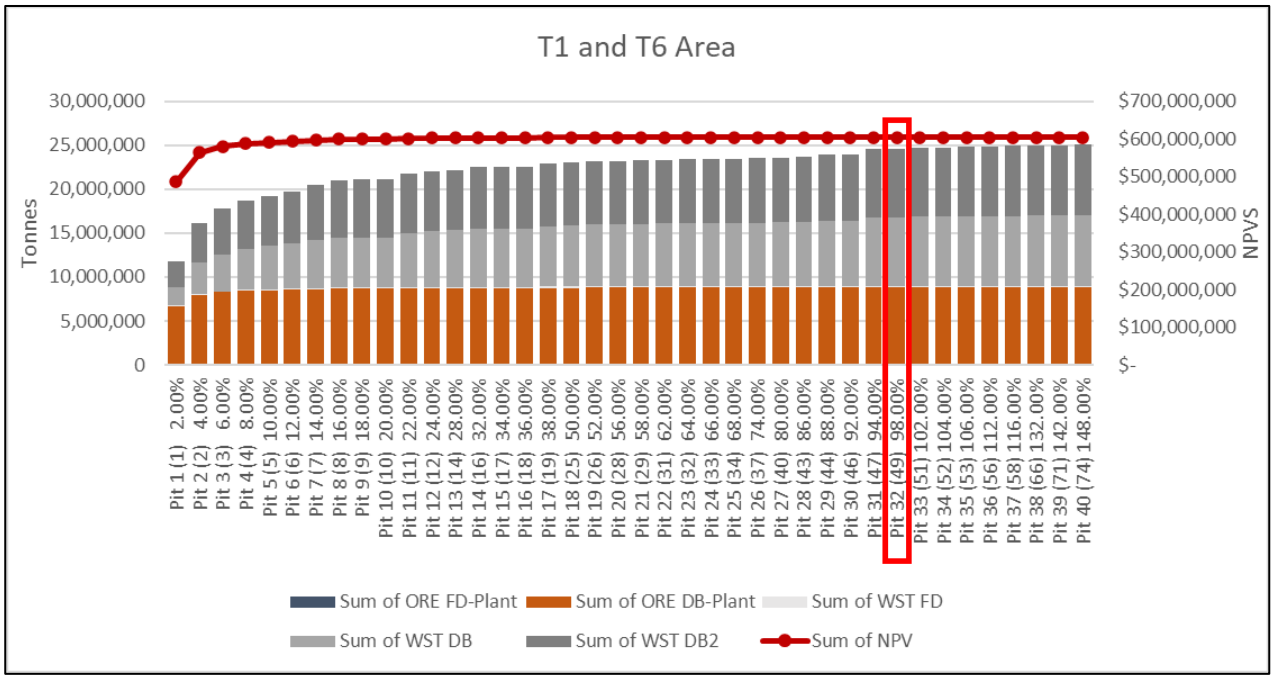


Table 4.33 Ore and waste tonnages for the pits alongside calculated NPV

Deposit	Ore (t)	Waste (t)	Net present value ($ M)
T1 T6	8.81	15.77	603.87
T4	4.80	6.27	860.77
Total	**13.60**	**22.04**	**1,464.64**

Note: Totals may not add up due to rounding

4.11 Independent reviews

No independent reviews have been undertaken on the mineral resources, as this is the maiden estimation.

4.12 Snowden Optiro comments on Mineral Resource estimate

The Monte Muambe 2023 Mineral Resource estimate is a maiden Mineral Resource and represents the first 3D integration of the available geology and data. The estimate was derived from appropriate data, that was used to develop the TREO grade based mineralised interpretations: a low grade 0.5–1.0% TREO and a high grade ≥1.0% TREO interpretations. The lower grade mineralisation appears as a dispersion halo, surrounding the higher-grade mineralisation, with the implication that the weathering/oxidation has created the halo around the higher grade. In addition, there is some preliminary evidence that the carbonatite is fractionated/ zoned, but an understanding of the nature and impact of this fractionation is still being developed, and no material impact has been identified to date. Within the mineralised envelopes, the grades exhibit low variability. No discrepancies were identified during validation, and there is reasonable confidence that the estimated grade suitably reflects the available geological understanding and sampling.

The Mineral Resource has been reported in accordance with the JORC Code (2012) reporting guidelines and has been constrained by an optimised pit shell to reflect the reasonable prospects for eventual economic extraction, The Mineral Resource employed a range of metrics to reflect the overall confidence in the estimate. Target 1 has been tested with regularly spaced data and the geological and grade continuity can be assumed, and the data is sufficient to define Indicated and Inferred Mineral Resources. At Target 4, the drill hole spacing is sufficient to imply geological and grade continuity and has been classified as an Inferred Mineral Resource.

There remains a significant amount of mineralisation that has been tested to varying extents, but which remains a mineralised inventory. This material is poorly informed/defined and either lacks sufficient confidence in the interpretation or sufficient sampling, and/or is outside of the optimised pit shell. It is expected that with on-going exploration, some of this mineralised inventory could be converted to a Mineral Resource.

On-going drilling and geological work is required to continue to develop the spatial geological understanding of the deposit. This includes improved understanding of the deposit geochemistry, weathering/oxidation features as well as collecting additional bulk density samples.

5 MINING

The mining method is based on conventional open pit using truck and shovel, and drill and blast, coupled to a ROM stockpile. Although the rock is largely classified as weathered, ore and waste rock will require drilling and blasting.

Both ore and waste will be excavated in 5 m flitches following mark-out by grade control. Ore will be hauled to either the ROM pad and tipped onto a designated ore finger or a designated low-grade stockpile. All mine waste will be hauled directly from the pit and placed onto a designated location of the tailings storage facility (TSF) dam wall; there are no other external waste dumps.

The mining fleet will comprise 40 – 60 t capacity articulated dump trucks (such as a Caterpillar 745) loaded by a 90-t excavator (such as a Caterpillar 395). A 30-t front-end loader (Caterpillar 980M) capable of loading the 41-t dump trucks, will be used as back-up for the primary loading unit and to make up shortfalls in periods where additional material movement is required. Other ancillary support will be supplied by a Cat D9R dozer, Cat 14M grader, and Cat 745 watercart. Maintenance will be conducted on site. Contract-mining is selected as the operating strategy at the Project.

5.1 Pit optimisation

Optimization parameters used for the Scoping Study are summarised in Table 5.1. Parameters were sourced as follows:

- TREO price and royalty – Altona. The estimation of the TREO final price was based on the long-term prices for the containing products, praseodymium, neodymium, terbium and dysprosium and the proportion they report on the resource model.
- Mining operating costs – assumed by Snowden Optiro based on pricing reported for a nearby rare earths operation of a similar scale.
- Processing costs, recovery assumptions and discount rates – Altona.
- Overall open slope angles (OSA) – assumed by Snowden Optiro based on a consideration of likely rock mass strength and the proportion of oxide and transition rocks in the top of the pit.

Table 5.1 Parameters used in optimization

Item	Unit	Value
TREO	$/t	24,651
Royalty	%	3.0
Mining costs	$/t	3.28
Ore – free dig	$/t	4.26
Ore – drill and blast	$/t	2.51
Waste – free dig	$/t	3.53
Waste – drill and blast	$/t	3.28
Processing cost	$/t ore	25.00
Downstream processing cost	$/t TREO	66.00
Recovery from ROM	%	60
Recovery from refining	%	80
Throughput rate	Tonnes per year	750,000
Discount rate	%	10
Overall slope angle (OSA) T4	°	47
OSA T1 and 6	°	43

5.1.1 Dilution and ore loss

A large proportion of the Project mineralisation has lateral widths of more than 30 m and mineralisation that is visually distinguishable by colour from the adjacent fresh rock, thereby providing ease of selectivity and minimal overall effect from ore loss at edges. No dilution was added to the block model for

optimisation, however a 5% dilution at zero grade, and a 5% ore loss has been applied in the mining schedule.

5.1.2 Geotechnical parameters

No geotechnical studies have been undertaken. Typical bench height and berm widths with OSA are weathered (21.3°), mixed (27.6°) and fresh (38.8°).

The groundwater depth has not yet been determined; but it is generally assumed that the water table is generally more than 100 m below surface and in many areas not encountered in drill holes. Mine dewatering is expected to be undertaken using in-pit drainage and sumps, with contingency measures for unexpected pit inflows.

5.1.3 Classification

The CONFID attribute defined which confidence of material would be used for the optimization. All resource confidence classifications were included in the optimisation. There is no Measured or Indicated classification in the block model. The confidence in the mining schedules is a function of the low confidence of the resource estimate. A cut-off grade of 1.5% of TREO was agreed, based on the grade and tonnage curve.

5.1.4 Optimisation results

For Target 4 area the pit shell chosen was using the price increment of 102% which provided the highest undiscounted NPV as summarised in Figure 5.1. For Target 1 and 6, the chosen price increment was 98% which provided the highest undiscounted NPV as shown in Figure 5.2.

Figure 5.1 T4 optimisation result

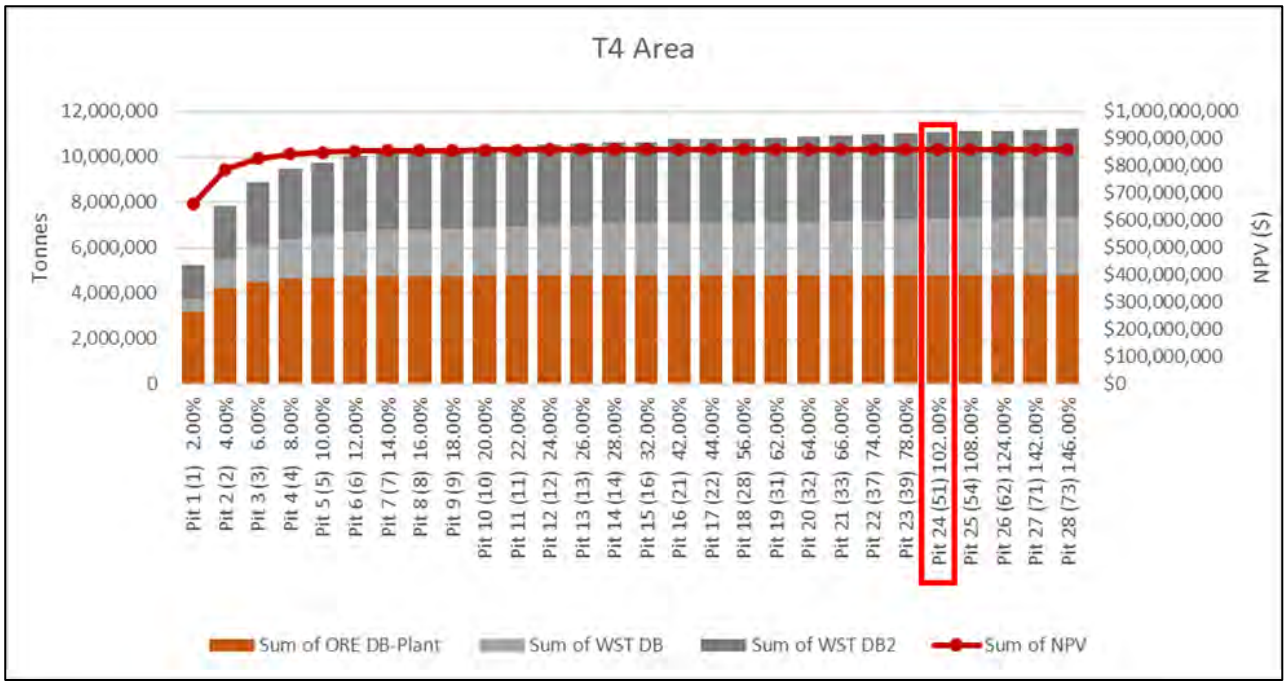
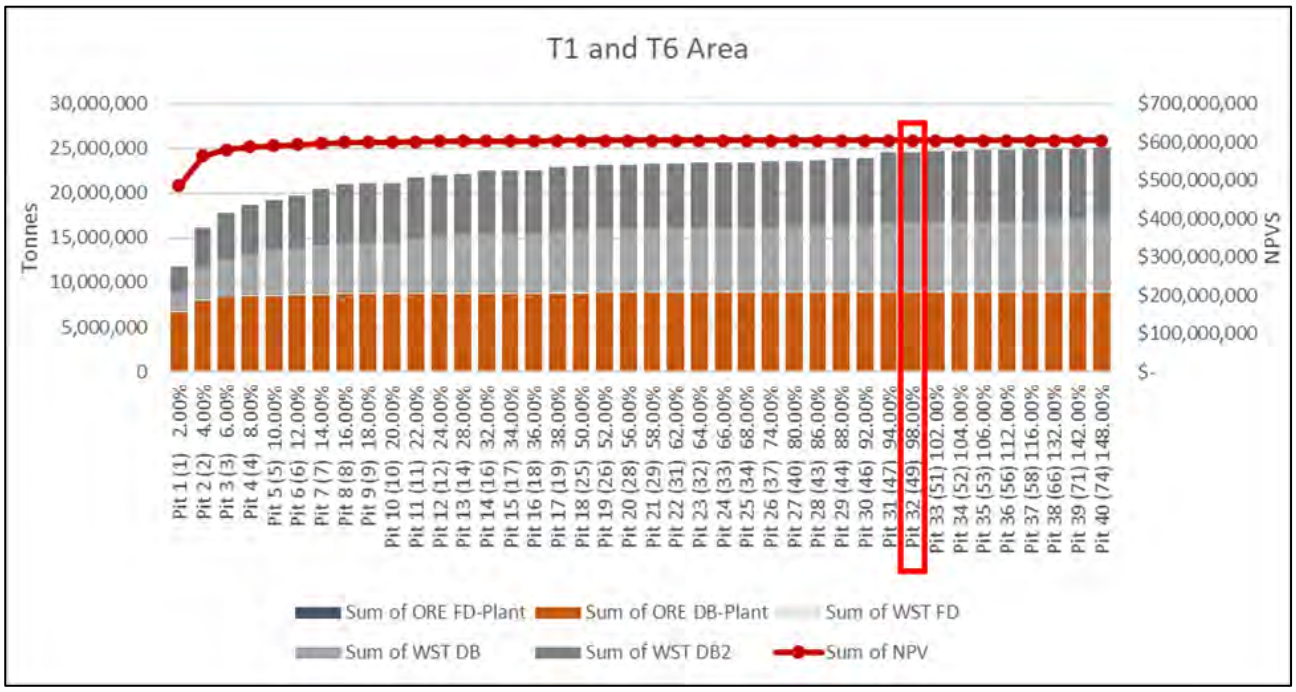


Figure 5.2 T 1 and 6 optimisation result



5.2 Mine design

The pit and stage designs were based on the slope parameters described above, using ramp widths of 10 m. All mine waste rock will be dumped external to the pit and used for the construction of the walls for the TSF. This has eliminated the need for an external rock dump. Any low-grade ore stockpiles will be reclaimed and processed in the final years of the schedule. In the planned mine schedule, all material <1.5% TREO has been classified as waste.

The mine life is planned at 18 years. There is no pre-strip period. Based on the selected pit shells a high-level pit design was produced based on the following parameters:

- Face angle of 60°.
- Berm width of 3.7 m.
- Ramp width of 10 m and 10% gradient

Indicative pit designs are shown in Figure 5.3 and Figure 5.4. Table 5.2 compares the pit optimisation ore and waste tonnages with the design. Differences are within normal tolerances.

Figure 5.3 T2 and T6 pit design

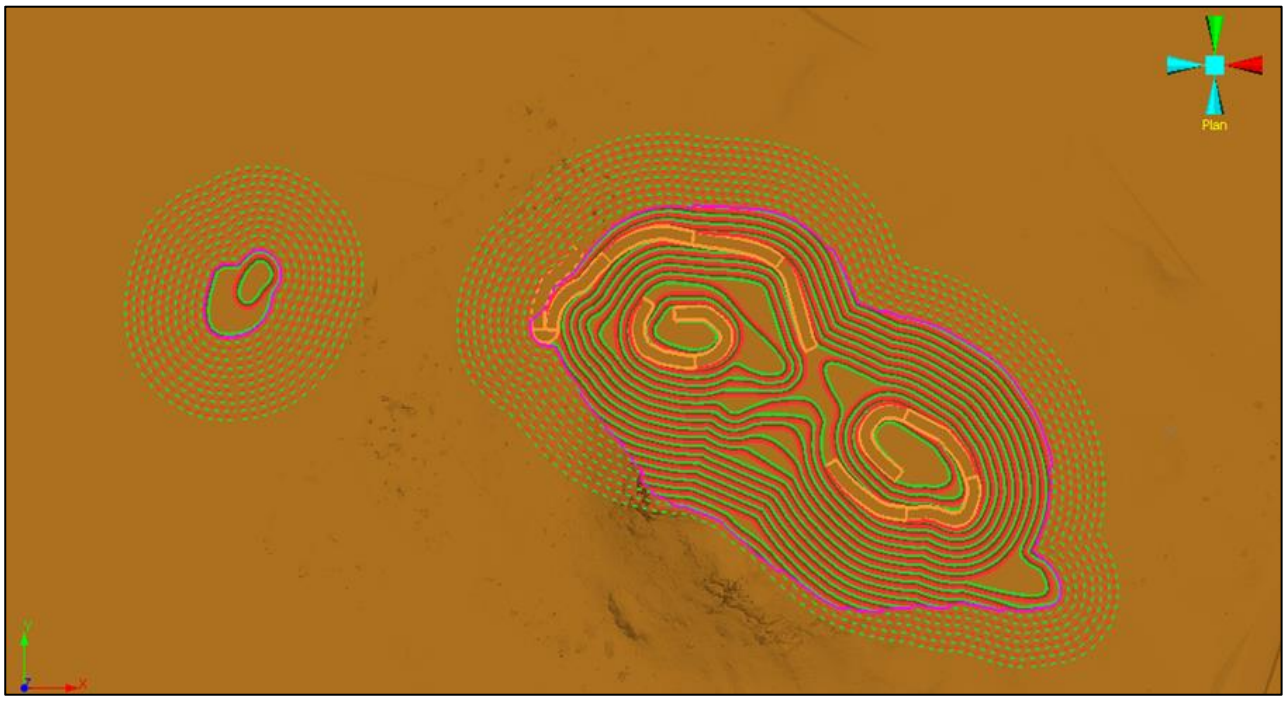


Figure 5.4 T1 pit design

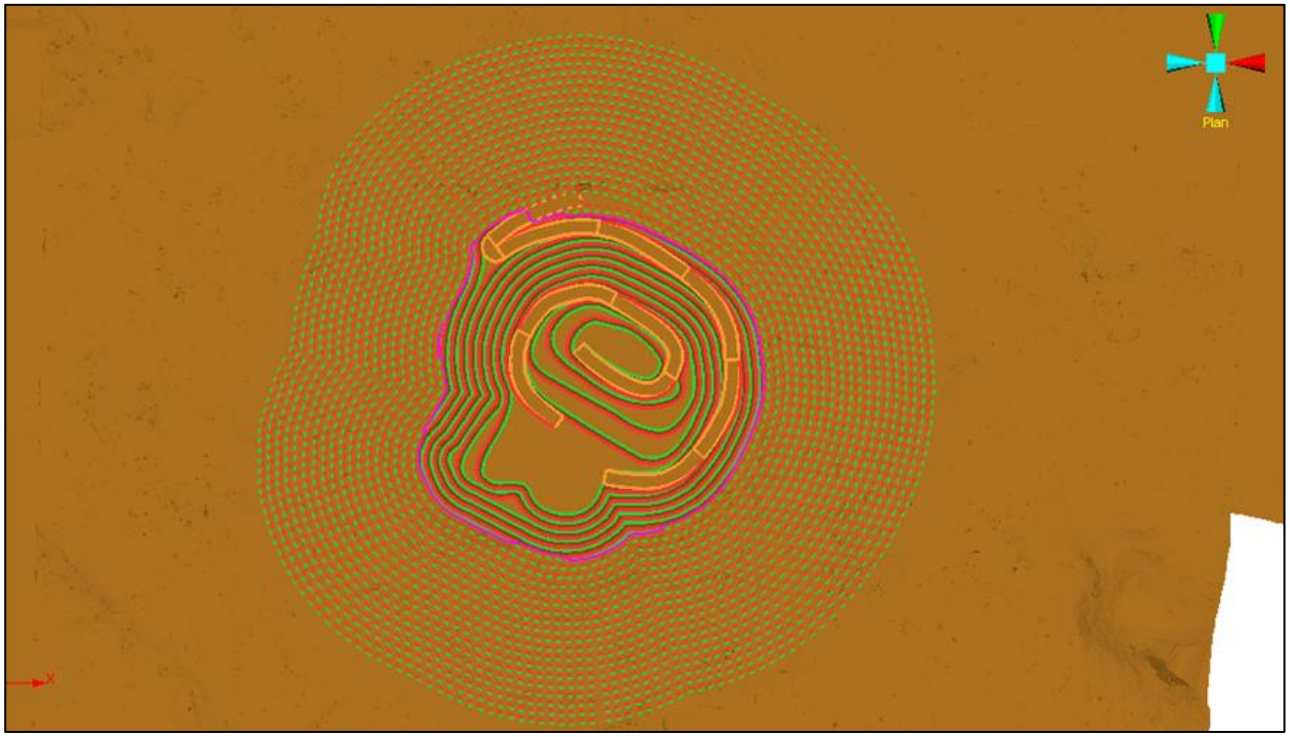


Table 5.2 Comparison of optimisation and pit design tonnages

Area	Unit	Optimisation	Design
T4			
Ore	Mt	4.799	4.588
Waste	Mt	6.430	6.565
Total T4	**Mt**	**11.229**	**11.153**
T 1 and 6			
Ore	Mt	8.805	8.568

Area	Unit	Optimisation	Design
Waste	Mt	15.766	15.274
Total T1 and 6	**Mt**	**24.572**	**23.842**

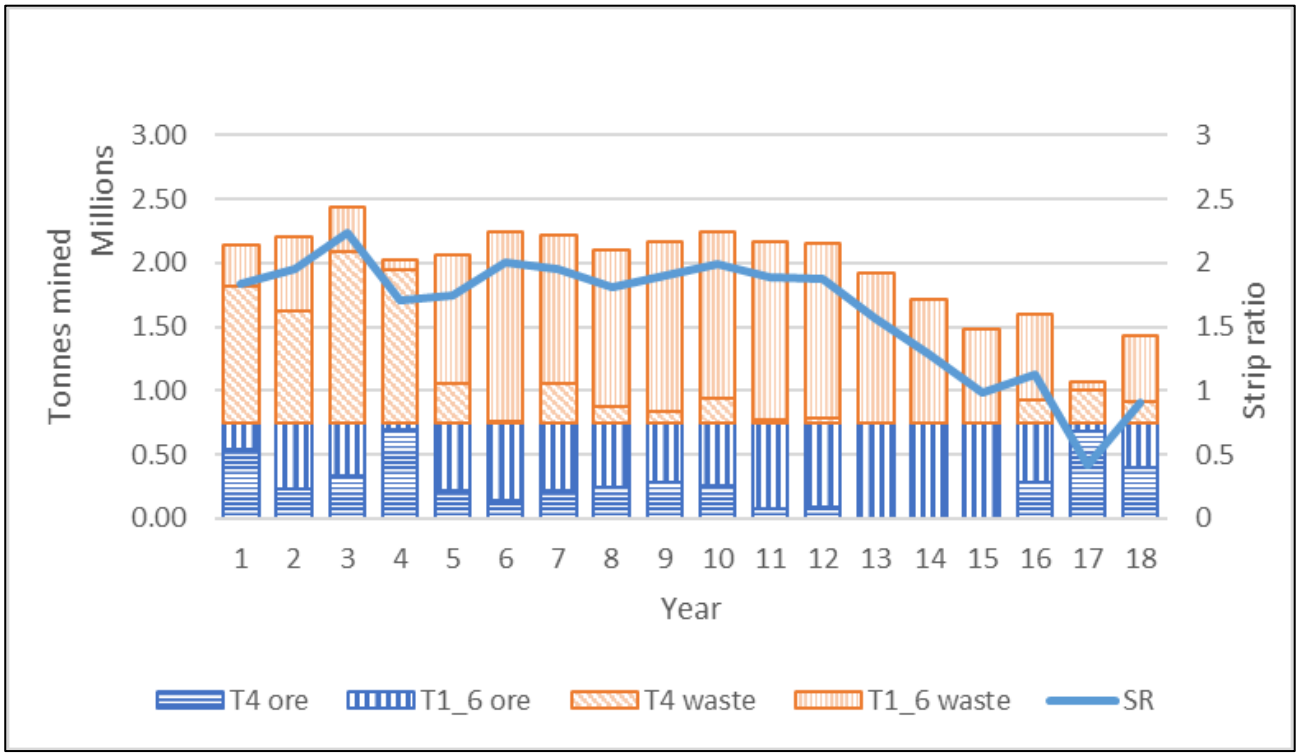
5.3 Ore Reserve estimate

The technical study is not to a pre-feasibility level. Consequently, no Ore Reserve was estimated or reported.

5.4 Indicative schedule

An indicative life of mine (LOM) schedule was prepared for the mining of the two open pits as shown in Figure 5.5. Throughput rate is maintained at 750,000 t/a at a total mining rate of between 2.0 to 2.5 Mt/a. The average strip ratio is 1.67 (waste: ore). A pre strip period is not required but may be used to generate sufficient waste for the first TSF lift.

Figure 5.5 Monte Muambe annual LOM mining schedule



5.5 Processing schedule

An annualised processing schedule is summarised in Table 5.3 (Year 1 - 9) and Table 5.4 (Year 10 – 18).

Table 5.3 LOM annualised processing schedule (Y1 – Y9)

Parameter	Unit	1	2	3	4	5	6	7	8	9
Run of mine tonnes	Mt	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
TREO	%	2.82	2.43	2.51	2.72	2.51	2.47	2.62	2.34	2.56
DY_2O_3	%	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
ND_2O_3	%	0.29	0.26	0.24	0.23	0.24	0.24	0.24	0.22	0.22
NB_2O_5	%	0.08	0.09	0.07	0.05	0.07	0.07	0.06	0.06	0.05
PR_2O_3	%	0.10	0.10	0.09	0.09	0.09	0.09	0.09	0.08	0.09
TB_2O_3	%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CEO_2	%	1.26	1.13	1.13	1.18	1.12	1.09	1.16	1.03	1.12
PR_6O_{11}	%	0.11	0.10	0.10	0.09	0.09	0.09	0.10	0.09	0.09
TB_4O_7	%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Table 5.4 LOM annualised processing schedule (Y10 – Y18)

Parameter	Unit	10	11	12	13	14	15	16	17	18	Total
Run of mine tonnes	Mt	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	**13.50**
TREO	%	2.43	2.45	2.32	2.39	2.37	2.39	2.27	2.09	1.95	**2.42**
DY_2O_3	%	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	**0.01**
ND_2O_3	%	0.22	0.23	0.21	0.21	0.21	0.20	0.19	0.19	0.18	**0.22**
NB_2O_5	%	0.05	0.05	0.05	0.04	0.04	0.04	0.03	0.04	0.04	**0.06**
PR_2O_3	%	0.09	0.09	0.08	0.09	0.08	0.08	0.08	0.07	0.07	**0.09**
TB_2O_3	%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
CEO_2	%	1.09	1.12	1.05	1.10	1.09	1.08	1.00	0.89	0.85	**1.08**
PR_6O_{11}	%	0.09	0.09	0.09	0.09	0.09	0.08	0.08	0.07	0.07	**0.09**
TB_4O_7	%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**

6 METALLURGY AND PROCESSING

6.1 Metallurgical testwork

6.1.1 Sample description

Two bulk sample composites were generated (Table 6.1) from RC cuttings:

- Low-grade (LG) composite.
- High-grade (HG) composite.

Both composites were homogenised and stage ground to 80% passing 150 microns. A head grade for each sample (Table 6.2) was determined to be:

- 1.05% TREO for the LG composite.
- 3.22% TREO for the HG composite.

Assay results for the composites are shown in Table 6.2.

Table 6.1 Composited intervals for metallurgical samples

Low grade sample (LG)					High grade sample (HG				
Hole	From	To	Weight (kg)	Tag No	Hole	From	To	Weight (kg)	Tag No
MM073	13	14	1		MM074	28	29	1	
MM073	14	15	1		MM074	30	31	1	
MM073	15	16	0.95	L6850	MM074	31	32	1	L6856
MM073	16	17	1		MM074	32	33	1.05	
MM073	17	18	1.05		MM074	33	34	1	
MM073	18	19	1.1		MM074	34	35	1	
MM073	19	20	1.025		MM074	36	37	1	
MM073	22	23	1	L6851	MM074	37	38	1.05	L6858
MM073	23	24	1		MM074	38	39	1	
MM073	24	25	0.975		MM074	39	40	1	
MM073	25	26	1		MM093	14	15	1	
MM073	26	27	1		MM093	15	16	1	
MM073	27	28	1.05	L6852	MM093	16	17	1	L6859
MM073	28	29	1		MM093	17	18	1	
MM073	29	30	0.95		MM093	18	19	1	
MM073	30	31	1		MM093	19	20	1	
MM073	31	32	1.05		MM093	20	21	1	
MM073	32	33	1.05	L6853	MM093	21	22	1	L6860
MM073	33	34	1		MM093	22	23	0.95	
MM073	34	35	0.95		MM093	23	24	1	
MM061	7	8	0.95		MM093	47	48	1	
MM061	8	9	0.95		MM093	48	49	1	
MM061	9	10	1.025	L6854	MM093	49	50	1	L6861
MM061	10	11	1		MM093	50	51	1	
MM061	11	12	1		MM093	51	52	1	
MM061	12	13	1		MM093	52	53	1	
MM061	13	14	0.95		MM093	53	54	1	
MM061	14	15	1.05	L6855	MM093	54	55	0.95	L6862
MM061	15	16	1		MM093	55	56	1	
MM061	16	17	1		MM093	56	57	1	
Total weight			**30.1 kg**		**Total weight**			**30.0 kg**	

Table 6.2 Assay results for composites

Element	Units	HG Comp	LG Comp
TREO	**%**	**3.22**	**1.05**
NdPrO	**%**	**0.41**	**0.22**
La_2O_3	ppm	11,728	2,580
CeO_2	ppm	15,232	4,913
Pr_6O_{11}	ppm	1,208	604
Nd_2O_3	ppm	2,916	1,633
Sm_2O_3	ppm	232	58
Eu_2O_3	ppm	58	58
Gd_2O_3	ppm	115	58
Tb_4O_7	ppm	17	20
Dy_2O_3	ppm	87	100
Ho_2O_3	ppm	16	18
Er_2O_3	ppm	41	47
Tm_2O_3	ppm	5	5
Yb_2O_3	ppm	46	34
Lu_2O_3	ppm	4.5	5.0
Y_2O_3	ppm	508	381
U	ppm	<10	<10
Th	ppm	270	180
K_2O	%	0.17	1.47
Fe_2O_3	%	26.4	18.9
P_2O_5	%	2.3	4.7
Al_2O_3	%	1.04	2.76
CaO	%	25.5	30.7
SiO_2	%	2.8	10.0
MgO	%	2.52	0.77
BaO	%	1.50	0.94
MnO	%	7.20	4.71
SO_3	%	0.21	0.06
Nb	%	0.05	0.19
Sc	ppm	16	6
Zr	%	0.02	0.04
LOI1000	%	18.16	17.78

6.1.2 Beneficiation testwork

Size and assay deportment

The samples were screened, and the size fractions assayed for rare earths and typical gangue elements. There were no significant biases (upgrade or rejection) of either the rare earths or gangue elements by mass deportment. The results are shown graphically in Figure 6.1 and Figure 6.2.

Figure 6.1 LG composite size fractions

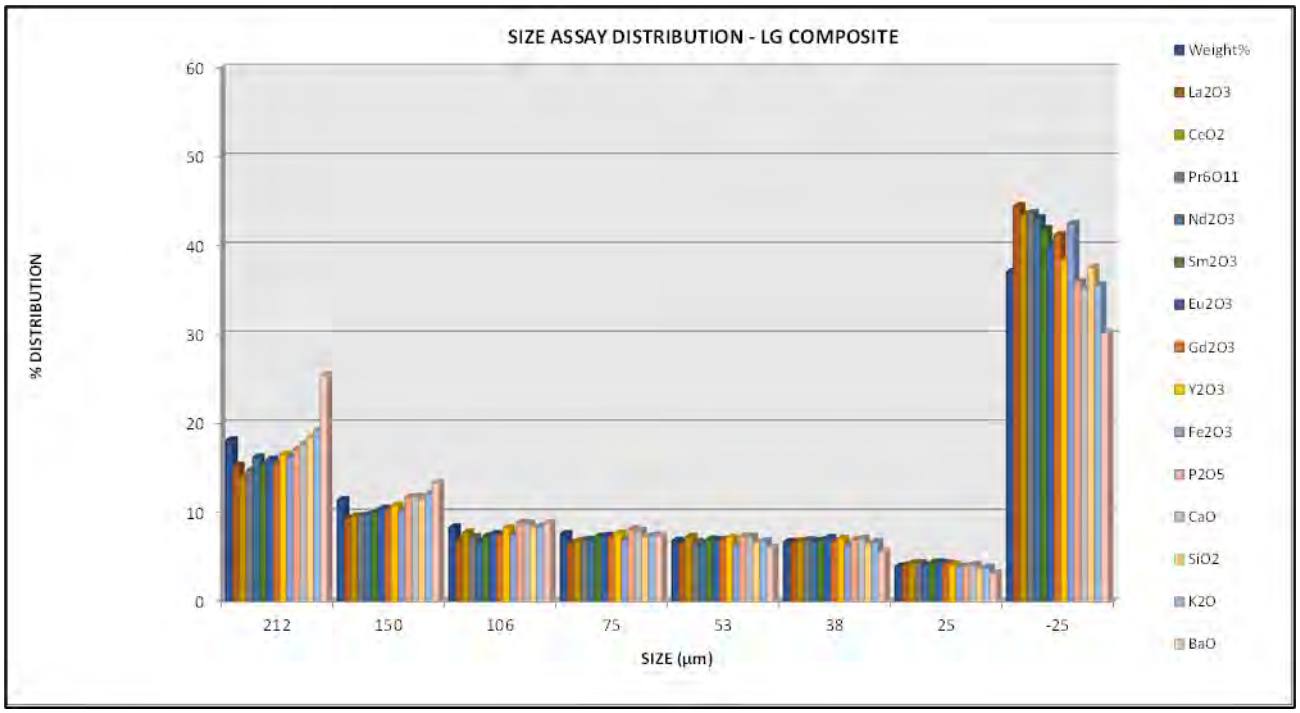
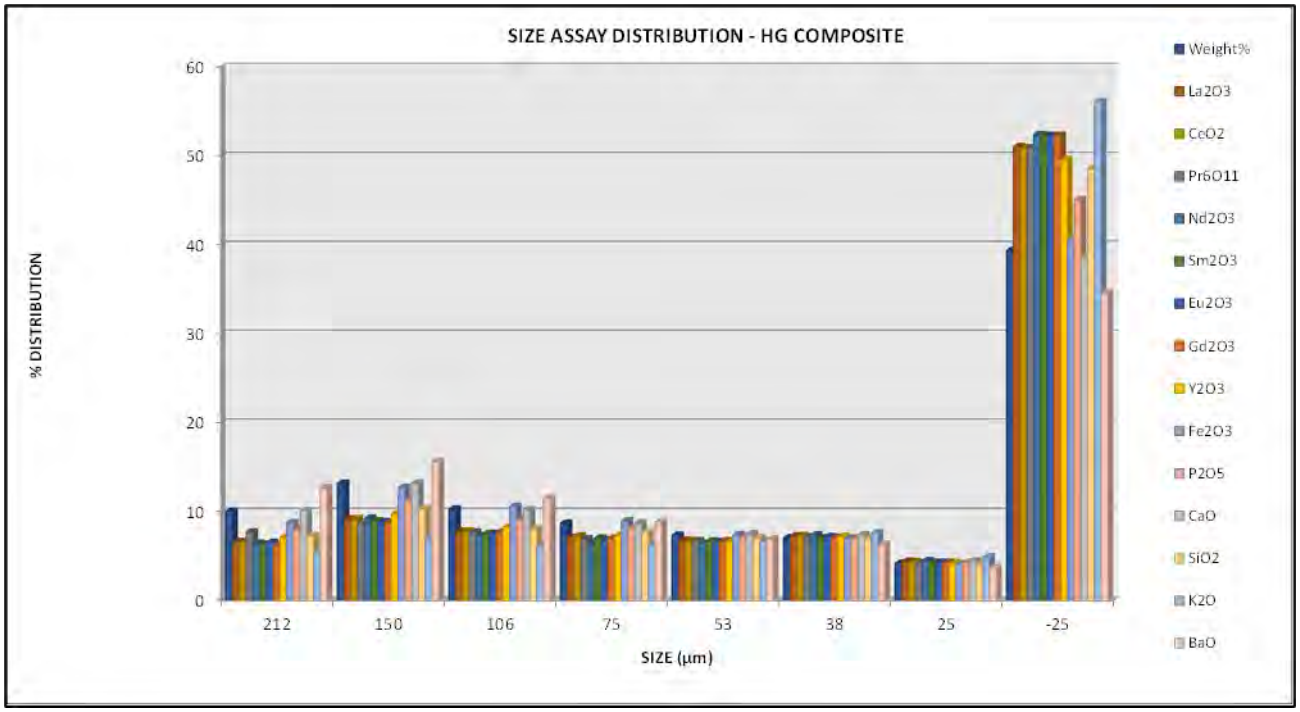


Figure 6.2 HG composite size fractions



Magnetic separation

The LG and HG composites were subjected to sighter wet high gradient magnetic separation (WHGMS) testing at various field strengths. No practical upgrade in rare earths or gangue rejection was seen in the limited testing.

Flotation

Sighter testwork was undertaken on the HG composite using a fatty acid collector (typical for bastnaesite hosted rare earth feeds) with a sodium silicate dispersant at elevated pH levels. As with the magnetic

separation, a practical upgrade in rare earths or gangue rejection was not evident in the limited testing. A standard rougher and cleaner arrangement was tested as shown in Figure 6.3.

A modest (but promising) doubling of the rare earth grade was seen in the combined (1 to 4) cleaner concentrates at ~50% recovery. TREO grades, recoveries and mass distributions are summarised in Table 6.3.

Figure 6.3 Laboratory flotation testwork regime

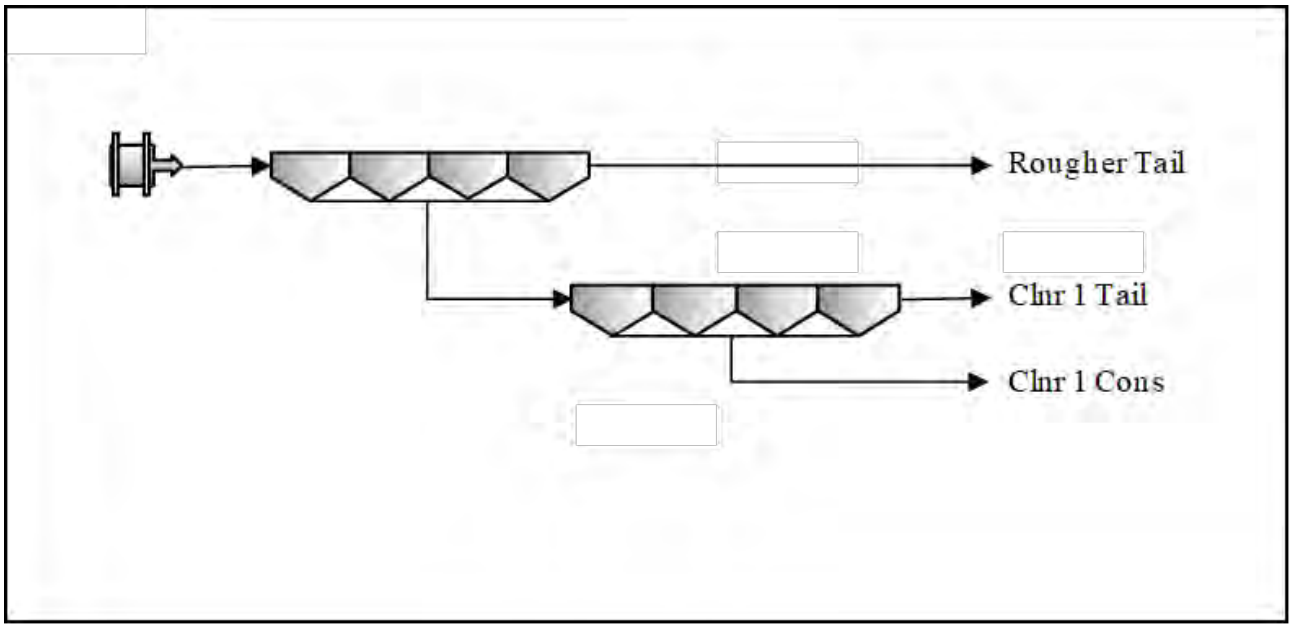


Table 6.3 Sighter flotation results on HG composite

Product	Mass %	TREO by stream		TREO cumulative	
		%	% dist	%	% dist
Cleaner Con 1	7.0	6.72	11.8	6.72	11.8
Cleaner Con 2	12.0	7.62	23.0	7.29	34.9
Cleaner Con 3	5.8	6.43	9.3	7.09	44.2
Cleaner Con 4	2.6	5.83	3.9	6.97	48.1
Cleaner Tail	17.8	3.81	17.0	3.81	65.1
Rougher Tail	54.8	2.53	34.9	2.53	100.0
Calculated head	**100.0**	**3.98**	**100.0**	**3.98**	
Assay head		**3.22**		**3.22**	

Competent Person comments

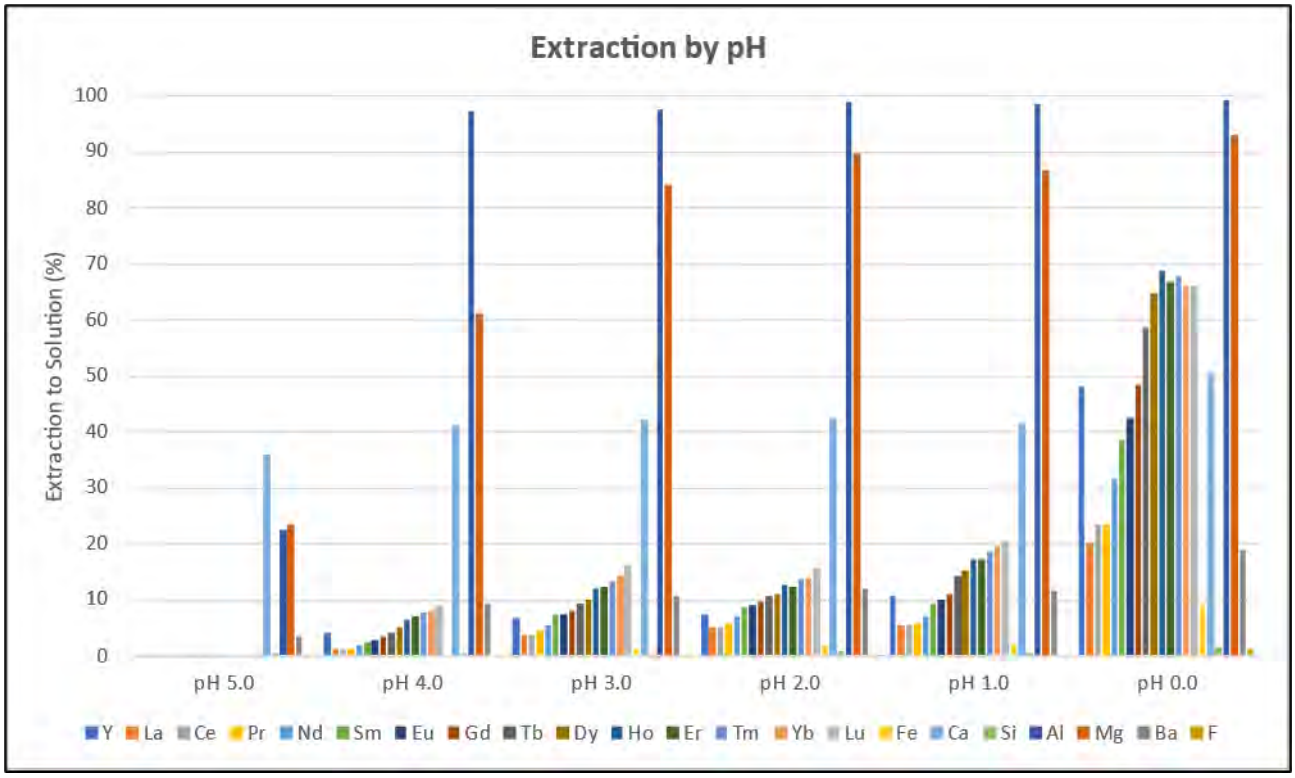
Whilst the magnetic separation didn't show immediate assurance, the flotation produced a doubling of the feed grade without any optimising of feed grind size or reagent regime and conditions. At the time of writing, qualitative mineralogy (QEMSCAN) is underway which will guide further beneficiation programs, qualitative mineralogy (QEMSCAN) was underway which will guide further beneficiation programs.

6.1.3 Hydrometallurgy testwork

Leaching

Mineralogy undertaken on the composite samples indicates significant quantities of calcite (up to 28% by mass) is present. A diagnostic leach was undertaken on a sample of the HG flotation concentrate in weak hydrochloric acid to ascertain if a gangue leach would be appropriate. It was found that more than 40% of the calcium (almost certainly present as calcite), 97% of the aluminium and 61% of the magnesium were solublised at a modest pH of 4.0. Importantly, less than 2% of the high value rare earth contributors (Nd and Pr) were solublised at this pH. The results are presented graphically in Figure 6.4.

Figure 6.4 Diagnostic hydrochloric acid leach on high grade composite



Competent Person comments

The sighter leach testwork undertaken was limited to the gangue leach stage only. It is surmised that a hard leach (strong KCl solution at elevated temperatures) on the gangue leach residue should solubilise the contained rare earths for subsequent recovery. It is noted that the presence of fluorine may inhibit this, however by forming insoluble rare earth fluorides. Should this mechanism result in unacceptable low rare earth extractions, then a cracking process (such as caustic conversion) may be required.

6.2 Process description

6.2.1 Introduction

Rare earth projects generally follow a three-stage metallurgical process of:

- Beneficiation – crushing and grinding (comminution) of the run of mine (ROM) ore followed by physical techniques to separate and upgrade the rare earth host minerals by rejecting the gangue minerals. Techniques used include gravity separation, magnetic separation and froth flotation.
- Hydrometallurgical recovery – comprising of chemical dissolution of the rare earth host minerals using acidic or alkaline processing steps often at elevated temperatures. This is followed by purification steps in order to remove the unwanted elements that dissolved along with the rare earths during the dissolution step. The resultant solution can either be fed directly to a separation stage if this is located on site or precipitated to give a high purity, mixed rare earth chemical concentrate

(typically a Mixed Rare Earth Carbonate or MREC) that will be transported to a remotely located separation facility.

- Separation – the separation of the individual or groups of rare earths into saleable products as determined by the particular end users. Solvent extraction (SX) is almost exclusively used for this purpose.

The first two stages tend to vary significantly across different projects, largely due to the highly variable mineralogy of REE deposits. It is thus essential that appropriate time and resources be devoted to understanding the mineralogy to guide the development of the beneficiation and hydrometallurgy phases. The scope of this study encompasses the beneficiation and hydrometallurgical stages.

6.2.2 Process overview

The possible process design is based on mineralogy, limited testwork and references to other REE projects in operation or at advanced stages of engineering. Altona is targeting a high grade MREC product that is suitable as a feed source to existing third party separation plants. The key design parameters for the processing plant are summarised in Table 6.4.

Table 6.4 Process design parameters

Description	Unit	Value
ROM feed rate	Dry t/a	750,000
TREO head grade	%	2.39
Contained TREO in ROM feed	t/a	17,925
Concentrate mass pull	% of ROM feed	14.3
Mineral concentrate TREO grade	%	10
Recovery of TREO to mineral concentrate	%	60
Contained TREO in mineral concentrate	t/a	10,755
Mineral concentrate feed rate to hydrometallurgy plant	Dry t/a	107,550
Recovery of TREO to MREC	%	80
Overall recovery of TREO from ROM to MREC	%	48
Contained TREO in MREC	t/a	8,604

Note: TREO – Total Rare Element Oxide, ROM – Run of mine, MREC – Mixed Rare Earth Carbonate

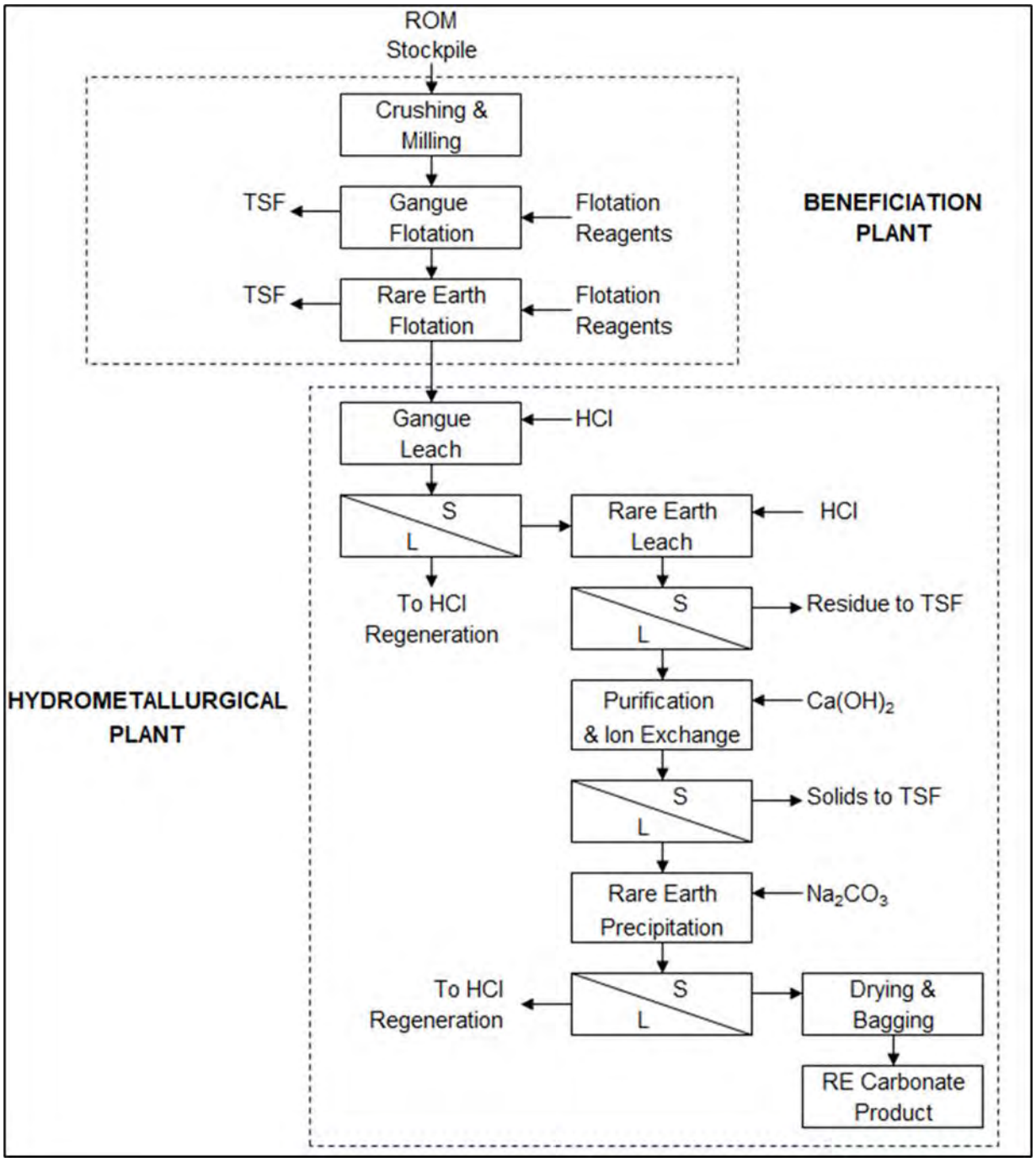
The process flow sheet as illustrated in Figure 6.5 consists of:

- The beneficiation plant which includes for the physical concentration of the rare earth host minerals and the rejection of gangue minerals.
- The hydrometallurgical plant which includes for the chemical recovery, purification and concentration of the rare earths employing a simple hydrochloric acid leach process.

The beneficiation plant comprises the comminution and flotation circuits. The purpose of the comminution circuit is to reduce the size of solid ore particles and thus increase the surface area of solids to enable the liberation of valuable materials that are locked within the gangue minerals. This is achieved by means of crushing and milling.

Flotation is used to upgrade the mineralized material. Flotation is a method of separation, which uses the differing surface properties of the various minerals in the ore. It involves the selective attachment of mineral particles to air bubbles generated in the flotation cell which float to the surface of the slurry and then flow over the lip of the cells into the launders.

Figure 6.5 Process flow sheet



6.2.3 Beneficiation process

Ore receiving and crushing plant

Ore will be recovered from the ROM pad and fed to a ROM bin fitted with an inclined static grizzly to prevent oversize material entering the ROM bin. The bin discharges through a feed chute onto a vibrating grizzly feeder. Undersize material discharges via a chute onto the secondary crusher feed conveyor. Oversize material discharges into the primary jaw crusher. Jaw crusher product, discharges and combines with the vibrating grizzly feeder undersize.

The secondary crusher feed conveyor discharges onto the double deck crusher feed screen. The screen (bottom deck) undersize material discharges onto the screen undersize conveyor. The material is transferred through a chute onto the mill feed silo. The top deck screen oversize discharges onto the secondary crusher feed conveyor and the bottom deck screen oversize discharges onto the tertiary crusher feed conveyor.

The secondary crusher is a standard head cone crusher with the product is recycled to the double deck screen. The tertiary crusher is a short head cone crusher with the product also recycled to the double deck screen.

Mill feed silo

The mill feed silo has a nominal capacity of ~2,000 t, equivalent to approximately 24 hours of milling capacity. Crushed ore is drawn from this silo using withdrawal vibrating feeders. Each feeder discharges onto the ball mill feed conveyor. Ball mill feed rate control is achieved using the variable speed vibrating feeders.

Milling

The ball mill operates in a closed circuit with a cyclone cluster to produce a product size P_{80} of approximately 53 µm in the cyclone overflow which is envisaged to provide the necessary degree of liberation for effective flotation. The cyclone overflow will gravitate into the gangue flotation feed tank.

Flotation

The flotation process consists of two distinct stages: gangue flotation and rare earth flotation.

The gangue flotation is designed to remove the majority of the calcium bearing gangue minerals such as calcite, fluorite and ankerite. These typically require a weak collector such as a fatty acid and is undertaken at ambient temperatures. As this is a reverse flotation process, the gangue reports to the flotation concentrate which is subsequently cleaned in a number of stages to recover the rare earth hosted bastnaesite minerals. This concentrate is thickened before pumping to the TSF.

The tailings from the gangue flotation contains the rare earth hosting bastnaesite mineral as well as non-calcium gangue minerals (silicates, feldspars etc). This stream is re-ground to further liberate the bastnaesite minerals and/or polish the mineral surfaces of the gangue flotation collector.

The rare earth flotation typically uses a stronger collector (fatty acid or hydroxamate) at elevated temperatures (40° to 50°C). Multiple roughing and cleaning stages are typically employed. The tailings from this circuit are sent to the gangue flotation thickener. The concentrate is sent to the rare earth mineral concentrate thickener.

Plant utilities (water)

The water reticulation system is designed to provide the following water services:

- Raw water.
- Filtered water.
- Fire water.
- Potable water.
- Process water.

Raw water is pumped from source into the raw water tank. The raw water tank overflows into the process water tank for make-up water. In addition, the raw water is pumped through the sand filter plant into the filtered water tank. Filtered water is distributed to reagents make-up, gland services, potable water treatment plant and fire systems. Process water is stored in a process water tank and is distributed to the plant by process water pumps.

Flotation reagents

Flotation reagent storage, make-up and distribution systems are typically required for the following:

- Gangue flotation collector.
- Rare earth flotation collector.
- Activator (typically sodium silicate).
- pH modifier (sodium hydroxide or sodium carbonate).
- Depressants.
- Dispersants.

6.2.4 Hydrometallurgy process

Calcite leach

The thickened rare earth mineral concentrate slurry is pumped to the first agitated fibreglass reinforced plastic (FRP) tank thereafter the slurry cascades to agitated FRP tanks where calcite leaching occurs using a weak HCl solution maintained at pH 4. The purpose of the calcite leach is to remove/solubilise the calcium contained within the REE host minerals of bastnaesite as well as residual calcite not rejected by the flotation process.

The leach slurry is thickened and filtered. The solution (thickener overflow and filtrate) is pumped to the HCl regeneration circuit with a small amount recycled back to the first leach tank to adjust the pulp density and build up the calcium tenor to improve HCl regeneration efficiency. The calcite leach residue from the filter is repulped with rare earth leach thickener overflow before being pumped to the rare earth leach section.

Rare earth leach

The purpose of the rare earth leach is to solubilise the rare earths by dissolving the bastnaesite host mineral. Repulped slurry from the calcite leach circuit is pumped into a series of cascading agitated FRP tanks and leaching is done with a strong 20 % (v/v) HCl solution at approximately 80ºC. The rare earth leach slurry is pumped to the rare earth thickener. The thickener underflow is sent to the leach filter which combines the filtrate with the thickener overflow and is pumped to the purification circuit.

The filter cake contains the depleted leach residue and is repulped and pumped to the waste treatment tank.

Purification

The purpose of the purification section is to precipitate solubilised gangue elements as their hydroxides. Slake lime (calcium hydroxide) is added to a series of FRP tanks to precipitate iron, aluminium and thorium. The resulting slurry is then thickened and filtered before the filter cake is repulped and pumped to the waste treatment tank.

The thickener overflow and filtrate is now essentially a rare earth chloride solution with some uranium contamination. This solution is treated via standard ion exchange (IX) columns to remove the uranium. The resulting purified rare earth liquor is sent to the MREC precipitation circuit.

Mixed rare earth carbonate (MREC) precipitation

The purified mixed rare earth liquor is subjected to a final precipitation step whereby a sodium carbonate (soda ash) slurry is added in a series of cascading, agitated FRP tanks.

The slurry from the agitated FRP tanks is fed to the final rare earth precipitation thickener. The thickener overflow and final MREC filtrate is recycled to the raw rare earth precipitation circuit and/or HCl regeneration. The thickener underflow is filtered then the rare earth filter cake is dried, cooled and bagged for shipping.

Hydrochloric acid regeneration

The HCl regeneration circuits involves contacting calcium chloride ($CaCl_2$) solution with sulphuric acid (H_2SO_4) to produce HCl and insoluble gypsum ($CaSO_4$). This is a well-documented process that enables regeneration of HCl on remote sites using H_2SO_4 that is also generated on site.

The calcite thickener overflow and filtrate solution together with the filtrate after the MREC precipitation is pumped to the HCl regeneration holding tank. The $CaCl_2$ solution is pumped to a series of cascading agitated FRP tanks in which 98 % H_2SO_4 solution is added. $CaCl_2$ can also be supplemented if required. The general form of the equation is:

$$CaCl_{2(aq)} + H_2SO_{4(l)} \rightarrow CaSO_{4(s)} + 2HCl_{(aq)}$$

The HCl and gypsum slurry is pumped to a thickener and filter whereby the thickener overflow and filtrate comprises of the regenerated HCl which is sent to a holding tank for plant distribution.

The gypsum filter cake can either be dry stacked or repulped and pumped to the TSF.

Sulphuric acid production

A commercial sulphuric acid burner plant is fed solid sulphur prill to produce the H_2SO_4 required for the HCl recycle process. There is an option to add a steam turbine power co-generation package to the package if excess steam is available. For the purpose of this study, it is assumed that the steam produced will be used only for heating the flotation and leaching circuits.

Reagents

Hydrometallurgy reagent storage, make-up and distribution systems are typically required for the following:

- Sulphur prill.
- Calcium chloride flake.
- Slaked lime.
- Sodium carbonate.

6.3 Ongoing testwork

Further detailed metallurgical studies for Monte Muambe are underway and currently focused on advanced metallurgical testwork. A 70 kg representative ore sample is with Auralia Metallurgy in Perth (Australia), and another 100kg ore sample has been received by SGS Lakefields in Canada. The sample at SGS Lakefields will first undergo extensive feed characterisation including Electron Microprobe Analysis and TIMA-X analysis. TIMA-X is designed to provide quantitative mineral speciation and distribution, as well as characterisation, grain size attributes, degree of liberation and associations of minerals of interest.

Following feed characterisation, test work will focus on producing a high-grade Rare Earth concentrate in order to improve the economics of the Mixed Rare Earth Carbonate production process. The possible separation and recovery of fluorspar, another critical raw material present in the ore at Monte Muambe, will also be assessed. Flotation test results are expected in Q2 2024.

6.4 Competent Person comments on metallurgy and processing

When referring here to a flowsheet, it does not imply the study flowsheet will be necessarily retained, as alternative processing routes could be selected as the sighter testwork progresses and associated technical and cost-benefit assessments are implemented.

The selected flowsheet is deemed reasonable based on comparing the mineralogy with operating plants of other rare earth deposits in advanced stages of development (i.e. have undertaken pilot plant verification).

7 PROJECT INFRASTRUCTURE

7.1 Site layout

All required infrastructure, the accommodation camp, process buildings, stockpiles, water resources, and TSF are located within the current Project's Licence boundaries. Site infrastructure is required both inside the crater and outside to service these facilities.

A conceptual site block plan (SBP) locates the main accommodation camp outside of the crater to minimize dust, noise and radiation exposure, whereas the process plant, mining contractors' workshops, TSF and associated infrastructure are deployed inside the crater, arranged to minimize the physical footprint and in close proximity to the two main pits.

The planned mine infrastructure and process areas are, as far as practical, consolidated to reduce materials handling distances (including that of ROM ore) and laid out to exploit or adapt to the topography as well as accommodating future expansion of selected process units and exploitation of new pits.

7.2 Power

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 (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 1,300 MW.
- The 1,500 MW Mphanda Nkuwa Hydropower (60 km downstream from Cahora Bassa dam and 70 km upstream from Tete city).
- Gas-to-power program: 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 120 MW 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 40 MW, 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, including 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).

7.3 Project power

The Company is 36 km from the Moatize mine transformer yard. A grid overhead power line (220 kv) is within 4.5 km of the Project. In addition, there is a medium voltage line getting to Mualadzi (24 km north of Monte Muambe), from which power can be brought to Monte Muambe.

Diesel generators will be used during construction and commissioning, and as backup for infrequent events of grid failure.

The 18 MW electrical power maximum demand of the Monte Muambe site will be provided at 11 kV, 50 Hz by a hybrid power generation plant. The plant will comprise a backup diesel-powered electrical generator station and solar photovoltaic (PV) power station supported by a battery energy storage system. Cables will link the power station substation to the process plant substation.

Solar PV generation is expected to contribute approximately 25% to the overall generation. The solar PV power station will be contained in a separate area, 800 m upwind from the process plant.

The backup diesel generators will be located adjacent to the process plant facilities and be capable of providing the maximum power demand with a N+1 level of redundancy for maintenance shutdowns or failure of a single generator. All diesel generator units are planned to be individually housed in acoustic containers and located in a section of the beneficiation plant that can be bermed off to further isolate noise from the general plant site. Fuel storage and a control room will be included in the installation.

Site electrical power will be distributed by means of overhead lines for remote facilities, such as the borehole field, accommodation camp, tailings storage facility, and explosives magazine. The process plant, being in proximity to the power station, will have electrical power distributed by cables buried or on racks.

7.3.1 Power requirements and costs

A total of 5 x 2 MVA diesel generators will be required for the initial phase to provide power during construction and in the interim till the EDM bulk power supply is available. This is an estimate of the initial power requirements before the planned mine comes into full production and will be in use for approximately 12 months depending on the construction program. The generators can then be phased into the initial phase of production then provide standby power of 8 MW when the bulk power supply is commissioned.

Table 7.1 lists the power supply requirements and costs to meet the power demand of the planned mine during the construction and initial phase. The assumption is that the diesel generators have 12 hours run time at 75% load with a tank capacity 4,000 litres. The diesel generator costs are rounded off and exclude switchgear and distribution.

Table 7.1 Power supply requirements and costs

Power generation	Total continuous power supply (kVA)	Capex cost (35% accuracy)	Opex cost (35% accuracy) At 75% load 325l/hour per 2 MVA generator – Diesel cost @ $1.53 per litre	Opex cost (35% accuracy) At 75% load 5 x 2 MVA generators
Phase 1- 5 off 2 MVA diesel generators construction phase and initial start-up -	10 000	$1,500 000 per unit = $7, 500 000	$497.25 / Hour = $11 934 / 24 hr day = $358 020 / Month	$358 000 / Month/ 2 MVA Generator = $1 790 100 per month for 5 2 MVA generators

The power demand is estimated at 18 MW, this is summarised in Table 7.2. The data is based on the information received from Altona management as there is no mechanical equipment list available for this project to determine the total installed power at this stage.

The ball mill will be the largest power user and thus the start-up energy will be significant. It is assumed the ball mill will be driven by a slip ring wound asynchronous motor which will be equipped with a liquid rotor starter (LRS) which is more cost effective than a variable speed drive (VSD).

The power plant will be adequately equipped to supply sufficient power during start-up without interruption to the rest of the plant equipment. This will have enough capacity to mitigate any significant voltage drop that may lead to interruptions in the power supply to the plant equipment.

Table 7.2 Plant and infrastructure power requirements

Project load	Mine in construction phase	Mine in full production continuous power demand (kW)	Maximum start-up demand (kW)
Process plant	3,500	14,000	

Project load	Mine in construction phase	Mine in full production continuous power demand (kW)	Maximum start-up demand (kW)
Off-site infrastructure	500	1,000	
Construction	1,000	500	
Ball mill	0	2,500	4,000
Total		**18,000**	

7.4 Water

Management consider that a bore well-field will be the most optimal solution for the Project's water supply. Groundwater generally has a high total dissolved solids (TDS) load (about 1,000 mg/l) and this will require water treatment prior to use in the plant and as potable water. Currently borehole water is abstracted from a converted exploration borehole located in the central part of the crater.

The closest point to the Zambezi river is approximately 30 km from the Project site. This may be considered as a possible abstraction source in the future.

The water demand for the Monte Muambe site will be supplied by on-ground overland pipelines from the bore field. Various sites for bore water have been identified and well tested. The bore field selected will provide water to the accommodation camp, process plant and camp. Dewatering from the open pits is also expected to increasingly contribute to the plant's water supply during the LOM.

Three qualities of water will be required on the Monte Muambe site.

- Raw water for bulk use in the process plant and mining for dust suppression; this will require an earth-lined dam to act as a buffer storage facility.
- Potable water for eye wash stations, food preparation and human consumption.
- Demineralised water for steam production.

A containerised potable water treatment plant comprising activated filter media filtration, softening, chlorine dosing and UV disinfection will be used to treat the water required for potable water services. A containerised demineralisation plant will be used to treat the raw water required for the boiler plant. Fire water distribution and potable water distribution will be included in the overall Project design.

The retentate from the potable water plant and the blowdown from the demineralisation plant will be discharged along with the waste process streams to the TSF. The supernatant water from the TSF will be reclaimed and recycled to the process plant with zero discharge. All wastewater arising from domestic use including from kitchen, canteen, and laundry will form part of sewage. Wastewater from the sewage treatment will be directed to either a spray field during the dry season or discharged through a leach field during wet season.

A TSF water return system will be considered in the TSF design.

7.4.1 Water distribution

Water will be pumped by HDPE pipeline incorporating valve chambers, thrust blocks and protective earth mound from the borehole wellfield to an elevated site on the crater rim into a dual compartment Braithwaite type steel panel tank founded on a reinforced concrete base and 1-m tall plinths servicing the following areas :

- Inside the crater:
  - Contractor laydown area
  - Office complex
  - Infrastructure and vehicle workshops area
  - Stores area
  - Mining infrastructure area
  - Container yard
  - Beneficiation plant

  - Weighbridge.
- Outside the crater:
  - Diesel tank farm
  - Sports fields
  - Kitchen, dining and recreation buildings
  - Change house, laundry and boiler room
  - Accommodation for C, D and E-class personnel.

7.4.2 Water demand forecast

This will be defined during PFS testwork and design, with an accuracy of litres/ day. Based on this planned demand the potable water reservoir will be made large enough for a two-day storage capacity.

7.4.3 Reticulation

Potable water from the Braithwaite-type reservoir is distributed by gravity feed in a 140 mm diameter HDPE pipeline configured as a ring-feed. A series of gate valves are introduced to isolate supply areas for maintenance and scour valve chambers are positioned at strategic points to drain pipelines, as maintenance is required. This ensures a reliable supply of potable water to all consumers.

The potable water pipeline is bedded in earthen berms which run on grade. At road crossings, the pipeline is concrete encased with 15 MPa mass concrete to prevent damage.

7.4.4 Raw water dam / process water dam

A HDPE-lined raw water dam is envisaged with an effective storage capacity of 5,000 m^3 with a base footprint of 30 m x 30 m with a depth of 3.5 m and side slopes of 1V:2.5H. Raw water supply from the wellfield, operating at 55 ℓ/s, can fill the dam in approximately 24 hours.

A 2 mm HDPE smooth flexible geomembrane is envisaged for the lining system. This infrastructure is constructed during the early works phase of the project as the specialist HDPE lining supplier requires the earthworks for the dam to be constructed and for attendance by the main contractor to supply labour resources and plant to assist with placement of the liner. A reinforced concrete spillway and chute is provided in the dam wall to prevent overtopping due to mechanical failures or major storm events.

A water bowser filling station is provided adjacent to the dam for filling water trucks for dust suppression, accessible by 6 m wide road constructed off the primary access road and with a loop route back to the beneficiation plant for access to the raw water dam for firefighting.

A 250 mm diameter suction pipe, surface mounted to the earth embankment dam and anchored to the base of the dam, is provided for abstraction of water into the pump station, which is delivered to the plant or to a containerised demineralisation facility to process the raw water prior to use in the boiler plant.

During periods of low demand, raw water can be pumped out of the crater for consumption by the local community for agricultural purposes.

To mitigate loss of dam capacity from the settling of particles in suspension, a reinforced concrete silt trap is incorporated at the raw water dam inlet. Sluice gates control the flow of raw water into the two compartments. Using the sluice gates, one compartment can be isolated, allowing removal of excess silt deposition and for maintenance without disrupting water supply to and from the dam.

7.4.5 Waste water

Two treatment works are envisaged, one for the accommodation camp and facilities outside of the crater, and another to service the plant requirements and facilities in the crater. Outlying areas such as the gatehouse, explosives bunker, wellfield, etc. will be serviced by environmental toilets and a small potable water tank on an elevated stand.

All wastewater arising from domestic use including from kitchen, canteen, and laundry is treated as sewage. Generally, 80 % of potable water consumption is returned as sewage discharge. Based on the potable water demand the effluent production per day can be planned.

All sewerage effluent is reticulated to containerized waste water treatment modules. The containers are placed on ground slabs. This system will be a design and supply package by specialists. It is proposed that multiple modules treating 70 m^3/day effluent by submerged aerated fixed film (SAFF) method satisfy the requirements for water quality standards of South African (Section 39 of the Water Act of 1998 – Act 36 of 1998), and are deemed appropriate for this facility in Mozambique.

Modular plant units can be rented to expand capacity as manpower numbers increase (and reduce). A 400 PE unit catering for 70 litres/ person/ day requires a 36-hour buffer/ retention tank and caters for a maximum of 350 people, operating 24-hours per day. A buffer/retention tank is not included in the modular package, which requires a separate civil structure to be constructed. A 3-compartment structure 6.0 m long x 2.5 m wide and approximately 2.5 m deep provides 36 m^3 buffer capacity with 500 mm freeboard. The number of buffer tanks depends upon the number of wastewater treatment modules deployed.

The plant will be charged by a gravity sewer pipeline unless the topography required the effluent to be pumped. Details of pumping the effluent into the treatment plant are yet to be designed as well as access for maintenance and annual removal of sludge by means of pumping into tankers for disposal at a suitable hazardous waste site or drying bed facility.

Various sundry equipment and infrastructure required for the waste water treatment plant include grease traps, discharge pipe and pump system to dispose of treated effluent, standby equipment, analytical instrumentation and reagents for testing, including storage facilities.

Commissioning of a modular plant requires approximately 2-months for micro-organisms to achieve full operational specifications. If this standard is met, water may be discharged as surface runoff, or used for other purposes, such as agriculture. Water quality and the treatment system must be routinely checked in order to ensure compliance. During the commissioning of the plant and during maintenance of the plant, effluent will have to be stored in a buffer tank (larger than that required for normal operation of the plant) or bypassed into the dirty water dam to prevent contamination to the surrounding environment.

Wastewater from sewage treatment is directed to either a spray field during the dry season or discharged through a leach field during wet season. Sludge will be disposed of in the waste dump.

7.4.6 Storm water management

Storm water infrastructure caters for natural overland flow that requires to be directed around man-made terraces, dumps and stockpiles, the pit and across roads, to continue overland into natural drainage gullies, as well as the conveyance and collection of rainfall runoff, decant water and spillage off terraces, TSF, stockpiles and waste dumps that may not be discharged back into the natural environment.

Storm water is considered clean water (uncontaminated) when surface runoff is remote from the plant, roads and terraces for workshops, waste dumps, ore stockpiles and areas where ore is handled. Clean water is dispersed back into the environment to recharge groundwater or to drain away in natural gullies.

Rainfall runoff from ore stockpiles and soil dumps that originates down-slope of clean water cut-off channels, is deemed to be contaminated and is collected in dirty water retention ponds. Contaminated spillage from the plant terraces, workshops and stores, etc., is directed to lined channels which discharge off the terraces in chutes. Where required, stilling basins or silt traps retain solids before the dirty water discharges into evaporation ponds or dirty water dams.

Dirty water runoff and decant water from the tailings storage facility TSF is collected into retention dams and pumped back to the treatment plant. Designs for the management and re-cycling of this water is dealt with in the detailed design of the TSF and excluded from general site infrastructure scope of work. Similarly, mine pit de-watering including direct rainfall within the pit footprint is collected and pumped to the treatment plant and also forms part of the water-mass balance calculations.

All drains are designed to convey the 1:50 year return period flow without overtopping. A minimum slope of 1:100 ensures that the drainage channels are self-cleaning. Where the topography is steep, drop structures will be introduced to reduce storm water velocity.

Road storm water drainage

Storm water run-off from roads that are not in areas classified as contaminated zones, is conveyed in gravel-lined mitre drains alongside road edges and directed to the surrounding environment where the runoff is classified and clean. This includes roads outside the crater in the accommodation camp and the 30 km upgraded mine access road.

Drains are generally unlined earth ditches but concrete-lined mitre drains are used where velocities would scour unlined drains or where materials handling equipment would damage un-lined drains. Where storm water is diverted under roadways, culverts are utilized.

Roads within the tenement area, including the entrance gate, mine offices, mine camp and accommodation facilities, container yard, mine electrical sub-station and workshops and stores, or any other man-made terrace or road, are deemed to be in the contaminated zone and runoff is collected in concrete lined channels and conveyed into the dirty water system.

7.4.7 Drainage channels

Two types of drainage channels will be used, namely, clean and dirty water drains:

- Clean water drains cut off and convey surface storm water around the plant and mining areas to protect and prevent flooding. This storm water is discharged into the surrounding environment (in accordance with local environmental legislation), eventually running out of the crater.
- Dirty water drains convey contaminated water within the plant and mining areas that is not suitable for discharge into the surrounding environment. This includes process plant, stockpile, waste dump, stores, workshop and wash-bay run-off.

No mixing of contaminated and non-contaminated water is permitted. Sites for centralized dirty water dams will be suited to the topography and to facilitate gravity conveyance from localized dirty water retention ponds. Separation of solids from the contaminated water in silt traps allows for removal to appropriate hazardous waste sites, in either solid or sludge form.

Earth and concrete-lined storm water drains generally comply with the criteria summarised in Table 7.3 and Table 7.4.

Table 7.3 Earth lined cut-off drains

Type	Unit	Type 1: Earth cut-off drain
Top width	mm	2,500
Base width		500
Depth		500
Side slope		1:2
Slope		Varies (min 1:100)
Q (minimum slope)	m^3/s	2.110
Velocity at minimum slope	m/s	2.813
Total length required	m	TBC

Table 7.4 Concrete lined channels

Type	Unit	Type 1: Concrete channel	Type 2: Concrete channel	Type 3 Concrete channel	Type 4 Concrete channel
Top width	mm	1,000	1,400	800	600
Depth		250	350	200	150
Side slope		1:2	1:2	1:2	1:2
Slope (varies) Longitudinal		min 1:100	min 1:100	min 1:100	min 1:100
Q .@ min slope	m^3/s	0.193	0.474	0.107	0.05
Velocity @ min slope	m/s	1.55	1.94	1.33	1.101

7.5 Landfill site

A general landfill site of approximately 14,500 m^2 (145 x 100 m) is envisaged. The earthworks terrace is shaped into a dish structure underlain by a geomembrane liner with an under-drain layer barrier protection complying with Class C landfill criteria (subject to confirmation of hazardous waste classification). This comprises of 300 mm thick finger drains of geotextile covered aggregate over a 100 mm silty sand protection layer for a 1.5 mm HDPE geomembrane. This barrier system overlies 2 x 150 mm thick compacted clay layers bedded on a 150 mm compacted in situ base preparation layer.

Leachate is collected in the finger drains and flows into a dirty water evaporation pond. An overflow pipe that is connected to a sewerage line returning to the treatment plant is integrated into the pond to manage excessive runoff.

The facility is to comply with the South African Department of Water Affairs and Forestry (or latest edition) – Minimum Requirements For Waste Disposal By Landfill and Minimum Requirements for the Handling, Classification and Disposal of Hazardous Waste A, reviewed by the EIA consultants for the project, and is deemed appropriate for this facility in Mozambique.

Cut off clean-water drains upstream of the landfill site divert overland storm water runoff flow away from the terrace to prevent contamination. Dirty-water drains divert contaminated surface runoff to the evaporation ponds.

The following waste types are separated and allocated to dedicated areas at a salvage yard for recycling and disposal off site, or incinerated on site:

- Recyclable waste:
  - Cardboard, paper, plastic, wires, tyres
  - mechanical parts and scrap metal
- Composting waste; food, vegetation.
- Hazardous waste:
  - Laboratory waste
  - Oil and fuels
  - Medical waste
  - Radioactive waste.

7.6 Road and general access

Monte Muambe is approximately 50 km east-south-east of the city of Tete. The capital city of Tete Province is located 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 20 km north-east of the Monte Muambe crater.

The city of Tete 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.

Primary access to the site for cargo and personnel is by road. Tete is 134 km from the Project; and the town of Cana-Cana is 67 km from the Project. From Blantyre (Malawi), the Project is located 244 km by road from the south, on the M1 (passing through the towns of Doa and Mecito); and 231 km by road from north on the M6, passing through Cana-Cana. As the crow flies, the Malawi-Mozambique border is 35 km in an easterly direction from the Project boundary; however, the closest official border crossing is at Mwanza-Zobue, approximately 130 km to the northeast, with travel time of more than 3.5 hours.

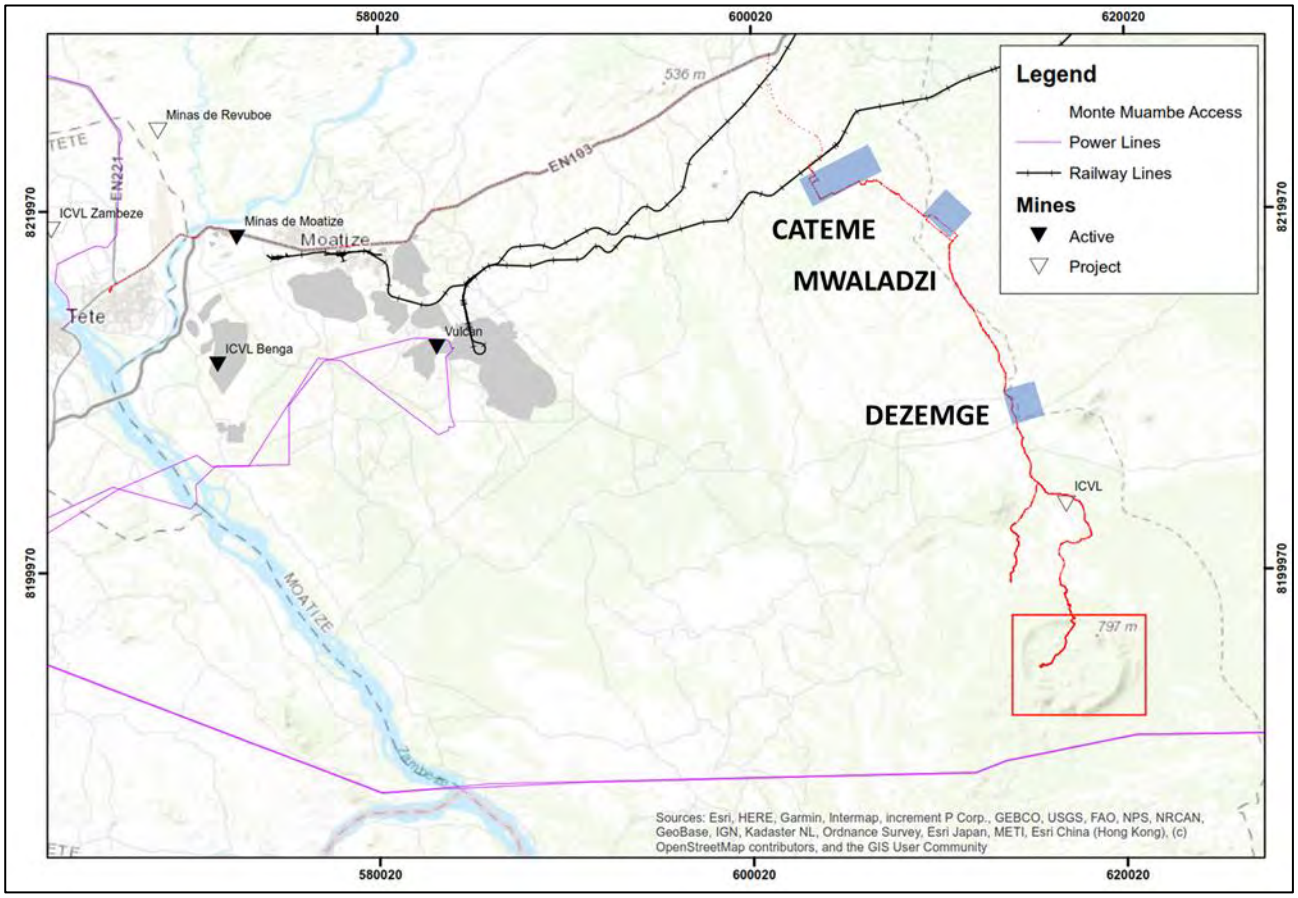
The Project is primarily accessed from the northern side. A tarred, single carriageway (N7) extends from Tete, passed Moatize coal mine in a north easterly direction, a total distance of 70 km. There is a right turn onto a tarred single carriageway extending in a southeasterly direction for 10 km to Cateme. From Cateme, a 35 km gravel road is used to access the Project site; this road passes through the villages of Mwaladzi and Dezemge (Figure 7.1).

The road from Dezemge to the Project site will require upgrading, including by-passes around villages. The road climbing from the foot of the mountain to the existing camp and into the basin will need to be redesigned to ensure a maximum slope of 10%. Estimated cost of local mine road refurbishment only, without bridge strengthening is approximately $200,000.

Inside the basin, where the mine and plant facilities will be located, the topography is gentle. Existing dirt tracks will require widening and upgrading using locally sourced road metal.

For this Project, it is a requirement to upgrade the gravel road between the village of M'cacama and the mine, which includes construction of culvert bridge over the Teixeira River. This work lies outside of the Licence area but is essential infrastructure for the transport of mine product to market and for delivery of consumables to the mine. The cost of the road refurbishment and bridge is noted elsewhere.

Figure 7.1 Location of the Project, licence LPP7573L in Tete Province, Mozambique



Source: Altona, 2023

7.6.1 Mine roads

The main access road into the crater is routed on a north-south axis, passing the temporary construction camp (future Accommodation Village) before traversing down the crater rim to the entrance gate at the plant. Use of the access road is limited to delivery of reagents, equipment and consumables and for transportation of ore product in addition to normal commuting of the labour force. This road is designed for high traffic volume and a range of heavy vehicle axle loads, especially during the construction stage. Gradients and turns to traverse the crater rim require robust construction and good drainage and erosion protection, as well as providing low resistance to skidding. Where appropriate, the road is widened and surfaced, in addition to stabilization. Routine road maintenance and frequent repair work is a requirement, unless the road is surfaced.

Secondary gravel roads provide access for construction and maintenance of infrastructure facilities such as the waste dumps, fuel depot, explosives bunker, waste water treatment works, water storage dams and wellfield. These are deemed to be single lane low traffic volume roads and are designed to the lowest standard that is appropriate.

The mining contractor's roads and pit haul roads are constructed as part of mining operations.

For road construction it is assumed, in the absence of geotechnical information, that the properties of the in-situ soils as the sub-grade layer of the road-bed or terrace can be pre-collapsed by excavating a box-cut to an appropriate depth below the road-bed (or terrace) and dynamically compacting the in-situ horizon using an impact roller. The excavated material is replaced in compacted layers into the box-cut and the structural layer work above natural grade is then built up with suitable quality material from the borrow pits, compacted layers. For unpaved roads and terraces, the selection of materials for pavement design is based on a combination of availability, economic factors and experience of construction in that environment. The recommended design procedure should also adhere to standard material specification defined in national or local authority standards and guidelines.

Allowance is made for typical culverts, bridge and conveyor crossings. Side drains for the roads are suited to typical cross sections for flat, rolling and hilly terrain. Further geotechnical testing and laboratory work is required for detailed design development with the available resources on site. Particularly vulnerable terraces and roads require concrete surfacing such as the container handling yard and other heavily trafficked roads may need to be upgraded and the wearing surface chemically stabilized. This includes an appropriate standard for upgrading the 30 km access road to the mine and to diesel tank farm facility based on traffic volume and wheel loading.

Conceptual design of unpaved gravel road is based on several references including:

- Ethiopian Roads Authority - Manual for the design of low volume roads - Part A – D.
- Southern African Development Community (SADC) - Guideline for low-volume sealed roads
- Guidelines for Human Settlement Planning and Design – Roads: Materials and Construction
- South African National Roads Agency Ltd (SANRAL) – South African Pavement Engineering Manual
- Technical Methods for Highways (TMH) – TMH 4 Geometric design standards for rural two-lane two-way roads

Gravel roads are designed with:

- Height between road crown and invert of side-drain varies from approximately 350 mm to 500 mm
  - Side drains and windrows, culverts and related storm water infrastructure suit terrain conditions varying from flat to rolling terrain
  - Cross fall on road is between 4% to 6%.
- Structural layers include natural soil (sub grade) dynamically compacted in-situ in the road box-cut overlain by selected sub-base gravel compacted in 2 x 150 mm layers thick and a 200 mm wearing course. Stabilization of the structural layers is envisaged due to:
  - Generally very low strength of natural gravel available in borrow pits that is suitable for road construction
  - Slippery conditions in wet weather
  - Scour by flowing water.

Gravel roads require substantial maintenance and frequent repair work, especially during the wet season and excessive axle loads. The procedures include:

- Resurfacing:
  - The gravel wearing course is 200 mm thick
  - Gravel loss rate is approximately 45 mm per year per 100 vehicles per day unless the surface is sealed
  - Replacement of the wearing course with new material is required every three years
  - Road work is to be undertaken by an experienced roads contractor, using appropriate earthmoving graders and compaction plant and equipment
  - Resurfacing is required over and above routine daily road maintenance.
- Daily road maintenance:

  - Maintenance work on roads and drains is suitable for community-based labour
  - Low cost due to low overheads
  - Simple contract system
  - Direct response - rapid mobilization
  - Retain skills in the community
  - Close control of work-force
  - Dispute resolution is contained within the community
  - Remuneration re-cycles within the community
  - Employment can target at poorest and disadvantaged group
  - Skills training required
  - Equipment and resources to be funded by the mine
  - Control of quality and productivity requires supervision.
- Productivity planning
  - Number of person-days per km per year = 75
  - Productivity target per person per day, assuming that daily maintenance results in light task difficulty. If maintenance is neglected, the task difficulty increases and productivity rate reduces to 50%
  - Bush clearing (light) = 450 m/day
  - Shoulder rehabilitation (manual) = 100 m/day
  - Plant grass = 100 m/day
  - Cut grass = 400 m/day
  - Blade gravel (light) 10 km/day
  - Spot repair (Selected gravel material) = 25-wheel barrows/day
  - Reshape and compact earth road camber = 70 m/day
  - Culvert cleaning = four culverts/day
  - Ditch clearing - Turn-out drains = 60 m/day
  - Ditch cleaning - Side drains = 65 m/day
  - Erosion damage repair = 7 m/day
  - Masonry repair = 7 m/day
  - Build stone scour check = 5 off/day.

7.7 Airports

The Tete International Airport (Chingozi) or TET, is 110 km by road to the Project, along the N7. The Chileka International Airport (Malawi) is 230 km by road, from the Project, whilst travelling along the N322 and M6. There are weekly flights between Tete, Beira and Maputo via the national carrier. TET can receive charter aircraft and airfreight, with TET asphalt runways over 2,500 m length.

7.8 Ports and rail

Beira is the closest port to the Project site, approximately 730 km by road (with travel time of about 12 hours one way), through Tete, Chimoio, Dondo to Beira (the southwestern route). An alternative road (northeastern route) is via Doa, Mutarara, Muanza to Beira (a route of 620 km, with travel time of more

than 15 hours one way). Three routes are available to the port of Nacala, with distance varying between 1,055 km and 1,135 km (travel time range of more than 18 hours to 20 hours, one way).

This study contends that all major inbound freight cargo over the LOM (reagents and consumables) will be processed via the Port of Beira and that all major outbound freight (MREC) will also be through the Port of Beira. The Port of Beira is serviced by all major sea freight carriers.

Two railway lines connect the project area to the Indian Ocean ports of Beira and Nacala: the Sena line and the Nacala Corridor respectively. The Nacala Corridor, opened in 2017, is the preferred route to export coal from Moatize.

A detailed cost-benefit of the various logistical options both for inbound and outbound freight cargo will need to be done as part of the PFS.

7.9 Buildings

Non-plant buildings and structures will include the following:

- Diesel fuel tanks.
- Change house (mining).
- Workshops and associated offices.
- General offices.
- Explosives magazine storage.
- Emulsion receiving, storage and distribution area.
- Accommodation and catering facilities.
- Medical facilities.

Primary plant buildings will consist of the following:

- Gatehouse.
- Change house and laundry.
- Clinic.
- Canteen.
- Plant control rooms.
- Office buildings.
- Metallurgical laboratory.
- Plant workshop.
- Plant main store.
- Reagents store.
- Final product store.
- Air services building.
- Blower air building.

7.9.1 Main gate entrance

The mine entrance gate, visitor parking and security kiosk is located to the north of the planned mine. The facility comprises of the following elements:

- Containerised security kiosk
  - Container unit supported on concrete plinths and foundations
  - Entrance and exit turnstiles and fencing

  - Portal frame steel roof structure with independent column supports covering the kiosk and perimeter walkways with an eaves height of 2,700 mm and 10° roof slope.
- Parking area
  - Gravel surface parking area (1,200 m^2)
  - 30 parking bays.
- Bus terminus.
- Circulation paving.
- Access roads incorporating air-lock gates for vehicle inspections.
- Environmental toilet
  - Permanent toilet and basin inside the kiosk is commissioned when potable water and sewer pipelines are installed.
- Fencing
  - Standard fencing temporarily extending 50 m on either side of the security kiosk.

7.9.2 Diesel fuel tank depot

Based on the planned fuel consumption defined during PFS design work:

- This fuel depot will have a plan area of approximately 100 m^2.
- Diesel provides power to mobile equipment and the plant. The total usage forecast for diesel per annum will be defined at PFS in order to achieve a 7-day storage buffer.
- A full design, installation and operation of the diesel supply infrastructure will be provided by a local Mozambique distributer of liquid fuels and lubricants. The complex will be bounded by a fence with gate access for security.
- Diesel and lubricants will be transported by road directly to the fuel depot facility located at the rim of the crater. From here, the diesel and lubricants will be reticulated in pipelines to two dispensing points at the mining contractor's terrace (storage capacity of the order of 10,000 litres) and at the plant (storage capacity of the order of 40,000 litres).
- The fuel depot will house multiple diesel storage tanks with a maximum capacity of seven days supply. The tanks will be supported on a reinforced surface bed with plinths and each row will be surrounded by 650 mm high bund walls to prevent spillage. Sump systems will be installed to safely collect and dispose of any spillage.
- Bulk storage tanks for lubricants will be accommodated in the same facility.

7.9.3 Change house and laundry complex (mining)

The change house complex is situated in the crater and will comprise the following:

- Interconnected ablution blocks with change rooms, showers, toilets and basins servicing band A, B, C, D and E personnel with a separate ablution block for female employees.
- A laundry room for regular laundering of PPE, bedding and personnel's clothing.
- A boiler room which distributes hot water to the change house supplemented by roof-mounted solar water heating system.
- A radiation room 4 x 4 m with a table, desk and cupboard to monitor levels of radioactivity exposure

7.9.4 Main contractor and mining contractor laydown area

The terraces will be gravel surfaced and designed for heavy vehicle traffic. Maintenance of the terraces damaged by rutting is the responsibility of the relevant contractors. These terraces are fenced off for security purposes.

- The main contractor's laydown area terrace plan area will be defined a PFS stage:

  - Contractors to provide own facilities and security
  - Main sewer connection provided
  - Potable water connection provided.
- The mining contractor's Infrastructure terrace plan area will be defined a PFS stage:
  - Contractors to provide own facilities and security
  - Main sewer connection provided
  - Potable water connection provided.

7.9.5 Workshops and associated stores

The mine workshops and stores will be constructed on terraces with a 6 m wide access road provided onto a paved apron slab within the workshops and stores.

Vehicle workshop

- Single storey container building covered with sheeted steel roof and partial side sheeting. Roof pitch of 10°. Supported on concrete plinths and foundations.
- Reinforced concrete ground slab (under work areas only).
- Clear span of 7 m.
- Eaves heigh of 4 m.
- Sundry vehicle inspection equipment

Infrastructure workshop

- Double storey container building covered with sheeted steel roof. Roof pitch 10 degrees. Supported on concrete plinths and foundations.
- Clear span of 10.6 m.
- Eaves height of 5.2 m.
- Reinforced concrete ground slab foundation (under work areas only).
- 3 t capacity monorail crawl beam.
- Contains heavy earth-moving equipment and general equipment wash bays with sumps for disposal or re-use of grey water.
- Contains fenced storage yard.

Plant store

- Single storey container building covered with sheeted steel roof. Roof pitch 10 degrees.
- Reinforced concrete ground slab foundation
- Portal frame span of 12.5 m
- Span between containers of 10 m
- Eaves height of 3.5 m

Plant control rooms

- Air-conditioned single storey container buildings with a sheeted roof on steel rafters and an under-roof concrete apron.

7.9.6 Mine administration office

Administration offices will consist of a complex of prefabricated containerized units with HVAC and a prefabricated containerised reception unit. The units rest on reinforced concrete plinths founded on a concrete ground slab. The office complex should contain the following facilities:

- Tea kitchen.
- Ablutions.
- Landscaped entertainment area.
- Boardroom.
- Offices.
- Storerooms.

A gravel parking facility will be located adjacent to the offices. Office and parking surface area to be designed during PFS work.

7.9.7 Medical clinic

Prefabricated containerized units will include a dispensary, treatment rooms and office as well as kitchenette and ablutions placed on a terrace with concrete apron slab foundations and pathways and parking for an ambulance.

7.9.8 Metallurgical laboratory

Air-conditioned single storey container buildings with a sheeted roof on steel rafters and an under-roof concrete apron.

7.9.9 Weighbridge

Proprietary weighbridge equipment mounted onto a concrete base. Should also contain:

- Earth ramps with wingwalls.
- Apron slab under equipment with sleeves for services.
- Elevated air-conditioned container control office foundation slab.
- Storm water management.

7.9.10 Plant substation and MCC rooms

The substation buildings and motor control centre (MCC) rooms are container structures fitted with lockable single dust proof personnel access door plus a lockable dust-proof double door to facilitate the movement of equipment in or out of the room and serve as a second emergency escape route from the room in the event of a fire or emergency.

- The doors are fitted with an approved panic release door mechanism.
- No windows are fitted to the substation buildings or MCC rooms.
- Buildings are elevated on concrete plinths to a minimum floor height of 1,200 mm above finished terrace level.

Transformer bays

- Transformer bays shall consist of hollow block masonry walls on three sides of the transformer to a height of 300 mm above the highest point of the transformer. The walls shall be constructed on top of the concrete bund walls, which are integral to the base slab and plinth supporting the transformer.
- The transformer bunded foundation shall have an oil catchment pit equipped with drainage valve and chipped stone filling, the volume of which is sufficient to capture all oil in the transformer, taking the stone filling into account.

- The transformer bay front section shall be fitted with a double gate access to prevent unauthorized entry.

Mini-subs

- Mini-sub foundations shall consist of a level concrete pad with bund wall sufficient for containment of all oil inside the transformer in the event of a spill.
- The mini-sub shall be placed on top of a concrete base and the perimeter guarded by chains to prevent entry with the necessary safety warnings and mandatory signage displayed.

7.10 Accommodation

An exploration camp is currently located on the rim of the crater, this will grow in phases during continued exploration and project development. The current accommodation is in tents, with a central mess and offices (Figure 7.2).

A single accommodation village for both the construction phase of work and for operations will be located to the north of the mine site outside of the crater, on a plateau. The village will be built in phases to meet the demand of the growing workforce. During construction, the workforce will reach a peak of several hundred workers on site. As construction is completed and commissioning activities commence, the workforce will decrease over a period of approximately six months until the completion of commissioning. At the conclusion of commissioning, the workforce will primarily be the mine operators.

The construction accommodations will likely be refurbished to meet the needs of operations, where multiple occupancy rooms will be converted to single occupancy rooms. Refurbishment of the common-use buildings is planned to ensure the facilities meet requirements for long-term use over the LOM.

The accommodation village will be connected to a hybrid power station via overhead power line connection with backup diesel generators to supply critical equipment including communications, food storage, etc. during outages.

Figure 7.2 Main office building (left); Individual tents (right)

The mine camp is to house manpower grouped by management class i.e. B, C, D and E.

- A-class workers will reside off-site.
- B-class partly skilled employees are accommodated in prefabricated air-conditioned dormitory type units without ablution facilities.
- C-class skilled and supervisory employees are accommodated prefabricated air-conditioned dormitory type units with common ablution building.
- D-class junior management are accommodated prefabricated air-conditioned units with en-suite ablution facilities.
- E-class senior management are accommodated prefabricated air-conditioned single room and lounge units with en-suite ablution facilities.

7.10.1 Main camp dining, kitchen and recreation

The following facilities are envisaged:

- Kitchen – Prefabricated unit catering for a standard menu cycle feeding 1,206 meals per day (breakfast, packed lunch and dinner) for B-E Band Employees and 82 meals per day for A Band Employees (1 per shift). The kitchen and ablution units are connected to the back-up diesel generator electricity supply system. The kitchen and ablution block discharges effluent into wastewater sewer after oils, fat and grease are trapped.
- Recreation room – Prefabricated unit with a bar/ commissary facility, reading, games, TV lounges etc.
- Courtyard – Located between the kitchen and recreation room. Paved and equipped with tables, chairs and umbrellas.
- Delivery Yard – Caters for the delivery of food and other items; e.g. bedding, additional PPE, located on the back side of the kitchen.
- Waste Yard - Management of waste generated by the camp only.

7.11 Communication

An integrated information system will be provided by the Company, including the latest operating systems enabling effective telephonic and digital communications.

A fibre optic network will be reticulated around the site, allowing for the installation of IP telephone, high-speed internet and VPN connection, and will be connected through the central node room located at the main office. Consistent and reliable site and external communications can be delivered to every location across the operational mine site, process plants and power facilities.

7.12 Construction logistics

The initial capital components will need to be transported either from premises in Johannesburg/ Maputo or from Beira port to Project site.

On a Scoping Study basis, the most probable route from Johannesburg is identified as travelling through South Africa on the N1 through Beitbridge to Zimbabwe, along the A4 to Harare (capital of Zimbabwe), then the A2 eastward through the Nyamapanda-Cochemane border post, then the N8 passed Changara district, from where the N7 is followed to Tete. Break bulk charter and transport for sensitive equipment (electrical) will follow this route.

Studies on Project cargo, clearance limits, abnormal load dimensions, height clearance, vehicle combinations and insurmountable limitations will need to be undertaken in future studies.

7.13 Container handling yard

MREC product from the beneficiation plant is bagged and loaded into shipping containers at the mine and onto trucks for transportation to the Port of Beira. This facility is also a staging point for delivery of reagents and other materials imported to the mine from elsewhere.

The container loading area is strategic infrastructure for the mine and therefore the integrity of the terrace surface, that is subjected to heavy vehicle traffic, needs to be robust. A 180 mm thick reinforced concrete ground slab is provided as a wearing surface, jointed into 5 m x 5 m panels to mitigate cracking of the concrete surface. The yard and final MREC product store will be fenced and serviced by a container office.

Storm water drains are provided to capture and direct runoff on the apron slab into catchpits and channels which discharge into the natural drainage gullies. Since the containers are sealed, the runoff is deemed to be clean water.

7.14 Ex-mine logistics of ex-plant product

For purposes of this study, it is proposed that stockpiled MREC will be placed in 1 t polypropylene, double-lined woven bulk bags at Project site, and then placed on pallets or loaded directly onto trucks. The Project site will have mobile equipment capable of loading either conventional flatbed type trucks or containers with these bags.

The bulk bags will be placed and dispatched in 20 ft standard containers from Project site to Beira. Approximately 21 bags can be dispatched per container. Containers will be trucked to Beira port and warehoused, prior to shipment. These transport arrangements are expected to result in approximately 745 truck journeys per annum (equivalent to 62 trips per month) of bagged concentrate MREC product to Beira. The containerised bags will be offloaded at Beira and then re-containerised at Beira or report straight to ocean going vessels.

7.15 Overall infrastructure costs and comments

The approximate infrastructure size and costs for the Project have been estimated. Primary infrastructure costs include:

- Power ($7.5 million)
- Access road ($7.0 million)
- Accommodation ($4.0 million)
- Sewage treatment ($2.0 million)
- Raw water dam ($2.0 million)
- Wellfield ($2.0 million)
- Stormwater ($1.0 million)
- Water treatment ($1.0 million)
- Other surface infrastructure (including gatehouse, changehouse, laundry, clinic, canteen, office buildings), of $2.8 million).

The approximate footprint of the ten primary surface infrastructure/ buildings is 10,915 m^2. As the Project advances, greater accuracy and footprint size will be estimated.

Design details will be required as the project advances to PFS stage; this will include as a priority:

- Power demand.
- Water demand.
- Detailed plans for site location.
- Detailed access road plans.

8 TAILINGS AND WASTE MANAGEMENT

The mine waste will be stored in a full-containment facility in line with the Global Industry Standards for Tailings Management (GISTM). There are two sources of waste; waste rock from overburden and mining waste, and tailings derived from the processing and beneficiation plants.

A detailed waste and tailings disposal as well as a water management plan will be developed in the next phase of the study.

8.1 Tailings disposal

8.1.1 Design criteria

All process plant waste products will likely be disposed of onto a single fully contained tailings storage facility (TSF). Pre-stripping over the mining area will provide the initial waste rock required for the containment embankment walls. As more waste is stripped over the mining areas, these waste rock embankments will be raised above the tailings level to provide solid rock embankment walls.

It has been assumed that the tailings residue will be conventionally thickened wet tailings of around 50% w/w. Supernatant water will be recycled and returned to the plant for re-use. From the preliminary sizing of the TSF, a placed dry density of the tailings is assumed as 1,4 t/m^3. The geochemical characteristics of the tailings are currently unknown.

The tailings will be placed on a 2 mm HDPE lined facility with suitably constructed under-drainage. Despite the low acid generating potential of some of the residues and the presence of carbonate rock, there will also be a component of hydrometallurgical plant waste containing residual thorium and radio-active elements, which will require safe disposal in the TSF. These hydrometallurgical residues may also be stabilised with lime / limestone ore detailed is provided in the metallurgical section of this report.

The financial model shows the required tailings dam size of 11.61 Mt for the beneficiation plant and 1.66 Mt for hydrometallurgical plant waste product. It is assumed that these wastes will be combined into a single facility of 13.27 Mt at a steady state deposition rate approximately 0.75 Mt/a, over a LOM of approximately 18 years.

There may be a potential to split the two waste streams, once planned metallurgical and geochemical work on the waste streams is undertaken, but at this stage these have been combined into a single TSF facility.

8.1.2 Characterisation of the waste streams

The bulk of the waste residue (~88%) for disposal is a flotation tailings slurry of approximately 50 % w/w solids to liquid ratio. The solution will contain some residual flotation reagents.

There is also a second combined hydrometallurgical solid residue and tailings stream (~12%), as a composite of several other smaller streams from the hydrometallurgical plant.

Although the anticipated runoff from the combined tailings and surrounding waste rock embankment is not considered to be of a high risk due to its lack of acidity and low concentrations of regulated contaminants, there is potential for the waste rock to release an elevated alkaline discharge (high pH) with minor concentrations of REEs which could pose a risk to freshwater resources.

8.1.3 Site selection

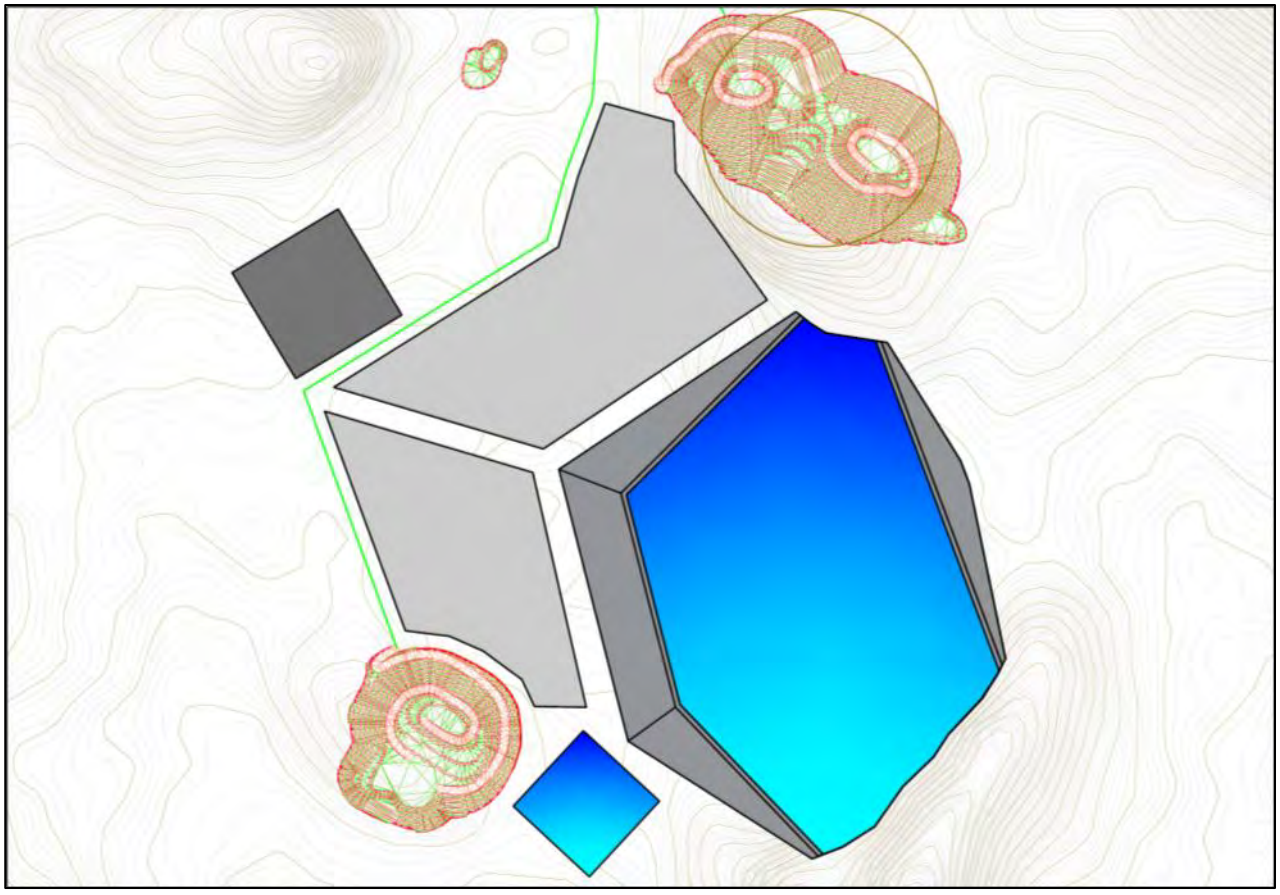
A preliminary site was selected for a storage capacity of 13.3 Mt (Figure 8.1), with a full-containment facility in line with the GISTM. The design will also need to take cognisance of the potential seismic nature of the area with the full waste containment.

All the potential sites will be further investigated during the PFS, but all would likely be contained within the perimeter of the circular layout of the crater site between the rocky outcropping hills. The intention would be to use some of these outcrop areas. The preliminary site was selected to be:

- The most economical site based on the high-level capital cost estimate.

- Lower risk site with limited infrastructure below it and close to the mining pits for the source of waste rock for the containment embankment walls.
- Sufficient space available for the construction of stormwater control dam downstream of the TSF and waste rock and ore stockpiles to the west.

Figure 8.1 Schematic layout of TSF, stormwater control dam and waste rock embankments



Note: TSF (large blue), stormwater control dam (blue square) and grey waste rock containment embankments

8.1.4 Geotechnical investigation

There is no geotechnical investigation of the TSF site at this stage, this is likely to be conducted during the PFS to follow.

8.1.5 Tailings storage facility design

The preliminary TSF design features used in the capital cost (capex) calculation comprises the following:

- A 2 mm HDPE-lined, full-containment valley TSF, constructed in a number of sequential phases or downstream lifts, following the construction of the initial starter embankment.
- The TSF embankment constructed from waste rock material sourced from the initial mining operations.
- A HDPE-lined stormwater control dam.
- Associated infrastructure, including the slurry distribution pipeline, catchment paddocks, toe drain system, underdrainage system, solution collection system, collection sumps and manholes, seepage cut-off trench, storm water diversion trenches, emergency spillways and leakage detection drains.
- A floating pump decant system to decant the supernatant tailings water and stormwater from the facility back to the process plant.

8.1.6 Design aspects of the TSF

The TSF has been designed taking cognisance of the following aspects:

- The topography, the immediate surroundings, and mine infrastructure.
- A total dry tailings storage capacity of 13.3 Mt at a deposition rate of 0.75 Mt/a over the LOM of approximately 18 years.
- Phased construction of the TSF over the LOM.

The preparatory works associated with the TSF design and capex comprise the following:

- Topsoil stripping within the TSF footprint, including the embankment wall footprint area and associated TSF infrastructure area.
- A compacted waste rock embankment with a 10 m minimum wide top-crest, an outer side slope of 1V:3H, and an inner side slope of 1V:2H, with an anchor key.
- Fine-grained material on the upstream face of the waste rock embankment wall, forming part of the total embankment wall.
- A compacted layer of suitable fine-grained material to a depth of 1.0 m beneath the TSF embankment wall to limit seepage through the waste rock embankment wall.
- A toe drain to draw down the phreatic surface within the TSF.
- Vertical and horizontal drains within the basin, in the form of a grid, above the HDPE liner, to draw down the phreatic surface within the TSF.
- Pipes at specified intervals along the perimeter of the drains, underdrains, and curtain drains, channelling the water collected by these drains into the solution pipeline.
- Seepage cut-off drain network.
- Catchment paddocks around the perimeter of the TSF.
- A gravel access road around the TSF.
- Storm water diversion channels and berms.
- Slurry distribution pipeline along the perimeter length of the TSF, with discharge outlets.
- An emergency spillway.
- Stormwater control dam.
- Leakage detection drains beneath the seepage collection dam (SCD) liner.
- A water collection manhole for the collection of leakage water beneath the liner.

8.1.7 Deposition and operating philosophy

The proposed depositional methodology for the TSF is likely to be by spigot/ open-ended discharge behind a fully contained embankment wall. This requires that each phase of the TSF embankment be built to its required height prior to commencing with that phase's associated deposition.

During the initial commissioning stage of the Project, it is important that the tailings not be deposited directly onto the various toe drains, as this would lead to erosion and possible blinding of the toe drain system.

Tailings should be deposited into the basin of the TSF by means of an open-ended deposition technique whereby flexible hosing is utilized. Prior to the tailings reaching the various toe drains, coarse tailings should be used to cover and further protect the drains. Open-ended deposition shall continue above the covered toe drains to the final elevation of each phase.

Surface water accumulating onto the TSF emanates from the following sources:

- Supernatant slurry water on the TSF.
- Stormwater runoff from the surface of the TSF.

Supernatant water and stormwater collected on the TSF shall be decanted by a floating barge pump or turret arrangement and pumped back to the plant for reuse as process water. Given that the decant pumping systems make use of electricity to pump slurry water back to the plant, standby pumps or a diesel generator is required to adequately cope with rapid water ingress during an emergency. There will also be provision in the final design for an emergency spillway to protect the wall integrity.

8.1.8 Slope stability analysis

Slope stability analyses still needs to be carried out on a variety of possible operational and upset conditions. A deterministic and probabilistic seismic site assessment will also be required for the site during the subsequent design phases.

8.1.9 Capex and opex

The capex cost estimate was factorised from our database of costs into Q3 2023 prices. The overall TSF has an estimated capex of $54 million over the 18-year life (Table 8.1). It will be possible to further divide the capex over various design phases with future design work, to reduce the initial capital and to increase the sustaining capital over the subsequent tailings dam lifts.

With a wet disposal solution, the first phase or initial lift will require the bulk of the HDPE lining, costed at $5.46 million.

Operating costs (opex) for the operation of the facility is expected to comprise of operational management, maintenance and surveillance, mechanical equipment replacement such as pipeline and valves. Opex also includes ongoing monitoring and daily, monthly and annual inspections. Overall, a opex cost of $0.52 per placed tonne or $390,000 p/a.

Table 8.1 Monte Muambe TSF capex

Description	Value ($ million)
Site clearance, earthworks and excavations	26.30
Drainage (and gabions)	4.70
Liner and geosynthetic materials	5.46
Concrete works	2.78
Pipe work	0.76
Decant access	0.33
Safety and security	0.88
SUB-TOTAL	41.21
Preliminary and general costs (30% of measured works)	12.36
TOTAL	**53.60**

8.2 Waste rock disposal

8.2.1 Design criteria

The mining of the resource at Monte Mumbe will include the excavation of waste rock, followed by the loading and hauling by articulated dump trucks from the pit for permanent disposal. The waste rock will be used in the construction of the TSF containment embankments. The balance of the waste will be deposited in designated waste rock dumping areas in close proximity to the pits, to reduce haulage distances. The key design parameters for the waste rock disposal are summarised below (Table 8.2).

The waste rock is expected to be non-acid forming with limited release of contaminants over the long term. The waste rock contact water is expected to show high alkalinity (due to the carbonatites) with minor concentrations of REEs. The protection of ground- and surface water resources is therefore a priority.

Table 8.2 Waste rock disposal design criteria

Description	Unit	Value	Source
Total waste rock tonnes	Mt	22	Snowden Optiro
Waste rock bulk density	t/m^3	1.8	Prime Resources
Total volume of waste rock (LCM)	Mm^3	12.3	Calculation
Volume of waste rock required for the TSF	Mm^3	3.6	Prime Resources
Waste rock storage volume requirement	Mm^3	8.7	Calculation
Waste rock storage tonnage requirement	Mt	15.7	Calculation

8.3 Site selection

The positioning of the waste rock disposal area was guided by the following criteria:

- Limit the haul distance from the pits to the designated disposal/ dumping area.
- Ensure a stable landform, both during operation and post closure.
- Effective management of drainage and surface water.
- Sufficient storage capacity.
- Minimize impacts on groundwater and surface water resources.
- Avoid environmentally- and socially sensitive areas.

The area between the T1 and T4 pits was identified as the preferred site for the positioning of the disposal of the waste rock. The position is ideally located in close proximity to both of the pits. There are no significant drainage features over the footprint.

8.3.1 Geotechnical investigation

A geotechnical investigation of the waste rock disposal area is yet to be undertaken; it will be completed during the PFS to follow.

8.3.2 Layout and geometry

The waste rock will be hauled from each of the pits to the waste rock dumps, located adjacent to each respective pit (Figure 8.1). A corridor will remain between the dumps, to provide for the placement of tailings delivery- and return water pipelines between the processing plant and the tailings storage facility. The waste rock dumps will be developed in 10 m vertical lifts, with 15 m wide benches and 1V:1.5H intermediate side slopes. The overall outer side slope profile will be 1V:3H for rehabilitation.

The waste rock dumps will cover a total footprint (natural ground) of approximately 40 ha, with a final downstream height of approximately 50 m. The total final storage capacity of the waste rock dumps is 8.7 Mm^3 or 15.7 Mt.

8.3.3 Design aspects

Prepared basal layer

In order to limit the ingress of potentially alkaline seepage into the foundation and groundwater resources, the basal layer of the footprint of the waste rock dump will be ripped and recompacted to specification. The geotechnical investigation planned for future studies will confirm the underlying soil profile and compaction requirements.

Perimeter embankment

The waste rock will be deposited behind a nominal toe embankment wall which contain the material and define the footprint of the WRD. The geotechnical investigation planned for future studies will confirm the availability of material to construct the embankment.

Drainage

An underdrainage system is included on the basin to reduce seepage to the groundwater and to collect runoff from the basin in the early stages of development. The underdrainage system will comprise of slotted pipes positioned across the basin of the waste rock dumps. The pipes will be covered with a layer of selected crushed waste rock, overlain by an additional layer of protective waste rock. The placed layers of rock will function as a coarse filter and protect the pipeline against initial traffic from haul trucks depositing the material. The slotted pipes will convey collected seepage and runoff to the perimeter solution trench.

Surface water management

Runoff from the waste rock dumps will be collected in catchment paddocks, constructed around the perimeter of the waste rock dumps. The collected runoff and direct rainfall will report a perimeter solution trench. The solution trenches collect all the water from waste rock dump and convey it to a dedicated surface water containment facility. Excess water collected in the surface water containment facility, will be discharged via an emergency spillway into the downstream receiving environment.

Stormwater management

Clean storm water runoff from the catchments upstream of the waste rock dumps will be diverted with a series of diversion berms and channels. The channels and berms are likely to be earth lined.

with light, naturally established vegetation. The diverted stormwater will be dispersed prior to discharge to mitigate soil erosion.

Rehabilitation and closure

The rehabilitation activities related to the waste rock dumps will include the removal of any hardware, pushing the intermediate side slopes to 1V:3H, blend stockpiled topsoil with the waste rock on the surface of the final landform and establish vegetation. Shaping of the final landform will be to promote runoff.

8.3.4 WRD capex

The capex for the waste rock dumps has been determined through the factorisation of database costs into Q3 2023 terms. The capex is primarily comprised site clearance and earthworks with selected concrete works and drainage material. Rehabilitation and closure related costs are excluded from the estimate. The waste rock dump capex is summarised in Table 8.3.

Table 8.3 Monte Muambe waste rock dump capex

Description	Value ($ million)
Site clearance, earthworks, and excavations	1.73
Concrete works	0.11
Drainage and pollution control	0.26
SUB-TOTAL	2.09
Preliminary and general costs (30% of measured works)	0.63
TOTAL	**2.72**

9 ENVIRONMENTAL AND SOCIAL

9.1 Altona licences

Exploration activities on LPP7573L are carried out under an environmental management plan (EMP) prepared by local environmental consultancy GeoAmbiente Lda. The Company's activities were subjected to an independent Environmental Audit which was validated the National Agency for Environmental Quality Control (AQUA) of Tete Province on 24 October 2022.

As part of its Mining Concession application, the Company will prepare an EMP covering the proposed mining operations, and subsequently a Level A EIA.

9.2 Regulatory framework

Mineral exploration and mining activities in Mozambique must comply with the provisions of the Environmental Law (Law no 20/1997 of 1 October), the Mining Law (Law no 20/2014 of 18 August), and the Environmental Regulations for Mining Activities (Decree no 26/2004 of 20 August).

The Mining Law and the Environmental Regulations for Mining Activities classify mining activities in three levels, based on the scope of the activities and the complexity of the equipment used. Each level has different licensing compliance requirements.

Level A covers mining activities carried out on a Mining Concession. These activities require a full Environmental Impact Assessment (EIA), which must be prepared by an environmental specialist licensed by the Ministry of Land and Environment (MITA). The EIA process aims at producing a project-specific environmental licence.

The EIA licensing process involves:

- The preparation and submission to MITA of a set of Terms of Reference (ToR), which must include the timing and procedures for public consultation, a risk and emergency management plan, and an Environmental Management Plan (EMP).
- The review of the ToR by MITA and MIREME.
- If the EIA is approved, MITA issues an Environmental Licence within 10 days from the date of approval. The Environmental Licence is valid for the duration of the Mining Concession but must be reviewed every five years.

The holder of a Level A Environmental Licence must also submit an annual environmental management report, with the monitoring process carried out either by the concessionaire or by an independent consultant.

Level A activities also require the provision of an environmental bond to cover rehabilitation activities during the closure of the mine. The bond may take the form of an insurance policy, a bank guarantee or a deposit in cash in a bank account provided by MIREME. The value of the bond is based on an estimate of the costs of such restoration, which will be calculated during or after the active life of the project. The value of the bond is set by MIREME and reviewed every two years.

Level B covers quarrying activities, pilot projects done during the exploration phase, and mining activities carried out under a Mining Certificate. Such activities require a Simplified Environmental Impact Assessment (SEIA).

Level C covers exploration activities, and non-mechanized mining activities carried out under a Mining Pass. Level C activities require an approved EMP.

9.3 Environmental and social fatal flaw analysis

A review of the Project's main Environmental and Social risks was undertaken by local environmental consultancy GeoAmbiente Lda (Jamal et al, 2023) and is summarized herein. The review is based on the 2021 EMP and on a desktop study.

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

Comprehensive stakeholder consultation at national, regional, and local levels will be undertaken during the ESIA, and will be conducted by a combination of Mozambican specialists, technical advisors, and Altona personnel. Stakeholder consultation activities included stakeholder interviews, focus group discussions, community mapping, and public meetings. The focus during the ESIA will be on the Project's potential impacts and appropriate mitigation and management.

9.3.1 Geopolitical risk

The Project area, and the Tete Province in general, have enjoyed a long-term stability, with no political or military instability recorded in the past 30 years.

Since 2017, Mozambique has suffered insurgent attacks began in the north-eastern tip of the country, more particular in the Cabo Delgado province where the liquefied natural gas projects are being developed by TOTAL, Eni and ExxonMobil, to the extent that the onshore projects were halted in March 2021. A joint Rwanda and SADC member forces (Angola, South Africa, Botswana, Lesotho, Zimbabwe, Malawi and Tanzania) has succeeded in disabling some of the insurgent cells, and recapturing most of the Mocimboa da Praia District in Cabo Delgado. The development of the offshore project continued, with first LNG export having taken place in November 2022.

The Project is located over 700 km from the insurgency-prone areas, and no such insurgent activity has ever been recorded in Tete Province.

9.3.2 Socio-economic risk

The development of mining projects usually entails deep changes in the socio-economic fabric of affected region. The Tete Province is not new to this, with the past 20 years having seen the development of several large coal mines, which created employment and economic activity, but also significant social disturbance, including the relocation of over 2,000 households.

Identified socio-economic risks include:

- Loss of land for subsistence.
- Increased cost of life.
- Lack of benefit from employment and business opportunities due to lack of education.
- Discrepancy between community expectations and reality.

There are no human settlements inside the Project's Licence. It is therefore expected that the Project will not involve any resettlement, or loss of subsistence land. Traditional activities such as honey harvesting currently occurring at Monte Muambe will be able to continue outside of actual mining areas, which will cover only a part of Monte Muambe.

Neighbouring communities are already involved in the Project, mostly through employment of non-skilled labour. The Company will implement a corporate social responsibility (CSR) programme from the PFS stage, and an education programme to ensure that as many community members as possible can access employment, including for skilled positions, as well as business opportunities arising from the Project.

9.3.3 Cultural and heritage

Desktop literature research revealed that while archaeological sites are known in Moatize and Zobue, no archaeological site exists within the Licence area.

A cultural site located in a cavern in the western part of the basin is presently occasionally used by the local community for traditional ceremonies.

In compliance with relevant legislation, the Company will commission an archaeological survey of the Project Areas as part of the EIA's baseline study.

9.3.4 Hydrological sensitivities

The Licence is located between the temporary Lulera river about 6 km to the west, and the permanent Minjova River 10 km to the east. Temporary streams immediately north of Monte Muambe are used by the Djendje community as sources of water for human and livestock consumption, but these are isolated from the Project area by the northern part of the Monte Muambe ridge.

The inner part of the Monte Muambe ridge drains towards the south into the Minjova River, and ultimately into the Zambeze. The first downstream human settlements are located about 10 km southeast of Monte Muambe.

Currently, the Company draws water for its camp from an exploration drill hole converted into a borehole.

The Monte Muambe area, like the most of the Tete Province, is water-stressed and access to water is an issue identified by the communities living around Monte Muambe as important.

As part of the PFS, the following water-related matters will be considered and addressed:

- The availability and suitability of ground water within the Project area for industrial use (mine and plant) as well as for human use.
- The protection of surface water from any mining-associated contamination.
- As part of CSR activities, the improvement of water access conditions of local communities.

9.3.5 Ecological sensitivity

The Licence is not located in any environmentally protected area.

The area of Monte Muambe belongs to the Zambezia and Mopane Woodlands, which is subdivided into four different vegetation types. The vegetation type present at Monte Muambe is the Miombo dry deciduous mixed woodland, which occurs between 200 and 800 m in areas with rainfall between 600 and 1,000 mm. The most representative species are Afzelia quanzensis, Commiphora spp., Combretum spp., Pterocarpus brenanii, D. condylocarpon, Diospyros kirkii, D. loureiriana, Lannea schweinfurthii, Piliostigma thonningii, Terminalia sericea, T. stuhlmannii, Dalbergia melanoxylon, Sclerocarya birrea, Xeroderris stuhlmannii, Philenoptera violacea, Acacia nigrescens and Julbernardia globiflora.

Miombo woodlands are considered important for several species of avifauna, although the Monte Muambe area is not included in any Important Bird Areas (source: http://datazone.birdlife.org/site/mapsearch). Six endemic bird species were identified in the area: Agapornis lilianae, Pinarornis plumosus, Serinus citrinipectus, Agapornis nigrigenis, Hypargos margaritatos and Lybius chaplini.

A study conducted in the neighbouring Moatize area showed that the fauna is largely depleted. Animal species expected at Monte Muambe include genets (Genetta tigrina), African civet (Civettictis civetta), servals (Felis serval), northern grysbok (Raphicerus sharpei), duiker (Sylvicapra grimmia) klipspringer (Oreotragus oreotragus), and several rodents of the genus Cricetomys, Thryonomys and Grammomys. Bands of baboons (Papio sp.) occasionally visit the Licence area.

The IUCN Red List of Threatened Species database does not highlight the presence of any vulnerable or endangered plant or animal species in the Monte Muambe area.

Nevertheless, Monte Muambe is a mountainous environment, and has undergone very little anthropogenic transformations. Untouched habitats are likely to host fauna and flora species of interest. This fact contributes to the area's ecological sensitivity. In its report, GeoAmbiante Lda provisionally classifies the area as of medium to high sensitivity and recommends that a baseline flora and fauna study be conducted as part of the EIA process for the Mining Concession.

9.4 Radiation management

The Project ore contains low levels of thorium (Th) and uranium (U). The LOM average concentrations for the bastnaesite ore are 200 ppm Th and 20 ppm U at Target 1 and 330 ppm Th and 7 ppm U at Target 4, which is favourably low compared with other rare earth deposits. The Project's flotation tailings will contain lower levels of radioactivity because thorium and uranium are mostly associated with the rare earth minerals (and hence removed from the tailings).

The mineral concentrate produced from the Project, whilst having an upgraded Th and U content, is expected to have a specific activity well below the trigger point of 10 Bq/g and will therefore not be deemed as Class 7 Dangerous Goods for transportation purposes. Note that this concentrate does not leave the site; it is fed directly to the hydrometallurgical plant.

Radionuclides (Th, U and the decay nuclides) will be removed during the hydrometallurgy refining stage to produce a radionuclides-free MREC.

Altona will develop a comprehensive radiation management plan (RMP) and undertake regular monitoring and regulatory compliance of radioactivity levels of all activities including exploration, mining, processing and tailings disposal.

9.5 Closure and remediation

The intent for closure planning at the Project is that disturbed areas will be rehabilitated and closed in a manner to make them physically safe to humans and animals, geotechnically stable, and geochemically non-polluting/ non-contaminating. It is the Company's intent that a sustainable solution is agreed upon for post-mining land use, without unacceptable liability to stakeholders.

In addition, environmental rehabilitation will be ongoing throughout the LOM. Decommissioning activities are likely to include the following:

- Dismantling of buildings and infrastructures.
- Rehabilitating haul roads and hard stand areas.
- Ensuring access to the void left from open pit mining is restricted.
- Reprofiling slopes and top surfaces of waste rock dumps, stockpiles and TSF to ensure stable landforms.
- Revegetation of previously disturbed areas with indigenous vegetation.

10 MARKET OVERVIEW

10.1 Rare earth elements (REEs)

REEs comprise 15 chemical elements of the Lanthanide group, to which are usually added yttrium and scandium. Promethium virtually doesn't exist in nature, and scandium is absent at Monte Muambe. REE have similar chemical and physical properties, arising from the nature of their electronic configuration, which leads to a stable 3+ oxidation straight (Henderson, 1984). The ionic radius increases slightly with the atomic number. As a result, these elements usually occur together, but can also be partly fractionated by geological processes. This means that the percentage of each REE in a given deposit varies. La to Sm are usually grouped into Light Rare Earths Elements (LREE) and Gd to Lu into Heavy Rare Earths Elements (HREE). Yttrium is usually grouped with HREE due to similar chemical properties and geological association.

10.2 Occurrences

Crustal abundances of REE are summarized in Table 10.1 below. (USGS, 2014)

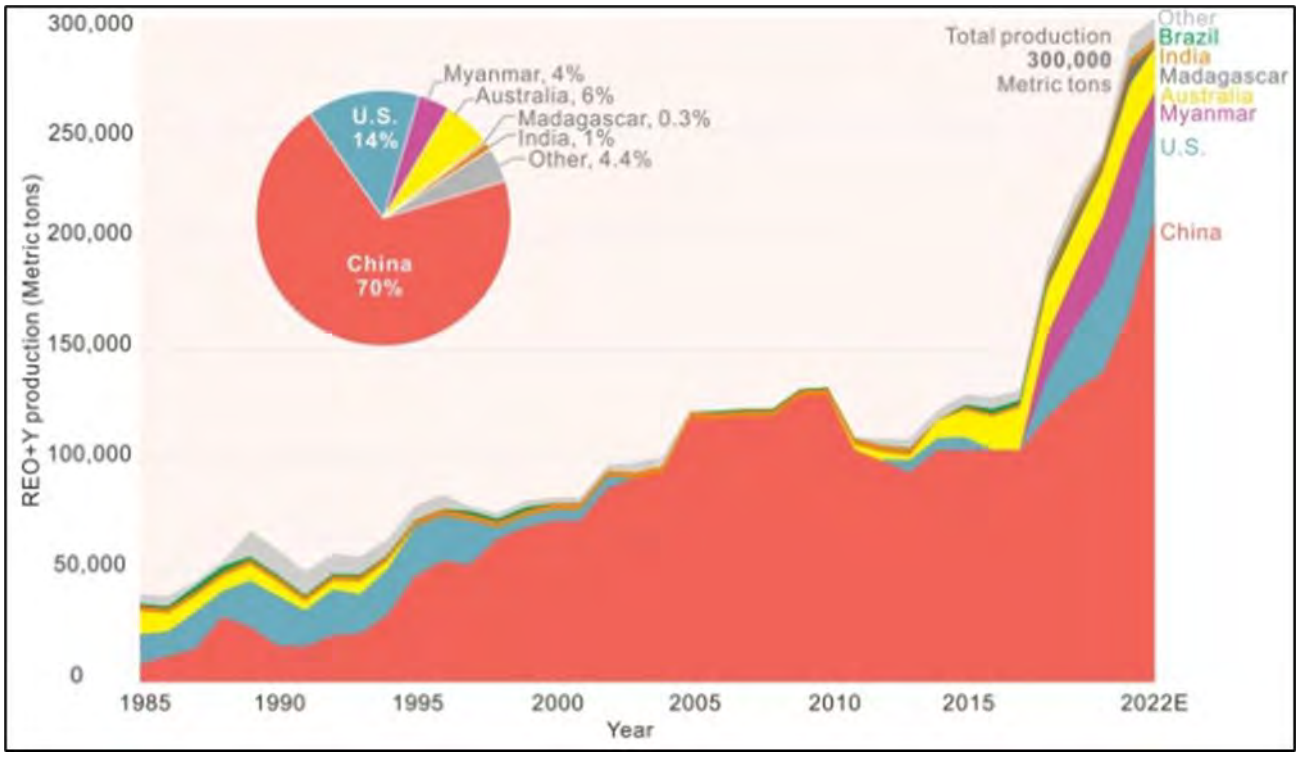
Table 10.1 REE crustal abundances

Element	Crustal Abundance (ppm)	Element	Crustal Abundance (ppm)
La	39.0	Gd	6.2
Ce	66.5	Tb	1.2
Pr	9.2	Dy	5.2
Nd	41.5	Ho	1.3
Sm	7.1	Er	3.5
Eu	2.0	Tm	0.5
		Yb	3.2
		Lu	0.8
		Y	33.0

REEs are not particularly rare, with the crustal abundance of Nd and Pr (41.5 and 9.5 ppm respectively) being of the same order of magnitude as that of Cu (50 ppm) and Pb (14 ppm). However, the occurrence of mineable REE concentrations is much more unusual. In igneous rocks, these exist only in uncommon, highly differentiated rocks such as carbonatites or granitic pegmatites. REEs can be concentrated further through various geological processes including remobilisation, weathering and erosion.

There are many REE mining projects in development across the world (Figure 10.1), however REE production currently comes from a small number of sources. According to Liu et al (2023) 86.5% of the World's REE production currently comes from carbonatite REE deposits, with the Bayan Obo mine in China accounting for about a third of the world's production. Other large REE mines include Mount Weld in Australia and Mountain Pass mine in the US. Aside from these deposits, there are also a multitude of small-scale Ionic Clay mining operations, mostly in Southeast China and Myanmar.

Figure 10.1 Global mine production of rare earth oxides for the period 1985-2022, by country



Note: The upper-left corner inset is the production percentage by country in 2022.

Source: Liu et al (2023)

10.3 Uses

REE have a wide range of uses in industry and high-technology applications including computers and cell phones, medical equipment, defence etc. These uses can be subdivided into two categories (Goonan, 2011):

- Mature markets, including catalysts, glass making and polishing, metallurgy (excluding battery alloys), and phosphors.
- High-Technology markets that have been developing over the past decades, including ceramics, battery alloys, and most importantly permanent magnets.

According to Transparency Market Research Inc, the Global Rare Earth Metals Market was valued at $10.6 billion in 2021. It is projected to expand at a CAGR of 7.4% from 2022 to 2031[1]. This means it is expected to more than double in this period. By volume, the main uses of REE are catalysts (19%) and permanent magnets (49%) (Table 10.2). However, by value, the permanent magnet market is by far the most important (>95%).

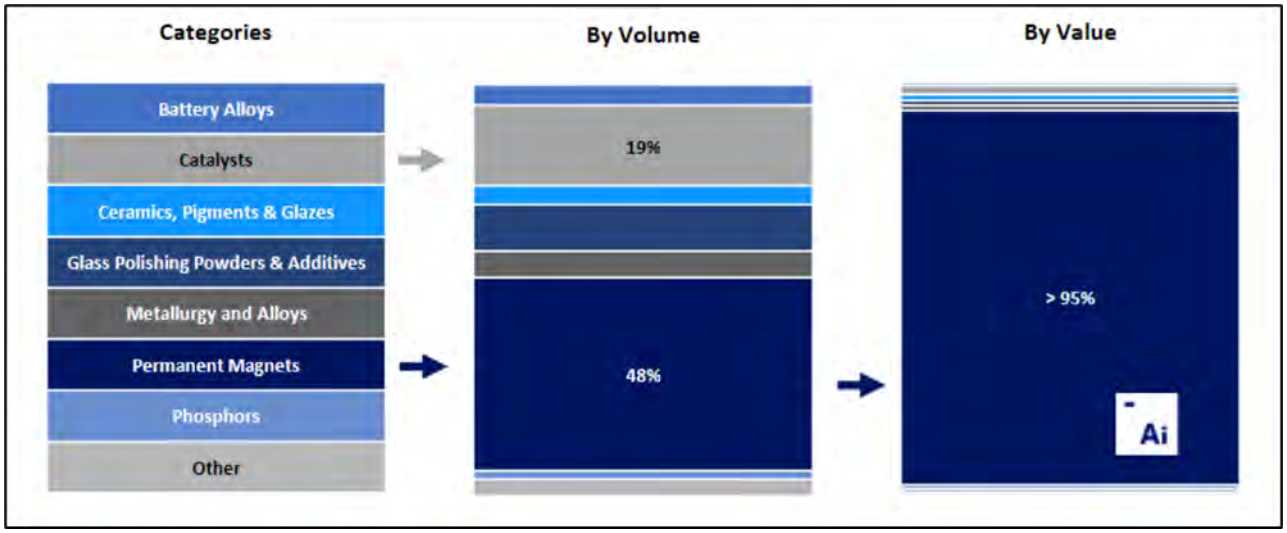
Rare-earth magnets are stronger per unit weight and volume than other magnet types (USGS, 2014), and retain their magnetic properties at high temperatures. They are usually made with four REE: Nd, Pr, Tb and Dy. These are known as the Magnet Metals. Permanent magnets are used to make generators and electric motors. This market is largely driven by the World's current decarbonization of energy sources, with the two main components being generators for wind turbines, and drive trains for electric vehicles (EVs).

[1] https://www.globenewswire.com/en/news-release/2023/06/06/2683268/0/en/Global-Rare-Earth-Metals-Market-to-Register-a-Staggering-7-4-CAGR-from-2022-to-2031-Reaching-US-21-7-Billion-TMR-Report.html

Table 10.2 Main markets for each REE (V – major market; v- minor market)

Use	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Y
Polishing agent		V													
Glass making	V		v	v			v							v	v
Catalysts	V	V	v	v											
Ceramics	v	v	v	v											V
Pigments		v	v								v				
Metallurgy	V	V	v	V											
Specialty alloys		V							V	V					
Battery alloys	V	V	v	v	v										
Permanent magnets			V	V	V			v	v						
Phosphors	v	v				v	v	v							V
Others	V	V	v	V	v		v			v	v	v	v	v	V

Figure 10.2 Main REE uses by volume and by value



Note: Adamas Intelligence, 2023 – figure used with permission

10.4 Pricing

Each REE has its own market price. The proportion of REE found in a given deposit depends on the geology of this deposit and is characterized by the ratio between abundant low-value elements such as Ce and La and rare high-value elements such as Lu, Dy and Tb.

As a result, each REE deposit has its own basket price. REE prices are currently largely controlled by China.

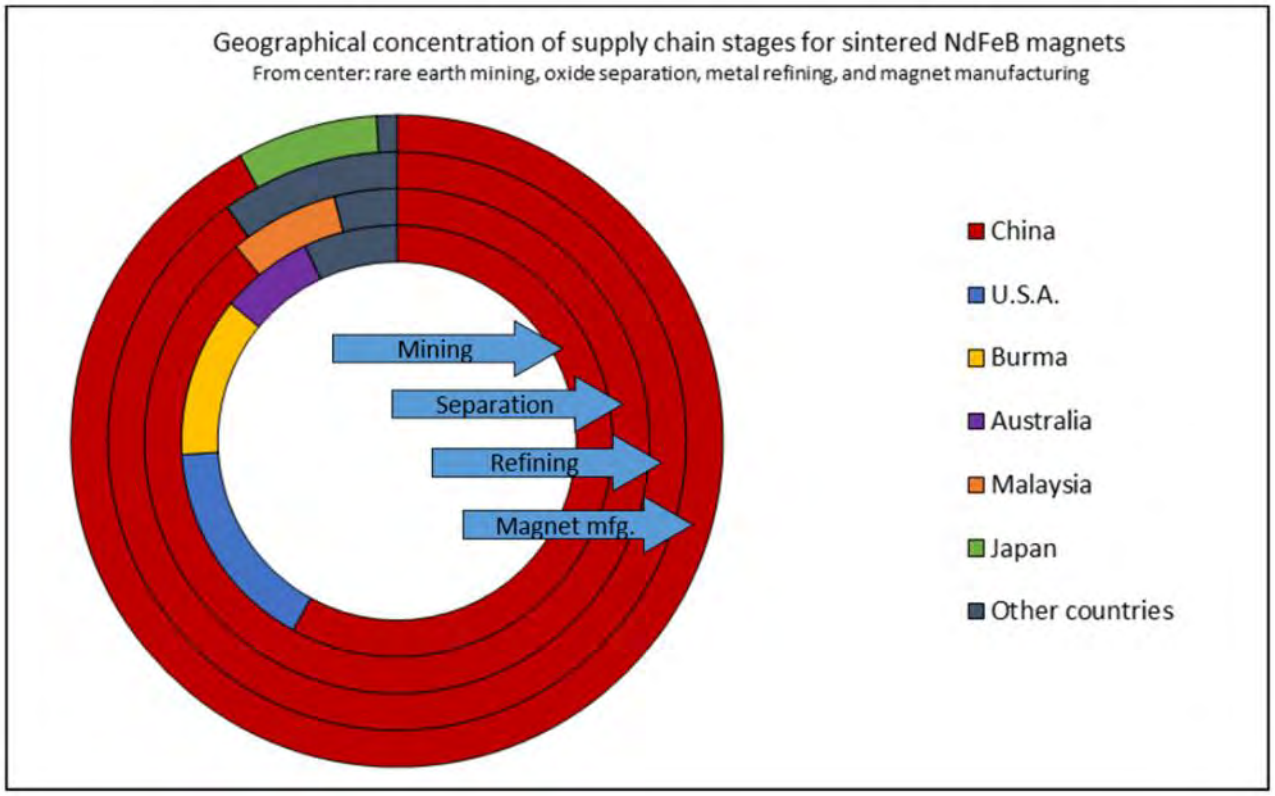
10.5 Value chain

The Magnet Metals value chain is summarized in Figure 10.3. It involves:

- Excavation.
- Production of a concentrate.
- Concentrate cracking and/or leaching to produce a mixed REE product such as a MREC.
- Separation and refining to NdPr Oxide and other rare-earths oxide products.
- Converting oxides to metal.
- Alloying to magnet manufacturers standards.
- Magnets manufacturing.

While 30 to 40% of REE are currently mined outside of China, the downstream part of the value chain is firmly controlled by this country.

Figure 10.3 Simplified value chain for Magnet Metals



Source: Smith et al, 2022

10.6 Criticality

REEs are considered as Critical Minerals because they are critical to:

- The manufacturing of wind turbines and EVs essential to the green energy transition, and which is currently concentrated in China, posing supply risks.
- Strategic high-technology applications in the defence and communications industries.

In the past years, western countries have taken steps towards reducing the reliance on China for Critical Minerals including REEs through devising policies, enacting legislation, and supporting the development of independent supply chains. This has worked effectively for the resource/ mining portion, but the downstream part of the REE chain is still over-reliant on China.

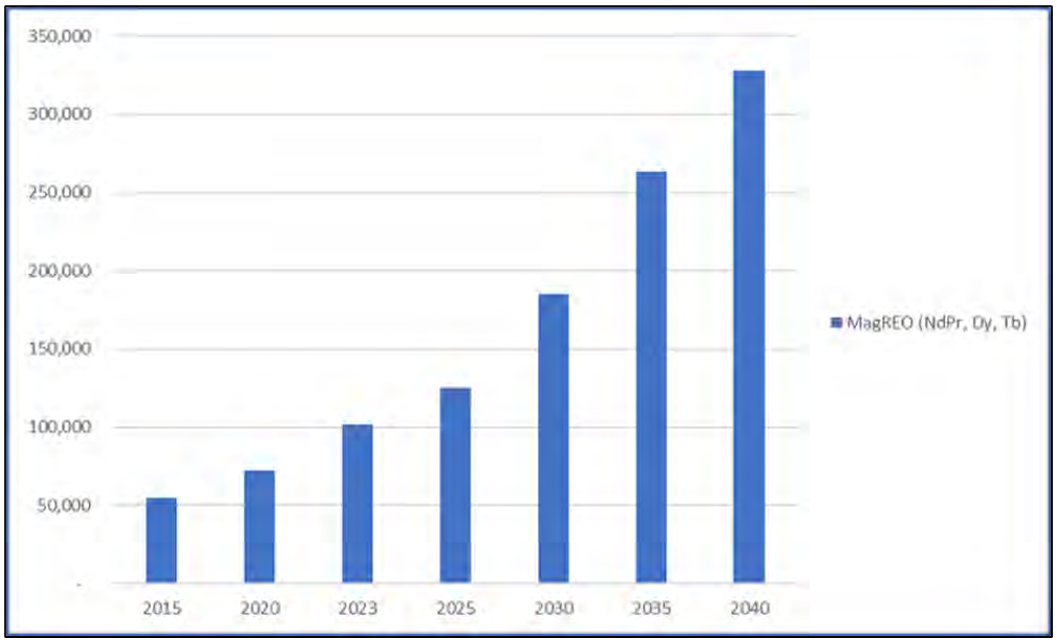
10.7 Forecasted demand and prices

Adamas Intelligence (2023) forecasts the demand for magnet metals to rise at a compound annual growth rate (CAGR) of 7.1% through 2040 (Figure 10.4). While the e-mobility and wind turbines still represent a relatively small proportion of the consumption of permanent magnets, the growth of these two market segments is expected to drive 50% of the magnet metals demand between 2030 and 2040.

At the same time, new upstream and downstream rare earths production capacity is expected to grow at a CAGR of 5.2%, insufficient to fill the projected deficit between supply and demand. The NdPr oxide supply deficit is expected by Adamas Intelligence (2023) to rise to 90,000 t p/a by 2040 (Figure 10.5).

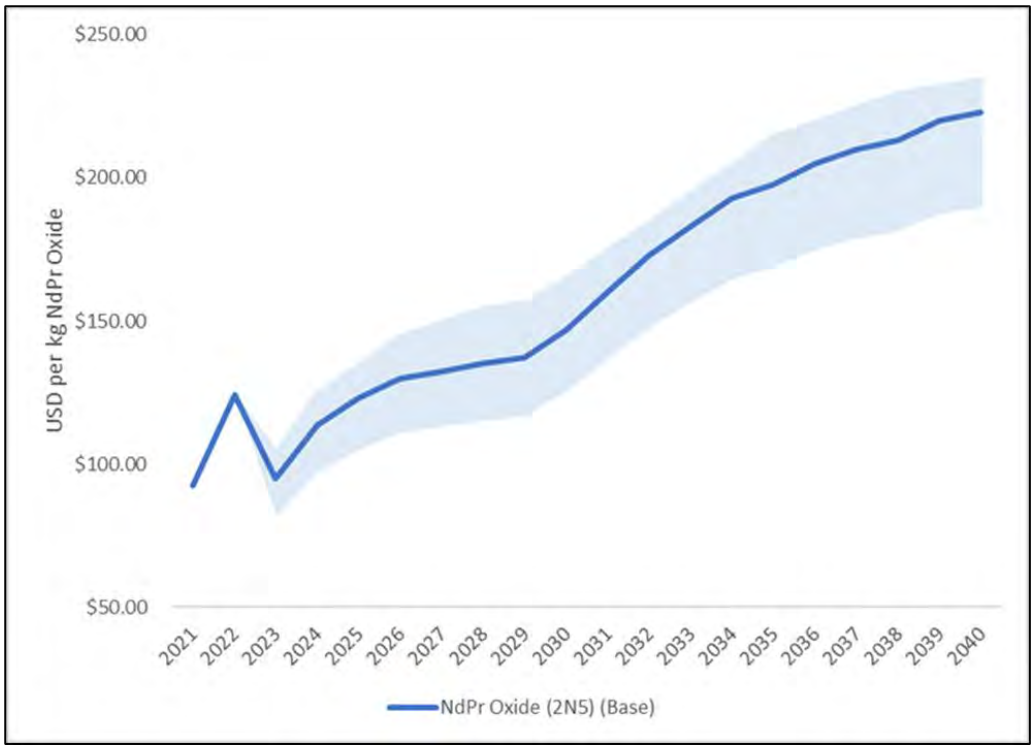
These market fundamentals are expected to sustain a growth of magnet metals oxides prices at CAGRs ranging from 5.1% to 5.2% through 2040.

Figure 10.4 World magnet metals historical and forecast demand



Note: Adamas Intelligence, 2023 – figure used with permission

Figure 10.5 World NdPr oxide forecast prices



Note: Adamas Intelligence, 2023 – figure used with permission

10.8 Monte Muambe MREC pricing assumptions

The pricing of the MREC product from Monte Muambe takes into consideration the following assumptions:

- Adamas forecast (Adamas Intelligence, 2023) 2024-2040 low case, base case and high case scenarios.
- Value for other elements $22.2/t oxide.
- Payability in MREC: 90%.

11 COSTS AND ECONOMIC EVALUATION

11.1 Introduction

Snowden Optiro has undertaken a real financial model for the Project. The base date for all financial inputs is 1 September 2023. The financial model start date is 1 October 2023, with quarterly and annual reporting over LOM. Nominal values have been estimated for the purposes of income tax and working capital exclusively. All values reported in this section are real; and all diagrams and tables have been generated from the financial model. ROM material and mineralisation are used interchangeably in this section.

11.2 Basis of estimate

The financial model has been undertaken in United States dollars ($), with the following exchange rates applied:

- ZAR19.00: $1.
- Mozambiquan metical (MT) 63.25: $1.

The capital costs were priced as of Q3 2023. No cost adjustments were undertaken. The following assumptions were made in the preparation of the opex and capex estimate:

- The LOM is 18 years.
- Only revenue associated with four primary REOs (praseodymium, neodymium, terbium and dysprosium) have been included in the financial model. No revenue has been attributed to the 13 remaining REOs
- A mining contractor will be appointed
- Landed diesel costs of $1.53/ litre have been applied in the financial model. Bulk fuel storage costing and installation will be undertaken by the primary bulk fuel supplier
- All unskilled and semi-skilled workers will be recruited locally. At least 50 % of the skilled workers will be recruited locally. Temporary accommodation to be provided for 75% of staff and contractors during construction. Permanent accommodation will be provided for 90% of the permanent staff and contractors.
- There will be no shortage of skilled trades workers throughout the entire construction phase, including the early works phase. Hence, there is no provision for salary increases potentially necessary to attract skilled trades workers.
- All employees accommodated in the camp will be provided with three meals per day.
- All other workers will be provided with daily lunch while on site.
- The camp will be located within a maximum of 30-minute walking distance from any working point for the whole duration of the Project implementation.
- There will be a smooth transition between the various project implementation phases; and no work disruption resulting from inadequate accommodation and/or catering services.
- The project schedule for the process plant is estimated to have a duration of 24 months from project award. This excludes prior construction of the access road.
- It is assumed that the bore wellfield will generate sufficient water supply for the Project. Treatment of abstracted water is required prior to use in plant and as potable water.
- Grid power will be made available at least three months before the start of hot commissioning of the beneficiation plant and hydrometallurgical plant. Diesel powered generators will be used during planned plant construction. A unit rate of $0.075/ kwh has been applied.
- The construction site will be accessible 24 hr/d and 7 d/week with adequate safety supervision.

- The construction contracts will be of the unit-rate type, cost-plus type, or lump-sum/turnkey type; the estimate does not allow for construction contracts of the time-and-material type.
- All the contractors will provide their own administration offices for the full duration of the construction phase.
- There will be no rework to field-erected and installed equipment and material, resulting from a quality assurance/quality control (QAQC) inspection.
- Residual thorium and uranium management has been included under process opex.
- It is assumed that no resettlement is required.

A number of technical design documents formed the basis of the capex estimate, including:

- Indicative, planned production schedule and LOM processing plan.
- Pit designs.
- Select mining equipment lists.
- Select process plant design criteria.
- General layouts of the process plant and related infrastructure.
- Process flow diagrams and process plant equipment data sheets and lists.
- In-house databases.

11.3 Exclusions

The following exclusions are applicable to opex and capex:

- Escalation beyond the base date.
- Duties.
- Schedule delays (associated with scope changes and labour disputes).
- Currency fluctuations.
- Force majeure.
- Financing costs.
- Contingencies.
- Marketing and selling fees.
- General management fees..

11.4 Production, revenue and metal prices

A mine schedule has been undertaken by Datamine and reviewed by Snowden Optiro. Proposed ROM steady state production of 0.75 Mt/a is reported for a mine life of 20 years. Snowden Optiro then applied a tail-cut, which has reduced the Project mine life to 18 years and is referenced accordingly as the LOM in this report.

The T1 and T4 deposits will be mined, each with their own pit. The two pits are approximately 1050 m metres apart at their closest point. A 1.5% TREO cut-off has been applied, with a Mineral Resource TREO averaging 2.42% (before dilution) over the LOM and a TREO ROM grade of 2.30% after dilution. Some 13.50 Mt of mineralisation is planned to be mined (less mining losses, plus dilution) and 21.91 Mt of waste over the LOM, with a LOM stripping ratio of 1.62.

All ROM mineralisation reports to the beneficiation plant. First stage planned recoveries are 60%, which will produce a concentrate with 10% TREO. This concentrate product will report to the on-site hydrometallurgical plant, where planned recoveries of 80% will be realised. A refined, final MREC product, with planned purity of 55% TREO, will be produced by the hydrometallurgical plant. The MREC will be stockpiled, bagged in 1 t bulk bags and then transported in 20 ft containers (by road) to Beira port. At the port the bags will be unloaded, warehoused and then loaded onto ocean going vessels.

There is minimal free dig material (less than 0.01% of mineralisation; and less than 1% of waste) over the LOM. Further study work needs to be undertaken to understand how mined oxide, transition and fresh material will report to the beneficiation plant.

Planned steady-state is reached in Year 1 of mining production.

The rare earth proportions in sold MREC are as follows:

- Praseodymium – 3.78%.
- Neodymium – 10.01%.
- Terbium – 0.08%.
- Dysprosium – 0.43%.

Long-term CIF (China) metal prices calculated as the average of Adamas Intelligence forecast (Adamas Intelligence, 2023) for the period 2024-2040 low case scenario have been applied as follows:

- Praseodymium oxide price of $148,000/t.
- Neodymium oxide price of $156,000/t.
- Terbium oxide price of $1,937,000/t.
- Dysprosium oxide price of $440,000/t.

Gross revenues total $3,670 million over LOM. Neodymium and praseodymium comprise the bulk of planned gross revenues (86%) along with dysprosium and terbium (14%); no value has been ascribed to the other 13 REOs, primarily cerium and lanthanum. A payability of 90% on the four primary elements in the sold MREC has been applied (Figure 11.1).

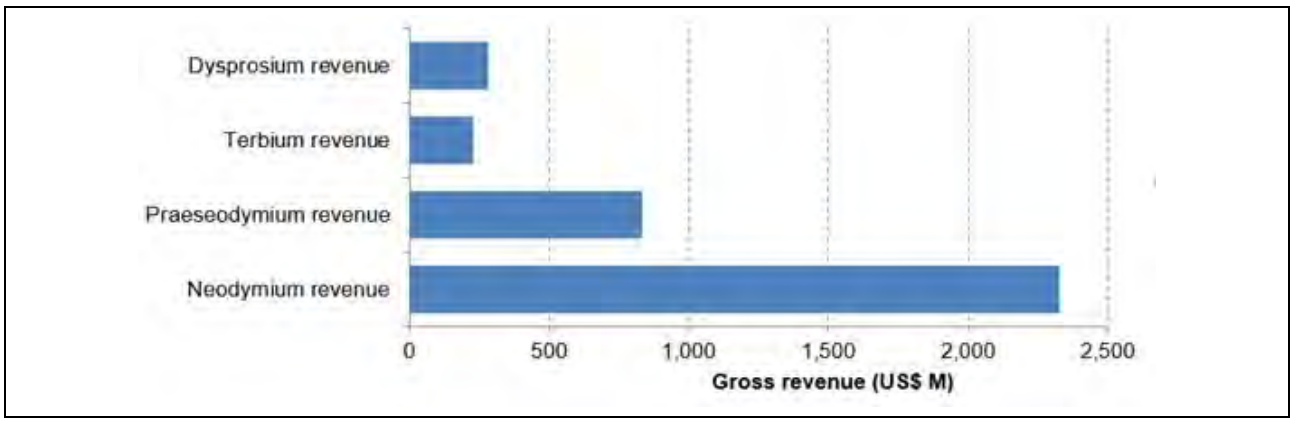
It is assumed that all MREC is sold and dispatched immediately, post-production. Benchmarked studies indicate overall payabilities would typically be 70% for unrefined REO product.

For the CIF pricing reported above, benchmarked CIF, port and warehousing charges have been applied, from the port of Beira (FOB) to China.

Net revenues include a State royalty of 3% on gross revenues;and payabilities of 90% on MREC product sold. Total MREC produced is 270.7 kt over LOM or 15.0 kt p/a, with an equivalent contained TREO volume of 148.9 kt over LOM or 8.3 t p/a. Net revenues total $3,193 million over LOM.

No provision has been made for marketing or selling fees.

Figure 11.1 Project gross revenue over LOM



11.5 Operating expenditure (opex)

The purpose of the opex estimate is to provide operating costs to an accuracy of +35% to −30% that can be utilised for the economic analysis of the Project.

The Project's annual opex estimate of production consists of the following:

- Mining operating costs benchmarked and factored by Datamine Africa (Pty) Ltd (Datamine) and Snowden Optiro.
- Beneficiation plant, hydrometallurgical plant and TSF operating costs benchmarked and factored by Met-Chem Consulting (Pty) Ltd.
- On-mine G&A or shared costs of $6.3 million p/a; benchmarked by Snowden Optiro.
- Off-mine logistics. Costs sources provided by Snowden Optiro and Altona management.

The basis of estimate and exclusions are referenced in section 11.2 and 11.3 respectively. No allowances have been applied to opex. Key project drivers are diesel, grid power, concentrate local transport by truck, concentrate transport CIF and reagents.

The planned LOM opex and unit opex is shown in Figure 11.2, Figure 11.3 and Table 11.1. Planned total LOM opex is $1,519 million, with processing opex accounting for more than 74% of total opex.

Figure 11.2 Planned LOM opex for the Project

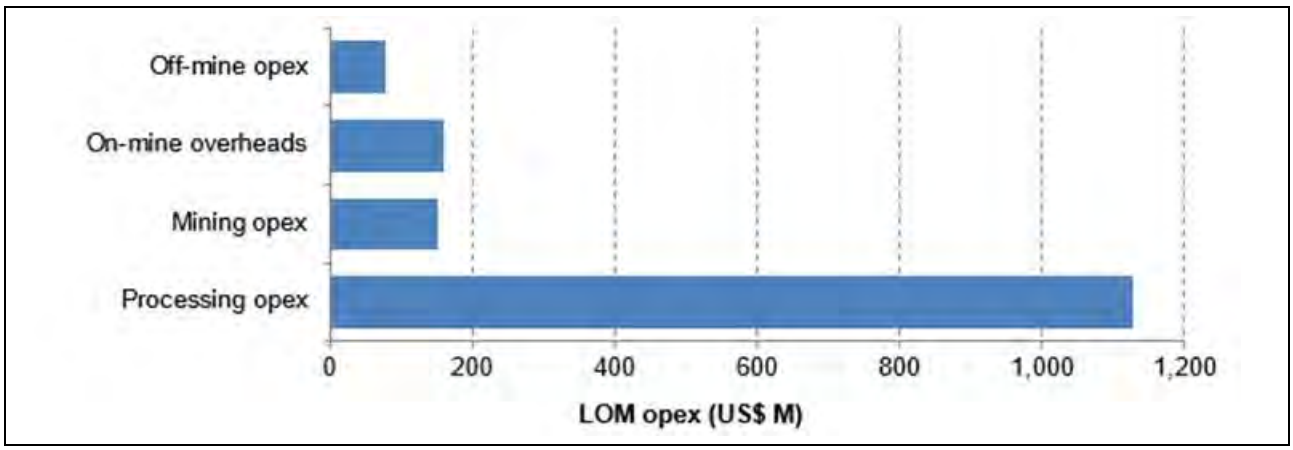


Figure 11.3 Planned opex unit cost (per t mineralisation) over the LOM

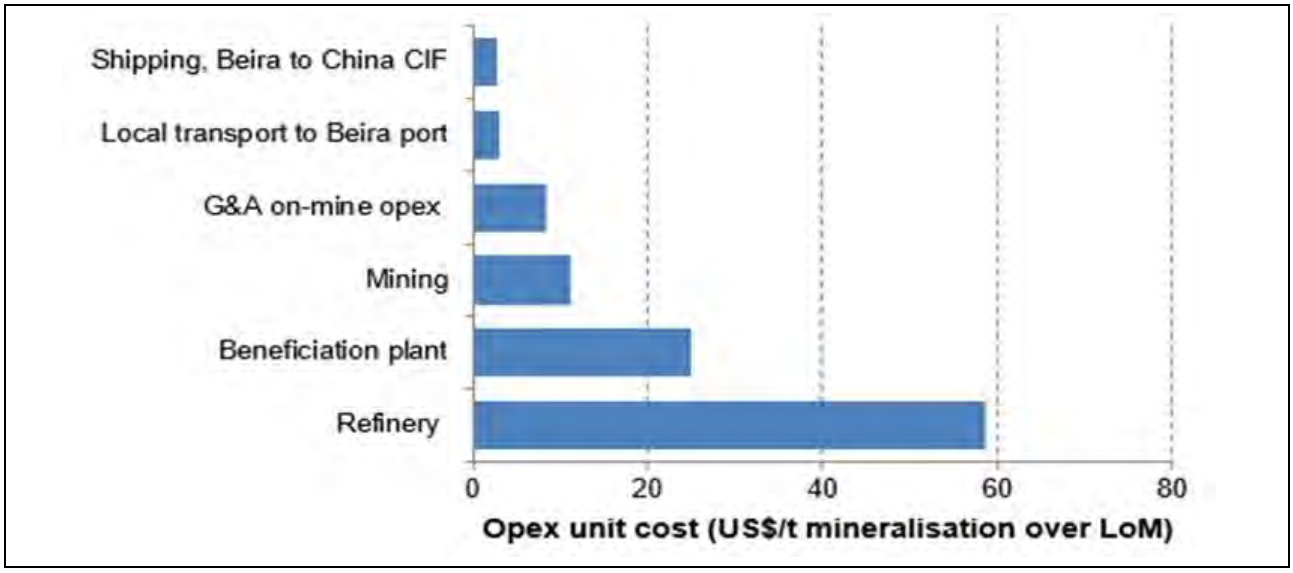


Table 11.1 Planned Project unit opex

Operating cost item	Unit	Mineralisation tonnes	Material moved	TREO in final carbonate	Final carbonate produced
Mineralisation drill and blast	$/t	4.27	1.62	386	212
Stockpiling rehandle	$/t	0.30	0.11	27	15
Waste drill and blast	$/t	5.74	2.18	519	286
Mining overheads	$/t	1.00	0.38	91	50
Beneficiation plant	$/t	25.06	9.53	2,267	1,247
Hydrometallurgical plant	$/t	58.64	22.30	5,305	2,917
Environmental and closure cost	$/t	1.50	0.57	136	75
G&A on-mine opex	$/t	8.37	3.18	757	416
Bulk infrastructure and site maintenance	$/t	2.01	0.76	181	100
State surface tax	$/t	<0.01	<0.01	<0.01	<0.01
Off-mine transport to Beira Port	$/t	2.80	1.07	253	139
Off-mine transport, Beira to China	$/t	3.12	1.18	282	155
Total unit opex	**$/t**	**112.82**	**42.91**	**10,205**	**5,613**
Volume	Mt	13.47	35.41	0.15	0.27

11.5.1 Mining operating costs

Snowden Optiro has applied unit mining rates for ROM material and waste, and further divided these into free dig and drill and blast material, as well as accounting for swell factors. A drill and blast rate of U$4.26 t/ mineralisation and $3.53/t waste has been applied in the financial model. Stockpile rehandling costs ($0.30/t mineralisation) and a charge of $1.00/t mineralisation) for grade control, Owners Team contractor management and dewatering has been applied in the financial model. A dilution of 5% and mining loss of 5% has been applied to ROM material. In the financial model, all mined material will be drill and blast.

Mining costs are defined as the costs of all ongoing mining from the time that mineralisation is mined and includes the cost of mining ROM and waste material from the open pit, including the cost of manpower and consumables; and the costs of maintaining the surface infrastructure. A mining contractor will be appointed to conduct open-pit mining and a leasing arrangement will be adopted for the mine fleet.

The mining opex estimate includes the following items:

- Mining contractor's costs.
- Mining contractor's overhead costs and charges.
- Fuel costs.
- Grade control drilling costs.
- Owner's team manpower costs (mining).

11.5.2 Process operating cost

Process plant costs have been benchmarked and factored in relation to two other rare earth studies undertaken recently in southern and eastern Africa. Beneficiation plant opex has been estimated on a ROM unit basis, with hydrometallurgical plant opex estimated on an annual basis.

Processing costs include the cost of processing the ROM material to saleable products, including the cost of manpower (plant operating and maintenance labour), consumables and reagents, maintenance and bulk supply.

A fuel farm with emergency diesel generator sets has been sized for an assumed limited duration of grid power unavailability. The backup diesel generators are configured to operate in a prime operating mode. Backup generators have been allocated to allow for an n+1 redundancy.

A high-level labour schedule was developed assuming a six-weeks-on and three-weeks-off roster for expatriate personnel and two 12-hour, two-shift cycles for Mozambican national personnel.

The salaries for expatriate personnel and Mozambican national personnel were based on remuneration rates in line with market rates internationally and in Mozambique, whilst considering the availability of qualified and unqualified labour in the mine locale. Expatriate personnel will be employed in some managerial and supervisory positions. The rest of the positions will be occupied by Mozambican nationals local to the mine site.

Plant maintenance and supplies costs refer to the costs of operating spares, lubricants and other maintenance-related consumables for the plant. It has been assumed that the plant will experience a moderate amount of wear. The annual maintenance cost is estimated by multiplying the total initial capital cost with a maintenance factor that has been determined by previous projects and observations on running plants. In addition, process sustaining capital has also been applied in the financial model and discussed in Section 11.6.2.

The opex associated with the TSF and water treatment has been estimated at $0.75 million per annum over the LOM, based on a tailings dam design and costing studies undertaken.

11.5.3 Shared / overhead services

The cost of shared services for the support of the operation, including the cost of on-site labour, infrastructure, camp costs and bulk supply. The following costs were excluded from process and included under G&A operating costs:

- Camp food and catering facility.
- Expatriate travel.
- Central services labour.
- HR, safety, training and IT.
- Software, insurance and consultants' fees.
- Select light vehicles for process and shared services personnel.

Additional shared services costs include:

- Infrastructure, bulk services and site maintenance.
- Environmental and closure costing.

Of the shared services, G&A opex ($112.7 million over LOM), infrastructure and site maintenance ($27.0 million) and closure costing ($20.3 million) are the primary components.

11.5.4 Off-mine costs

Off-mine costs include bagging, warehousing and despatch of MREC. Containers will be received at Project site, loaded with 21 bags per 20 ft container and then despatched to Beira port. A cost of $139/t MREC has been allocated for bagging, loading, unloading, on-site warehousing and transport to Beira port.

A total CIF cost of $155/t MREC has been allocated for port warehousing, port charges, stevedoring, shipment from Beira to China, insurance and paperwork.

11.6 Capital expenditure (capex)

The Project's capex estimate breakdown with associated responsibilities consists of the following:

- Snowden Optiro and Datamine – Mining.
- Met-Chem Consulting (Pty) Ltd – Beneficiation plant, hydrometallurgical plant and process associated infrastructure.
- Prime Resources (Pty) Ltd – Tailings and mine waste management facility.
- Ritchie Midgley Consulting Engineers (Pty) Ltd – primary bulk and surface infrastructure.

- Altona and Snowden Optiro – Owner's pre-production costs and logistics.
- Snowden Optiro – Environmental management, rehabilitation and closure.

The basis of estimate and exclusions are referenced in section 11.2 and 11.3 respectively. No contingencies have been included in any capex estimates.

11.6.1 Initial capital estimate

The initial capex estimate consists of the direct and indirect costs, including Owner's costs and contingency costs, to be expended during the implementation phase up until planned commercial production.

The initial and sustaining capex prepared for this report qualifies as a Class 4 estimate as per the Association for the Advancement of Cost Engineering (AACE) Recommended Practice 47R-11. The accuracy of the initial capital estimate is assessed at +35 % to −30 %.

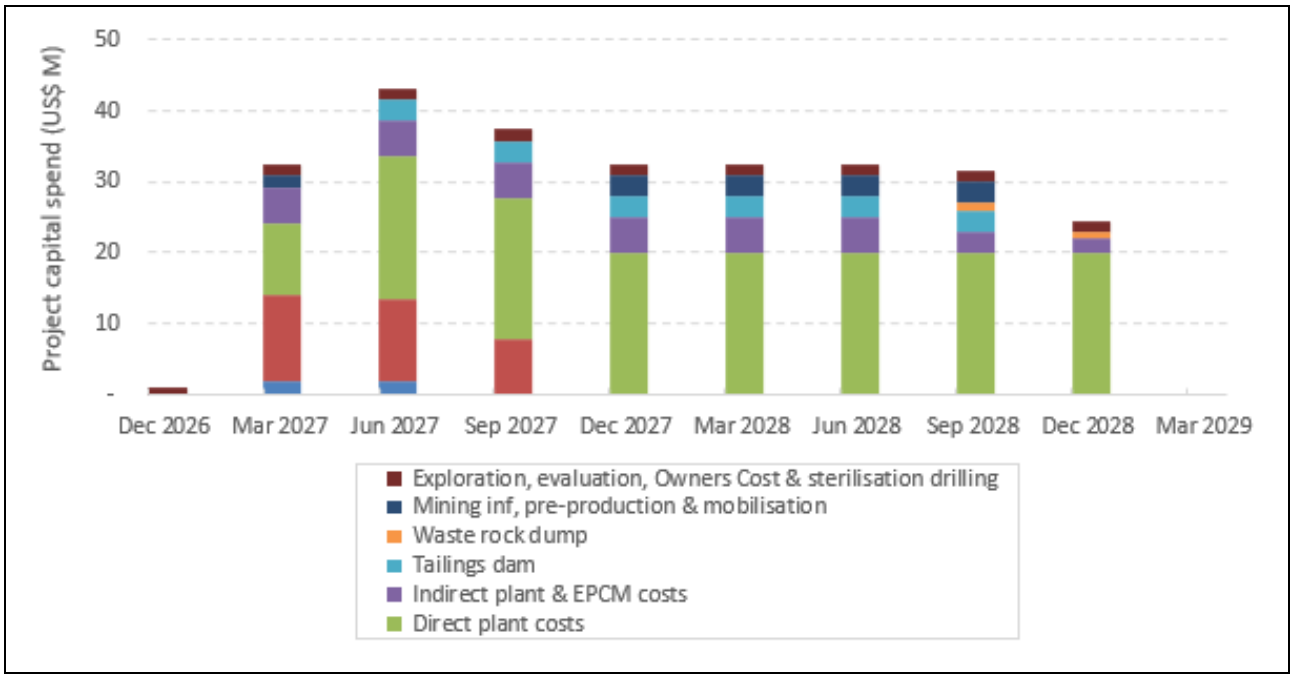
The total initial and sustaining capital for the Project was estimated to be $339.3 million, which includes project execution, EPCM, contingency and sustaining capital costs. Initial capital is estimated to be $276.3 million and includes all capex over the period October 2023 to December 2028. The initial capital is summarised in Table 12.1. Phasing of planned initial capex is shown in Figure 11.4 (exploration and study capital costs in previous quarters have been excised).

Table 11.2 Initial capital summary

Initial capital item	Value ($ M)
Project mobilisation & camp construction	4.0
Bulk & other infrastructure	31.3
Direct plant costs	150.0
Indirect plant and EPCM costs	35.0
Tailings dam	18.0
Waste rock dump	2.0
Mining inf, pre-production and mobilisation	14.0
Exploration, evaluation, Owners Team and sterilisation drilling	22.0
Total initial capital	**276.3**

Note: EPCM – Engineering, procurement, construction management; rounding has been applied to select initial capital items.

Figure 11.4 Planned initial capital phasing per primary capital item



Bulk and other infrastructure includes the following primary items:

- Power plant ($7.5 million).
- Access road ($7.0 million).
- Mobile plant, cranes and equipment ($4.0 million).
- Raw water dam ($2.0 million).
- Wellfield ($2.0 million).
- Internal roads ($2.0 million).
- Sewage and water treatment (combined cost of $3.0 million).

Direct plant costs comprise the following primary items:

- Machinery and equipment ($51.6 million).
- Earthworks, civil works, structural steel, plant infrastructure and platework ($38.5 million).
- Electricals, instrumentation and E&I installation ($22.4 million).
- SMPP installation ($21.9 million).

Indirect costs comprise the following primary items:

- Commissioning, critical and operational spares ($4.9 million).
- EPCM, associated insurances and guarantees ($26.5 million).

Mining infrastructure and mobilisation includes:

- Mining contractor mobilisation fees ($4.0 million).
- Mining infrastructure, comprising explosives, magazine, lighting, workshops, wash.
- No mining fleet has been provisioned for. A mining contractor will purchase and/ or lease all mining fleet for the Project. Diesel tank storage will be installed by the mining contractor, with an equivalent 30 days consumption to be stored.

Owners' costs comprise:

- Exploration, drilling and sampling programmes, testwork, studies ($10.0 million).

- General Owners Team costs ($6.0 million).
- Sterilisation drilling costs ($2.0 million).
- Customs, DUAT purchase, other ($6.0 million).

11.6.2 Sustaining capital

The sustaining capex estimate comprises direct costs, indirect costs, Owner's costs and contingency costs, and covers all the costs to be expended during the period starting at commercial production and extending until the end of the planned LOM. Sustaining capital over LOM totals $63.0 million, comprising three tailings lifts ($35.0 million), ongoing process capital ($27.0 million) and WRD expansion ($1.0 million). No provision for mining sustaining capital is reported. Site and bulk infrastructure maintenance charges have been included under opex.

11.6.3 Working capital

Working capital is defined as those fixed and variable costs incurred by the mine from commissioning to the point where the mine is cash flow positive, and the revenue from concentrate sales can pay for the mine's operational costs. Working capital has been benchmarked, by estimating a ramp-up period (period for plant to reach design production capacity) of six months. The following costs were considered:

- Operating costs for the whole operation, i.e. mining, process plant, and waste management facility
- General and administration costs.
- Mining and process plant assay costs.
- Stockholding costs.

For the LOM, debtors days of 30 days has been applied, creditors of 30 days (mining and process opex) and 15 days on inventories (select mining and process opex).

11.7 Taxes and royalties

A production tax or royalty is payable based on the value of the mineral extracted, with an applicable royalty of 3% for other minerals. This value of the mineral extracted results from the sale price of the previous consignment of the respective mineral or, if the mineral has never been sold, its market value. Production tax is to be paid at the end of the month during which the mineral was extracted. Total State royalties over LOM is $110.1 million and have been included under net revenues.

In the future, the Company may apply for a 50% reduction in this royalty if further downstream manufacture is undertaken and/ or the ex-plant product is used in the development of local industry.

A surface tax is payable. The current rate is 210 MT/ ha for prospecting licence (in Year 7 of renewals). Snowden Optiro has applied the 210 MT/ ha rate over LOM for the Mining Concession for completeness. The LOM value of less than $0.01 million is reported for surface tax.

A windfall profits tax (WPT) is referenced in Mozambican legislation. Mining Concessions or mining certificates with a pre-corporate income tax net return in excess of 18% are subject to a windfall profits tax levied on the accumulated net cash flow. The statutory rate of the windfall profits tax is set at 20%. Snowden Optiro has not applied a WPT in the financial model.

A corporate tax of 32% on cashflows (after the applied WPT) has been applied in the financial model. Total corporate tax over LOM is $372.5 million.

Provision has been made under Owners costs, for customs and duties; although there is a strong likelihood that no customs will be payable during the initial years of construction, ramp-up and first two years of steady-state production.

No government free carry has been applied to the financial model.

No capital gains, withholding or transaction tax has been applied.

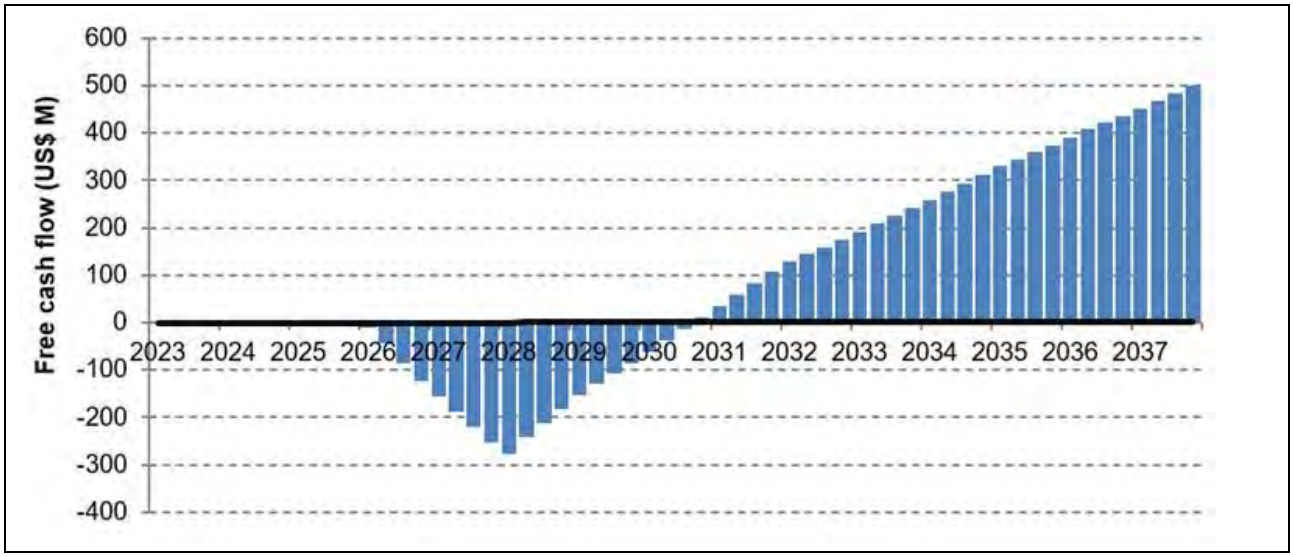
Snowden Optiro is not aware of any municipal fees or rates that are to be applied.

11.8 Net present value (NPV) and internal rate of return (IRR)

The NPV of the Project is $283.3 million, based on a real discount rate of 8% and using long-term REO prices reported in section 11.4. An NPV of $149.6 million is reported using a real discount rate of 12%. A post-tax IRR of 25% and a payback from the construction start date of 4.5 years, and a payback from first TREO production of 2.5 years is reported. An operating cashflow margin of 42% is noted. Project earnings before interest, tax, depreciation and amortisation (EBITDA) would effectively be operating cash flows (no capital expenditure, tax, interest, depreciation nor amortisation expenses have been included). Operating cashflows would include all realisation costs, on- and off-mine expenses and royalties. The planned LOM EBITDA will be $1,674 million; and planned annual EBITDA is $93 million.

Planned cumulative free cashflows over LOM are shown in Figure 11.5.

Figure 11.5 Planned cumulative free cashflow over the LOM

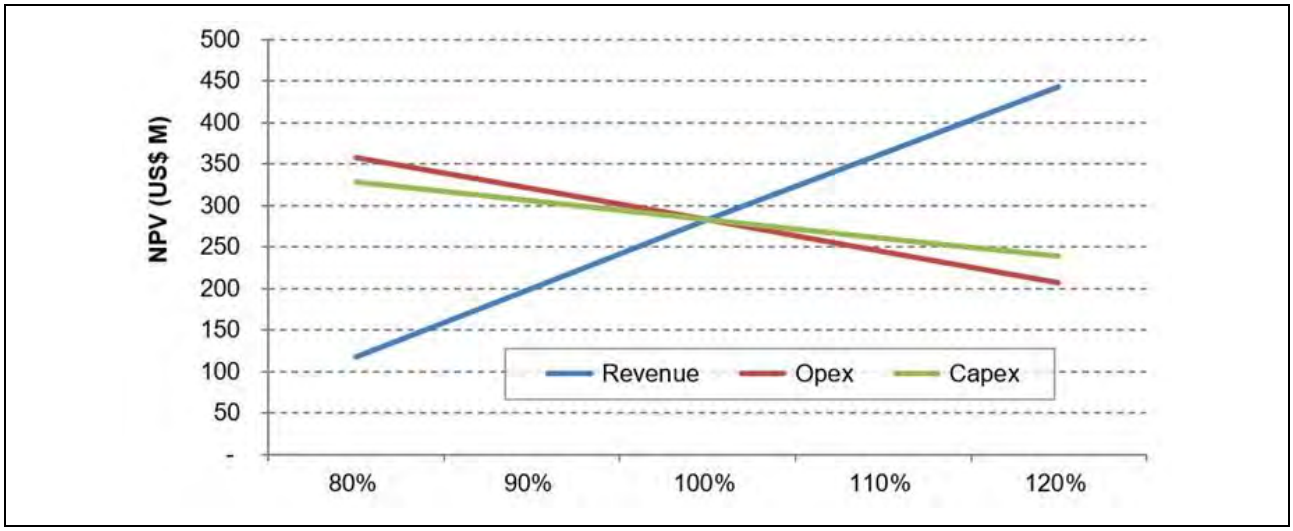


Source: Snowden Optiro, 2023

11.9 Sensitivity analysis

Using an NPV of $283.3 million with an applied real discount rate of 8%, the Project is most sensitive to revenue (price, recovery, grade and exchange rates), less sensitive to opex and least sensitive to capex (Figure 11.6). The sensitivity analysis shows that the Project is more sensitivity to capital than other benchmarked projects.

Figure 11.6 Sensitivity analysis for the Project



Source: Snowden Optiro, 2023

11.10 Summary of key Project parameters

A summary of key Project parameters is shown in

Table 11.3.

Table 11.3 Forecast key Project parameters

Parameter	Unit	Value
Ore processed	Mt	13.5
TREO ROM grade (after dilution)	%	2.30%
MREC produced	Kt	270.7
Initial capex	$ M	276.3
Sustaining capex	$ M	63.0
Opex LOM	$ M	1,519.3
Opex per sold MREC	$/t MREC	5,612.6
Gross revenue LOM	$ M	3,670.2
Net revenue LOM	$ M	3,193.1
EBITDA LOM	$ M	1,673.8
Gross revenue per tonne MREC	$/t	13,558.4
Net revenue per tonne MREC	$/t	11,795.8
Payback from first MREC	Years	2.5
Post-tax NPV_8	$ M	283.3
Post-tax NPV_{10}	$ M	207.0
Post-tax IRR	%	25%
Operating margin	%	42%

Note: TREO – Total Rare Earth Oxide; ROM – Run of mine; MREC – Mixed Rare Earth Carbonate; EBITDA – Earnings before interest tax, depreciation and amortisation; opex – operating expenditure.

11.11 Upside scenario

An upside scenario with higher long-term metal prices has been undertaken. No changes in production, opex, capex or discount rates were made to the financial model. The long-term metal prices applied are as follows:

- Praseodymium oxide price of $174,000/t.
- Neodymium oxide price of $183,000/t.
- Terbium oxide price of $2,083,000/t.
- Dysprosium oxide price of $474,000/t.

Total gross revenues of $4,258 million are reported over LOM for the upside scenario; with planned net revenues of $3,704 million.

The NPV of the upside scenario is $409.9 million, based on a real discount rate of 8%. An NPV of $231.3 million is reported using a real discount rate of 12%. A post-tax IRR of 32% and a payback from the construction start date of 4.0h years, and a payback from first TREO production of 2.0 years is reported. An operating cashflow margin of 50% is noted.

12 PROJECT EXECUTION

A high-level planned schedule has been undertaken for the overall Project. Key milestones are highlighted in the Level 1 schedule (Table 12.1). The schedule was based on industry benchmarking, scope of work and a general deliverables list. Snowden Optiro assumes a seamless advancement between the various phases, as the Project advances. The overall schedule is five years to first TREO being produced, which includes 18 months for a PFS, one year for a FS, two years construction and a six-month production ramp-up. Project financing will be applied for, for pre-production funding and Project construction.

Initial major work packages would include:

- Ordering of long-lead items
- Upgrading of the access road to the Project
- Permanent and temporary accommodation
- Progressing of diesel generator yard and grid power infrastructure
- Wellfield development
- Earthworks and civils for all primary terraces and buildings.

Table 12.1 Planned milestones for the Project.

Milestone	Milestone date/ duration
Submission of Mining Concession application	Q4 2023 (Achieved)
Prefeasibility study	18 months to March 2025
Feasibility study	12 months to March 2026
Value engineering, FEED and financing	Nine months to December 2026
EPCM tendering	November 2026
Early works commencement	December 2026
EPCM award	January 2027
Construction commences	Two years to December 2028
First TREO to be produced	December 2028
Production ramp-up	Six months to June 2029
Steady state of 187.5 kt per quarter (750 kt/a)	Q3 2029

Note: FEED – Front end engineering design; EPCM – Engineering, procurement, construction management; TREO – Total Rare Earth Oxide

Source: Snowden Optiro, 2023

An engineering, procurement, construction management (EPCM) execution strategy has been recommended for the Project. The planned contracts would be mixture of lump sums for equipment supply and cost-reimbursable contracts with performance incentives for construction, where required. This execution strategy provides the Company with greater control over the outcomes specifically regarding health, safety, security, environment, and community issues, and more flexibility with respect to timing of the activities, and input into design.

The EPCM provider's scope of work would cover most of the execution phase activities and will include the services required to design, construct, pre-commission, and commission the Project.

A formal project execution schedule will be undertaken during the PFS and FS. Critical path items and float will be incorporated into the master schedule. Schedule assumptions and cognisance of rainfall periods will be incorporated into the project execution schedule and associated plan.

During the PFS, a detailed work breakdown structure (WBS) template will be undertaken for both capital and operating expenditure.

A procurement operating plan and a long lead equipment list will be formulated during the FS.

Post-FS, a project execution plan and an operational readiness plan will be undertaken.

Detailed risk assessments and hazard identification (HAZID) and hazard and operability (HAZOP) study(ies) will be undertaken during FS. The risk assessments will inform the overall risk management plan.

12.1 Project budget

Table 12.2 below contains the indicative costs for PFS level work at Monte Muambe.

Table 12.2 Indicative budget for PFS

PFS component	Budgeted cost ($)
Operations overheads and salaries	400,000
Drilling; 6,000 m RC and 1,000 m DD	468,000
Assays	302,600
Metallurgical testwork and studies	400,000
Geotechnical studies	70,000
Geotechnical drilling and testwork	30,000
Mining studies	150,000
Mineral resource updates	60,000
Hydrology and hydrogeology studies	100,000
Tailings and waste studies	100,000
Infrastructure	100,000
Equipment	18,500
Contingency	100,000
TOTAL	**2,300,000**

13 CONCLUSIONS AND RECOMMENDATIONS

13.1 Snowden Optiro conclusions

It is expected that Altona will undertake a PFS as the next stage of project development, based on the positive outcome of this CPR and Scoping Study. Specific conclusions are summarised below:

13.1.1 Geology and resources

Not all carbonatites carry REE mineralisation at Monte Muambe. Both low grade (0.5 to 1% TREO) and high grade (>1% TREO) mineralisation is encountered in specific REE-enriched parts of the carbonatite intrusion.

- Low grade mineralisation (LGM) is mostly associated with Ca-carbonatites.
- High grade mineralisation (HGM) is associated with both Ca-carbonatites and Mg-carbonatites, and often extends across boundaries between these two lithologies.

This suggests that lithology is not the sole control for HGM, and that the current geometric distribution of REE at Monte Muambe may be the result of post-magmatic remobilisation and redeposition across geological boundaries. However, two distinct geochemical domains were identified based on their REE and Nb grades (for all drill data across the complex).

- Low grade mineralisation with 0.5% to 1% TREO (average ~0.7% TREO) and a high level of Nb (typically above 500 ppm Nb)
- High grade mineralisation with over 1% TREO (average ~2.4% TREO) and a low level of Nb (typically below 500 ppm Nb).

The REEs at Monte Muambe are contained in three minerals namely bastnaesite (the most common), florencite and synchisite.

Mineral Resources have been estimated for Targets 1 and 4. The Monte Muambe 2023 Mineral Resource has been classified and reported in accordance with the JORC Code (2012). The classification is based on the following parameters:

- Blocks within the pit shells informed with a minimum drill hole spacing approaching 80 m along strike by 80 m across strike, in addition to demonstrated geological and grade continuity, and where the grade has been extrapolated no more than 35 m across strike, was classified as an Indicated Mineral Resource.
- Where informed by wider spaced drilling and/or where geological and grade continuity was assumed, the Mineral Resource was classified as an Inferred Mineral Resource.

Additional drilling, petrological, mineralogical and geochemical work will be necessary to improve understanding of the REE mineralisation controls at Monte Muambe.

The 2023 maiden Mineral Resource appropriately reflects the available data and geological understanding. No material discrepancies were identified with the available data. Two spatially consistent mineralised domains were interpreted identified, at 0.5 to 1.0% and ≥1.0% TREO. Grade variability within these interpreted domains was low. There is reasonable confidence that the estimated grade suitably reflects the available geological understanding and sampling. The Mineral Resource has been reported in accordance with the JORC Code (2012) reporting guidelines and has been constrained by an optimised pit shell to reflect the reasonable prospects for eventual economic extraction. The Mineral Resource employed a range of metrics to reflect the confidence in the estimate.

On-going drilling and geological work is required to continue to develop the spatial geological understanding of the deposit and to improve the local confidence of subsequent Mineral Resources. This includes improved understanding of the deposit geochemistry, weathering/oxidation features as well as collecting additional bulk density samples.

13.1.2 Mining

The mining method is based on conventional open pit using truck and shovel, and drill and blast, coupled to a ROM stockpile. Although the rock is largely classified as weathered, ore and waste rock will require drilling and blasting.

Both ore and waste will be excavated in 5 m flitches following mark-out by grade control. Ore will be hauled to either the ROM pad and tipped onto a designated ore finger or a designated low-grade stockpile. All mine waste will be hauled directly from the pit and placed onto a designated location of the TSF dam wall.

No Ore Reserve was estimated or reported.

13.1.3 Metallurgical Testwork

The existing testwork shows promising potential to upgrade the REE content by conventional beneficiation and hydrometallurgical routes. However this aspect of project development is the highest risk to project economics and overall viability. A detailed definition of process flowsheet and quantitative information on recoveries is required at the next stage of project development.

13.1.4 Infrastructure

Development of a rational site block plan is to be undertaken during the PFS stage, which will incorporate all the services that support the mine, beneficiation plant and support infrastructure within the mine lease area. It is recommended that high resolution topographic survey of the area and survey along approximately 35 km access road upgrade route (and village by-pass routes) suited to infrastructure design work is undertaken in advance of the next study stage.

There are benefits from the topography of the crater where this assists with water storage and gravity flow of waterborne services as well as storm water management, which naturally drains out at the southern rim of the crater. A disadvantage of the crater topography is the impact on the mine access road that negotiates 200 m to 300 m change in elevation from the rim into the basin at a maximum 10% gradient. A 2 km to 3 km long ramp into the crater may require re-thinking the efficacy of the current north-south route.

The construction and ongoing maintenance cost of approximately 35 km access road upgrade and bridges is a significant factor as the mine is reliant upon transport security for delivery of consumables to the mine and export of product from the mine.

Engineering geotechnical investigation work is recommended to evaluate the near surface founding conditions for the beneficiation plant, support infrastructure as well as sourcing construction materials for engineered terrace construction, mine road building and aggregates for concrete manufacture.

Initial indications are that a competent founding horizon is within 2 m of the natural ground surface, which substantially reduces the cost and risk of civil works construction, especially for the beneficiation plant.

Harvesting competent waste rock at shallow depth from the future mining areas for road and terrace construction and for concrete manufacture may be possible during the early works infrastructure build programme and prior to TSF wall construction.

Development of the manpower histogram to greater detail in the PFS will improve the accuracy of support infrastructure design and cost of construction for services (water and sewerage reticulation, solid waste disposal, etc), accommodation and non-process infrastructure (offices, camp, kitchens and change house, etc.).

13.1.5 Tailings and waste

As most of the design and costing for the TSF is based on high-level estimates and experience, further engineering and costing is required going forward in the PFS.

The waste rock material from the mining activities planned for the Target 1 and Target 4 pits will be deposited on designated WRDs used in the construction of the TSF containment walls. The WRDs are situated in close proximity to the pits to reduce haulage distances. The WRDs will be developed over a total footprint of approximately 40 ha and to a final height of approximately 50 m. Detailed modelling to

be undertaken to confirm TSF waste rock requirement and additional capacity required for the waste rock dumps.

13.1.6 Project economics

Preliminary work has provided a positive cashflow model for the project. At the moment this is defined with a precision of +35% / -30%, and the next step will involve detailed input from all sections of the project.

13.2 PFS work plan recommendations

A number of studies need to be undertaken prior to project execution. During the PFS and FS, all items discussed in Section 12 (master schedule, project execution plan, HAZID, HAZOP, WBS), will be progressed. Specific items that should be addressed are summarised in relevant sections below.

13.2.1 Exploration

- Use the improved mineralisation model to attempt identifying new targets, including blind targets.
- Continue improving mineralisation model through mapping as well as academic research.
- Exploration drilling at T3, T9, T11, and any other potential high-grade target
- MRE update
- Data centralisation

The resource update should cover tonnage increase, as well as improve the level of confidence within the pits to Measured and Indicated. Resource drilling and studies should include:

- Infill drilling at T1 and T4; 2 to 4 sections on a spacing of 20 m along strike x 20 m across strike and outside of that a broader pattern of 40 m x 40 m throughout the rest of the T1 main mineralisation focusing on high grade domain.
- Down-dip drilling at T1 and to 150 m below surface at T4.
- Re-evaluation of T6 through with a pit optimisation exercise to see if this should be considered in the MRE and if further drilling then required.
- Resource drilling on any target confirmed through exploration drilling.
- Geotechnical drilling (triple tube DD) in the two open pits. This must be structurally orientated and structurally logged and geotechnically logged to provide input for future pit optimisations.
- More spatially distributed density data from the planned diamond drilling. Snowden Optiro recommends density sampling is done every assayed interval.

13.2.2 Geometallurgy / processing

Geometallurgy and process flowsheet design will be a priority activity during the PFS. The Scoping Study sighter testwork forming part of this Scoping Study provides a preliminary assessment based on a possible flowsheet.

Future testwork is expected to follow the flowsheet progressively, with upstream sections being developed to produce representative test material for downstream sections. Note that when referring here to a flowsheet, it does not imply the concept study flowsheet necessarily, as alternative processing routes could be selected as the sighter testwork progresses and associated technical and cost-benefit assessments are implemented. The beneficiation and hydrometallurgical plants should be viewed from a functional perspective, comprising the following main steps of progressive processing:

- Mineralogical and geo-metallurgical assessment.
- Beneficiation flowsheet development:
  - Optimal grind size
  - Crushing/ grinding parameters including work and abrasion indices

  - Need for desliming
  - Requirement for multi-stage flotation
  - Thickening and filtering characterisation testwork.
- Hydrometallurgical flowsheet:
  - Optimise gangue leach conditions
  - Evaluate rare earth leach options (hard HCl leach and/or cracking)
  - Reagent selection for purification via pH adjustment (lime or caustic soda)
  - IX removal of uranium
  - Mixed rare earth carbonate precipitation
  - Thickening and filtering characterisation testwork
  - Radionuclide deportment study.

Further detailed metallurgical studies for Monte Muambe are underway and currently focused on advanced metallurgical testwork. A 70 kg representative ore sample is with Auralia Metallurgy in Perth (Australia), and another 100kg ore sample has been received by SGS Lakefields in Canada. The sample at SGS Lakefields will first undergo extensive feed characterisation including Electron Microprobe Analysis and TIMA-X analysis. TIMA-X is designed to provide quantitative mineral speciation and distribution, as well as characterisation, grain size attributes, degree of liberation and associations of minerals of interest.

Following feed characterisation, test work will focus on producing a high-grade Rare Earth concentrate in order to improve the economics of the Mixed Rare Earth Carbonate production process. The possible separation and recovery of fluorspar, another critical raw material present in the ore at Monte Muambe, will also be assessed. Flotation test results are expected in Q2 2024.

Geo-metallurgical modelling should be implemented, looking in particular at optimising the cut-off grade and at decisions as to what is ore and what is waste (possible including NdPrO/ TREO ratio modelling). This will be necessary to domain the geological and resource model, allowing more efficacious mine planning, scheduling, and process planning.

During the PFS, work will be undertaken to define the proportion of oxide, transition and fresh material reporting to the plant on a quarterly/annual basis over LOM. There is likely to be some effect on processing (flotation) from different degrees of weathering; however, with the metallurgical testwork that has been done it cannot be accurately defined. The sulphide content of the ore will also need to be quantified during the ongoing testwork.

On a marketing/ sales consideration, further downstream processing from MREC product through part separation of a NdPrO product. There is a possibility of a regional hydrometallurgical plant facility to be considered, involving cooperation between different REE mining operations in the Southern Africa region.

Separation of the 15 Rare Earths present at Monte Muambe from their ore, with a focus on neodymium, praseodymium, terbium and dysprosium, is a complex process. Metallurgy is a critical component of rare earths projects development. Beside process design and costing, key outputs will also include products specifications to enable discussions with potential off-takers.

13.2.3 Mining geotechnical

The mining geotechnical studies should form part of an initial work program and comprise:

- Defining a geotechnical drilling program for the PFS (the drilling will be managed by Altona's exploration team). The outcome of the initial pit optimisation studies will provide guidance on the number and location of diamond drill holes required for the geotechnical studies.
- Onsite geotechnical logging of drill core and data collection. This is to ensure that logging and sample collection are done of the required quality and standard. The site visit will also entail discussion with exploration geologists to ensure all major structures within the vicinity of the deposits have been mapped.

- Selection of drill core for off-site testing, selection, and management of the geotechnical testing laboratories. It is expected that drill core will be transported to recognised laboratories in Johannesburg for rock testing (likely tests will include, rock – UCS, tensile strength, saw cut shear strength, soil – Atterbergs limits, PSD, triaxial tests).
- Structural interpretation – All available drilling and mapping data will be compiled into a geotechnical database and analysed to identify major structures that will have significant impact on wall stability.
- Assessment of data, development of geotechnical parameters and completion of various slope stability assessments. Rock mass classifications will be calculated from the geotechnical drilling data. The rock mass classification and structure data will be processed and compiled to provide an understanding of the deposits and their surrounds, comprising a series of spatial domains of each delineating material with distinct geotechnical properties and behavioural characteristics.
- Slope stability analysis. Rock mass and structurally controlled failure analysis for each wall of the open pit (overall and batter scale), particularly critical sections identified during the studies targeting agreed factor of safety. Slope stability analyses will be undertaken with kinematic and/ or limit equilibrium and numerical methods.
- Developing geotechnical design parameters for the open pit(s). Design parameters for mine planning optimisation purposes by pit sectors in a form of polygon or solids indicating the boundaries of each slope design recommendations.
- Excavatability, trafficability and blastability assessments, defining potential areas of free dig, poor road conditions requiring increased pavement/sheeting thickness and indicative blast patterns and power factors for cost evaluation purposes.

13.2.4 Mine planning and Ore Reserve

Initial work program

To initiate early works and the gain an understanding of the likely scale of operations, the initial mining studies will include:

- Preliminary pit optimisation and schedule to guide to provide guidance to Altona and consultants (geotechnical, hydrology, geohydrology, metallurgical testwork, processing, environmental).
- Scenario analysis to identify best throughput rate and size of resource required – Identify the best project development plan over the entire life of Project to be identified including the scale and quality of additional resources required to achieve the PFS ROM target.
- Mining cost assessment – based on initial schedules, develop contract mining cost.
- A site visit by the Ore Reserve Competent Person.

Detailed prefeasibility studies

Once adequate metallurgical testwork has been completed to reliably inform recovery and process cost parameters, the following work can be completed:

- Open pit optimisation: Complete a pit optimisation using industry optimisation software to determine the economic limits of the pits for design. For the Ore Reserve case, this would be completed for Measured and/ or Indicated Resources only. Sensitivity analysis should be completed to justify the selected pit, including optimisation with inferred resources.
- Incorporate geo-metallurgy modelling and individual element grade/ recovery and pricing in optimisation studies
- Pit design: Pit designs from shells derived from pit optimisation, including any stages in a generalised mining package using design criteria provided by the geotechnical work. Pit staging to identify opportunities to minimise the amount of waste mined in the early years. These studies will need to consider the amount of waste required to progressively construct the TSF.

- Waste dump and stockpile design: Simple waste dump design for each pit in a generalised mining package. More detailed studies may be required to incorporate the waste dump into the TSF.
- Major haulage roads: Complete haul road layouts connecting the pits to the waste dump, ROM pad and stockpiles.
- Mining schedule: Develop quarterly mining schedules of ore and waste movements, and stockpile movements, by bench and, if necessary, generate a processing schedule.
- Develop capital and operating costs for mining of ore and waste and ROM loading. Grade control and owner's mining costs should also be developed.
- The Ore Reserve Competent Person for the mining aspects of the Ore Reserves will need to complete Section 4 of Table 1 (JORC Code, 2012) for the Ore Reserve in conjunction with other Competent Persons.
- Identify opportunities to stockpile LG mineralisation for processing at the end of the mine life.

13.2.5 Environmental studies

- Start baseline studies as soon as possible.
- Environmental compliance as part of the Mining Concession application (EMP, ESIA). ESG planning to World Bank level.
- As part of the PFS, see how the carbon footprint of the proposed product can be minimised through locally available opportunities.

13.2.6 Infrastructure studies

- Logistics optimisation – road vs different rail options.
- Consider whether all or part of the processing should be undertaken at a port as opposed to on site.
- Power sources mix optimisation (capex, opex and carbon footprint).

13.2.7 Tailings/ waste management

Tailings

As there are several mineral targets surrounding the infrastructure area, one of the key focus areas will be sterilisation drilling, to determine if there are any mineralised zones below the 60 ha footprint required for the TSF.

The PFS will require a detailed site selection and associated surface geotechnical investigations. A key requirement will be to conduct geochemical static and kinetic leach testing on the types of ore/ tailings/ waste to determine the future design/ lining of the TSF.

The planned PFS will identify several options and determine the best site or sites for tailings disposal. Optimization of facility locations on site map showing the topography; simple general arrangement drawings of major equipment items.

Currently there are good quality topographic maps; but a soil conditions report for the foundation determinations and more accurate basic preliminary quantities will be required.

Waste rock

The following recommendations are made for inclusion in the scope for the prefeasibility phase:

- Hydrology – This study should include regional climate, catchment characteristics, surface flow patterns and quantities.
- Geohydrology – A geohydrological study is recommended to accurately determine the depth to and extent of groundwater resources / aquifers and the characteristics thereof.
- Site selection – A more detailed site selection study with consideration to technical, environmental, and social factors.
- Geotechnical investigation – A geotechnical investigation may be undertaken for the selected WRD sites and general area to provide an initial indication of the near surface soil- and groundwater conditions and identify any problematic subsoil conditions.
- Geochemistry – Geochemical analysis and characterisation of the waste rock is required to confirm the assumptions made regarding the non- acid generating potential and high alkalinity of contact water.
- Design criteria – Confirm and update design criteria as required.
- Cost estimates – Improvement on capital and operational cost estimates.

13.2.8 Marketing

As part of the PFS, join a Responsible Sourcing organisation and integrate Responsible Sourcing processes. Develop marketing side of business as part of PFS. Offtakes and integration with ROW supply chains (existing and projects) to be addressed in PFS.

13.2.9 Project economics

Relevant studies need to be undertaken to improve granularity and accuracy of the opex and capex estimates, production and planned recoveries.

Appendix A
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Appendix B
Table 1

Section 1 Sampling techniques and data

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

Criteria	JORC Code (2012) 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 database compiled by Altona Rare Earths Plc (Altona) for the Monte Muambe rare earth project (the Project or Monte Muambe) contains 113 holes totalling over 7,800 m and comprises of diamond drilling (DD) and reverse circulation (RC) holes. The database does not include twinned RC-DD holes. • The drill hole dataset directly used in the Mineral Resource estimation comprises a total of 2 DD holes (299 m) and 121 RC holes (9,413 m). • All extracted DD core was sampled and assayed. Core sampling was done over a nominal length of 1 m with variations taking into consideration lithological contacts. Individual sample lengths varied from 4cm to 336cm with an average of 62cm. Quarter cores (PQ and HQ) and half cores (NQ) were submitted to Intertek Genalysis laboratory for chemical analysis. Samples not competent enough to be split with the core saw were bagged, homogenized, and split using a riffle splitter. • Samples from RC drilling were collected at 1 m intervals. All RC samples from the 2021 drilling campaign were composited at 3 m intervals. Samples selected on the basis of their REE content (TREO>0.5% for 3 m composite results) were re-composited at 2 m intervals and resubmitted to the laboratory. Samples from the 2022 RC drilling campaign selected on the basis of preliminary onsite pXRF assay results (TREO>0.5%) were composited over 2 m intervals and submitted to the laboratory. In both cases the weight of the submitted splits was about 3 kg. • Sampling was carried out in accordance with Altona SOPs which are in line with industry practice. During RC drilling the drill string and cyclone were regularly flushed with air and cleaned. 1 m cutting bags weights were monitored and recorded. RC cuttings were split using a 3-tier riffle splitter which was cleaned between samples. • All samples were despatched by road to the Intertek Genalysis facility in Boksburg, South Africa for sample preparation, with the pulps forwarded by airfreight to Intertek Genalysis Perth laboratory for assay. DD samples were dried, crushed to ~10 mm, split and

Criteria	JORC Code (2012) explanation	Commentary
		pulverized to 85% or better passing 75 micron. RC samples were dried, split and pulverized to 85% or better passing 75 micron. • Samples were assayed for Al, Ba, Ca, Ce, Cr, Cs, Dy, Er, Eu, F, Fe, Ga, Gd, Hf, Ho, K, La, Lu, Mg, Mn, Na, Nb, Nd, P, Pr, Rb, S, Sc, Si, Sm, Sn, Sr, Ta, Tb, Th, Ti, Tm, U, V, W, Y, Yb, Zr, LOI. • A total of 2,960 samples including DD samples, 3 m composites and 2 m composites were sent to the laboratory and assayed. • An overall total of 6,733 assays were used for the Mineral Resource estimation.
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).*	• The diamond drilling rig was a trailer mounted Atlas Copco CS14. Diamond drill (DD) holes were started in PQ diameter, with the diameter reduced to HQ and if necessary NQ as dictated by ground conditions. 15.5% of diamond drilling was done in PQ diameter, 63.9% in HQ and 20.6% in NQ. Because of the disseminated nature of the mineralization, it was not considered necessary to do core orientation. • The RC rigs were a truck mounted Smith Capital 14R6H with a 21bar compressor (2021 and 2023 drilling campaigns) and a track mounted Hanjin Power7000SD (2022 drilling campaign). The RC bit has a 4 ½ diameter.
Drill sample recovery	• *Method of recording and assessing core and chip sample recoveries and results assessed.* • *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.*	• The DD cores were checked against the driller's core blocks and recovery was recorded. The presence of cavities was recorded based on information provided by the driller and observations on the core. • DD core recoveries varied from 17% to 100%, with an average of 83%. Short runs were used to maximize sample recovery when necessary. • RC recoveries were systematically monitored and recorded, and regularly assessed. The presence of cavities was recorded based on information provided by the driller. 1 m samples were weighted and their moisture content recorded.
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*	• The entire length of each hole was logged by trained geologists. Lithology, mineralogy, colour, weathering, grain size, texture, fabric and alterations were logged. • RC samples pXRF logging was done on-site using a Hitachi X-MET8000 device with a 50 kv anode designed to assay Ce, La, Nd,

Criteria	JORC Code (2012) explanation	Commentary
	costean, channel, etc) photography. • *The total length and percentage of the relevant intersections logged.*	Pr and Y. For RC samples, a 50 g sub-sample was split from each 1 m sample using a 1-tier riffle splitter. Each sub-sample was split further and placed in an XRF capsule for assay. The pXRF was set up in bench top mode. Preparation and assay were done in standard conditions. The sum of the 5 above-mentioned elements was calculated as oxide %. Orientation, QAQC and comparisons with laboratory results show that this sum provides a reliable proxy of the actual TREO%. Accordingly, pXRF logging results were used to guide the day-to-day implementation of the drilling program and to select mineralized samples (TREO>0.5%) to be sent to the laboratory for assay. pXRF assay results were not used for the Mineral Resource estimation. • Lithology determinations on RC chips were supported by the preliminary pXRF assays done on site, with SiO_2 being used to distinguish fenite from carbonatite and from mixed lithologies, and MgO to distinguish two geochemically different suites of carbonatites. • Gamma spectrometer logging was carried out using a hand-held gamma spectrometer to do one reading in each RC cutting bag (RC samples) and to do spot readings at 50cm intervals of cores (DD samples). • No geophysical tools were used to determine element grades. • Geology logging was qualitative and pXRF logging was quantitative. • All DD core trays, and RC chip trays were photographed in standard conditions and white-balanced.
Sub-sampling techniques and sample preparation	• *If core, whether cut or sawn and whether quarter, half or all core 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.*	• For PQ and HQ diameters, a ¼ core was submitted to the laboratory. For NQ diameter, ½ cores were submitted to the laboratory. The cores were cut on site by a trained technician using a core saw with a diamond impregnated blade. Cores that were not competent enough to be split with the core saw were bagged and split using a riffle splitter. • 1 m RC samples, as well as 3 m and 2 m RC composites were split using a 3-tier riffle splitter. When necessary, samples were sun-dried in a protected environment before splitting. • Samples were prepared at Intertek Genalysis's Boksburg (South Africa) facility. DD samples were dried, crushed to ~10 mm, split and pulverized to 85% or better passing 75 micron. RC samples were dried, split and pulverized to 85% or better passing 75 micron.

Criteria	JORC Code (2012) explanation	Commentary
		• Field duplicates were prepared by submitting another ¼ core or ½ core (for DD core samples) or by preparing a 2nd composite from the same interval using the same splitting and compositing method (RC samples). • Field duplicates, OREAS certified reference materials (CRMs) and blanks (locally procured quartzite) were inserted in sample batches at fixed intervals, with a frequency of 1 of each type in 27 samples which equated to insertion rates of 3.7% (Duplicates), 3.6% (Blanks) and 3.5% (CRMs) • 112 pulp samples were submitted to Nagrom laboratory in Perth for secondary (umpire) analyses. This equates to 5.9% of the original pulp samples analysed at Intertek Genalysis. • Both Intertek Genalysis and Nagrom laboratories also conducted and reported internal QAQC checks. • QAQC data is stored in the Project database. • A review of QAQC data did not highlight any significant sampling or analytical issues. The QC sample insertion rate is slightly low, but is being increased during the next stages of project development.
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.*	• Sample analysis was carried out by Intertek Genalysis' Perth laboratory an accredited status (ISO/IEC 17025). • All samples were assayed for Al, Ba, Ca, Ce, Cr, Cs, Dy, Er, Eu, F, Fe, Ga, Gd, Hf, Ho, K, La, Lu, Mg, Mn, Na, Nb, Nd, P, Pr, Rb, S, Sc, Si, Sm, Sn, Sr, Ta, Tb, Th, Ti, Tm, U, V, W, Y, Yb, Zr, LOI. • Major elements and some trace elements (including Ce and La) were assayed by Li Borate fusion followed by ICP-OES. • Trace elements (including all REE, U, Th and Nb) were assayed by Li Borate Fusion followed by ICP-MS. • Fluoride was assayed by alkaline fusion in a nickel crucible followed by specific ion electrode (SIE) analysis. • Field duplicates, OREAS certified reference materials (CRMs) and blanks (locally procured quartzite) were inserted in sample batches at fixed intervals, with an approximate frequency of 1 of each type in 27 samples. Actual insertion rates were 3.5% CRMs, 3.6% Blanks and 3.7% Field Duplicates. • The laboratory also conducted and reported its own QAQC checks. • Pulps for 1 in 17 (5.9%) samples for DD and all RC 2 m composites

Criteria	JORC Code (2012) explanation	Commentary
		were sent to Nagrom laboratory for external (umpire) assays. Where available, 3 m composites from the 2021 drilling campaign were compared with 2 m composites. For Ce and La, ICP-OES and ICP-MS results were compared. The QAQC review results indicated acceptable levels of accuracy and precision and did not highlight any significant assaying issues.
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.*	• Significant intersections were verified by Altona's CEO. • No twin DD-RC holes were drilled. • Field data was transferred into Microsoft Excel sheets stored in a Dropbox folder backed-up on an off-site server in real-time. Data entry was done by trained geologists, under the responsibility of the Project Manager. The database was regularly backed up on a second Dropbox account, and on the Company's Sharepoint backup system. Scans of all paper documents (driller's daily reports, logs etc) are stored digitally in the database. • Digital data were checked and validated against the original field sheets. • REE, U and Th are reported by the laboratory as element ppm. Grades reported in the Mineral Resource estimation as TREO% or as NdPrO% involved conversions from element ppm to oxide %. The following conversion factors were used: o La to La_2O_3 – 1.1728 o Ce to CeO_2 – 1.2284 o Pr to Pr_6O_{11} – 1.2082 o Nd to Nd_2O_3 – 1.1664 o Sm to Sm_2O_3 – 1.1596 o Eu to Eu_2O_3 – 1.1596 o Gd to Gd_2O_3 – 1.1526 o Tb to Tb_4O_7 – 1.1762 o Dy to Dy_2O_3 – 1.1477 o Ho to Ho_2O_3 – 1.1455 o Er to Er_2O_3 – 1.1435 o Tm to Tm_2O_3 – 1.1421 o Yb to Yb_2O_3 – 1.1387 o Lu to Lu_2O_3 – 1.1371 o Y to Y_2O_3 – 1.2699

Criteria	JORC Code (2012) explanation	Commentary
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 used in Mineral Resource estimation.* • *Specification of the grid system used.* • *Quality and adequacy of topographic control.*	• The project's coordinate system is UTM Zone 36s, WGS84 Datum. All reported data uses this coordinate system. The position of the project's reference point is not tied to the local grid and its position was acquired by the RTK dGPS's system base station. • Hole collar positions used for the Mineral Resources estimate were georeferenced using a Kolida 20S RTK dGPS system, owned by Altona and operated by a trained technician. • Except for 4 DD holes which were drilled vertically, all holes were drilled at a dip angle of 55 degrees. The mast angle was checked using a specially designed spirit level. • Down-hole surveying was done in plastic tubing inserted in holes after the drill string was removed. Not all holes could be surveyed due to collapses and blockages. 80% of the DD holes and 59% of the RC holes having a depth >30 m were surveyed using an EZTRAC system, at 6 m depth intervals. • The Altona drill hole used RTK dGPS survey locations, with the exception of fourteen drill holes. These holes were projected onto the available DEM. All drill hole collars were then reviewed spatially against available DEMs and no discrepancies identified. • Digital Elevation Models (DEM) were prepared by Snowden Optiro for Target 1 and Target 4 (0.921 and 1.357 km^2 respectively) using drone photogrammetry data collected by Altona with a non-RTK drone. Photogrammetry data processing included the use of RTK dGPS-surveyed Ground Control Points (GCPs). The DEM has a nominal resolution of 2 to 3 metres. • The Competent Person is of the opinion that the accuracy and precision of the survey data is suitable for resource estimation.
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.*	• DD and RC drilling conducted in 2021 was aimed at testing potential targets and did not follow a regular pattern. • RC drilling conducted in 2022 at Target 1 was done along fences with most holes having an azimuth of 213 degrees and a dip angle of 55 degrees. The distance between fences ranged from 70 to 80 m and the distance between holes of the same fence ranged from 50 to 75 m. • RC drilling conducted in 2022 at Target 4 was done along two fences 150 m apart, with a spacing between holes of about 65 m. • RC samples used in the Mineral Resource estimation were 2 m

Criteria	JORC Code (2012) explanation	Commentary
		composites. The choice of this composite length was based on information from preliminary modelling done in the context of an Exploration Target estimate prepared by Rock and Stock Investment on 19 July 2022.

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.*
		• Two geochemically distinct types of mineralization have been identified at Monte Muambe:
		  • Low-grade mineralization: TREO% between 0.5 and 1% (average 0.73%), and an average NdPrOxide/TREO ratio of 0.18.
		  • High-grade mineralization: TREO% above 1% (average 2.38%), and an average NdPrOxide/TREO ratio of 0.14.
		• High grade mineralization at Target 1 forms a relatively well-defined body trending in a WNW-ESE direction and dipping towards the NNE at an angle of 40 to 50 degrees. Its length is about 500 m, and its thickness varies from 30 to 70 m, with inter-burden intervals of 5 to 20 m encountered in some holes. Drill holes intersected the mineralized zone at approximately 80 degrees and borehole orientation was appropriate for this geometry.
		• High grade mineralization at Target 4 forms a sub-vertical pipe about 150 m in diameter. Drill holes intersected the envelope of the mineralized zone at a +/- 35 degrees angle and their orientation was suitable for this geometry.
		• No significant sample bias is considered to have been introduced by the drilling orientation and its relation to the mineralization geometry.

Sample security	• *The measures taken to ensure sample security.*	• Sample security is managed by the Altona Project Manager. RC samples awaiting shipment are stored in plastic woven sacks in an open shed. DD core trays are stored in a locked section of the core shed. Batches of samples are checked by a technician from the Tete Provincial, Infrastructure Service, Department of Mineral Resources and Energy and collected by the transporter on site. Samples are transported in a locked truck to the sample preparation laboratory in South Africa. Pulps are air freighted by the laboratory to its Perth facility for assay. • The laboratory audits the samples on arrival and reports any discrepancies with the submission documentation to the Company.

Criteria	JORC Code (2012) explanation	Commentary
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• Snowden-Optiro has conducted a review of primary and QAQC data. This included a site visit by Mr Robert Barnett on behalf of the Competent Person Andrew Scogings from 7 – 10 August 2023. • The Competent Person is of the opinion that the sampling techniques are suitable for the type of mineralization. The Competent Person is of the opinion that the sample database is adequate for the 2023 Mineral Resource estimated. Altona has advised that an improved database system will be implemented going forward. • There has been no other formal audit of the project or data at this stage.

Section 2 Reporting of exploration results

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

Criteria	JORC Code (2012) 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 Project is held under Prospecting Licence (*Licença de Prospecção e Pesquisa*) LPP7573L (the Licence), issued in accordance with the Mining Law 2014. The Licence covers a surface area of 3,939.87 Ha (39.3987 km^2), and is valid for Fluorspar, REEs and Associated Minerals. The Licence was granted on 22 May 2017 to Ussokoti Investimentos Sociedade Unipessoal for an initial five year term. On 26 October 2022, the Licence was transferred to Monte Muambe Mining Limitada, and renewed for a final three year term, i.e. up to 22 May 2025. • The Licence is in good standing and there are no known impediments to its validity or to the Company's ability to secure a Mining Concession. • Altona's interest in the Licence is through a Farm Out Agreement dated 23 June 2021 between Ussokoti Investimentos (the original owner of the licence – see section 3.4 of this report), Altona, Monte Muambe Mining Lda (MMML) and its original shareholders. The Farm Out Agreement gives Altona the right to earn up to 70% of MMML in a phased manner, subject to the completion of certain conditions and milestones. Each transfer of shares requires the approval of the Minister, Ministry of Mineral Resources and Energy (MIREME).

Criteria	JORC Code (2012) explanation	Commentary
		• Beside exploration rights, the Licence gives the licencee a preferential right to an application for a Mining Concession. The Company plans to lodge a Mining Concession application in Q3 2023. Mining Concessions have a validity of up to 25 years, renewable once for an equal period. Mining activities on a Mining Concession also require the obtention of Land Rights (Direito de Uso e Aproveitamento da Terra – DUAT), and an Environmental Impact Study for Category A activities.
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• Previous exploration done at the Project site includes fluorspar exploration by Grupo Madal (1998), and fluorspar and rare earths exploration done by Globe Metals & Mining between 2009 and 2012.
Geology	• *Deposit type, geological setting and style of mineralisation.*	• The Monte Muambe deposit is a ~3.5 km diameter weathered sub-volcanic carbonatite intrusion. The intrusion occupies the inner part of a circular structure resulting from the differential erosion of indurated Karoo sandstones. A fenite alteration zone lines the contact between the carbonatite and the sandstones. At a detailed level, the geometric relations between the carbonatites and the fenites are complicated by faulting. Pyroclastic deposits from the former volcanic edifice are preserved in parts of the structure. • REE mineralization, and high-grade mineralization in particular, are heterogeneously distributed in the intrusion. High-grade mineralization forms relatively well-defined bodies of varying shape, size and orientation. • Fluorspar is known at Monte Muambe and was previously explored. It occurs as disseminations in carbonatite, and as botryoidal veins cutting across the carbonatite. An Inferred fluorspar Mineral Resource totalling 1.63 mt at 19% fluorite was defined by Globe Metals & Mining in 2012. Altona considers the size and grade of the fluorspar occurrence, with little potential for increase, are too low to be of economic interest. • REE-bearing minerals (mainly bastnaesite, but also florencite and synchisite) occur disseminated in the carbonatite or concentrated along mm thin veins and cracks of the rocks. Mg and Fe rich carbonatite tends to have a higher REE content. • The Monte Muambe carbonatites also contain fluorite, apatite, barite, Nb-bearing pyrochlore as well as Fe- and Mn- bearing minerals. None

Criteria	JORC Code (2012) explanation	Commentary
		of these minerals / elements is in sufficient concentration to be recovered. No significant correlations were observed between REE and other chemical elements.
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 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.*	• Not relevant – exploration results are not being reported.
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.*	• Not relevant – exploration results are not being reported. • No metal equivalents are used.
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').*	• High grade mineralization at Target 1 forms a relatively well-defined body trending in a WNW-ESE direction and dips towards the NNE at an angle of 40 to 50 degrees. Its length is about 500 m, and its thickness varies from 30 to 70 m, with inter-burden intervals of 5 to 20 m encountered in some holes. Drill holes intersected the mineralized zone at a 80 degrees angle and their orientation was appropriate for this geometry. Intercepts length is therefore close to the true width of the mineralized zone at Target 1. • High grade mineralization at Target 4 forms a sub-vertical pipe about 150 m in diameter. Drill holes intersected the envelope of the mineralized zone at a +/- 35 degrees angle and their orientation was suitable for this geometry. Intercepts length do not represent the true

Criteria	JORC Code (2012) explanation	Commentary
		width of the mineralized zone at Target 4.
Diagrams	• *Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.*	• Appropriate plans and sections have been created, but are not included in this statement.
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.*	• Not relevant – exploration results are not being reported.
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.*	• Data from the 1998 legacy helicopter-borne geophysical survey was available. This included Total Magnetic Intensity, Analytical Signal, 1st Order Vertical Derivative, Total Count, Potassium, Thorium, Uranium grids. • Altona carried out ground gamma radiometer surveys at Target 1, Target 4 and Target 10. • Altona carried out a comprehensive soil sampling survey covering the carbonatite and fenite outcrop zones, involving the collection of 2,146 samples. Samples were sieved to -500 micron, split using a 1-tied splitter, prepared in XRF assay capsules, and assayed by pXRF on site. The survey was done along a 100 x 100 m grid, with 50 x 50 m and 25 x 25 m infill sampling where necessary. • In August 2023, Altona carried out shallow trenching aimed at exposing substratum outcrops for in-situ pXRF assays at Target 3, 4, and on other prospects at Monte Muambe. Actual assay points were georeferenced using the RTK dGPS system. The objective of this data collection was to determine the position of the envelope of high-grade mineralization zones at surface level. • 20 DD and RC samples selected to represent the lithology and geochemistry variability of Monte Muambe rocks were analyzed by XRD at Intertek Genalysis laboratories to produce semi-quantitative mineralogical data.
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.*	• In-fill RC drilling is planned at Target 1 and Target 4 with the aim of supporting future Mineral Resource estimates, and Ore Reserve estimates. Mineralization remains open at depth at both targets. • Additional exploration work is planned at other targets identified through soil sampling, including RC drilling and trenching.

Criteria	JORC Code (2012) explanation	Commentary
		• About 10 tonnes of representative samples from high-grade zones at Target 1 and Target 4 have been set aside for future use in PFS-level metallurgical testing.

Section 3 Estimation and reporting of Mineral Resources

(Criteria listed in section 1, and where relevant in section 2, also apply to this section.)

Criteria	JORC Code (2012) explanation	Commentary
Database integrity	• *Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.* • *Data validation procedures used.*	Random cross-checks were conducted between the supplied original source sheets for the logging, sampling and assay data, and the supplied digital data. The TO value for the last logged interval of eleven holes had <0.5 m rounding discrepancies. These were re-set reset to the correct values prior to desurveying. On compilation and import of the data, random spot checks were completed to confirm the data integrity. The data was then desurveyed in three dimensional space and then reviewed spatially, with no inconsistencies identified.
Site visits	• *Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* • *If no site visits have been undertaken indicate why this is the case.*	• Mr Robert Barnett visited Monte Muambe on behalf of the Competent Person Andrew Scogings from 7 – 10 August 2023. Drilling and sampling procedures were observed and density checks conducted. The geological and sampling data are deemed fit for Mineral Resource Estimation.
Geological interpretation	• *Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.* • *Nature of the data used and of any assumptions made.* • *The effect, if any, of alternative interpretations on Mineral Resource estimation.* • *The use of geology in guiding and controlling Mineral Resource estimation.* • *The factors affecting continuity both of grade and geology.*	• The current geological understanding of the Monte Muambe mineralisation is still developing. The mineralisation is hosted by a carbonatite, with variable development of fenite as well as mixed carbonatite-fenite rock types, which is variably mineralised. Rare earth mineralisation has been impacted by weathering, with rare earth grades increasing with increased weathering. • Interpretations were prepared using Leapfrog Geo software. Development of the interpretation was primarily based on the TREO grades. Review of the TREO grade distribution, the spatial distribution of grade and observed continuity resulted in selecting a 0.5% on-set of mineralisation, and a 1.0% TREO mineralised grade

Criteria	JORC Code (2012) explanation	Commentary
		cut-off. • Holes informed by laboratory assay and handheld XRF assays were used to inform the geological interpretations. Only laboratory assays were used to inform the estimate. • The 0.5% TREO domain geometry appear as dispersion haloes around the higher grade mineralisation. • Only the T1_11 and T4_11 mineralised domain meet the criteria of a Mineral Resource. • The RC and diamond drill hole samples are assumed to be representative of the material being sampled. • The potential for alternative interpretations on a global scale is considered low to moderate. However, with increased drilling and geological understanding, refinements to the mineralisation is expected. • For estimation, the mineralisation boundaries were treated as hard boundaries, whilst the weathering boundaries were not used for estimation. Both approaches supported by contact analysis. • A broad correlation was observed between magnesium-oxide (MgO) rich carbonatite rocks and the rare earth mineralisation. However, near surface the MgO grades were impacted by the weathering (MgO depletion). There is greater grade continuity associated with the MgO rich rock types and increased greater grade continuity with increased weathering.
Dimensions	• *The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.*	• At target 1, the interpreted mineralised is broadly lenticular in shape, strikes approximately 310° with a variable dip ranging from 25 to 35°, dipping towards the northeast. The mineralisation has a strike length approximately 760 m, outcrops on surface, and narrows with depth, pinching out approximately 135 m vertically below surface, The average horizontal width is 42 m. • At target 4, the interpreted mineralised is flat lying, broadly lenticular in shape, and striking between 295 and 320°. The dip that ranges from 05 to 30° to the northeast. The mineralisation has a strike length of approximately 260 m, is 230 m across strike with an average vertical thickness of 46 m. The mineralisation outcrops on surface and extends 96 m vertically below surface.

Criteria	JORC Code (2012) explanation	Commentary

Estimation and modelling techniques	• *The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.*
	• *The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.*
	• *The assumptions made regarding recovery of by-products.*
	• *Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).*
	• *In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.*
	• *Any assumptions behind modelling of selective mining units.*
	• *Any assumptions about correlation between variables.*
	• *Description of how the geological interpretation was used to control the resource estimates.*
	• *Discussion of basis for using or not using grade cutting or capping.*
	• *The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.*
		• Geological modelling was undertaken with Leapfrog Geo (v2022.1), statistical analysis and variogram modelling was completed using Snowden Supervisor (v8.15) and grade estimation was undertaken using Datamine Studio RM Pro (v1.12.113.0).
		• A total of thirteen domain-composite samples combinations had top-cut applied to minimize the local impact of extreme values.
		• As a function of the low variability and coefficient of variation (CV) and relatively low coefficient of skew, ordinary kriging of 2. 0 m top-cut composites were used for estimation.
		• As a maiden Mineral Resource estimate there are no previous estimates for comparison, nor is there any production data.
		• An inverse-distance cubed (ID^3) test estimate using identical estimation parameters but implementing an octant search was completed, with the average absolute relative difference between the two estimation methods of 2.0% at Target 1, and 1.1% at Target 4.
		• Deleterious elements and non-grade variables.
		• Currently there are no selective mining unit assumptions and no no by-product recovery assumed.
		• Independent variogram models were prepared for all variables, on a mineralised domain basis.
		• To maintain the cross-correlation between variables within an estimation domain, identical search parameters were used for all variables within the domain. Estimation employed a three-pass search strategy for all estimates:
		  • At target 1, a disc shaped search with identical along strike and down-dip search distances was used, with a reduced distances perpendicular to the dip plane. The primary search was 150 m x 150 m x 15 m in the plane of the mineralisation, with between 8 and 24 samples. The primary search distance was doubled for pass 2, using the same number of samples. Pass three had the primary distance tripled, with the number of informing samples reduced to between 4 to 12. No restriction on the number of informing samples was used.
		  • At target 4, an ellipse shaped search was used. The primary search was 150 m x 100 m x 80 m in the plane of the mineralisation, with between 8 and 20 samples. The primary

Criteria	JORC Code (2012) explanation	Commentary
		search distance was doubled for pass 2, using the same number of samples. For pass three, the primary distance was tripled, and the number of informing samples reduced to 8 to 12. No restriction on the number of informing samples was used. • Parent block estimation was used for all domains, with discretization of 3 (X) x 3 (Y) x 2 (Z). • The estimate was validated by initially reviewing the composite and estimated grades in plan and section. This was followed by whole of domain comparisons between the naïve and declustered composite mean and the estimated grades. Trend plots were then prepared for each estimation domain-variable-combinations to ensure sample trends had been maintained. No discrepancies were observed.
Moisture	• *Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	• Dry bulk density was applied to the Mineral Resource assigned based on the interpreted weathering. The reported Mineral Resource tonnage is considered dry.
Cut-off parameters	• *The basis of the adopted cut-off grade(s) or quality parameters applied.*	• The adopted cut-off grade of 1.5% TREO was the minimum grade expected to support mining at Monte Muambe.
Mining factors or assumptions	• *Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.*	• The mineralisation is assumed to be amenable to open pit mining exclusively. • Reasonable prospects for eventual economic extraction have been constrained by open pit optimization which used an estimate of the TREO price of $24.65 per kg of TREO and 3% of royalties applied. The processing costs were split into beneficiation ($25/ROM t) and hydrometallurgical plant ($66/t of product) and the overall recovery (beneficiation and hydrometallurgical plant) percentage was 48%. An overall angle of 43 degrees was used for target 1 and 6 area, and 47 degrees for target 4, based in a study of a similar mine. • The rock types were divided into free dig material and drill and blast which have different mining costs. • The annual ore output expected was of 750 000 t and s discount rate of 10%. • The mining dilution considered is 5% and mining recovery of 95%.

Criteria	JORC Code (2012) explanation	Commentary
Metallurgical factors or assumptions	• *The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.*	• Two 30 kg samples representative of low-grade mineralization and of high-grade mineralization were prepared and sent to Auralia Metallurgy in Perth for metallurgical testing. Preliminary beneficiation tests included size by assay analysis, comminution, gravity separation, flotation, magnetic separation and hydrometallurgy. • The purpose of the beneficiation testwork program was a simple sighter program to give an indication as to likely beneficiation routes that can be used and where future focus may lie on metallurgical flowsheet development. This metallurgical testwork is ongoing. • Both beneficiation and hydrometallurgical flowsheet and recovery assumptions have been made based on mineralogical similarities to other deposits which are at later stages of process development or are in production.
Environmental factors or assumptions	• *Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.*	Mineral exploration and mining activities in Mozambique must comply with the provisions of the Environmental Law (Law no 20/1997 of 1 October), the Mining Law (Law no 20/2014 of 18 August), and the Environmental Regulations for Mining Activities (Decree no 26/2004 of 20 August).. Exploration activities on LPP7573L are carried out under an Environmental Management Plan prepared by local environmental consultancy GeoAmbiente Lda. The Company's activities were subjected to an independent Environmental Audit which was validated the National Agency for Environmental Quality Control (AQUA) of Tete Province on 24 October 2022. As part of its Mining Concession application, the Company will prepare an EMP covering the proposed mining operations, and subsequently a Level A EIA. A review of the Project's main Environmental and Social risks was done by local environmental consultancy GeoAmbiente Lda (Jamal et al, 2023)

Criteria	JORC Code (2012) explanation	Commentary
Bulk density	• *Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.* • *The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.* • *Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.*	• Density was measured on 371 dry core samples. After reviewing available methods against the characteristics of the Monte Muambe cores, the following methods were used: o For competent cores, the Caliper Method was used on core sections cut at right angle to the core axis. The diameter of the core was measured using a caliper, and its lengths using a measuring tape. Samples were weighted on a scale having a 0.1 g accuracy. o For weathered cores with cracks, largely made of clay and/or limonite, which presented some swelling, the volume calculation was done using the nominal inner diameter of the coring bit. Samples were weighted on a scale having a 0.1 g accuracy. o The density of samples that were crumbling and had no integrity or competency was not measured. • During the Competent Person's representative's visit in August 2023, the density of 20 samples was rechecked, using a modified Caliper Method (to suit the fact that the cores were now half cores), and using the Saturated Immersion Method. The accuracy of the scale was also checked using reference weights. These checks confirmed the reliability of the original density database. • Conditional mean densities were assigned based on the interpreted weathering.

Target	Description	Interpreted Weathering	Assigned density
			Density t/m3
1	Soil	SO	1.80
	Very Weathered	VW	2.10
	Weathered	W	2.55
	Slightly weathered	SW	2.60
	Fresh	FR	2.70
4	Soil	SO	1.80
	Very Weathered	VW	2.10
	Weathered	W	2.55
	Slightly weathered	SW	2.60
	Fresh	FR	2.70

Criteria	JORC Code (2012) explanation	Commentary

Classification	• *The basis for the classification of the Mineral Resources into varying confidence categories.*
	• *Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).*
	• *Whether the result appropriately reflects the Competent Person's view of the deposit.*
		• Classification of the Mineral Resource incorporated confidence in the:
		  • Available geological and sample data
		  • The geological knowledge and interpretation
		  • The confidence in the demonstrated geological and grade continuity
		  • Confidence in the final Mineral Resource estimate; and
		  • Results of the open pit optimization.
		• All relevant factors have been taken into account.
		• The resource categories accurately reflect the confidence of the Competent Person in the deposit.

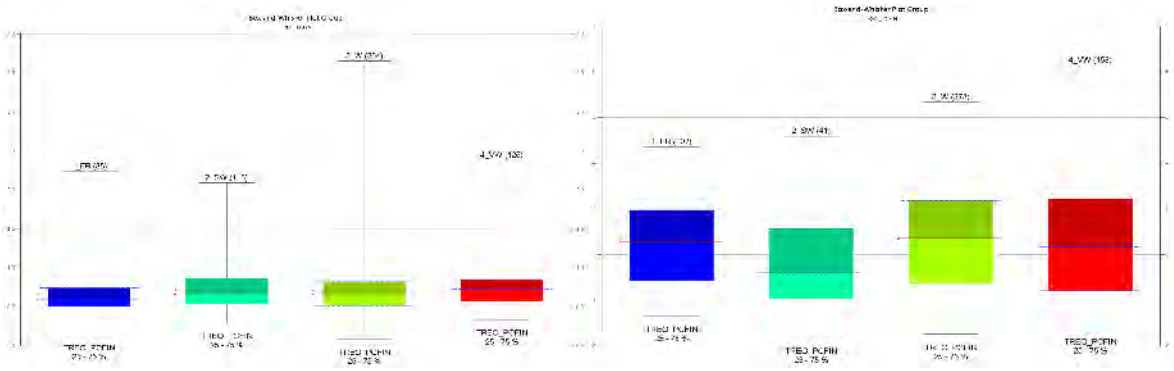
Audits or reviews	• *The results of any audits or reviews of Mineral Resource estimates.*	• The 2023 Mineral Resource estimate has been reviewed internally. No external review has been undertaken.
Discussion of relative accuracy/ confidence	• *Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.* • *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.* • *These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	• The 2023 Mineral Resource estimate is a global estimate with confidence being commensurate with the Mineral Resource classification (primarily Inferred and Indicated Mineral Resource) and drill hole spacing. • The 2023 Monte Muambe Mineral Resource is a maiden resource and it has no production history.

Appendix C

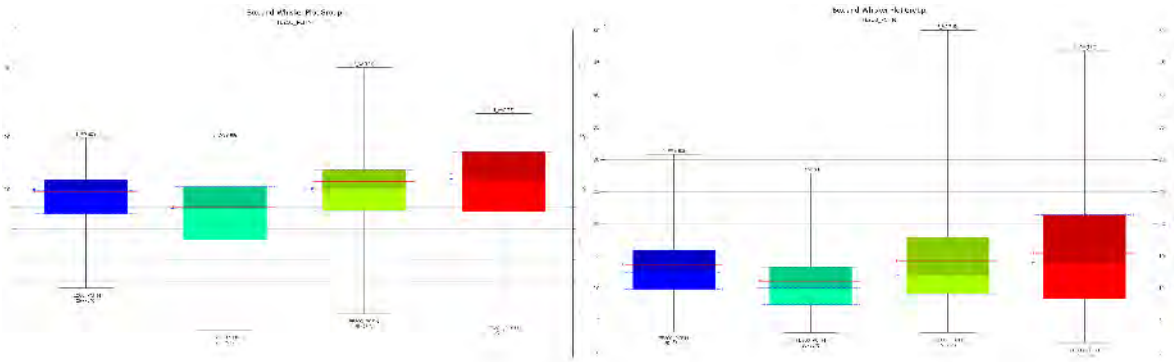
Box and whisker plots; key grade variables

Target 1 Box and whisker plots by weathering (left ESTDOM T1_01, right ESTDOM T1_11)

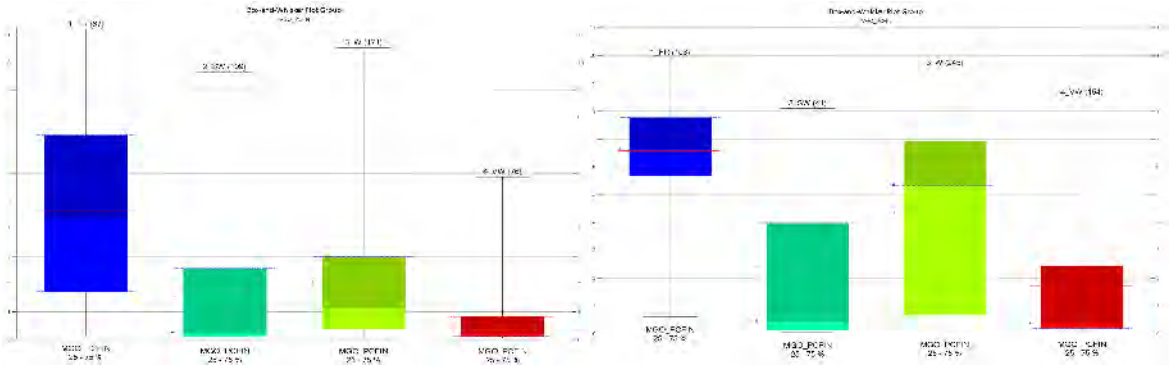
TREO %



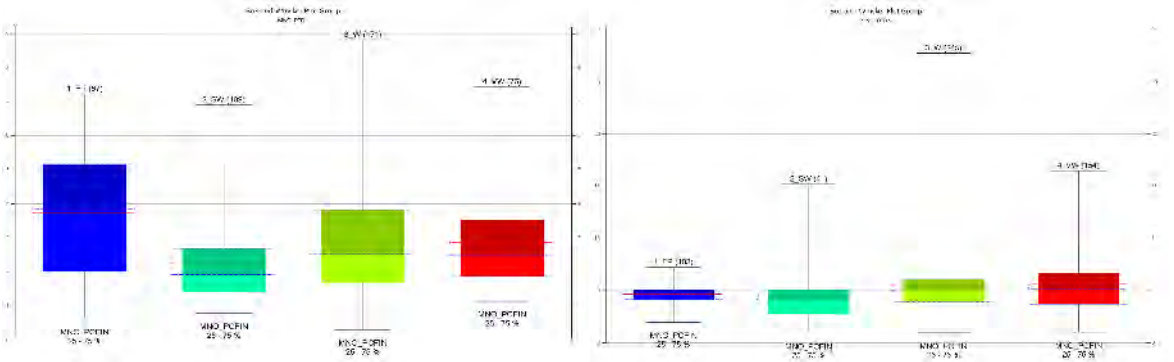
Fe_2O_3 %



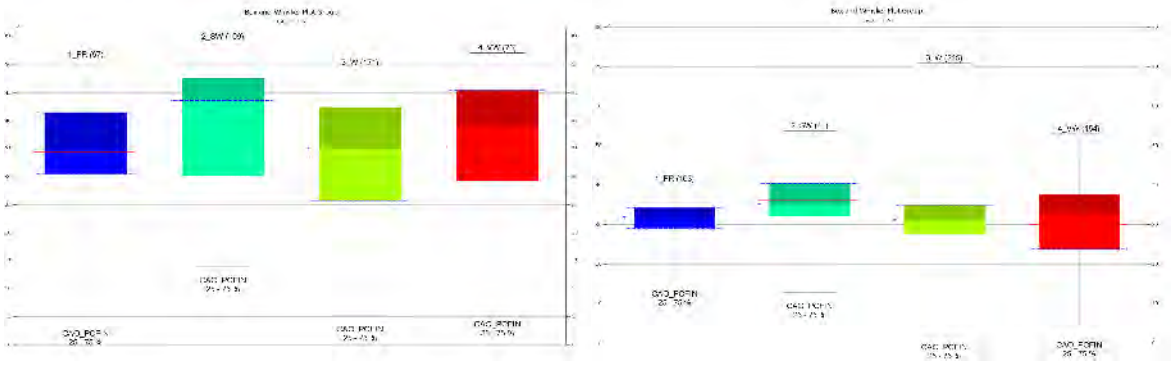
MgO %



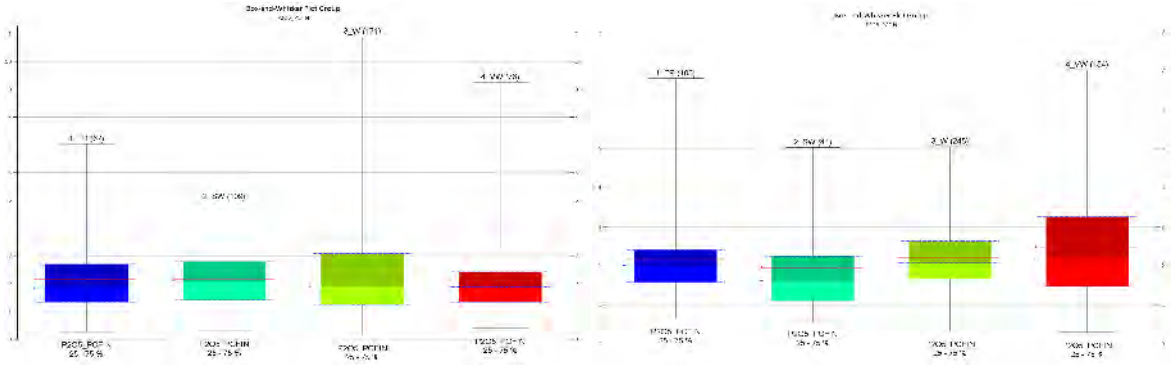
MnO %



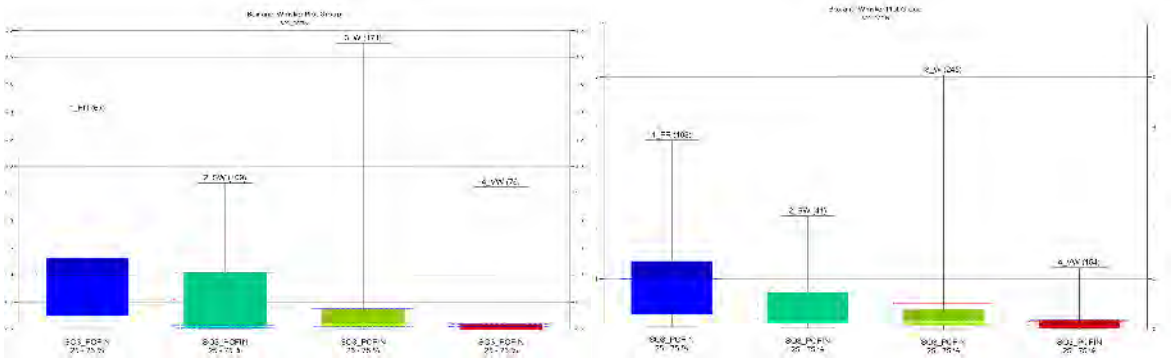
CaO %



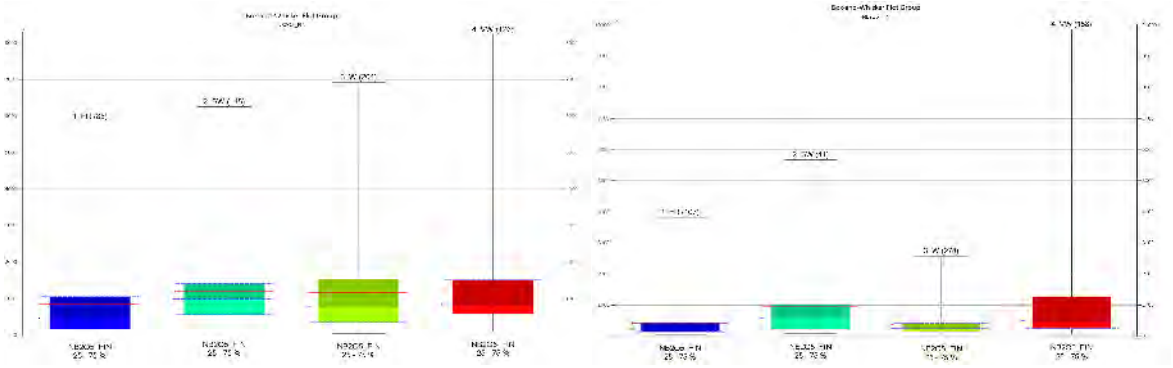
P_2O_5 %



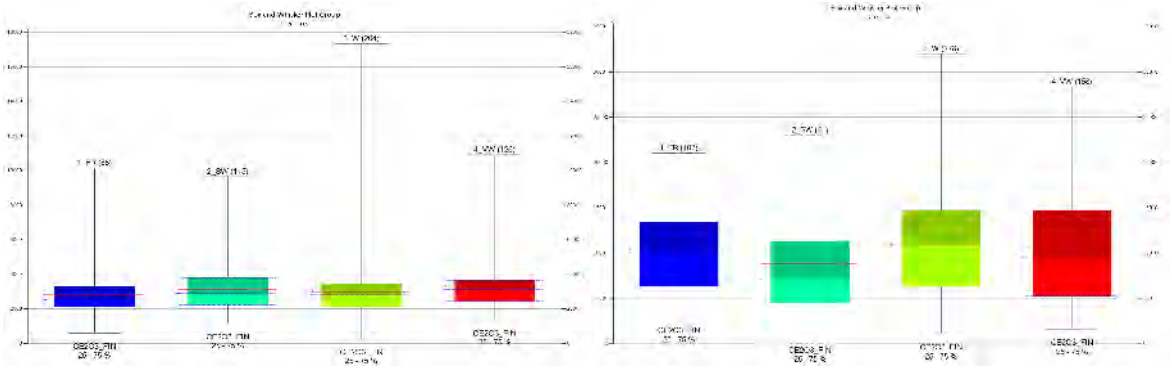
SO_3 %



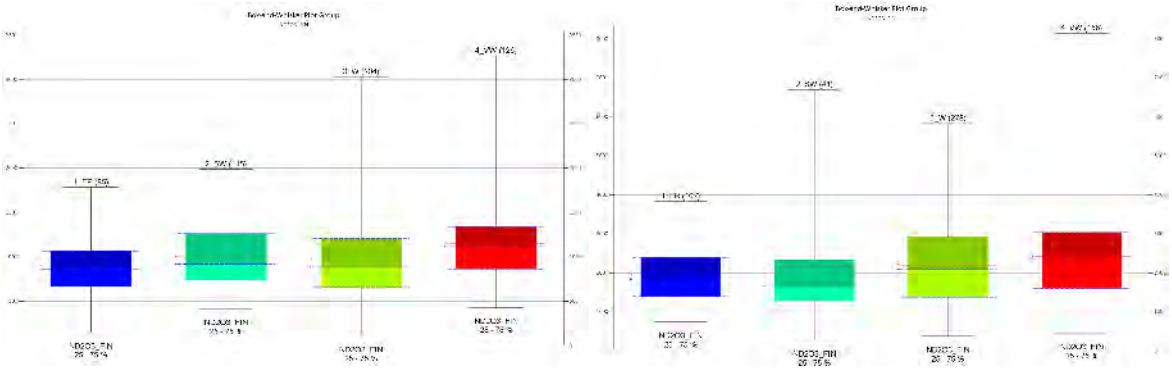
Nb_2O_5 ppm



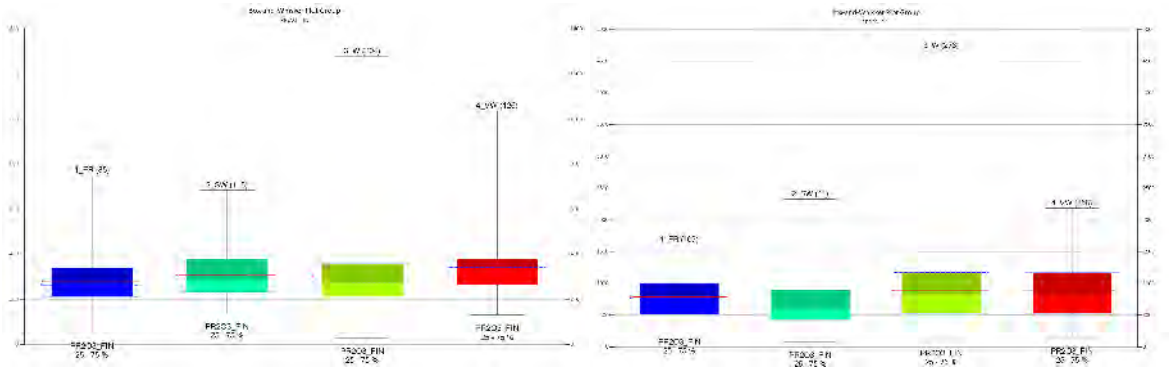
Ce_2O_3 ppm



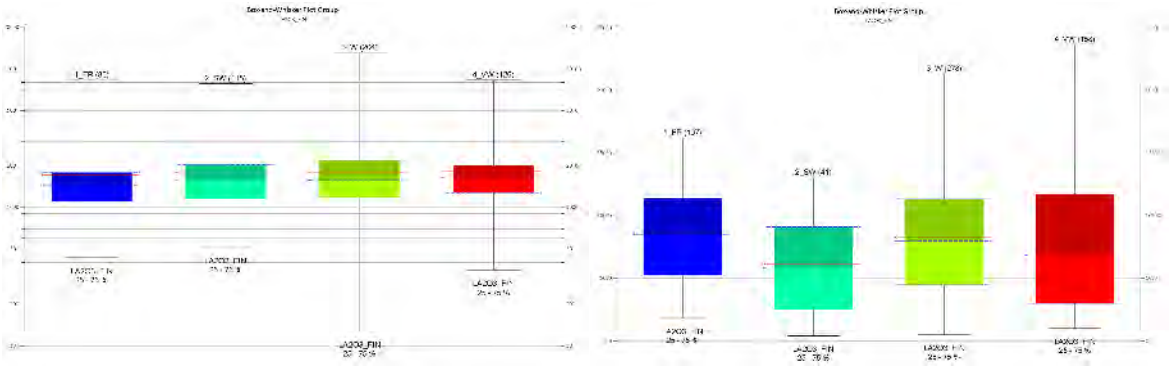
Nd_2O_3 ppm



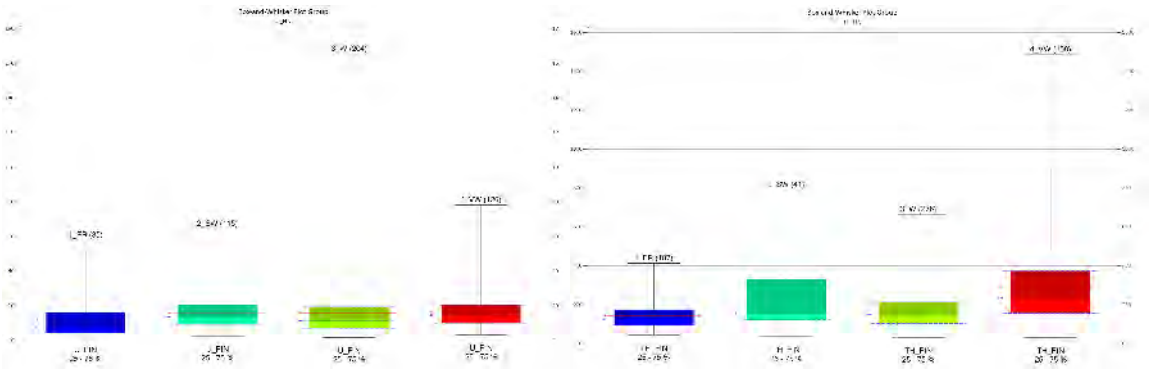
Pr_2O_3 ppm



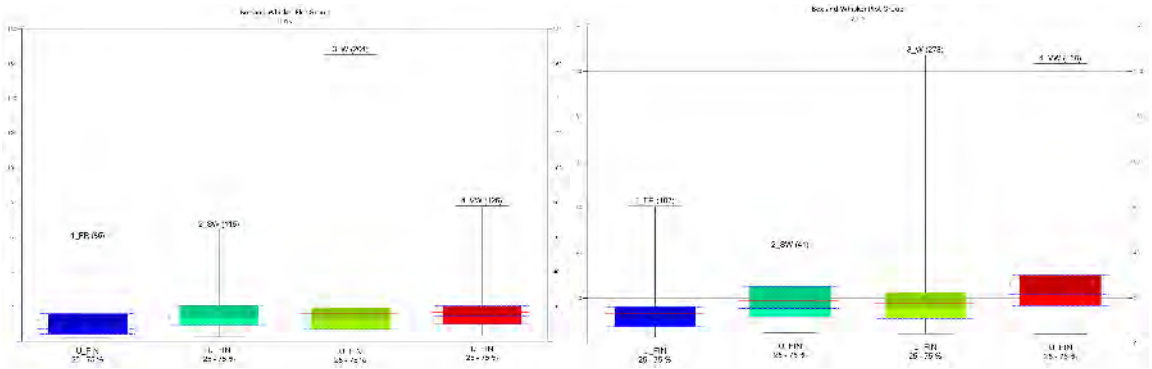
La_2O_3 ppm



Th ppm

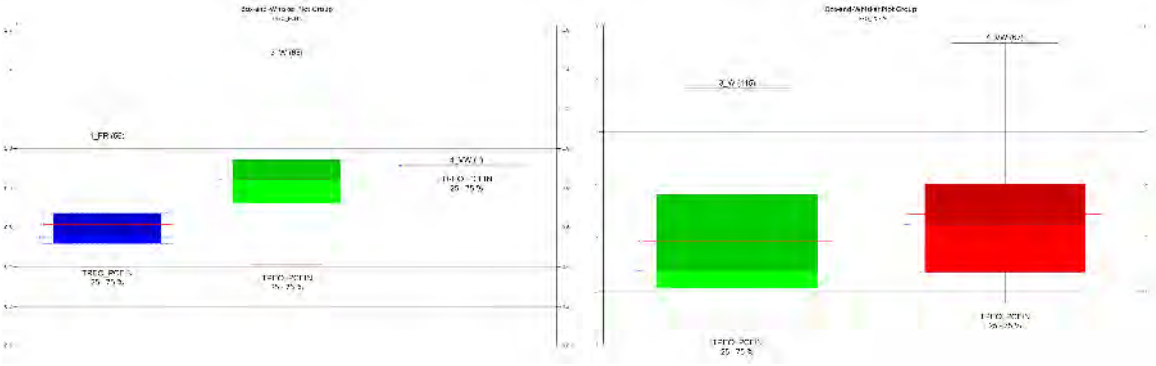


U ppm

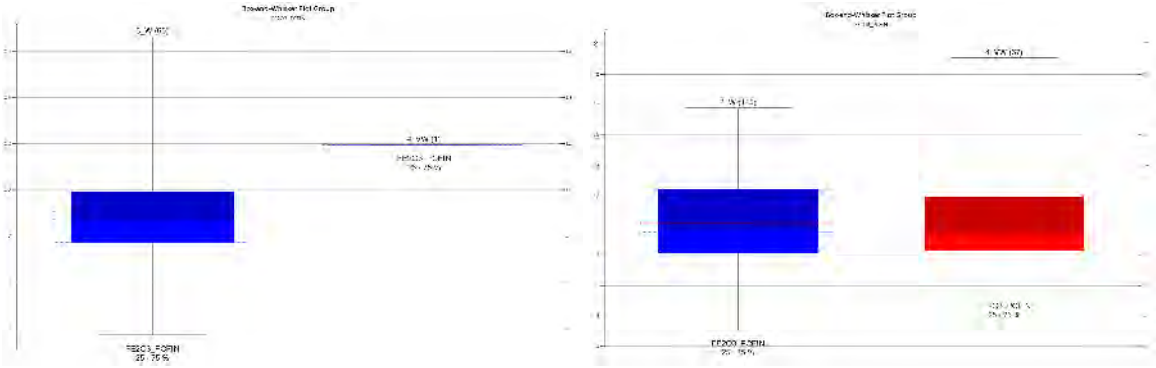


Target 4 Box and whisker plots by weathering (left ESTDOM T1_01, right ESTDOM T1_11)

TREO %

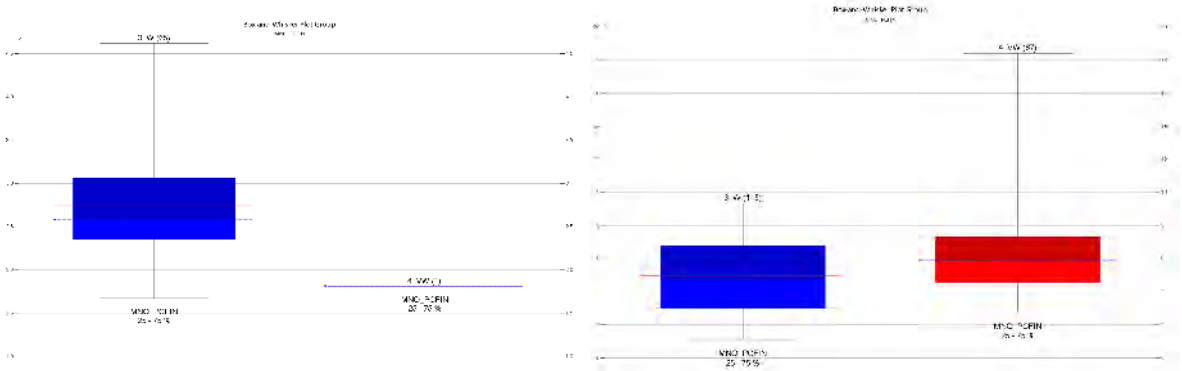


Fe_2O_3 %

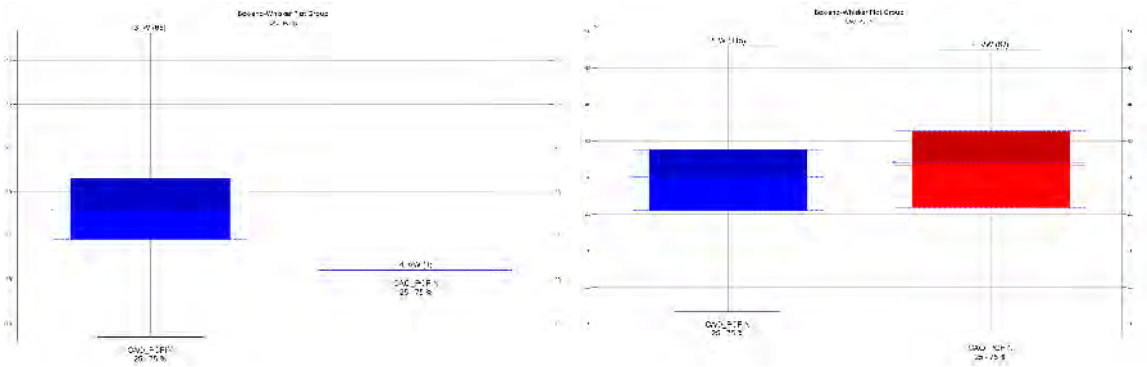


MgO %

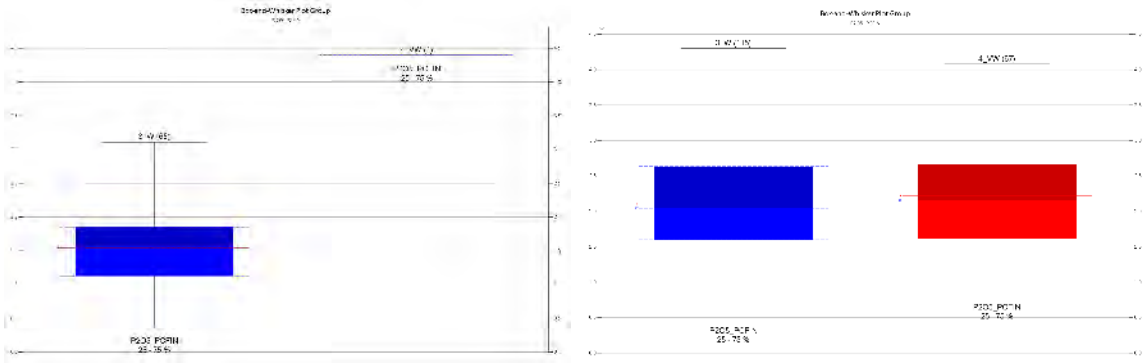
MnO %



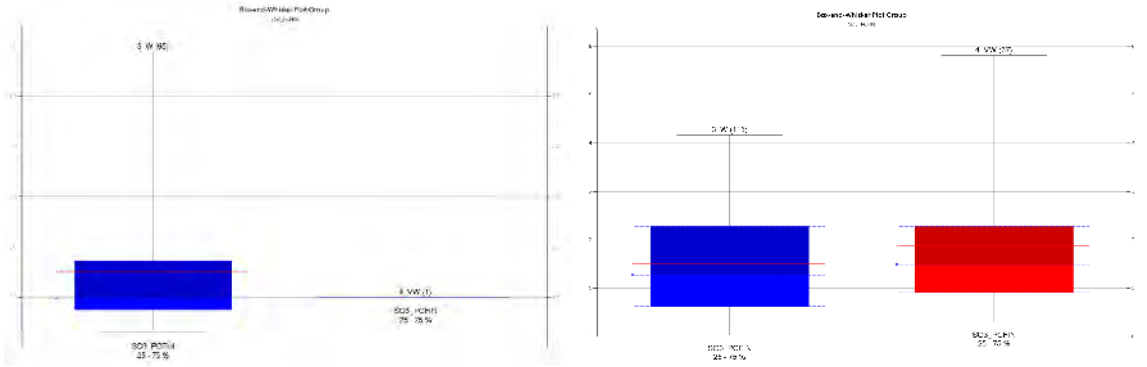
CaO %



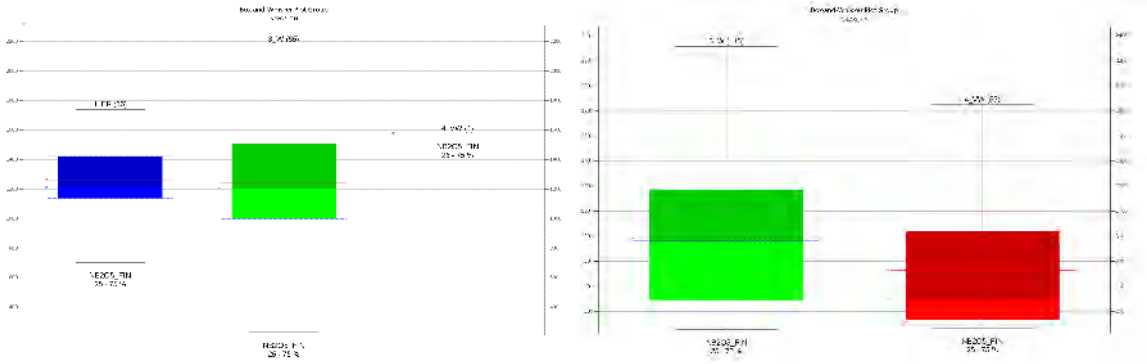
P_2O_5 %



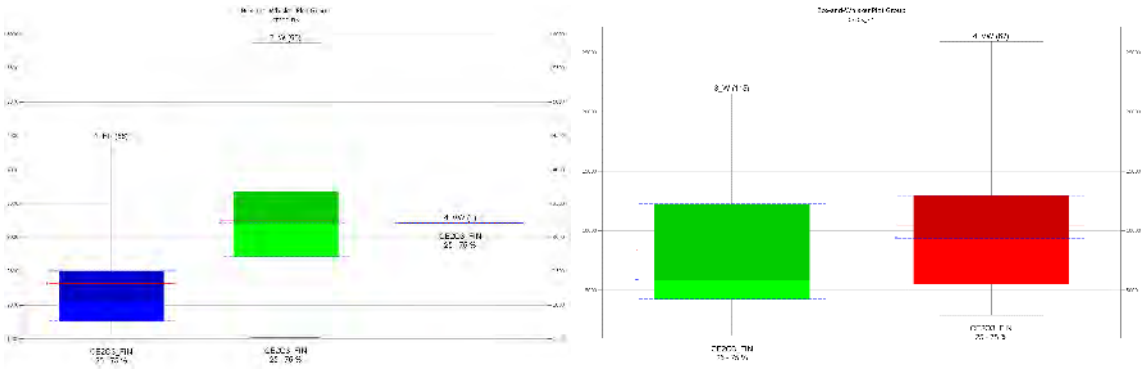
SO_3 %



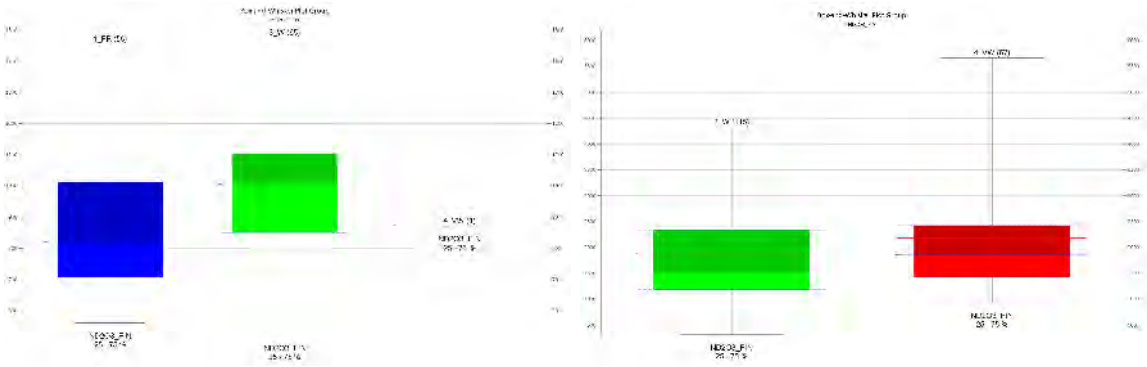
Nb_2O_5 ppm



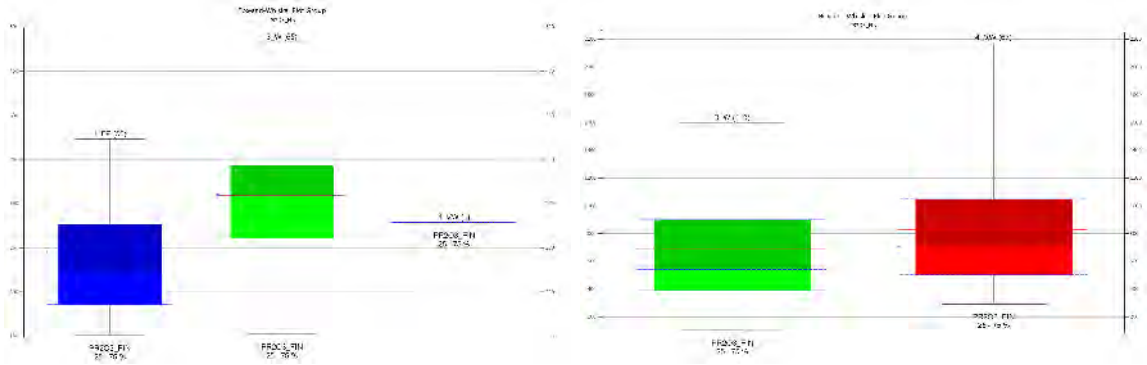
Ce_2O_3 ppm



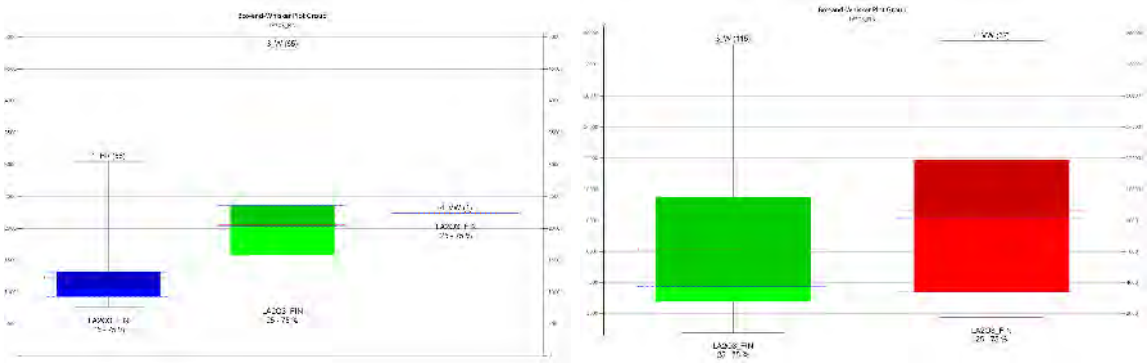
Nd_2O_3 ppm



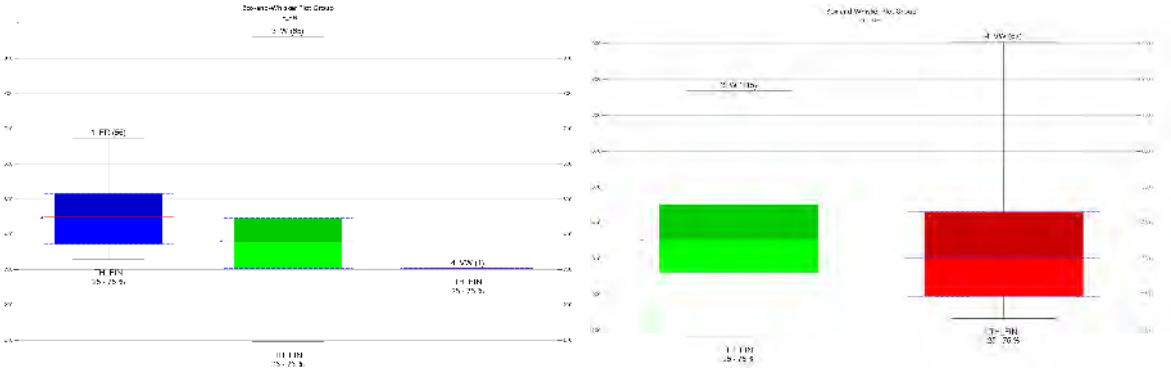
Pr_2O_3 ppm



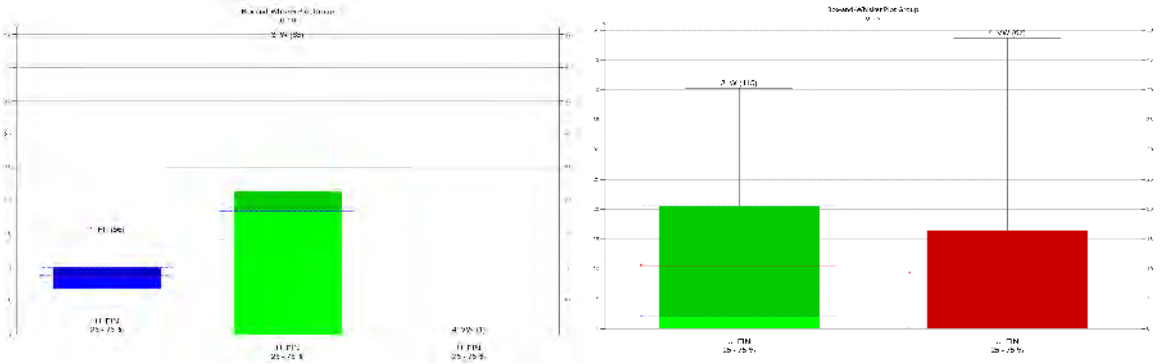
La_2O_3 pp



Th ppm



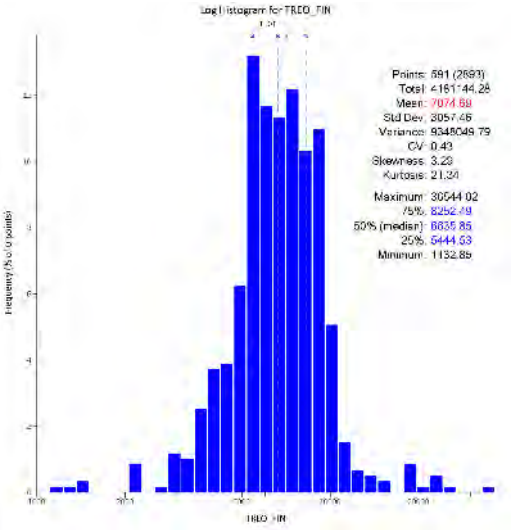
U ppm

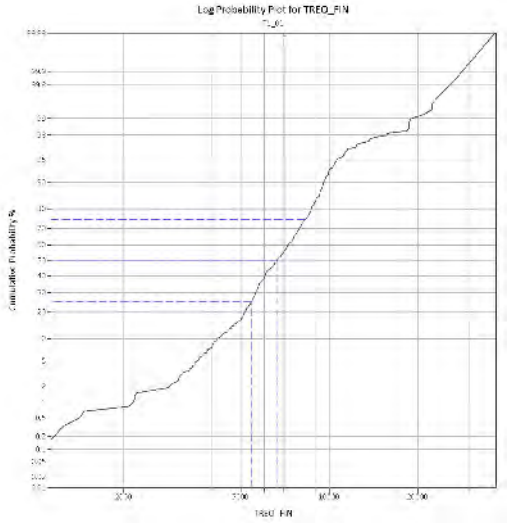


Appendix D
Grade distribution by domain

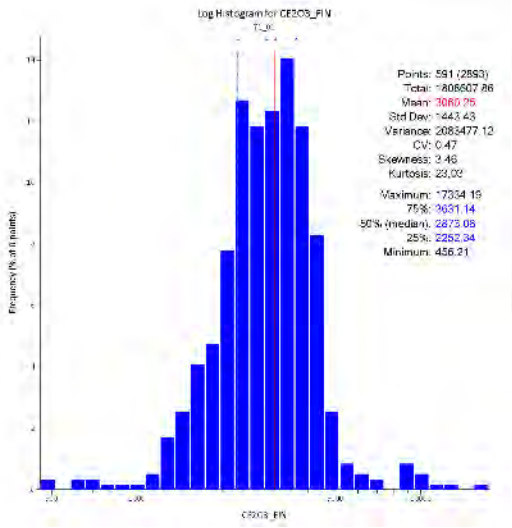
Target 1 Log-plot histogram and probability plots 0.5 to 1.0% TREO domain (ESTDOM T1_01)

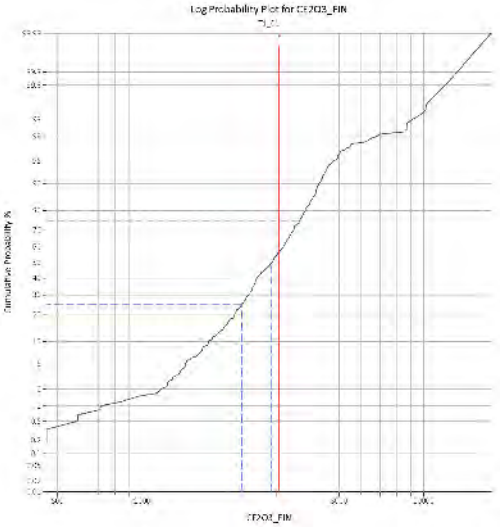
TREO



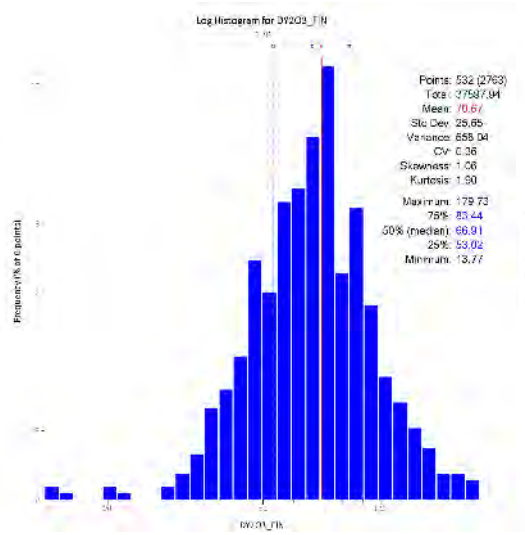


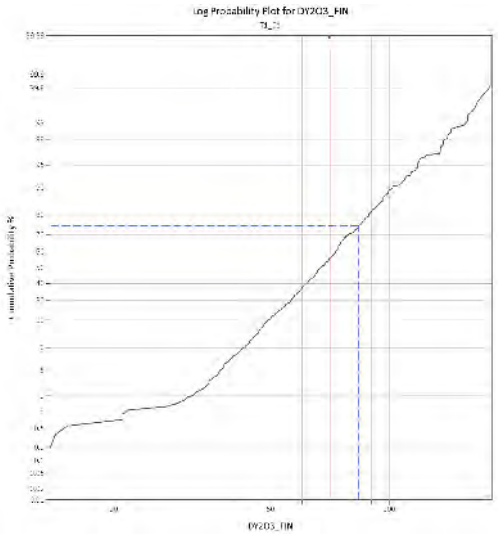
Ce_2O_3



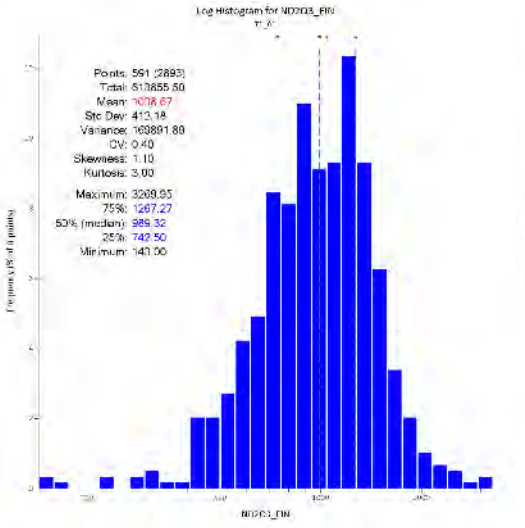


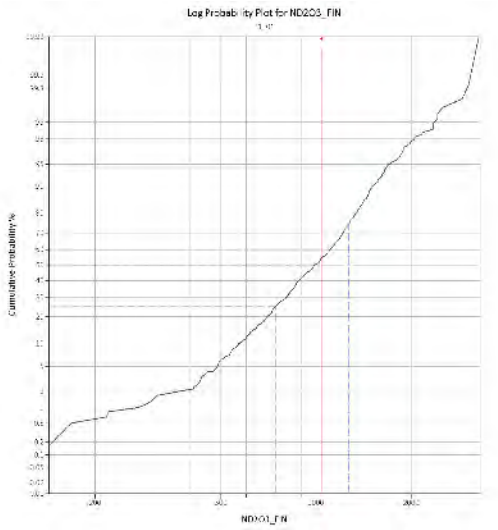
Dy_2O_3



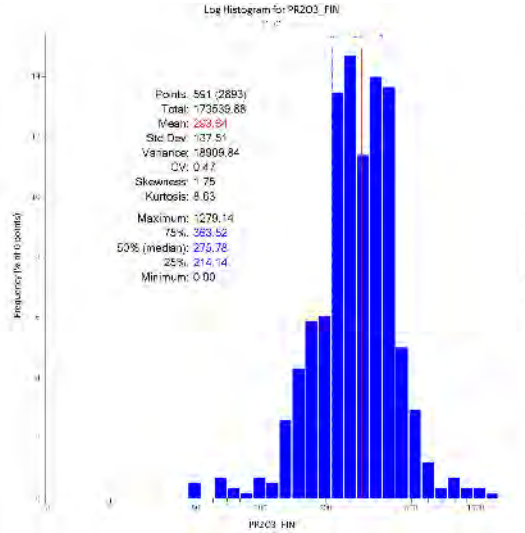


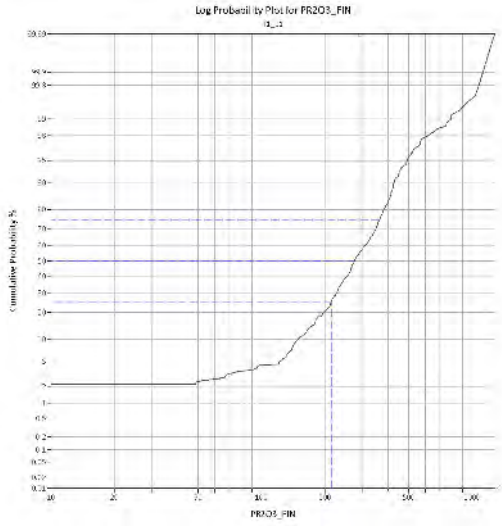
Nd_2O_3



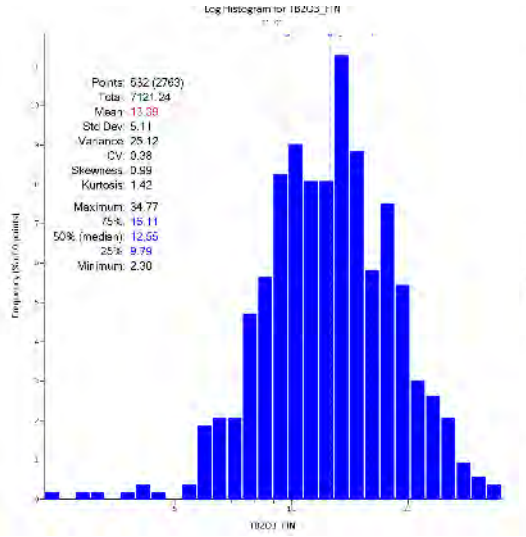


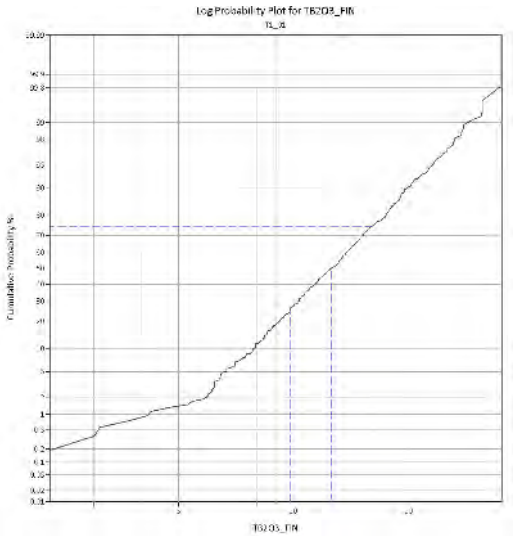
Pr_2O_3



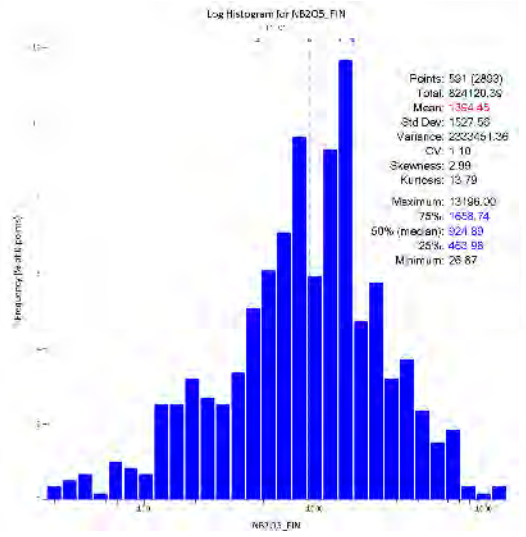


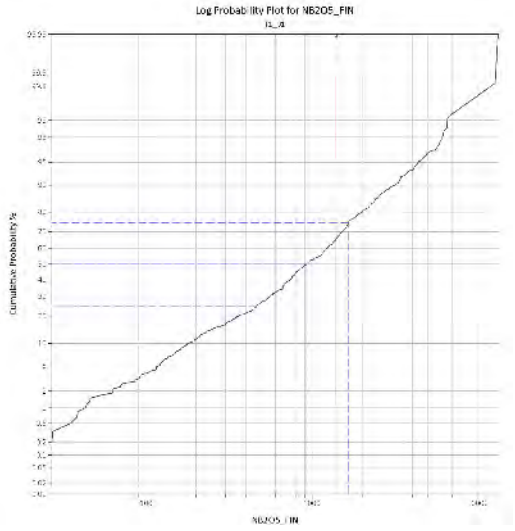
Tb_2O_3



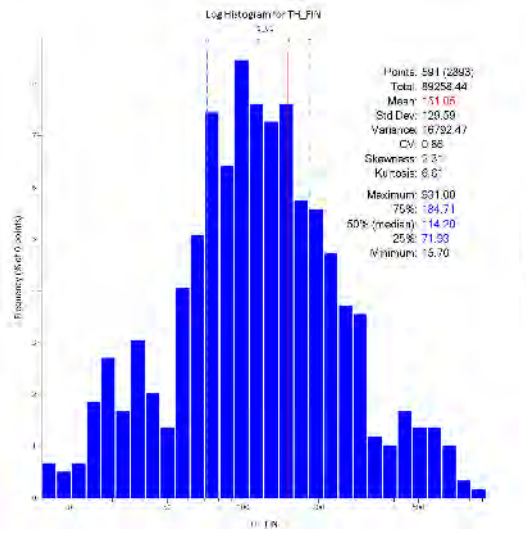


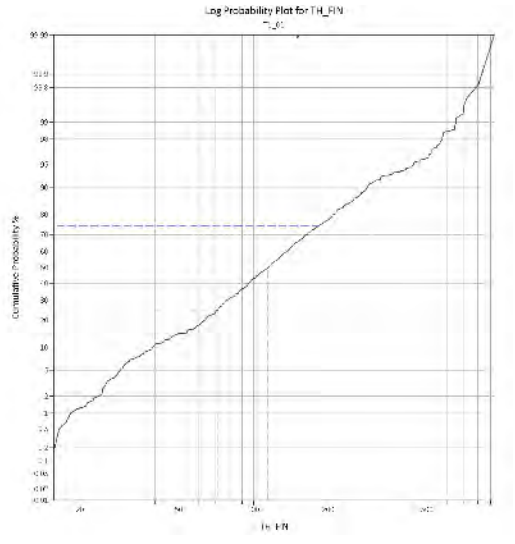
Nb_2O_5



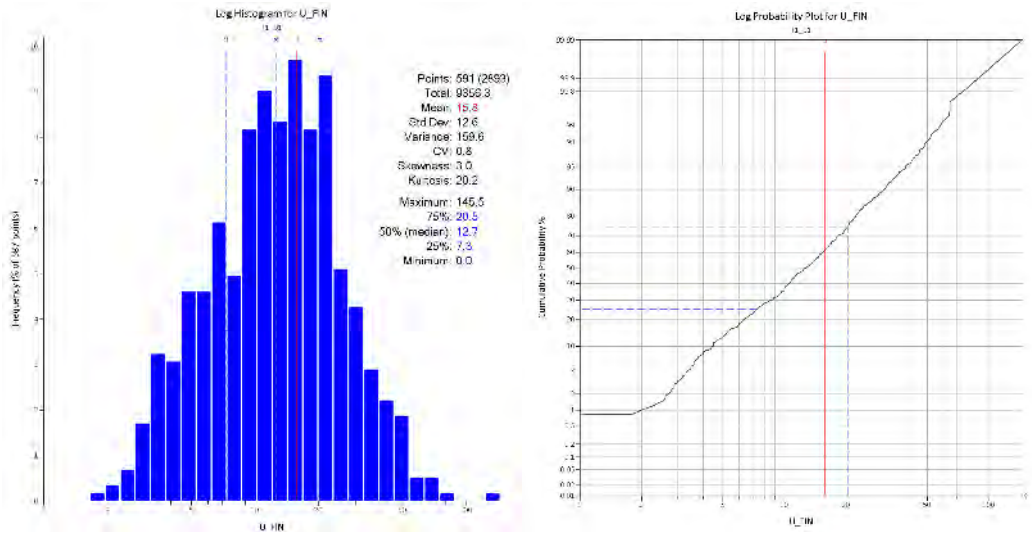


Th



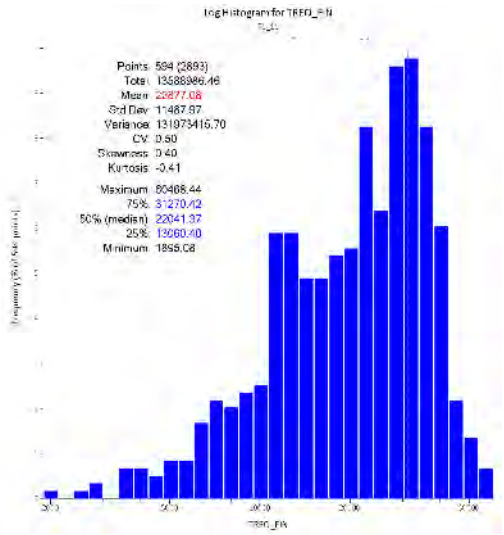


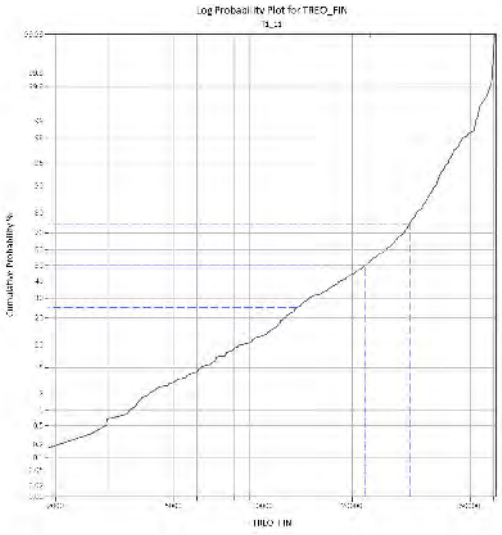
U


Log Histogram for U_FIN
Points: 591 (2693)
Total: 9358.3
Mean: 15.8
Std Dev: 12.6
Variance: 159.6
CV: 0.8
Skewness: 3.0
Kurtosis: 20.2
Maximum: 145.5
75%: 20.5
50% (median): 12.7
25%: 7.3
Minimum: 0.0
U_FIN
Log Probability Plot for U_FIN
U_FIN

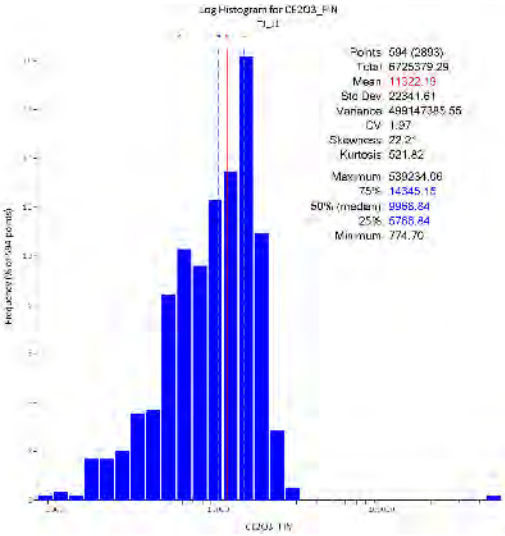
Target 1 Log-plot histogram and probability plots 0.5 to 1.0% TREO domain (ESTDOM T1_11)

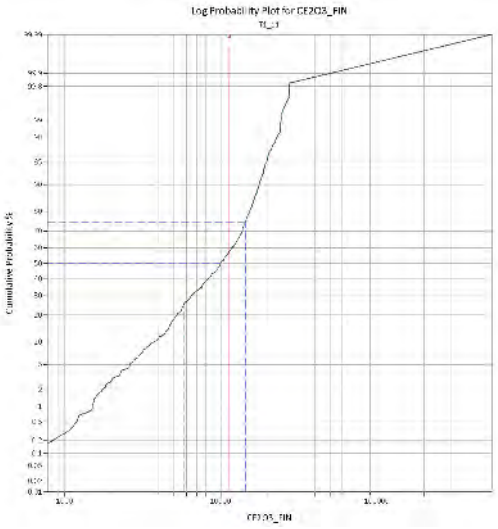
TREO



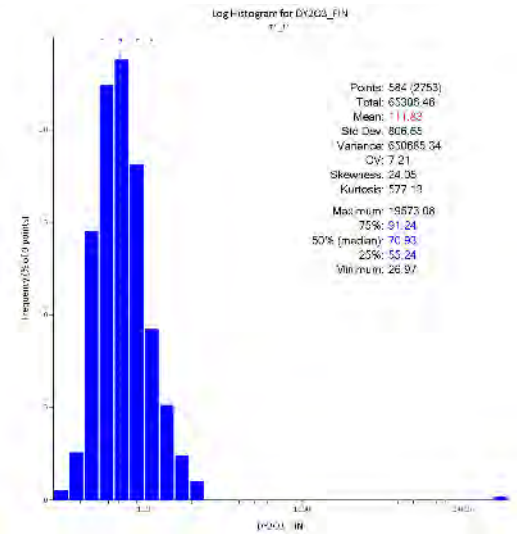


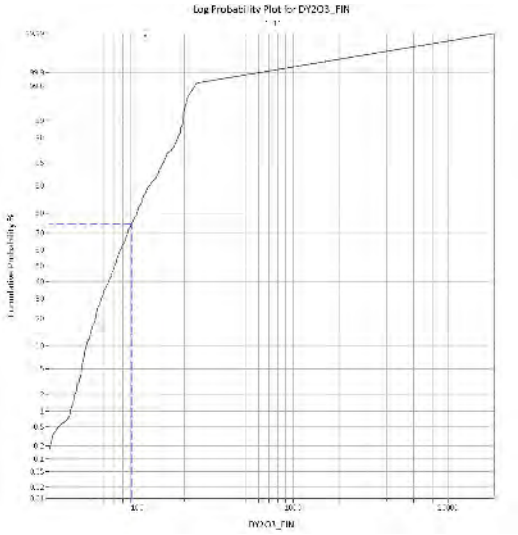
Ce_2O_3



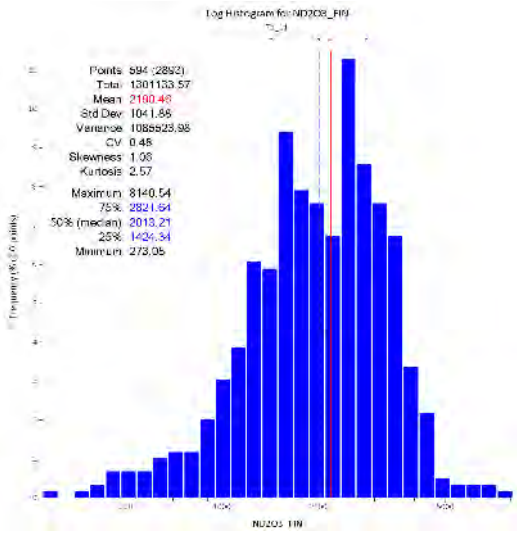


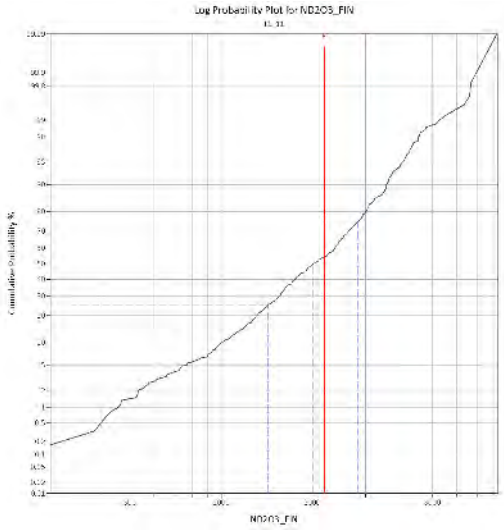
Dy_2O_3



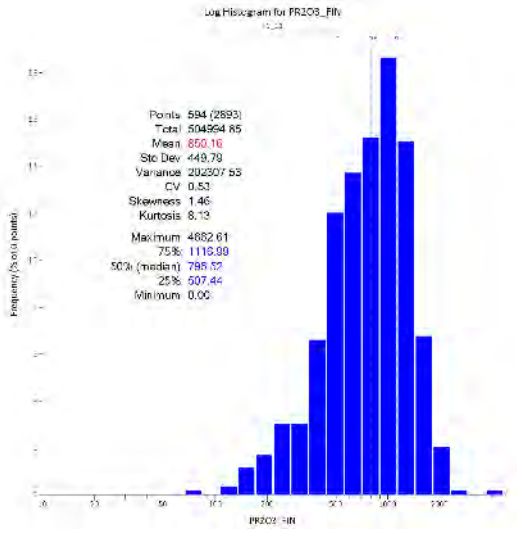


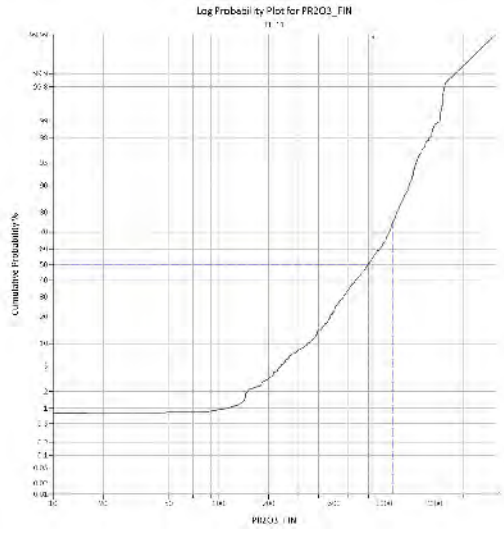
Nd_2O_3



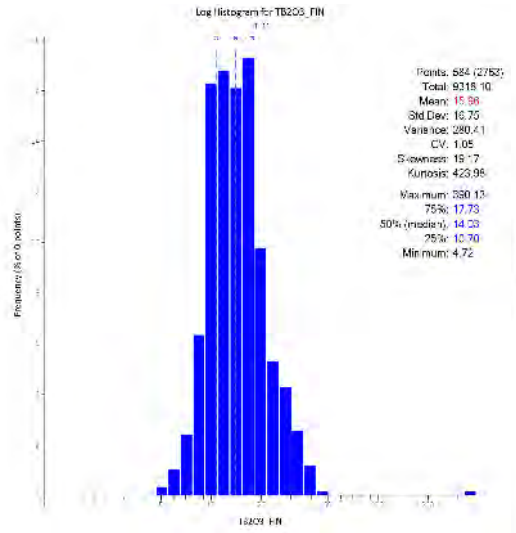


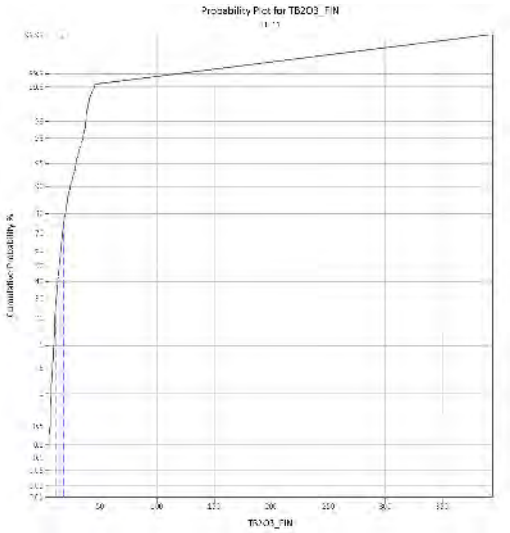
Pr_2O_3



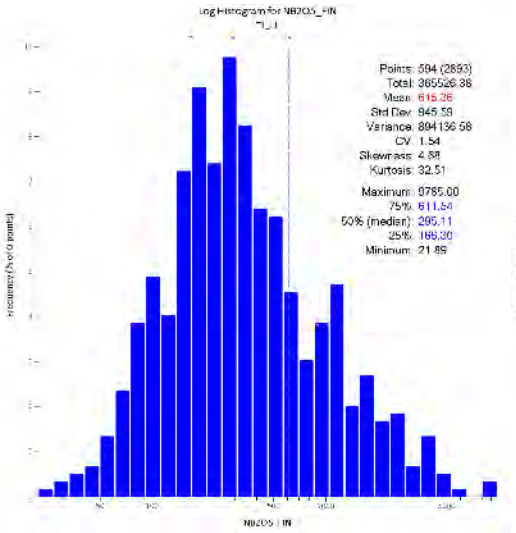


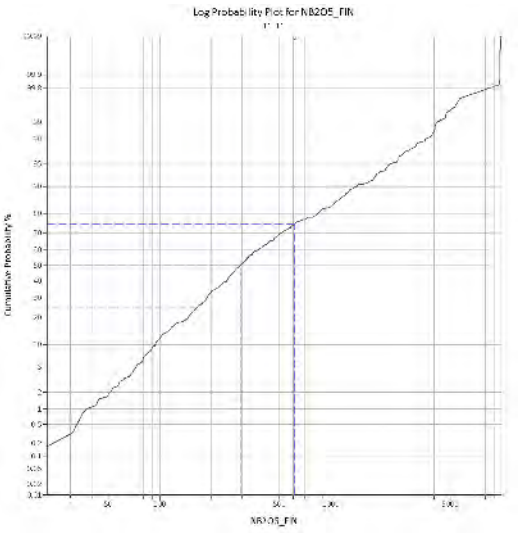
Tb_2O_3



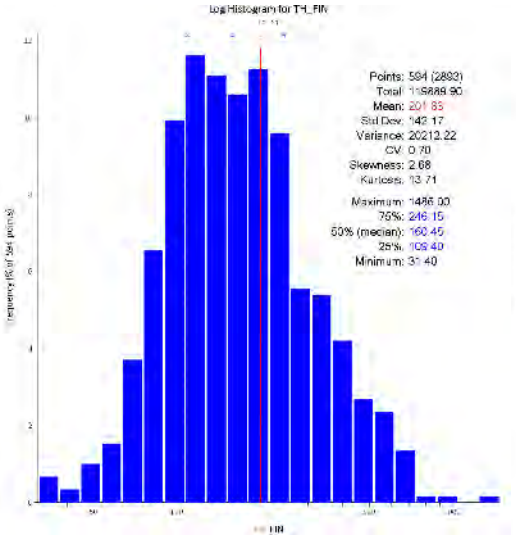


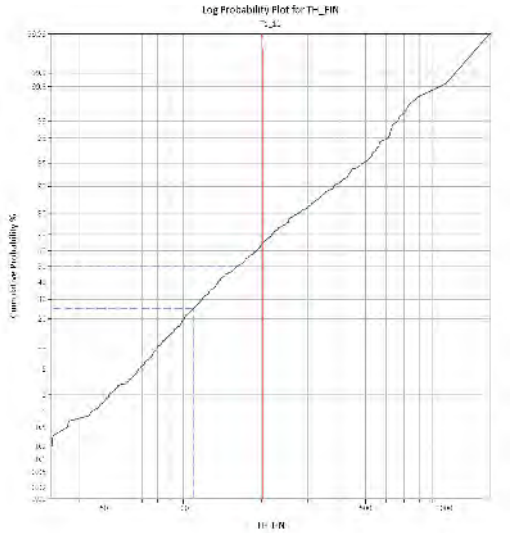
Nb_2O_5



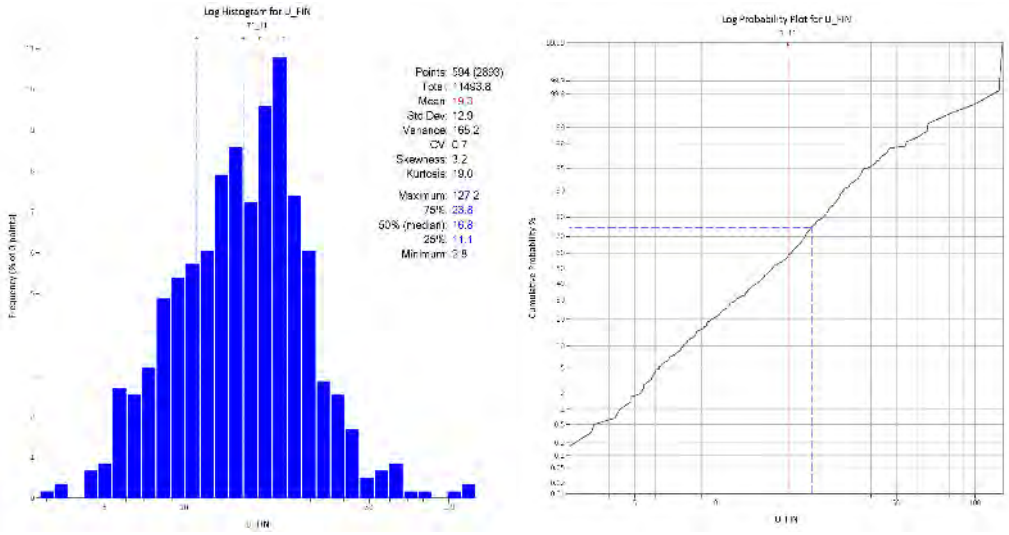


Th



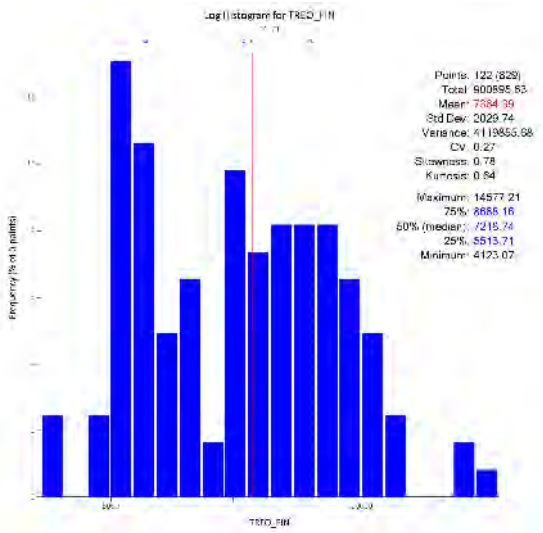


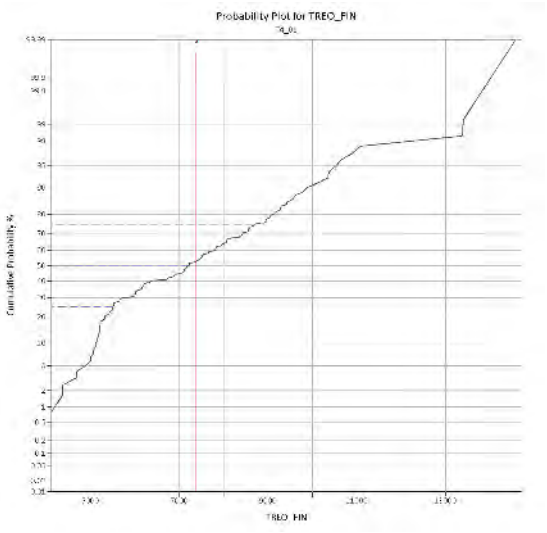
U


Log Histogram for U_PPM
Points: 594 (2893)
Total: 11493.8
Mean: 19.3
Std Dev: 12.9
Variance: 165.2
CV: 0.7
Skewness: 3.2
Kurtosis: 19.0
Maximum: 127.2
75%: 23.8
50% (median): 16.8
25%: 11.1
Minimum: 2.8
Frequency (% of 0 plotted)
U_PPM
Log Probability Plot for U_PPM
Cumulative Probability %
U_PPM

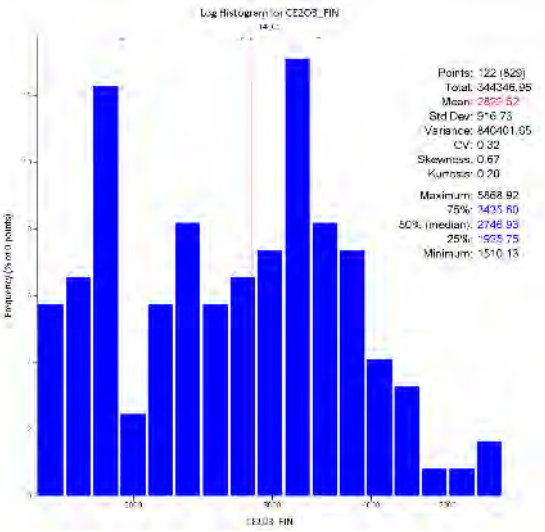
Target 4 Log-plot histogram and probability plots 0.5 to 1.0% TREO domain (ESTDOM T4_01)

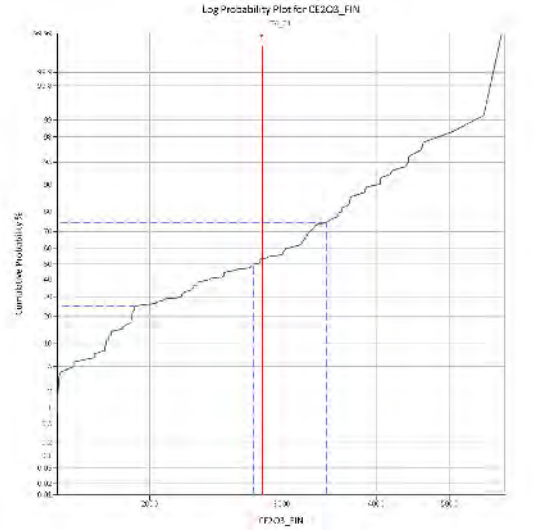
TREO



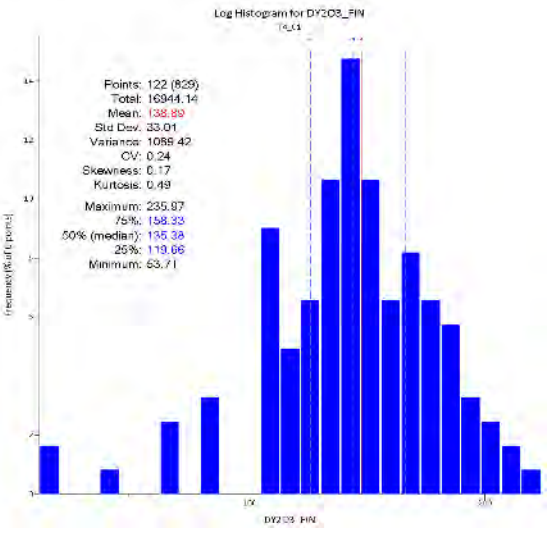


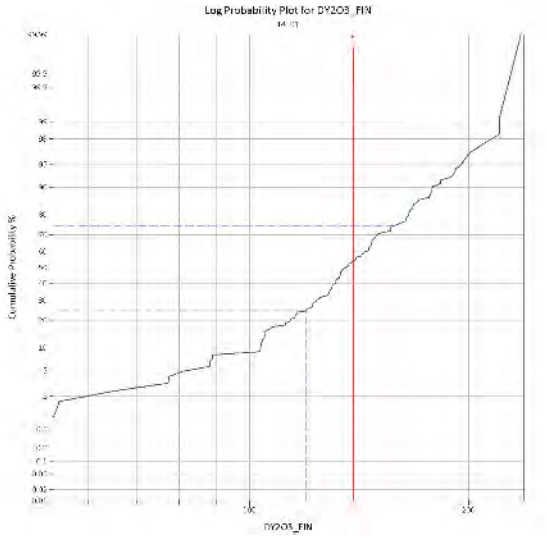
Ce2O3



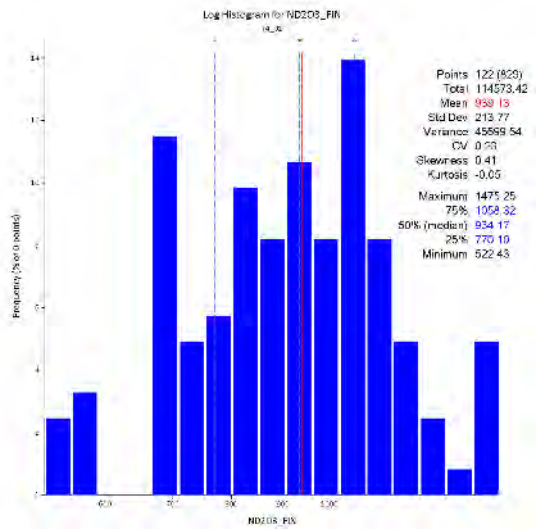


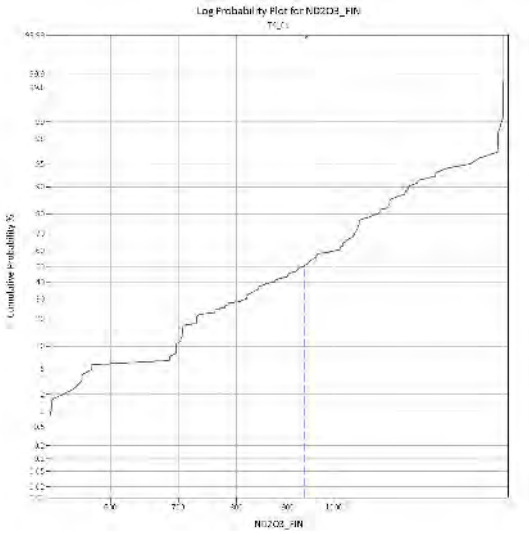
DY2O3



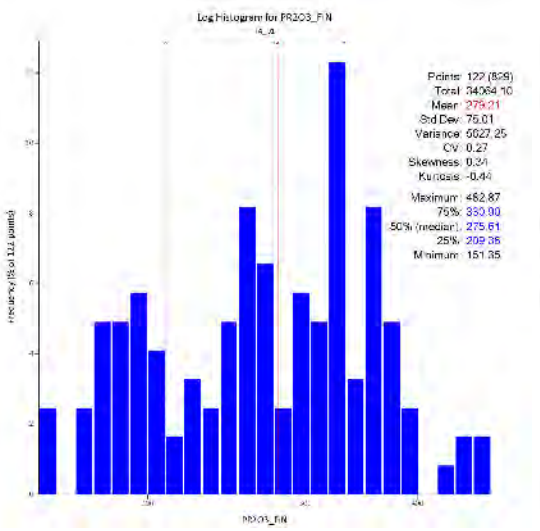


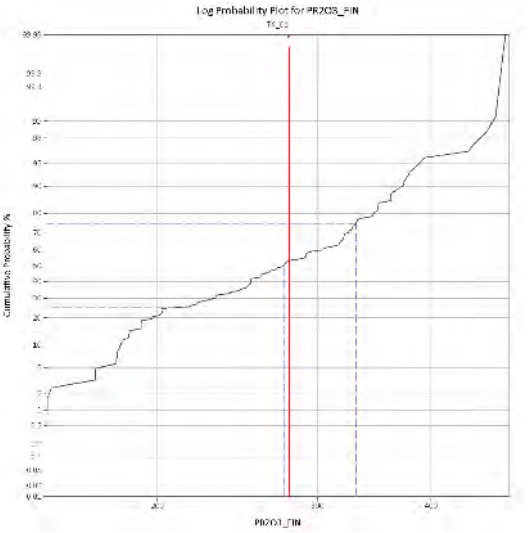
Nd2O3


Points 122 (829)
Total 114573.42
Mean 938.13
Std Dev 213.77
Variance 45689.54
CV 0.23
Skewness 0.41
Kurtosis -0.05
Maximum 1475.25
75% 1058.32
50% (median) 934.17
25% 770.19
Minimum 522.43

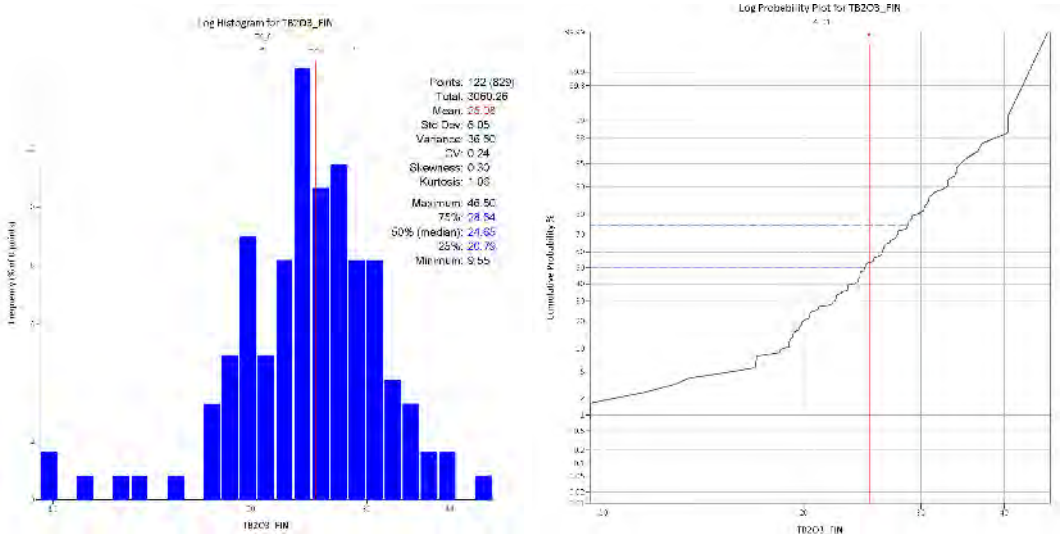


Pr2O3

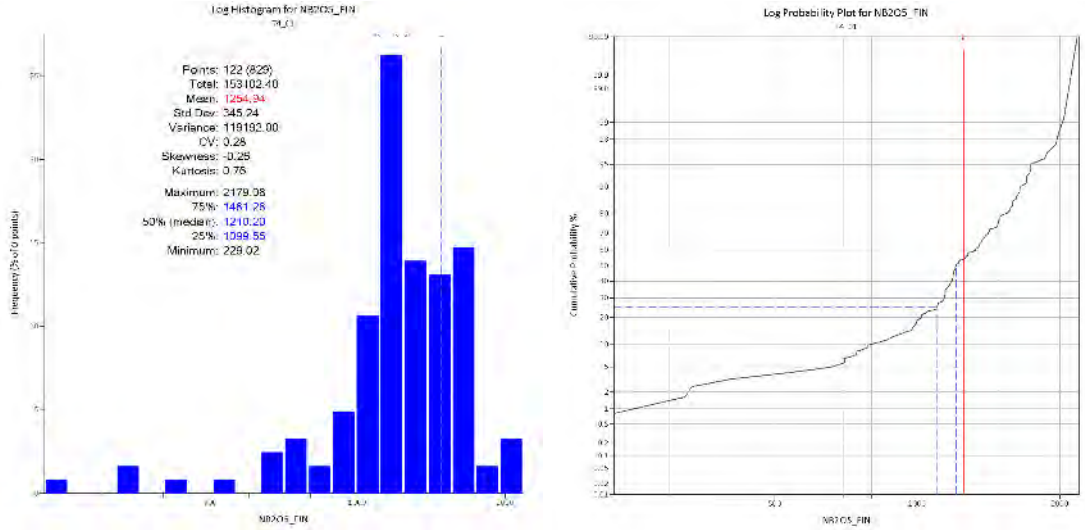

Points 122 (829)
Total 34064.10
Mean 279.21
Std Dev 75.01
Variance 5627.25
CV 0.27
Skewness 0.34
Kurtosis -0.44
Maximum 482.87
75% 330.90
50% (median) 275.61
25% 209.36
Minimum 151.35



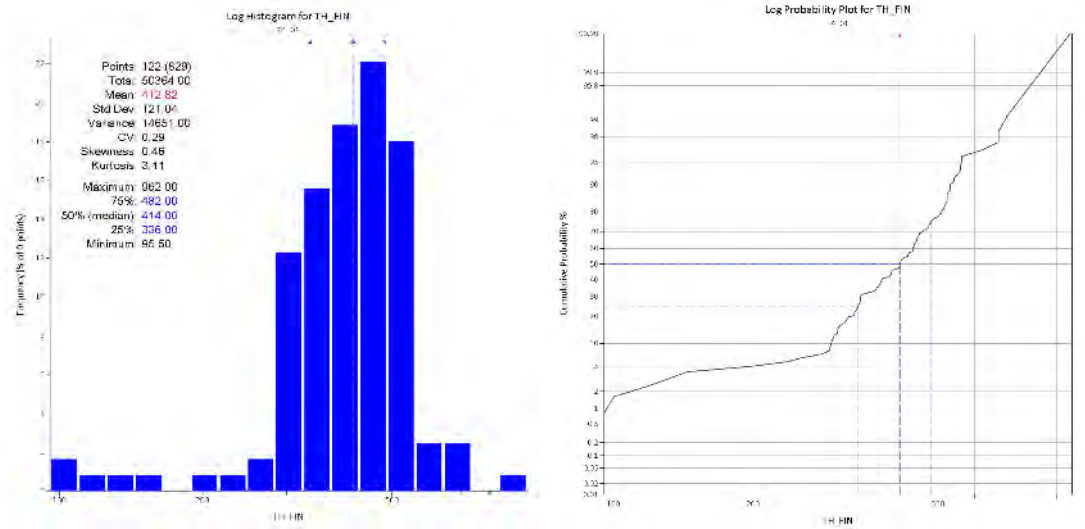
Tb2O3



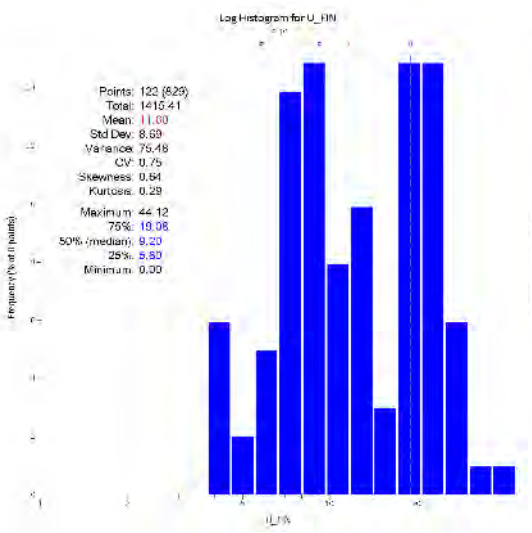
Nb2O5

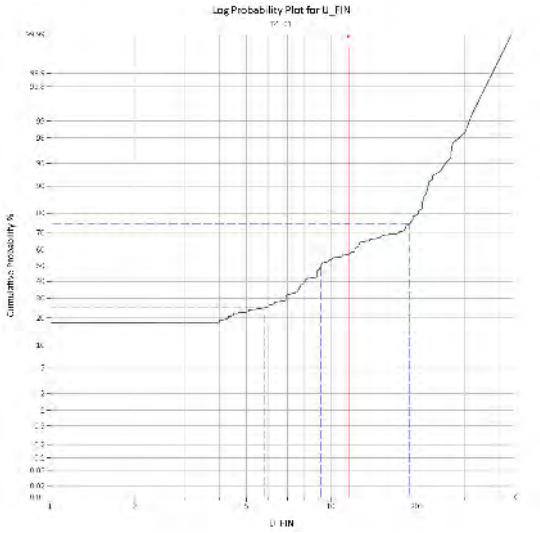


Th



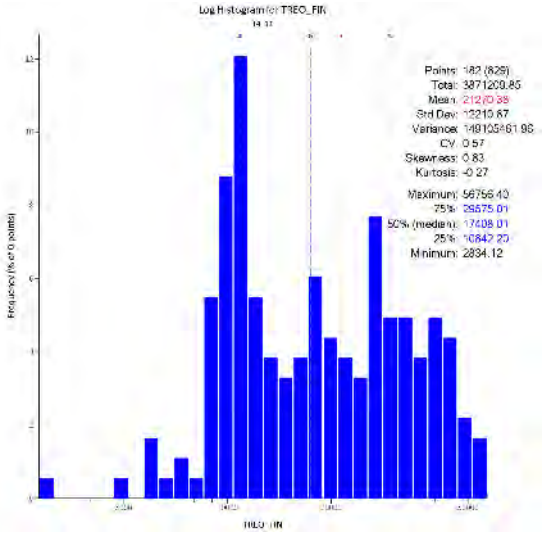
U

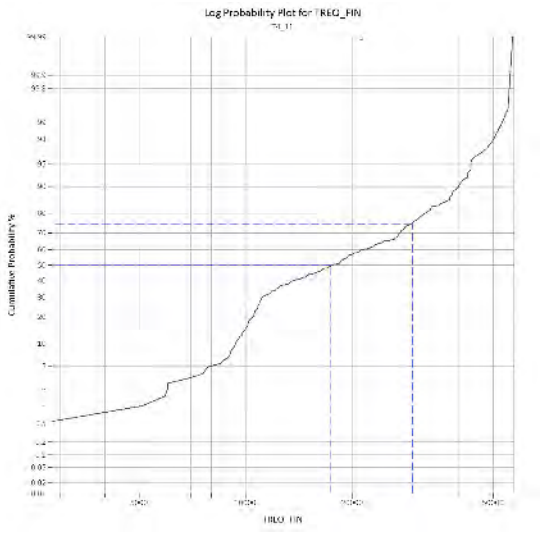

Log Histogram for U_PPM
Points: 123 (629)
Total: 1415.41
Mean: 11.00
Std Dev: 8.69
Variance: 75.48
CV: 0.75
Skewness: 0.64
Kurtosis: 0.29
Maximum: 44.12
75%: 16.08
50% (median): 9.20
25%: 5.80
Minimum: 0.00
U_PPM


Log Probability Plot for U_PPM
U_PPM

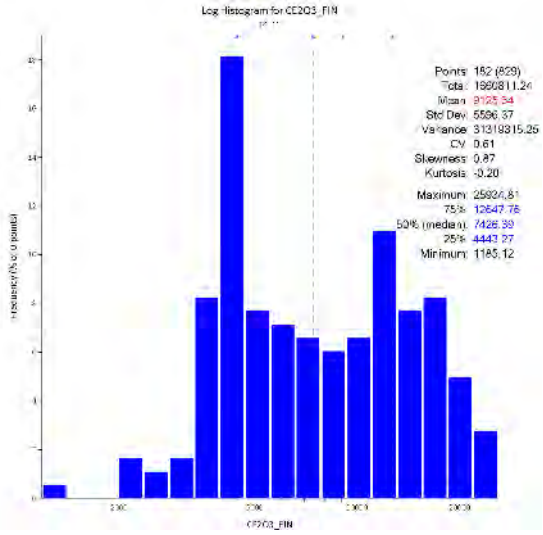
Appendix 3d – Target 4 Log-plot histogram and probability ≥1.0% TREO domain (ESTDOM T4_11)

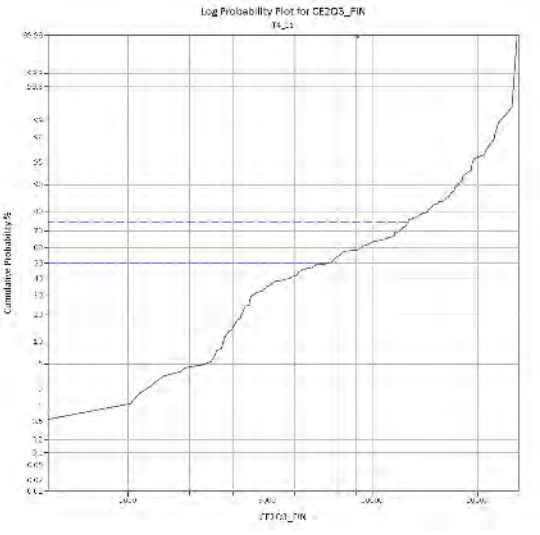
TREO



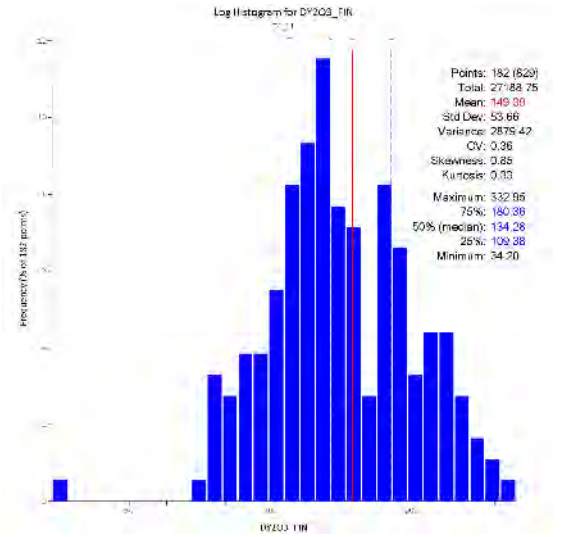


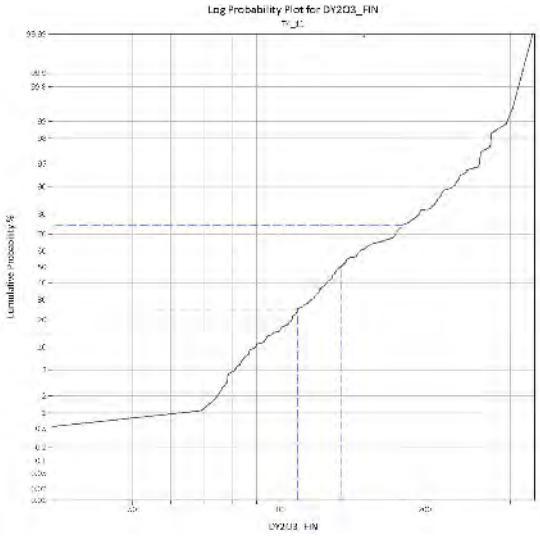
Ce2O3



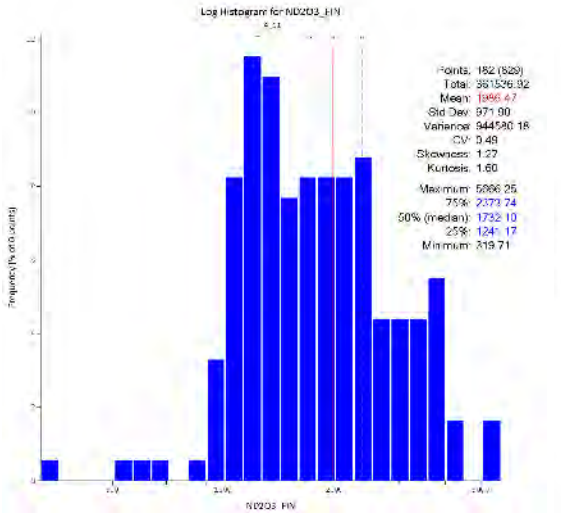


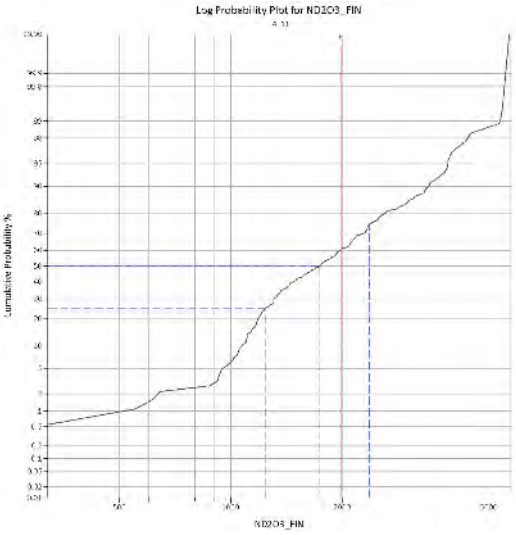
DY2O3



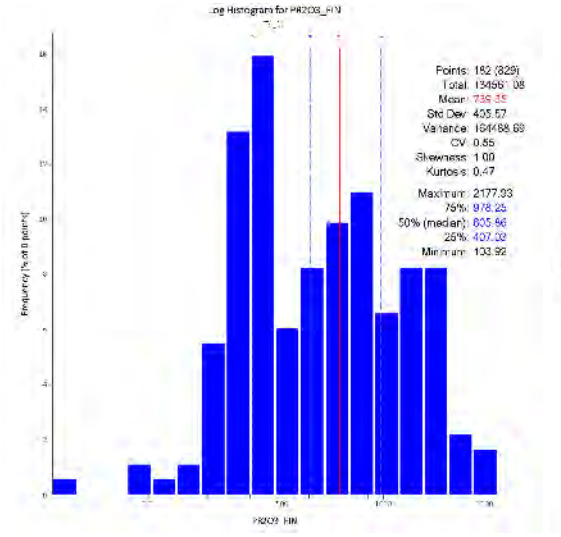


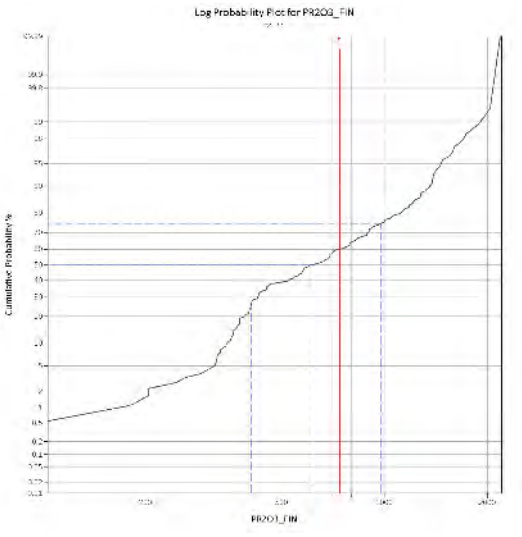
Nd2O3



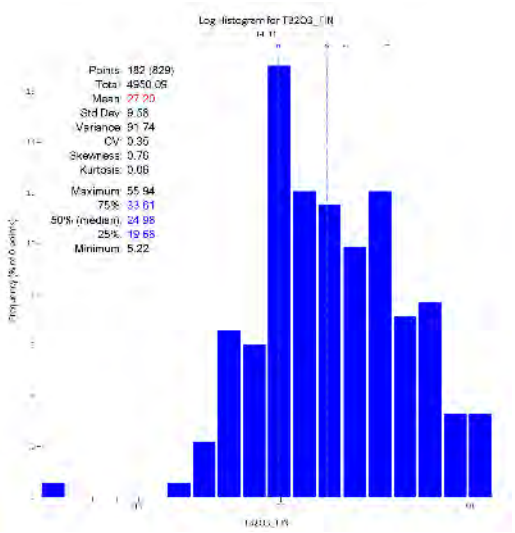


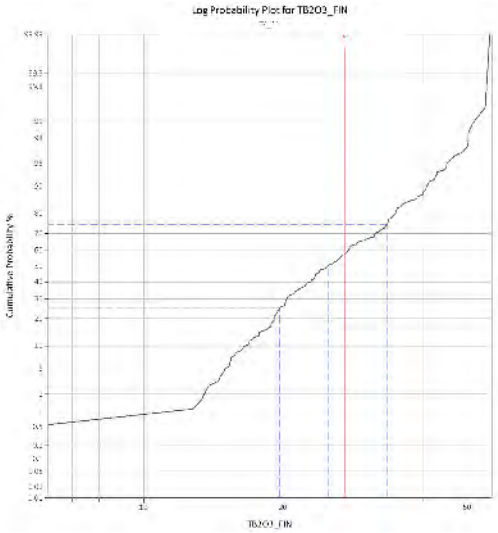
Pr2O3



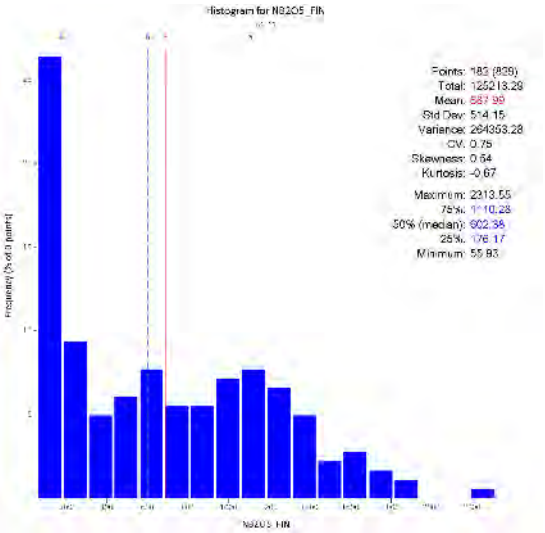


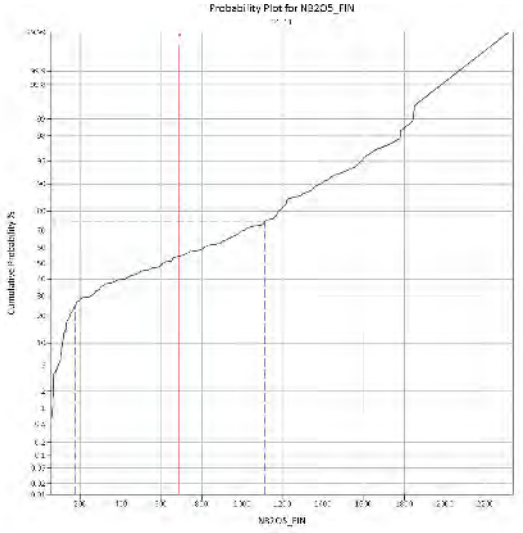
Tb2O3





Nb2O5





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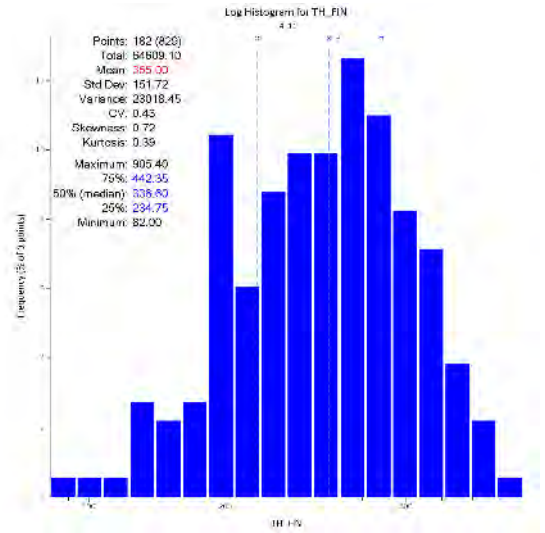
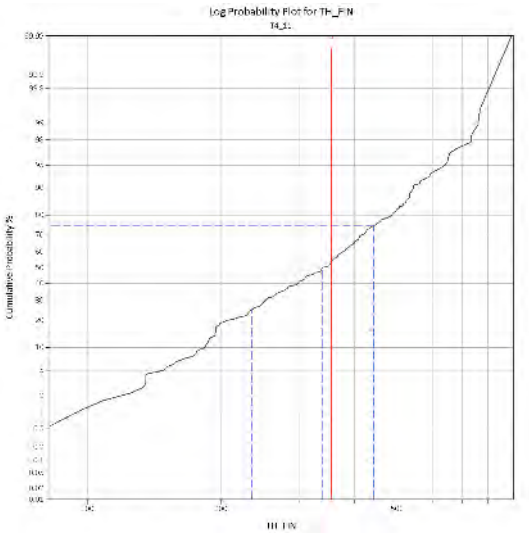
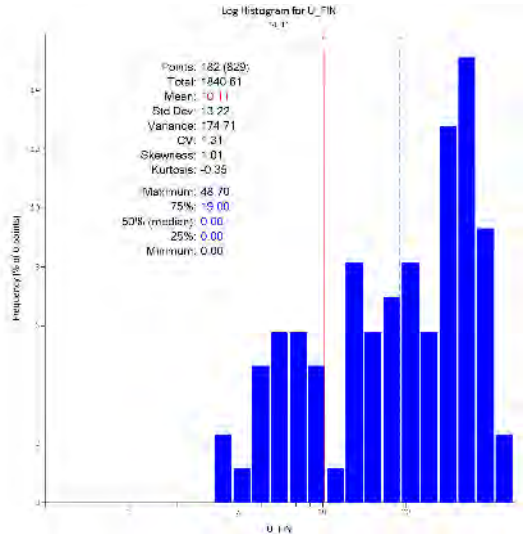
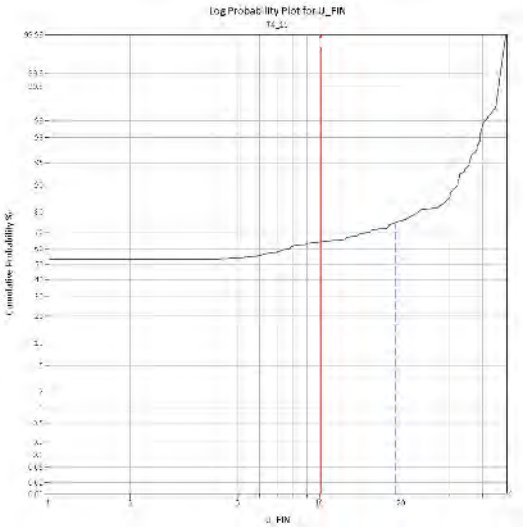




U

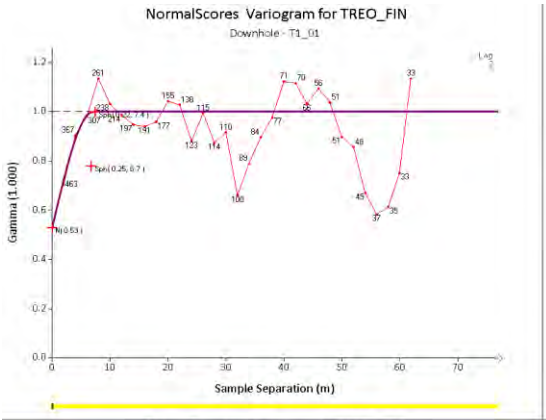

Log Histogram for U_FIN
Points: 182 (829)
Total: 1840.61
Mean: 10.11
Std Dev: 13.22
Variance: 174.71
CV: 1.31
Skewness: 1.01
Kurtosis: -0.35
Maximum: 48.70
75%: 19.00
50% (median): 0.00
25%: 0.00
Minimum: 0.00

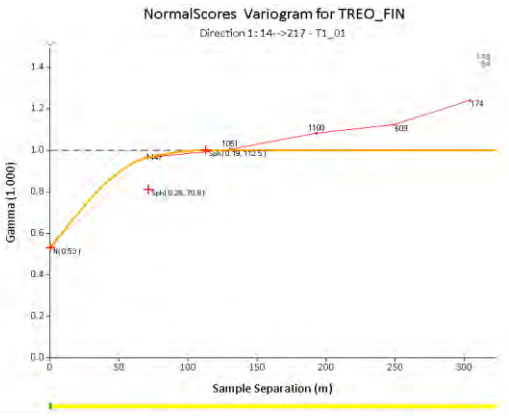

Log Probability Plot for U_FIN

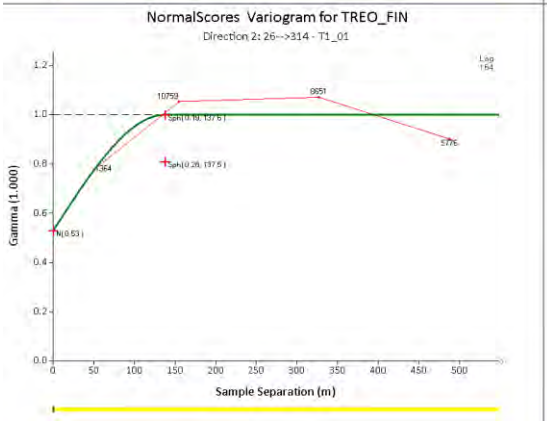
Appendix E
Grade continuity models

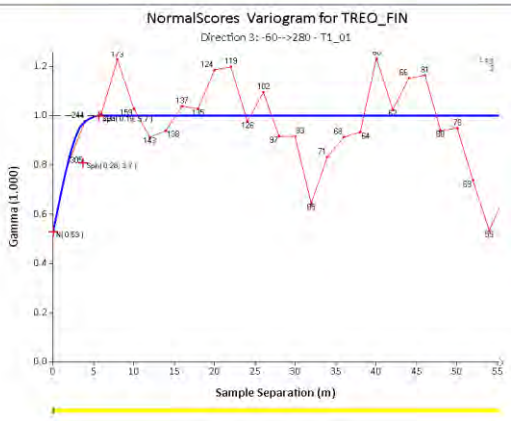
Target 1 Variogram models 0.5 to 1.0% TREO domain (ESTDOM T4_01)

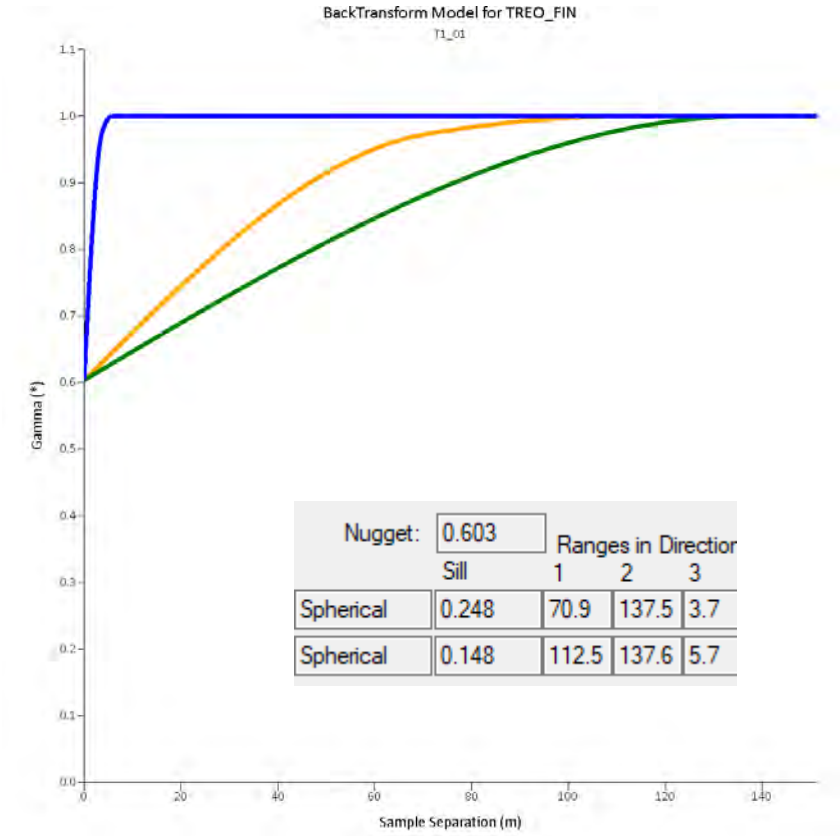
TREO





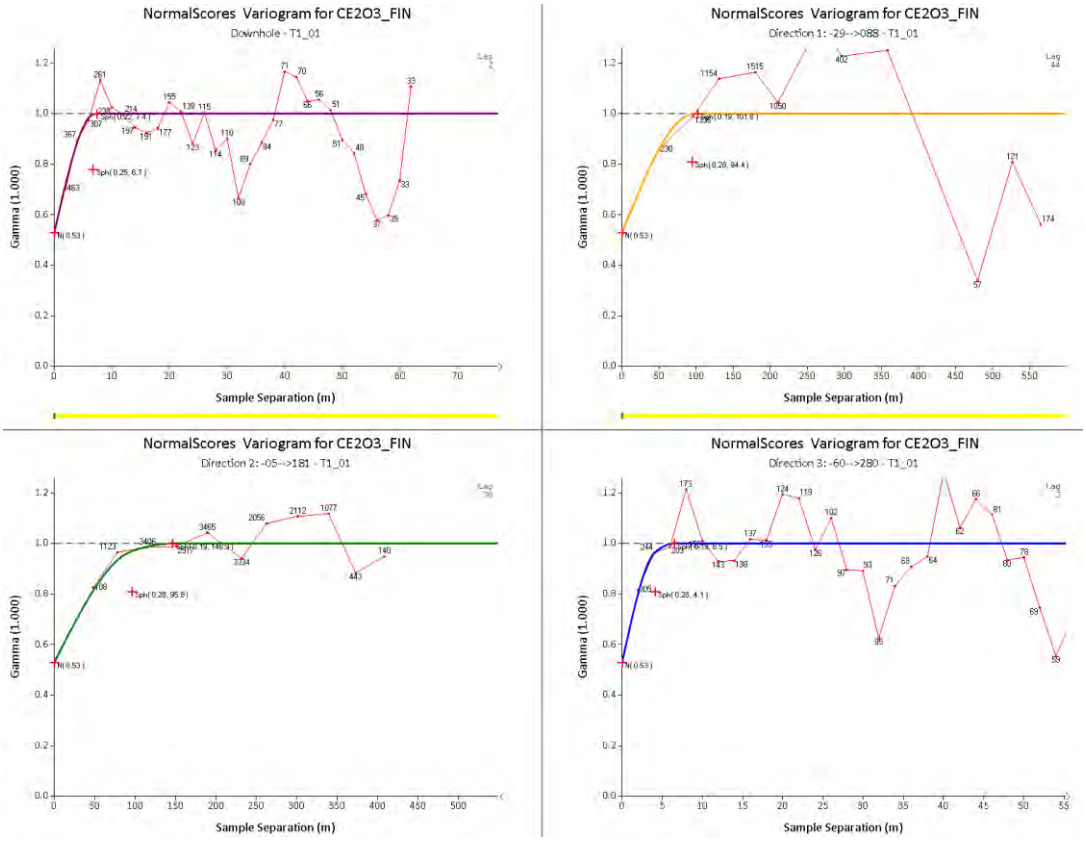


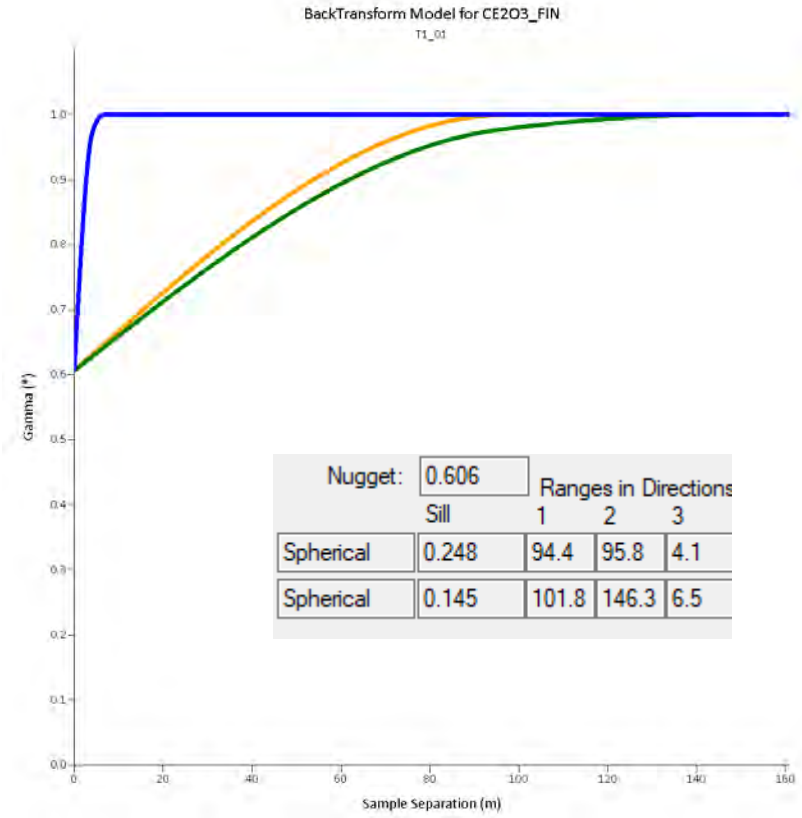




		Ranges in Direction		
Nugget:	0.603			
	Sill	1	2	3
Spherical	0.248	70.9	137.5	3.7
Spherical	0.148	112.5	137.6	5.7

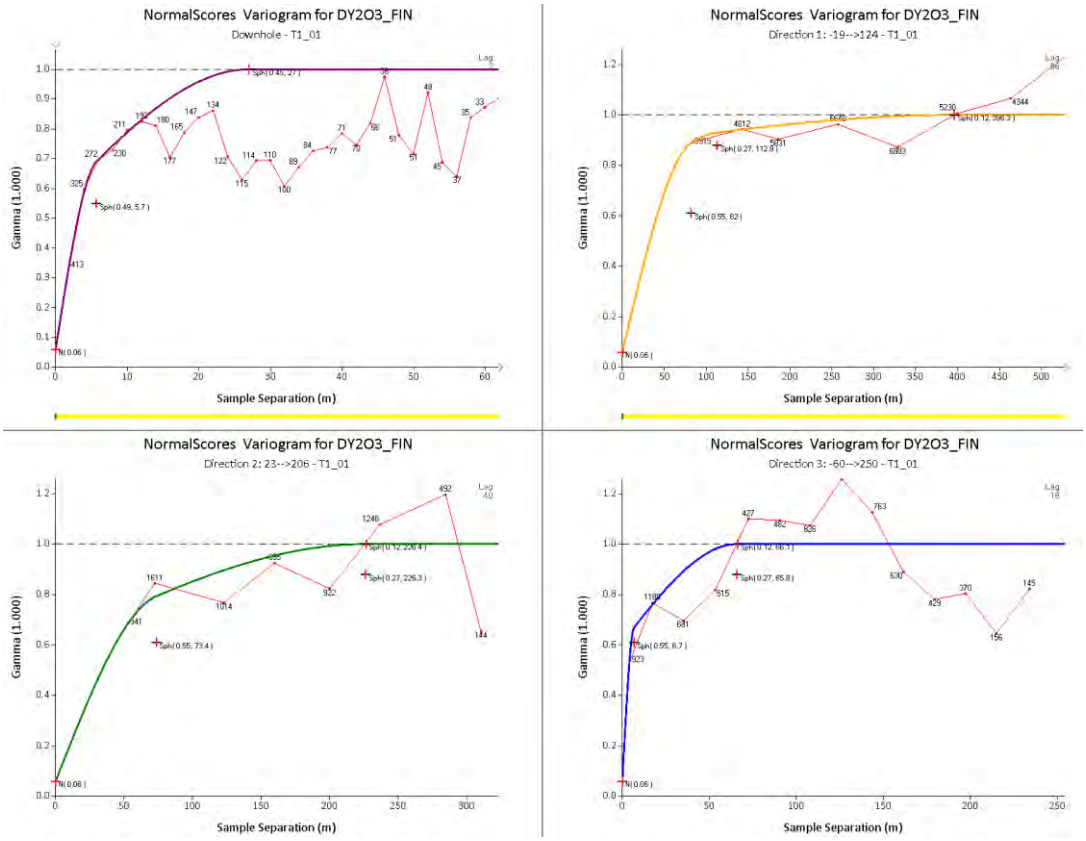
Ce_2O_3

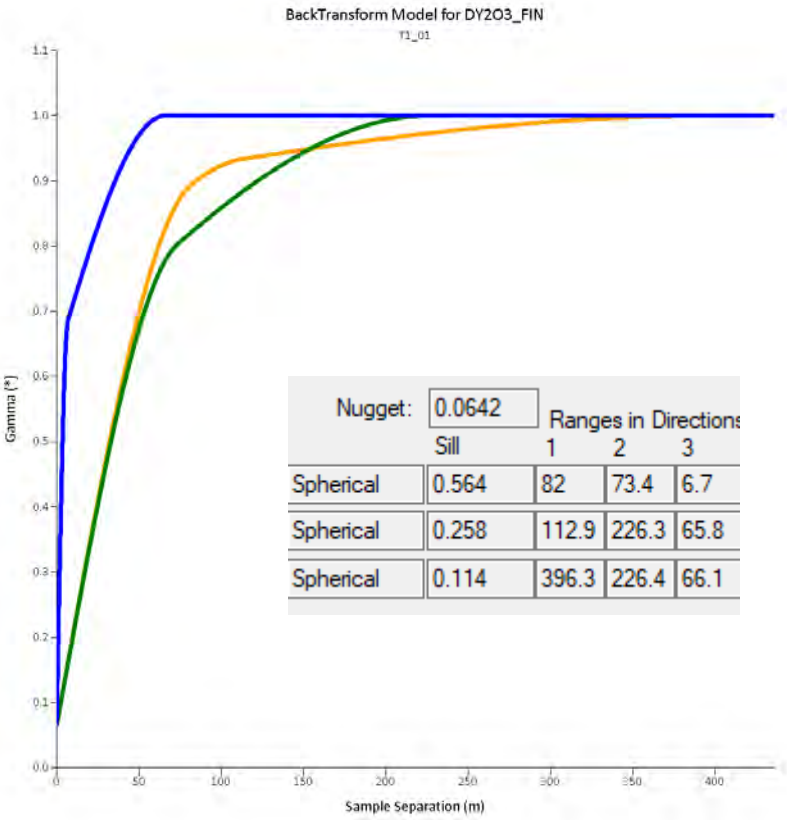




Nugget:	0.606	Ranges in Directions		
	Sill	1	2	3
Spherical	0.248	94.4	95.8	4.1
Spherical	0.145	101.8	146.3	6.5

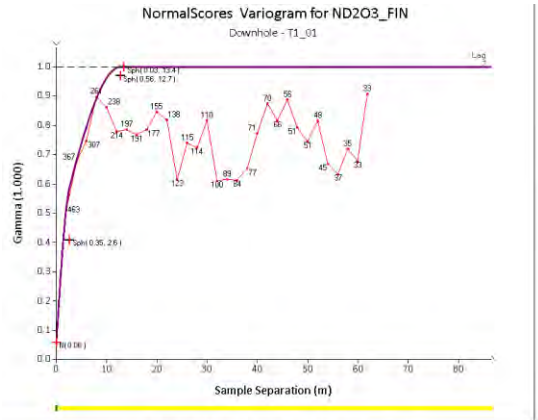
Dy_2O_3

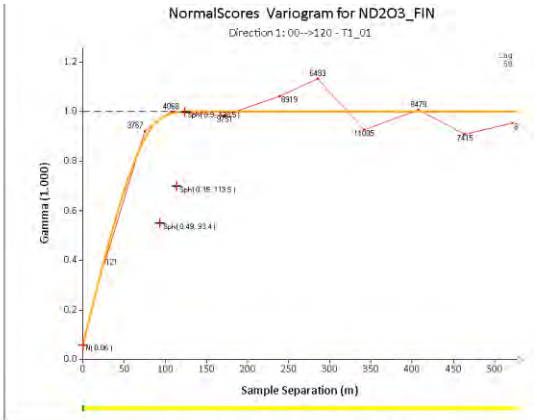


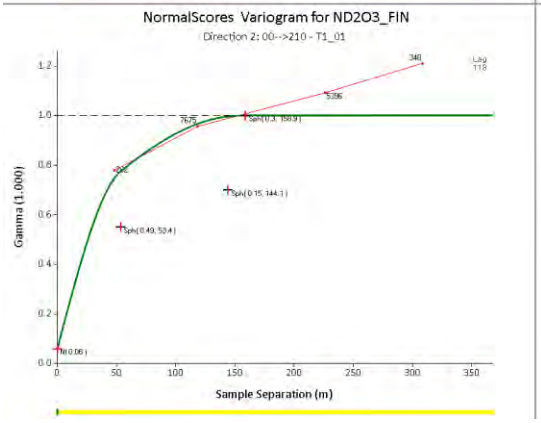


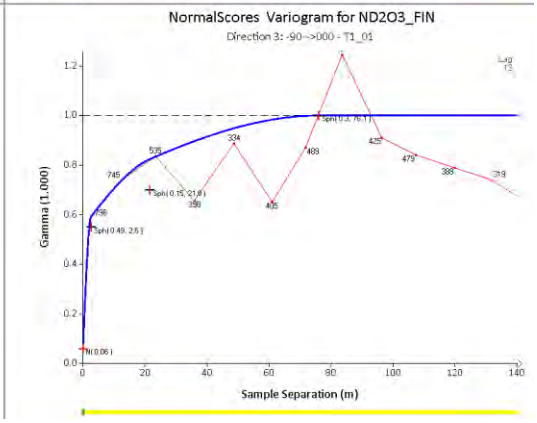
Nugget:	0.0642	Ranges in Directions		
	Sill	1	2	3
Spherical	0.564	82	73.4	6.7
Spherical	0.258	112.9	226.3	65.8
Spherical	0.114	396.3	226.4	66.1

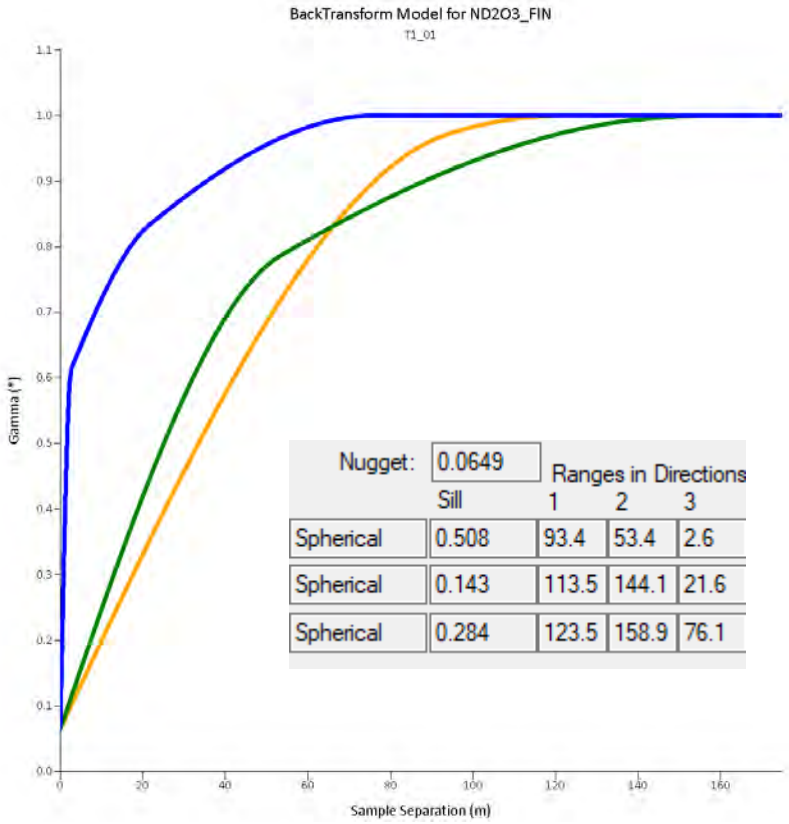
Nd_2O_3





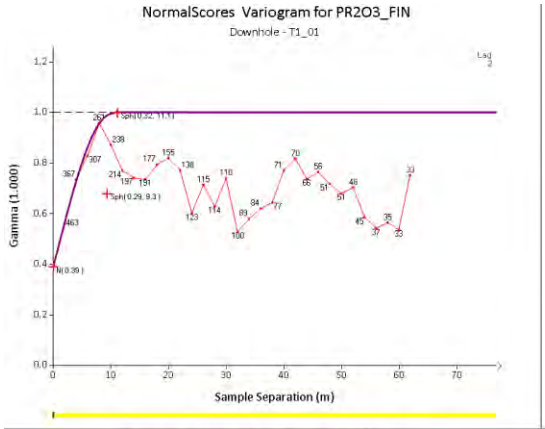


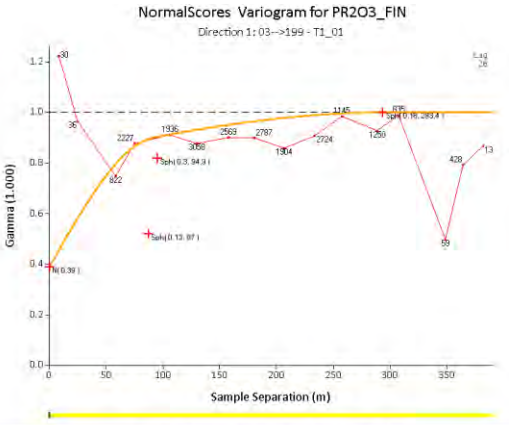


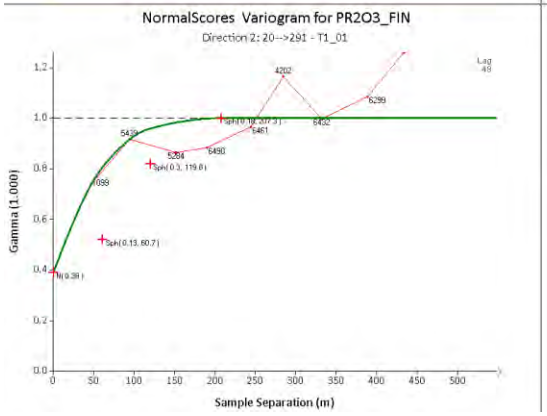


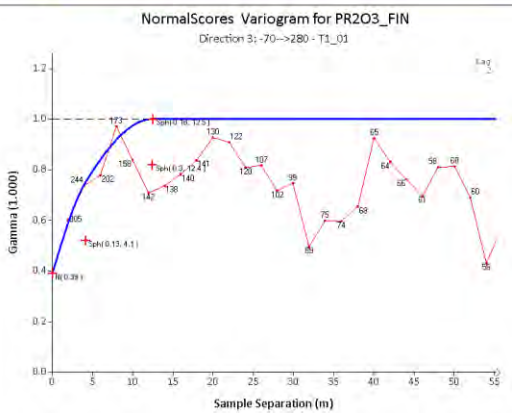
Nugget:	0.0649	Ranges in Directions		
	Sill	1	2	3
Spherical	0.508	93.4	53.4	2.6
Spherical	0.143	113.5	144.1	21.6
Spherical	0.284	123.5	158.9	76.1

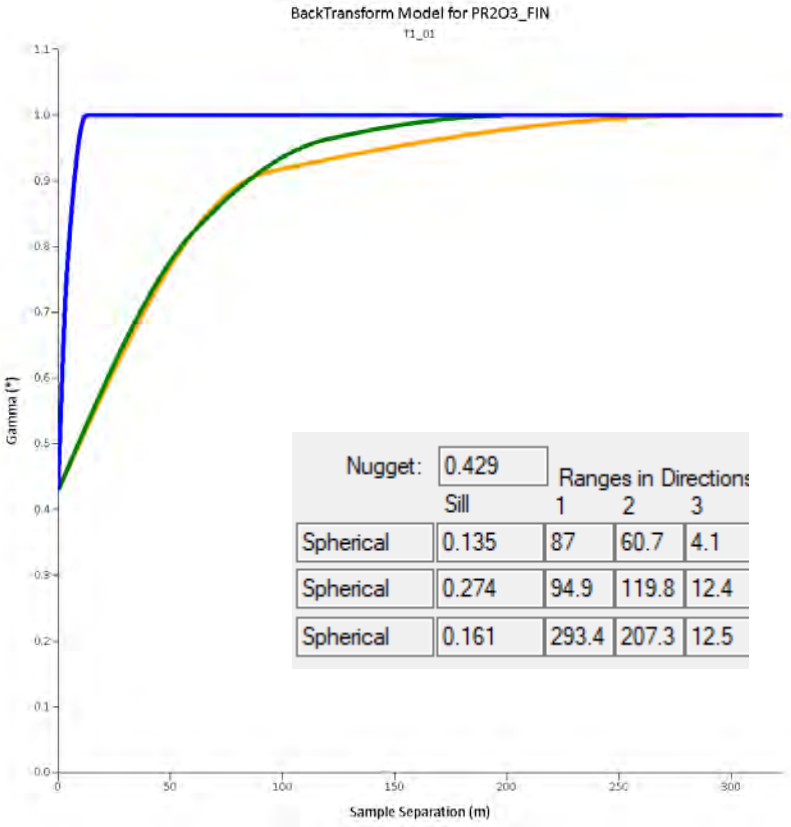
Pr_2O_3





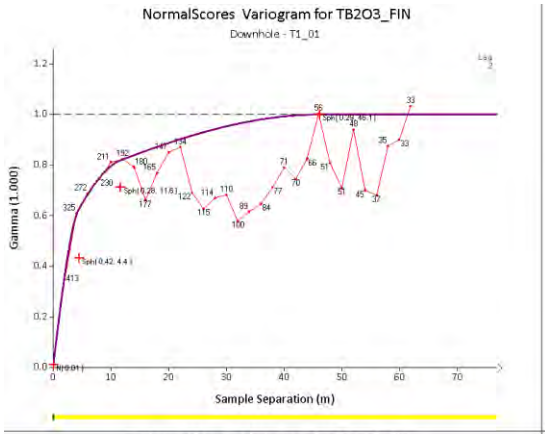


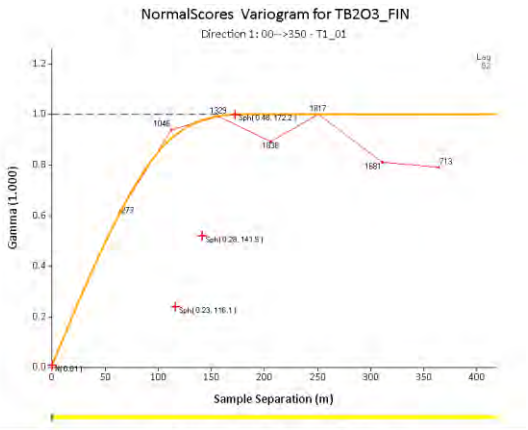


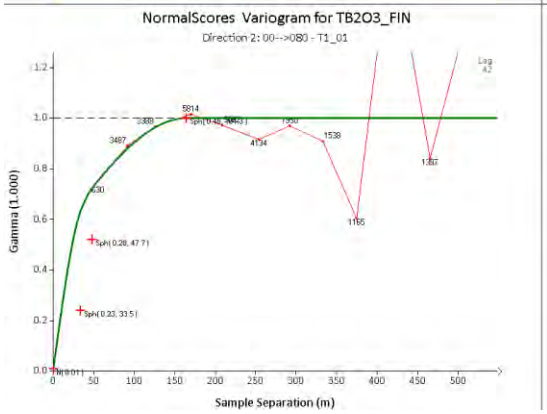


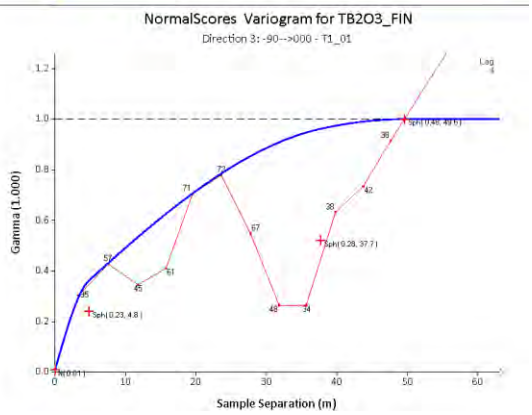
Nugget:	0.429	Ranges in Directions		
	Sill	1	2	3
Spherical	0.135	87	60.7	4.1
Spherical	0.274	94.9	119.8	12.4
Spherical	0.161	293.4	207.3	12.5

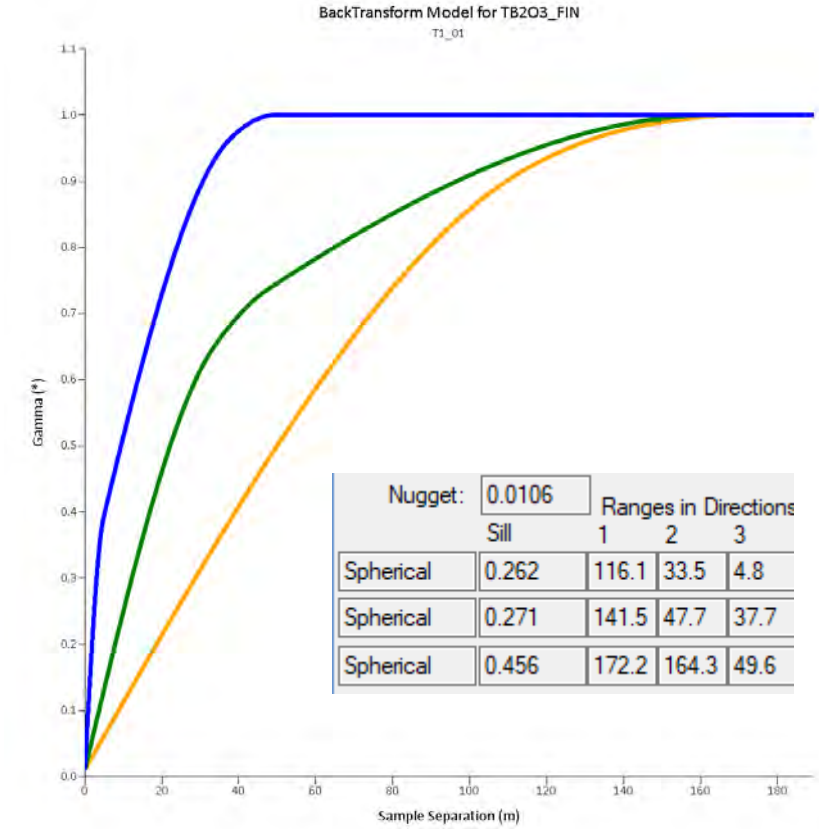
Tb_2O_3





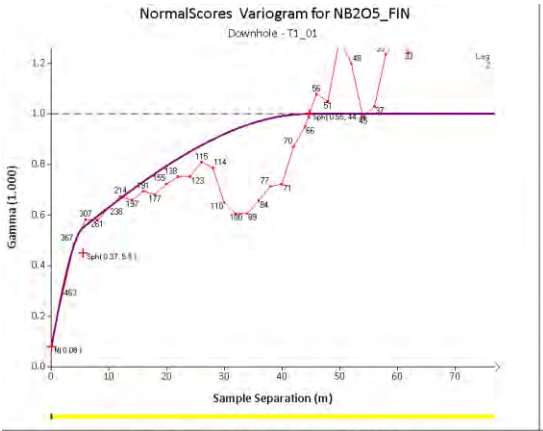


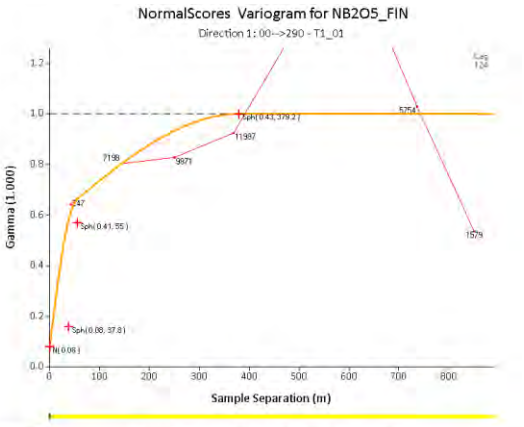


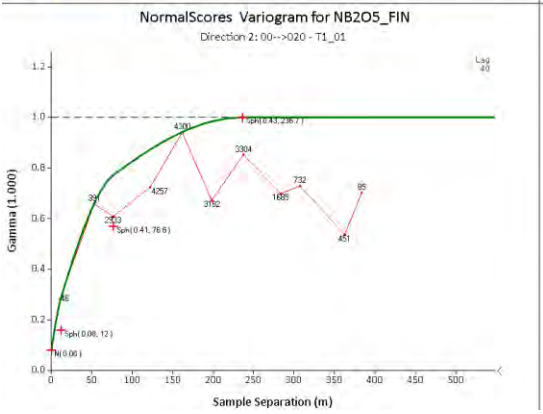


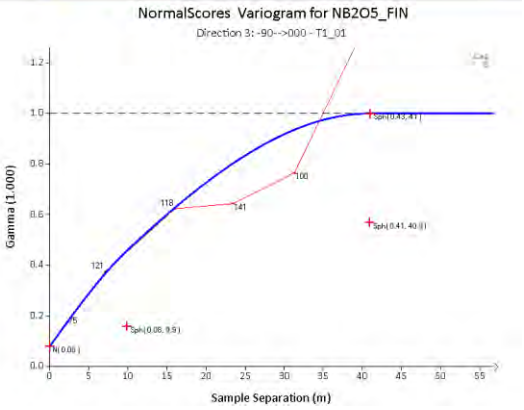
Nugget:	0.0106	Ranges in Directions		
	Sill	1	2	3
Spherical	0.262	116.1	33.5	4.8
Spherical	0.271	141.5	47.7	37.7
Spherical	0.456	172.2	164.3	49.6

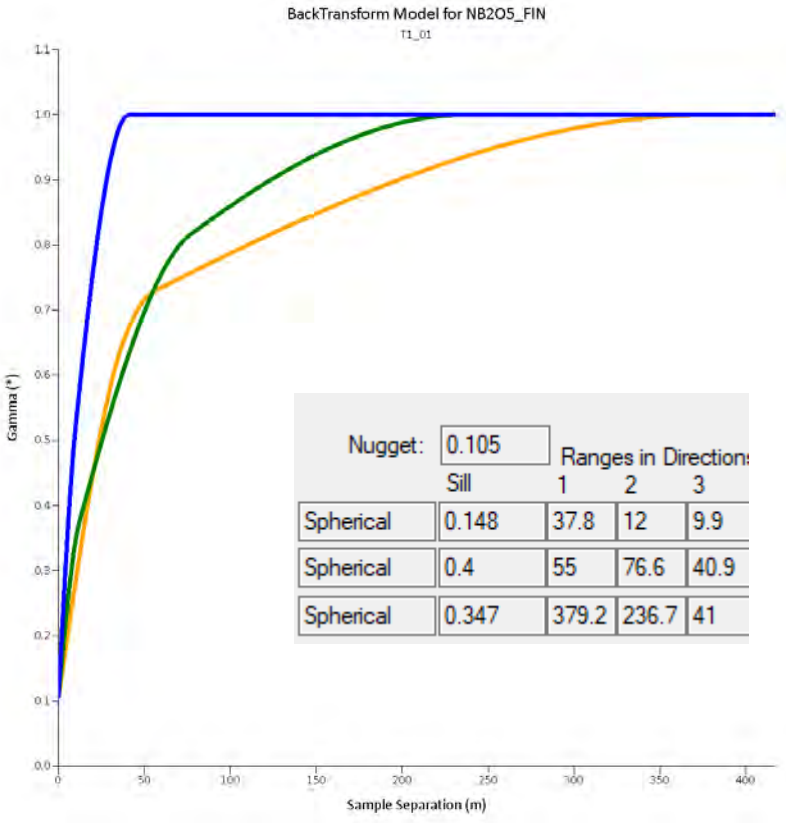
Nb_2O_5





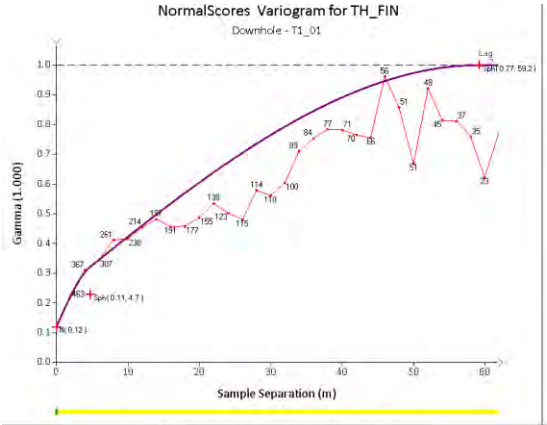


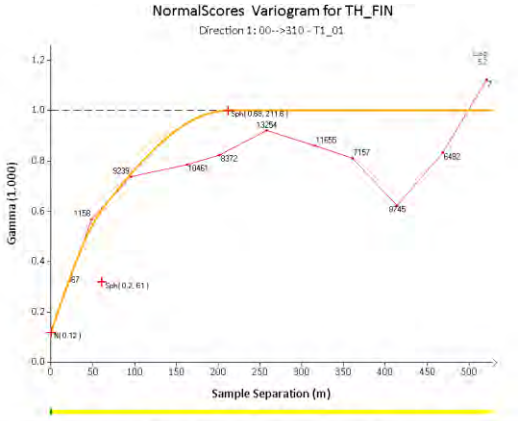


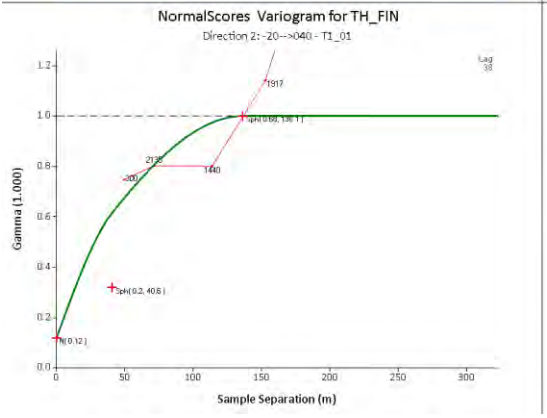


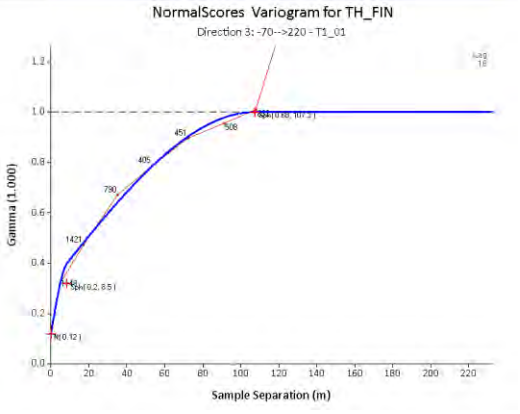
Nugget:	0.105	Ranges in Direction		
	Sill	1	2	3
Spherical	0.148	37.8	12	9.9
Spherical	0.4	55	76.6	40.9
Spherical	0.347	379.2	236.7	41

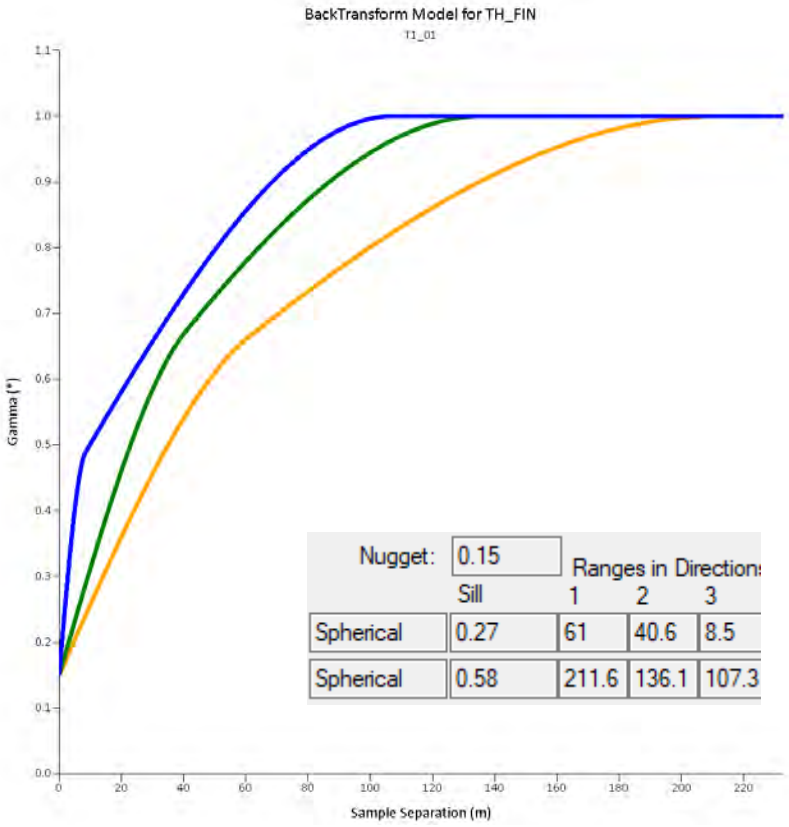
Th





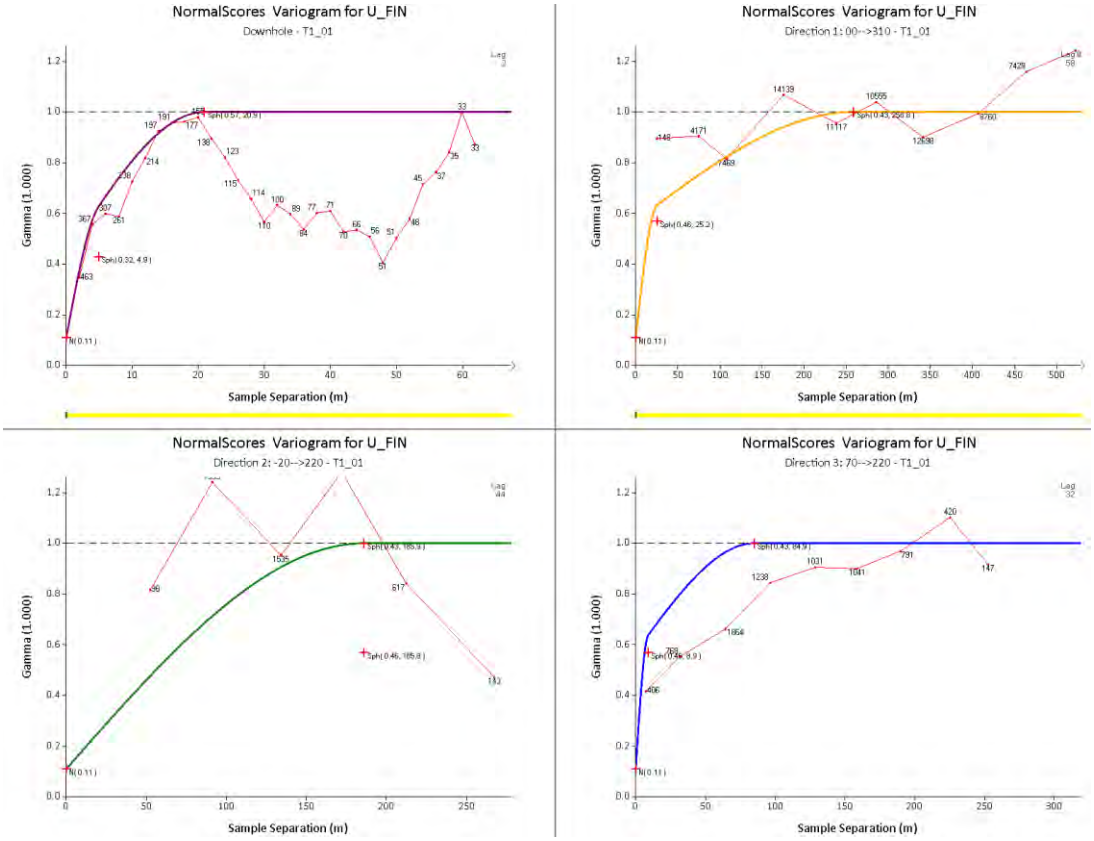


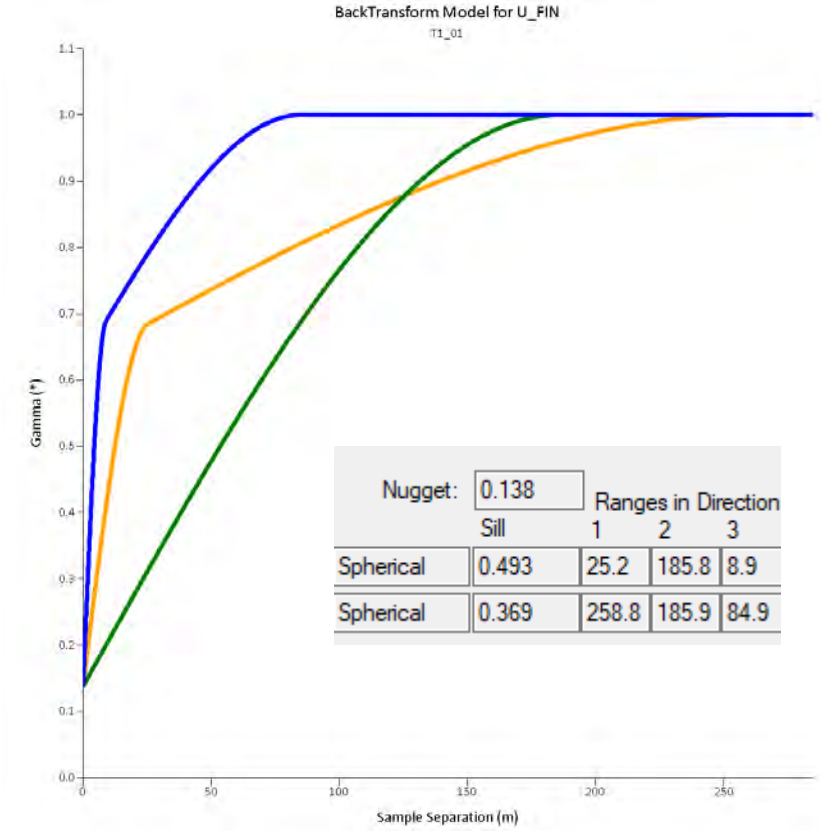




Nugget:	0.15	Ranges in Direction		
	Sill	1	2	3
Spherical	0.27	61	40.6	8.5
Spherical	0.58	211.6	136.1	107.3

U

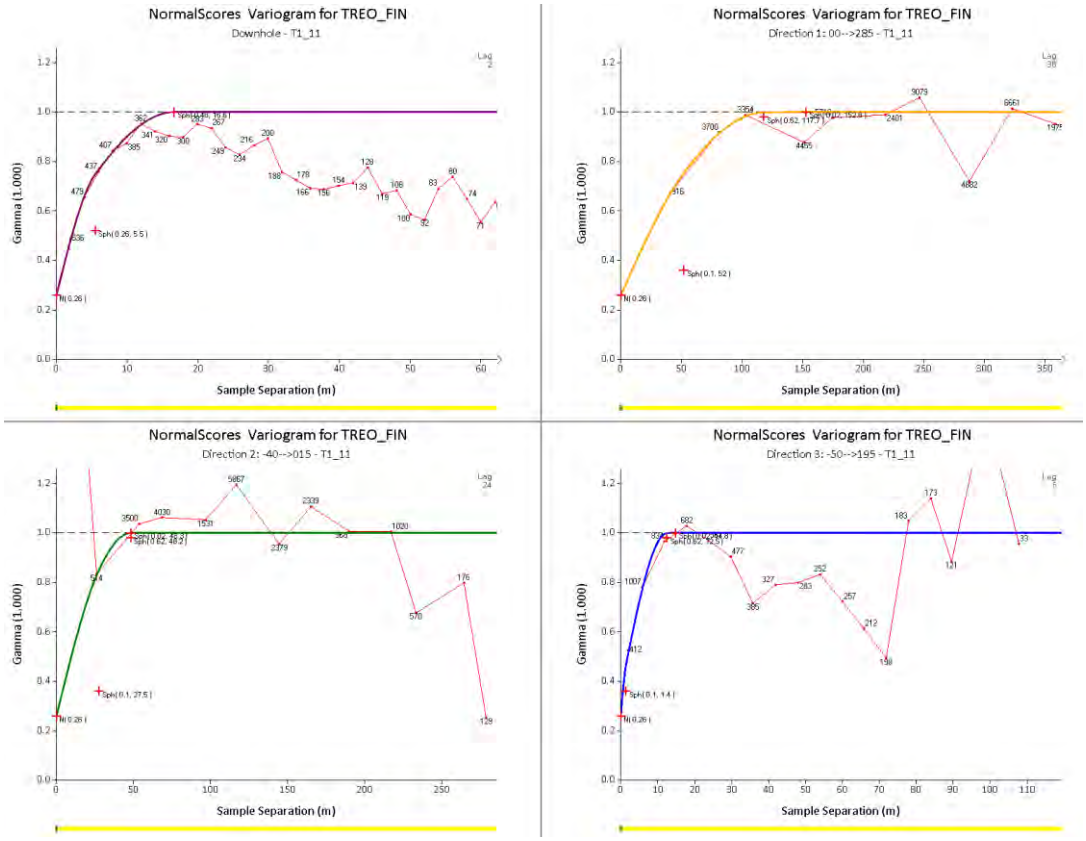


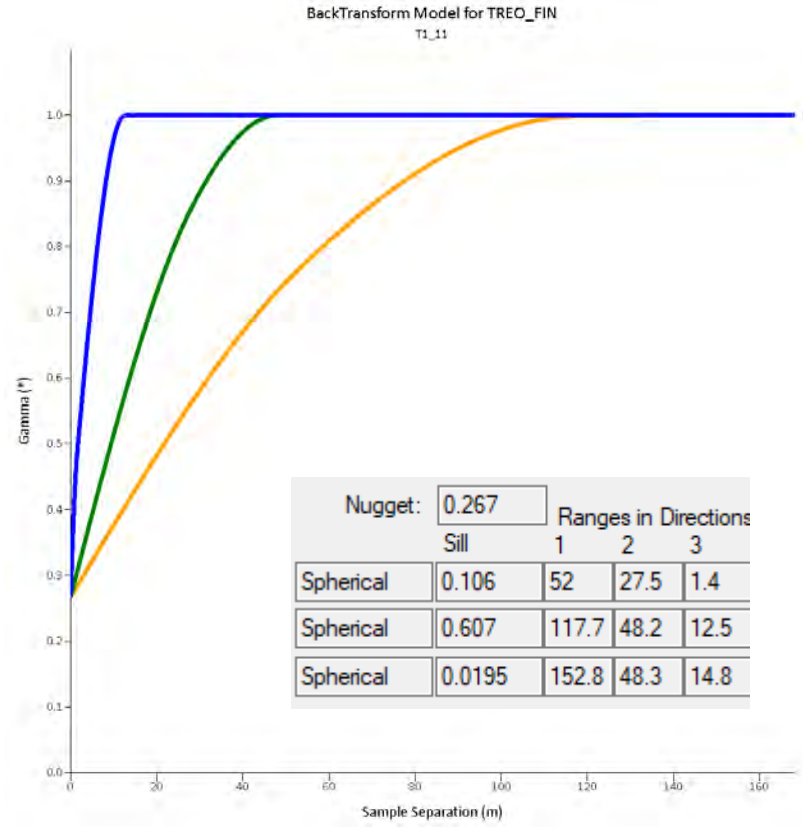


Nugget:	0.138	Ranges in Direction		
	Sill	1	2	3
Spherical	0.493	25.2	185.8	8.9
Spherical	0.369	258.8	185.9	84.9

Target 1 Variogram models ≥1.0% TREO domain (ESTDOM T4_11)

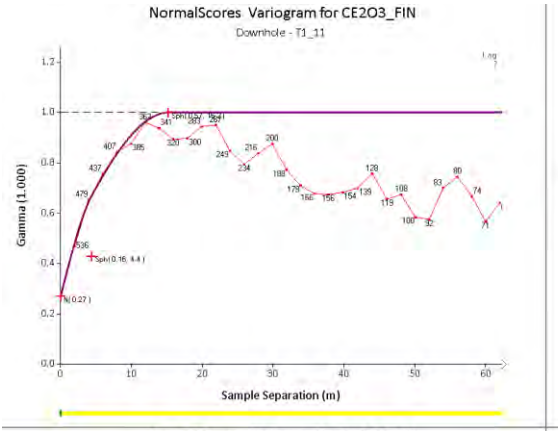
TREO

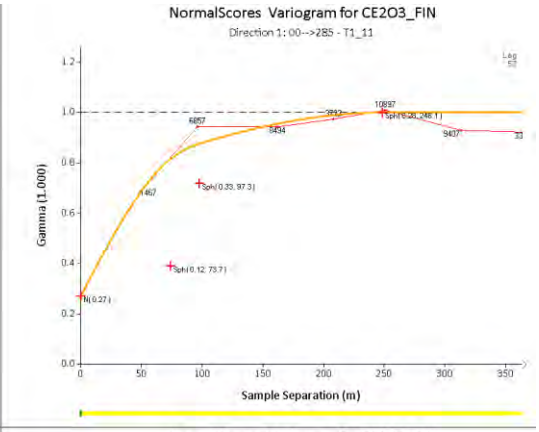


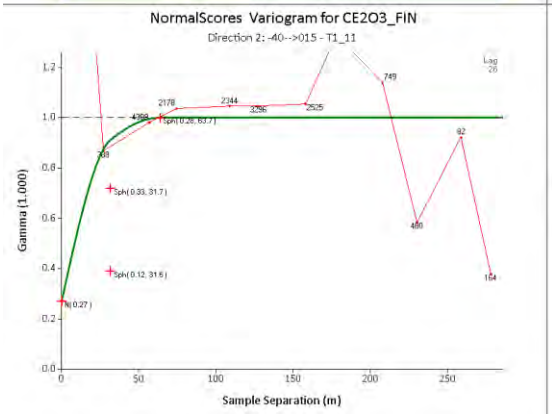


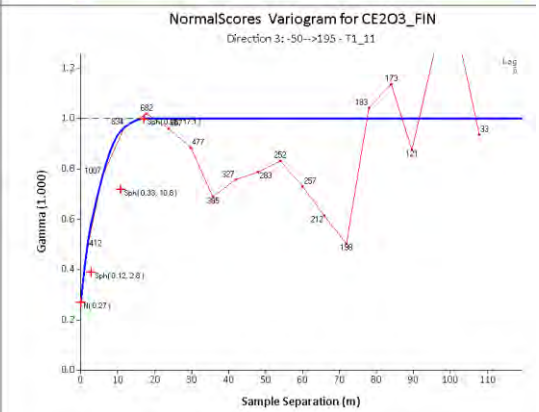
Nugget:	0.267	Ranges in Directions		
	Sill	1	2	3
Spherical	0.106	52	27.5	1.4
Spherical	0.607	117.7	48.2	12.5
Spherical	0.0195	152.8	48.3	14.8

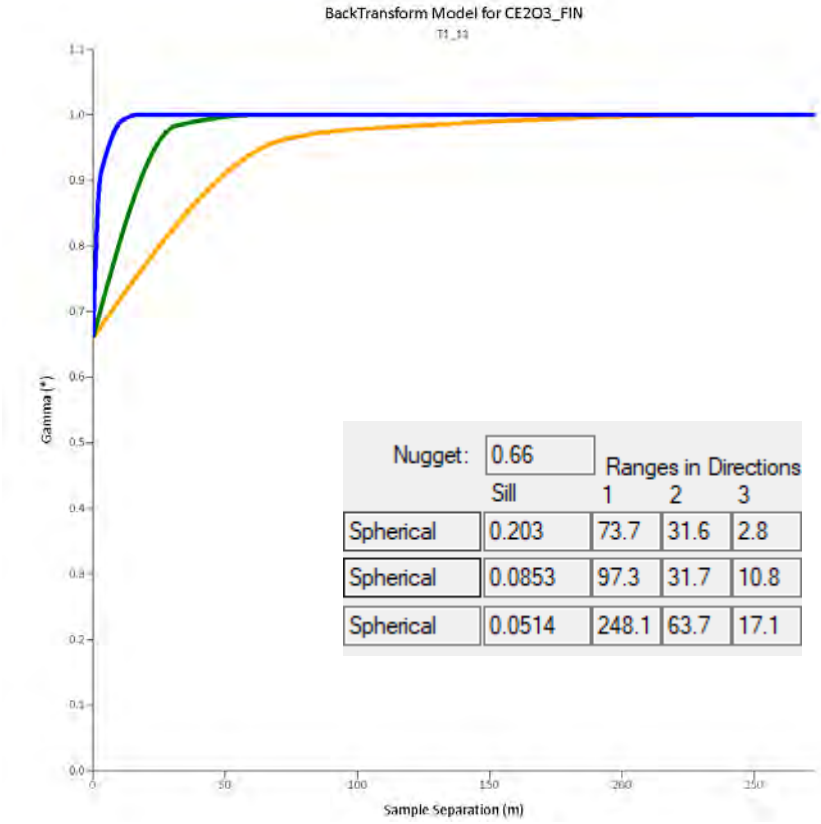
Ce_2O_3





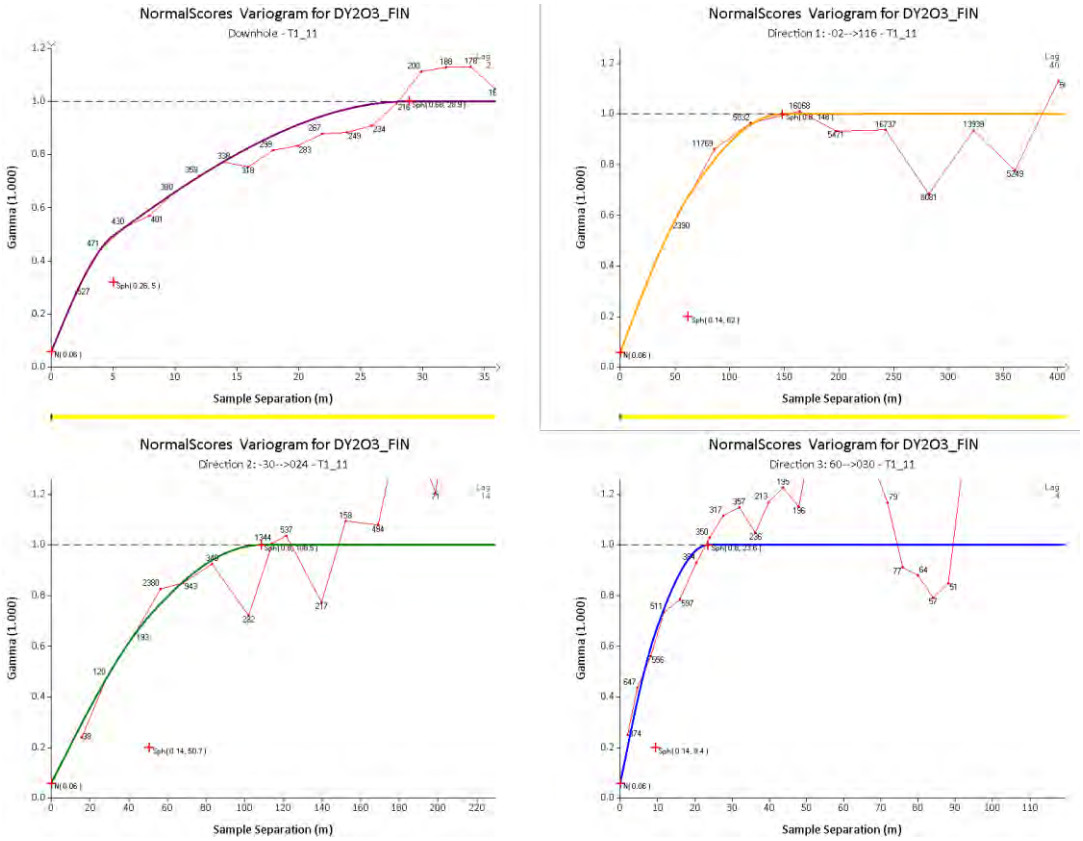


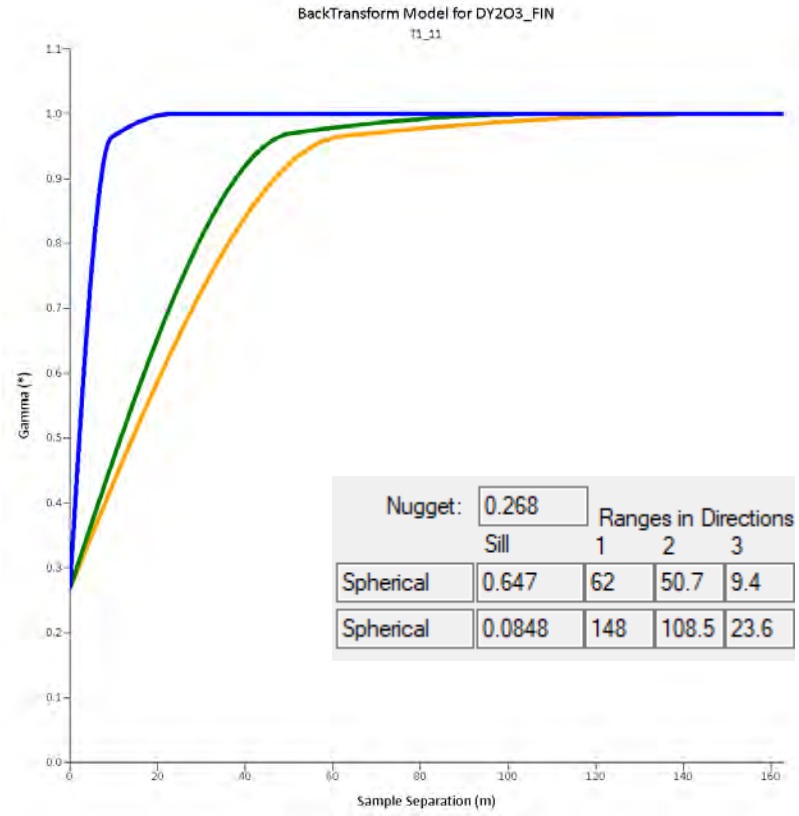




	Nugget:	0.66	Ranges in Directions	
		Sill	1	2	3
Spherical		0.203	73.7	31.6	2.8
Spherical		0.0853	97.3	31.7	10.8
Spherical		0.0514	248.1	63.7	17.1

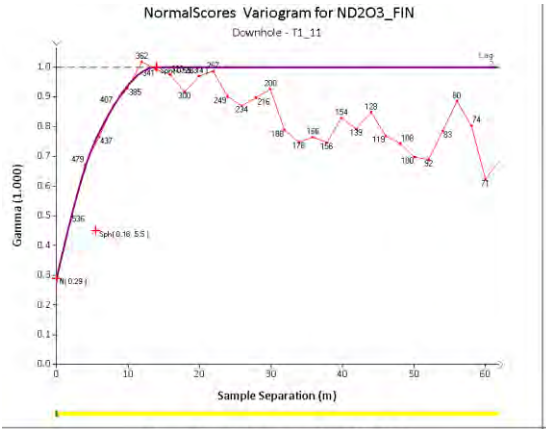
Dy_2O_3

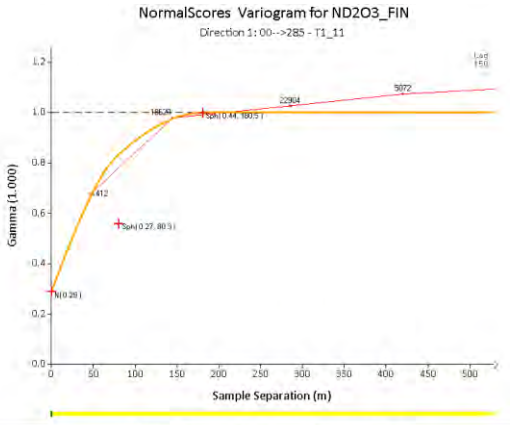


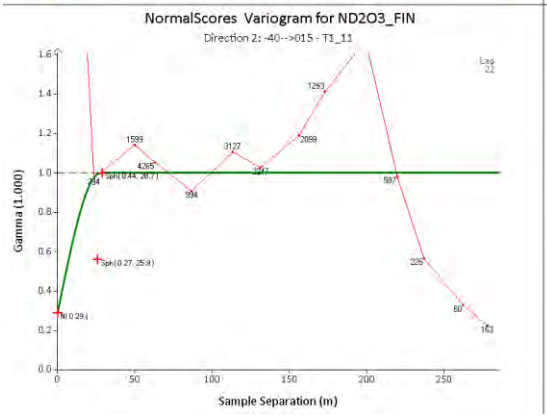


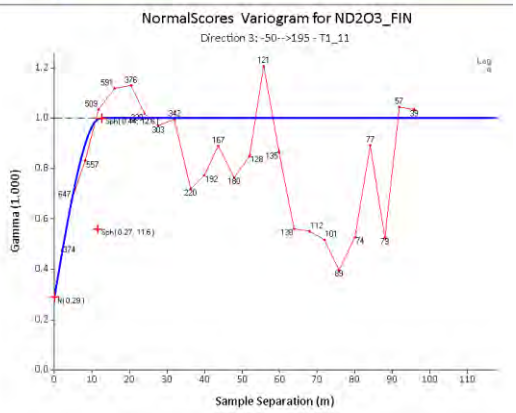
Nugget:	0.268	Ranges in Directions		
	Sill	1	2	3
Spherical	0.647	62	50.7	9.4
Spherical	0.0848	148	108.5	23.6

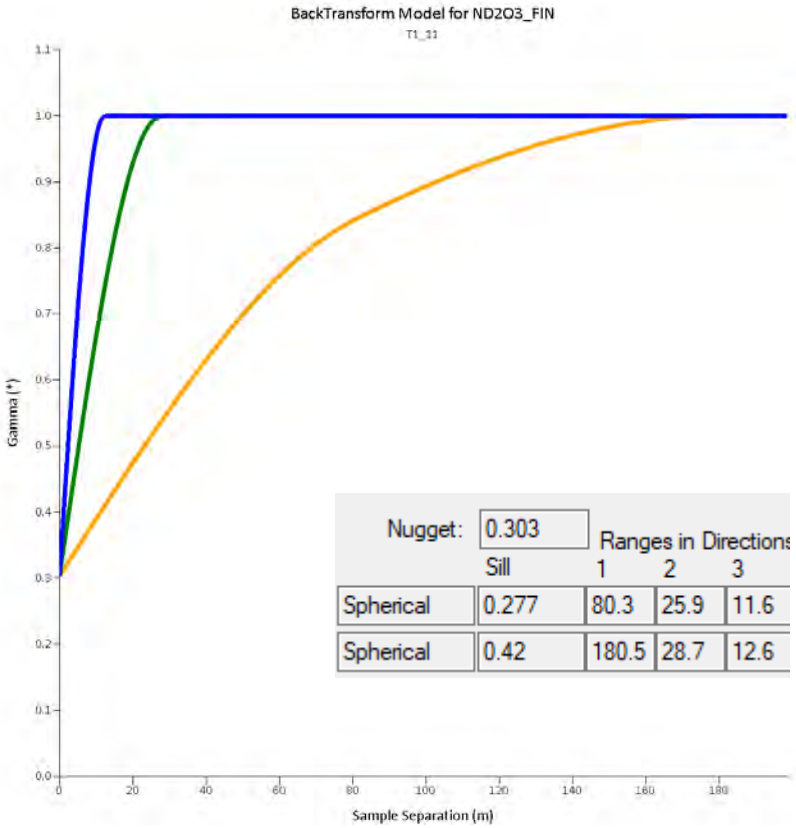
Nd_2O_3





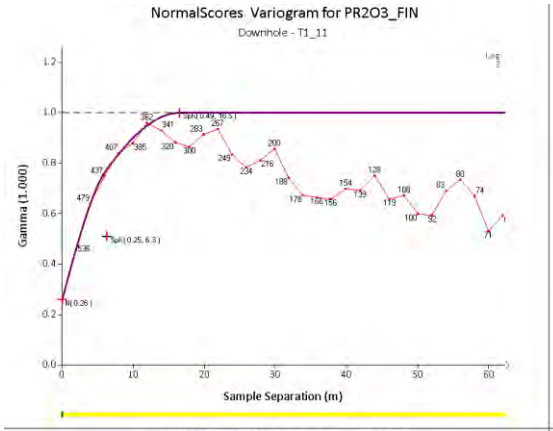


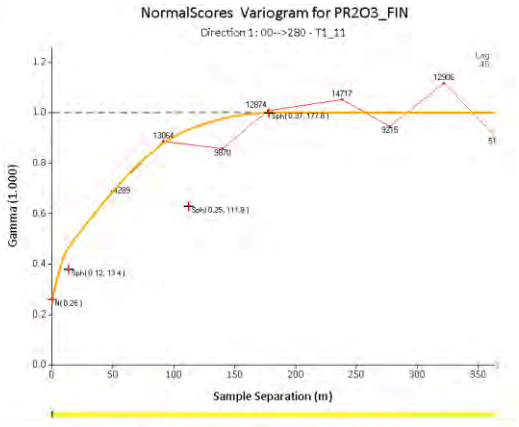


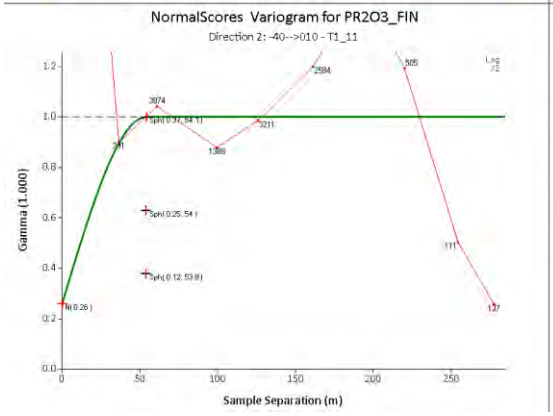


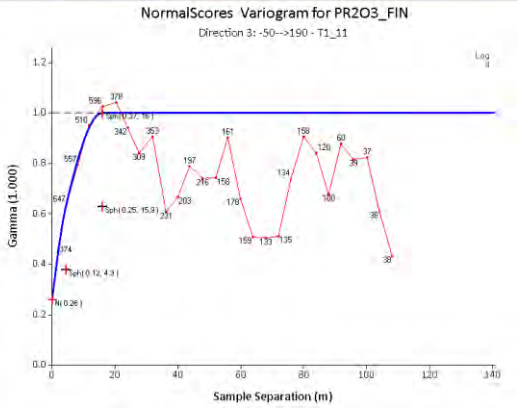
Nugget:	0.303	Ranges in Directions		
	Sill	1	2	3
Spherical	0.277	80.3	25.9	11.6
Spherical	0.42	180.5	28.7	12.6

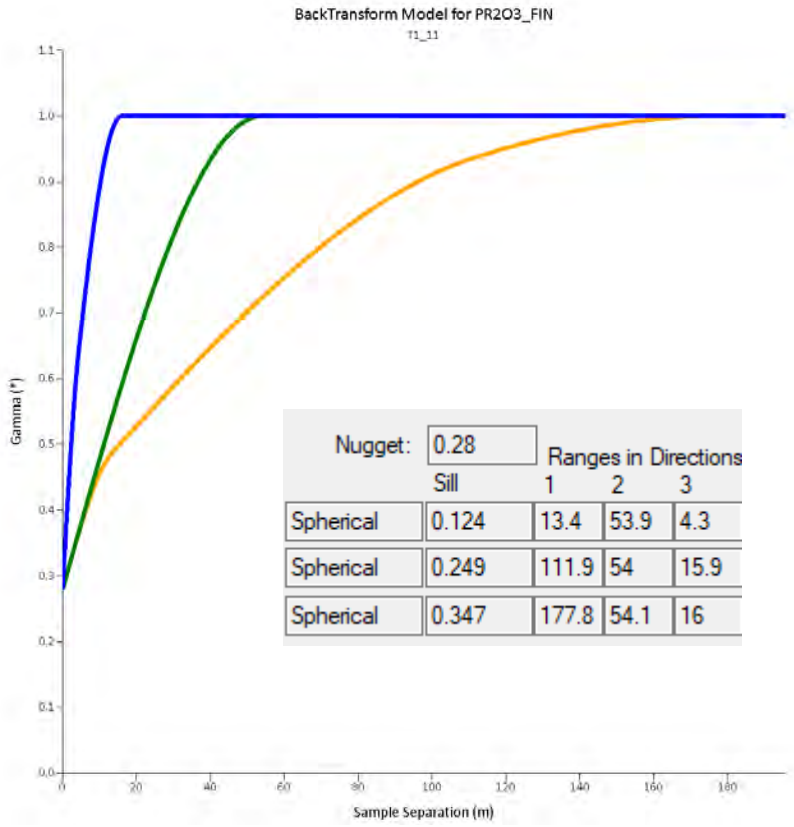
Pr_2O_3





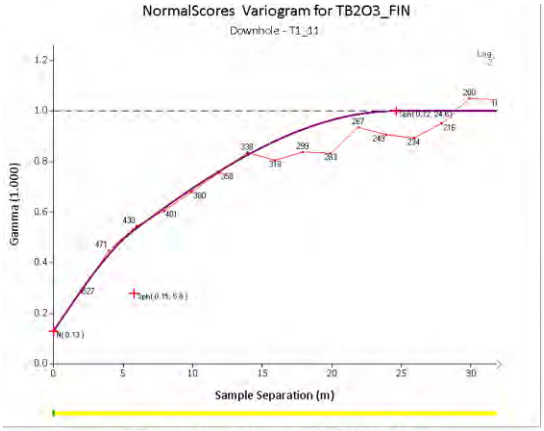


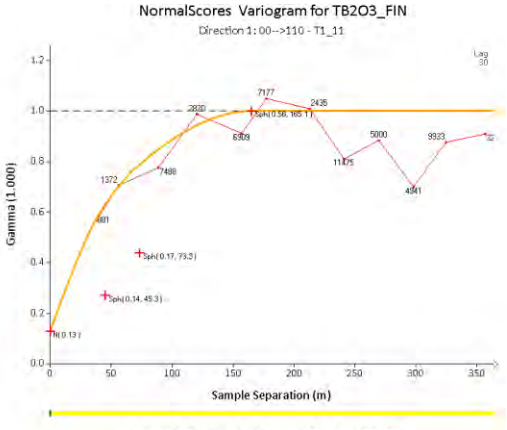


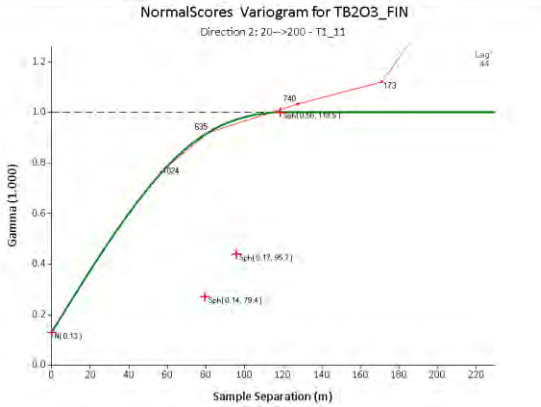


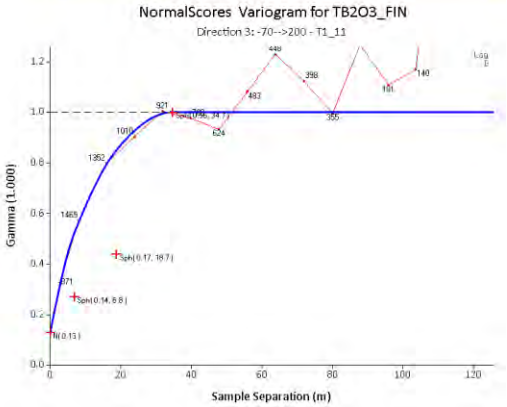
Nugget:	0.28	Ranges in Directions		
	Sill	1	2	3
Spherical	0.124	13.4	53.9	4.3
Spherical	0.249	111.9	54	15.9
Spherical	0.347	177.8	54.1	16

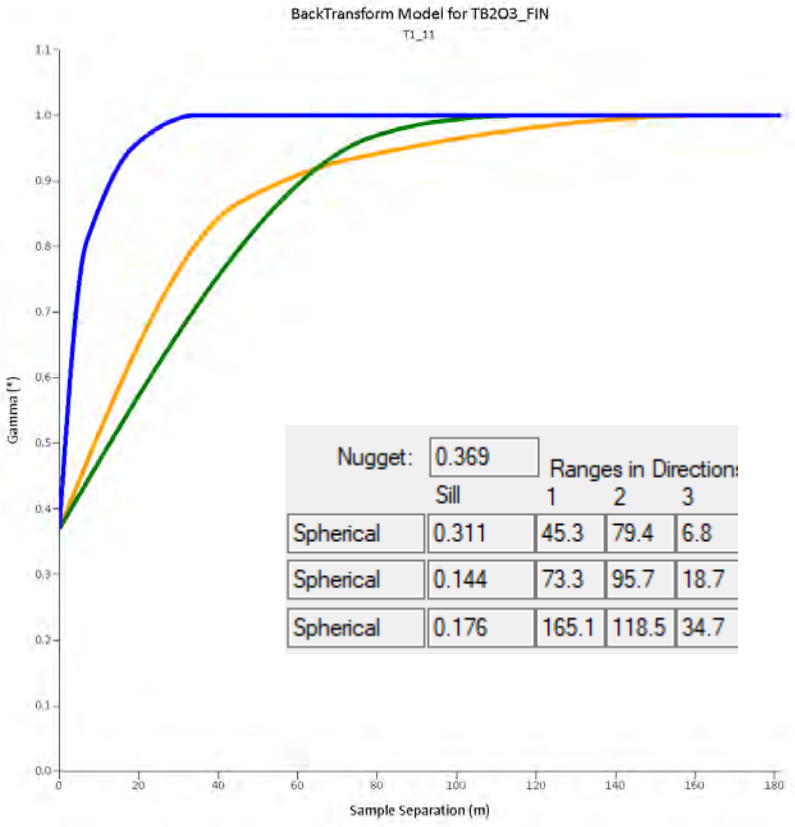
Tb_2O_3





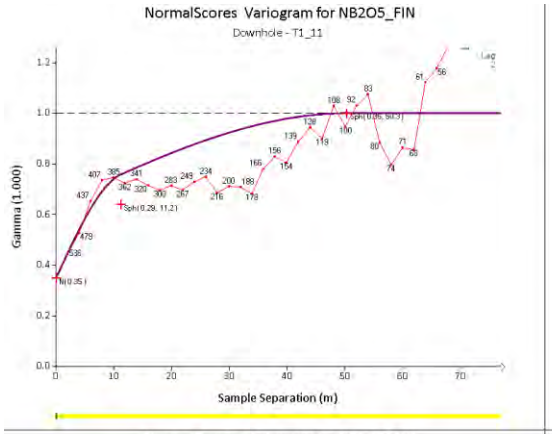


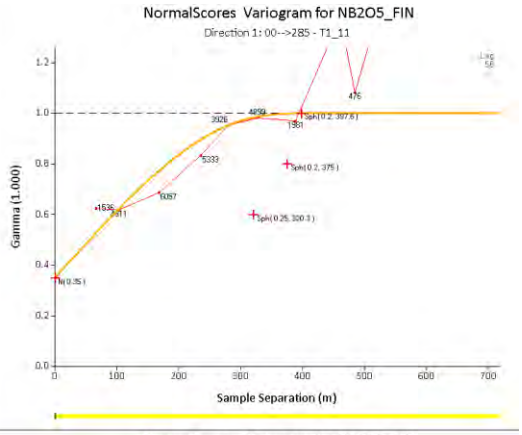


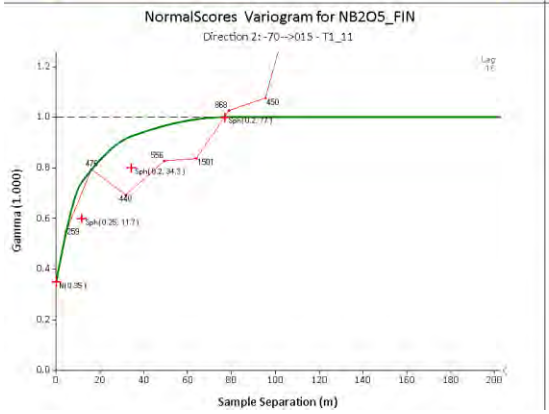


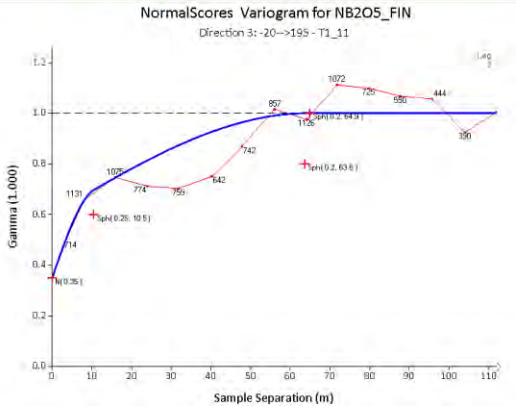
Nugget:	0.369	Ranges in Direction		
	Sill	1	2	3
Spherical	0.311	45.3	79.4	6.8
Spherical	0.144	73.3	95.7	18.7
Spherical	0.176	165.1	118.5	34.7

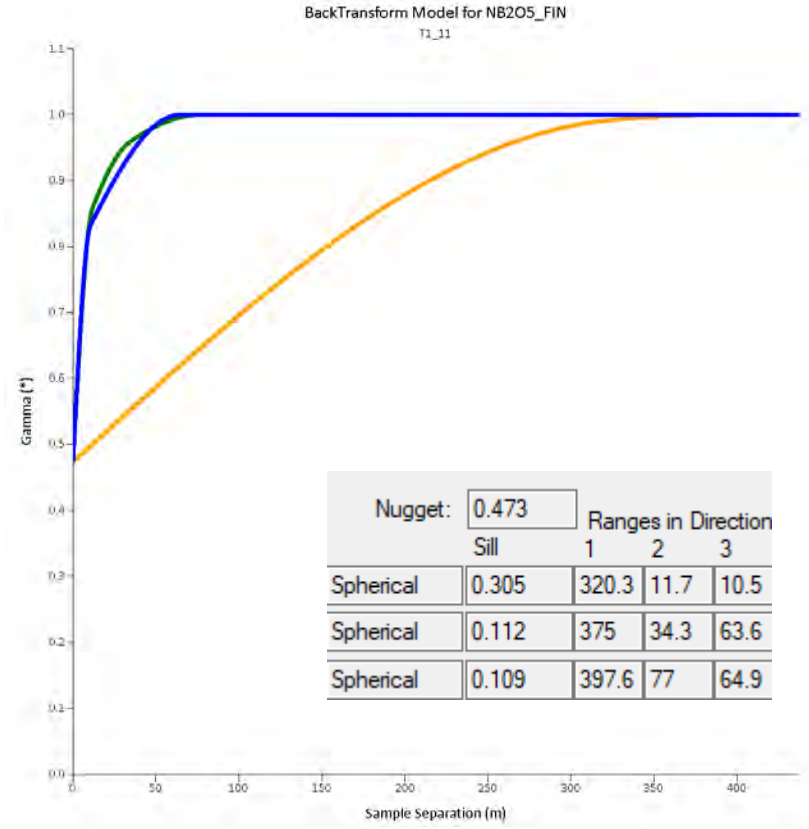
Nb_2O_5





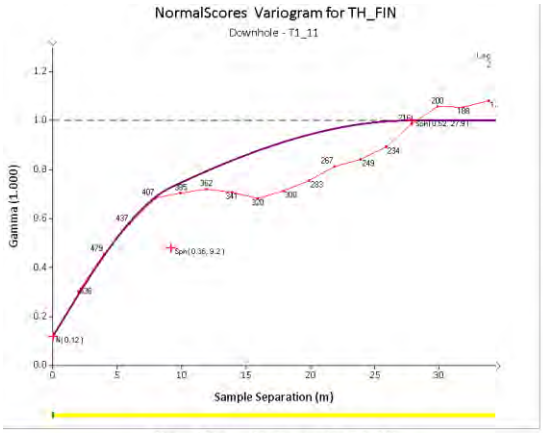


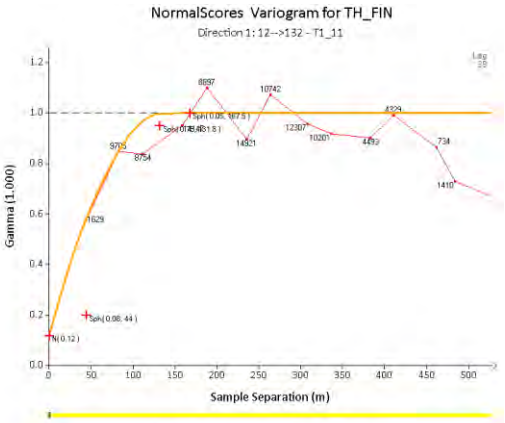


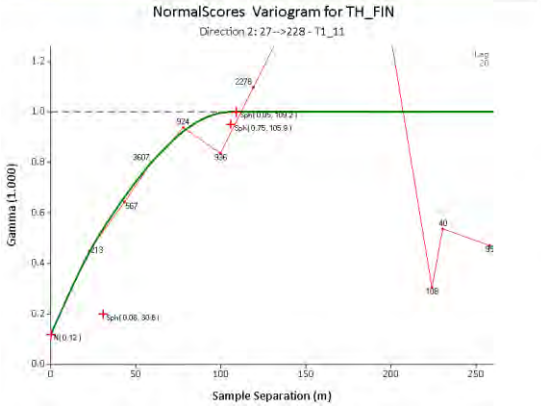


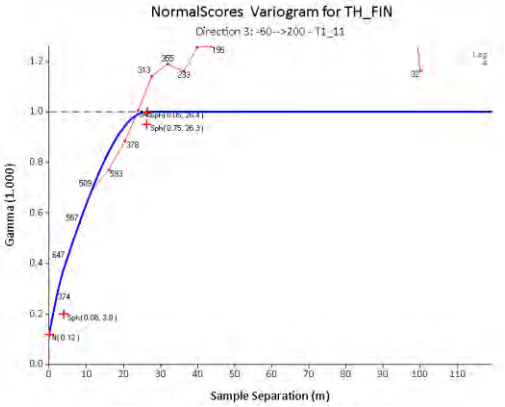
Nugget:	0.473	Ranges in Direction		
	Sill	1	2	3
Spherical	0.305	320.3	11.7	10.5
Spherical	0.112	375	34.3	63.6
Spherical	0.109	397.6	77	64.9

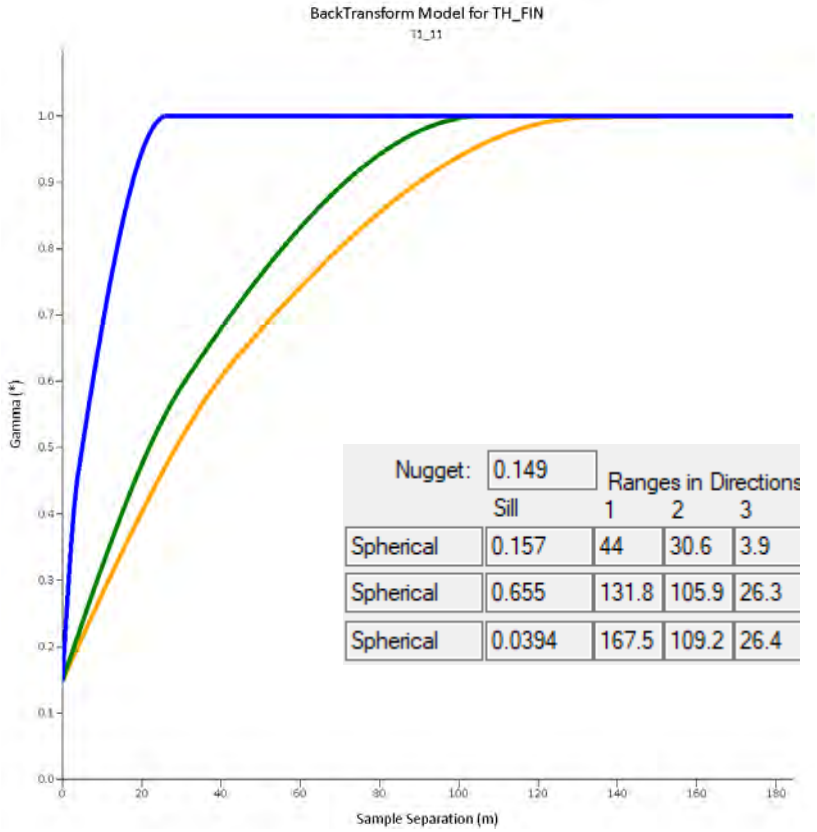
Th





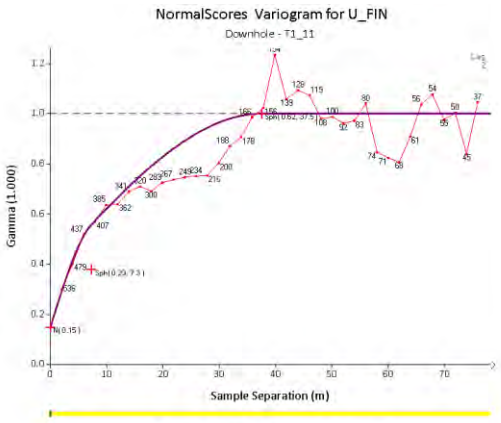


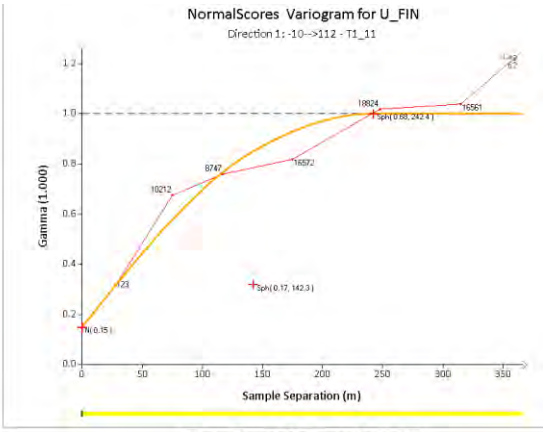


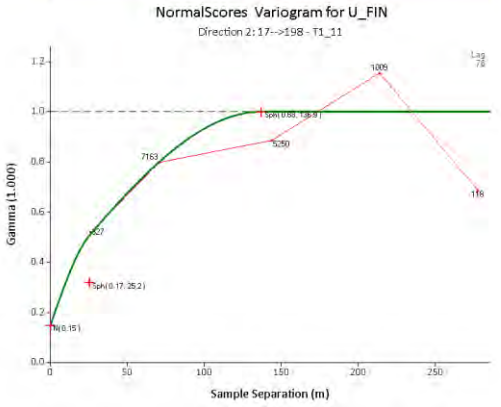


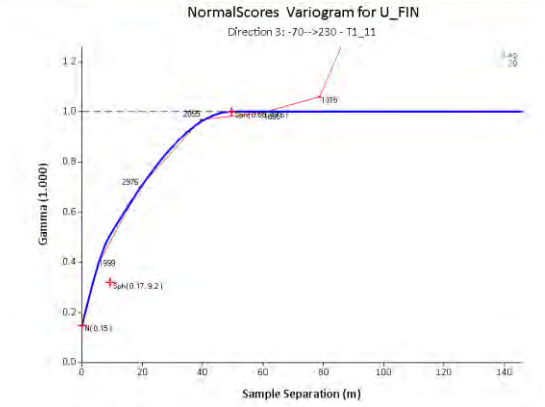
Nugget:	0.149	Ranges in Directions		
	Sill	1	2	3
Spherical	0.157	44	30.6	3.9
Spherical	0.655	131.8	105.9	26.3
Spherical	0.0394	167.5	109.2	26.4

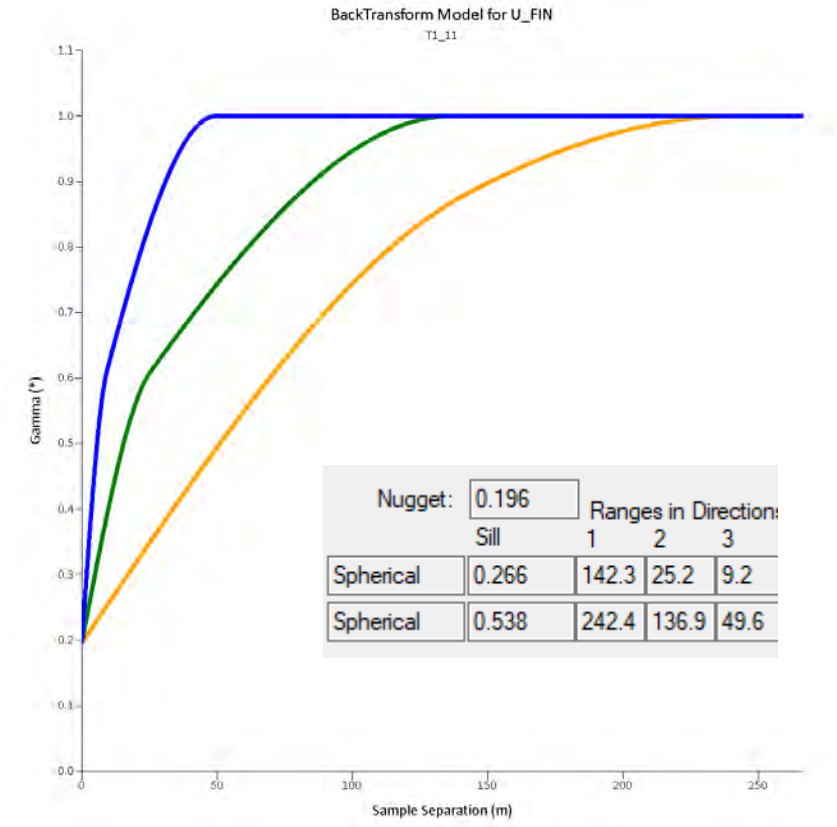
U







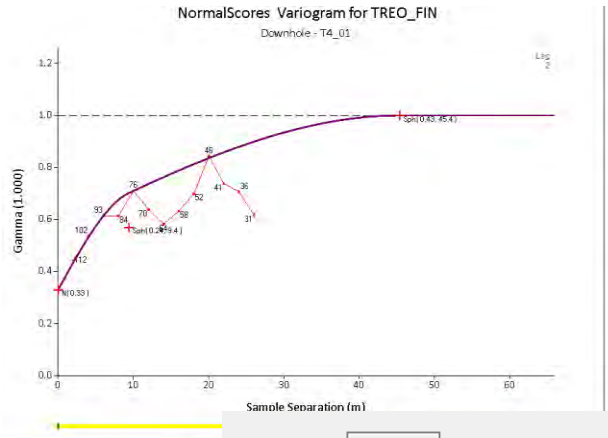


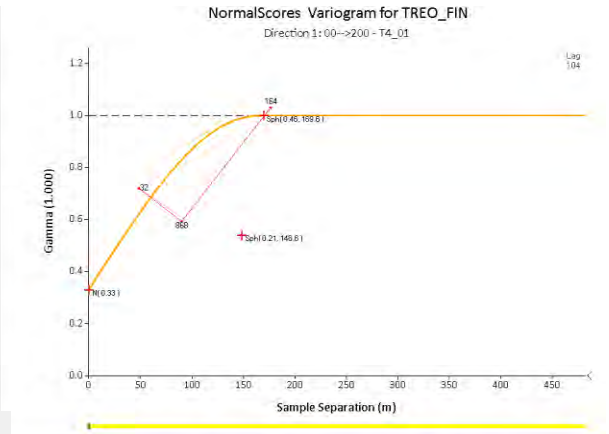


Nugget:	0.196	Ranges in Direction		
	Sill	1	2	3
Spherical	0.266	142.3	25.2	9.2
Spherical	0.538	242.4	136.9	49.6

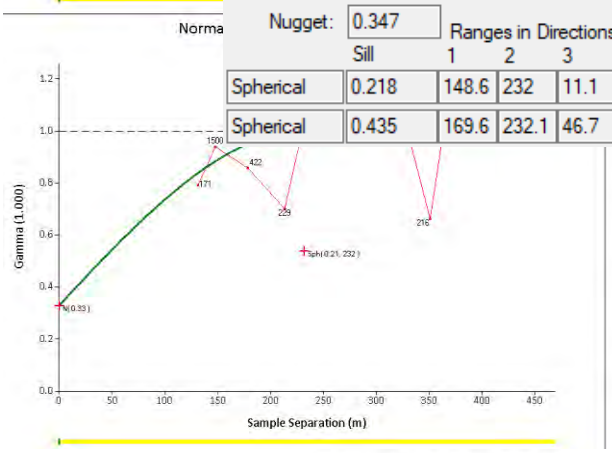
Target 1 Variogram models 0.5 - 1.0% TREO domain (ESTDOM T4_01)

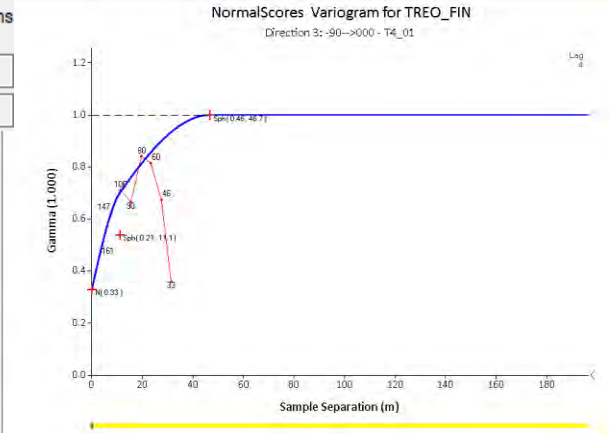
TREO

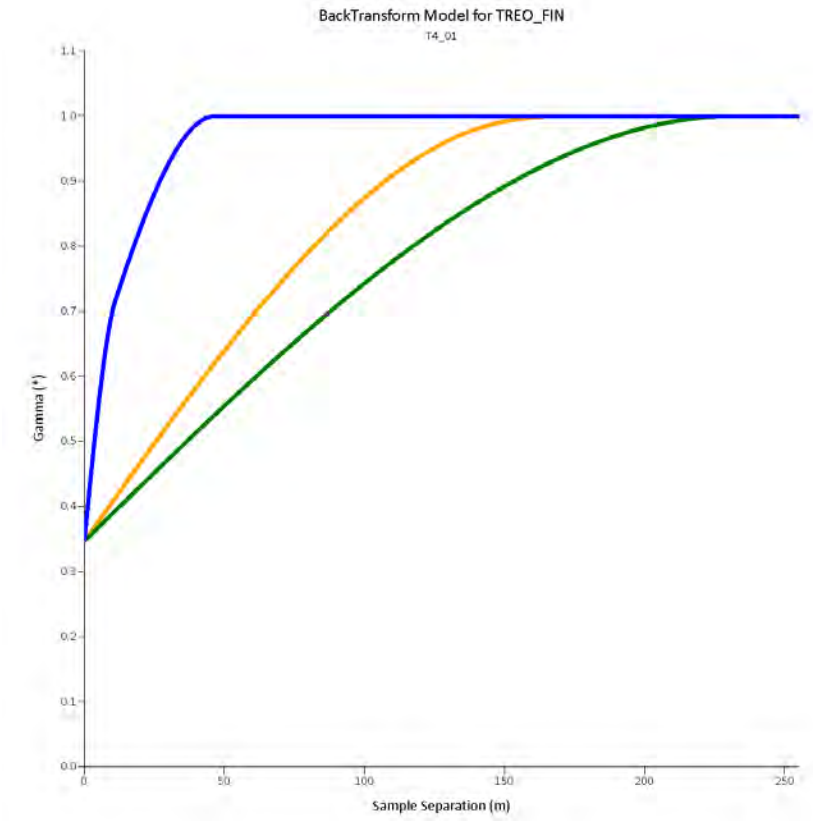




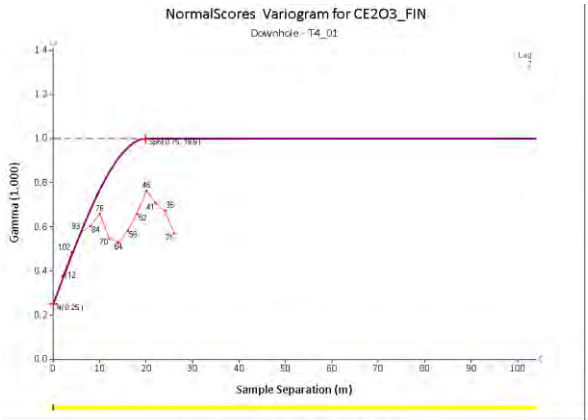
Nugget:	0.347	Ranges in Directions		
	Sill	1	2	3
Spherical	0.218	148.6	232	11.1
Spherical	0.435	169.6	232.1	46.7

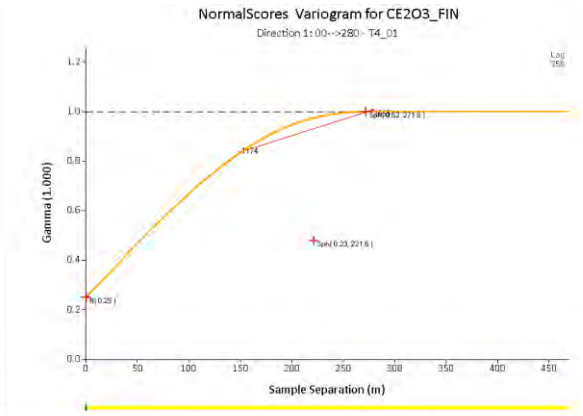


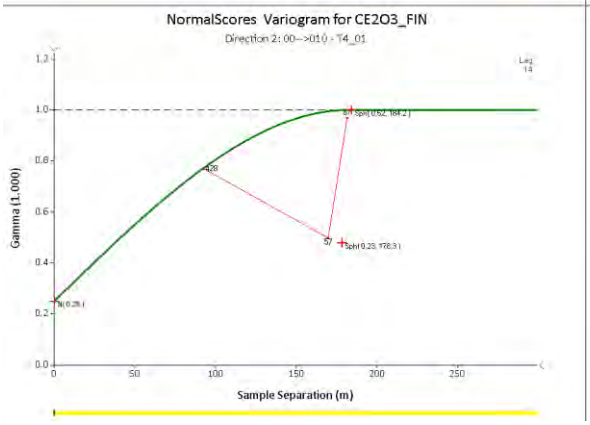


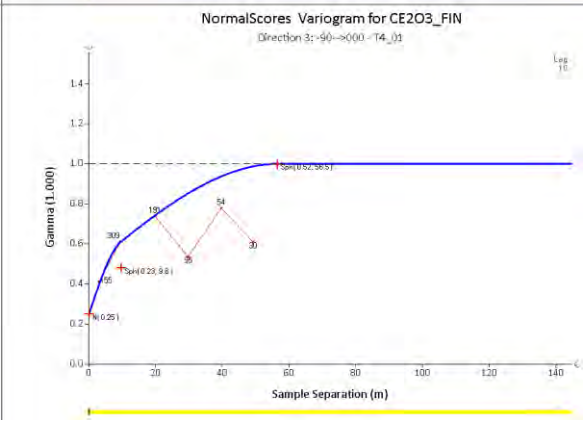


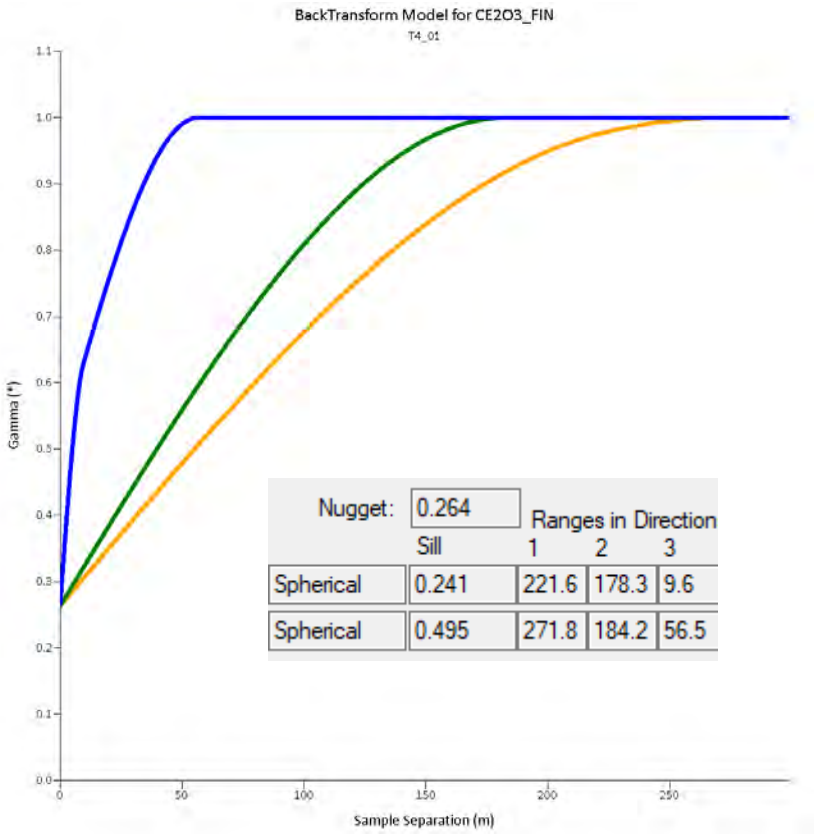
Ce_2O_3





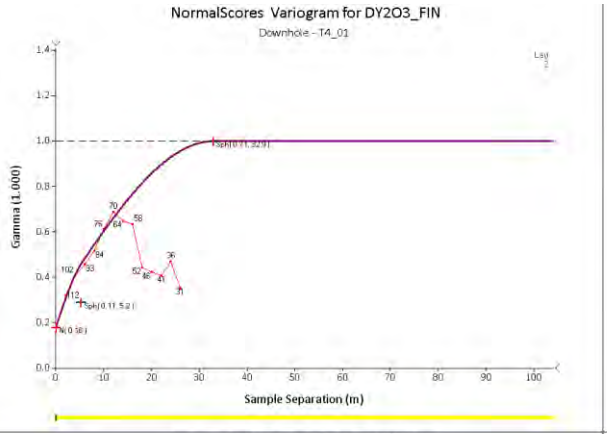


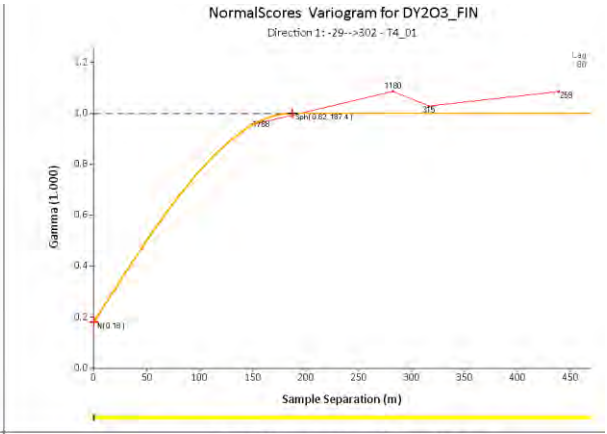


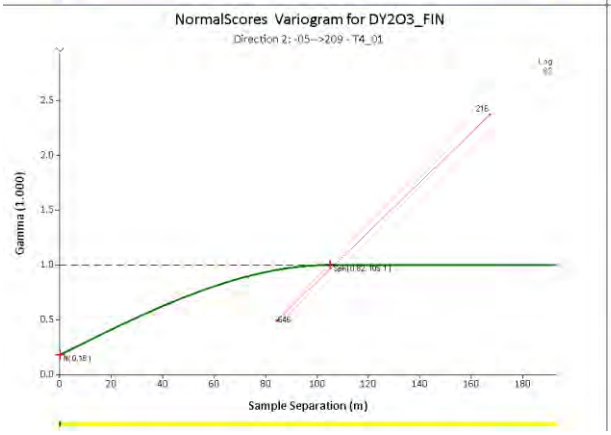


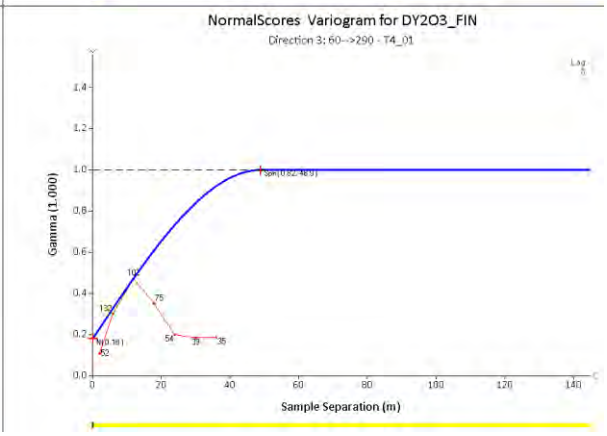
Nugget:	0.264	Ranges in Direction		
	Sill	1	2	3
Spherical	0.241	221.6	178.3	9.6
Spherical	0.495	271.8	184.2	56.5

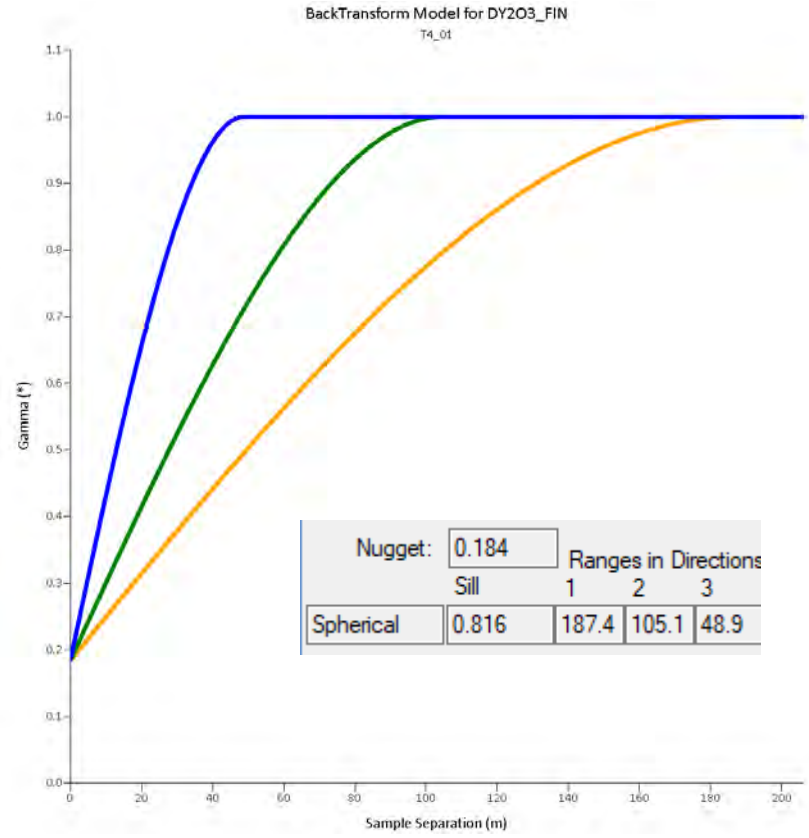
Dy_2O_3


NormalScores Variogram for DY2O3_FIN
Downhole - T4_01
Gamma (1.000)
Sample Separation (m)

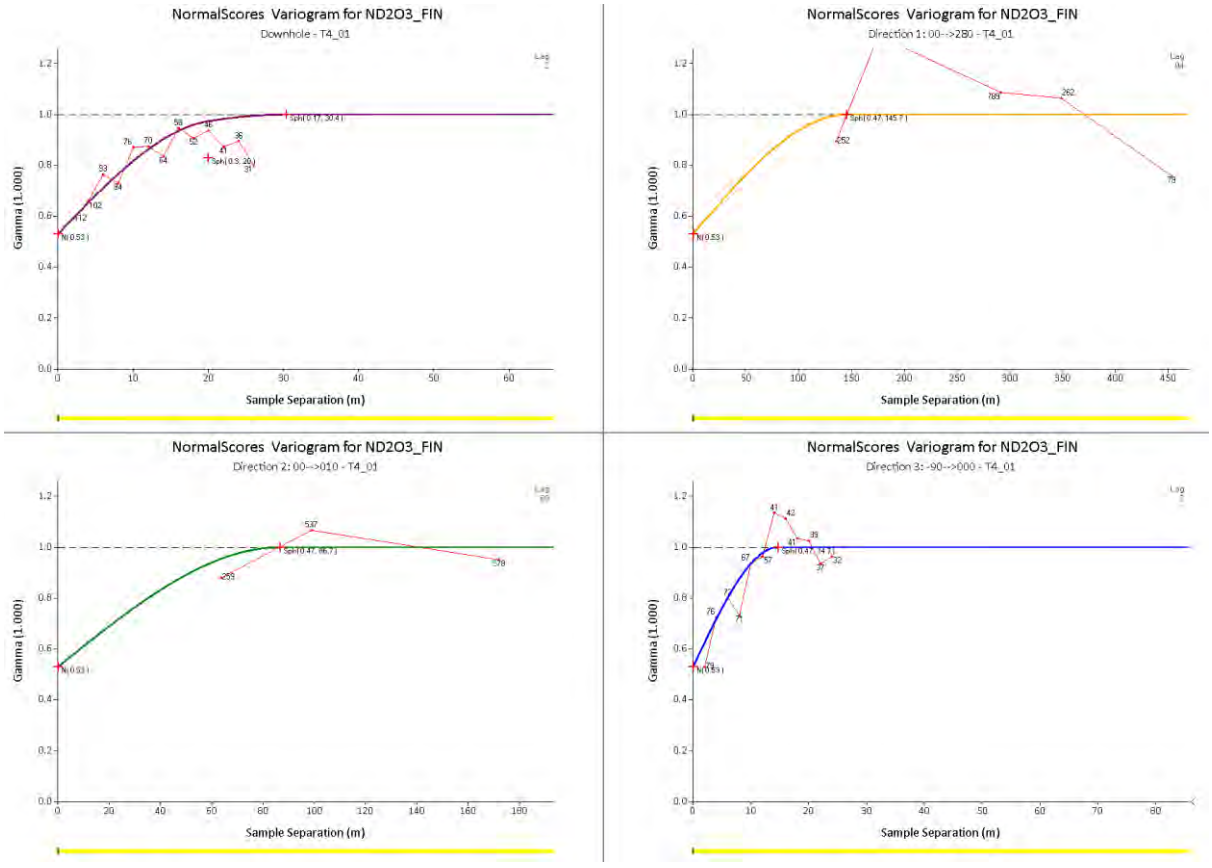

NormalScores Variogram for DY2O3_FIN
Direction 1: -29-->302 - T4_01
Gamma (1.000)
Sample Separation (m)

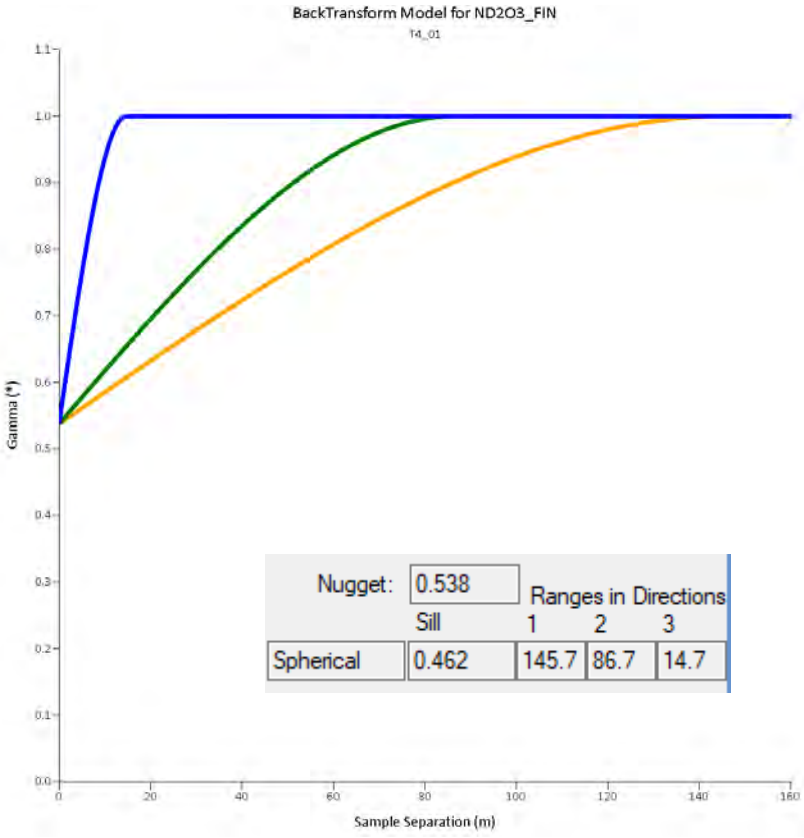

NormalScores Variogram for DY2O3_FIN
Direction 2: -05-->209 - T4_01
Gamma (1.000)
Sample Separation (m)


NormalScores Variogram for DY2O3_FIN
Direction 3: 60-->290 - T4_01
Gamma (1.000)
Sample Separation (m)

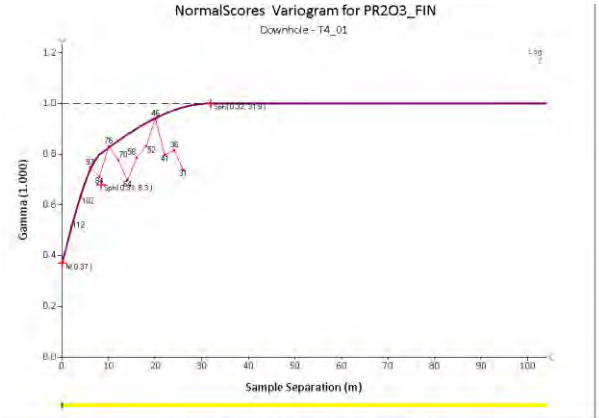

BackTransform Model for DY2O3_FIN
T4_01
Gamma (*)
Sample Separation (m)
Nugget: 0.184
Ranges in Directions
Sill 1 2 3
Spherical 0.816 187.4 105.1 48.9

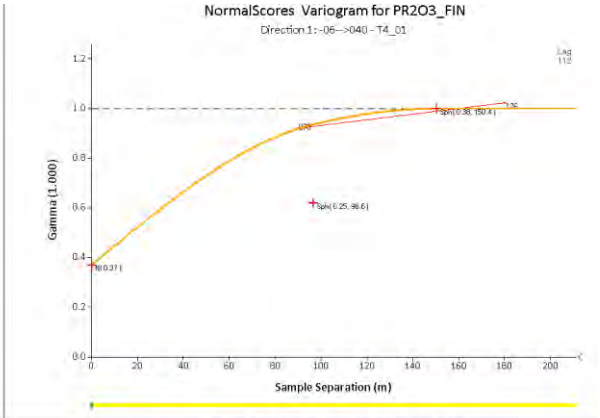
Nd_2O_3

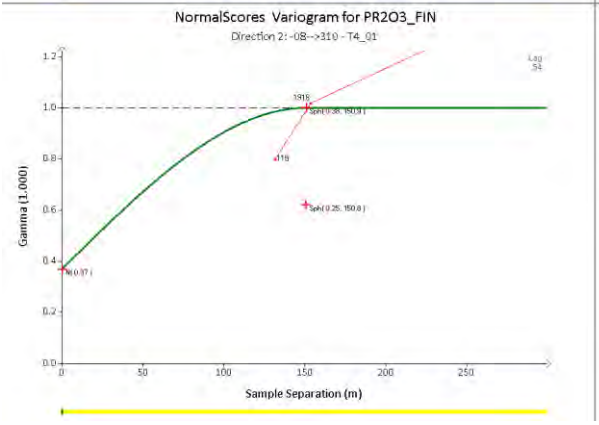

NormalScores Variogram for ND2O3_FIN
Downhole - T4_01
Direction 1: 00-->280 - T4_01
Direction 2: 00-->010 - T4_01
Direction 3: -90-->000 - T4_01
Gamma (1.000)
Sample Separation (m)

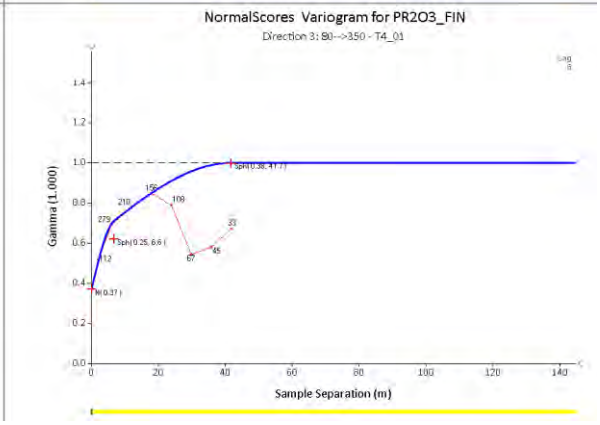

BackTransform Model for ND2O3_FIN
T4_01
Gamma (*)
Sample Separation (m)
Nugget: 0.538
Ranges in Directions
Sill 1 2 3
Spherical 0.462 145.7 86.7 14.7

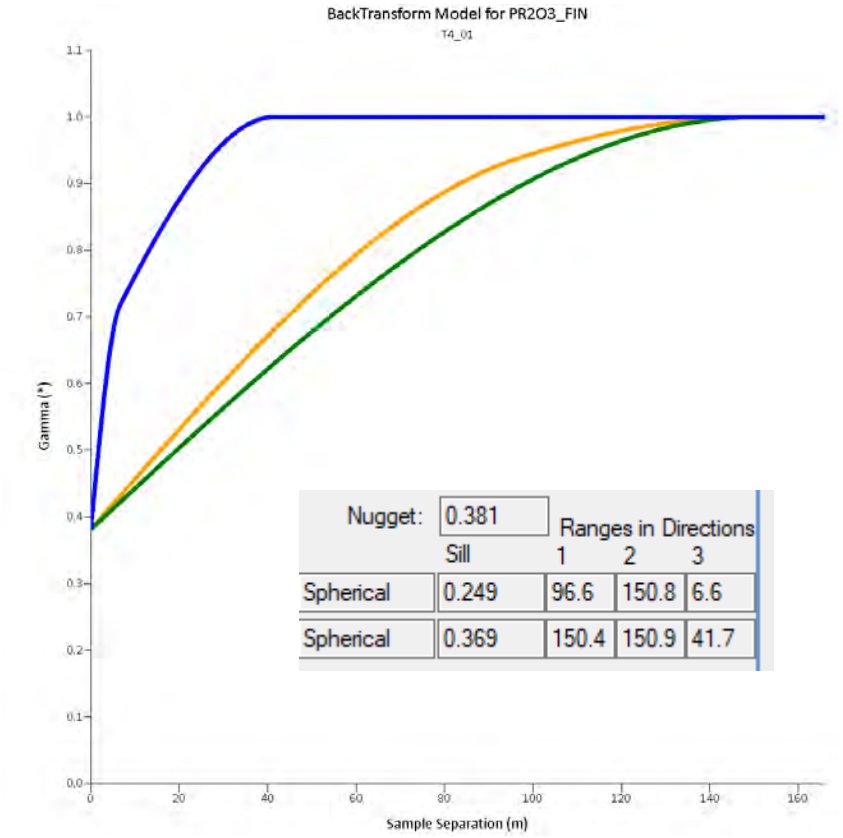
Pr_2O_3





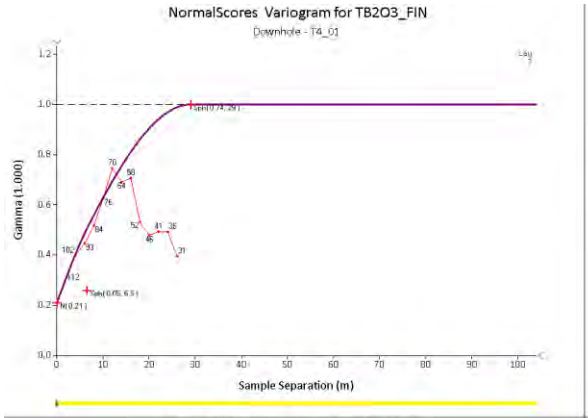


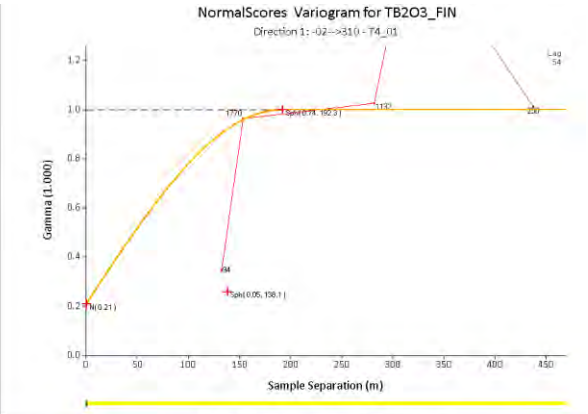


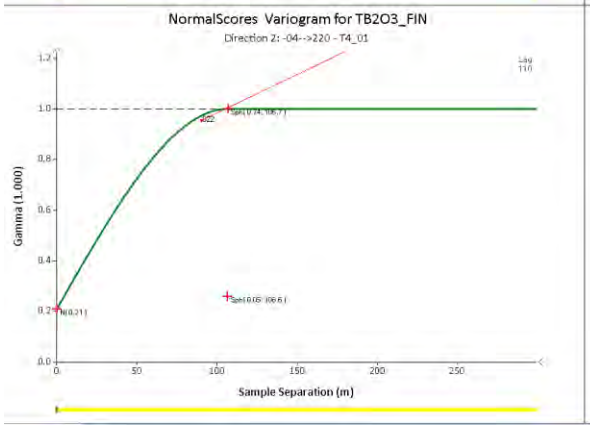


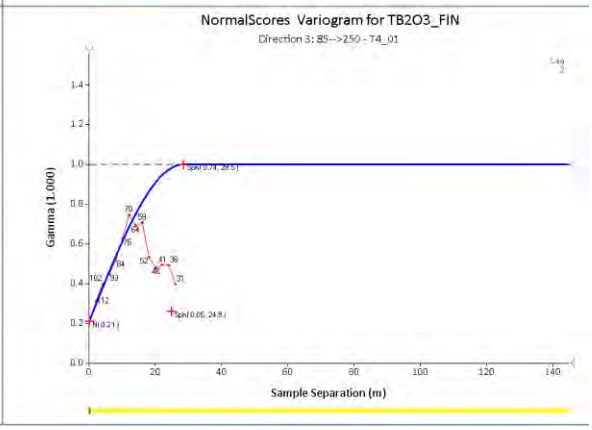
Nugget:	0.381	Ranges in Directions		
	Sill	1	2	3
Spherical	0.249	96.6	150.8	6.6
Spherical	0.369	150.4	150.9	41.7

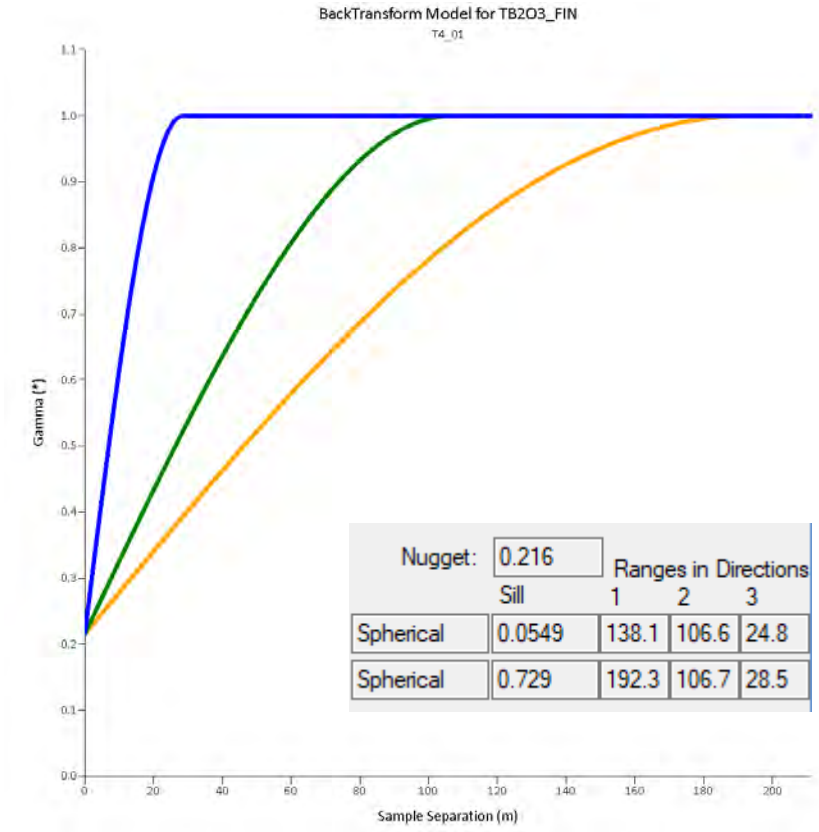
Tb_2O_3





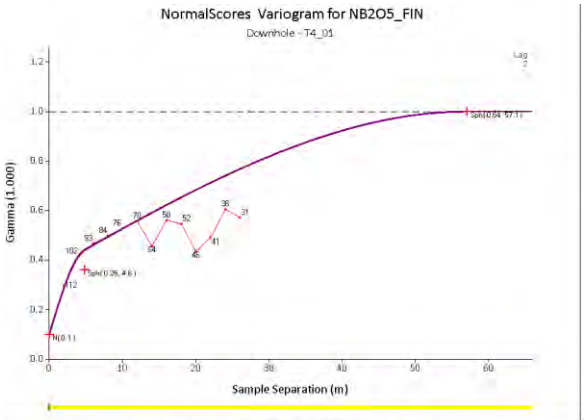


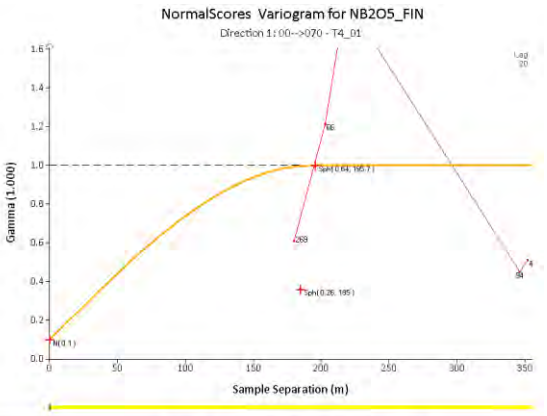


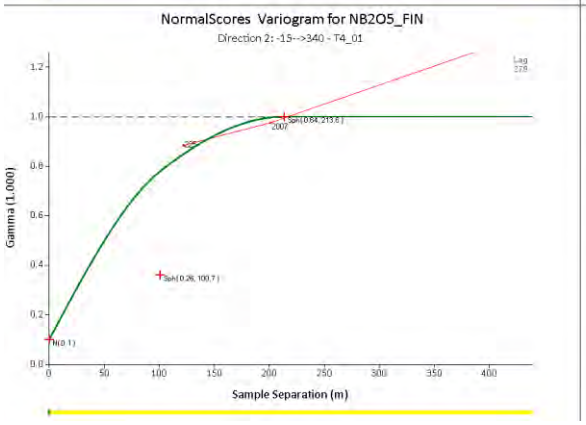


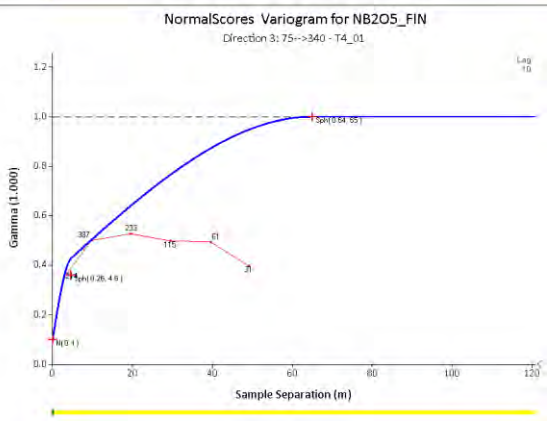
Nugget:	0.216	Ranges in Directions		
	Sill	1	2	3
Spherical	0.0549	138.1	106.6	24.8
Spherical	0.729	192.3	106.7	28.5

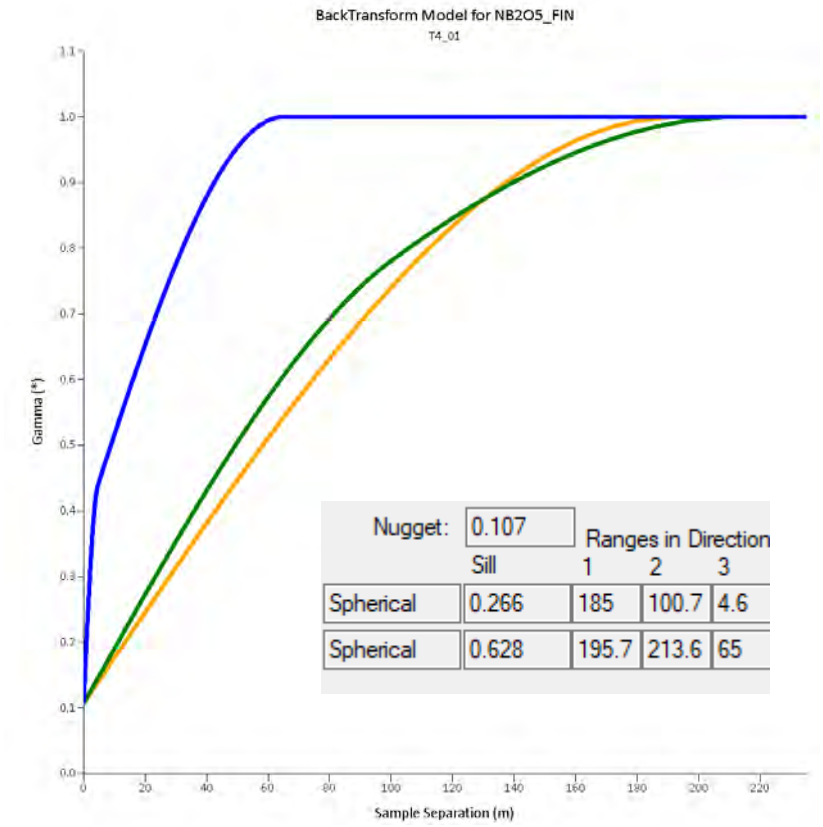
Nb_2O_5





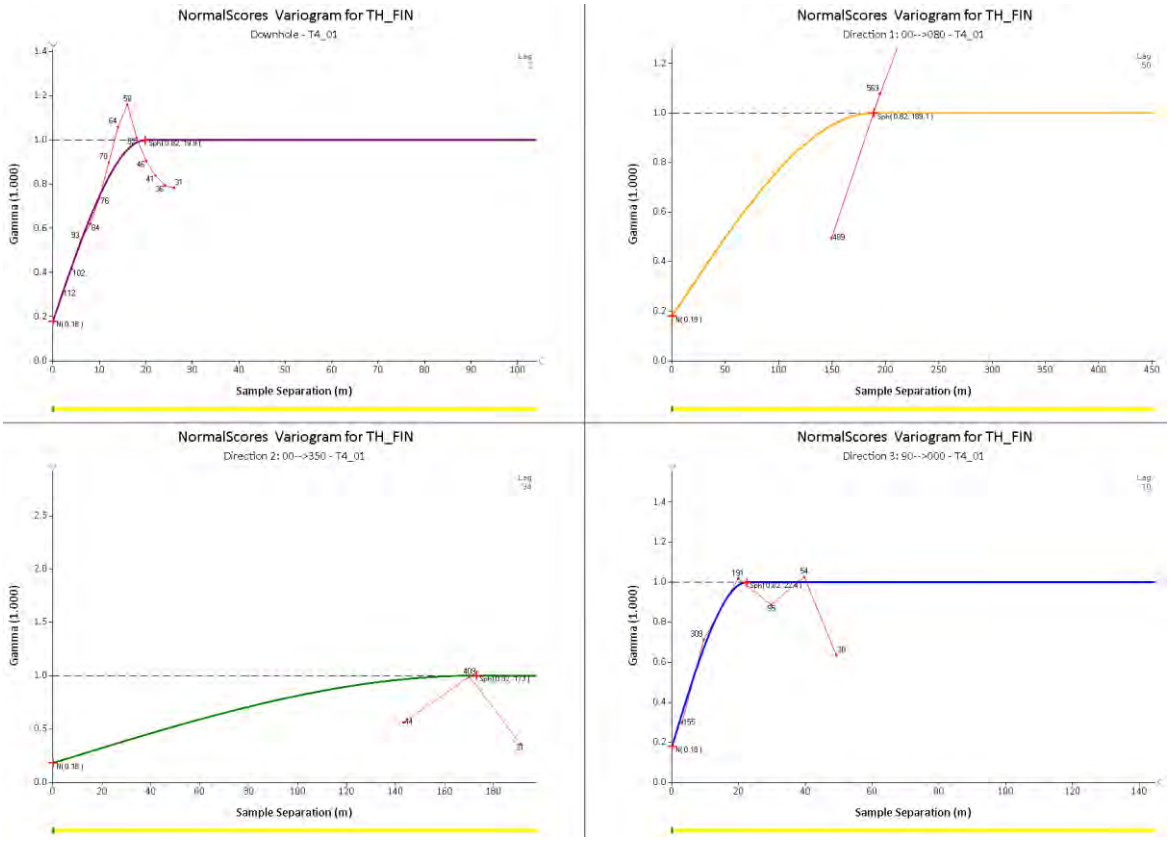


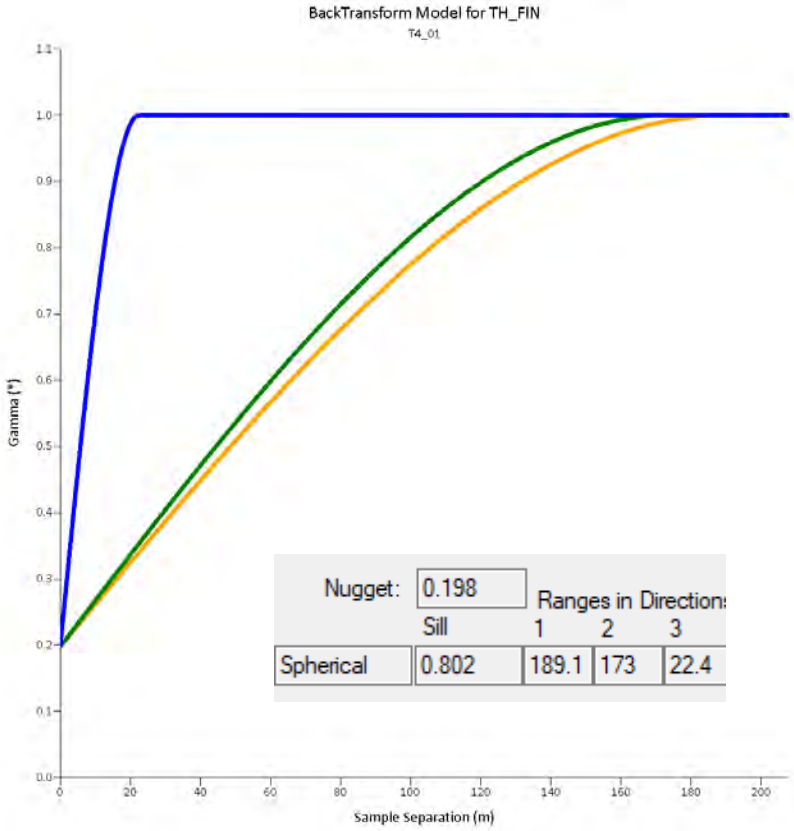




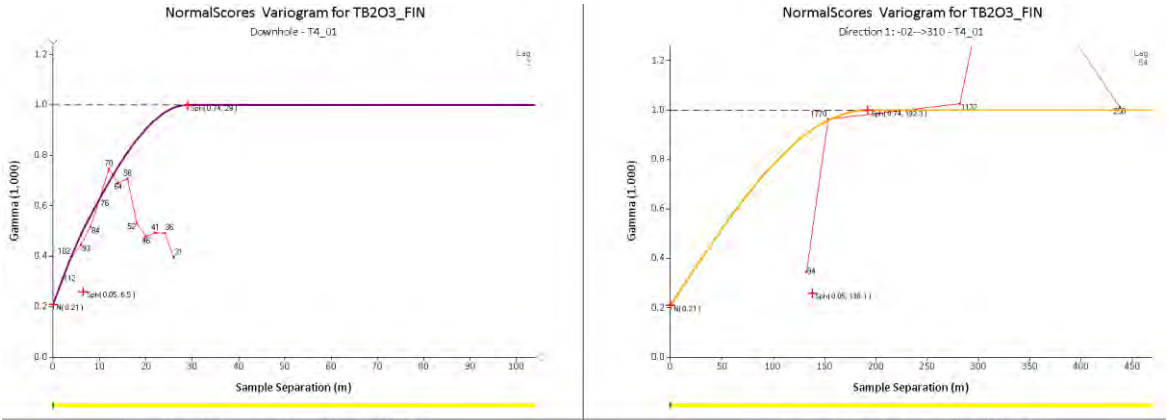
Nugget:	0.107	Ranges in Direction		
	Sill	1	2	3
Spherical	0.266	185	100.7	4.6
Spherical	0.628	195.7	213.6	65

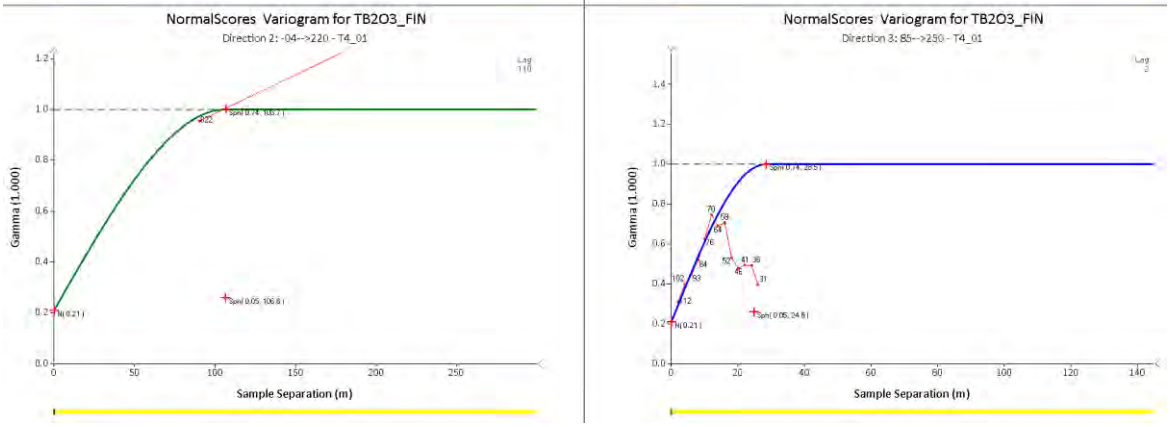
Th

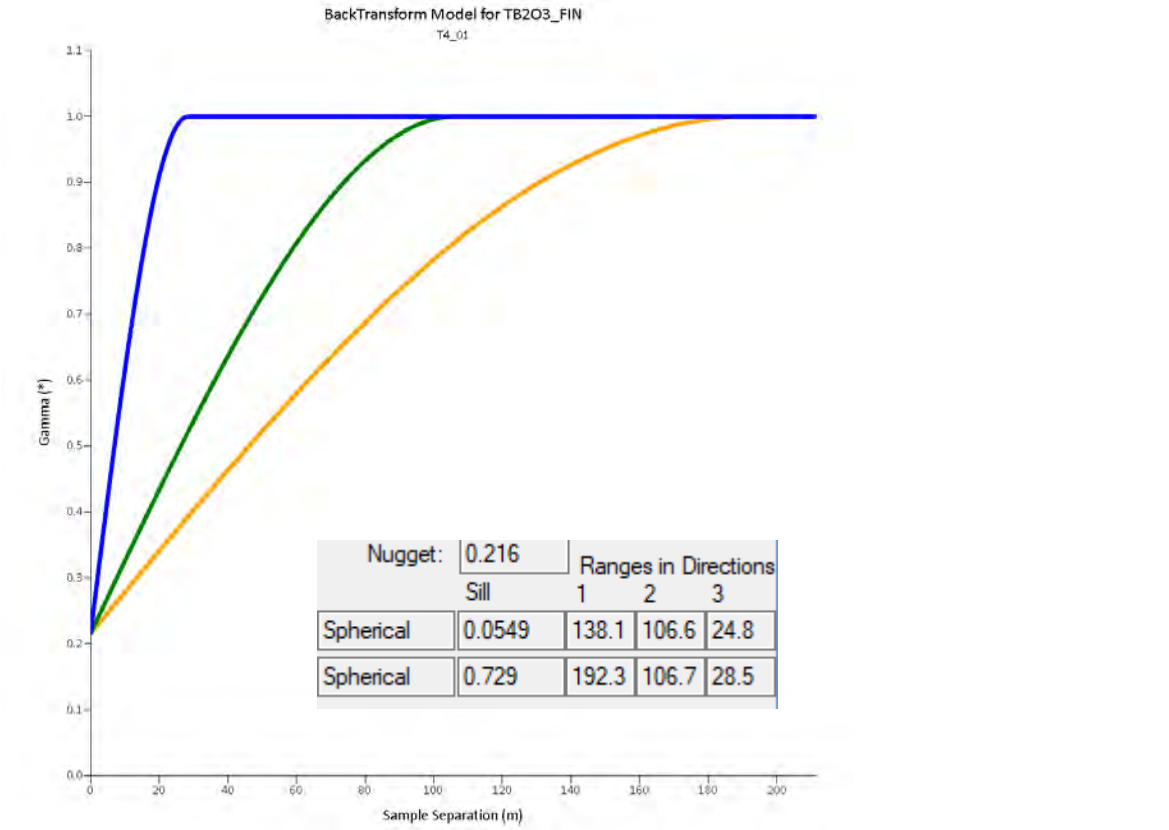

NormalScores Variogram for TH_FIN
Downhole - T4_01
Gamma (1.000)
Sample Separation (m)
NormalScores Variogram for TH_FIN
Direction 1: 00-->080 - T4_01
Gamma (1.000)
Sample Separation (m)
NormalScores Variogram for TH_FIN
Direction 2: 00-->350 - T4_01
Gamma (1.000)
Sample Separation (m)
NormalScores Variogram for TH_FIN
Direction 3: 90-->000 - T4_01
Gamma (1.000)
Sample Separation (m)


BackTransform Model for TH_FIN
T4_01
Gamma (*)
Sample Separation (m)
Nugget: 0.198
Ranges in Directions
Sill 1 2 3
Spherical 0.802 189.1 173 22.4

U



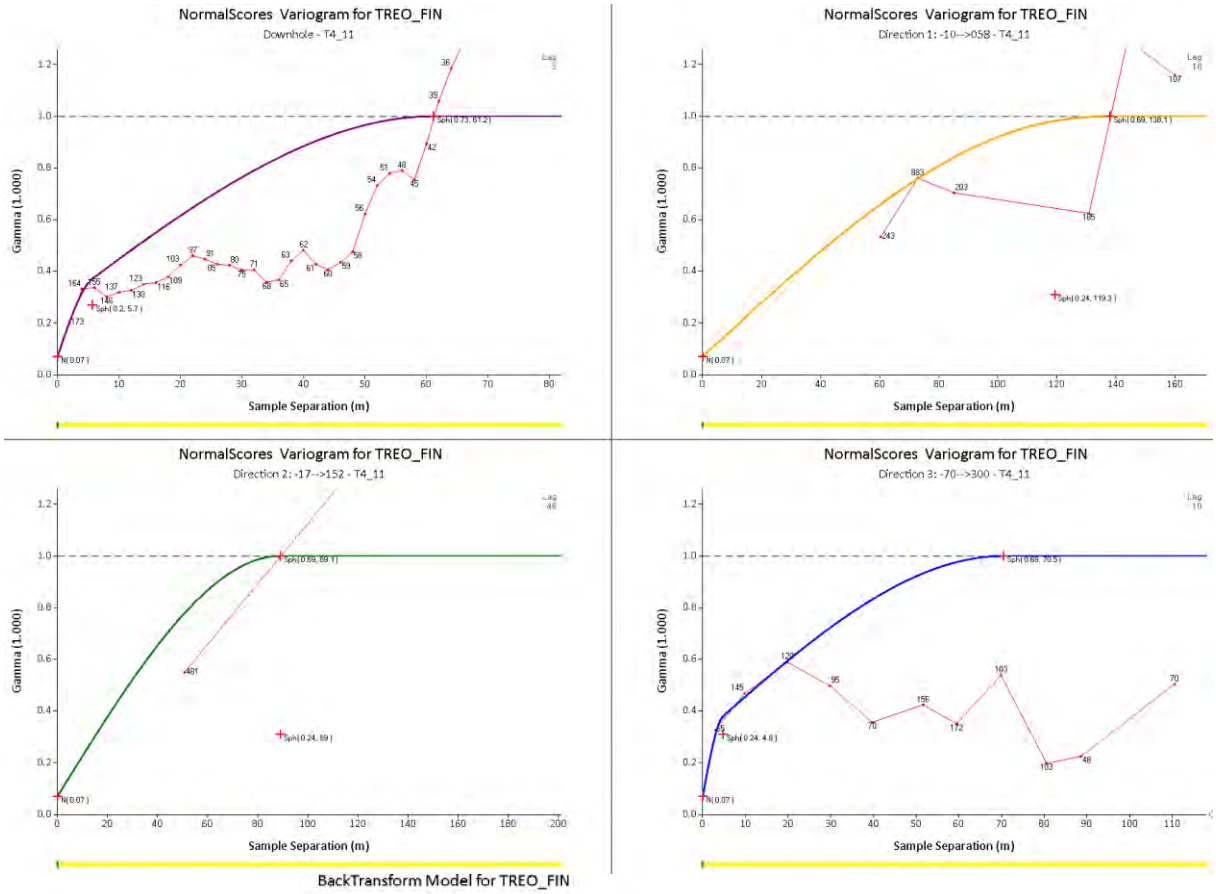


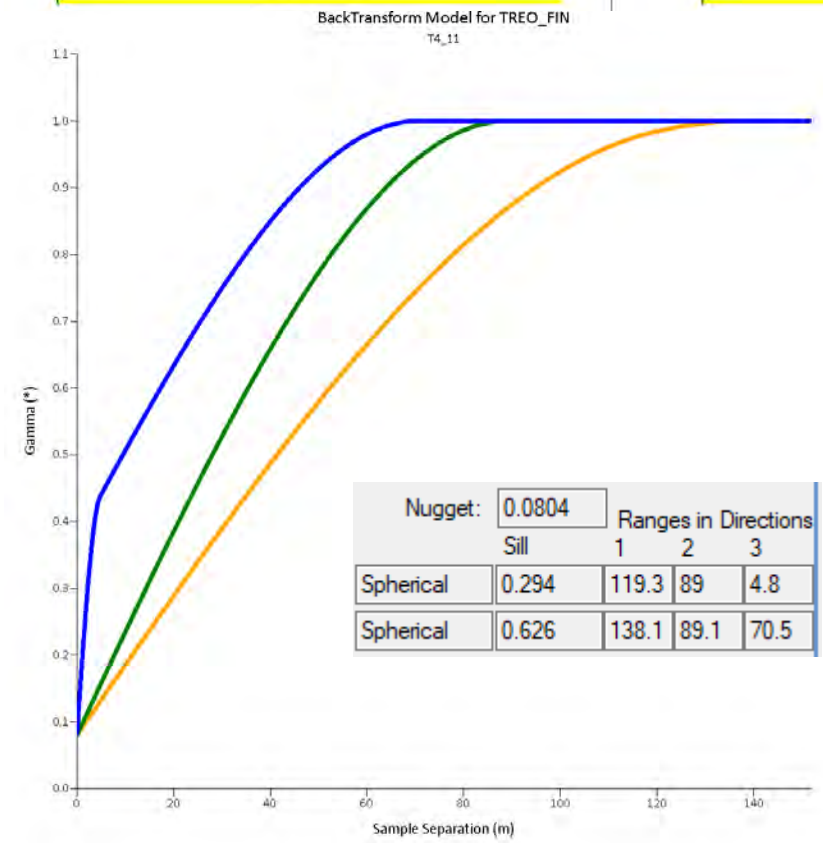


Nugget:	0.216	Ranges in Directions		
	Sill	1	2	3
Spherical	0.0549	138.1	106.6	24.8
Spherical	0.729	192.3	106.7	28.5

Target 1 Variogram models ≥1.0% TREO domain (ESTDOM T4_11)

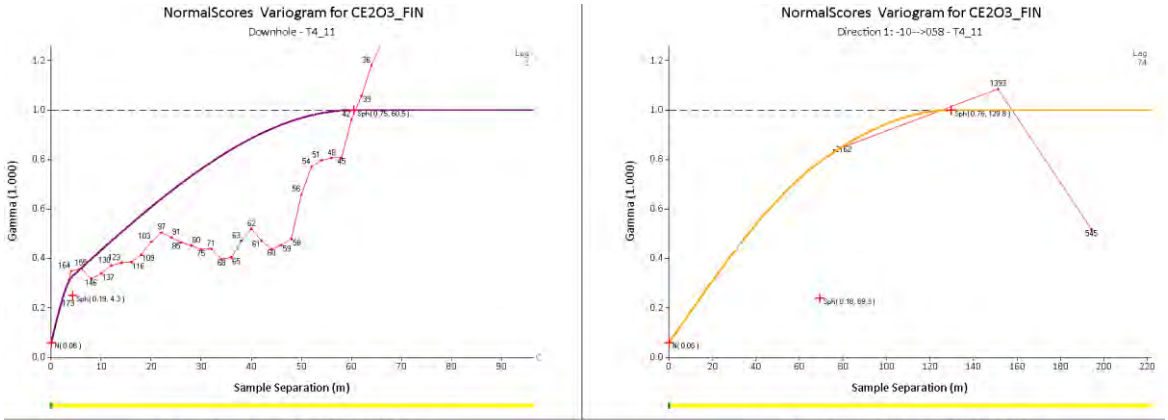
TREO



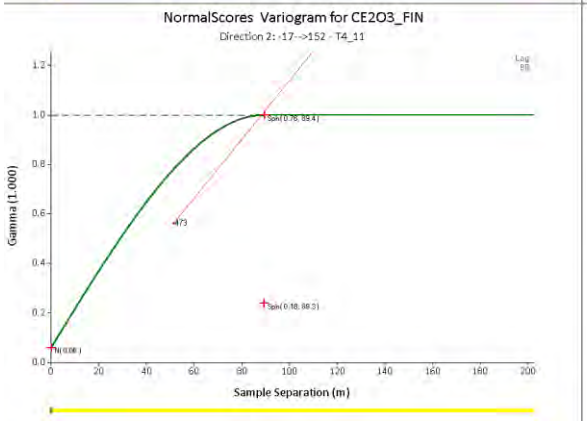


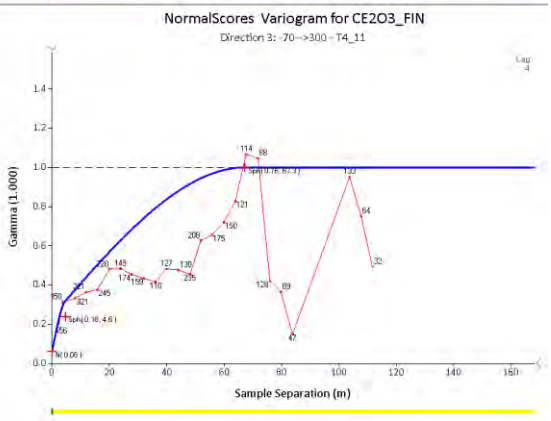
Nugget:	0.0804	Ranges in Directions		
	Sill	1	2	3
Spherical	0.294	119.3	89	4.8
Spherical	0.626	138.1	89.1	70.5

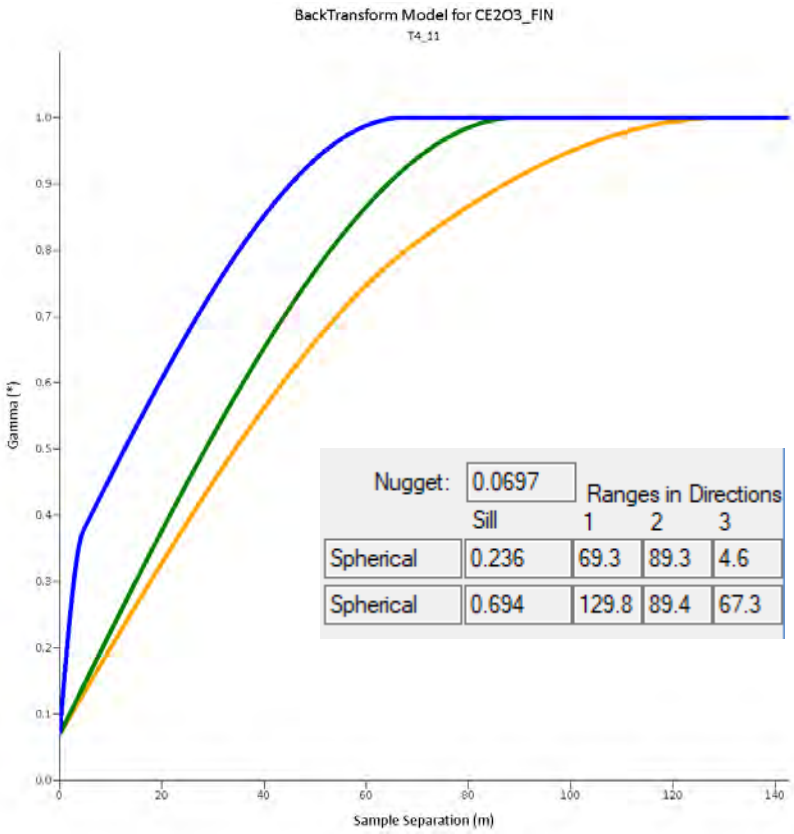
Ce_2O_3


NormalScores Variogram for CE2O3_FIN
Downhole - T4_11
Gamma (1.000)
Sample Separation (m)

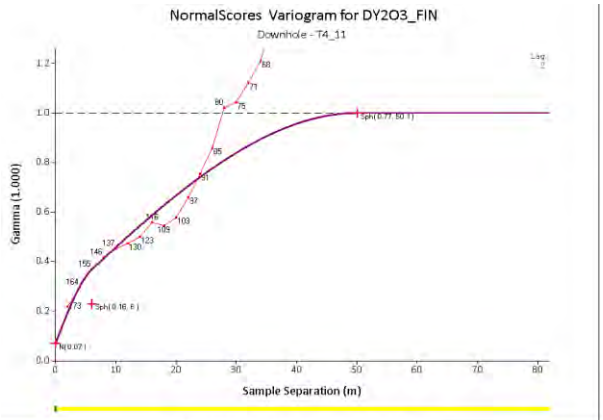
NormalScores Variogram for CE2O3_FIN
Direction 1: -10-->058 - T4_11
Gamma (1.000)
Sample Separation (m)

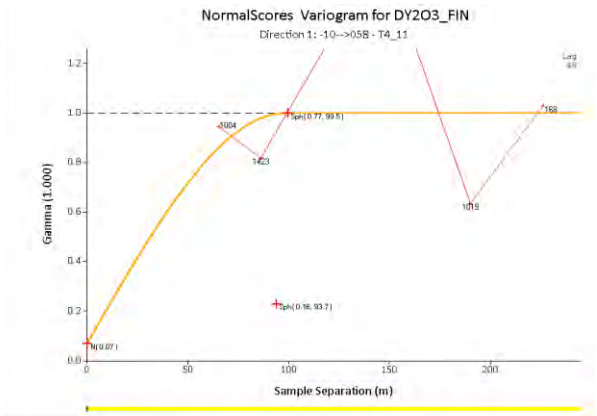

NormalScores Variogram for CE2O3_FIN
Direction 2: -17-->152 - T4_11
Gamma (1.000)
Sample Separation (m)

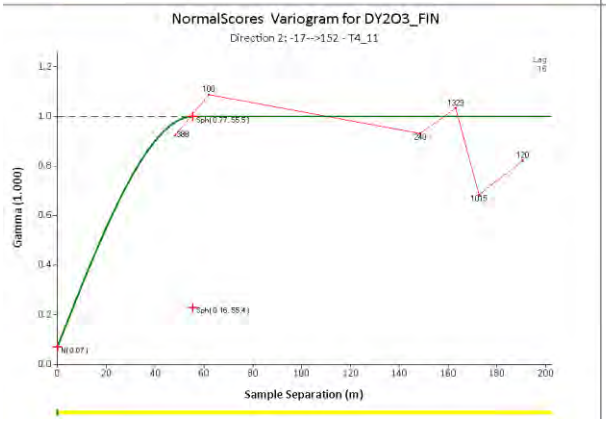

NormalScores Variogram for CE2O3_FIN
Direction 3: -70-->300 - T4_11
Gamma (1.000)
Sample Separation (m)

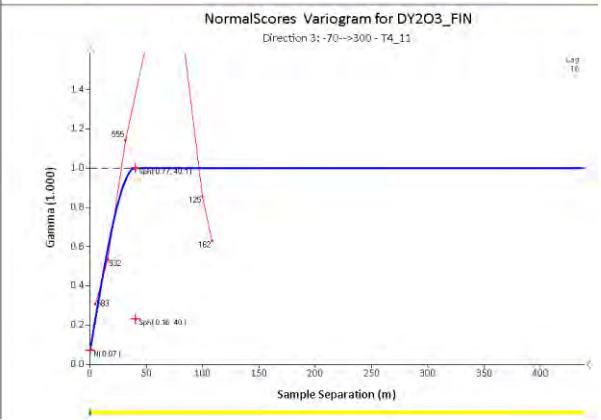

BackTransform Model for CE2O3_FIN
T4_11
Gamma (*)
Sample Separation (m)
Nugget: 0.0697
Ranges in Directions
Sill 1 2 3
Spherical 0.236 69.3 89.3 4.6
Spherical 0.694 129.8 89.4 67.3

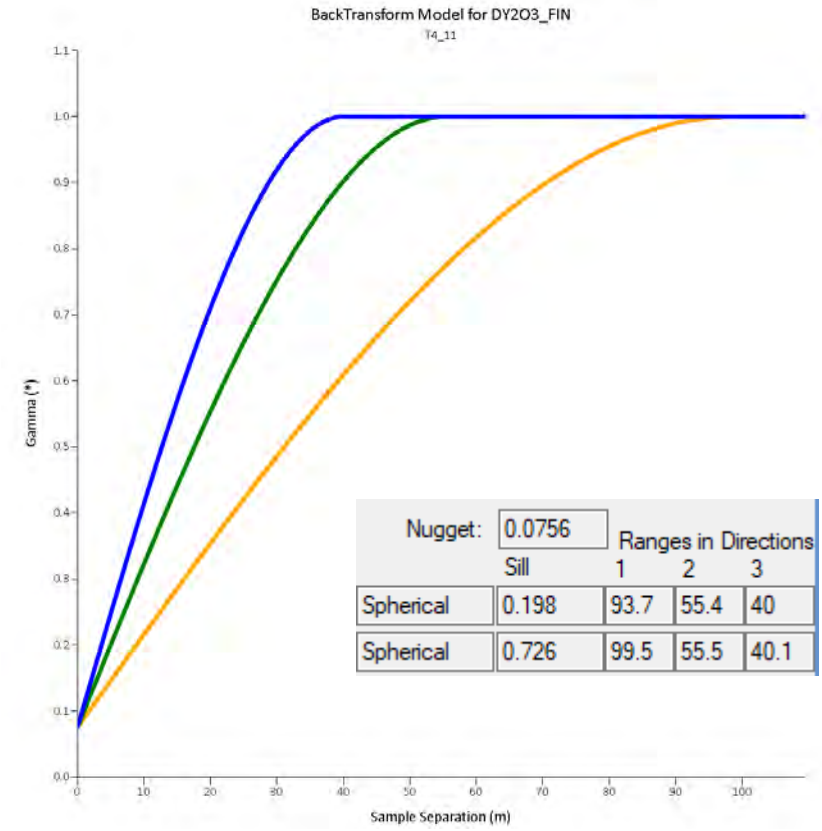
Dy_2O_3





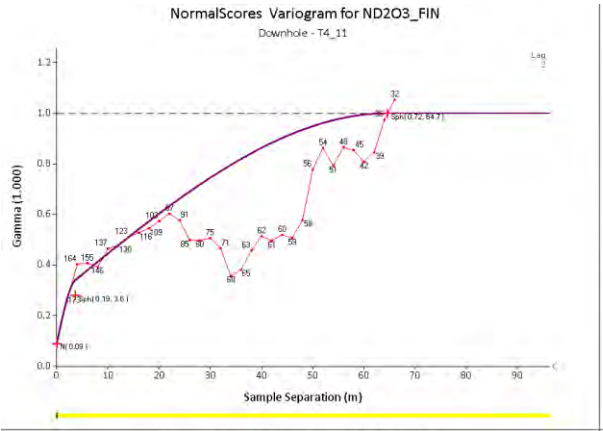


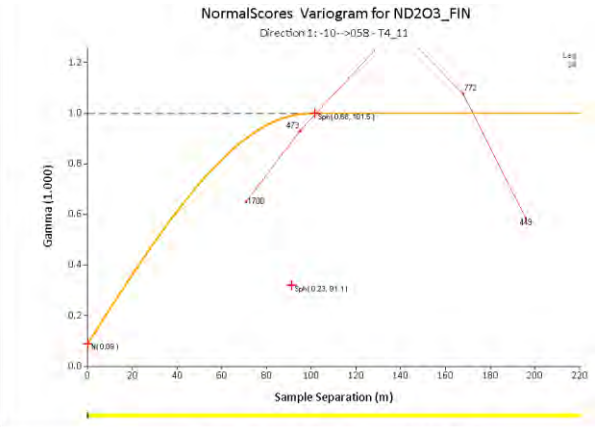


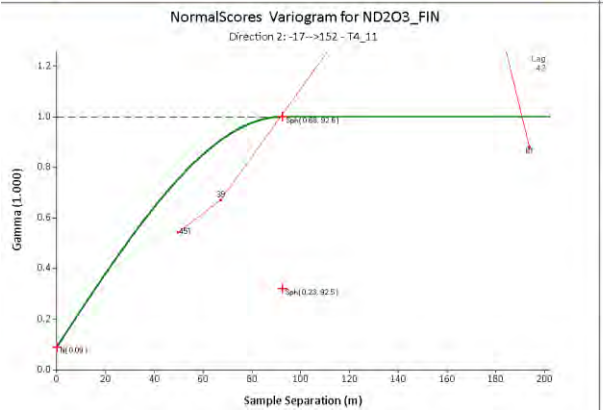


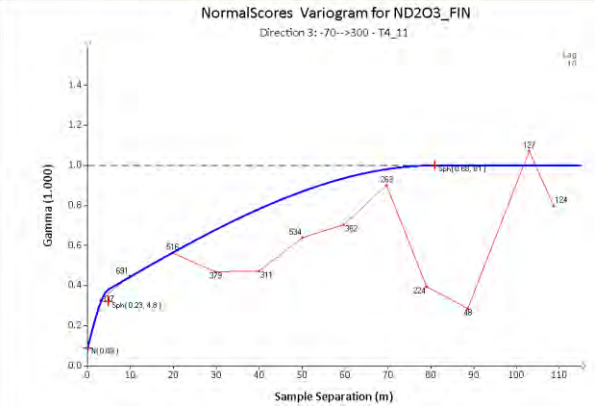
Nugget:	0.0756	Ranges in Directions		
	Sill	1	2	3
Spherical	0.198	93.7	55.4	40
Spherical	0.726	99.5	55.5	40.1

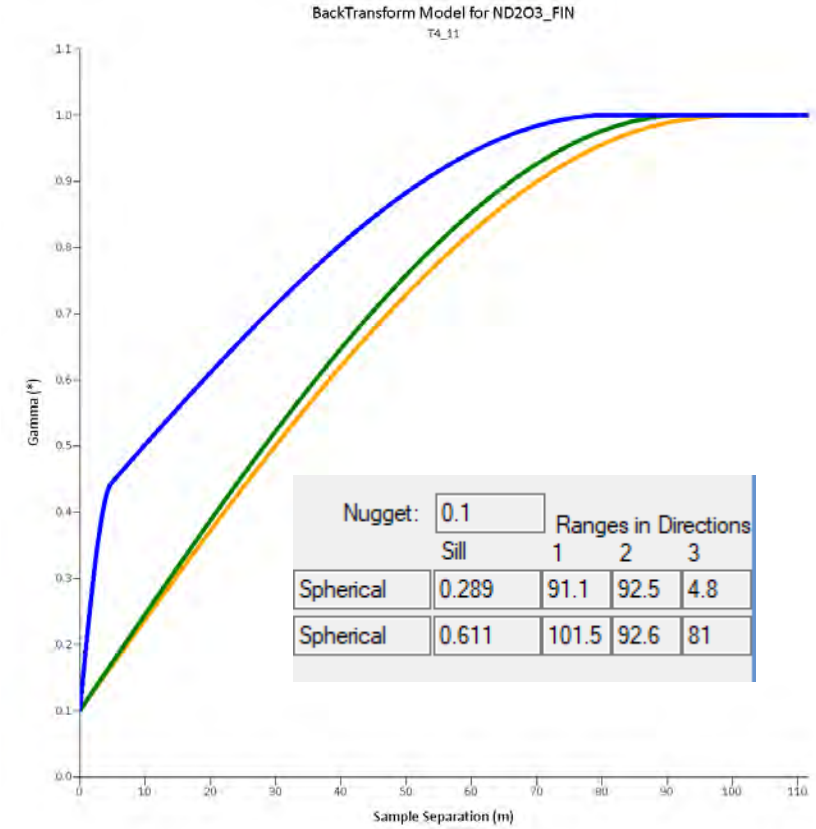
Nd_2O_3





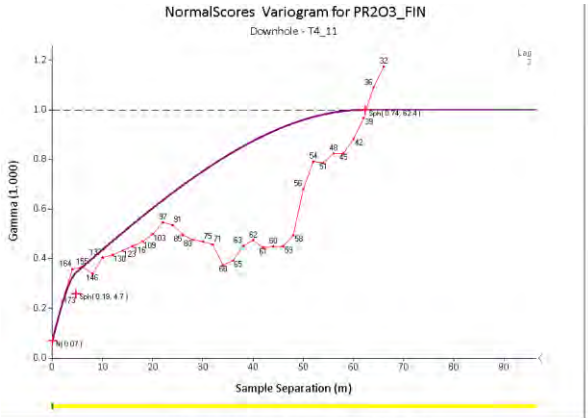


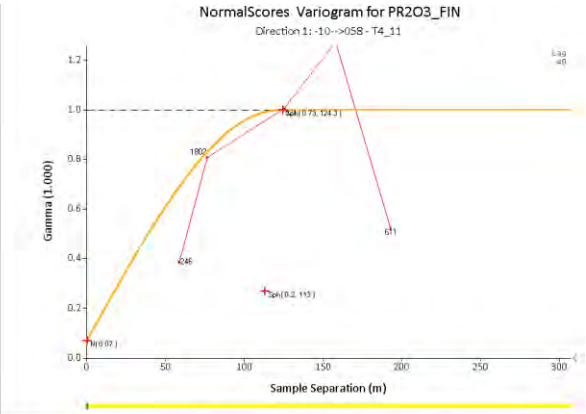


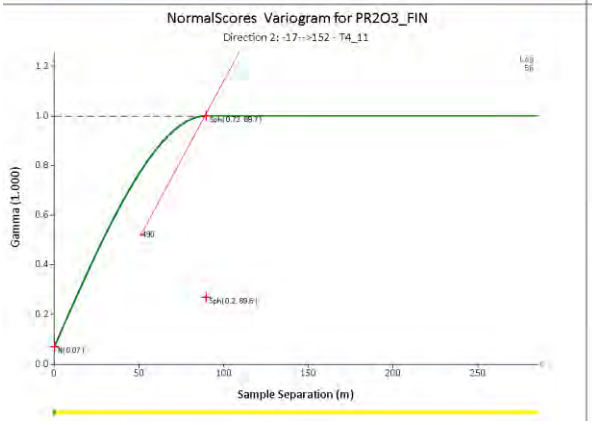


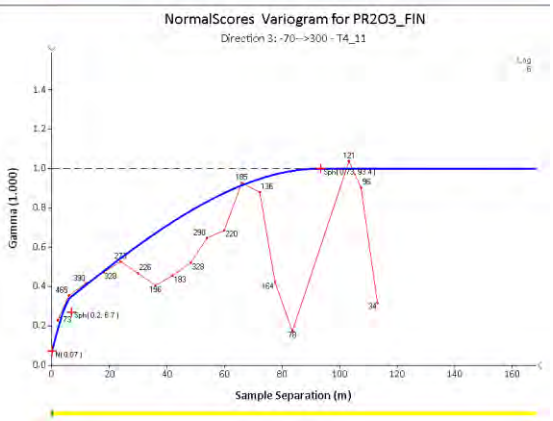
Nugget:	0.1	Ranges in Directions		
	Sill	1	2	3
Spherical	0.289	91.1	92.5	4.8
Spherical	0.611	101.5	92.6	81

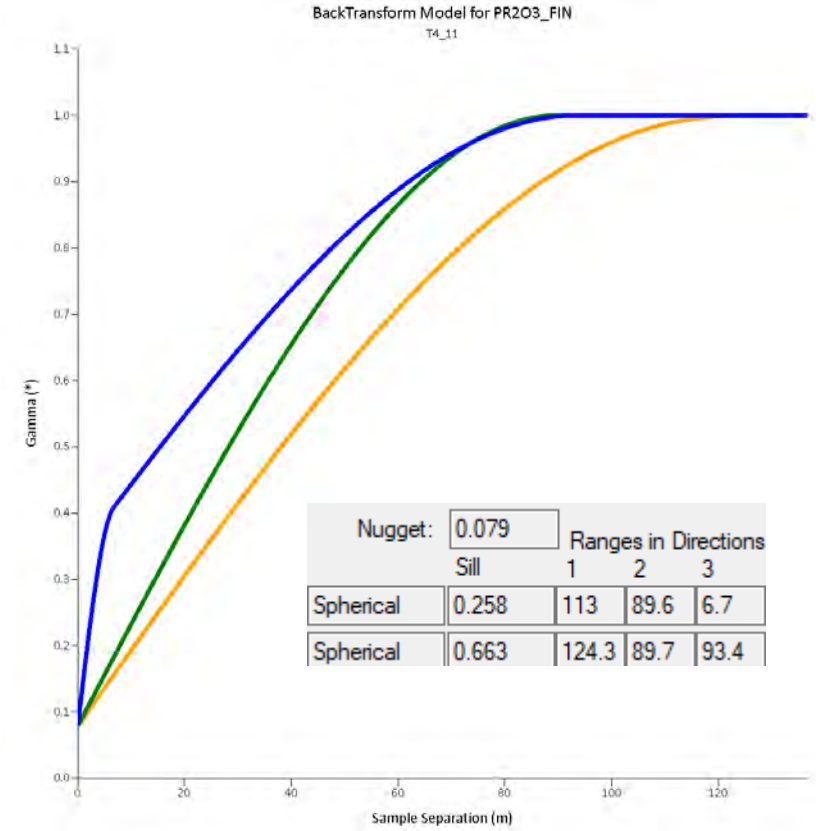
Pr_2O_3





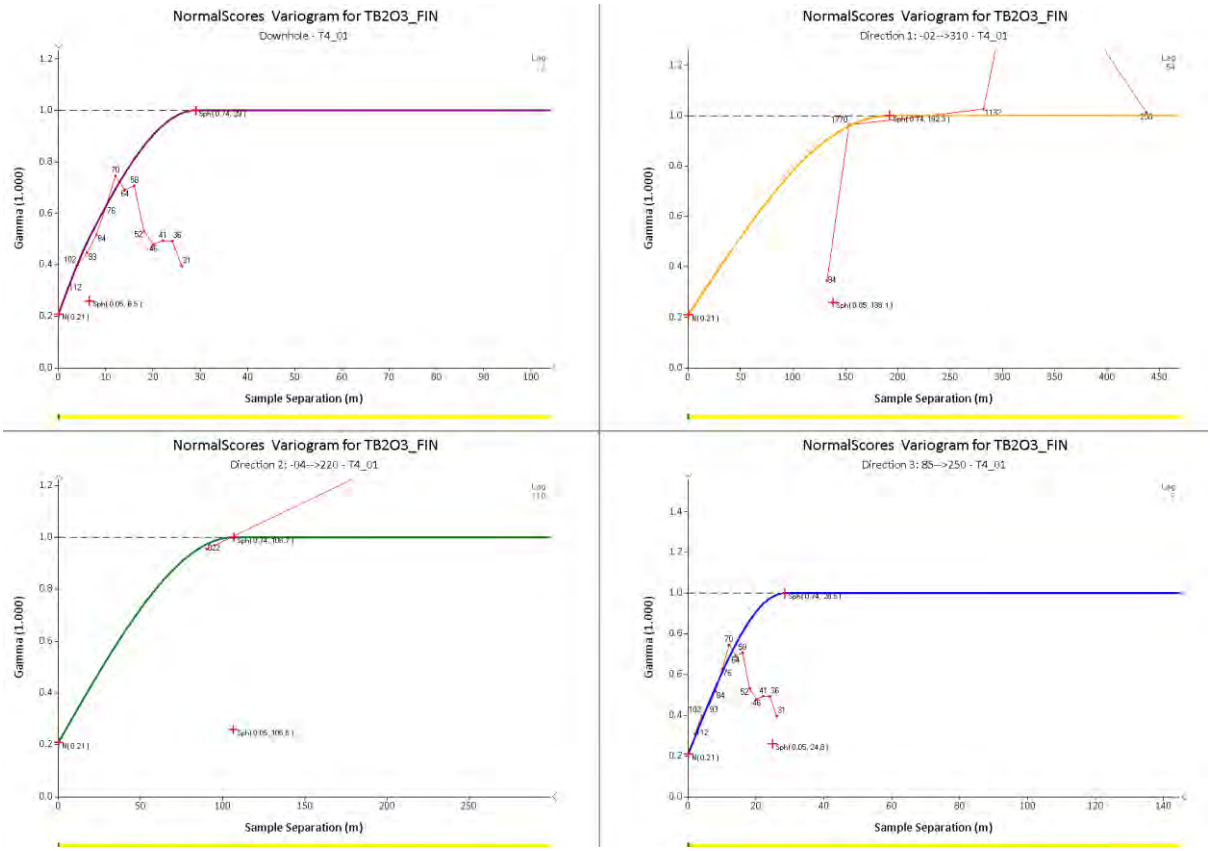


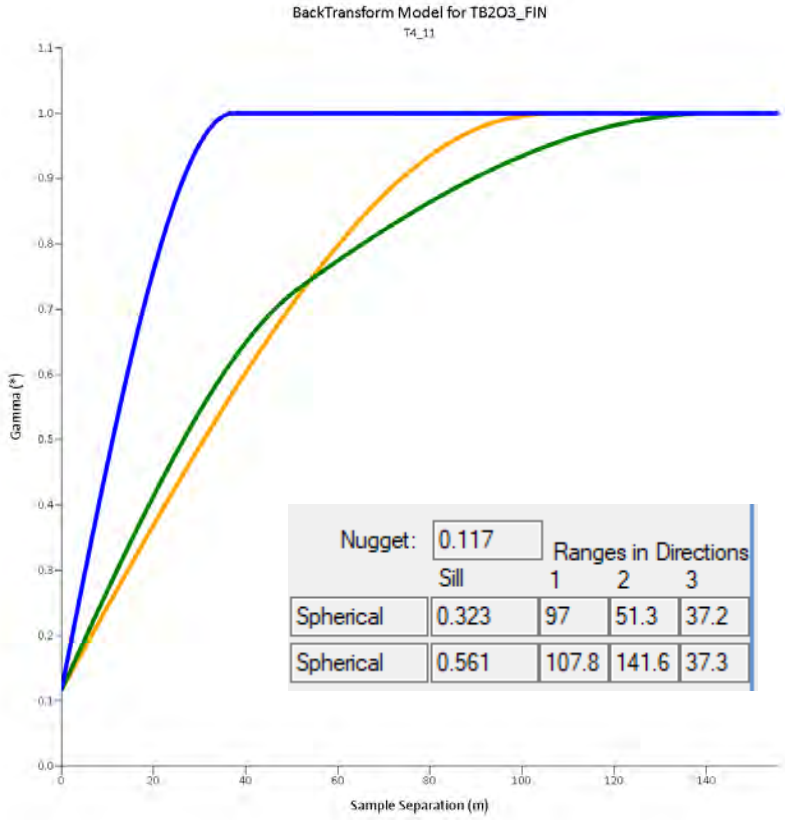




	Nugget:	0.079	Ranges in Directions		
		Sill	1	2	3
Spherical		0.258	113	89.6	6.7
Spherical		0.663	124.3	89.7	93.4

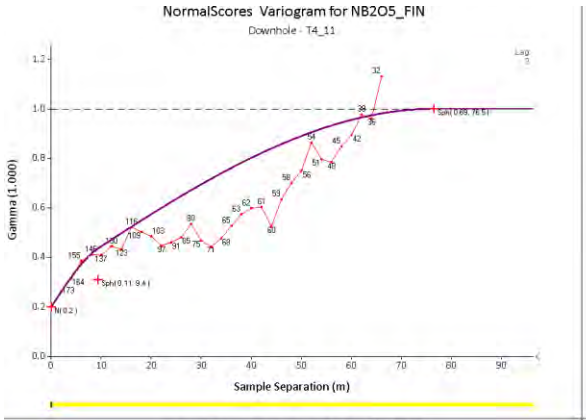
Tb_2O_3

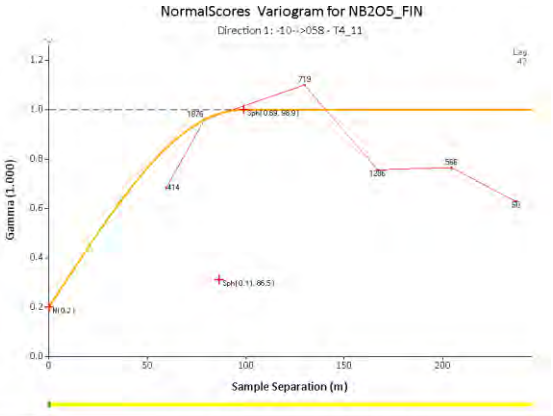


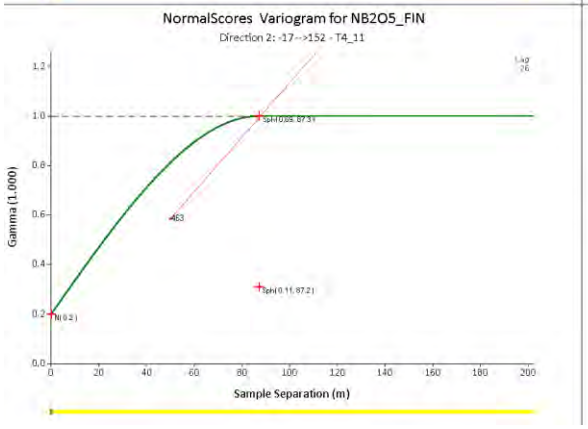


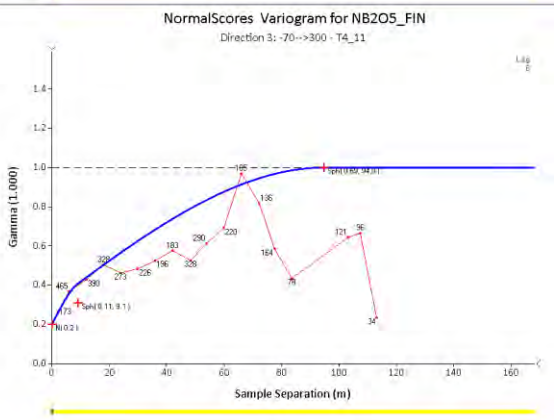
Nugget:	0.117	Ranges in Directions		
	Sill	1	2	3
Spherical	0.323	97	51.3	37.2
Spherical	0.561	107.8	141.6	37.3

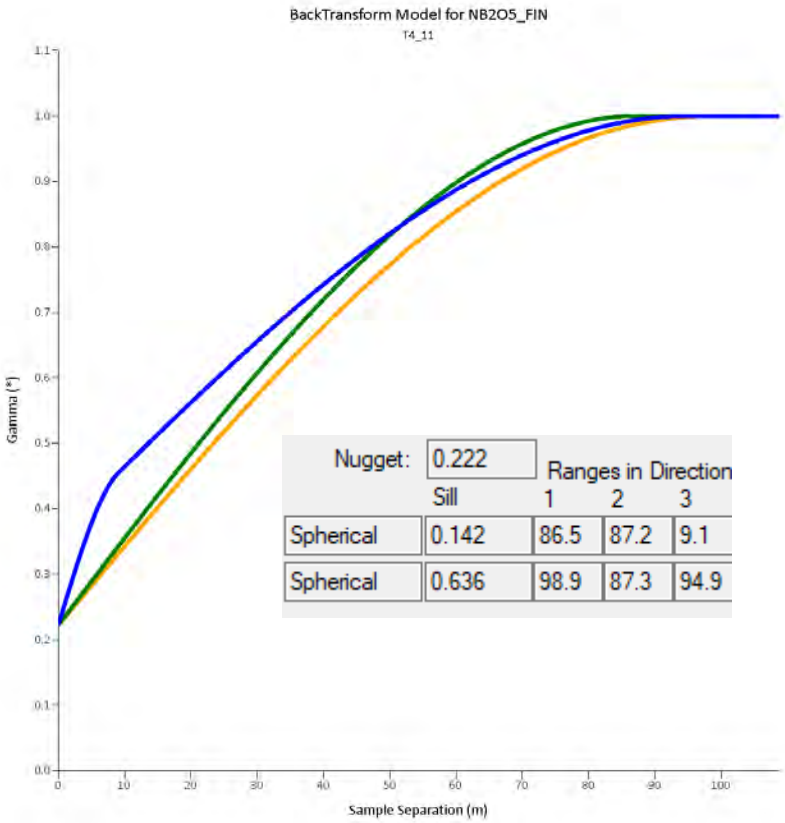
Nb_2O_5





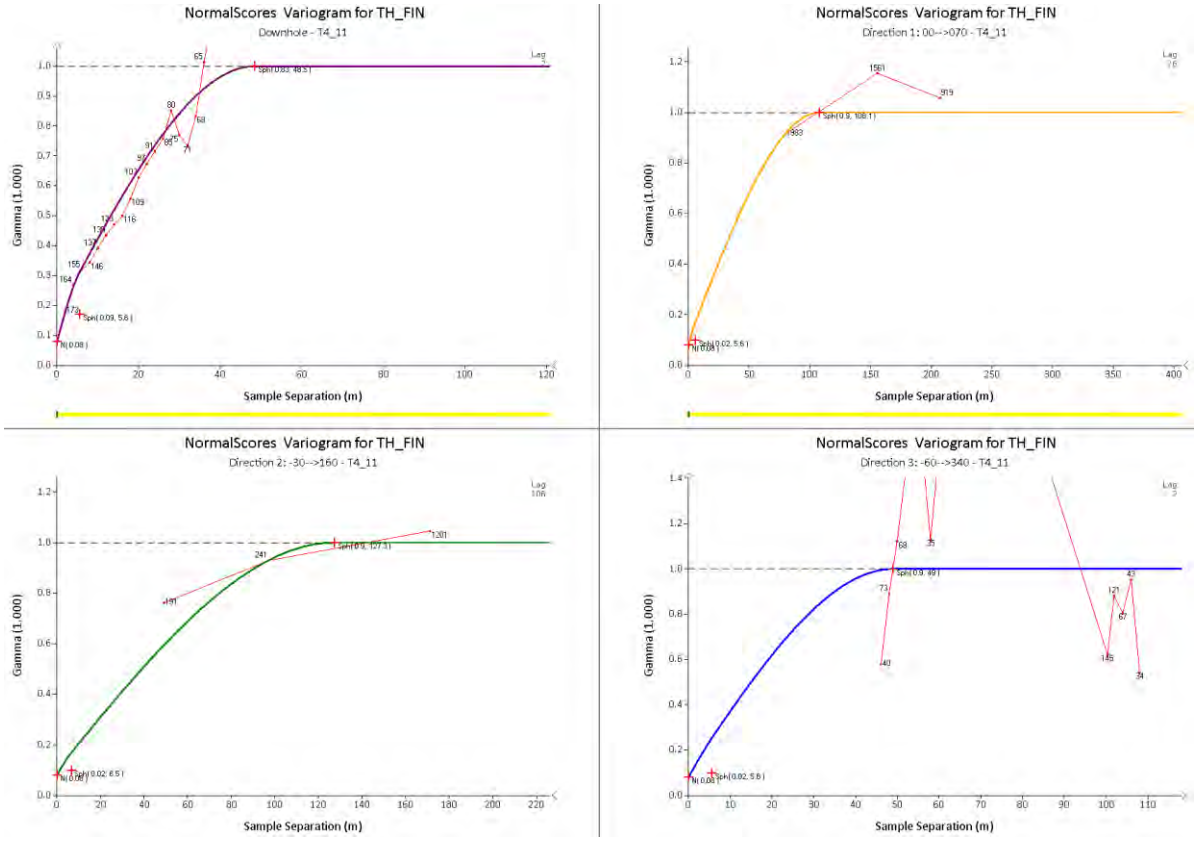


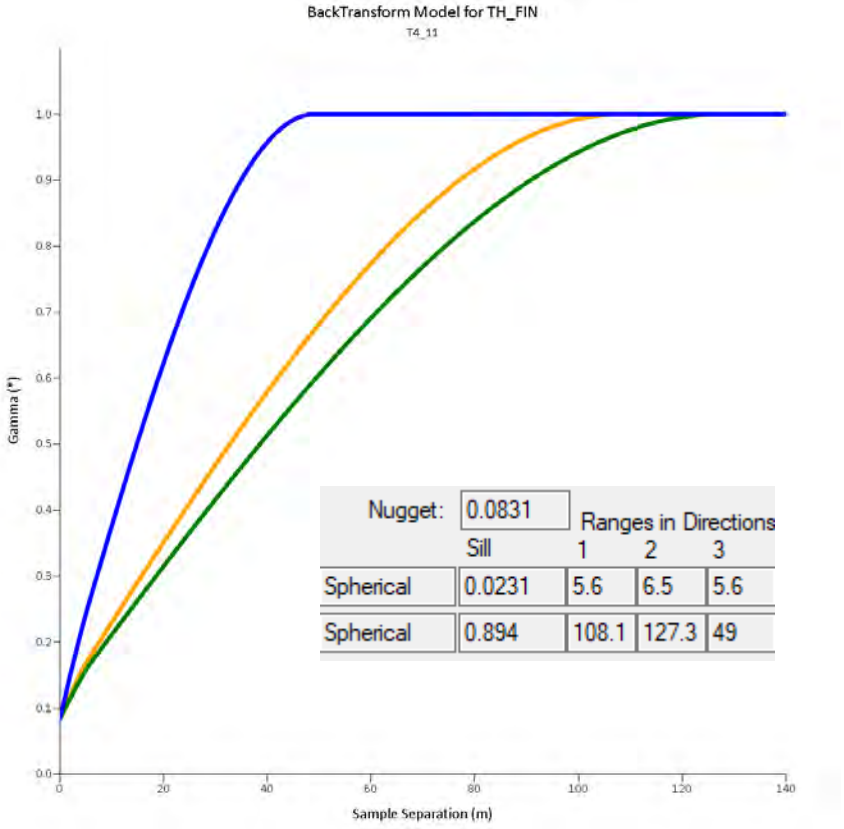




Nugget:	0.222	Ranges in Direction		
	Sill	1	2	3
Spherical	0.142	86.5	87.2	9.1
Spherical	0.636	98.9	87.3	94.9

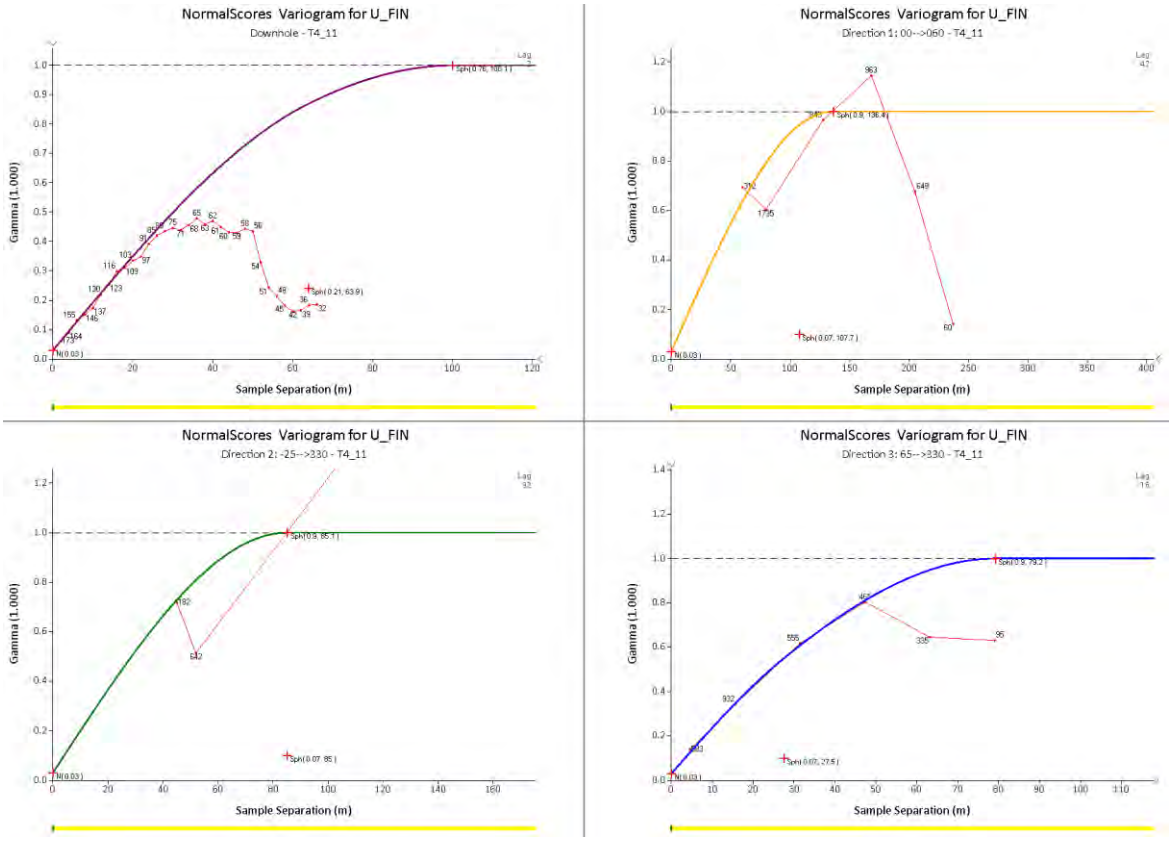
Th

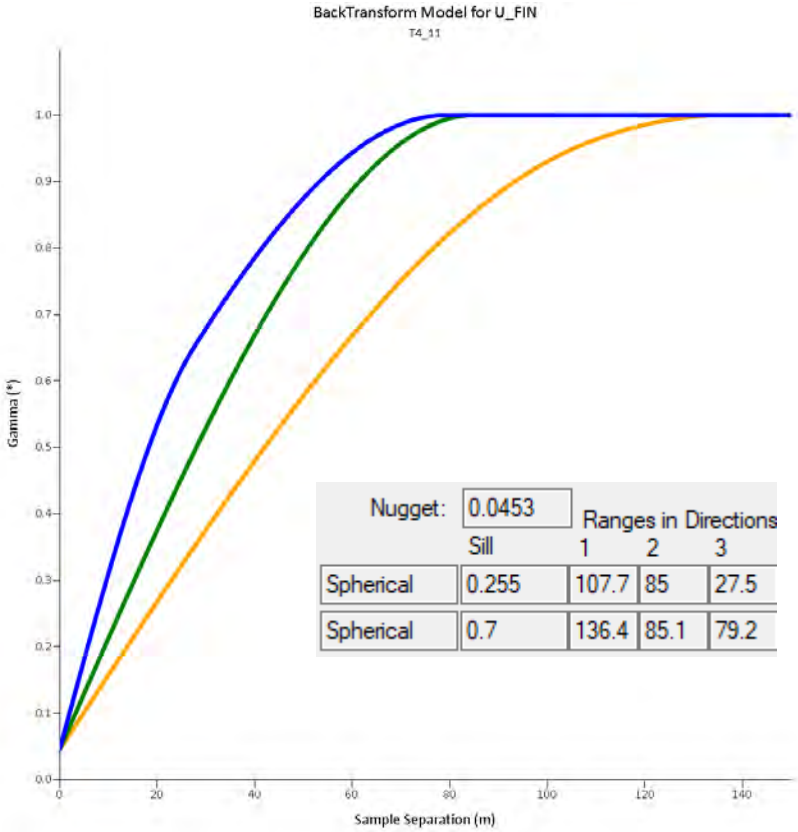




		Ranges in Directions		
Nugget:	0.0831			
	Sill	1	2	3
Spherical	0.0231	5.6	6.5	5.6
Spherical	0.894	108.1	127.3	49

U





Nugget:	0.0453	Ranges in Directions		
	Sill	1	2	3
Spherical	0.255	107.7	85	27.5
Spherical	0.7	136.4	85.1	79.2

Appendix F
Validation of the Mineral Resource Estimate

Appendix 5 – Whole of domain average grade comparison

Variable	ESTDOM	Nos Samples	Composite Average		Model Av	Percent difference	
			Naïve Mean	Decl Mean		Naive-model	Decl_Model
TREO ppm	T1_01	532	7,104	7,463	7,290	2.6%	-2.3%
	T1_02	14	7,488	7,369	7,494	0.1%	1.7%
	T1_03	42	5,917	5,973	6,059	2.4%	1.4%
	T1_04	36	11,549	10,315	11,096	-3.9%	7.6%
	T1_11	584	23,174	22,600	23,543	1.6%	4.2%
	T1_13	40	29,418	26,507	29,183	-0.8%	10.1%
	T1_14	68	14,934	14,690	14,726	-1.4%	0.2%
	T1_15	20	15,560	15,528	14,066	-9.6%	-9.4%
	T1_16	20	13,468	14,296	13,368	-0.7%	-6.5%
	T1_17	14	11,292	11,324	11,639	3.1%	2.8%
	T1_18	8	12,453	12,248	12,293	-1.3%	0.4%
	T4_01	122	7,384	7,207	7,768	5.2%	7.8%
	T4_11	182	21,270	20,166	20,243	-4.8%	0.4%
	T6_01	108	7,560	7,724	7,720	2.1%	-0.1%
	T6_11	115	21,026	19,827	21,951	4.4%	10.7%
	T6_12	25	24,397	23,948	23,342	-4.3%	-2.5%

Variable	ESTDOM	Nos Samples	Composite Average		Model Av	Percent difference	
			Naïve Mean	Decl Mean		Naive-model	Decl_Model
Tb_2O_3 ppm	T1_01	532	13	13	14	0.9%	1.0%
	T1_02	14	29	28	29	0.3%	1.3%
	T1_03	42	14	14	14	4.1%	4.2%
	T1_04	36	11	11	11	4.3%	-0.5%
	T1_11	584	16	17	16	-2.6%	-8.2%
	T1_13	40	22	21	20	-7.5%	-1.4%
	T1_14	68	18	18	18	-0.3%	-0.8%
	T1_15	20	30	32	33	8.8%	1.7%
	T1_16	20	26	25	25	-1.1%	1.1%
	T1_17	14	33	32	34	4.2%	5.7%
	T1_18	8	27	29	26	-4.4%	-10.4%
	T4_01	122	25	25	25	0.1%	0.4%
	T4_11	182	27	27	26	-6.3%	-6.4%
	T6_01	108	18	17	16	-8.3%	-2.7%
	T6_11	115	23	23	22	-4.2%	-3.4%
	T6_12	25	16	16	17	3.5%	3.3%

Variable	ESTDOM	Nos Samples	Composite Average		Model Av	Percent difference	
			Naïve Mean	Decl Mean		Naive-model	Decl_Model
Ce_2O_3 ppm	T1_01	532	3,054	3,156	3,127	2.4%	-0.9%
	T1_02	14	2,746	2,730	2,757	0.4%	1.0%
	T1_03	42	2,492	2,605	2,563	2.8%	-1.6%
	T1_04	36	5,440	5,288	5,180	-4.8%	-2.0%
	T1_11	584	10,606	10,607	10,922	3.0%	3.0%
	T1_13	40	13,699	12,527	13,620	-0.6%	8.7%
	T1_14	68	6,703	7,011	6,749	0.7%	-3.7%
	T1_15	20	6,711	5,917	5,907	-12.0%	-0.2%
	T1_16	20	5,778	5,841	5,700	-1.3%	-2.4%
	T1_17	14	4,460	4,444	4,603	3.2%	3.6%
	T1_18	8	5,212	5,378	5,206	-0.1%	-3.2%
	T4_01	122	2,822	2,781	2,979	5.6%	7.1%
	T4_11	182	9,125	8,599	8,632	-5.4%	0.4%
	T6_01	108	2,959	3,003	3,273	10.6%	9.0%
	T6_11	115	9,711	9,181	10,291	6.0%	12.1%
	T6_12	25	11,666	11,700	11,366	-2.6%	-2.8%

Variable	ESTDOM	Nos Samples	Composite Average		Model Av	Percent difference	
			Naïve Mean	Decl Mean		Naive-model	Decl_Model
Nb_2O_5 ppm	T1_01	532	1,142	1,190	1,197	4.9%	0.6%
	T1_02	14	3,124	3,134	3,033	-2.9%	-3.2%
	T1_03	42	1,307	1,275	1,303	-0.4%	2.1%
	T1_04	36	673	663	645	-4.1%	-2.6%
	T1_11	584	581	665	620	6.8%	-6.8%
	T1_13	40	591	556	551	-6.8%	-0.9%
	T1_14	68	1,239	1,222	1,074	-13.3%	-12.1%
	T1_15	20	3,728	4,150	4,417	18.5%	6.4%
	T1_16	20	1,137	1,062	1,165	2.4%	9.7%
	T1_17	14	2,033	2,017	2,132	4.9%	5.7%
	T1_18	8	1,096	1,114	1,093	-0.3%	-1.9%
	T4_01	122	1,255	1,255	1,203	-4.2%	-4.2%
	T4_11	182	688	692	715	3.9%	3.3%
	T6_01	108	828	901	966	16.6%	7.3%
	T6_11	115	779	822	729	-6.4%	-11.3%
	T6_12	25	278	277	290	4.6%	4.9%

Variable	ESTDOM	Nos Samples	Composite Average		Model Av	Percent difference	
			Naïve Mean	Decl Mean		Naive-model	Decl_Model
Dy_2O_3 ppm	T1_01	532	71	71	71	1.1%	1.2%
	T1_02	14	156	155	159	2.0%	2.7%
	T1_03	42	75	75	80	6.5%	6.6%
	T1_04	36	57	60	61	6.0%	0.6%
	T1_11	584	83	88	82	-0.4%	-6.9%
	T1_13	40	118	109	108	-8.4%	-0.5%
	T1_14	68	91	92	91	-0.6%	-1.3%
	T1_15	20	137	134	134	-2.4%	-0.2%
	T1_16	20	137	134	134	-2.4%	-0.2%
	T1_17	14	182	179	185	1.4%	2.9%
	T1_18	8	149	161	140	-6.1%	-13.1%
	T4_01	122	139	139	139	-0.1%	-0.5%
	T4_11	182	149	150	140	-6.2%	-6.8%
	T6_01	108	92	87	86	-6.3%	-1.0%
	T6_11	115	120	118	114	-5.0%	-3.7%
	T6_12	25	78	78	81	3.6%	3.5%

Variable	ESTDOM	Nos Samples	Composite Average		Model Av	Percent difference	
			Naïve Mean	Decl Mean		Naive-model	Decl_Model
Th ppm	T1_01	532	149	148	153	2.2%	3.3%
	T1_02	14	253	249	254	0.5%	2.2%
	T1_03	42	183	186	188	3.0%	1.3%
	T1_04	36	257	263	269	4.7%	2.2%
	T1_11	584	202	212	201	-0.7%	-5.3%
	T1_13	40	719	714	681	-5.3%	-4.7%
	T1_14	68	170	183	168	-1.1%	-7.9%
	T1_15	20	290	284	272	-6.1%	-4.2%
	T1_16	20	369	394	366	-0.9%	-7.1%
	T1_17	14	446	438	472	5.9%	7.8%
	T1_18	8	722	747	718	-0.5%	-3.8%
	T4_01	122	413	410	398	-3.7%	-3.2%
	T4_11	182	355	362	333	-6.3%	-8.1%
	T6_01	108	297	265	245	-17.5%	-7.6%
	T6_11	115	441	428	413	-6.4%	-3.4%
	T6_12	25	227	228	240	5.8%	5.5%

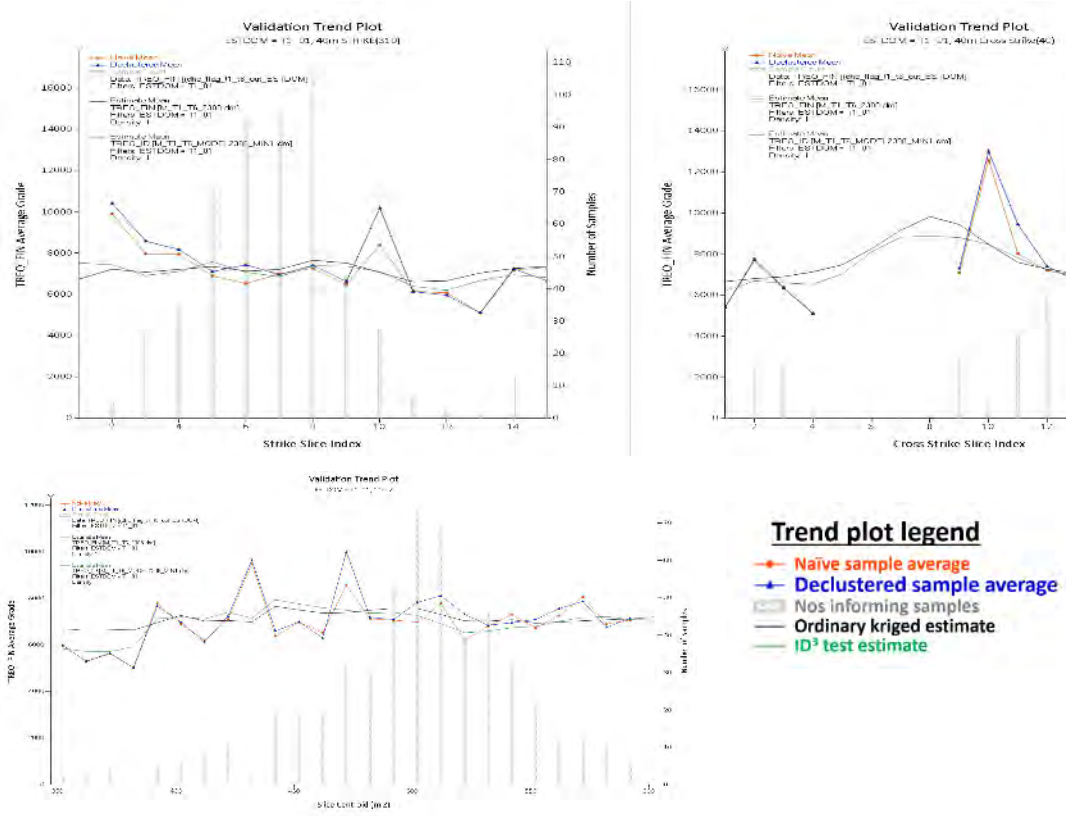
Variable	ESTDOM	Nos Samples	Composite Average		Model Av	Percent difference	
			Naïve Mean	Decl Mean		Naive-model	Decl_Model
Nd_2O_3 ppm	T1_01	532	1,007	1,021	1,021	1.4%	0.0%
	T1_02	14	1,292	1,280	1,280	-0.9%	0.0%
	T1_03	42	944	963	944	0.0%	-2.0%
	T1_04	36	1,948	1,920	1,776	-8.8%	-7.5%
	T1_11	584	2,209	2,255	2,248	1.8%	-0.3%
	T1_13	40	3,503	3,288	3,417	-2.5%	3.9%
	T1_14	68	1,811	1,815	1,803	-0.5%	-0.6%
	T1_15	20	2,117	2,065	2,131	0.6%	3.2%
	T1_16	20	2,119	2,124	2,104	-0.7%	-0.9%
	T1_17	14	1,744	1,731	1,778	2.0%	2.7%
	T1_18	8	1,706	1,742	1,707	0.1%	-2.0%
	T4_01	122	939	934	962	2.4%	2.9%
	T4_11	182	1,986	1,942	1,873	-5.7%	-3.6%
	T6_01	108	1,214	1,195	1,236	1.8%	3.4%
	T6_11	115	2,972	2,822	3,070	3.3%	8.8%
	T6_12	25	2,605	2,615	2,480	-4.8%	-5.2%

Variable	ESTDOM	Nos Samples	Composite Average		Model Av	Percent difference	
			Naïve Mean	Decl Mean		Naive-model	Decl_Model
U ppm	T1_01	532	15	16	17	11.4%	9.6%
	T1_02	14	92	91	87	-5.0%	-3.7%
	T1_03	42	25	24	25	-0.2%	2.0%
	T1_04	36	14	15	15	4.4%	0.7%
	T1_11	584	19	21	21	9.0%	-1.4%
	T1_13	40	29	27	27	-6.2%	1.9%
	T1_14	68	16	17	15	-3.2%	-12.3%
	T1_15	20	29	29	27	-6.4%	-7.6%
	T1_16	20	32	30	30	-5.5%	0.7%
	T1_17	14	36	36	44	21.6%	21.8%
	T1_18	8	22	25	20	-11.4%	-20.7%
	T4_01	122	12	12	11	-4.7%	-4.5%
	T4_11	182	10	10	12	22.1%	18.9%
	T6_01	108	20	22	24	22.3%	10.4%
	T6_11	115	26	28	25	-2.8%	-9.7%
	T6_12	25	13	13	14	7.8%	7.8%

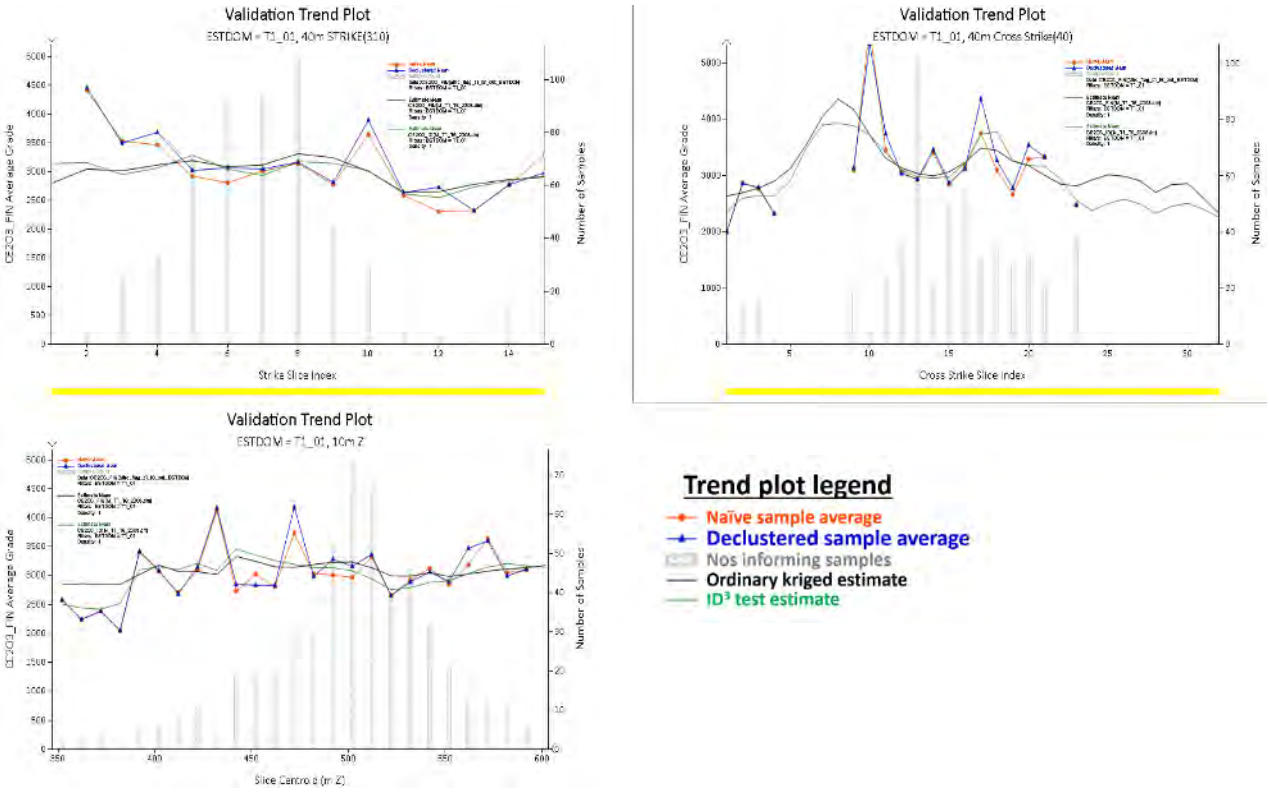
Variable	ESTDOM	Nos Samples	Composite Average		Model Av	Percent difference	
			Naïve Mean	Decl Mean		Naive-model	Decl_Model
Pr_2O_3 ppm	T1_01	532	308	316	315	2.3%	-0.1%
	T1_02	14	330	328	336	1.6%	2.5%
	T1_03	42	274	281	283	3.2%	0.5%
	T1_04	36	623	609	582	-6.7%	-4.5%
	T1_11	584	862	874	874	1.4%	0.0%
	T1_13	40	1,219	1,154	1,206	-1.1%	4.5%
	T1_14	68	616	629	610	-1.0%	-3.0%
	T1_15	20	656	613	624	-4.9%	2.0%
	T1_16	20	627	633	625	-0.3%	-1.2%
	T1_17	14	492	489	507	3.1%	3.7%
	T1_18	8	504	513	505	0.1%	-1.7%
	T4_01	122	279	276	290	3.7%	4.8%
	T4_11	182	739	738	697	-5.8%	-5.6%
	T6_01	108	346	347	366	5.5%	5.4%
	T6_11	115	963	911	999	3.7%	9.7%
	T6_12	25	971	974	926	-4.7%	-5.0%

Model validation trend plots target 1 - T1_01

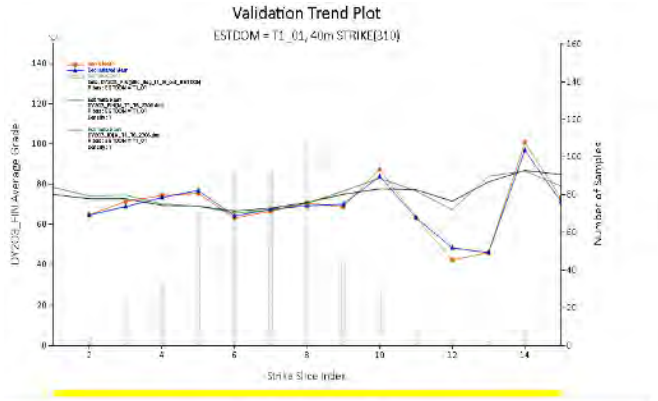
TREO



Ce_2O_3



Dy_2O_3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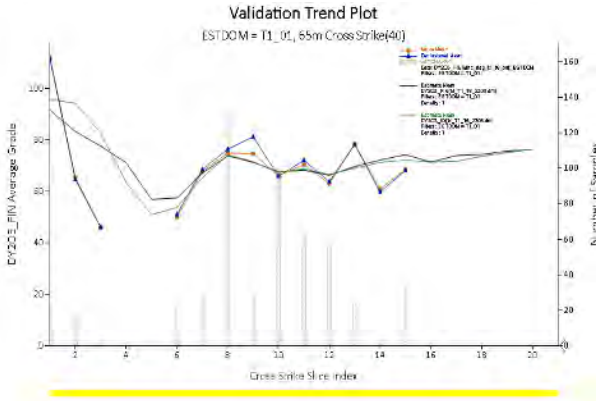
ESTDOM = T1_01, 40m STRIKE(310)
Strike Slice Index
Number of Samples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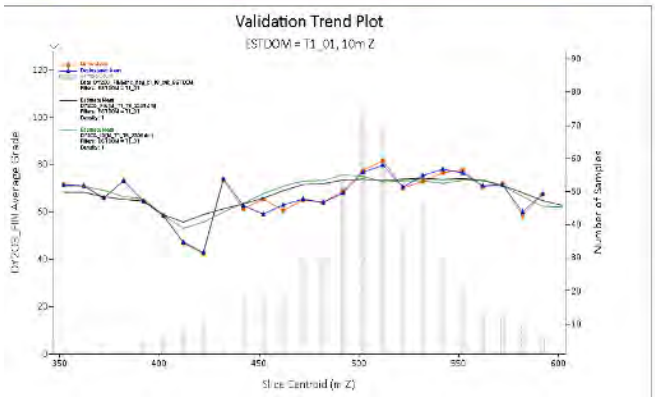
Cross Strike Slice Index
Number of Samples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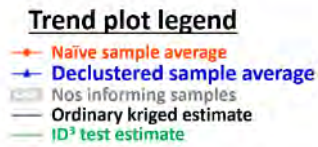
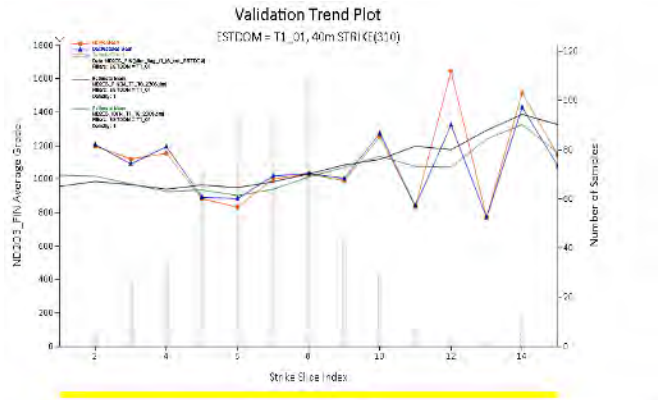
ESTDOM = T1_01, 10m Z
Slice Centroid (m Z)
Number of Samples


Trend plot legend
Naïve sample average
Declustered sample average
Nos informing samples
Ordinary kriged estimate
ID³ test estimate

Nd_2O_3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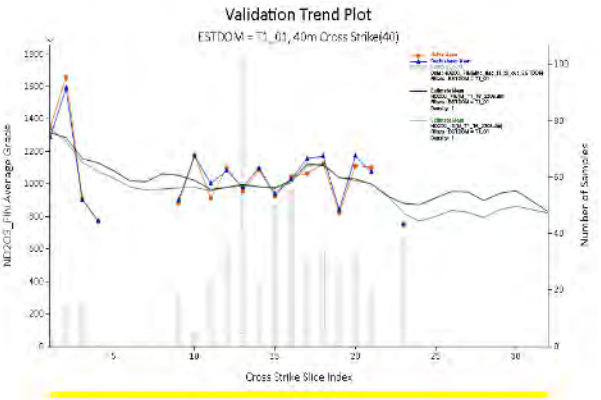
ESTDOM = T1_01, 40m STRIKE(310)
Strike Slice Index
Number of Samples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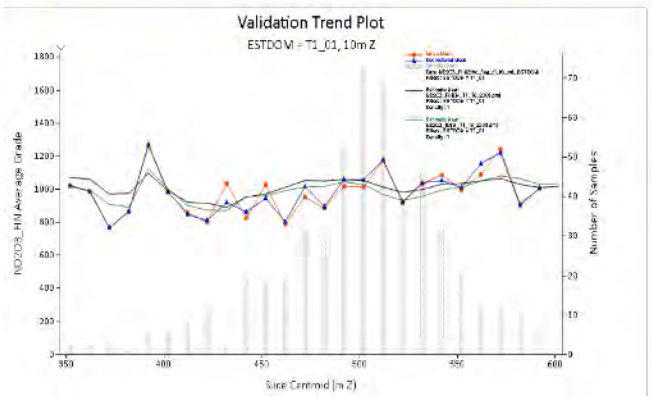
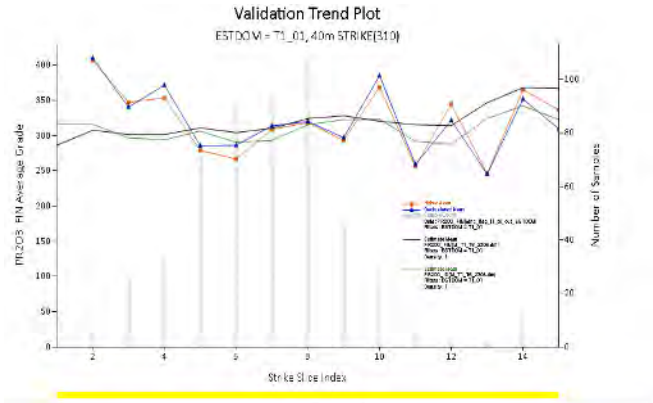
Cross Strike Slice Index
Number of Samples


Validation Trend Plot
ESTDOM = T1_01, 10m Z
Slice Centroid (m Z)
Number of Samples


Trend plot legend
Naïve sample average
Declustered sample average
Nos informing samples
Ordinary kriged estimate
ID³ test estimate

Pr_2O_3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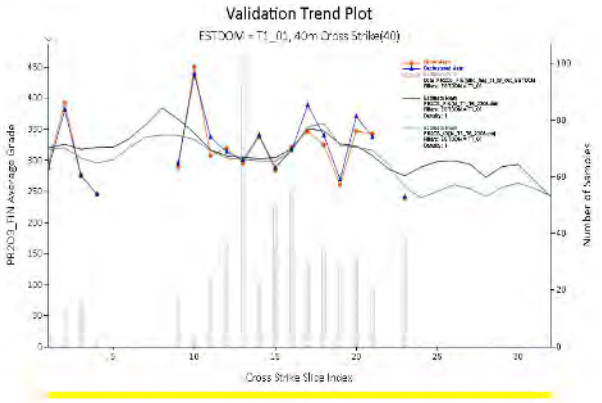
PR2O3_FIN Average Grade
Number of Samples
Strike Slice Index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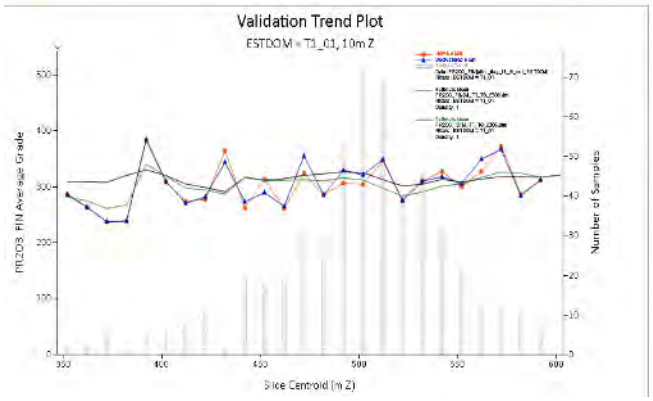
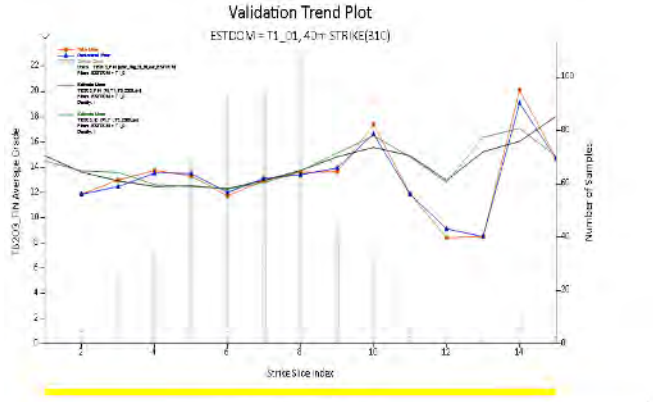
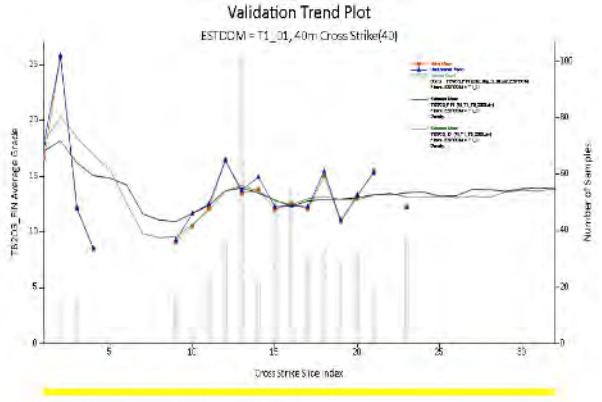
ESTDOM = T1_01, 40m Cross Strike(40)
PR2O3_FIN Average Grade
Number of Samples
Cross Strike Slice Index

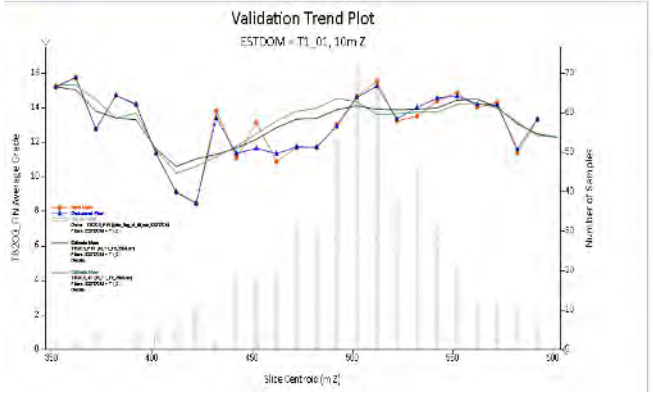

Validation Trend Plot
ESTDOM = T1_01, 10m Z
PR2O3_FIN Average Grade
Number of Samples
Slice Centroid (m Z)


Trend plot legend
Naïve sample average
Declustered sample average
Nos informing samples
Ordinary kriged estimate
ID³ test estimate

Tb_2O_3

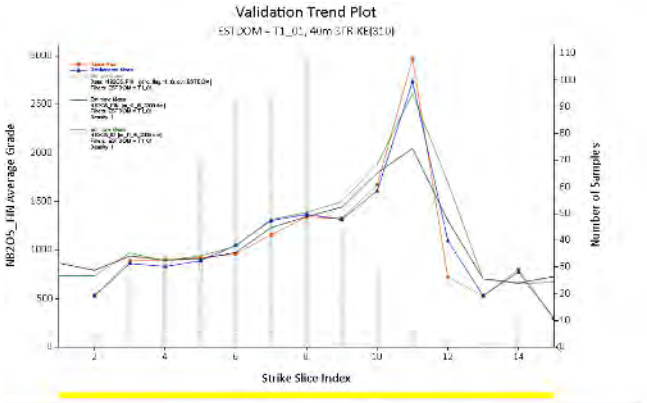

Validation Trend Plot
ESTDOM = T1_01, 40m STRIKE(310)
TB2O3_FIN Average Grade
Number of Samples
Strike Slice Index

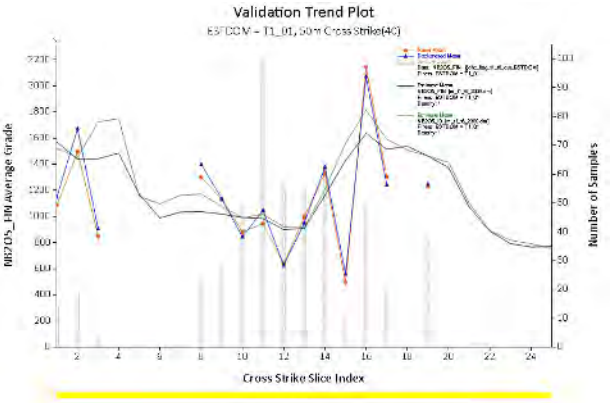

Validation Trend Plot
ESTDOM = T1_01, 40m Cross Strike(40)
TB2O3_FIN Average Grade
Number of Samples
Cross Strike Slice Index

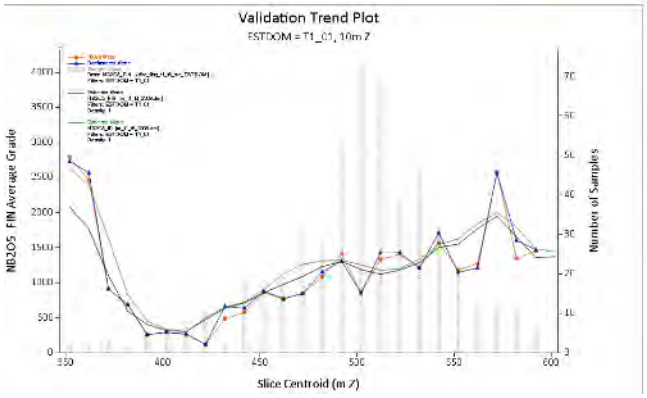

Validation Trend Plot
ESTDOM = T1_01, 10m Z
TB2O3_FIN Average Grade
Number of Samples
Slice Centroid (m Z)


Trend plot legend
Naïve sample average
Declustered sample average
Nos informing samples
Ordinary kriged estimate
ID³ test estimate

Nb_2O_5

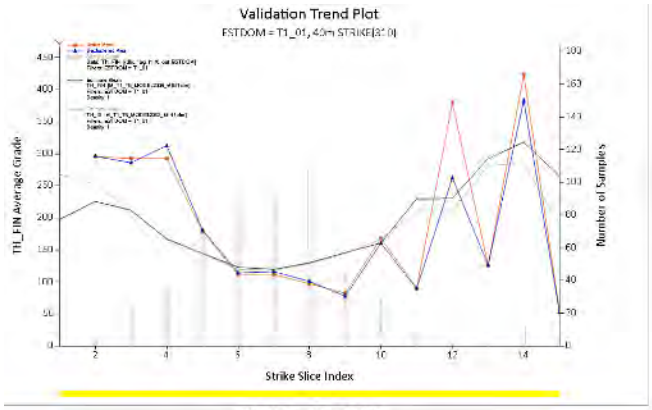

Validation Trend Plot
Strike Slice Index
Number of Samples

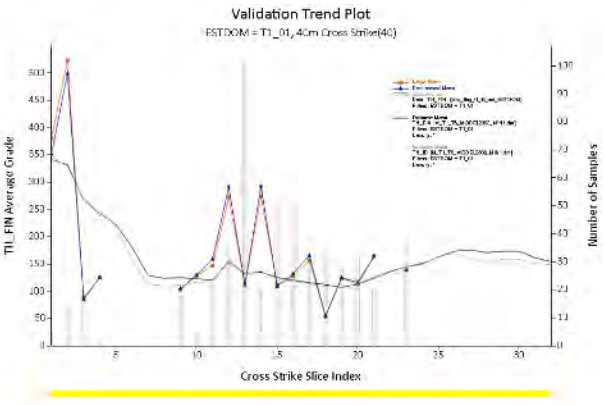

Validation Trend Plot
Cross Strike Slice Index
Number of Samples

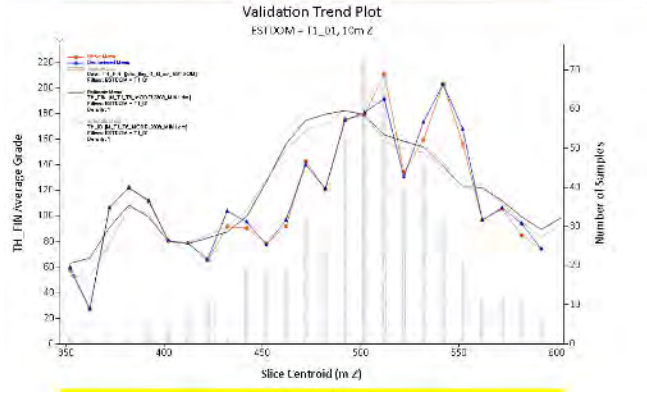

Validation Trend Plot
Slice Centroid (m Z)
Number of Samples

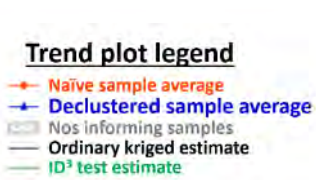

Trend plot legend
Naïve sample average
Declustered sample average
Nos informing samples
Ordinary kriged estimate
ID³ test estimate

Th


Validation Trend Plot
Strike Slice Index
Number of Samples

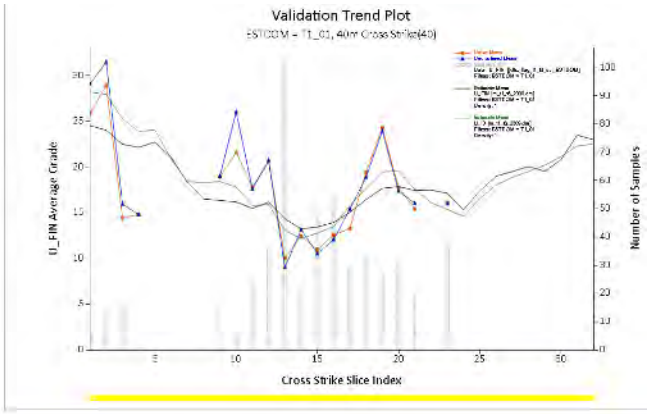

Validation Trend Plot
Cross Strike Slice Index
Number of Samples

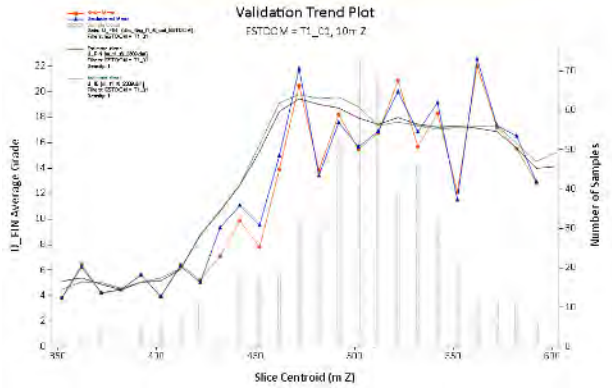

Validation Trend Plot
Slice Centroid (m Z)
Number of Samples


Trend plot legend
Naïve sample average
Declustered sample average
Nos informing samples
Ordinary kriged estimate
ID³ test estimate

U


Validation Trend Plot
U_FIN Average Grade
Number of Samples
Strike Slice Index

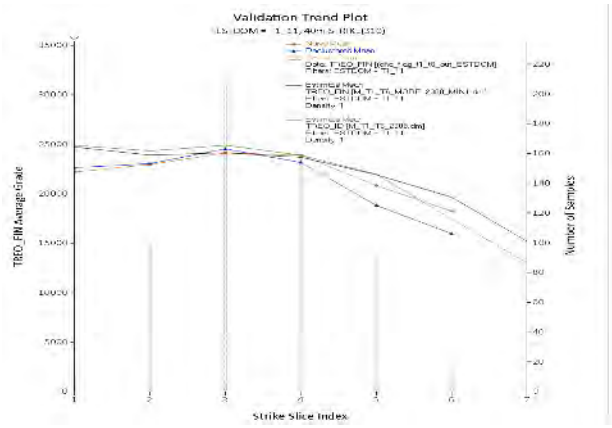

Validation Trend Plot
U_FIN Average Grade
Number of Samples
Cross Strike Slice Index

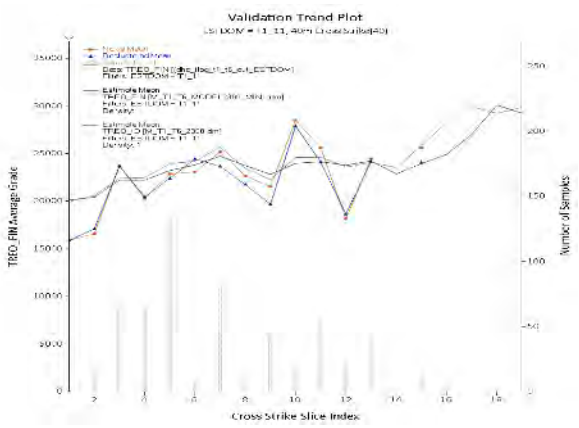

Validation Trend Plot
U_FIN Average Grade
Number of Samples
Slice Centroid (m Z)

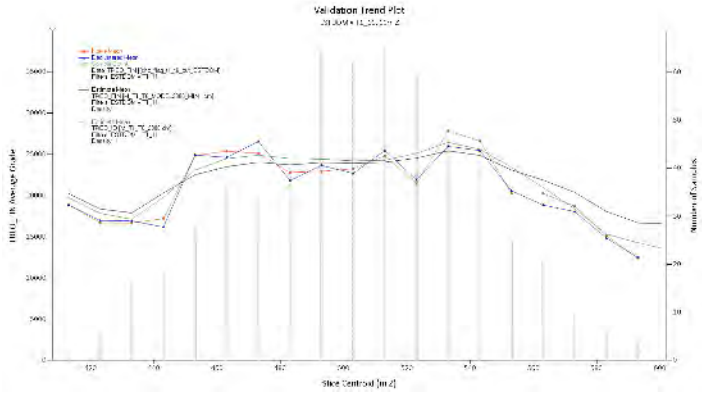

Trend plot legend
Naïve sample average
Declustered sample average
Nos informing samples
Ordinary kriged estimate
ID³ test estimate

Model validation trend plots target 1 - T1_11

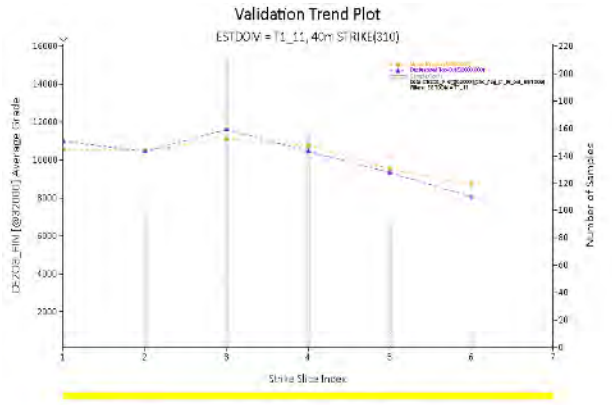
TREO

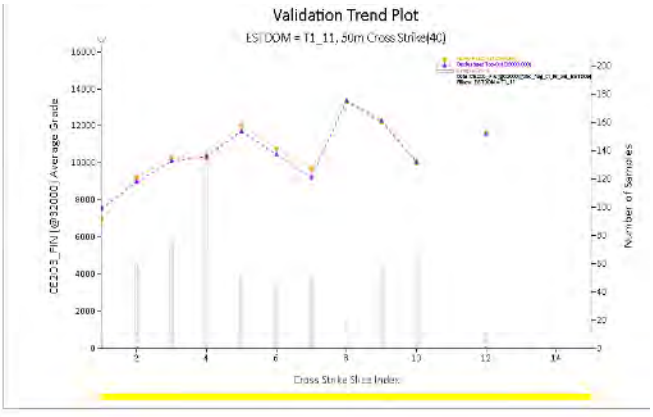


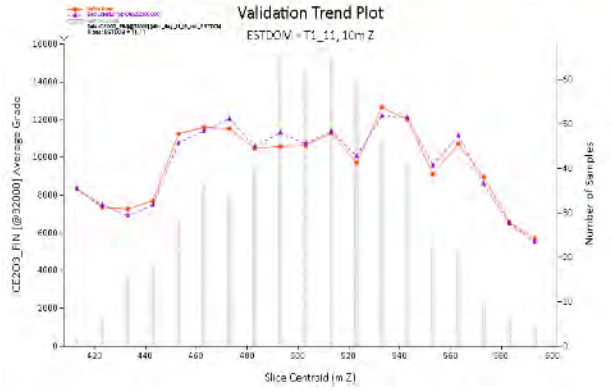


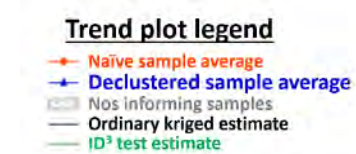


Ce_2O_3

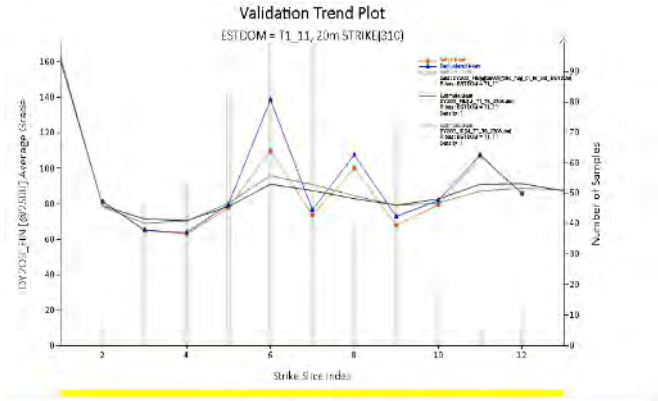




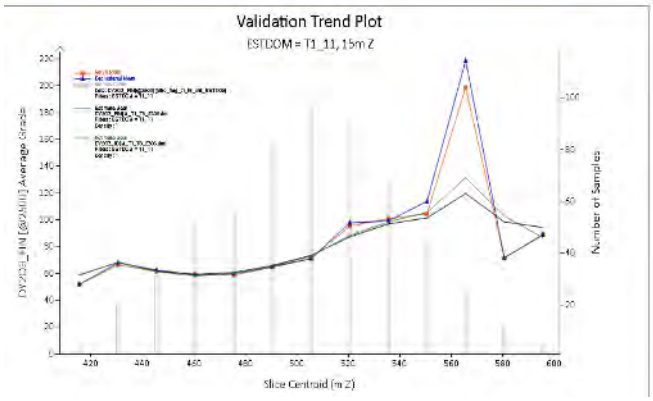




Dy_2O_3


Validation Trend Plot
ESTDOM = T1_11, 20m STRIKE(310)
Strike Slice Index
Number of Samples

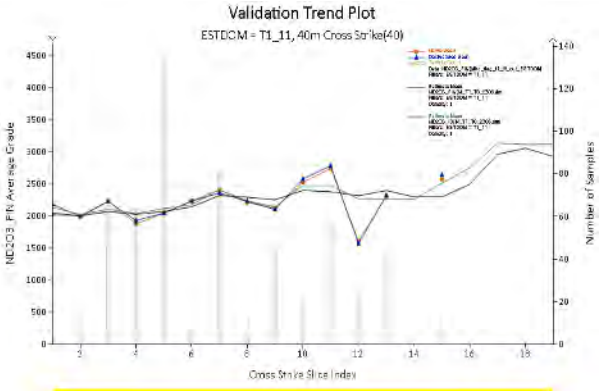

Validation Trend Plot
ESTDOM = T1_11, 50m Cross Strike(40)
Cross Strike Slice Index
Number of Samples

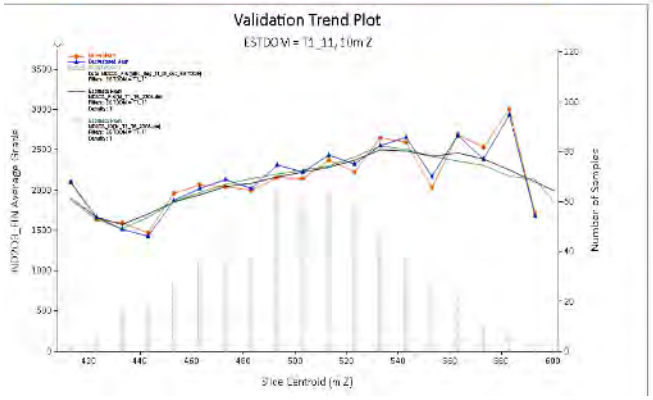

Validation Trend Plot
ESTDOM = T1_11, 15m Z
Slice Centroid (m Z)
Number of Samples


Trend plot legend
Naïve sample average
Declustered sample average
Nos informing samples
Ordinary kriged estimate
ID³ test estimate

Nd_2O_3

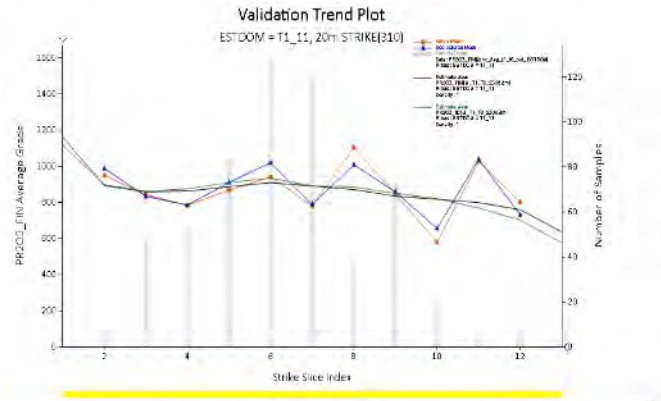

Validation Trend Plot
ESTDOM = T1_11, 40m STRIKE(310)
Strike Slice Index
Number of Samples


Validation Trend Plot
ESTDOM = T1_11, 40m Cross Strike(40)
Cross Strike Slice Index
Number of Samples

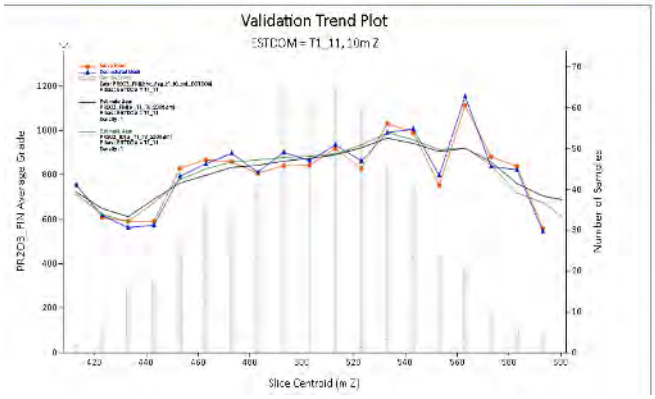

Validation Trend Plot
ESTDOM = T1_11, 10m Z
Slice Centroid (m Z)
Number of Samples

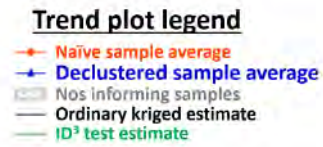

Trend plot legend
Naïve sample average
Declustered sample average
Nos informing samples
Ordinary kriged estimate
ID³ test estimate

Pr_2O_3

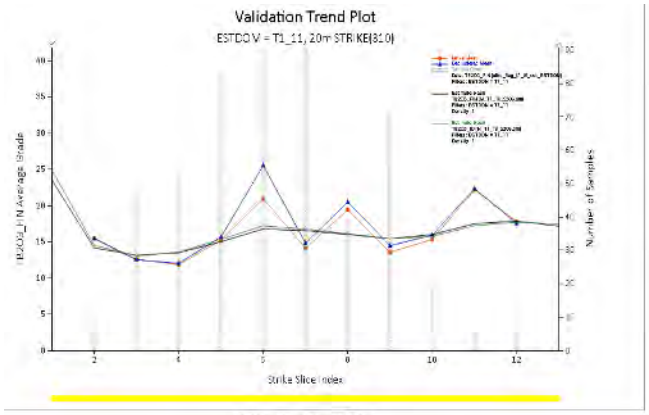

Validation Trend Plot
ESTDOM = T1_11, 20m STRIKE(310)
PR2O3_FIN Average Grade
Number of Samples
Strike Slice Index

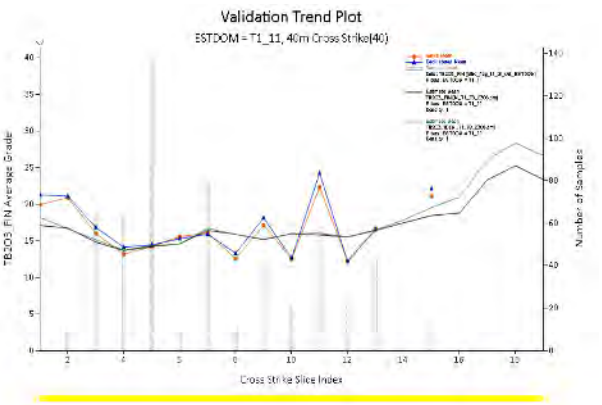

Validation Trend Plot
ESTDOM = T1_11, 40m Cross Strike(40)
PR2O3_FIN Average Grade
Number of Samples
Cross Strike Slice Index

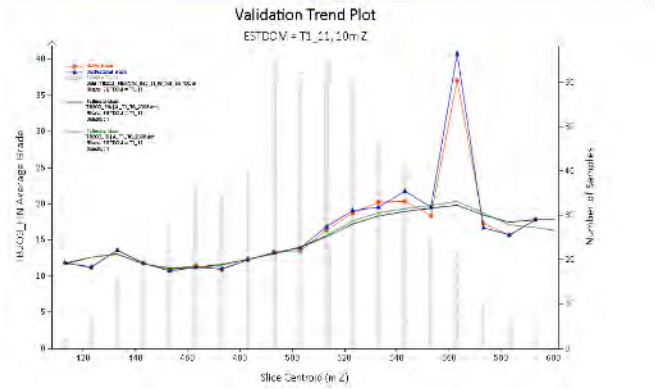

Validation Trend Plot
ESTDOM = T1_11, 10m Z
PR2O3_FIN Average Grade
Number of Samples
Slice Centroid (m Z)

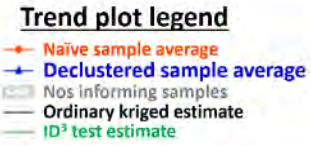

Trend plot legend
Naïve sample average
Declustered sample average
Nos informing samples
Ordinary kriged estimate
ID³ test estimate

Tb_2O_3

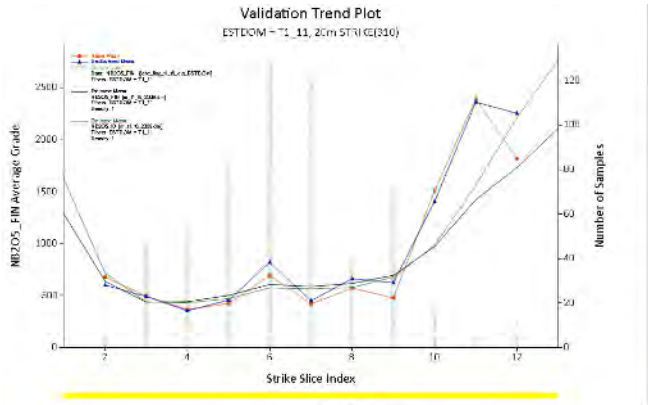

Validation Trend Plot
ESTDOM = T1_11, 20m STRIKE(310)
TB2O3_FIN Average Grade
Number of Samples
Strike Slice Index

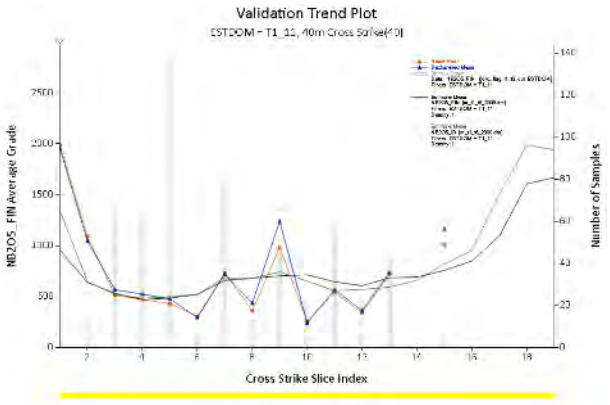

Validation Trend Plot
ESTDOM = T1_11, 40m Cross Strike(40)
TB2O3_FIN Average Grade
Number of Samples
Cross Strike Slice Index

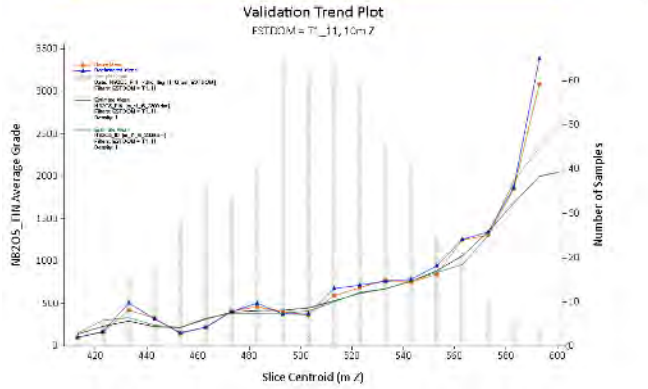

Validation Trend Plot
ESTDOM = T1_11, 10m Z
TB2O3_FIN Average Grade
Number of Samples
Slice Centroid (m Z)

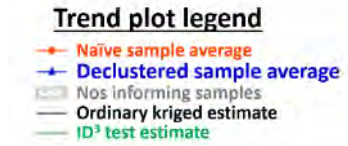

Trend plot legend
Naïve sample average
Declustered sample average
Nos informing samples
Ordinary kriged estimate
ID³ test estimate

Nb_2O_5

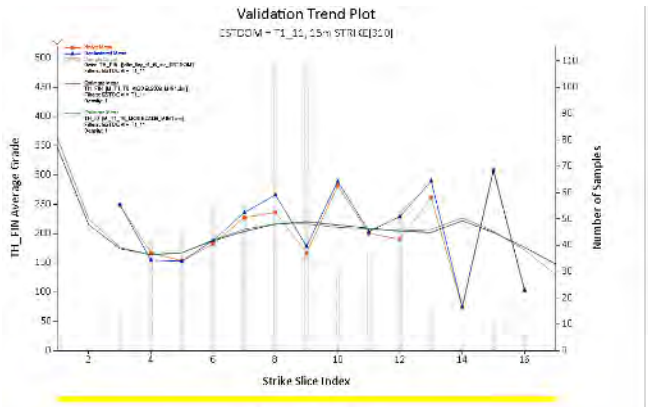

Validation Trend Plot
NB2O5_FIN Average Grade
Number of Samples
Strike Slice Index

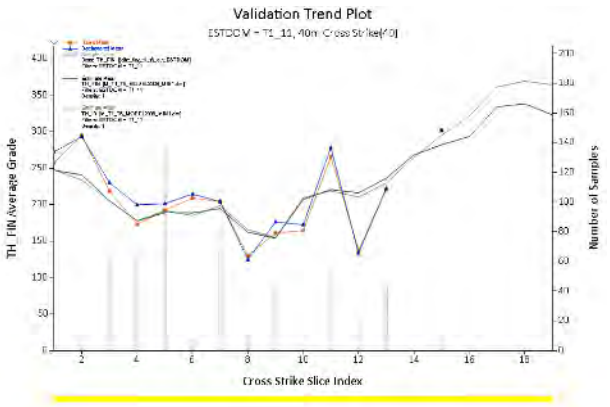

Validation Trend Plot
NB2O5_FIN Average Grade
Number of Samples
Cross Strike Slice Index

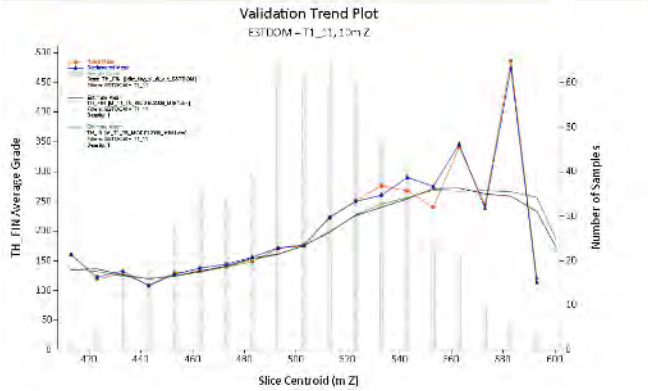

Validation Trend Plot
NB2O5_FIN Average Grade
Number of Samples
Slice Centroid (m Z)

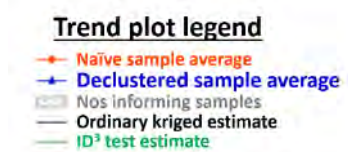

Trend plot legend
Naïve sample average
Declustered sample average
Nos informing samples
Ordinary kriged estimate
ID³ test estimate

Th

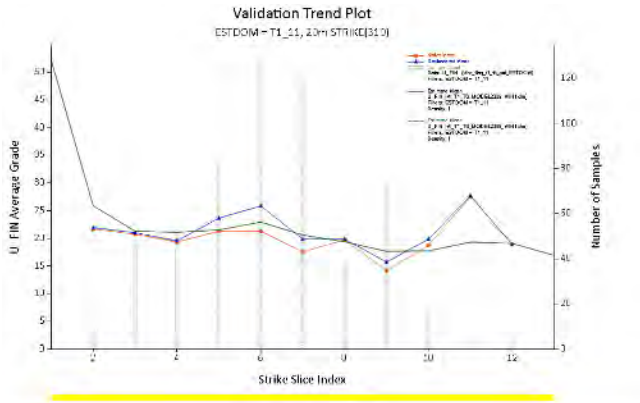

Validation Trend Plot
TH_FIN Average Grade
Number of Samples
Strike Slice Index

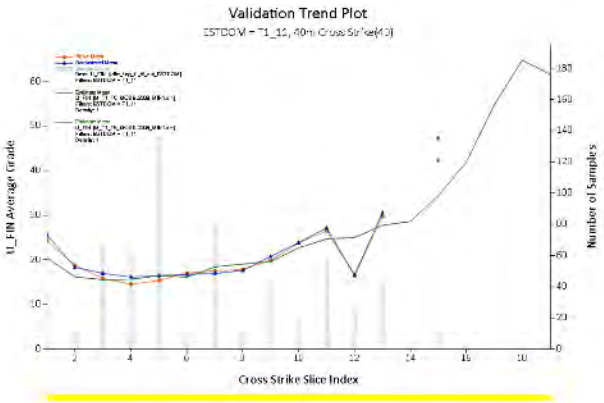

Validation Trend Plot
TH_FIN Average Grade
Number of Samples
Cross Strike Slice Index


Validation Trend Plot
TH_FIN Average Grade
Number of Samples
Slice Centroid (m Z)

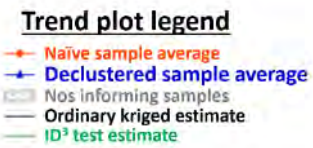

Trend plot legend
Naïve sample average
Declustered sample average
Nos informing samples
Ordinary kriged estimate
ID³ test estimate

U


Validation Trend Plot
U_FIN Average Grade
Number of Samples
Strike Slice Index

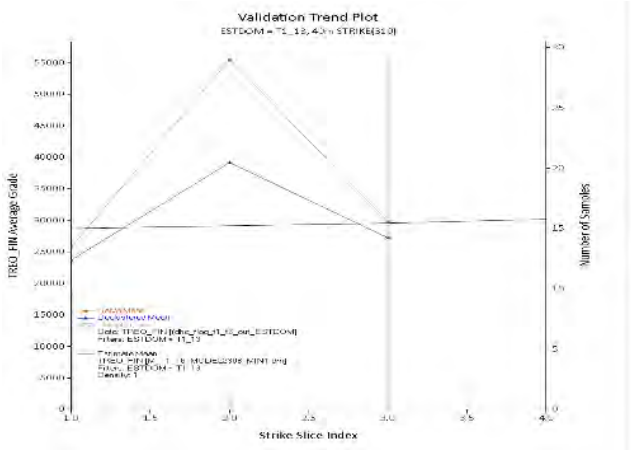

Validation Trend Plot
U_FIN Average Grade
Number of Samples
Cross Strike Slice Index

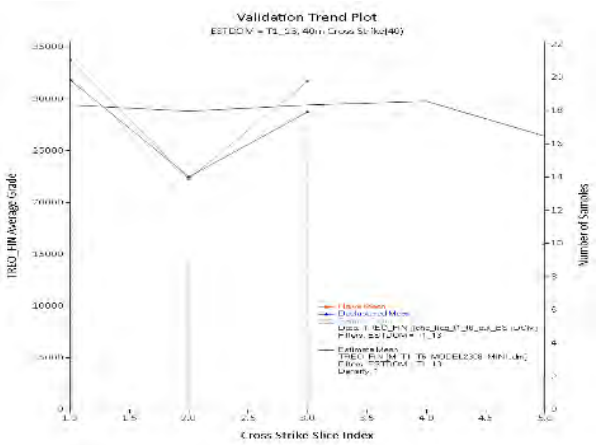

Validation Trend Plot
U_FIN Average Grade
Number of Samples
Slice Centroid (m Z)

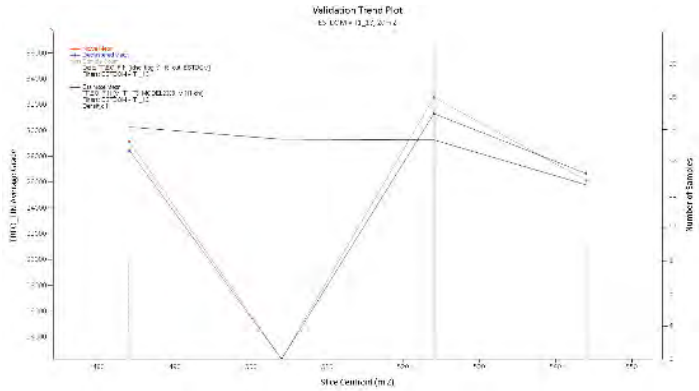

Trend plot legend
Naïve sample average
Declustered sample average
Nos informing samples
Ordinary kriged estimate
ID³ test estimate

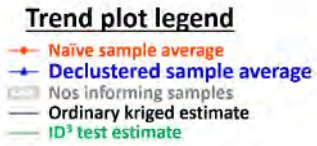
Model validation trend plots target 1 - T1_13

TREO

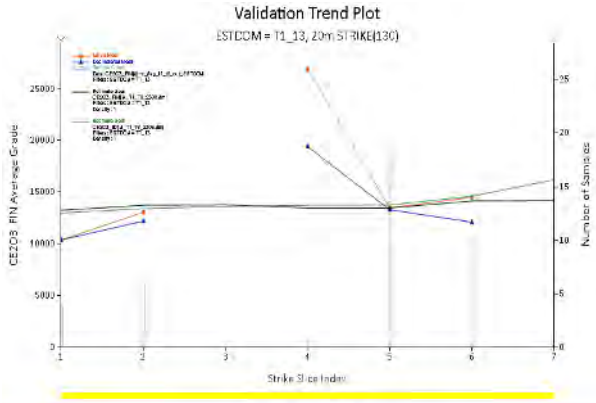


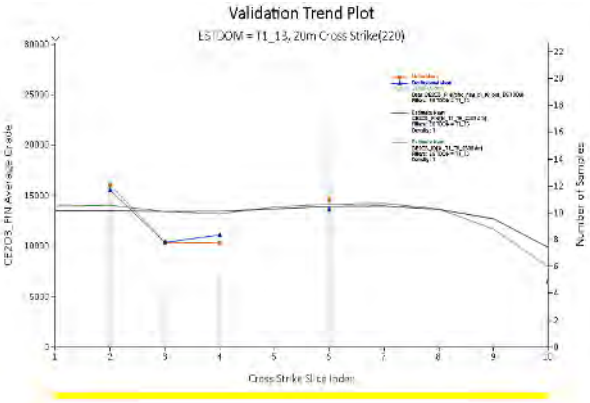


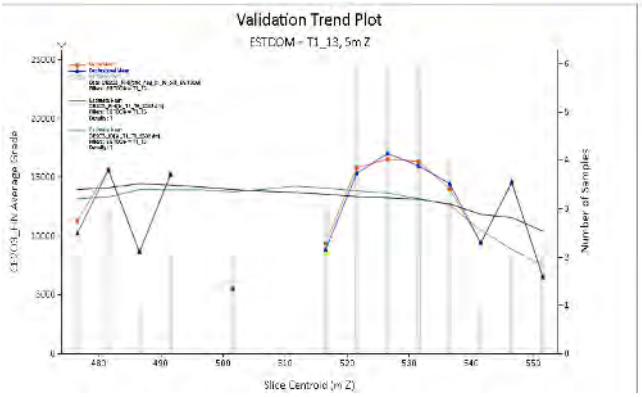


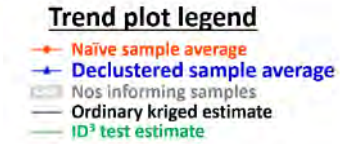


Ce_2O_3

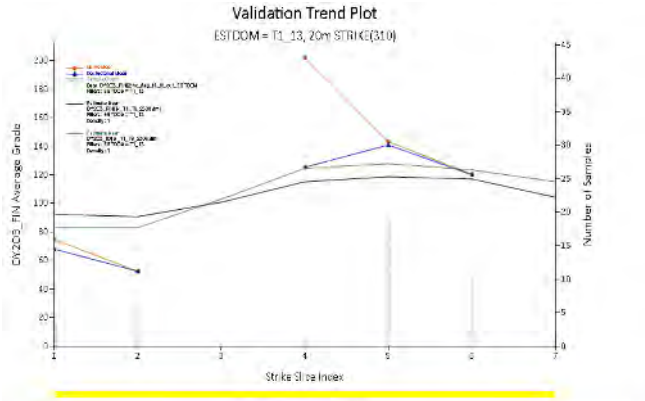




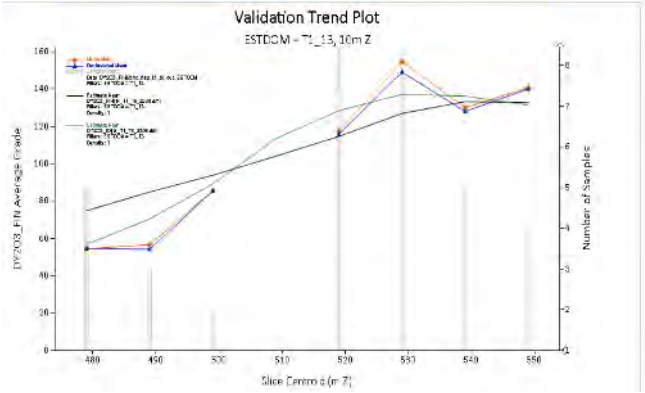


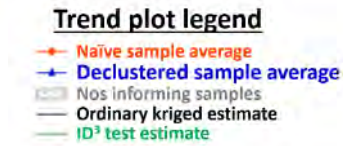


Dy_2O_3

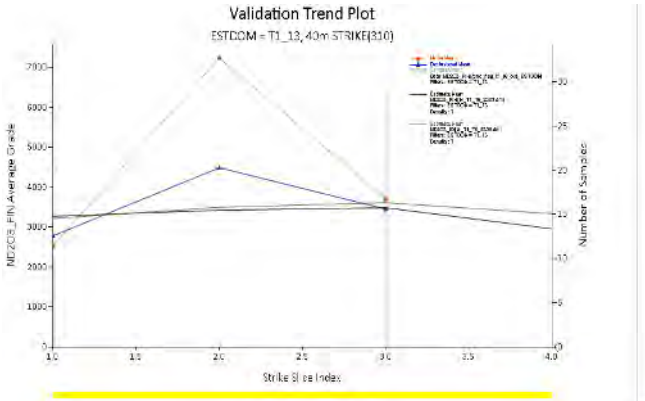

Validation Trend Plot
ESTDOM = T1_13, 20m STRIKE(310)
DY2O3_FIN Average Grade
Number of Samples
Strike Slice Index

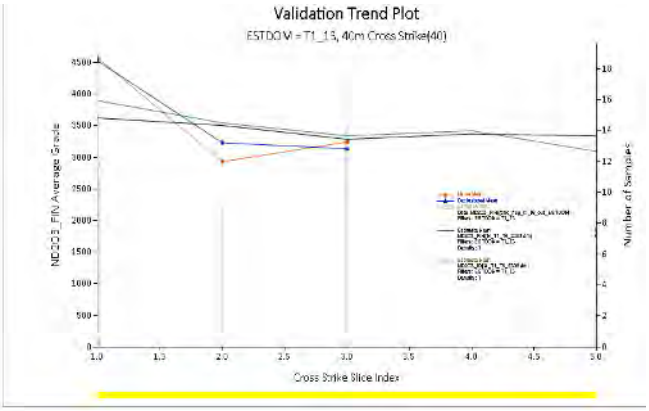

Validation Trend Plot
ESTDOM = T1_13, 30m Cross Strike(40)
DY2O3_FIN Average Grade
Number of Samples
Cross Strike Slice Index

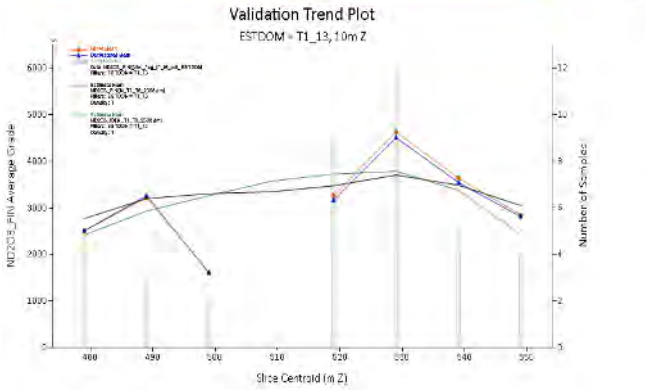

Validation Trend Plot
ESTDOM = T1_13, 10m Z
DY2O3_FIN Average Grade
Number of Samples
Slice Centroid (m Z)

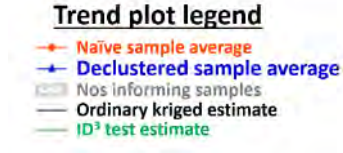

Trend plot legend
Naïve sample average
Declustered sample average
Nos informing samples
Ordinary kriged estimate
ID³ test estimate

Nd_2O_3

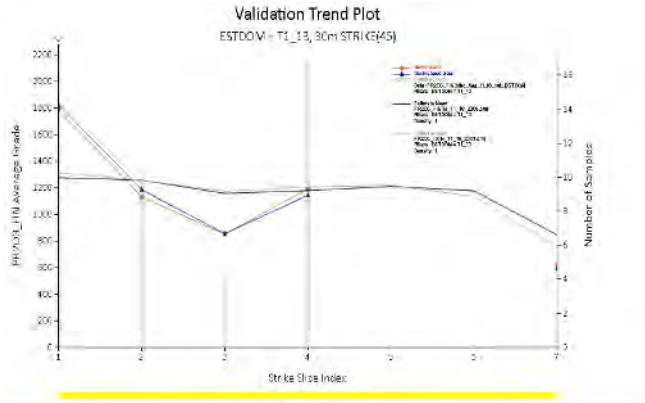

Validation Trend Plot
ESTDOM = T1_13, 40m STRIKE(310)
ND2O3_FIN Average Grade
Number of Samples
Strike Slice Index

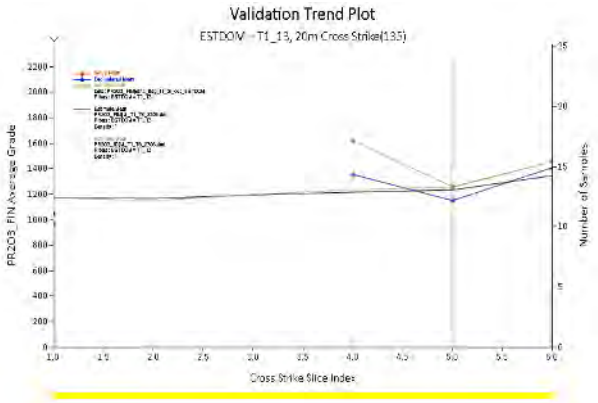

Validation Trend Plot
ESTDOM = T1_13, 40m Cross Strike(40)
ND2O3_FIN Average Grade
Number of Samples
Cross Strike Slice Index

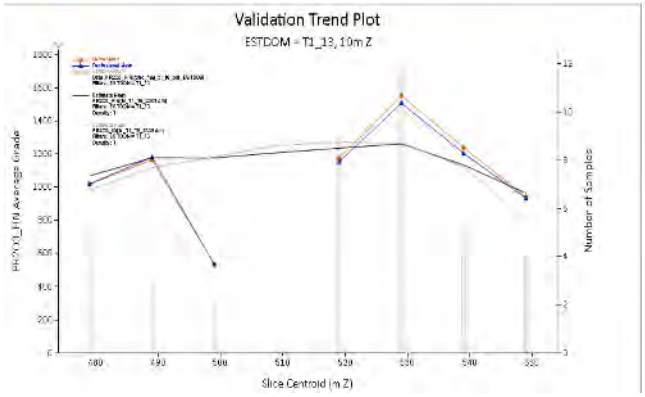

Validation Trend Plot
ESTDOM = T1_13, 10m Z
ND2O3_FIN Average Grade
Number of Samples
Slice Centroid (m Z)

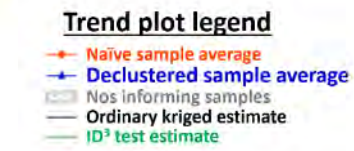

Trend plot legend
Naïve sample average
Declustered sample average
Nos informing samples
Ordinary kriged estimate
ID³ test estimate

Pr_2O_3

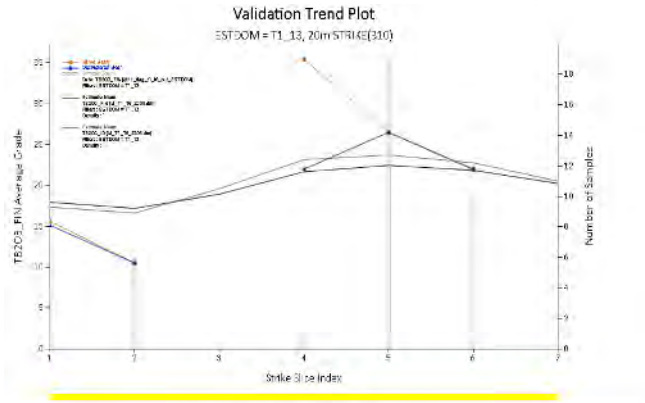

Validation Trend Plot
ESTDOM = T1_13, 30m STRIKE(45)
PR2O3_FIN Average Grade
Number of Samples
Strike Slice Index

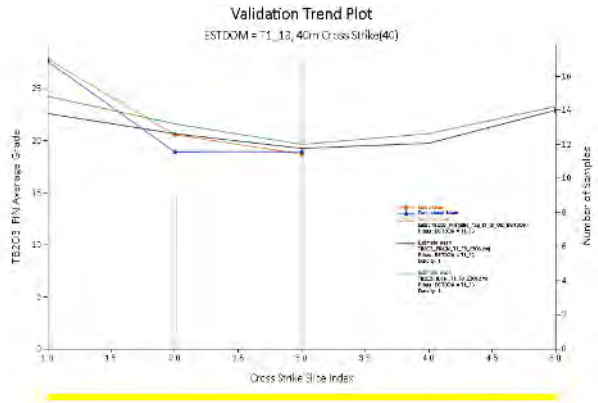

Validation Trend Plot
ESTDOM = T1_13, 20m Cross Strike(135)
PR2O3_FIN Average Grade
Number of Samples
Cross Strike Slice Index

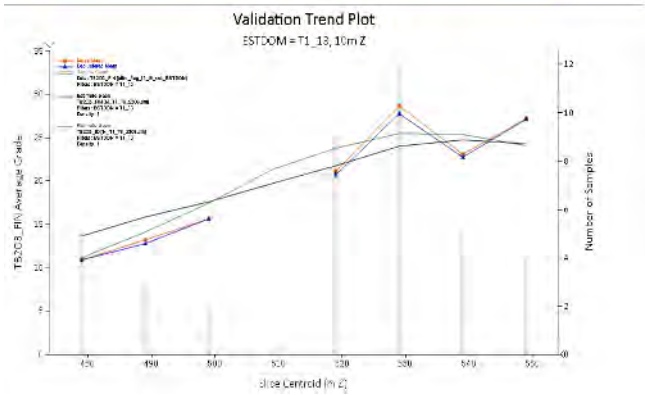

Validation Trend Plot
ESTDOM = T1_13, 10m Z
PR2O3_FIN Average Grade
Number of Samples
Slice Centroid (m Z)

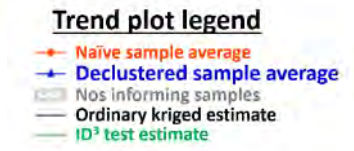

Trend plot legend
Naïve sample average
Declustered sample average
Nos informing samples
Ordinary kriged estimate
ID³ test estimate

Tb_2O_3

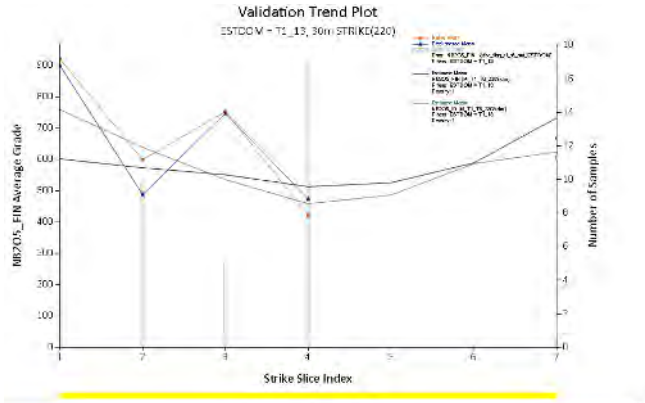

Validation Trend Plot
ESTDOM = T1_13, 20m STRIKE(310)
TB2O3_FIN Average Grade
Number of Samples
Strike Slice Index

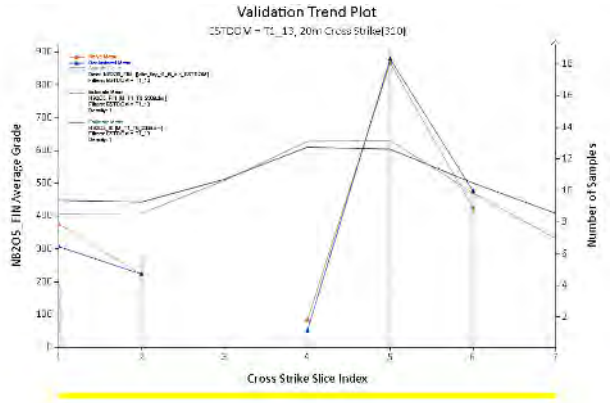

Validation Trend Plot
ESTDOM = T1_13, 40m Cross Strike(40)
TB2O3_FIN Average Grade
Number of Samples
Cross Strike Slice Index

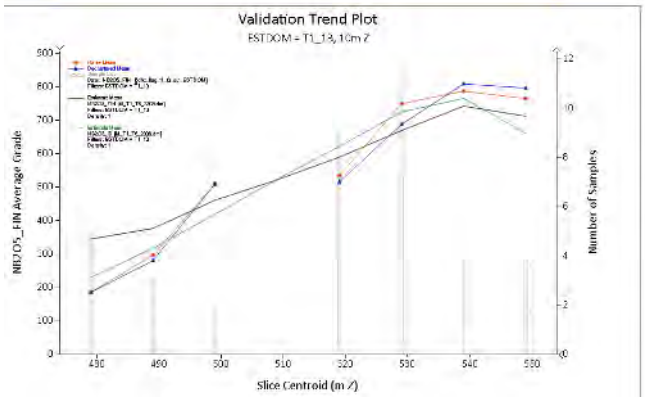

Validation Trend Plot
ESTDOM = T1_13, 10m Z
TB2O3_FIN Average Grade
Number of Samples
Slice Centroid (m Z)

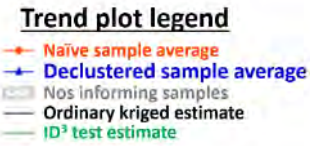

Trend plot legend
Naïve sample average
Declustered sample average
Nos informing samples
Ordinary kriged estimate
ID³ test estimate

Nb_2O_5

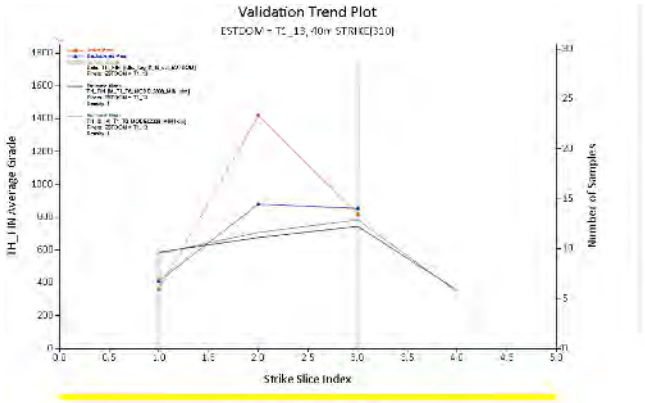

Validation Trend Plot
NB2O5_FIN Average Grade
Number of Samples
Strike Slice Index

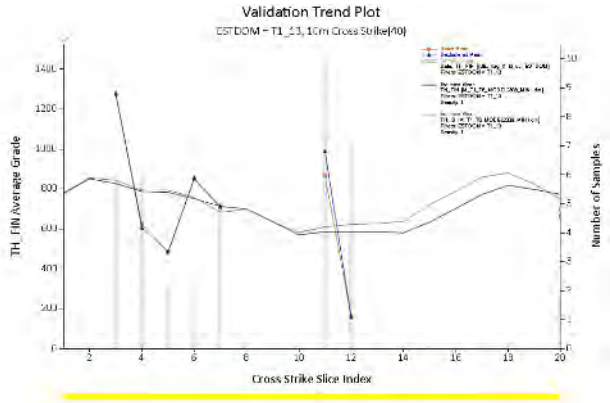

Validation Trend Plot
NB2O5_FIN Average Grade
Number of Samples
Cross Strike Slice Index

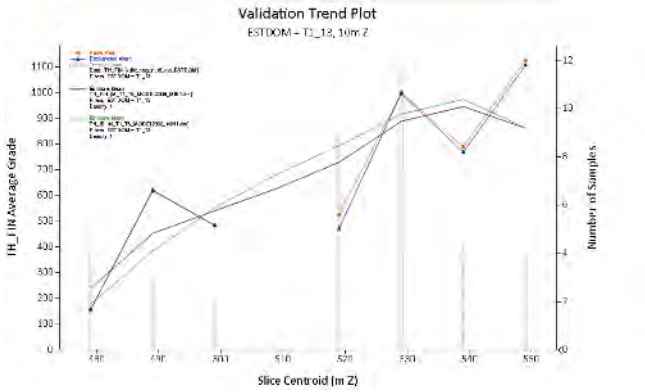

Validation Trend Plot
NB2O5_FIN Average Grade
Number of Samples
Slice Centroid (m Z)

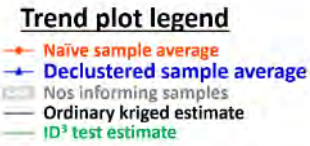

Trend plot legend
Naïve sample average
Declustered sample average
Nos informing samples
Ordinary kriged estimate
ID³ test estimate

Th

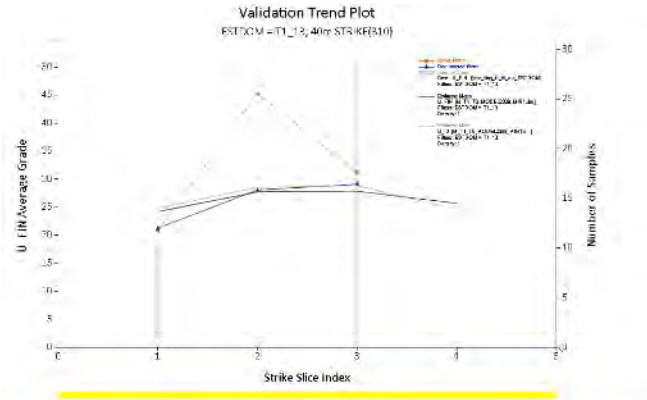

Validation Trend Plot
TH_FIN Average Grade
Number of Samples
Strike Slice Index


Validation Trend Plot
TH_FIN Average Grade
Number of Samples
Cross Strike Slice Index

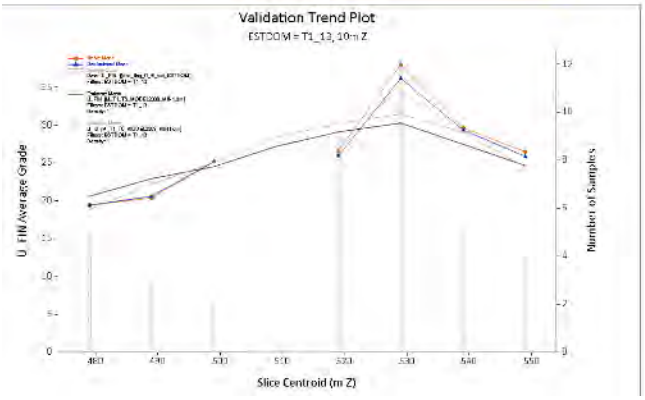

Validation Trend Plot
TH_FIN Average Grade
Number of Samples
Slice Centroid (m Z)


Trend plot legend
Naïve sample average
Declustered sample average
Nos informing samples
Ordinary kriged estimate
ID³ test estimate

U


Validation Trend Plot
U_FIN Average Grade
Number of Samples
Strike Slice Index

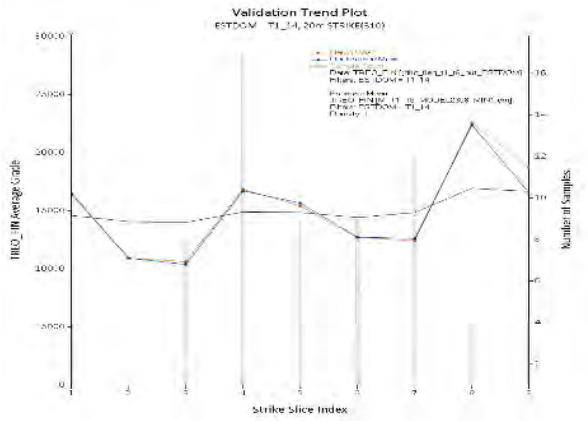

Validation Trend Plot
U_FIN Average Grade
Number of Samples
Cross Strike Slice Index

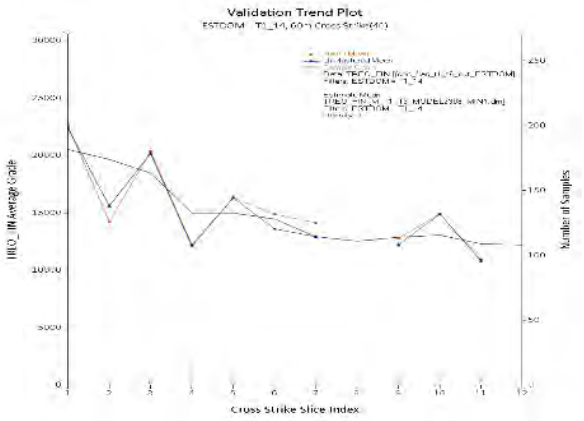

Validation Trend Plot
U_FIN Average Grade
Number of Samples
Slice Centroid (m Z)

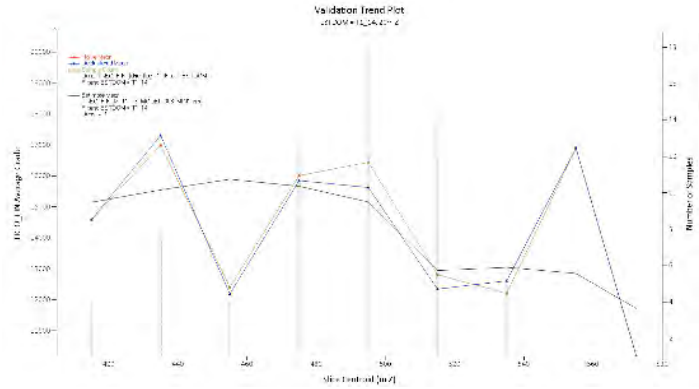

Trend plot legend
Naïve sample average
Declustered sample average
Nos informing samples
Ordinary kriged estimate
ID³ test estimate

Model validation trend plots target 1 - T1_14

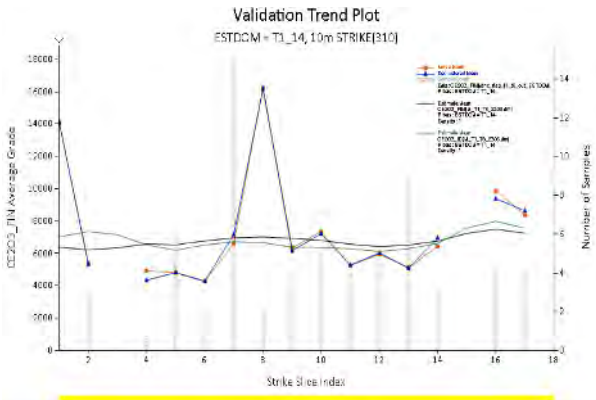
TREO

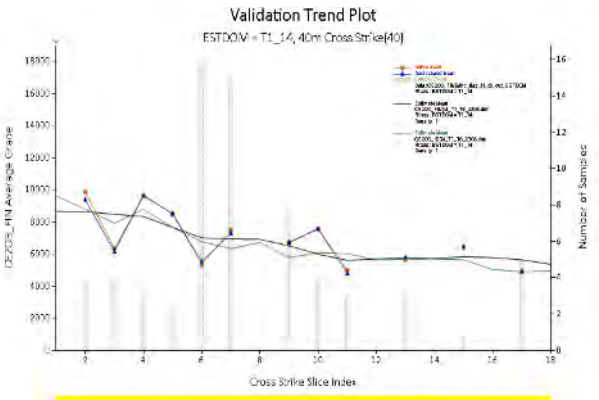


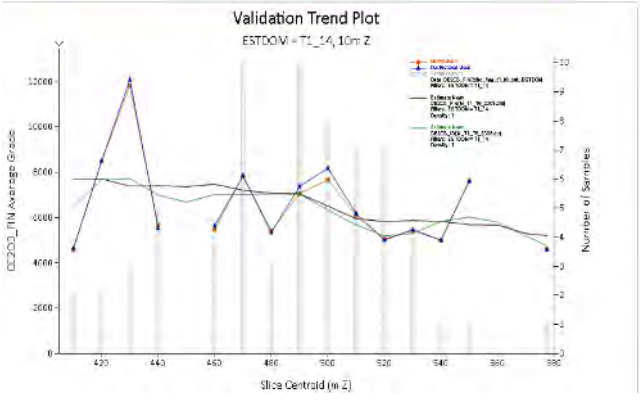




Ce_2O_3

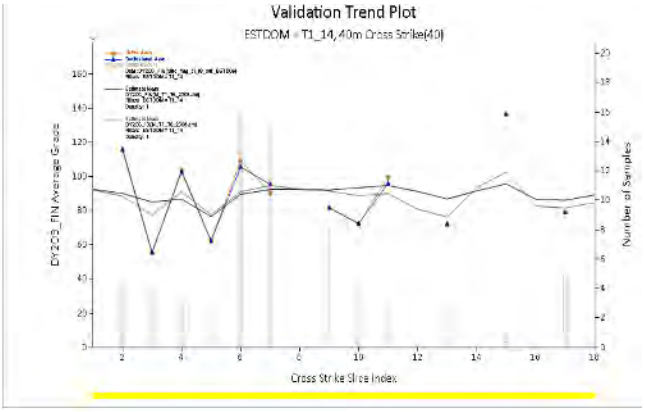


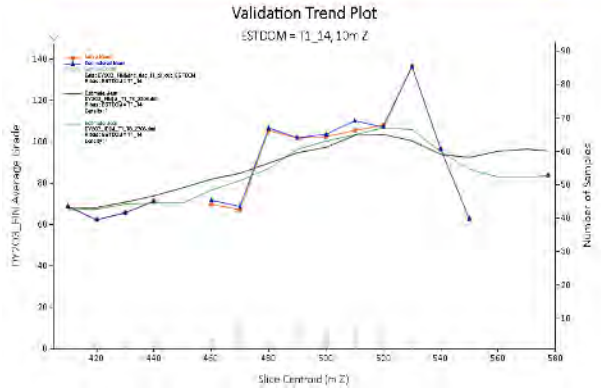




Dy_2O_3

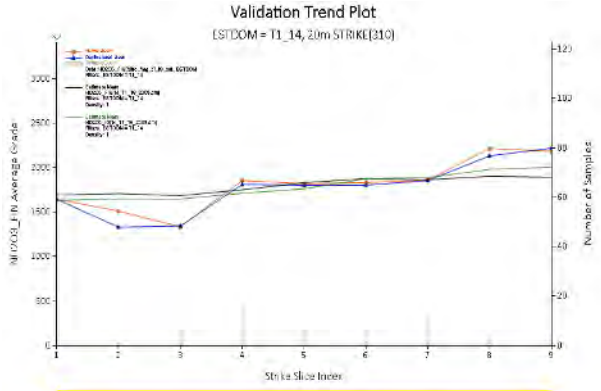

Validation Trend Plot
ESTDOM = T1_14, 20m STRIKE(310)
Strike Slice Index
Number of Samples

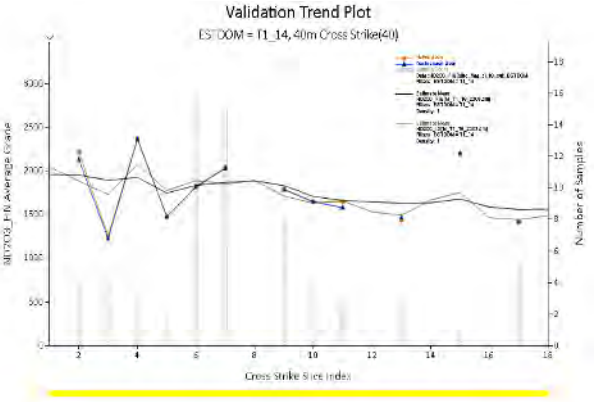

Validation Trend Plot
ESTDOM = T1_14, 40m Cross Strike(40)
Cross Strike Slice Index
Number of Samples

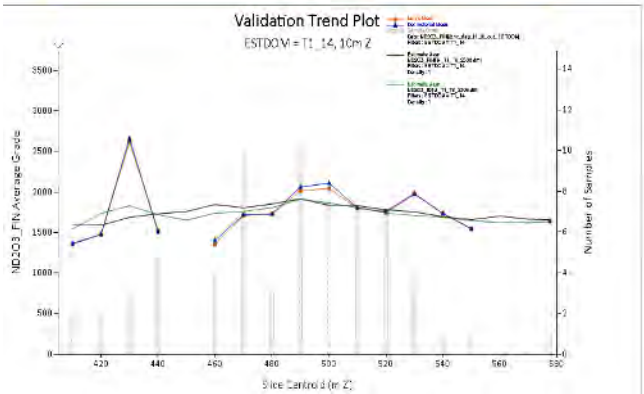

Validation Trend Plot
ESTDOM = T1_14, 10m Z
Slice Centroid (m Z)
Number of Samples


Trend plot legend
Naïve sample average
Declustered sample average
Nos informing samples
Ordinary kriged estimate
ID³ test estimate

Nd_2O_3

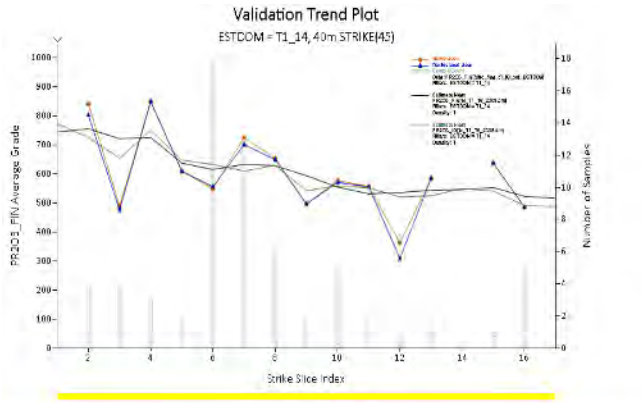

Validation Trend Plot
ESTDOM = T1_14, 20m STRIKE(310)
Strike Slice Index
Number of Samples

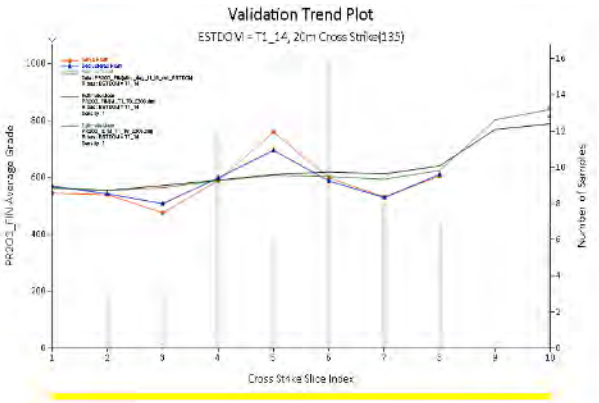

Validation Trend Plot
ESTDOM = T1_14, 40m Cross Strike(40)
Cross Strike Slice Index
Number of Samples

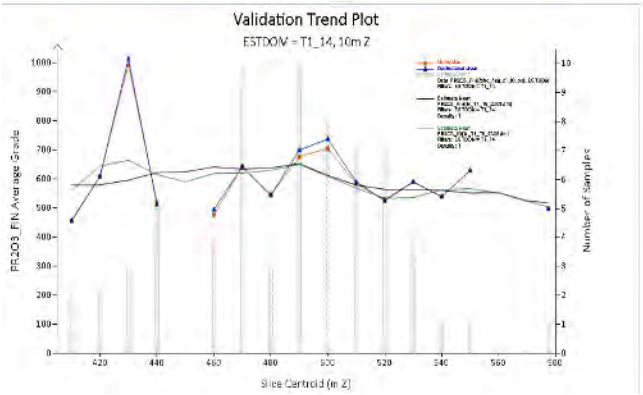

Validation Trend Plot
ESTDOM = T1_14, 10m Z
Slice Centroid (m Z)
Number of Samples


Trend plot legend
Naïve sample average
Declustered sample average
Nos informing samples
Ordinary kriged estimate
ID³ test estimate

Pr_2O_3

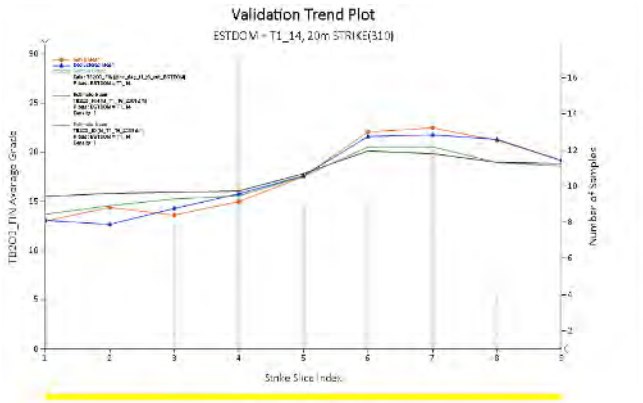

Validation Trend Plot
ESTDOM = T1_14, 40m STRIKE(45)
PR2O3_FIN Average Grade
Number of Samples
Strike Slice Index

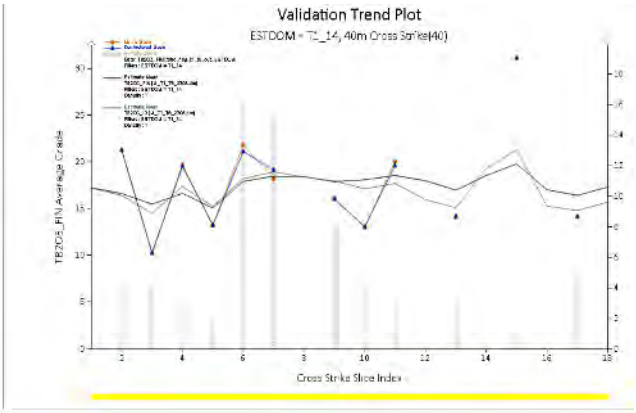

Validation Trend Plot
ESTDOM = T1_14, 20m Cross Strike(135)
PR2O3_FIN Average Grade
Number of Samples
Cross Strike Slice Index

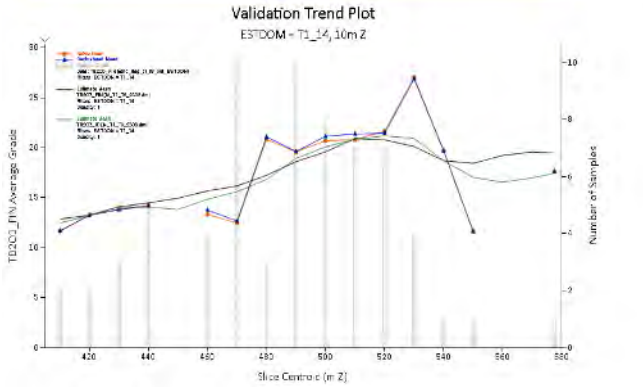

Validation Trend Plot
ESTDOM = T1_14, 10m Z
PR2O3_FIN Average Grade
Number of Samples
Slice Centroid (m Z)


Trend plot legend
Naïve sample average
Declustered sample average
Nos informing samples
Ordinary kriged estimate
ID³ test estimate

Tb_2O_3

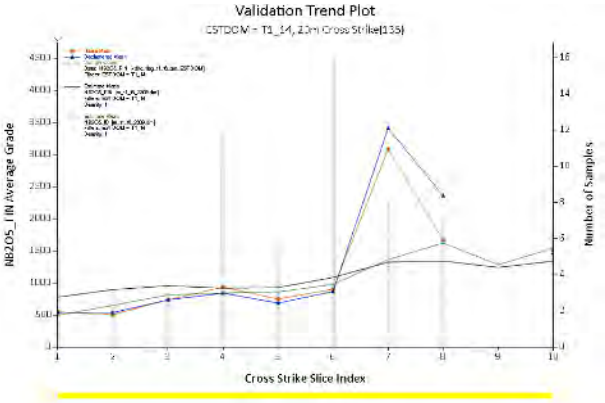

Validation Trend Plot
ESTDOM = T1_14, 20m STRIKE(310)
TB2O3_FIN Average Grade
Number of Samples
Strike Slice Index

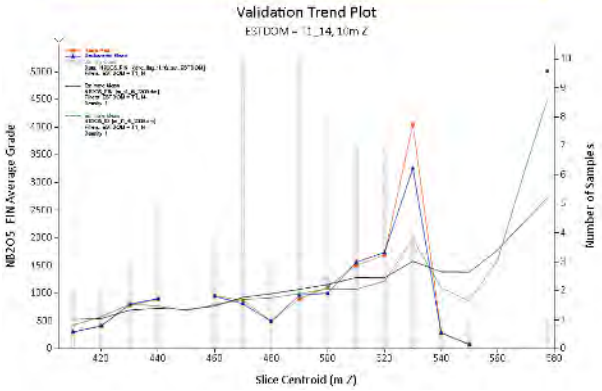

Validation Trend Plot
ESTDOM = T1_14, 40m Cross Strike(40)
TB2O3_FIN Average Grade
Cross Strike Slice Index


Validation Trend Plot
ESTDOM = T1_14, 10m Z
TB2O3_FIN Average Grade
Number of Samples
Slice Centroid (m Z)


Trend plot legend
Naïve sample average
Declustered sample average
Nos informing samples
Ordinary kriged estimate
ID³ test estimate

Nb_2O_5

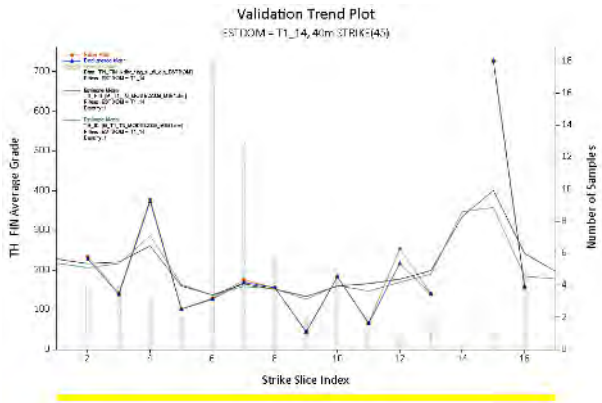


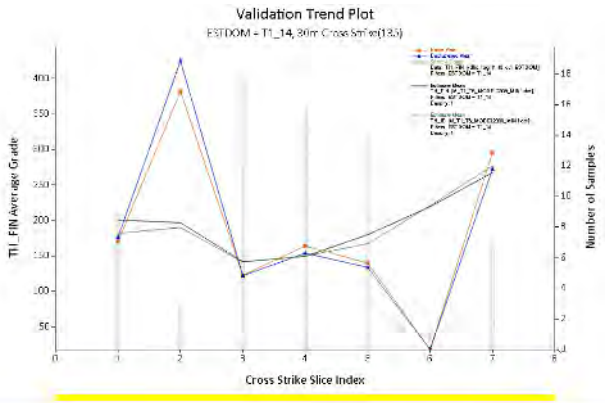


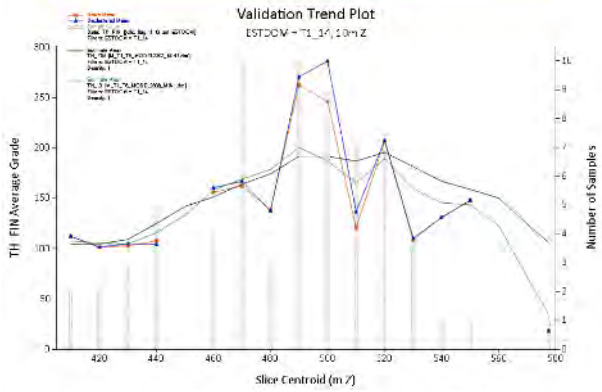
Trend plot legend

- Naïve sample average
- Declustered sample average
- Nos informing samples
- Ordinary kriged estimate
- ID³ test estimate

Th



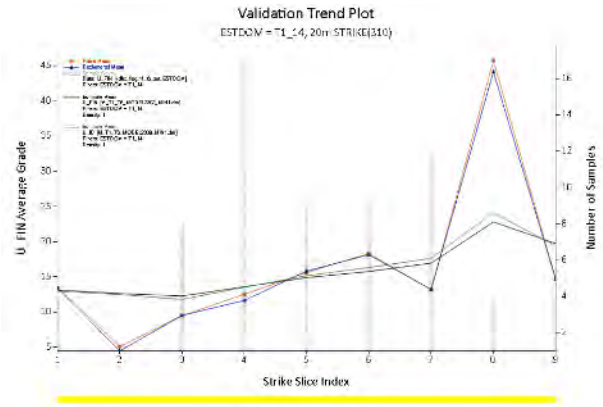


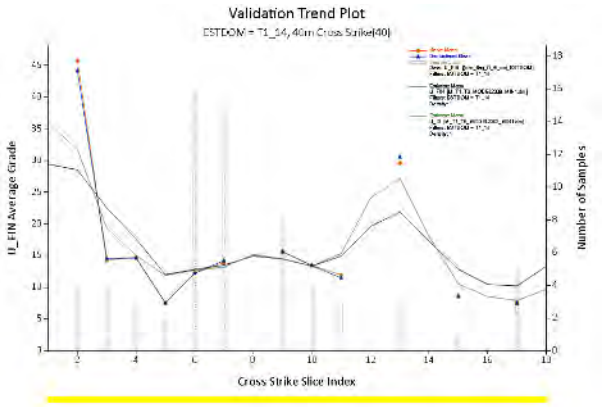


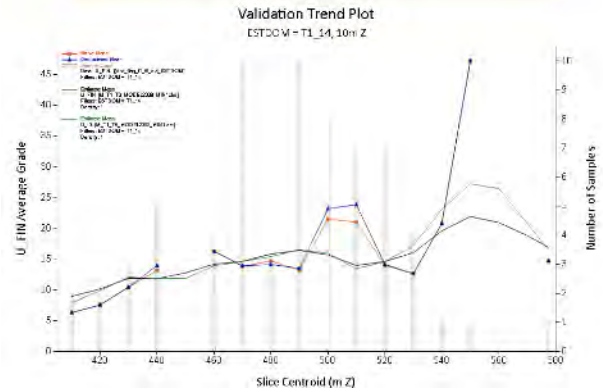
Trend plot legend

- Naïve sample average
- Declustered sample average
- Nos informing samples
- Ordinary kriged estimate
- ID³ test estimate

U


Validation Trend Plot
U_FIN Average Grade
Number of Samples
Strike Slice Index

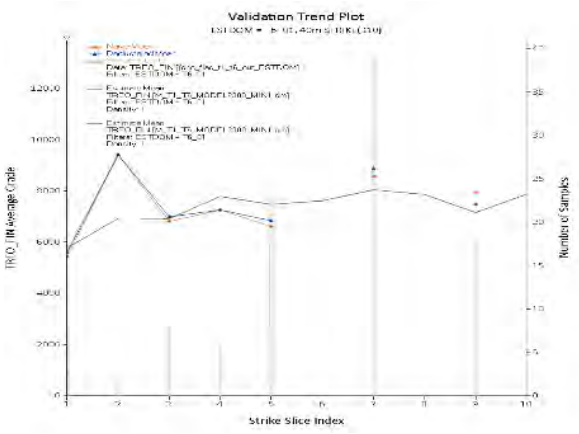

Validation Trend Plot
U_FIN Average Grade
Number of Samples
Cross Strike Slice Index

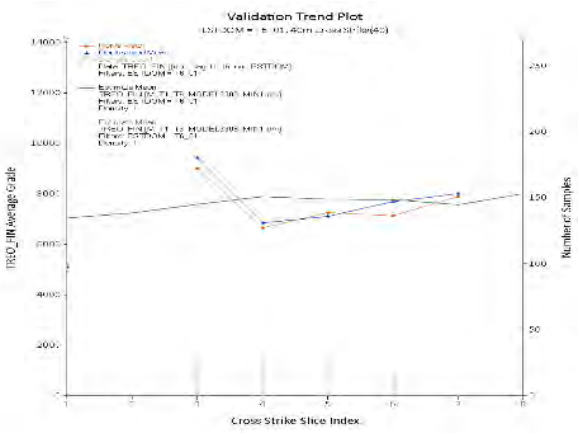

Validation Trend Plot
U_FIN Average Grade
Number of Samples
Slice Centroid (m Z)

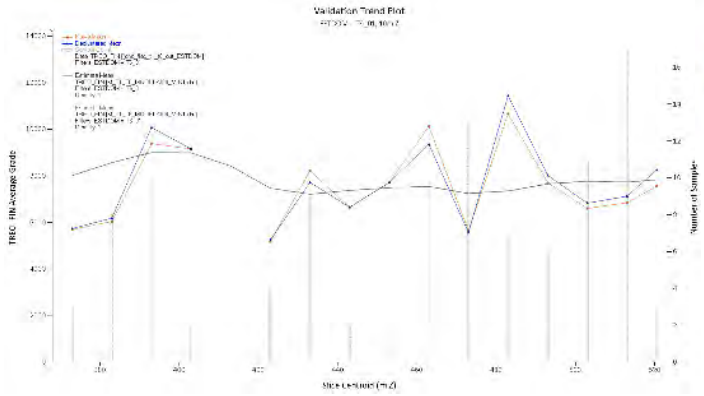

Trend plot legend
Naïve sample average
Declustered sample average
Nos informing samples
Ordinary kriged estimate
ID³ test estimate

Model validation trend plots target 6 – T6_01

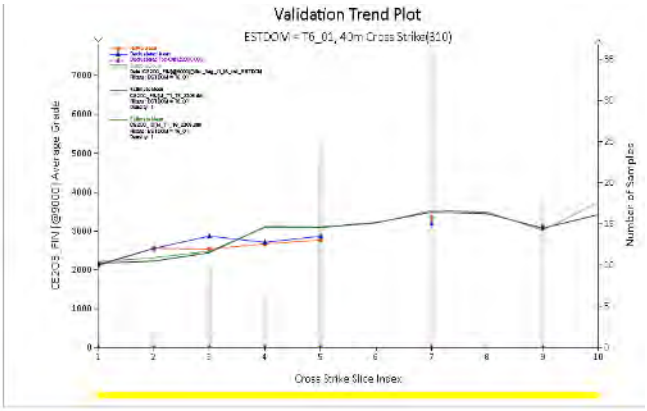
TREO

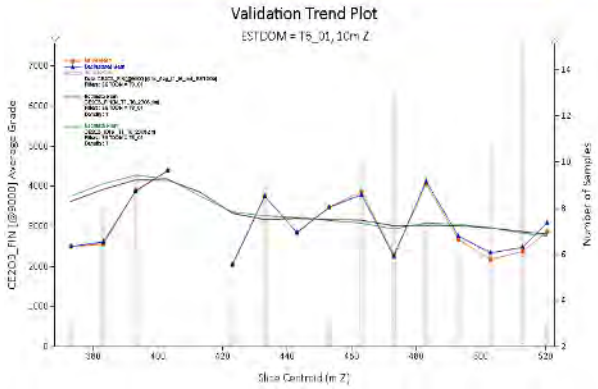




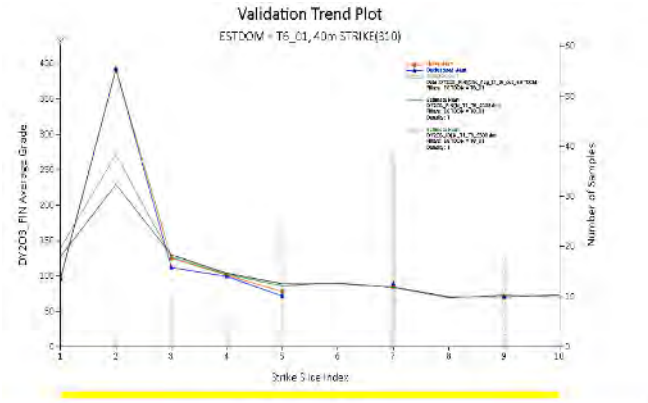


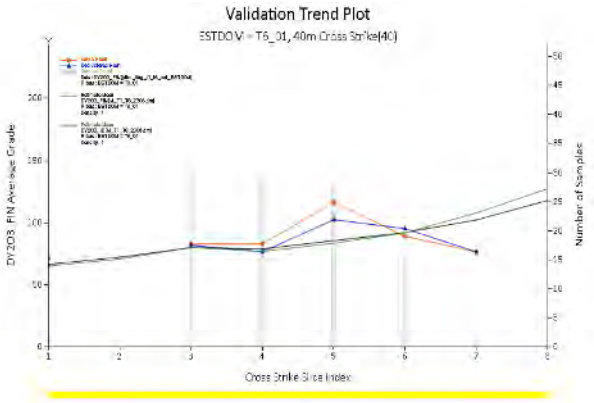
Ce_2O_3

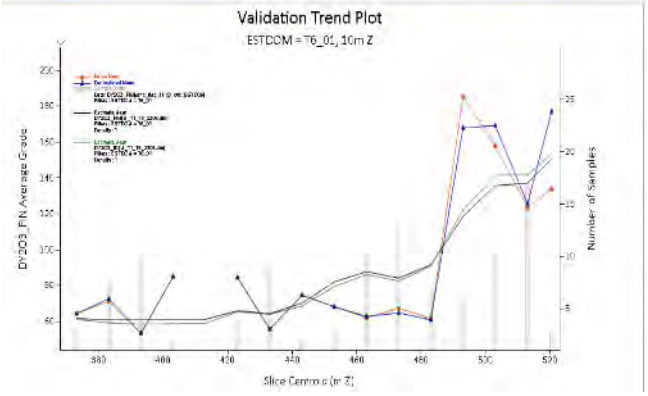




Dy_2O_3

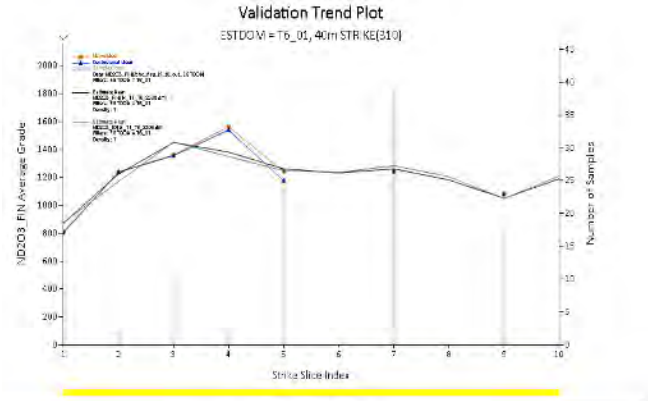


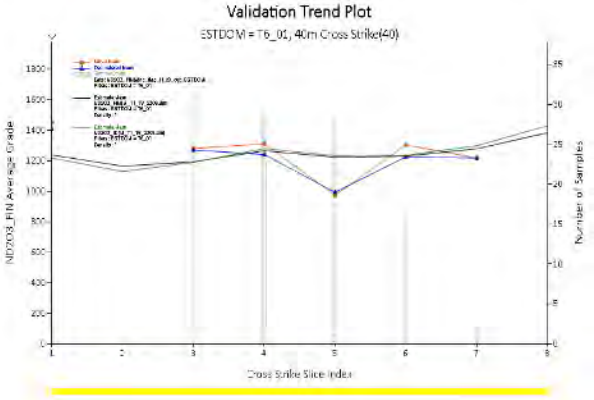


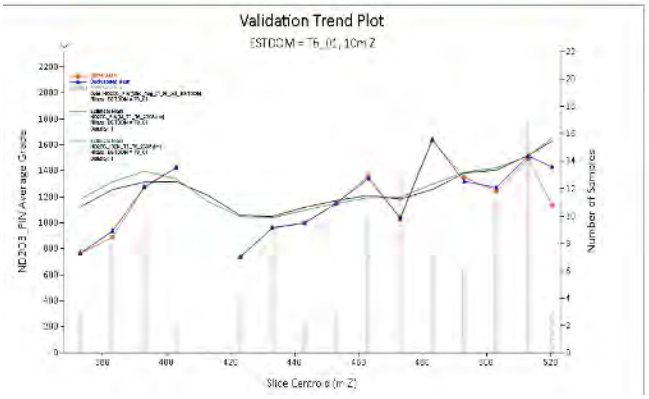


Trend plot legend
- Naïve sample average
- Declustered sample average
- Nos informing samples
- Ordinary kriged estimate
- ID³ test estimate

Nd_2O_3

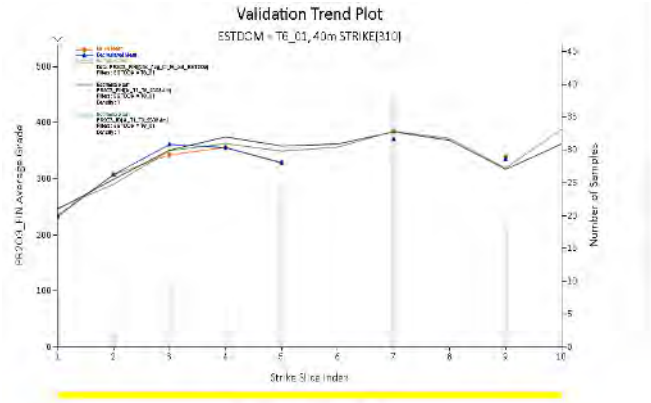


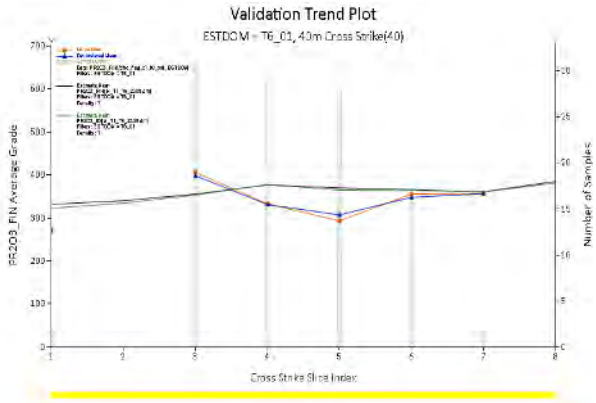


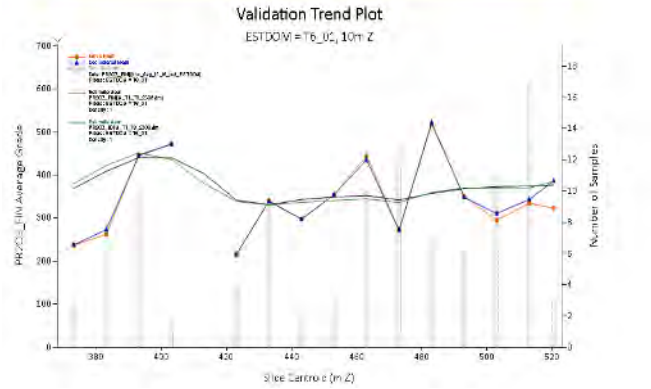


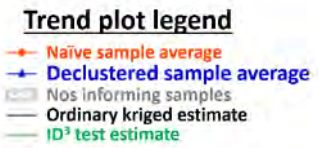
Trend plot legend
- Naïve sample average
- Declustered sample average
- Nos informing samples
- Ordinary kriged estimate
- ID³ test estimate

Pr_2O_3


Validation Trend Plot
ESTDOM = T6_01, 40m STRIKE(310)
Strike Slice Index
Number of Samples

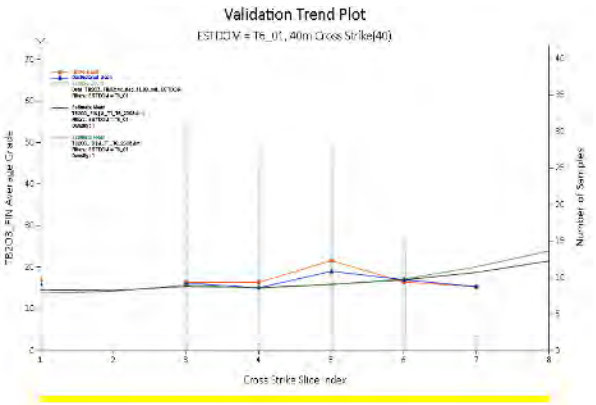

Validation Trend Plot
ESTDOM = T6_01, 40m Cross Strike(40)
Cross Strike Slice Index
Number of Samples

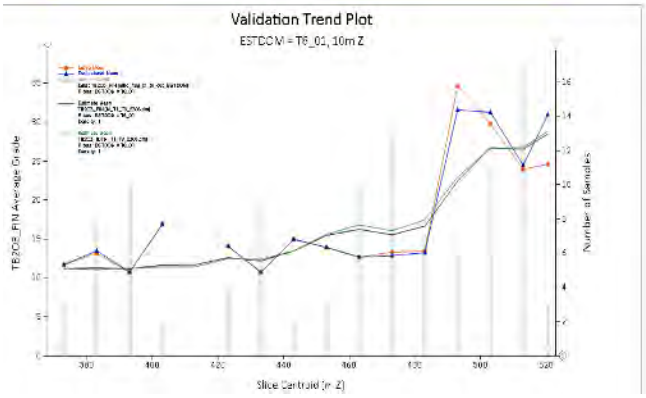

Validation Trend Plot
ESTDOM = T6_01, 10m Z
Slice Centroid (m Z)
Number of Samples


Trend plot legend
Naïve sample average
Declustered sample average
Nos informing samples
Ordinary kriged estimate
ID³ test estimate

Tb_2O_3

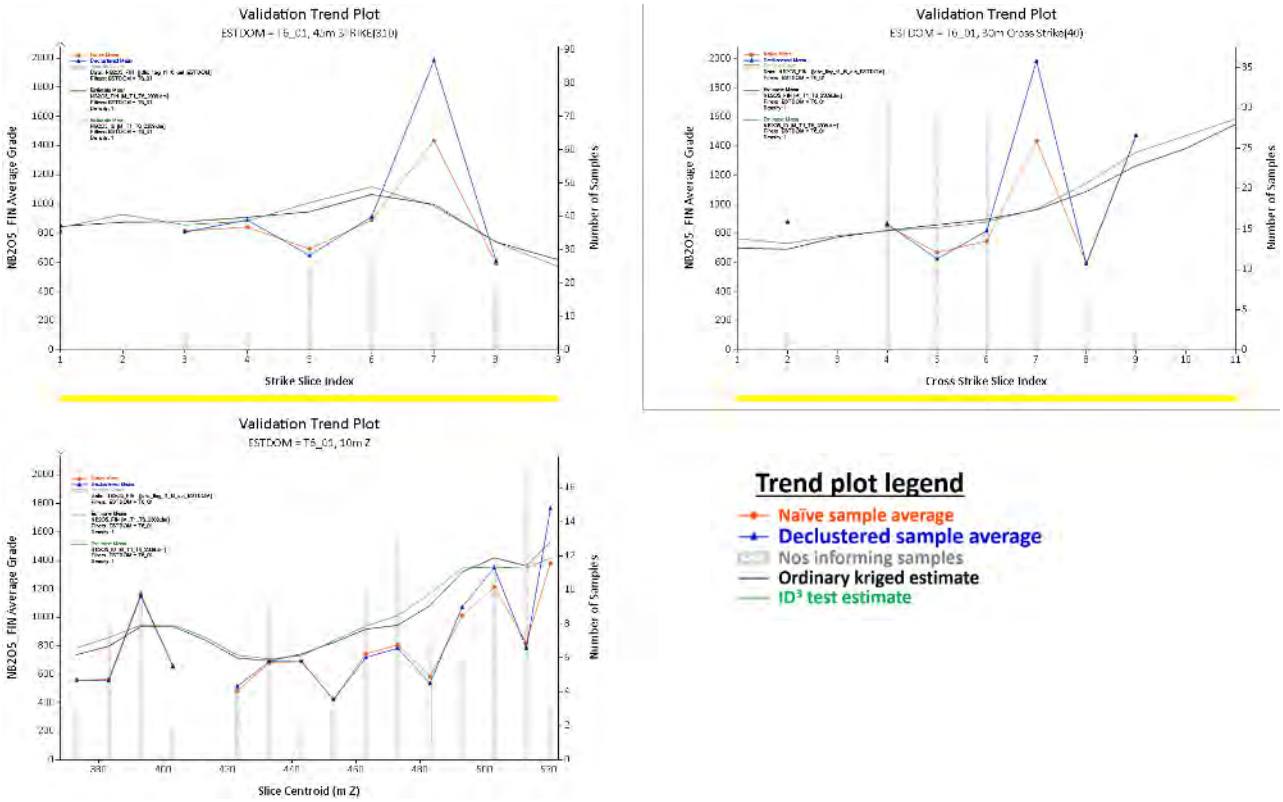

Validation Trend Plot
ESTDOM = T6_01, 40m STRIKE(310)
Strike Slice Index
Number of Samples


Validation Trend Plot
ESTDOM = T6_01, 40m Cross Strike(40)
Cross Strike Slice Index
Number of Samples

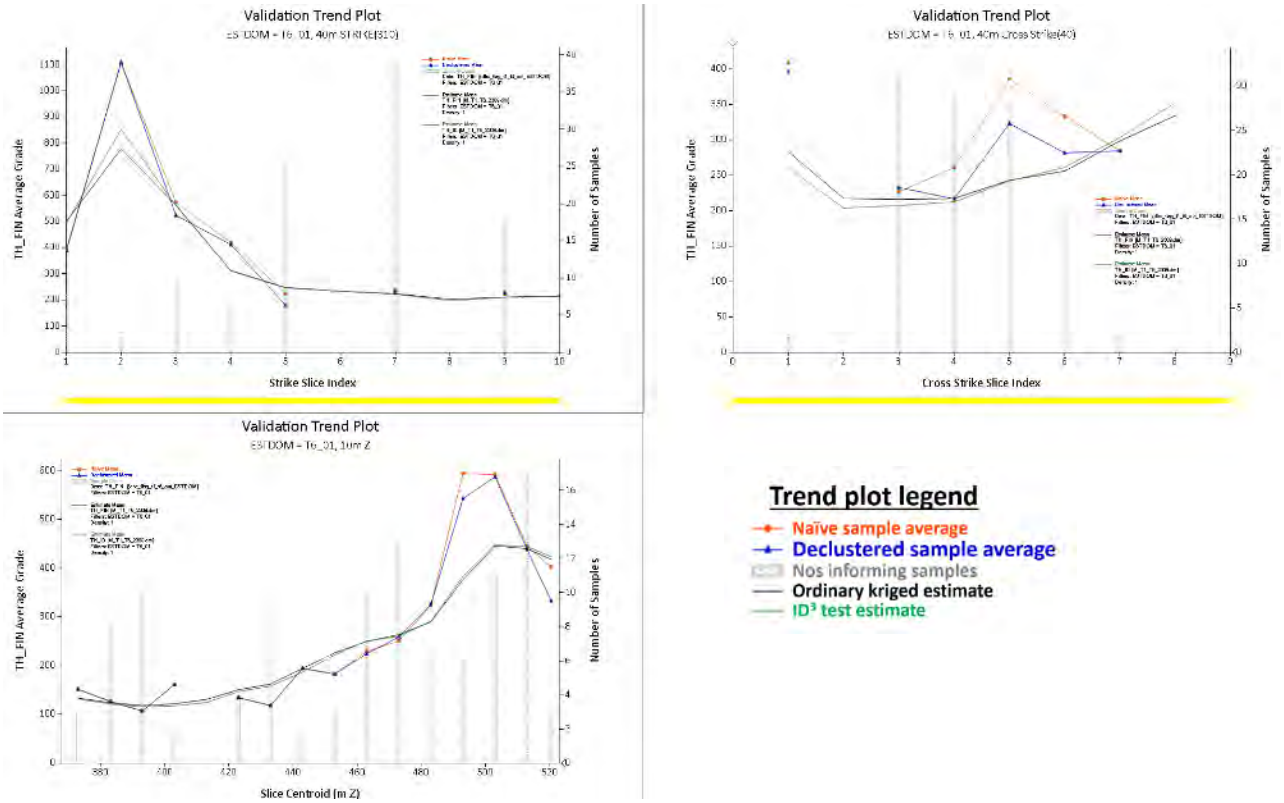

Validation Trend Plot
ESTDOM = T6_01, 10m Z
Slice Centroid (m Z)
Number of Samples


Trend plot legend
Naïve sample average
Declustered sample average
Nos informing samples
Ordinary kriged estimate
ID³ test estimate

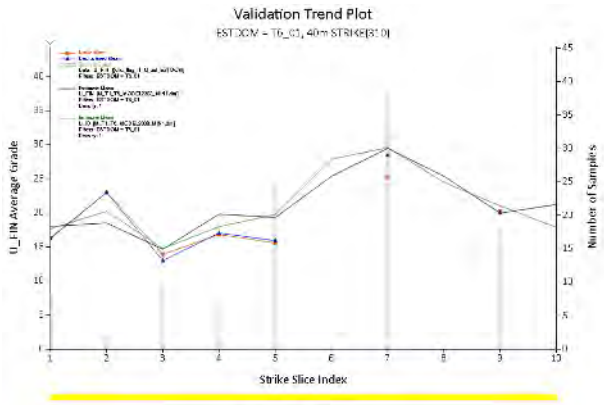
Nb_2O_5

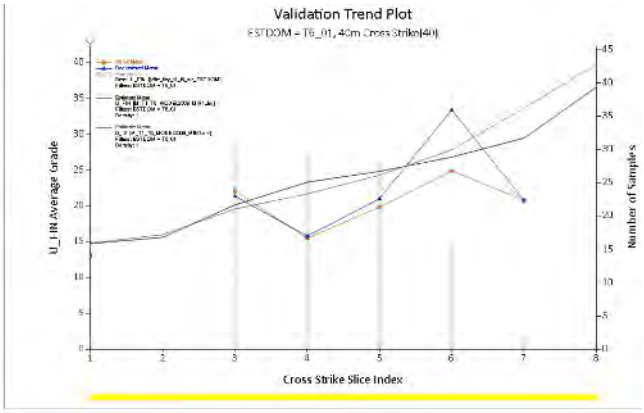

Validation Trend Plot
Validation Trend Plot
Validation Trend Plot
Trend plot legend
Naïve sample average
Declustered sample average
Nos informing samples
Ordinary kriged estimate
ID³ test estimate

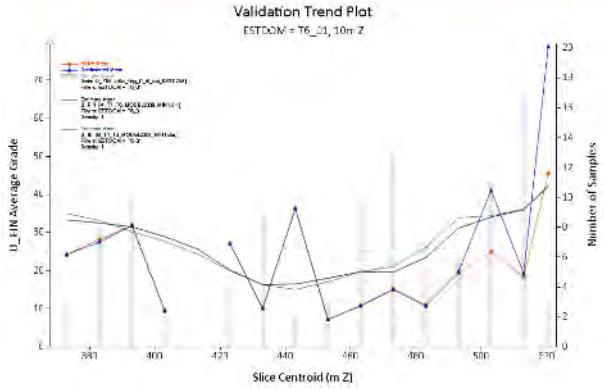
Th


Validation Trend Plot
Validation Trend Plot
Validation Trend Plot
Trend plot legend
Naïve sample average
Declustered sample average
Nos informing samples
Ordinary kriged estimate
ID³ test estimate

U





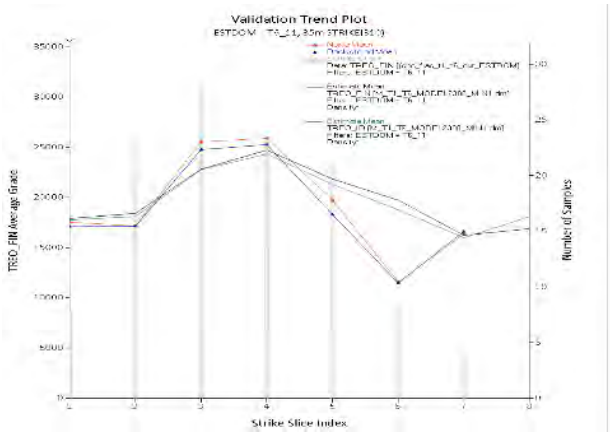


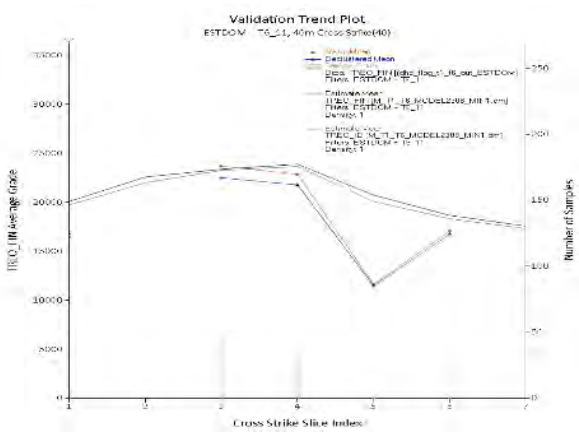
Trend plot legend

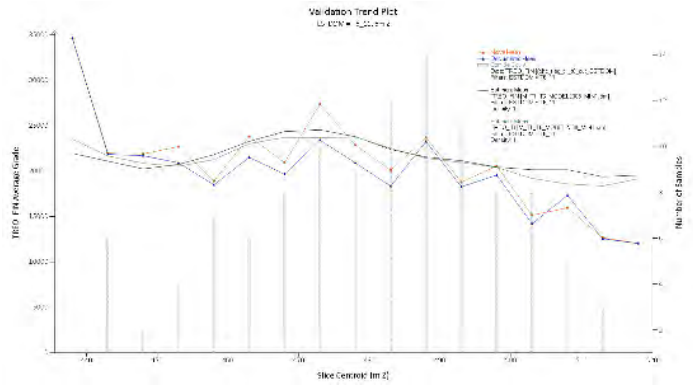
- Naïve sample average
- Declustered sample average
- Nos informing samples
- Ordinary kriged estimate
- ID³ test estimate

Model validation trend plots target 6 – T6_11

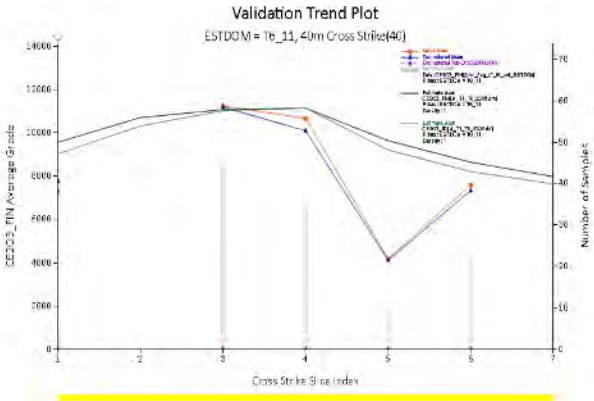
TREO

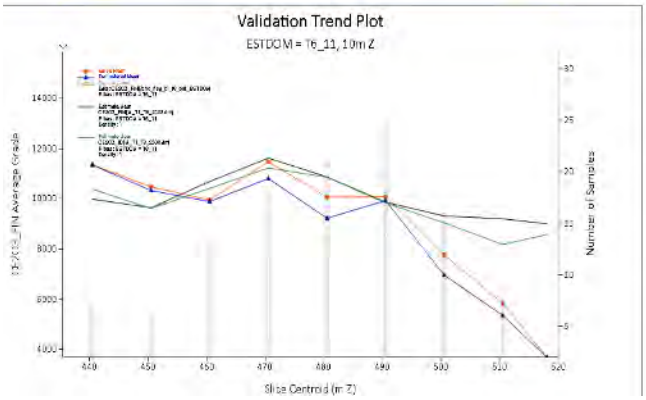




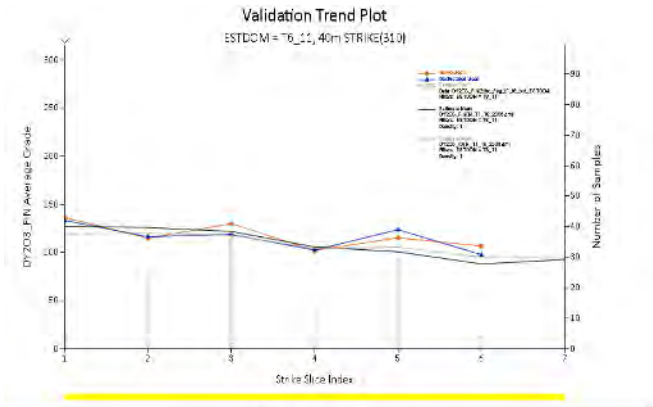


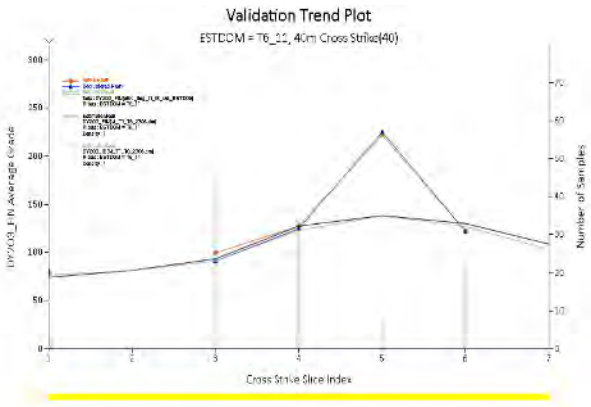
Ce_2O_3

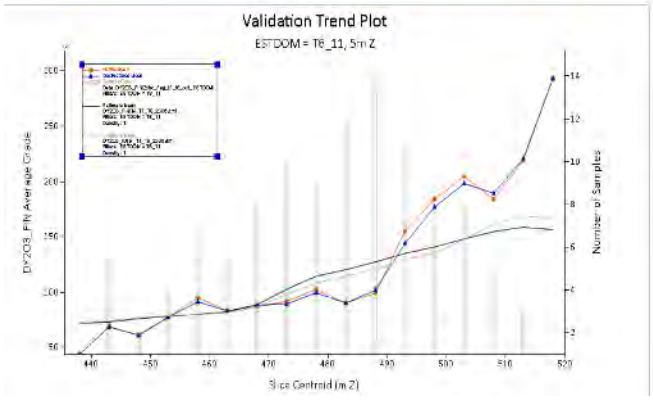




Dy_2O_3


Validation Trend Plot
ESTDOM = T6_11, 40m STRIKE(310)
DY2O3_FIN Average Grade
Number of Samples
Strike Slice Index

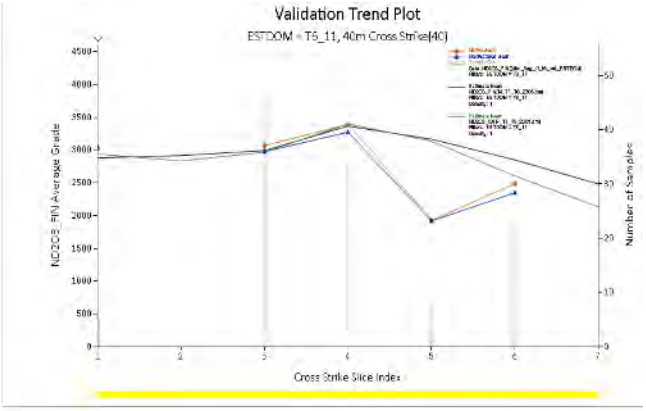

Validation Trend Plot
ESTDOM = T6_11, 40m Cross Strike(40)
DY2O3_FIN Average Grade
Number of Samples
Cross Strike Slice Index

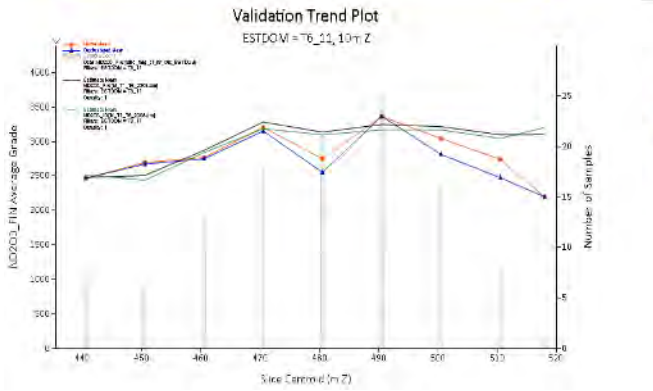

Validation Trend Plot
ESTDOM = T6_11, 5m Z
DY2O3_FIN Average Grade
Number of Samples
Slice Centroid (m Z)


Trend plot legend
Naïve sample average
Declustered sample average
Nos informing samples
Ordinary kriged estimate
ID³ test estimate

Nd_2O_3


Validation Trend Plot
ESTDOM = T6_11, 30m STRIKE(310)
ND2O3_FIN Average Grade
Number of Samples
Strike Slice Index


Validation Trend Plot
ESTDOM = T6_11, 40m Cross Strike(40)
ND2O3_FIN Average Grade
Number of Samples
Cross Strike Slice Index

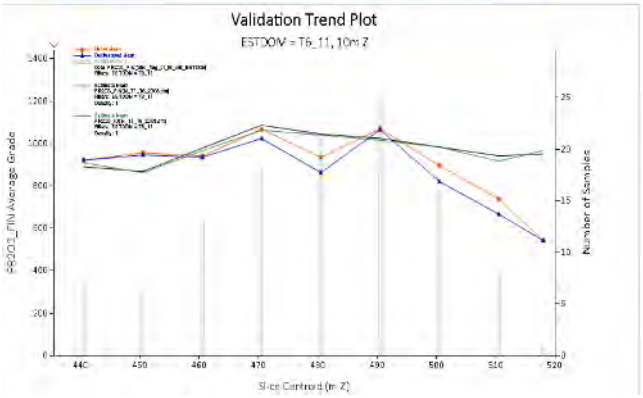

Validation Trend Plot
ESTDOM = T6_11, 10m Z
ND2O3_FIN Average Grade
Number of Samples
Slice Centroid (m Z)


Trend plot legend
Naïve sample average
Declustered sample average
Nos informing samples
Ordinary kriged estimate
ID³ test estimate

Pr_2O_3


Validation Trend Plot
ESTDOM = T6_11, 40m STRIKE(310)
PR2O3_FIN Average Grade
Number of Samples
Strike Slice Index

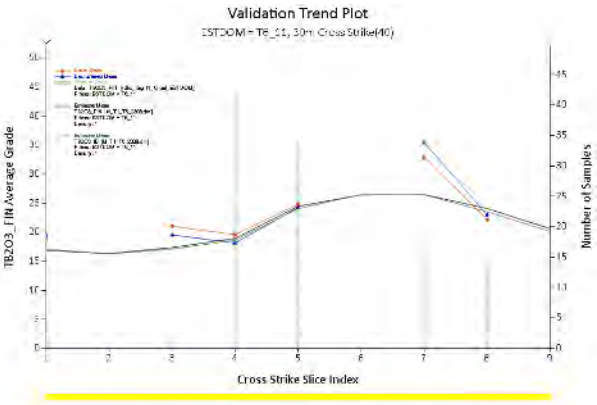

Validation Trend Plot
ESTDOM = T6_11, 40m Cross Strike(40)
PR2O3_FIN Average Grade
Number of Samples
Cross Strike Slice Index

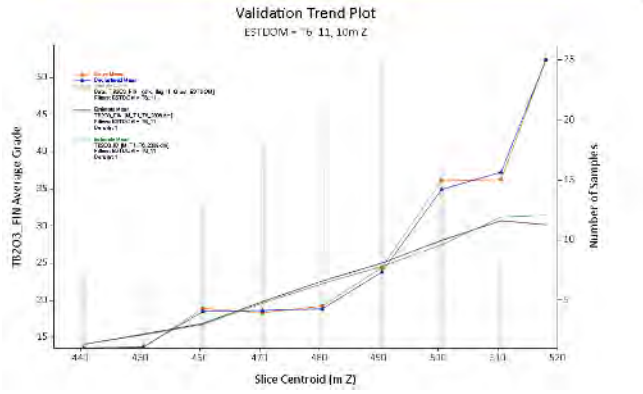

Validation Trend Plot
ESTDOM = T6_11, 10m Z
PR2O3_FIN Average Grade
Number of Samples
Slice Centroid (m Z)


Trend plot legend
Naïve sample average
Declustered sample average
Nos informing samples
Ordinary kriged estimate
ID³ test estimate

Tb_2O_3

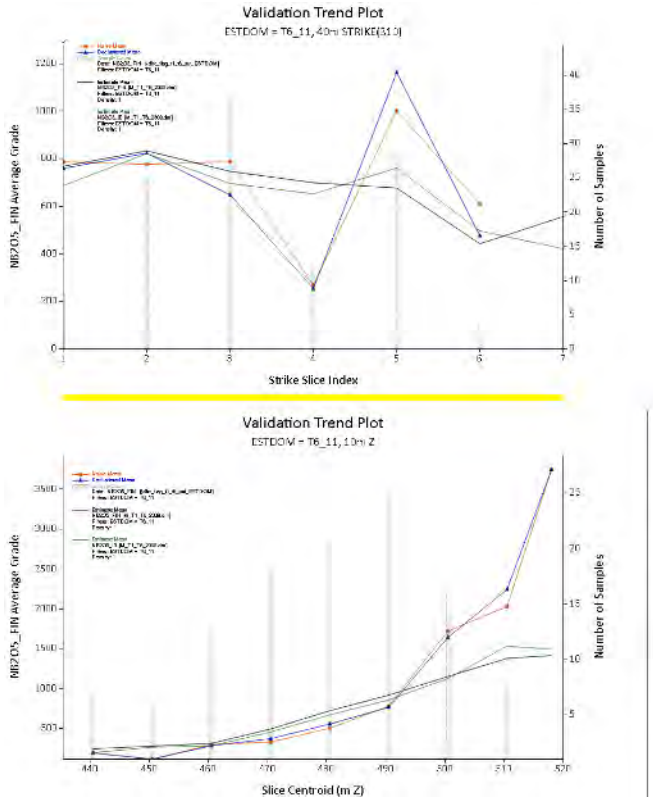

Validation Trend Plot
ESTDOM = T6_11, 30m STRIKE(310)
TB2O3_FIN Average Grade
Number of Samples
Strike Slice Index


Validation Trend Plot
ESTDOM = T6_11, 30m Cross Strike(40)
TB2O3_FIN Average Grade
Number of Samples
Cross Strike Slice Index

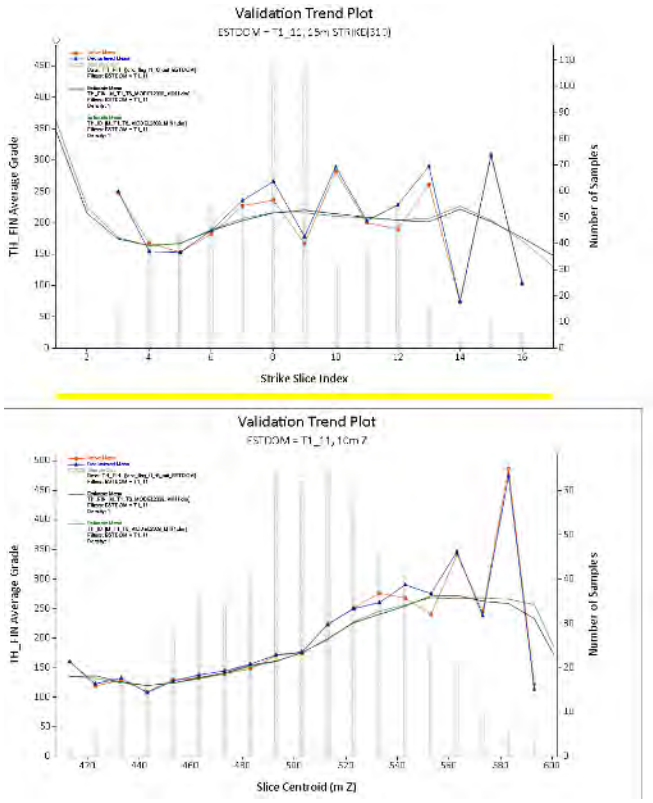

Validation Trend Plot
ESTDOM = T6_11, 10m Z
TB2O3_FIN Average Grade
Number of Samples
Slice Centroid (m Z)


Trend plot legend
Naïve sample average
Declustered sample average
Nos informing samples
Ordinary kriged estimate
ID³ test estimate

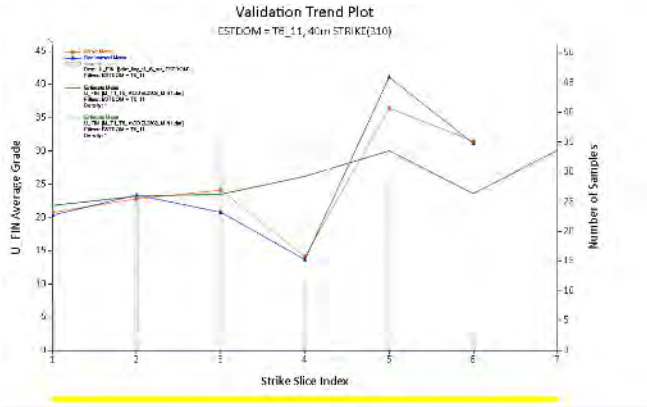
Nb_2O_5

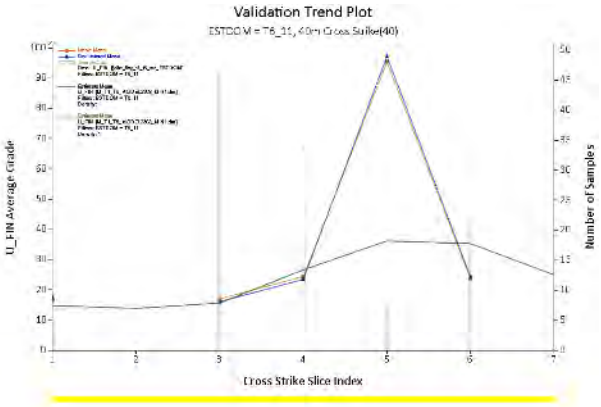

Validation Trend Plot
ESTDOM = T6_11, 40m STRIKE(310)
NB2O5_FIN Average Grade
Number of Samples
Strike Slice Index
Validation Trend Plot
ESTDOM = T6_11, 35m Cross Strike(40)
NB2O5_FIN Average Grade
Number of Samples
Cross Strike Slice Index
Validation Trend Plot
ESTDOM = T6_11, 10m Z
NB2O5_FIN Average Grade
Number of Samples
Slice Centroid (m Z)
Trend plot legend
Naïve sample average
Declustered sample average
Nos informing samples
Ordinary kriged estimate
ID³ test estimate

Th

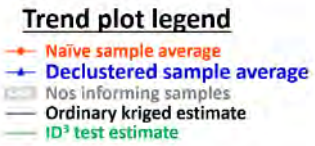

Validation Trend Plot
ESTDOM = T1_11, 25m STRIKE(310)
TH_FIN Average Grade
Number of Samples
Strike Slice Index
Validation Trend Plot
ESTDOM = T1_11, 40m Cross Strike(40)
TH_FIN Average Grade
Number of Samples
Cross Strike Slice Index
Validation Trend Plot
ESTDOM = T1_11, 10m Z
TH_FIN Average Grade
Number of Samples
Slice Centroid (m Z)
Trend plot legend
Naïve sample average
Declustered sample average
Nos informing samples
Ordinary kriged estimate
ID³ test estimate

U


Validation Trend Plot
U_FIN Average Grade
Number of Samples
Strike Slice Index

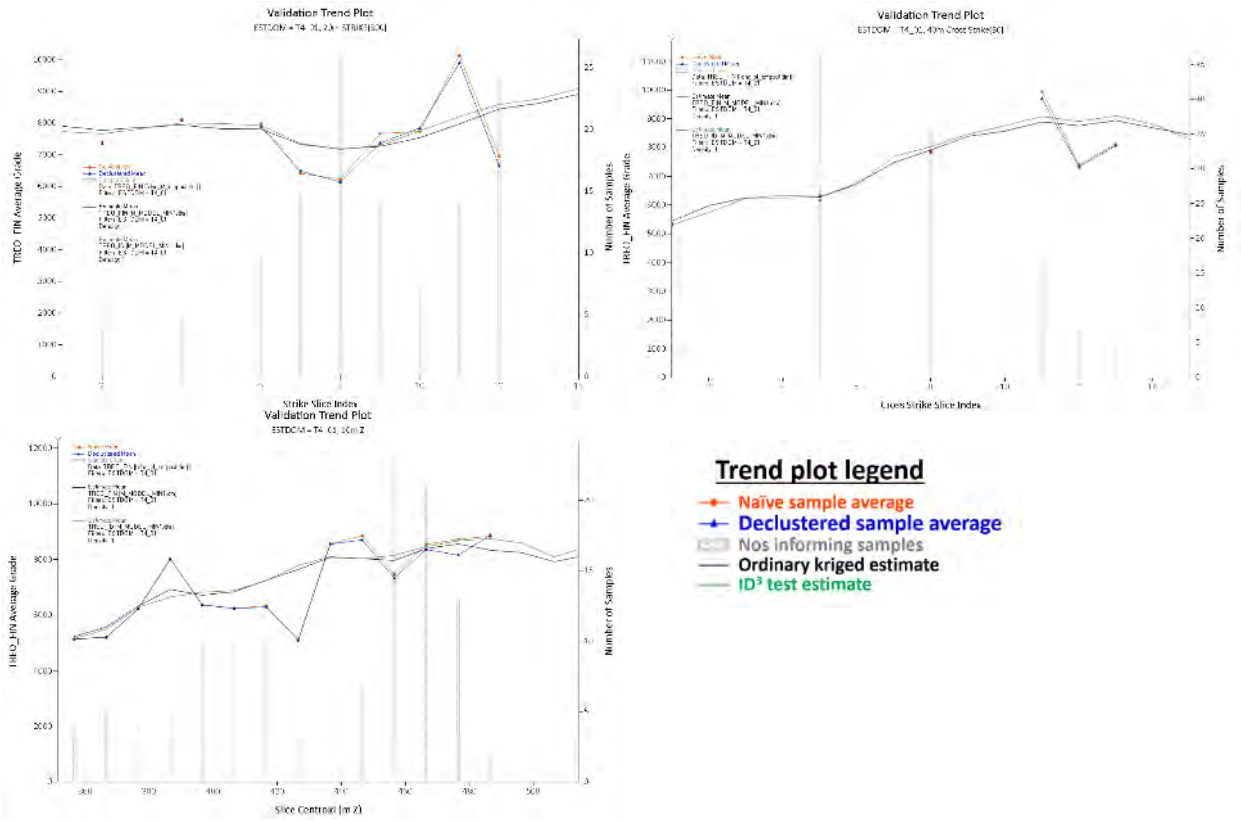

Validation Trend Plot
U_FIN Average Grade
Number of Samples
Cross Strike Slice Index


Validation Trend Plot
U_FIN Average Grade
Number of Samples
Slice Centroid (m Z)

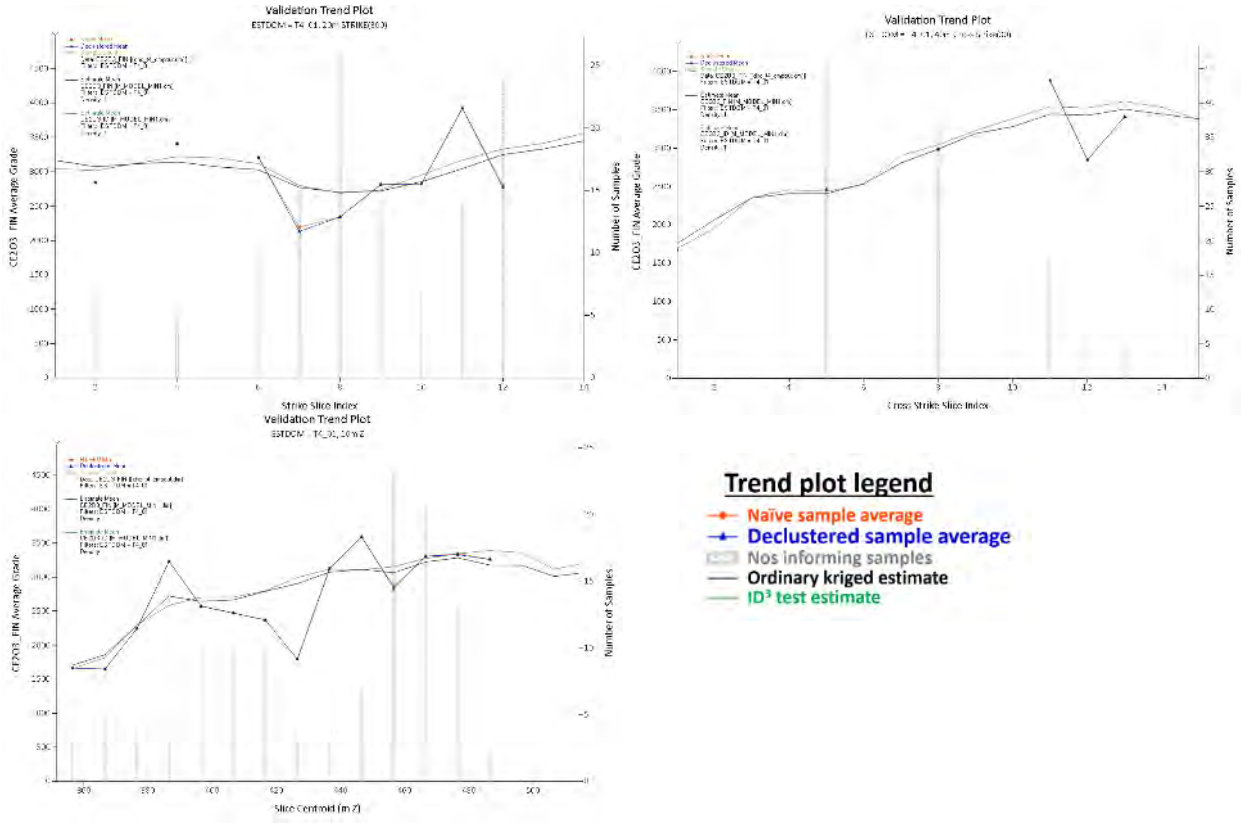

Trend plot legend
Naïve sample average
Declustered sample average
Nos informing samples
Ordinary kriged estimate
ID³ test estimate

Model validation trend plots target 4 – T4_01

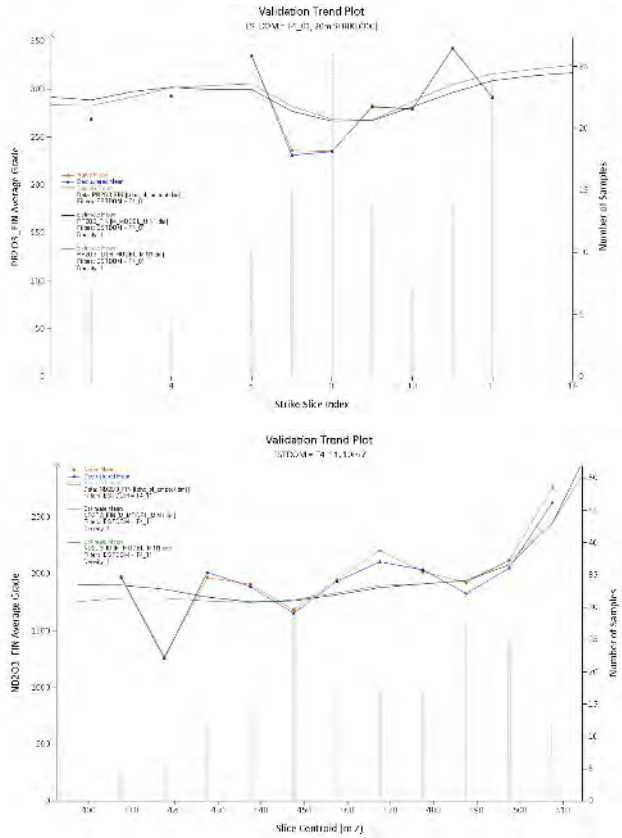
TREO



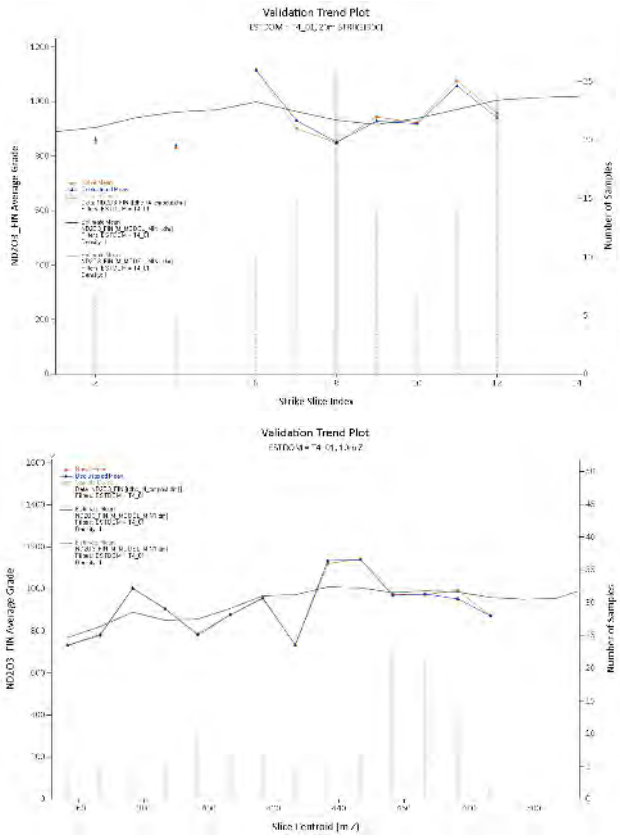
Ce_2O_3



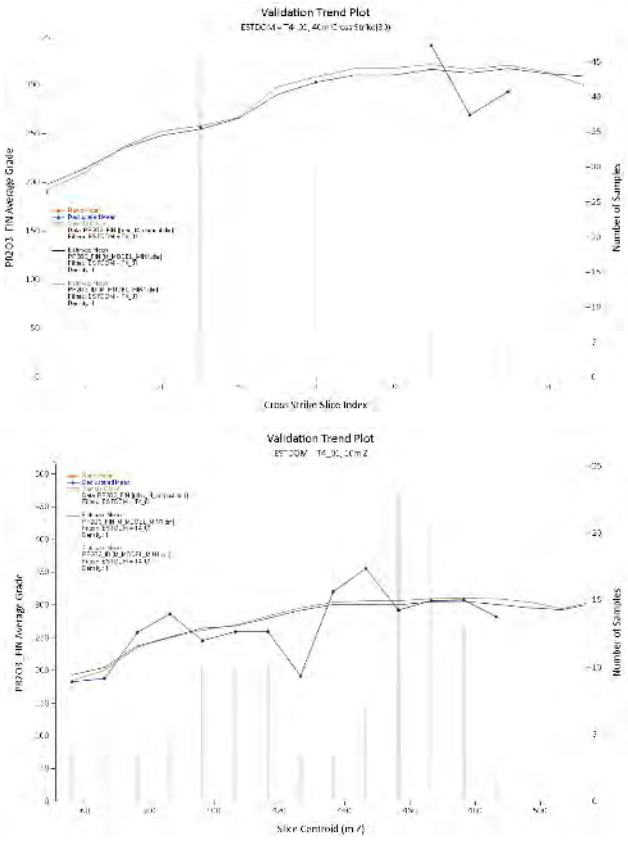
Dy_2O_3


Validation Trend Plot
Validation Trend Plot
Validation Trend Plot
Trend plot legend
Naïve sample average
Declustered sample average
Nos informing samples
Ordinary kriged estimate
ID³ test estimate

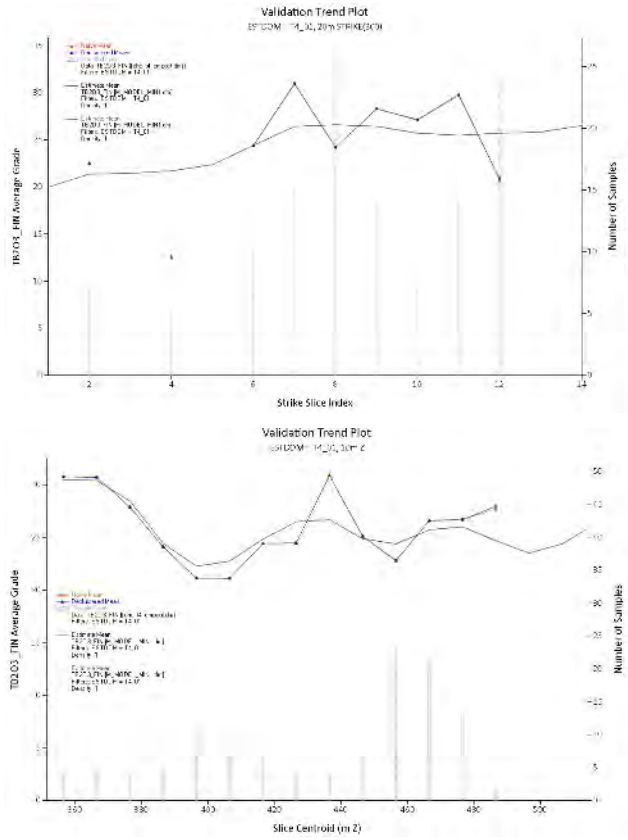
Nd_2O_3


Validation Trend Plot
Validation Trend Plot
Validation Trend Plot
Trend plot legend
Naïve sample average
Declustered sample average
Nos informing samples
Ordinary kriged estimate
ID³ test estimate

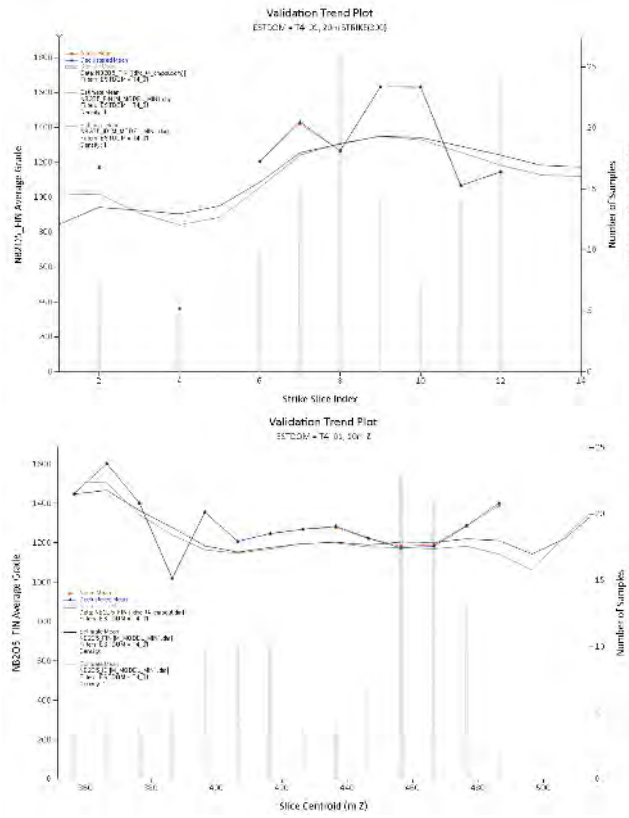
Pr_2O_3


Validation Trend Plot
Validation Trend Plot
Validation Trend Plot
Trend plot legend
Naïve sample average
Declustered sample average
Nos informing samples
Ordinary kriged estimate
ID³ test estimate

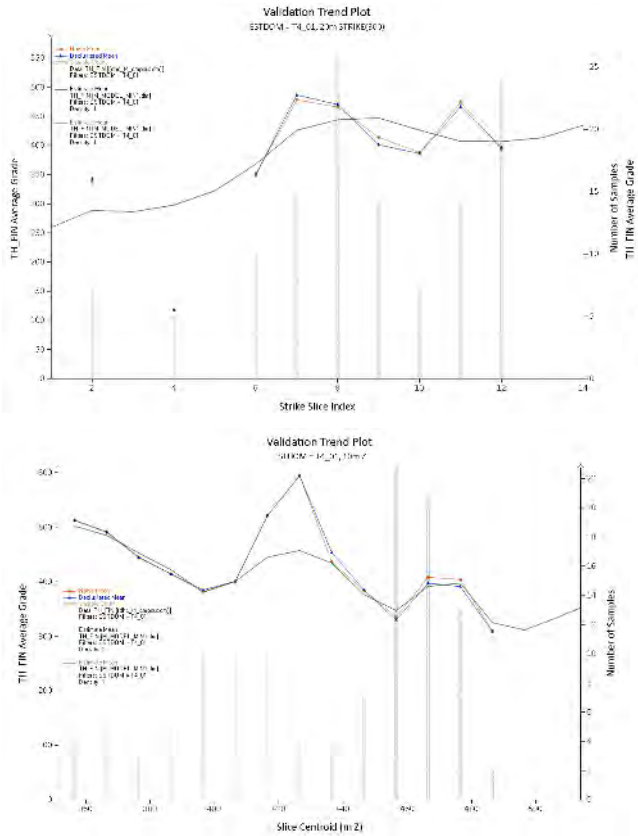
Tb_2O_3


Validation Trend Plot
Validation Trend Plot
Validation Trend Plot
Trend plot legend
Naïve sample average
Declustered sample average
Nos informing samples
Ordinary kriged estimate
ID³ test estimate

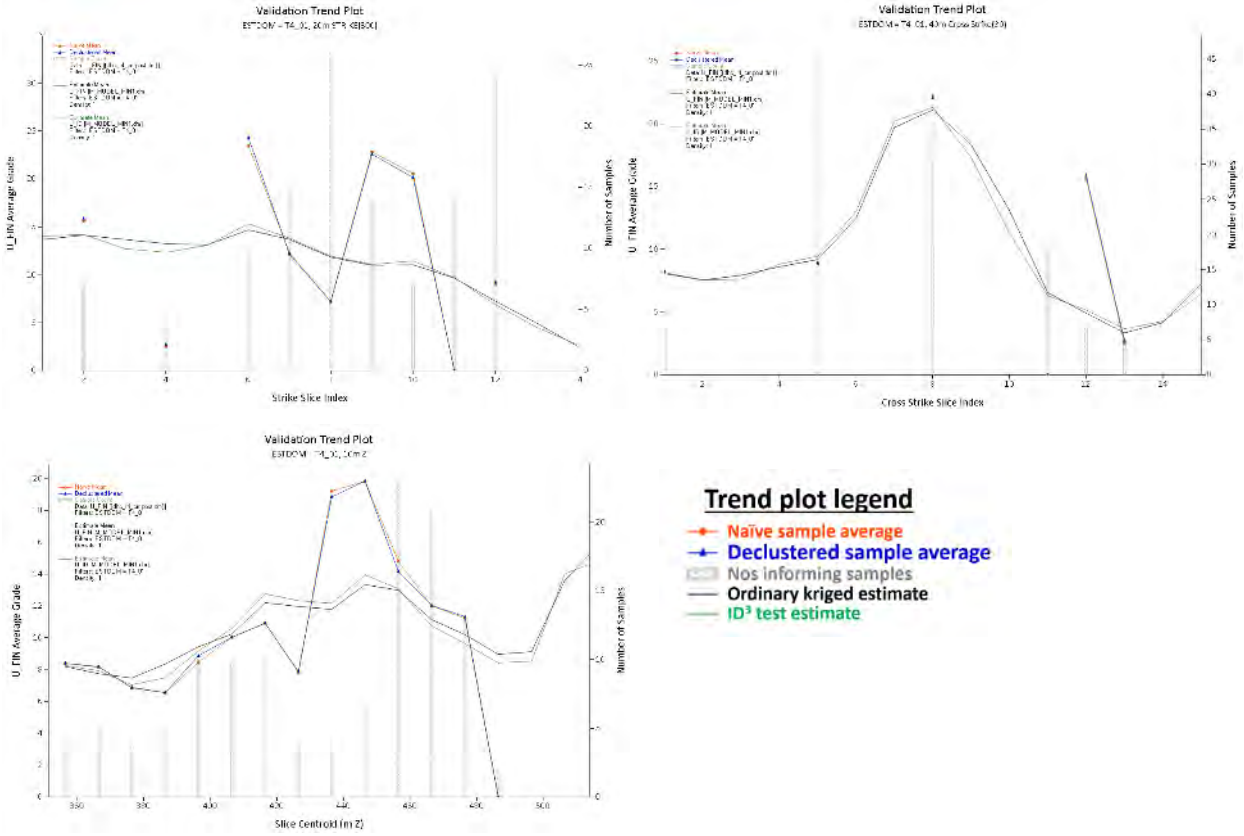
Nb_2O_5


Validation Trend Plot
Strike Slice Index
Number of Samples
Validation Trend Plot
Cross Strike Slice Index
Number of Samples
Validation Trend Plot
Slice Centroid (m Z)
Number of Samples
Trend plot legend
Naïve sample average
Declustered sample average
Nos informing samples
Ordinary kriged estimate
ID³ test estimate

Th

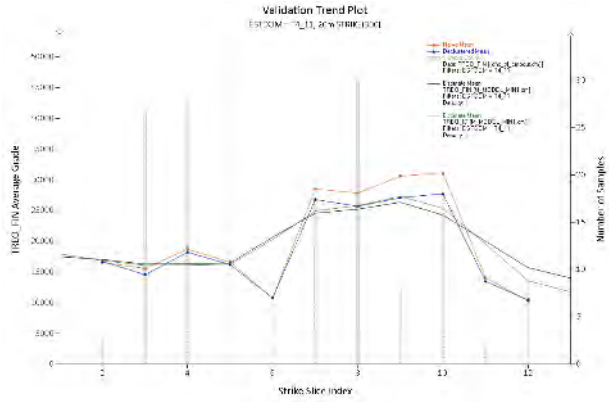

Validation Trend Plot
Strike Slice Index
Number of Samples
Validation Trend Plot
Cross Strike Slice Index
Number of Samples
Validation Trend Plot
Slice Centroid (m Z)
Number of Samples
Trend plot legend
Naïve sample average
Declustered sample average
Nos informing samples
Ordinary kriged estimate
ID³ test estimate

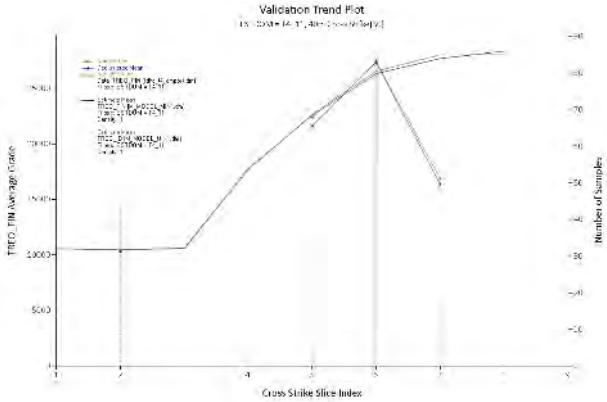
U

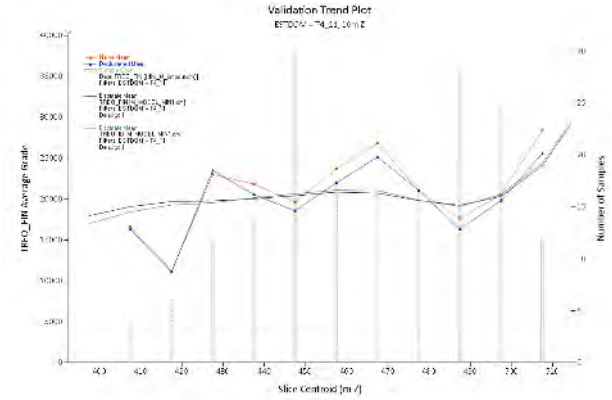

Validation Trend Plot
U_FIN Average Grade
Number of Samples
Strike Slice Index
Validation Trend Plot
U_FIN Average Grade
Number of Samples
Cross Strike Slice Index
Validation Trend Plot
U_FIN Average Grade
Number of Samples
Slice Centroid (m Z)
Trend plot legend
Naïve sample average
Declustered sample average
Nos informing samples
Ordinary kriged estimate
ID³ test estimate

Model validation trend plots target 4 – T4_11

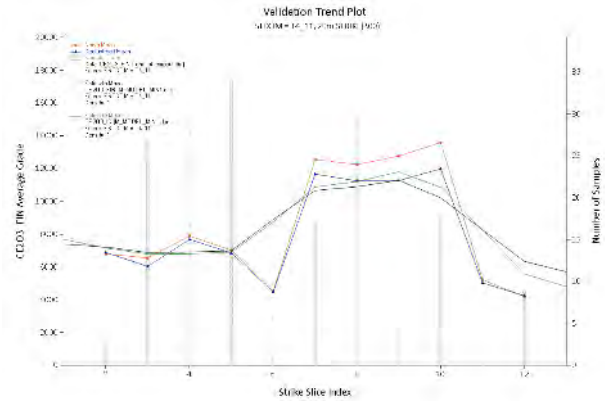
TREO

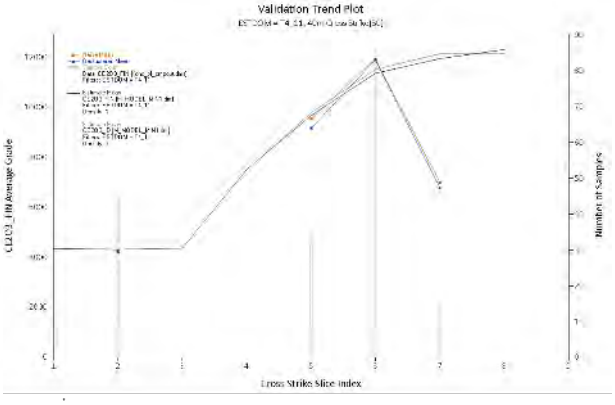


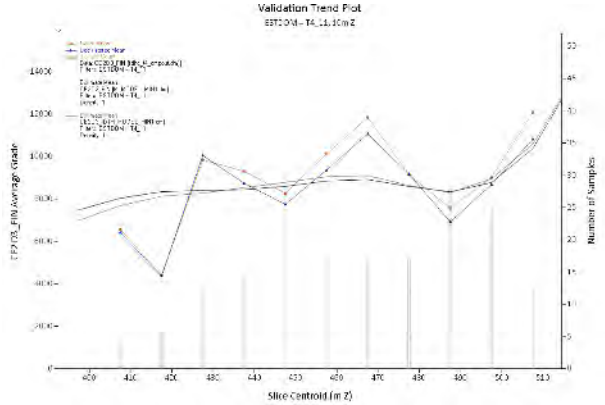


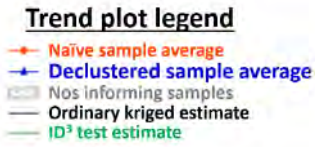


Ce_2O_3









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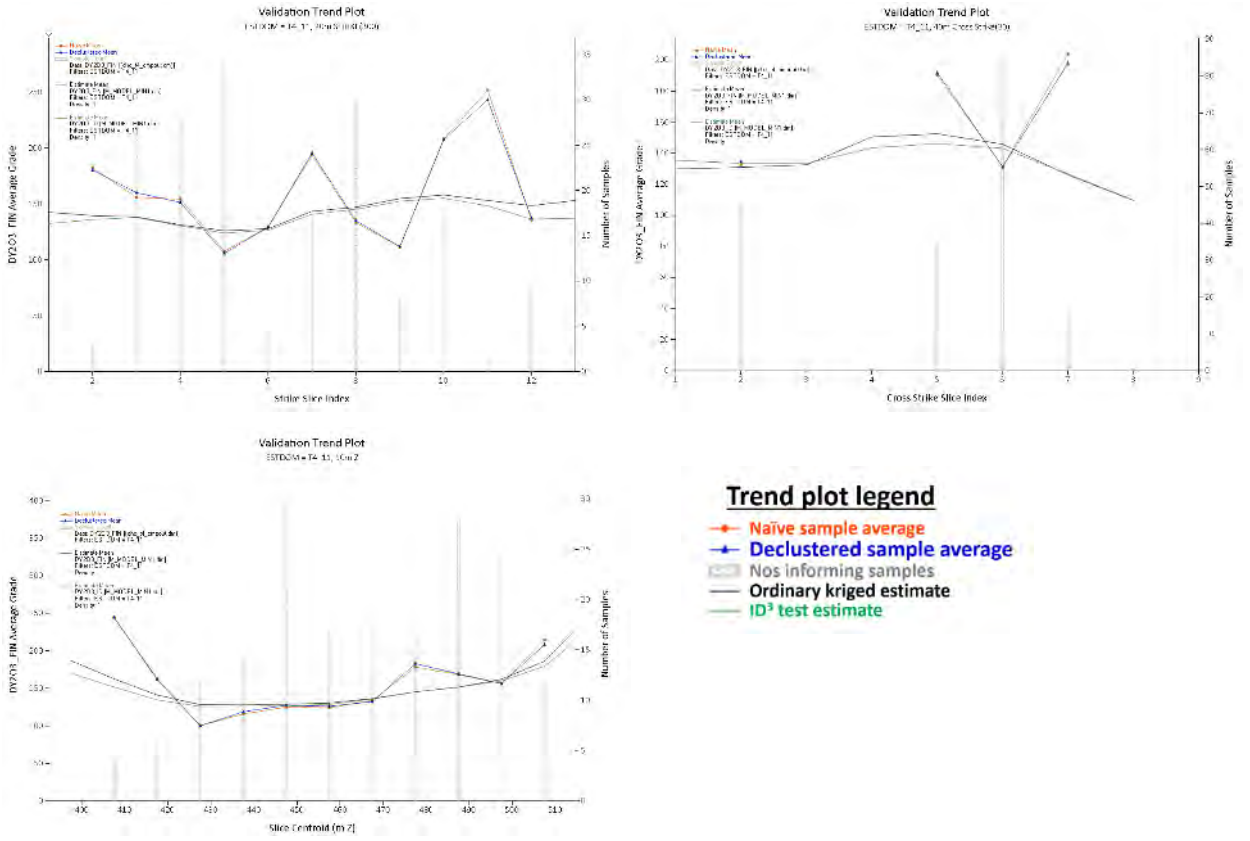
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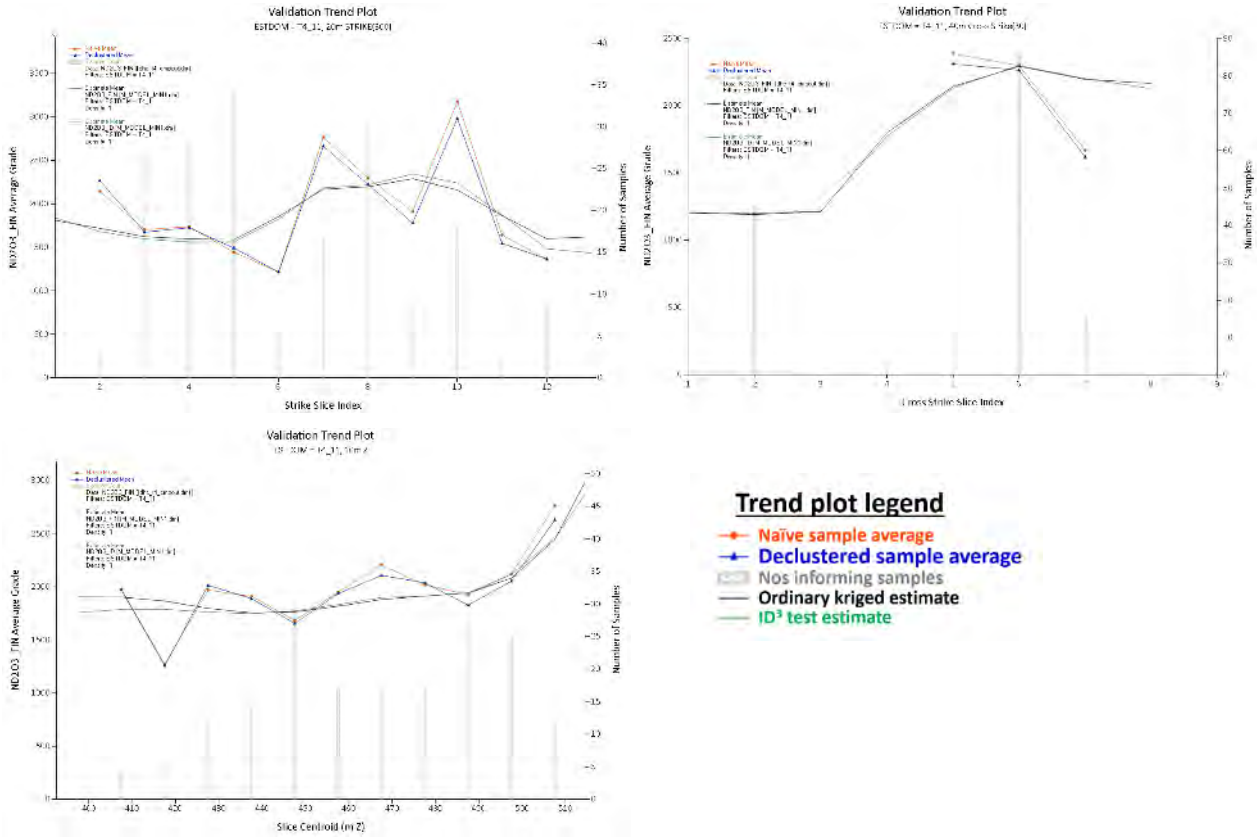
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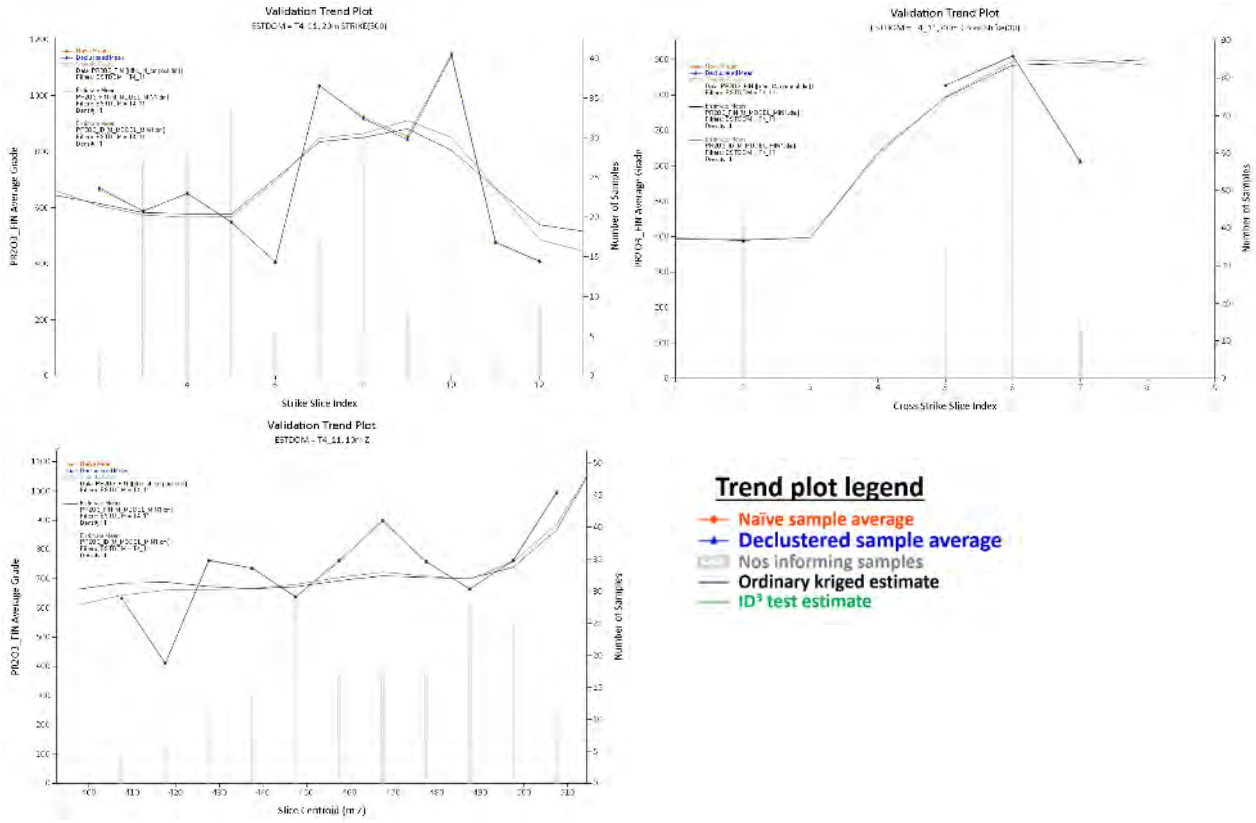
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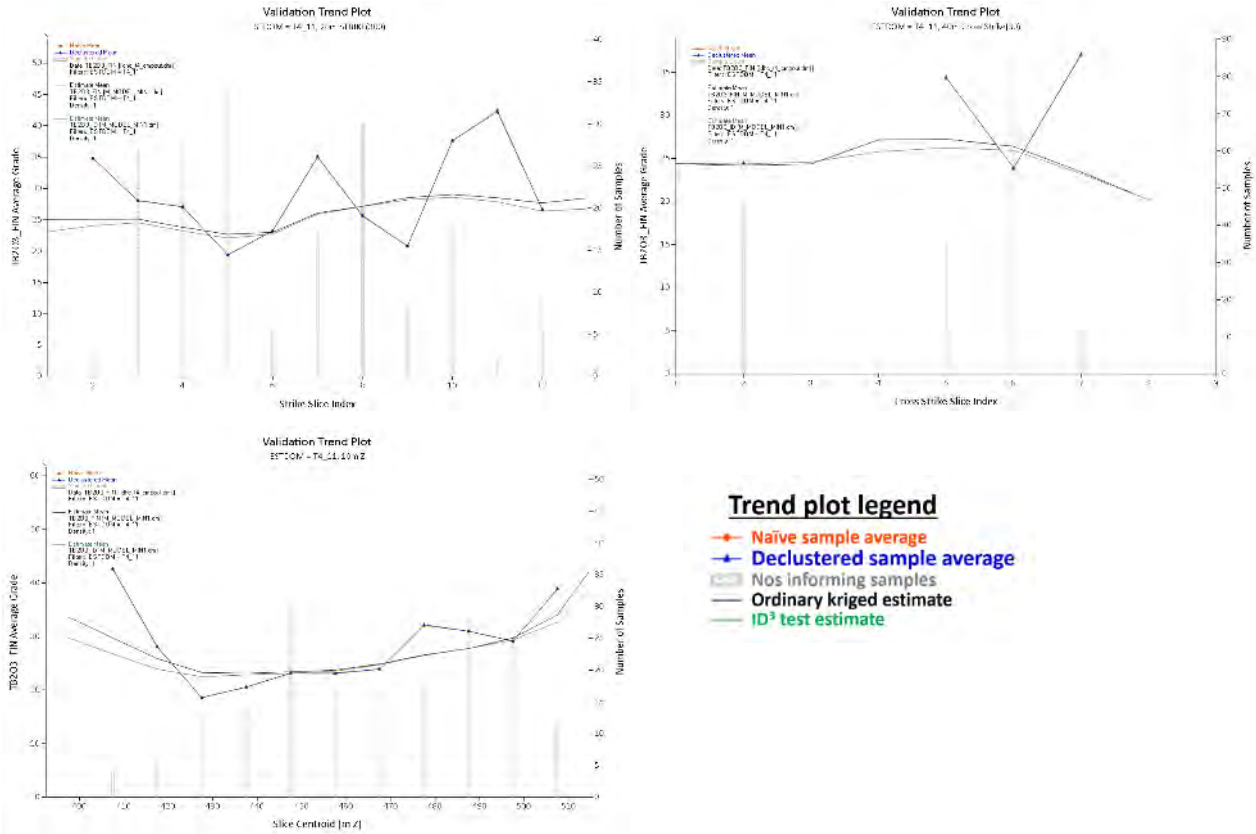
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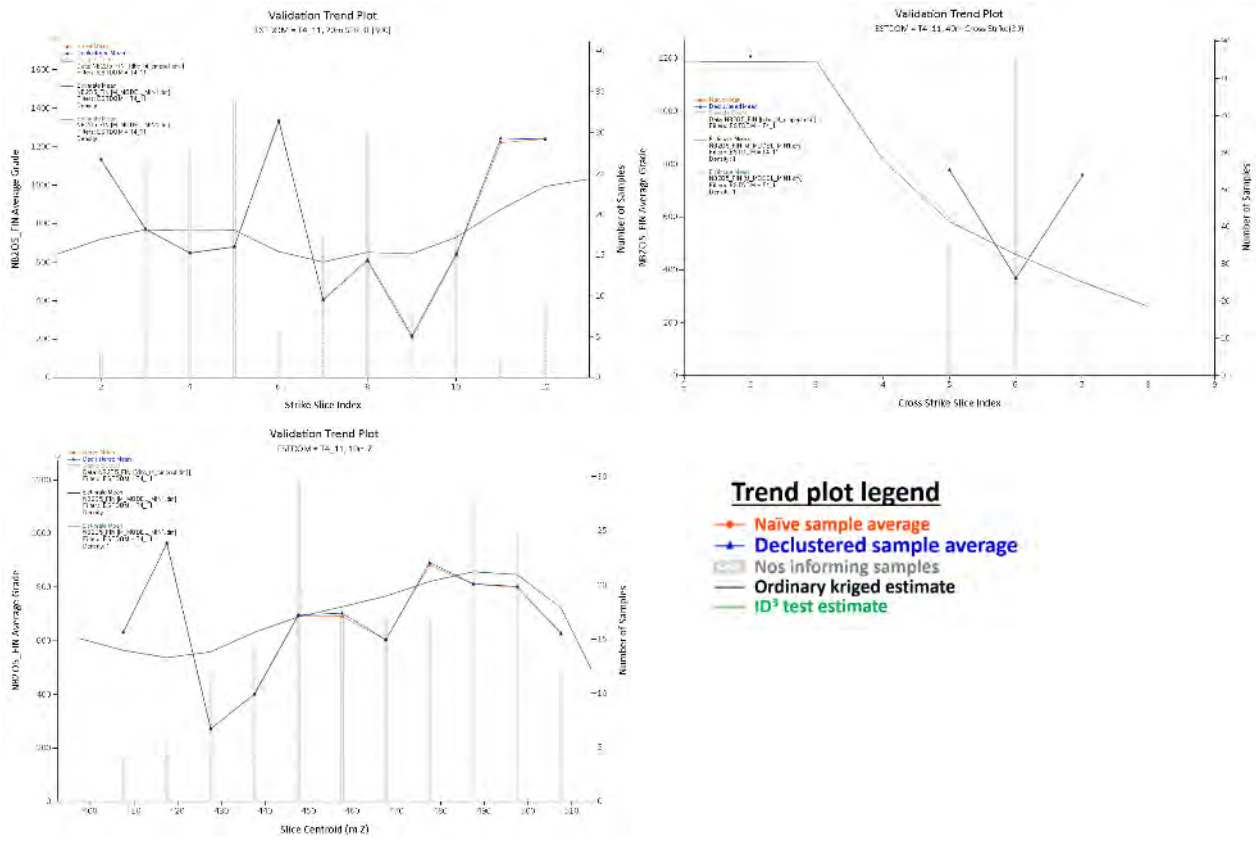
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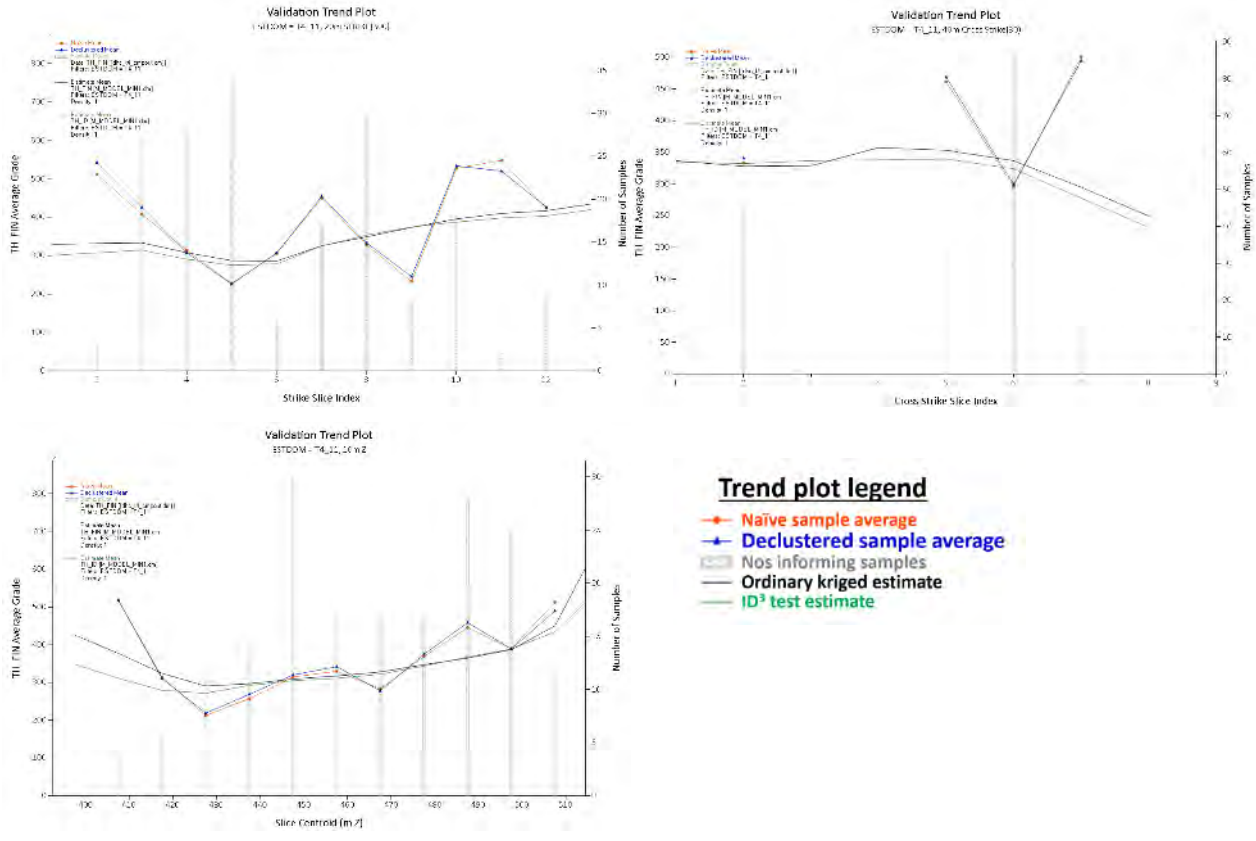
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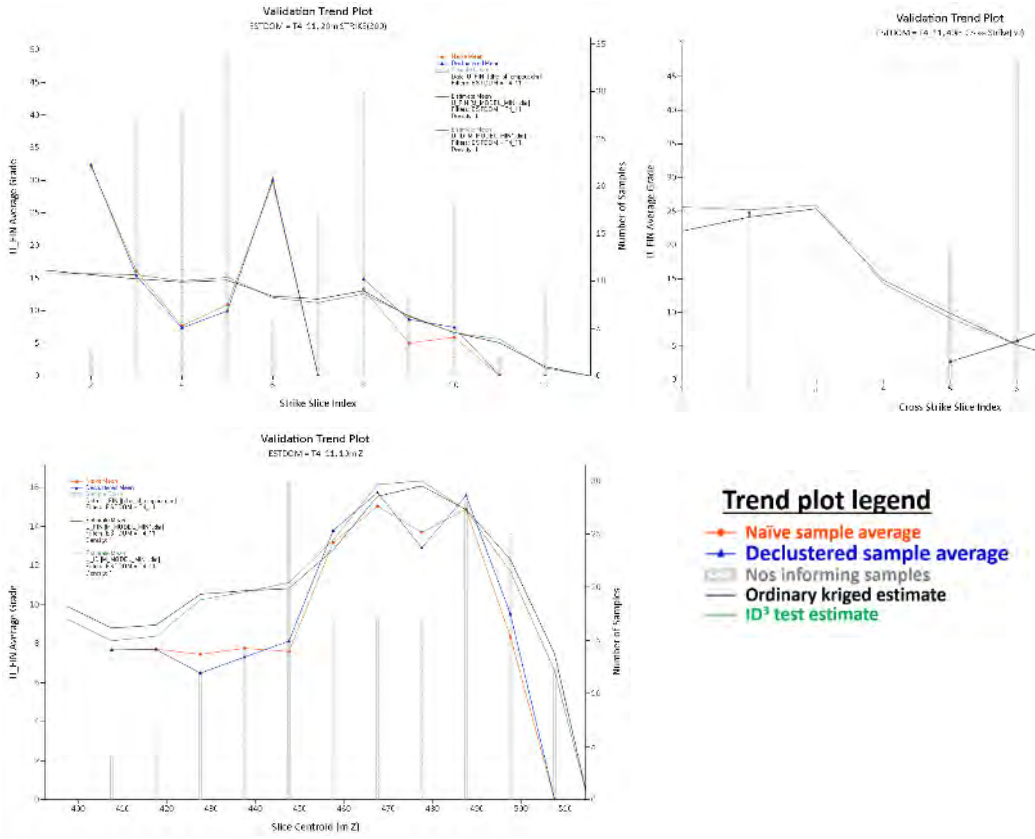
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PART IV

OPERATING AND FINANCIAL REVIEW OF THE COMPANY

Altona Rare Earths Plc (the "Company") is a publicly listed company incorporated and domiciled in England & Wales. On 9 June 2023, the Company announced the admission of the Company's entire issued share capital to the Official List of the Financial Conduct Authority by way of a Standard Listing under Chapter 14 of the Listing Rules and to trading on the London Stock Exchange's Main Market for listed securities ("Admission"). The Company's shares are listed under the new ticker "REE". The Company's principal activity is that of being a Rare Earths exploration, development and extraction company focusing on opportunities in Africa.

The Company changed its name to Altona Rare Earths Plc on 27 February 2021 to recognise its new strategy which is to acquire multiple Rare Earth Elements mining projects in East and Central Africa and carry out sufficient exploration work to establish an economically viable resource showing a high-quality ore body of rare earth metals.

The Company made its primary acquisition in the rare earth elements mining sector on 25 June 2021, with a 1% holding in Monte Muambe Mining Lda ("MMM") and began a drilling programme as part of a Farm In Agreement. This holding was increased to 20% on completion of Phase 1 in April 2022. Phase 2 was officially completed on 18 October 2023 on the publication of the MRE and Scoping Study and the Company increased its shareholding to 51% as per the Farm In Agreement.

The Directors have provided below a review of the most recent financial history of the Company and its subsidiaries (together, "the Group") that focuses on the three periods for which audited financial statements are available being 1 July 2020 to 30 June 2021, 1 July 2021 to 30 June 2022 and 1 July 2022 to 30 June 2023, and the two periods for which unaudited interim financial information is available being 1 July 2022 to 31 December 2022 and 1 July 2023 to 31 December 2023, and which relate to the period since its primary acquisition in this sector.

The Historical Financial Information for the Company and the Group up to 31 December 2023 has been incorporated by reference and is available to the Investor from Companies House or can be found on the Company website www.altonaRE.com.

The Group incurred expenditure during the period from 1 July 2020 to 30 June 2021 totalling c.£729,000 which is mainly made up of Director's fees (c.£174,000), other staff costs (c.£70,000), exploration costs not capitalised (c.£182,000), audit and accountancy fees (£c.24,000) and legal and other professional fees (c.£279,000) which have been incurred in the pursuit of the investments in Africa and the ongoing corporate costs of the Company.

For the year ended 30 June 2022, the Group incurred expenditure totalling £801,000 which comprised of legal and professional fees (c.£88,000), costs in relation to the proposed placing (c.£100,000), regulatory fees (c.£31,000), audit and accountancy fees (c.£57,000), Directors fees (c.£346,000) which includes the COO who is the principal Geologist for the Group, other (c.£120,000) and c.£59,000 incurred on legal and financial due diligence for the terminated licence acquisition in Malawi. All other exploration costs were capitalised in the year.

For the year ended 30 June 2023, the Group's expenditure increased to c.£1,296,000. This increase was mainly due to the increased operations and indebtedness of the Group; finance costs in the year totalled c.£180,000 and are discussed below. Administrative expenses rose by £426,000 to £1,068,000 and are discussed below. Listing costs were £48,000, which was a reduction from the prior year as much of these overall transaction costs (c.£155,000) were set against equity as they related to the Fundraise rather than the concurrent change in listing from AQSE to LSE.

The administrative expenses of c.£1,068,000 in the year ended 30 June 2023 comprised of the following:

- wages and salaries of c.£437,000, an increase of c.£57,000 compared to prior year. This reflects the increase in average employees from 14 to 17 in the year (in addition c.£81,000 of operational wages costs have been capitalised, versus c.£55,000 in prior year). Directors' fees of c.£413,000 are included in this amount, an increase of c.£67,000 from prior year which is mainly due to bonuses of c.£42,500. An equivalent of 3 months salary was paid in shares rather than cash in the year.

- legal and professional costs rose by c.£171,000 to c.£259,000, this reflected the increase in corporate spend for the change in exchanges but also c.£45,000 Consultants fees, prior year catch up Broker Fees of £50,000 (paid in shares) and £30,000 for Research Analysis (paid in shares).
- regulatory fees (c.£17,000), audit and accountancy fees (c.£66,000), insurance costs (c.£37,000) and other (c.£253,000). All exploration costs were capitalised in the year.

Finance costs of c.£180,000 related to the interest payable on the convertible loan notes ("CLNs") of c.£25,000, the finance costs of the loan with Catalyse Capital Limited ("CCL"), which totalled c.£152,000 (this was made up of interest paid in cash (c.£40,000), share-based payments paid in warrants (c.£62,000) and loan extension costs paid in shares, (c.£50,000)) and other interest of c.£3,000.

For the income statement review of the interim period ending 31 December 2023, a comparison is made to the costs incurred over a similar period in the six months ending 31 December 2022. The Group's loss was c.£690,000, which increased from c.£412,000 in the same period in the prior year. This increase was mainly due to the increased operations and indebtedness of the Group; finance costs in the half year ended 31 December 2023 totalled c.£74,000, which was an increase of £49,000 from the prior year interim figure of c.£25,000. This was due to the interest payable on the CLNSs (c. £21,000) which were entered into in February 2023 and the additional cost of warrants issued to CCL (c.£46,000) for the £250,000 loan faciality that was entered into on 20 December 2023, though not drawn down until after the year end.

Administrative expenses rose from c.£387,000 in the prior interim period to c.£616,000 which was due to the following increases and reasons:

- Legal and professional costs rose from c.£88,000 to c.£193,000.
- Wages and salaries increased from c.£207,000 to c.£272,000 due to a one-off payment for a change in contract for the Business Development Officer, who moved from a full time position to a part time position, reducing his annual fee from £150,000 to £72,000.
- Other costs increased from c.£92,000 to c.£151,000, reflecting increased Public Relations and Marketing costs as well as operational costs in Mozambique.

Assets

At 30 June 2021, current assets included cash of c.£436,000 and trade and other receivables of c.£21,000 consisting of prepayments of c.£18,000 which relate to the prepaid part of the Chairman's salary paid upfront in shares and the annual cost of the Company's Aquis stock market listing.

Current assets, excluding cash, as at 30 June 2022 increased to c.£119,000 from c.£21,000 at 30 June 2021. At the end of June 2022, prepayments increased to c.£25,000, which includes new insurance prepayments. Other debtors of c.£94,000 included VAT recoverable from expenditure in Mozambique. The cash balance at 30 June 2022 was c.£283,000, which had reduced from c.£436,000 in the prior year, due to the increased operational and corporate activity of the Group.

As at 30 June 2022, the Group had intangible fixed assets of c.£866,000 which represents the capitalisation of its exploration and evaluation expenditure (c.£617,000) during Phase 1 and 2 on its exploration licence in Monte Muambe in Mozambique and the fair value of these exploration and evaluation assets acquired (c.£249,000). The fixed asset balance of c.£173,000 also relates to this licence and is in respect of the tangible assets acquired and constructed at the Monte Muambe site in addition to a pXRF and Drone owned by the Group.

As at 30 June 2023, the Group had intangible fixed assets of c.£1,290,000 which represents the capitalisation of its exploration and evaluation expenditure (c.£460,000) and payments to increase its holding in MMM (c.£40,000) during Phase 2 on its exploration licence in Monte Muambe in Mozambique. The fixed asset balance of c.£146,000 also relates to this licence and is in respect of the tangible assets acquired and constructed at the Monte Muambe site in addition to a pXRF owned by the Group.

Trade and other receivables as at 30 June 2023, were c.£168,000 which was an increase of c.£49,000 from 30 June 2022 (c.£119,000). This increase mainly comprised of a VAT refund of c.£59,000 due to the Company that was received in August 2023, and an increase in a VAT

receivable from the Mozambique government of c.£80,000 which is expected to be recoverable by the Directors.

As at 31 December 2023, the Group had increased its intangible assets to c.£1,618,000. This was due to the increase of the holding in Monte Muambe from 20% to 51%, which resulted in a fair value addition of c.£166,000 to the intangible value of this holding. A further increase was due to cash spend on the licence which saw additions to exploration assets for the period of c.£162,000. Fixed assets reduced from c.£146,000 to c.£140,000 as the additions at Monte Muambe mainly related to intangible costs.

Trade and other receivables as at 31 December 2023, were c.£130,000, which was a decrease of c.£38,000 from the balance at 30 June 2023. This was mainly due to the receipt of the VAT refund that is mentioned above.

Liabilities

Total liabilities increased from c.£321,000 at 30 June 2021 to c.£391,000 as at 30 June 2022. This is mainly due to the increase in operational activity of the Group and the rise in corporate activity to ensure the completion of the Standard Listing. It also includes a deferred tax liability arising on the acquisition of the licence of c.£77,000. The trade payables balance as at 30 June 2022 of c.£115,000, mainly comprises of trade creditors related to the corporate costs and a creditor balance owed to Leander PR Limited of c.£57,000. The accruals and other payables balance of c.£199,000 (2021: c.£175,000), comprises of administrative, legal and IPO accruals and has not significantly changed since 30 June 2021. There is also an HSBC Bounce Back Loan of £25,000 which was arranged on 17 July 2020 to meet the ongoing corporate costs of the Company. This was fully repaid by the Company on 18 February 2022.

As at 30 June 2023, total liabilities increased further to c.£849,000, being made up of trade and other payables (c.£593,000) and convertible loan notes (c.£256,000). The trade payables balance of c.£257,000 mainly related to creditors arising from the concurrent IPO and change of listing, being Novum Securities Ltd, London Stock Exchange, Mildwaters Consulting LLP and Orana Corporate LLP. These payables were all satisfied in July 2023. An outstanding balance of £50,000, due to Leander PR Limited was also settled in July 2023 through the issue of ordinary shares. Other payables also comprised of accruals of c.£153,000 (made up of mainly of legal and audit fees), wages and salaries (c.£113,000) and amounts due to HMRC with respect to taxes and social security (c.£70,000), the latter two amounts being settled in July 2023.

As at 31 December 2023, total liabilities decreased to c.£604,000 from c.£849,000 at 30 June 2023. This was due to the significant reduction of c.£252,000 in trade creditors and other payables in the six month period. The majority of these creditors were paid in July 2023 following the inflow of cash funds from the fund raise in June 2023. Trade payables stood at c.£81,000 as at 31 December 2023 (compared with c.£257,000 in the prior period). Accruals also fell, but not as sharply from c.£336,000 to c.£260,000, still leaving the Group with substantial creditors at the period end.

In addition to the CLN mentioned above that was entered into in February 2023, on 20 December 2023, the Company entered into a short-term loan facility of up to £250,000 with CCL. The loan carries an amended fixed interest rate of 18%. This was only drawn down post year end up to the value of £200,000 as at the date of this Document.

Cash flows

In the year from 1 July 2020 to 30 June 2021, net cash flow used in operations was c.£528,000. These outflows were all incurred in relation to the Company's ongoing corporate costs and its operations to discover new investment opportunities.

In the year from 1 July 2021 to 30 June 2022, net cash flow used in operations was c.£832,000. These outflows significantly increased due to the increased activities of the Group, specifically the costs of the proposed placing and the operational activity at the Monte Muambe Project.

In the year from 1 July 2022 to 30 June 20223, net cash flow used in operations was c.£649,000. These outflows reduced due to cash conservation measures resulting from the delay in funding, which only came in at the end of the year in June 2023. This was reflected in the increase in the overall cash position from c.£283,000 as at 30 June 2022 to c.£1,130,000 at 30 June 2023.

In the six month period ended 31 December 2023, the Group's net cash outflow used in operations was c.£758,000 versus the comparable period in the prior interim period ended 31 December 2022 of c.£107,000. This increase was due to the both the increase in operations (largely due to the Group having more funds) and the change in payables as the Group was able to pay down its payables balance by c.£251,000 (having increased this balance in the comparable interim period by c.£353,000).

The net cash outflow from investing activities increased from £nil for the year ended 30 June 2021 to c.£875,000 in the year ended 30 June 2022, due the expenditure on intangible and tangible assets, almost entirely related to the operations in MMM.

The net cash outflow from investing activities decreased from c.£875,000 for the year ended 30 June 2022 to c.£505,000 in the year ended 30 June 2023, reflecting the end of drilling for Phase 2, with the costs for the final studies being met in July 2023.

The net cash outflow from investing activities remained steady in both interim periods (31 December 2023: c.£278,000 and 31 December 2022: c.£279,000), reflecting both the expenditure at Monte Muambe and the acquisition of a further 31% in this subsidiary.

The net cash inflow from financing activities increased from c.£964,000 for the year ended 30 June 2021 to c.£1,554,000 for the year ended 30 June 2022, due to further successful fund raising through additional share issues. These totalled c.£1,118,000 in the year ended 30 June 2021 and c.£1,688,000 in the twelve months ending 30 June 2022.

The net cash inflow from financing activities increased from c.£1,554,000 for the year ended 30 June 2022 to c.£2,000,000 for the year ended 30 June 2023, due to the oversubscribed placing of £1,677,300 and a subscription of £322,700 through the issue of 40 million new ordinary shares at 5 pence per share. The Company also issued 4.9 million fee shares to various advisers and Directors.

Further funding in the year ended 30 June 2023 was obtained on 2 November 2022, when the Company entered into a short-term loan facility of up to £150,000 with Catalyse Capital Limited ("CCL"), formerly Align Research Investments Ltd. The loan carried a fixed interest rate of 15%. On 28 January 2023, the Company amended the terms of the loan with CCL to extend the repayment date to the earlier of the completion of the IPO or 30 June 2023. An additional charge of 10% on the outstanding loan was made and this was added to the principal of the loan. The loan and its related interest was repaid in its entirety before the 2023 year end.

On 1 February 2023, the Company issued 5.5 million 15% convertible loan notes ("CLNs") for £275,000, the net proceeds of which was £247,500. The notes are convertible into ordinary shares of the entity, at the option of the holder, or repayable on or before 1 May 2025.

The net cash outflow from financing activities for the interim period ended 31 December 2023 was c.£21,000 which was the cash cost of the interest payable on the CLNs mentioned above. The comparable period ended 31 December 2022 saw a net cash inflow of c.£148,000 which related to the proceeds from the CCL loan less costs also noted above.

On 20 December 2023, the Company entered into a short-term loan facility of up to £250,000 with CCL. The loan carries an amended fixed interest rate of 18%. As at the date of this Document the Company had drawn down £200,000 of this loan.

Capital resources

The Company's shares were re-admitted to trading on Aquis Stock Exchange ("AQSE") on 2 December 2020, following a successful fund raise of c.£138,000 before expenses. The fund raise was completed at a price of 6.5 pence, with a 1:2 warrants offering with a strike price of 12 pence and an expiry date of March 2023. A further placing was completed in January 2021 with subscription letters being received by the Company in respect of a further fundraising of c.£523,000 before expenses on the same terms as the December raise. Due to an oversubscription in this January raise, the Company, in March 2021 issued further Shares, on the same terms, for c.£259,000 before expenses. In June 2021, the Company raised a further c.£178,000 from private investors, to cover the down payment needed for its exploration work on the Monte Muambe Project. In September and October 2021, the Company raised c.£1.2m before expenses with the issue of 8,842,820 new ordinary shares at a price of 14p to enable the Company to progress with

Phase 2 of the exploration work at Monte Muambe. A pre-IPO placing was concluded in May 2022 where the Company raised c.£500,000 before expenses at a price of 8p.

On 13 June 2022, the Company issued 1 million ordinary shares to the owners of Monte Muambe Mining Lda as part of the consideration for the acquisition of a further 19% interest in said company. This took the Company's ownership to 20%.

On 1 June 2023, the Company announced that it had raised £2.0m via an oversubscribed placing of £1,677,300 and a subscription of £322,700 through the issue of 40 million new ordinary shares at 5 pence per share (together, "the Fundraise"). The Company also issued 4.9 million fee shares to various advisers and Directors. The net cash funding from this raise was c.£1.8m. This fundraise enabled the Group to complete Phase 2 of its exploration work at Monte Muambe which was completed with the publication of the Scoping Study on 18 October 2023 and commencement of Phase 3 of this project.

On 9 June 2023, the Company announced the admission of the Company's entire issued share capital to the Official List of the Financial Conduct Authority by way of a Standard Listing under Chapter 14 of the Listing Rules and to trading on the London Stock Exchange's Main Market for listed securities.

On 22 November 2023, the Company issued a further 1 million ordinary shares to the owners of Monte Muambe Mining Lda as part of the consideration to take the Company's ownership from 20% to 51%.

During the interim period ended 31 December 2023, the Company issued 1,042,535 to Directors, senior management and suppliers in lieu of cash payments c.£52.000. On 9 January 2024, it issued a further 1,521,373 shares (c.£60,000) to Directors and senior management in lieu of cash payment for salaries, fees and changes in contracts.

On 2 April 2024, Sustineri subscribed for and the Company issued 800,000 Ordinary Shares utilising the consideration of £40,000 paid for the transfer of the exclusive right to acquire PDMZ the owner of the Kabompo South Project.

PART V

HISTORICAL FINANCIAL INFORMATION OF THE COMPANY

The following historical financial information of the Company has been incorporated by reference:

Unaudited historical financial information for the six months ended 31 December 2023

The Group's unaudited historical financial information for the six months ended 31 December 2023 can be viewed on the Company's website at:

https://storage.googleapis.com/leaf-prod/uploads/company_profile/corporate_page/200/section_attachment/7229535b-ba3c-4824-b0bf-0cc0af429e74.pdf

The unaudited historical financial information available includes the following:

- Operational Review (page 3);
- Financial Review (page 4);
- Corporate Strategy Update (page 4);
- Statement of Directors' Responsibilities (page 6);
- Statement of Consolidated Profit or Loss and Other Comprehensive Income (page 7)
- Statement of Consolidated Financial Position (page 8);
- Statement of Consolidated Cashflows (page 9);
- Consolidated Statement of Changes in Equity (page 10) and
- Notes to the Consolidated Financial Statements (page 11).

Audited historical financial information for the year ended 30 June 2023

The Group's audited historical financial information for the year ended 30 June 2023 can be viewed on the Company's website at:

https://wp-altona-2021.s3.eu-west-2.amazonaws.com/media/2023/10/Altona-Rare-Earths-Plc-Annual-Report-Accounts-30-June-23-24-October-23.pdf

The audited historical financial information available includes the following:

- Corporate Information (page 4);
- Chairman's Statement (page 8);
- CEO's Statement (page 9);
- Operations Review (page 11);
- Group Strategic Report (page 19);
- Corporate Governance Report (page 24);
- Directors' Report (page 37);
- Statement of Directors' Responsibilities (page 39);
- Remuneration Report (page 41);
- Independent Auditors' Report To The Members of Altona Rare Earths Plc (page 48);
- Statement of Consolidated Profit or Loss and Other Comprehensive Income (page 54);
- Statement of Consolidated Financial Position (page 55);
- Statement of Consolidated Cashflows (page 57);
- Consolidated Statement of Changes in Equity (page 59) and
- Notes to the Consolidated Financial Statements (page 61).

Audit report material uncertainty relating to going concern

The Company's auditors included a material uncertainty relating to going concern in their audit report for the year ended 30 June 2023. The disclosure is summarised as follows:

""Material uncertainty relating to going concern

We draw attention to note 1 in the financial statements, which indicates that the group's current cash resources are insufficient to enable the group to meet its recurring outgoings for the twelve months from the date of approval of the financial statements. The group incurred a net loss of £1,300k during the year ended 30 June 2023 and is continuing to generate losses subsequently due to the pre revenue nature of the Group. As stated in note 1, these events or conditions, along with the other matters as set forth in note 1, indicate that a material uncertainty exists that may cast significant doubt on the Group's and company's ability to continue as a going concern. Our opinion is not modified in respect of this matter."

All of the above parts of the Company's audited historical financial information for the year ended 30 June 2023 are relevant to investors.

Audited historical financial information for the year ended 30 June 2022

The Group's audited historical financial information for the year ended 30 June 2022 can be viewed on the Company's website at:

https://wp-altona-2021.s3.eu-west-2.amazonaws.com/media/2022/12/Altona-Rare-Earths-Plc-Annual-Report-Accounts-30-June-22-14-December-22.pdf

The audited historical financial information available includes the following:

- Corporate Information (page 3);
- Chief Executive's Statement (page 4);
- Strategic Report (page 10);
- Directors' Report (page 14);
- Statement of Directors' Responsibilities (page 18);
- Corporate Governance Report (page 19):
- Independent Auditors' Report To The Members of Altona Rare Earths Plc (page 26);
- Statement of Consolidated Profit or Loss and Other Comprehensive Income (page 34);
- Statement of Consolidated Financial Position (page 35);
- Statement of Consolidated Cashflows (page 37);
- Consolidated Statement of Changes in Equity (page 39);
- Notes to the Consolidated Financial Statements (page 41);

Audit report material uncertainty relating to going concern

The Company's auditors included a material uncertainty relating to going concern in their audit report for the year ended 30 June 2022. The disclosure is summarised as follows:

"Material uncertainty relating to going concern

We draw attention to note 1 in the financial statements, which indicates that the Group is not currently generating revenue and remains reliant on shareholder funding. The Group incurred a net loss of £801,000 during the year ended 30 June 2022. As stated in note 1, these events or conditions indicate that a material uncertainty exists that may cast significant doubt on the company's ability to continue as a going concern. The Group is reliant on a successful fundraise by the Company to fund its operations for the foreseeable future. Management expect this to be post audit completion, following a successful admission to the standard market of the London Stock Exchange. Our opinion is not modified in respect of this matter."

All of the above parts of the Company's audited historical financial information for the year ended 30 June 2022 are relevant to investors.

Audited historical financial information for the year ended 30 June 2021

The Company's audited historical financial information for the year ended 30 June 2021 can be viewed on the Company's website at:

https://wp-altona-2021.s3.eu-west-2.amazonaws.com/media/2021/08/03125555/Altona-Rare-Earths-Annual-Report-2021.pdf

The audited historical financial information available includes the following:

Corporate Information (page 2);

Chief Executive's Statement (page 3);

Strategic Report (page 7);

Directors' Report (page 10);

Statement of Directors' Responsibilities (page 13);

Independent Auditors' Report To The Members of Altona Rare Earths Plc (page 14);

Statement of Comprehensive Income for the Year Ended 30 June 2021 (page 19);

Statement of Financial Position as at 30 June 2021 (page 20);

Statement of Cash Flows for the Year Ended 30 June 2021 (page 21);

Statement of Changes in Equity for the Year Ended 30 June 2021 (page 22);

Notes to the Financial Statements for the Year Ended 30 June 2021 (page 23).

Audit report material uncertainty relating to going concern

The Company's auditors included a material uncertainty relating to going concern in their audit report for the year ended 30 June 2021. The disclosure is summarised as follows:

"Material uncertainty relating to going concern

We draw attention to note 1 in the Financial Statements, which indicates that the company is not currently generating revenue and remains reliant on shareholder funding. The company incurred a net loss of £733,000 during the year ended 30 June 2021. As stated in note 1, these events or conditions indicate that a material uncertainty exists and may cast significant doubt on the company's ability to continue as a going concern. The Company is reliant on a successful fundraise by the company to fund its operations for the foreseeable future. Our opinion is not modified in respect of this matter".

All of the above parts of the Company's audited historical financial information for the year ended 30 June 2021 are relevant to investors.

PART VI

TAXATION

1. TAXATION

1.1 Taxation in the UK

The following information is based on UK tax law and HM Revenue and Customs ("HMRC") practice currently in force in the UK. Such law and practice (including, without limitation, rates of tax) is in principle subject to change at any time. The information that follows is for guidance purposes only. Any person who is in any doubt about his or her position should contact their professional advisor immediately.

An investment in the Company involves a number of complex tax considerations. Changes in tax legislation in any of the countries in which the Group has assets or in the United Kingdom (or in any other country in which a subsidiary of the Company through which an acquisition is made, is located), or changes in tax treaties negotiated by those countries, could adversely affect the returns from the Company to Investors.

Prospective Investors should consult their own independent professional advisers on the potential tax consequences of subscribing for, purchasing, holding or selling Shares under the laws of their country and/or state of citizenship, domicile or residence including the consequences of distributions by the Company, either on a liquidation or distribution or otherwise.

Tax treatment of UK investors

The following information, which relates only to UK taxation, is applicable to persons who are resident in the UK and who beneficially own Ordinary Shares as investments and not as securities to be realised in the course of a trade. It is based on the law and practice currently in force in the UK. The information is not exhaustive and does not apply to potential investors:

- who intend to acquire, or may acquire (either on their own or together with persons with whom they are connected or associated for tax purposes), more than 10%, of any of the classes of shares in the Company; or
- who intend to acquire Ordinary Shares as part of tax avoidance arrangements; or
- who are in any doubt as to their taxation position.

Such Shareholders should consult their professional advisers without delay. Shareholders should note that tax law and interpretation can change and that, in particular, the levels, basis of and reliefs from taxation may change. Such changes may alter the benefits of investment in the Company.

Shareholders who are neither resident nor temporarily non-resident in the UK and who do not carry on a trade, profession or vocation through a branch, agency or permanent establishment in the UK with which the Ordinary Shares are connected, will not normally be liable to UK taxation on dividends paid by the Company or on capital gains arising on the sale or other disposal of Ordinary Shares. Such Shareholders should consult their own tax advisers concerning their tax liabilities.

Dividends

Where the Company pays dividends, no UK withholding taxes are deducted at source. Shareholders who are resident in the UK for tax purposes will, depending on their circumstances, be liable to UK income tax or corporation tax on those dividends.

UK resident individual Shareholders who are domiciled in the UK, and who hold their Ordinary Shares as investments, will be subject to UK income tax on the amount of dividends received from the Company.

There is a dividend allowance of £1,000 per annum for individuals for the period 6 April 2023 to 5 April 2024 and £500 from 6 April 2024 for UK tax resident individuals. Dividend receipts

in excess of £1,000 are taxed at 8.75% for basic rate taxpayers, 33.75% for higher rate taxpayers, and 39.35% for additional rate taxpayers.

Shareholders who are subject to UK corporation tax should generally, and subject to certain anti-avoidance provisions, be able to claim exemption from UK corporation tax in respect of any dividend received but will not be entitled to claim relief in respect of any underlying tax.

Disposals of Ordinary Shares

Any gain arising on the sale, redemption or other disposal of Ordinary Shares will be taxed at the time of such sale, redemption or disposal as a capital gain.

UK resident individual Shareholders will be subject to capital gains tax to the extent their net gains exceed the annual exempt amount of £6,000 during the 2023/24 tax year and £3,000 during the 2024/25 tax year, after taking account of any other available reliefs. The rate of capital gains tax on disposal of Ordinary Shares by basic rate taxpayers is 10%, and 20% for upper rate and additional rate taxpayers.

The corporation tax rate applicable to taxable profits is currently 25% applying to profits over £250,000. A small profits rate applies for companies with profits of £50,000 or less so that these companies pay corporation tax at 19%. Companies with profits between £50,000 and £250,000 pay tax at the main rate reduced by a marginal relief providing a gradual increase in the effective corporation tax rate.

Further information for Shareholders subject to UK income tax and capital gains tax

"Transactions in securities"

The attention of Shareholders (whether corporates or individuals) within the scope of UK taxation is drawn to the provisions set out in, respectively, Part 15 of the Corporation Tax Act 2010 and Chapter 1 of Part 13 of the Income Tax Act 2007, which (in each case) give powers to HMRC to raise tax assessments so as to cancel *"tax advantages"* derived from certain prescribed *"transactions in securities"*.

Stamp Duty and Stamp Duty Reserve Tax

The statements below are intended as a general guide to the current position. They do not apply to certain intermediaries who are not liable to stamp duty or stamp duty reserve tax or (except where stated otherwise) to persons connected with depositary arrangements or clearance services who may be liable at a higher rate.

No UK stamp duty or stamp duty reserve tax will be payable on the allotment and issue of Ordinary Shares pursuant to the Subscription.

Most investors will purchase existing Ordinary Shares using the CREST paperless clearance system and these acquisitions will be subject to stamp duty reserve tax at 0.5%. Where Ordinary Shares are acquired using paper (i.e. non-electronic settlement) stamp duty will become payable at 0.5% if the purchase consideration exceeds £1,000.

The above comments are intended as a guide to the general stamp duty and stamp duty reserve tax positions and may not relate to persons such as charities, market makers, brokers, dealers, intermediaries and persons connected with depositary arrangements or clearance services to whom special rules apply.

Inheritance tax

Shareholders regardless of their tax status should seek independent professional advice when considering any event which may give rise to an inheritance tax charge.

Ordinary Shares beneficially owned by an individual Shareholder will be subject to UK inheritance tax on the death of the Shareholder (even if the Shareholder is not domiciled or deemed domiciled in the UK); although the availability of exemptions and reliefs may mean that in some circumstances there is no actual tax liability. A lifetime transfer of assets to another individual or trust may also be subject to UK inheritance tax based on the loss of value to the donor, although again exemptions and reliefs may be relevant. Particular rules apply to gifts where the donor reserves or retains some benefit.

THIS SUMMARY OF UK TAXATION ISSUES CAN ONLY PROVIDE A GENERAL OVERVIEW OF THESE AREAS AND IT IS NOT A DESCRIPTION OF ALL THE TAX CONSIDERATIONS THAT MAY BE RELEVANT TO A DECISION TO INVEST IN THE COMPANY. THE SUMMARY OF CERTAIN UK TAX ISSUES IS BASED ON THE LAWS AND REGULATIONS IN FORCE AS OF THE DATE OF THIS DOCUMENT AND MAY BE SUBJECT TO ANY CHANGES IN UK LAWS OCCURRING AFTER SUCH DATE. LEGAL ADVICE SHOULD BE TAKEN WITH REGARD TO INDIVIDUAL CIRCUMSTANCES. ANY PERSON WHO IS IN ANY DOUBT AS TO THEIR TAX POSITION OR WHERE THEY ARE RESIDENT, OR OTHERWISE SUBJECT TO TAXATION, IN A JURISDICTION OTHER THAN THE UK, SHOULD CONSULT THEIR PROFESSIONAL ADVISER.

PART VII

ADDITIONAL INFORMATION

1 Responsibility statement

1.1 The Directors, whose names appear on page 36 of this Document, and the Company accept responsibility for the information contained in this Document. To the best of the knowledge of the Directors and the Company the information contained in this Document is in accordance with the facts and this Document makes no omission likely to affect its import.

1.2 Snowden-Optiro accepts responsibility for its Competent Persons' Report set out at "Part III Competent Persons' Reports" of this Document and for information extracted from the Competent Persons' Report that is included within Part I of this Document. To the best of the knowledge of Snowden-Optiro the information contained in the Competent Persons' Report is in accordance with the facts and that the Competent Persons' Report makes no omissions likely to affect their import.

2 The Company

2.1 The Company was incorporated with limited liability under the laws of England and Wales under the Companies Act 1985 on 2 February 2005 with number 05350512 under the name Altona Resources Plc, with an indefinite life. The Company subsequently changed its name to Altona Energy Plc on 19 December 2008. The Company changed its name to Altona Rare Earths Plc on 27 February 2021.

2.2 The principal legislation under which the Company operates and under which the Shares are created and issued is the Companies Act.

2.3 The Company's registered office is at Eccleston Yards 25 Eccleston Place London SW1W 9NF. The telephone numbers for the Company are +44 7721 492 922 and +44 7778 866 108.

2.4 On 13 September 2021 the Company adopted the Articles in substitution for and to the exclusion of the then existing articles of association of the Company. The Company operates in conformity with its Articles and with the laws of England and Wales.

2.5 As at 18 July 2024, the latest practicable date prior to publication of this Document, the Company has no shares in any company other than its subsidiaries noted below. The Company is subject to the Listing Rules, Disclosure Guidance and Transparency Rules, to the extent such rules apply to companies with a Standard Listing pursuant to Chapter 14 of the Listing Rules (and as a company listed on the Equity Shares (transition) category with effect from the Transition Date).

2.6 The Deferred Shares were created when the Company undertook sub-divisions of the share capital, the first in October 2017 when 1,411,956,853 deferred shares of £0.0009 each were created and the second in August 2019 when 1,602,434 deferred shares of £0.09 each were created. The holders of the Deferred Shares were the holders of the ordinary shares on the date of the relevant sub-division. No Deferred Shares have been transferred since the date of creation as there is no value in the Deferred Shares due to their terms of creation. The terms of each class of Deferred Shares are as follows. The Deferred Shares shall have:

(a) no right to receive any dividend or to participate in any distribution made by the Company;

(b) no right to receive notice of or to attend or to vote at any General Meeting of the Company;

(c) the right on a return of assets on liquidation or otherwise to receive out of the assets of the Company available for distribution such sum not exceeding the amount paid up on the Deferred Shares (excluding any premium) as may be available after payment to each of the holders of the Ordinary Shares the sum of £10,000 per Ordinary Share.

3 Share capital

The following is a summary of the changes in the issued share capital of the Company from 1 July 2018. During this period no Deferred Shares were issued.

Issue of Shares

3.1 During the period covered by the historical financial information, the Company made the following changes to its share capital:

(i) on 17 October 2018, by resolution of the Shareholders, the share capital of the Company was consolidated, with 1,000 ordinary shares being consolidated into 1 Share to give 1,558,956 Shares in issue and 1,411,956,853 Deferred Shares of £0.0009;

(ii) on 10 April 2019, an additional 43,478 Shares were issued fully paid, in consideration of certain directors foregoing payment of director's fees, such Shares being issued at 23 pence per Share;

(iii) on 16 September 2020 an additional 263,158 Shares were issued fully paid at 9.5 pence per Share;

(iv) on 5 November 2020 an additional 1,307,693 Shares were issued fully paid, in consideration of certain directors foregoing payment of director's fees, such Share being issued at 6.5 pence per Share;

(v) on 30 November 2020 an additional 1,565,078 Shares were issued fully paid at 6.5 pence per Share;

(vi) on 12 January 2021 an additional 565,100 Shares were issued fully paid at 6.5 pence per Share;

(vii) on 28 January 2021 an additional 9,109,607 Shares were issued fully paid at 6.5 pence per Share.;

(viii) on 11 March 2021 an additional 3,977,790 Shares were issued fully paid at 6.5 pence per Share;

(ix) on 30 March 2021 an additional 198,886 Shares were issued fully paid at 6.5 pence per Share;

(x) on 31 March 2021 and additional 250,000 Shares were issued fully paid at 10 pence per Share;

(xi) on 30 April 2021 an additional 884,619 Shares were issued fully paid at 6.5 pence per Share;

(xii) on 5 May 2021 an additional 44,231 Shares were issued fully paid at 6.5 pence per Share;

(xiii) on 6 May 2021 an additional 348,766 Shares were issued fully paid at 11.5 pence per Share;

(xiv) on 18 June 2021 an additional 1,480,836 Shares were issued fully paid at 12.0 pence per Share;

(xv) on 25 June 2021 an additional 67,792 Shares were issued fully paid at 12.0 pence per Share;

(xvi) on 9 September 2021 an additional 83,333 Shares were issued fully paid at 12.0 pence per Share;

(xvii) on 9 September 2021 an additional 8,285,676 Shares were issued fully paid at 14.0 pence per Share;

(xviii) on 20 October 2021 an additional 200,000 Shares were issued fully paid at 14.0 pence per Share;

(xix) on 27 April 2022 an additional 6,250,000 Shares were issued fully paid at 8.0 pence per Share;

(xx) on 13 June 2022 an additional 1,000,000 Shares were issued fully paid, pursuant to the terms and conditions of the Monte Muambe Farmout Agreement;

(xxi) on 9 June 2023, the Company issued the following Shares to the following people and entities in full and final satisfaction of the payment due for services provided to the Company as follows:

1. Orana Corporate LLP – £15,000 being 300,000 Shares;
2. Christian Taylor-Wilkinson – £37,500 being 750,000 Shares;
3. Cedric Simonet – £28,710 being 574,200 Shares;
4. Martin Wood – £17,500 being 350,000 Shares;
5. Green Lantern Investment GmbH – £1,200 being 24,000 Shares;
6. Catalyse Capital Limited – £86,000 being 1,720,000 Shares; and
7. Optiva – £60,000 being 1,200,000 Shares;

(xxii) on 9 June 2023 an additional 40,000,000 Shares were issued fully paid at 5.0 pence per Share;

(xxiii) on 11 July 2023 an additional 1,033,600 Shares were issued in lieu of fees of £51,680, including an amount of £50,000 to settle fees owed to Leander PR Limited, a company wholly owned by Christian Taylor-Wilkinson;

(xxiv) on 22 November 2023, an additional 1,000,000 Shares were issued fully paid, pursuant to the terms and conditions of the Monte Muambe Farmout Agreement, and 8,935 Shares were issued in lieu of interest expense to the value of £375 to an existing CLN holder;

(xxv) on 9 January 2024, the Company issued the following Shares to the following people in lieu of salaries and as payment for changes in contract conditions as follows:

1. Louise Adrian, Director – £5,019 being 105,306 Shares;
2. Martin Wood – £9,132 being 191,594 Shares; and
3. Christian Taylor-Wilkinson – £45,944 being 1,224,473 Shares; and

(xxvi) on 2 April 2024, Sustineri subscribed for and the Company issued 800,000 Shares at a subscription price of £0.05, utilising the consideration payable for the transfer of the exclusivity of the right to acquire PDMZ, which owns the Kabompo South Licence.

The issued share capital of the Company at the date of this Document, not including the New Ordinary Shares, (issued conditional upon Admission) is as follows:

Issued (fully paid)	**Number**
Shares	86,767,107
Deferred Shares	1,411,956,853 of £0.0009 each
	1,602,434 of 9 pence each

3.2 Upon Admission, following issue of the New Ordinary Shares, the issued share capital of the Company will be as follows:

Issued (full paid)	**Number**
Shares	163,015,866
Deferred Shares	1,411,956,853 of £0.0009 each
	1,602,434 of 9 pence each

Grant of Warrants

3.3 As at the date of this Document the Company has 130,646,561 Warrants (including Piggyback Options) outstanding pursuant to the warrant instruments created by the Company and as detailed in paragraphs 20.7 and 20.11 of this Part VII. A further 175,500,000 Warrants will be created pursuant to the New Loan Facilities and to CCL conditional upon passing of the Resolutions.

3.4 The Directors and Senior Manager have the following interests in Warrants (including any Piggyback Options) on the date of this Document and at Admission.

	At the date of this Document	On Admission
Martin Wood	1,000,000	1,000,000
Cédric Simonet	—	—
Audrey Mothupi	—	—
Christian Taylor-Wilkinson	2,400,000	2,400,000
Louise Adrian	600,000	600,000
Simon Charles	—	—

3.5 Further details regarding the terms of the warrant instruments are set out in paragraph 20.7 of this Part VII *"Additional Information"* of this Document.

General

3.6 All the issued Shares are in registered form and are capable of being held in certificated or uncertificated form. The Registrar is responsible for maintaining the Company's register of members and arranging for it to be kept at a location within the United Kingdom. Temporary documents of title will not be issued. The ISIN of the Shares is GB00BFZNKV91. The SEDOL of the Shares is BFZNKV9. The Deferred Shares can only be held in certificated form.

3.7 The Existing Shares rank in full for all dividends or other distributions hereafter declared, made or paid on the Existing Shares and the New Ordinary Shares will rank *pari passu* in all other respects with other Existing Shares in issue on Admission. The Deferred Shares carry no right to receive any dividend.

3.8 The resolution passed on 28 December 2023, disapplied the pre-emption rights in the Articles in respect of the issue for cash of Shares with an aggregate nominal amount of £800,000 ("**Authorised Limit**") Such authority expires at the conclusion of the next annual general meeting of the Company or 15 months after the passing of this Resolution, unless such authority is varied, revoked or renewed prior to such date by a special resolution of the Company in general meeting, save that the Company may before such expiry make offers or agreements which would or might require equity securities to be issued or granted after such expiry and the Directors of the Company may issue or grant equity securities in pursuance of any such offer or agreement notwithstanding that the authority given to the Directors of the Company pursuant to the above resolution have expired.

3.9 Save as disclosed in paragraph 3 of this Part VII *"Additional Information"* as at the date of this Document:

(a) no issued Shares of the Company are under option or have been agreed conditionally or unconditionally to be put under option;

(b) no Share or loan capital of the Company has been issued or is now proposed to be issued, fully or partly paid, either for cash or for a consideration other than cash;

(c) no commission, discount, brokerage or any other special term has been granted by the Company or is now proposed in connection with the issue or sale of any part of the Share or loan capital of the Company;

(d) no persons have preferential subscription rights in respect of any Share or loan capital of the Company or any subsidiary;

(e) no amount or benefit has been paid or is to be paid or given to any promoter of the Company; and

(f) the Company will have no short, medium or long-term indebtedness.

4 Substantial Shareholders

4.1 Save for the interests of the Directors and Senior Manager which are set out in paragraph 5.1 of this Part VII *"Additional Information"*, the Company is aware of the following persons who hold, or will on Admission hold, directly or indirectly, voting rights representing three per cent. (3%) or more of the Voting Rights of the Company:

Shareholder	Number of Shares as at the date of this Document	Percentage of Existing Share Capital	Number of Shares on Admission	Percentage of Issued Shares on Admission	Fully Diluted Holding Admission*	Fully Diluted Percentage on Admission*
Optiva Securities Limited	13,329,866	15.36%	18,252,064	11.20%	73,544,064	15.68%
Jub Capital	7,974,460	9.19%	7,974,460	4.89%	7,974,460	1.70%
Christian Taylor-Wilkinson	6,086,844	7.02%	6,271,437	3.85%	8,671,437	1.85%
Jim Nominees Limited[1]	5,688,835	6.56%	5,688,835	3.49%	5,688,835	1.21%
John Story	5,000,000	5.76%	15,000,000	9.20%	29,000,000	6.18%
Individual & Private Clients	4,150,907	4.78%	4,150,907	2.55%	4,150,907	0.88%
Interactive Investor Services Nominees Limited[1]	3,672,623	4.23%	3,672,623	2.25%	3,672,623	0.78%
Remy Welschinger	3,000,000	3.46%	3,000,000	1.84%	3,000,000	0.64%
Mr Mohamed Zafar Quraishi	2,966,015	3.42%	3,966,015	2.43%	6,128,515	1.31%
Hargreaves Lansdown Stockbrokers	2,856,389	3.29%	2,856,389	1.75%	2,856,389	0.61%
Redmayne Bentley LLP	2,818,994	3.25%	2,818,994	1.73%	2,818,994	0.60%
Heiko Thomas	2,655,642	3.06%	2,655,642	1.63%	3,989,142	0.85%
SI Capital Ltd	2,628,812	3.03%	2,628,812	1.61%	2,628,812	0.56%
Catalyse Capital (Richard Jennings)	7,720,000	8.90%	14,720,000	9.03%	112,220,000	23.92%
John Wardle/Tracarta	0	0.00%	30,000,000	18.40%	135,000,000	28.77%

[1]Shares held in a nominee account – no individual holdings over 3%

*Fully Diluted Basis on Admission assumes all Warrants (including Piggyback Options, the New CCL Warrants and the New Loan Facility Warrants) are created and exercised up to the maximum amount and that Shareholders approve the Resolutions. NB: from the date of Admission, all existing CLNs and loans from CCL will either have been converted into Shares, repaid (including accrued interest thereon) or (In the case of loans from CCL) amended so that they are no longer convertible into Shares.

On Admission, such Shareholders will not have special Voting Rights in relation to the Shares and the Shares owned by them will rank *pari passu* in all respects with other Shares.

4.2 The Company is not aware of any person who, either as at the date of this Document or immediately following Admission, exercises, or could exercise, directly or indirectly, jointly or severally, control over the Company.

4.3 Any person who is directly or indirectly interested in five per cent. (5%) or more of the Company's Voting Rights, is required to notify such interests to the Company in accordance with the provisions of Chapter 5 of the Disclosure Guidance and Transparency Rules, and such interests will be notified by the Company to the public.

4.4 No Shareholder of the Company holds any class of share that at the date of this Document or following Admission will have different Voting Rights from other holders of Shares.

5 Interests of the Directors and Senior Manager

5.1 The interests of the Directors, the Senior Manager and their respective Connected Persons (within the meaning of section 252 of the Companies Act) in the issued share capital of the Company, on Admission, all of which are beneficial, are as follows:

Name	*Number of Existing Shares as at the date of this Document*	*Number of New Ordinary Shares subject to Admission*	*Number of Shares at Admission*	*% interest in Enlarged Share Capital on Admission**	*Fully Diluted Holding on Admission**	*Fully Diluted Percentage on Admission**
Christian Taylor-Wilkinson	6,086,844[1]	184,593	6,271,437	3.85%	8,671,437	1.85%
Martin Wood	1,580,056[2]	1,040,000	2,620,056	1.61%	3,620,056	0.77%
Cedric Simonet	925,711	1,000,000	1,925,711	1.18%	2,525,711	0.54%
Louise Adrian	405,306[2]	2,907,968	3,313,274	2.03%	3,913,274	0.83%
Audrey Mothupi	—	192,000	192,000	0.12%	192,000	0.04%
Simon Charles	—	602,000	602,000	0.37%	602,000	0.13%

[1] *66,560 of these shares are held in a nominee account with Interactive Investor Services Nominees Limited.*
[2] These shares are held in a nominee account with Hargreaves Lansdowne.

*Fully Diluted Basis on Admission assumes all Warrants (including Piggyback Options, the New CCL Warrants and the New Loan Facility Warrants) are created and exercised up to the maximum amount and that Shareholders approve the Resolutions. NB: from the date of Admission, all existing CLNs and loans from CCL will either have been converted into Shares, repaid (including accrued interest thereon) or (In the case of loans from CCL) amended so that they are no longer convertible into Shares.

5.2 Save as disclosed in this paragraph 5 and the warrants and share options in paragraphs 3 and 20 of this Part VII *"Additional Information"*, as at the date of this Document, no Director or member of the administrative, management or supervisory bodies have any interests in options or warrants or in the issued share capital of the Company.

6 Directors' and Senior Manager Service Agreements

6.1 Martin Wood

The Company and Mr Wood have entered into a letter of appointment dated 26 October 2020, as amended by a letter of agreement dated 1st November 2021, pursuant to which Mr Wood is appointed as the Non-Executive Chairman. The Company paid an annual fee of £35,000 for the first year of appointment, which will be satisfied by the issue of Shares at an issue price of 6.5 pence per Share. Thereafter, the fee increased to £70,000 per annum and became payable in cash. The appointment is intended to be for a term of 3 years, but this may be extended by the Company. The appointment can be terminated by the Company or director on giving the other three months written notice, or the Company can terminate earlier for cause. Mr Wood has agreed that following termination of his position, not to be involved as director or shareholder of, or consultant to, any competing company for a period of 9 months. The Company and Mr Wood amended this contract on the 30 May 2023, to reduce the annual salary to £60,000, which, for the 12-month period following the Listing Date, Mr. Wood may elect, on a quarterly basis in arrears, will be satisfied in cash or by the issue of Shares, at an issue price equal to the 10-day VWAP at the end of such quarter.

6.2 Cédric Simonet

The Company and Mr Simonet have entered into a services agreement dated 30 May 2023, which replaces his current contract and took effect from the Listing Date, pursuant to which Mr Simonet is employed as Chief Executive Officer of the Company. Mr Simonet will be paid an annual salary of £120,000. The employment is full time, subject to an entitlement to 30-days holiday in each calendar year. Mr Simonet is entitled to participate in the Company's share option plans and may be awarded a bonus at the discretion of the Company. Each party may terminate the employment on giving 90-days' notice. The Company has a right to pay salary in lieu of notice. The Company may terminate without notice for cause. On termination of the employment, Mr Simonet is subject to restrictive covenants for a period of 180-days in respect of working for a competing business or soliciting the business of any customer or offering to employ/engage any senior person.

6.3 **Audrey Mamoshoeshoe Mothupi**

The Company and Ms Mothupi have entered into a letter of appointment dated 5 February 2021, pursuant to which Ms Mothupi is appointed as a Non-Executive Director. The Company will pay an annual fee of £24,000 per annum, payable monthly in arrears. The appointment is intended to be for a term of 3 years, but this may be extended by the Company. The appointment can be terminated by the Company or director on giving the other three months written notice, or the Company can terminate earlier for cause. Ms Mothupi has agreed that following termination of her position, not to be involved as director or shareholder of, or consultant to, any competing company for a period of 9 months.

6.4 **Simon Charles**

The Company and Mr Charles have entered into a letter of appointment dated 30 May 2023, as amended pursuant to which Mr Charles is appointed as a Non-Executive Director. The Company will pay an annual fee of £28,000 per annum, payable monthly in arrears. The appointment is intended to be for a term of 3 years, but this may be extended by the Company. The appointment can be terminated by the Company or director on giving the other three months written notice, or the Company can terminate earlier for cause. Mr Charles has agreed that following termination of his position, not to be involved as director or shareholder of, or consultant to, any competing company for a period of 9 months.

6.5 **Louise Adrian**

The Company and Mrs Adrian have entered into a services agreement dated 30 May 2023, pursuant to which Mrs Adrian will be employed as Chief Financial Officer of the Company. Mrs Adrian will be paid an annual salary of £24,000 payable as to ¼ quarterly in arrears and to be satisfied by the issue of Shares at an issue price equal to 10-day VWAP at the end of such quarter. The employment is part-time, subject to an entitlement to 15-days holiday in each calendar year. Mrs Adrian is entitled to participate in the Company's share option plans and may be awarded a bonus at the discretion of the Company. Each party may terminate the employment on giving 90-days' notice. The Company has a right to pay salary in lieu of notice. The Company may terminate without notice for cause. On termination of the employment, Mrs Adrian is subject to restrictive covenants for a period of 90-days in respect of working for a competing business or soliciting the business of any customer or offering to employ/engage any senior person.

6.6 **Christian Taylor-Wilkinson**

The Company and Mr Taylor-Wilkinson have entered into an employee contract as Business Development Officer dated 20 November 2023. The Company will pay an annual salary of £72,000 per annum for 3 days per week, payable monthly in arrears. The employment is part-time and subject to an entitlement of 18 days paid holiday in each year. Mr Taylor-Wilkinson is entitled to participate in the Company's share option plans and may be awarded a bonus at the discretion of the Company. Each party may terminate the employment on giving 6 months notice. The Company has a right to pay salary in lieu of notice. The Company may terminate without notice for cause. On termination of the employment, Mr Taylor-Wilkinson is subject to restrictive covenants for a period of 90-days in respect of working for a competing business or soliciting the business of any customer or offering to employ/engage any senior person. The Company has issued a redundancy notice to Mr Taylor-Wilkinson and he will leave the Company with effect from 24 October 2024.

7 Summary of Memorandum and Articles of Association

The Company is incorporated in England and Wales as a company under the provisions of the Companies Act and therefore is subject to English law. Set out below is a summary of the main provisions of the constitutional documents of the Company and is not intended to provide a comprehensive review of the applicable law, or of all provisions.

7.1 ***Memorandum of Association***

The provisions contained in the Company's Memorandum of Association determining its objects state that the Company's main activity is that of a general commercial company.

7.2 ***Shares***

Subject to any limitation or provisions to the contrary contained in the memorandum or articles of association of a company, the issuance of shares and other securities in a company are under the control of its Directors. Under the Articles all unissued shares in the Company shall be at the disposal of the Board who, subject to being authorised to do so by the Company by an ordinary resolution, may allot (with or without conferring rights of renunciation), grant options over, offer or otherwise deal with or dispose of them or rights to subscribe for or convert any security into shares to such persons, at such times and generally on such terms and conditions as the Board may decide.

7.3 ***Articles of Association***

The Articles of the Company, contain, *inter alia*, the following provisions relating to the rights attaching to Shares:

(a) There are no rights of pre-emption in respect of transfers of issued Shares. However, in certain circumstances, the Company's Shareholders may have statutory pre-emption rights under the Companies Act in respect of the allotment of new shares in the Company. These statutory pre-emption rights would require the Company to place new shares for allotment of existing Shareholders on a pro-rata basis before allotting them to other persons. In such circumstances, the procedure for the exercise of such statutory pre-emption rights would be set out in the documentation by which such shares are offered to the Company's Shareholders.

(b) In order to transfer Shares, the instrument of transfer of any such shares must be in any usual form or in such other form as may be approved by the Directors and must be executed by or on behalf of the transferor and, if the shares are not fully paid, by or on behalf of the transferee. The Articles contain no restrictions on the free transferability of fully paid shares, provided that the transfer is in respect of only one class of share and is accompanied by the share certificate and any other evidence of title required by the Directors and that the provisions in the Articles relating to the deposit of instruments for transfer have been complied with.

(c) Each Share confers the rights to receive notice of and attend all meetings of shareholders. Each holder of Shares present at a general meeting in person or by proxy has one vote, and, on a poll, one vote for each Share of which he is the holder.

(d) On a winding up a liquidator may, with the sanction of an extraordinary resolution of the Company, divide amongst the holders of the Company's shares (in specie or in kind) the whole or any part of the assets of the Company, and may, with the like sanction, determine how such diversion is to be carried out.

(e) The Shares confer upon their holders the right to participate in any profits which the Company may from time to time determine to distribute in respect of any financial period.

(f) Subject to the provisions of the Companies Act and if the profits of the Company justify such payments, the Directors may declare and pay interim dividends on shares of any class of such amounts as and when they think fit. All dividends are apportioned and paid pro-rata according to the amounts paid on the shares. No dividend or other monies payable on or in respect of a share will bear interest as against the Company. The Directors may retain any dividend or other monies payable on or in respect of a share on which the Company has a lien and may apply them towards the satisfaction of the debts, liability or engagements in respect of a lien. A dividend may be retained if a shareholder has failed to comply with the statutory disclosure requirements of the Companies Act. Any dividend unclaimed for twelve years will be forfeited and revert to the Company.

(g) Subject to the provisions of the Companies Act, the Company may purchase any of its own shares, provided that the terms of any contract under which the Company will or may become entitled or obliged to purchase its own shares be authorised by an ordinary resolution of the Company in a general meeting before the Company enters such a contract.

(h) All or any of the rights or privileges attached to any class of shares in the Company may be varied or abrogated with the consent in writing of the holders of three quarters in nominal value of the issued shares of that class or with the sanction of a special resolution passed at a separate general meeting of the holders of shares of that class. At every such separate general meeting the quorum is two persons holding or representing by proxy one-third in nominal value of the issued shares of that class.

(i) The Company may make arrangements for any class of its shares to be issued in uncertified form and in accordance with and subject as provided in The Uncertificated Securities Regulations 2001 and transfer of title of those shares shall be effected by means of relevant system in the manner provided for and subject as provided for in the Uncertificated Securities Regulations 2001. Shares held in certificated form and those held in uncertificated form may be changed to certificated form.

Shares are defined in the Articles as "shares in the Company". The rights attaching to the shares, as set out in the Memorandum and the Articles, and other key provisions, are set out as follows.

Rights of Shareholders

The Articles provide that each Share confers upon the Shareholder (but not on the holders of the Deferred Shares, except as specified or in relation to class meetings):

(a) the right to one vote on a show of hands and on a poll to one vote for every share of which he is the holder at a meeting of the Shareholders;

(b) the right to receive dividends according to the amounts paid up (otherwise than in advance of calls) on the shares on which the dividend is paid by the Company; and

(c) the right in the distribution of the surplus assets of the Company on its liquidation to a share in proportion to the amount to which, at the commencement of the winding, the shares held by him are paid up.

Variation of rights

Subject to the provisions of the Companies Act, if at any time the share capital of the Company is divided into shares of different classes any of the rights for the time being attached to any share or class of shares in the Company may (unless otherwise provided by the terms of issue of the shares of that class) be varied or abrogated in such manner (if any) as may be provided by such rights or, in the absence of any such provision, either with the consent in writing of the holders of not less than three quarters of the issued shares of the class or with the sanction of a special resolution passed at a separate general meeting of the holders of shares of the class duly convened and held as provided in the Articles. The foregoing provisions of this paragraph shall apply also to the variation or abrogation of the special rights attached to some only of the shares of any class as if each group of shares of the class differently treated formed a separate class the separate rights of which are to be varied.

Transfers of shares

Each member may transfer all or any of his shares in the case of certificated shares by instrument of transfer in writing in any usual form or in any form approved by the Board or in the case of uncertificated shares without a written instrument in accordance with the Uncertificated Regulations. Any written instrument shall be executed by or on behalf of the transferor and (in the case of a transfer of a share which is not fully paid up) by or on behalf of the transferee. The transferor shall be deemed to remain the holder of such share until the name of the transferee is entered in the Register in respect of it.

The Directors may also, in their absolute discretion, refuse to register any transfer of a certificated share unless the following conditions are satisfied:

(a) it is in respect of only one class of shares;

(b) it is in favour of a single transferee or not more than four joint transferees;

(c) it is duly stamped (if so required); and

(d) it is delivered for registration to the registered office of the Company or such other place as the Directors may decide, accompanied by the certificate for the shares to which it relates (except in the case of a person to whom the Company is not required by sections 769, 776, 777 or 778 of the Companies Act to issue a certificate, or in the case of a renunciation) and such other evidence as the Directors may reasonably require to prove the title of the transferor or person renouncing and the due execution by him of the transfer or renunciation or, if the transfer or renunciation is executed by some other person on his behalf, the authority of that person to do so,

provided that if the Directors refuse to register the transfer, the instrument of transfer must be returned to the transferee as soon as practicable and in any event within 2 months, with the notice of refusal and reasons for refusal unless they suspect that the proposed transfer may be fraudulent. The Board will not exercise such discretion if it would conflict with the Listing Rules.

Purchase and Redemption of shares

Shares may be purchased, redeemed or otherwise acquired for any consideration provided that such redemption or acquisition does not contravene the requirements of the Companies Act.

Payment of dividends

Subject to the provisions of the Companies Act and the Articles, the Company may, by ordinary resolution declare that dividends out of the Company's profits may be paid to members according to their respective rights and interests in the profits of the Company. However, no dividend shall exceed the amount recommended by the Board. The Deferred Shares carry no right to a dividend.

The Board may declare and pay such interim dividends (including any dividend payable at a fixed rate) as appear to the Directors that the profits available for distribution justify the payment. If the Company's share capital is divided into different classes, no interim dividend may be paid on shares carrying deferred or non-preferred rights if, at the time of payment, any preferential dividend is in arrears. If the Directors act in good faith, they do not incur any liability to the holders of shares conferring preferred rights for any loss they may suffer by the lawful payment of an interim dividend on shares with deferred or non-preferred rights.

All dividends, interest or other sum payable and unclaimed after having been declared and become payable may be invested or otherwise made use of by the Board for the benefit of the Company until claimed and the Company shall not be constituted a trustee in respect thereof. All dividends unclaimed for a period of twelve years after having become due for payment shall (if the Board so resolves) be forfeited and shall revert to the Company.

Unless otherwise provided by the rights attached to the share no dividend or other moneys payable by the Company or in respect of a share shall bear interest as against the Company.

Return of capital

Under the Articles, on a voluntary winding up of the Company the liquidator may, on obtaining any sanction required by law, divide among the members in kind the whole or any part of the assets of the Company, whether or not the assets consist of property of one kind or of different lands; and vest the whole or any part of the assets in trustees upon such trusts for the benefit of the members as he, with the like sanction, shall determine. The holders of the Deferred Shares have limited rights to a return on capital.

Borrowing powers

The business and affairs of the Company may be managed by, or under the direction or supervision of the Board. The Board has all the powers necessary for managing and for directing and supervising, the business and affairs of the Company. Subject to the Articles and to the provisions of the Companies Act, the Directors may exercise all the powers of the Company to borrow money, and to mortgage or charge its undertaking, and all or any part of its property and uncalled capital, and to issue debentures and other securities, whether outright or as collateral security for any debt, liability or obligation of the Company or of any third party.

Directors

(a) Unless and until otherwise determined by the Company by ordinary resolution the number of Directors (other than any alternate Directors) shall be not less than two and there shall be no more than 15 Directors.

(b) At every Annual General Meeting at least one third of the Directors who are subject to retirement by rotation, provided that if there is only one Director who is subject to retirement by rotation, he shall retire.

(c) Without prejudice to the power of the Company to appoint any person to be a Director pursuant to the Articles the Board shall have power at any time to appoint any person who is willing to act as a Director, either to fill a vacancy or as an addition to the existing Board, but the total number of Directors shall not exceed any maximum number fixed in accordance with the Articles. Any Director so appointed shall hold office only until the annual general meeting of the Company next following such appointment and shall then be eligible for re-election but shall not be taken into account in determining the number of Directors who are to retire by rotation at that meeting. If not re-appointed at such annual general meeting, he shall vacate office at the conclusion thereof.

(d) The Company may by resolution remove any Director before the expiration of his period of office notwithstanding anything in the Articles or in any agreement between the Company and such Director and, without prejudice to any claim for damages which he may have for breach of any contract of service between him and the Company, may (subject to the Articles) by resolution appoint another person who is willing to act to be a Director in his place.

(e) No shareholding qualification is required by a Director.

(f) The Directors may by resolution of Directors appoint officers of the Company at such times as may be considered necessary or expedient.

Meetings of Shareholders

Subject to the Companies Act, the Company must hold an annual general meeting in each period of six months beginning with the day following its accounting reference date (in addition to any other general meeting held in that period). Any annual general meeting so convened shall be held at such a time and place as the Board may determine.

The Directors may call a general meeting whenever they think fit. At any meeting so convened (or any meeting requisitioned pursuant to section 303 of the Companies Act) no business shall be transacted except that proposed by the Board or stated by the requisition. If there are not sufficient members of the Board to convene a general meeting, any Director or any member of the Company may call a general meeting.

Any annual general meeting shall be convened by not less than twenty-one clear days' notice in writing. Other general meetings shall be convened by not less than fourteen clear days' notice in writing. Notwithstanding that a meeting is convened by a shorter notice than that specified in the Articles, it shall be deemed to have been properly convened if it is so agreed by all members entitled to attend and vote in the meeting.

No business other than the appointment of the chairman of the meeting is to be transacted at a general meeting if the persons attending the meeting do not constitute a quorum. If the Company has only one member entitled to attend and vote at the general meeting, one qualifying person present at the meeting and entitled to vote is a quorum; provided that in all cases two qualifying persons present at the meeting and entitled to vote are a quorum.

If a general meeting was requisitioned by members holding the Shares and the persons attending the meeting within 30 minutes of the time at which the meeting was due to start (or such longer time as the chairman of the meeting decides to wait) do not constitute a quorum, or if during the meeting a quorum ceases to be present, the meeting is dissolved. In the case of a general meeting other than one requisitioned by members, if the persons attending the meeting within 30 minutes of the time at which the meeting was due to start (or such longer time as the chairman of the meeting decides to wait) do not constitute a quorum, or if during the meeting a quorum ceases to be present, the chairman of the meeting must

adjourn it. The continuation of a general meeting adjourned for lack of quorum it to take place either: on a day that is not less than 14 days but not more than 28 days after it was adjourned and at a time and/or place specified for the purpose in the notice calling the meeting; or where no such arrangements have been specified, on a day that is not less than 14 days but not more than 28 days after it was adjourned and at such time and/or place as the chairman of the meeting decides (or, in default, the Directors decide). At an adjourned meeting the quorum is one qualifying person present and entitled to vote. If a quorum is not present within five minutes from the time fixed for the start of the meeting, the adjourned meeting is dissolved.

Pre-emption rights of Shareholders

Shareholders have pre-emption rights as set out in the Companies Act, subject to any additional authority given by special resolution. The pre-emption provisions shall not apply to the allotment of any shares for a consideration other than cash or in connection with an employees' share scheme, and, accordingly, the Directors may allot or otherwise dispose of any unissued shares in the capital of the Company for a consideration other than cash to such persons at such times and generally on such terms as they may think fit.

A reference in the foregoing paragraphs to the allotment of any shares includes the grant of a right to subscribe for, or to convert any securities into, shares but such reference does not include the allotment of any relevant shares pursuant to such a right.

Management

Subject to the provisions of the Companies Act, the Memorandum and the Articles and to any directions given by special resolution of the Company, the business of the Company shall be managed by the Board, which may exercise all the powers of the Company whether relating to the management of the business or not. No alteration of the Memorandum or the Articles and no such direction given by the Company shall invalidate any prior act of the Board which would have been valid if such alteration had not been made or such direction had not been given. Provisions contained in the Articles as to any specific power of the Board shall not be deemed to limit the general powers given by the Articles.

Accounting and auditing requirements

Under the Articles the Directors must ensure that accounting records are kept in accordance with the Companies Act. The accounting records shall be kept at the registered office of the Company or, subject to the Companies Act, at another place decided by the Directors and shall be available during business hours for the inspection of the Directors and other officers. No member (other than a Director or other officer) has the right to inspect an accounting record or other document except if that right is conferred by the Companies Act or he is authorised by the Directors or by an ordinary resolution of the Company.

The Directors may determine that persons entitled to receive a copy of the Company's annual accounts, the directors' report, the strategic report, the directors' remuneration report, the auditors' report on those accounts and on the auditable part of the directors' remuneration report are those persons entered on the register at the close of business on a day determined by the Directors; provided that, if the Company is a participating issuer, the day determined by the Directors may not be more than 21 days before the day that the relevant copies are being sent.

A printed copy of the Directors' and auditors' reports accompanied by printed copies of the annual accounts (including every document required by law or regulations applicable to the Company to be comprised in them or annexed or attached to them) shall not less than twenty-one clear days before the meeting before which they are to be laid, be delivered, sent by post or sent by Electronic Communication to every member who is entitled to receive notices from the Company and holder of debentures of the Company and to the auditors and to every other person who is entitled to receive notice of general meetings.

Winding up

The Board shall have power in the name and on behalf of the Company to present a petition to the court for the Company to be wound up.

Under the Articles, on a voluntary winding up of the Company the liquidator may, on obtaining any sanction required by law, divide among the members in kind the whole or any part of the assets of the Company, whether or not the assets consist of property of one kind or of different lands; and vest the whole or any part of the assets in trustees upon such trusts for the benefit of the members as he, with the like sanction, shall determine.

If the Company is wound up the liquidator may, set the value he deems fair on a class or classes of property; and determine on the basis of that valuation and in accordance with the then existing rights of members how the division is to be earned out between members or classes of members. The liquidator may not, however, distribute to a member without his consent an asset to which there is attached a liability or potential liability for the owner.

Disclosure of Interests in shares

The provisions of Chapter 5 of the Disclosure Guidance and Transparency Rules and section 793 of the Companies Act apply to the disclosure of interests in shares.

Chapter 5 details the circumstances in which a person may be obliged to notify the Company that he has an interest in voting rights in respect of shares (a "**notifiable interest**"). An obligation to notify the Company arises: (a) when a person becomes or ceases to be interested (by way of a direct or indirect holding of shares or of certain "Qualifying Financial Instruments" (as defined in the Disclosure Guidance and Transparency Rules) or other instruments creating a long position on the economic performance of the shares) in three per cent. or more of the voting rights attaching to the shares; and (b) where such person's interests alters by a complete integer of one per cent. of the voting rights attaching to the shares.

The Companies Act permits the Company to serve a notice on any person where the Company has reasonable cause to believe such person is interested in the shares or has been interested in the shares at any time during the three years immediately preceding the date on which the notice is issued. Such notice may require the person to confirm or deny that he has or was interested in the shares and, if holds, or has during that time held, any such interest to give such further information as may be required in accordance with the Articles. Where such Shareholder fails to comply with the terms of the notice within the period specified in such notice the Shareholder will be in default (such Shareholder's shares being referred to as "**Default Shares**"). The Board may direct that voting rights and dividend rights be suspended in respect of Default Shares.

Under the Disclosure Guidance and Transparency Rules, a person must notify the Company of the percentage of its voting rights if, at any time after the date on which the Articles came into force the percentage of voting rights which he holds as shareholder or through his direct or indirect holding of financial instruments (or a combination of such holdings):

(a) reaches, exceeds or falls below 3 per cent, 4 per cent, 5 per cent, 6 per cent, 7 per cent, 8 per cent, 9 per cent, 10 per cent and each 1 per cent threshold thereafter up to 100 per cent; or

(b) reaches, exceeds or falls below an applicable threshold in (a) as a result of events changing the breakdown of voting rights and on the basis of information disclosed by the Company in accordance with the Articles.

A person shall not be required to aggregate his holdings in the circumstances prescribed in rule 5.4 of the Disclosure Guidance and Transparency Rules.

The Company must at the end of each calendar month during which an increase or decrease has occurred, notify to a Regulatory Information Service for distribution to the public the total number of voting rights and capital in respect of each class of share which it issues.

An obligation to give a notice to the Company in relation to notifying of the change in his percentage of voting rights shall be fulfilled as soon as possible and in any event before the end of the second working day after the relevant person learns the relevant threshold was reached or crossed.

In addition, under the Articles, and in accordance with the process set out under the Articles, where notice is served by the Company under section 793 of the Act (a **"section 793**

notice") on a member, or another person appearing to be interested in shares held by that member, and the member or other person has failed in relation to any shares (the **"default shares",** which expression includes any shares allotted or issued after the date of the section 793 notice in respect of those shares) to give the Company the information required within the prescribed period from the date of service of the section 793 notice, the following sanctions apply, unless the Directors otherwise decide:

(1) the member shall not be entitled in respect of the default shares to be present or to vote (either in person, by proxy or by corporate representative) at a general meeting or at a separate meeting of the holders of a class of shares or on a poll; and

(2) where the default shares represent at least 0.25 per cent in nominal value of the issued shares of their class (excluding any share of their class held as treasury shares):

a dividend (or any part of a dividend) or other amount payable in respect of the default shares shall be withheld by the Company, which has no obligation to pay interest on it, and the member shall not be entitled to elect, under article 106, to receive shares instead of a dividend, and

no transfer of any certificated default shares shall be registered unless the transfer is an excepted transfer; or

(i) the member is not himself in default in supplying the information required; and

(ii) the member proves to the satisfaction of the Directors that no person in default in supplying the information required is interested in any of the shares the subject of the transfer.

7.4 ***Dividends and distributions***

Subject to the provisions of the Companies Act, the Company's memorandum and articles of association, Directors may declare dividends to the holders of the Shares (excluding the Deferred Shares) in money, shares or other property provided they determine the company will pass the solvency test (i.e. the value of the company's assets will exceed its liabilities and it will be able to meet its debts as they fall due).

8 City Code on Takeovers and Mergers

The City Code applies to the Company.

The City Code is issued and administered by the Takeover Panel. The Takeover Panel has been designated as the supervisory authority to carry out certain regulatory functions in relation to takeovers pursuant to under Chapter 1 of Part 28 of the Companies Act 2006. The rules in the City Code which are derived from the Act now have a statutory basis.

The City Code applies to all takeovers and merger transactions, however effected, where *inter alia*, the offeree company is a public company which has its registered office in the United Kingdom, the Isle of Man or the Channel Islands, if the company has its securities admitted to trading on a regulated market in the United Kingdom or on any stock exchange in the Channel Islands or the Isle of Man. The City Code therefore applies to the Company and its Shareholders will be entitled to the protection afforded by the City Code.

Under Rule 9 of the City Code, where: (i) any person acquires, whether by a series of transactions over a period of time or not, an interest in shares which (taken together with shares in which persons in which he is already interested and in which persons acting in concert with him are interested) carry 30% or more of the voting rights of a company subject to the City Code; or (ii) any person who, together with persons acting in concert with him, is interested in shares which in the aggregate carry not less than 30% but not more than 50% of the voting rights of such a company, if such person, or any person acting in concert with him, acquires an interest in any other shares which increases the percentage of shares carrying voting rights in which he is interested, then, except with the consent of the Takeover Panel, he, and any person acting in concert with him, must make a general offer in cash to the holders of any class of equity share capital, whether voting or non-voting, and also to the

holders of any other class of transferable securities carrying voting rights to acquire the balance of the shares not held by him and his concert party.

Save where the Takeover Panel permits otherwise, an offer under Rule 9 of the City Code must be in cash and at the highest price paid within the 12 months prior to the announcement of the offer for any shares in the company by the person required to make the offer or any person acting in concert with him. Offers for different classes of equity share capital must be comparable; the Takeover Panel should be consulted in advance in such cases.

9 Working capital

The Company is of the opinion that, taking into account the Net Proceeds of the Fundraising, the working capital available to the Company is insufficient for its present requirements, that is for at least 12 months from the date of this document.

The Company expects to have a funding shortfall of approximately £370,000 by February 2025 based on current base case projections ("Shortfall").

In addition, on 30 October 2025, being approximately 16 months following the date of the Prospectus, £1.23m comprising principal and interest under outstanding loan agreements becomes payable. In the event that the Company is unable to refinance these payments, the Shortfall will increase by this amount.

The Company intends to fund the Shortfall by raising further capital through an equity fundraising in advance of February 2025 commencing in Q4 2024 from i) current key shareholders and other potential new investors yet to be identified and ii) seeking a potential new strategic shareholder yet to be identified or securing finance from other sources for the Monte Muambe Project. Each such fundraising will take place concurrently. Furthermore, additional funds may become available from cash received as a result of the exercise of unexercised warrants granted to investors and brokers.

In the event that there is an equity fundraising to fund the amount of the Shortfall at the Issue Price, the existing shareholders would be diluted by 18.50 per cent.

Based on conversations to date, both with existing major Shareholders and other potential investors, the Directors are confident that the Company will be able to raise funds to meet the Shortfall by February 2025, however, there is no certainty that the Company will raise sufficient funds to meet the Shortfall either in part or at all.

The Directors will closely monitor the prospects for an equity fundraise during Q4 2024, and will from the beginning of this period proactively take steps (including discussions with potential buyers) to ensure that, in the event of failure to raise additional finance, the Company will be in a position to immediately sell either part (via a farm-out) or all of its interest in the Monte Muambe Project within the required timeframe to fund the Shortfall. The Directors are currently confident that they will be able to find a buyer for this Project and that the proceeds would be sufficient to at least fund the Shortall, as currently the Company's interest in the Monte Muambe Project far exceeds the estimated Shortfall and recent M&A activity in the rare earths sector show that there is an appetite for advanced rare earths projects.

However, although the Directors would use all endeavours to sell an interest in the Monte Muambe Project, in the event that they were unable to do so and had exhausted all other actions to fulfil the Shorftall, the Company would need to wind down its operations, realise its assets and may enter administration, if and to the extent there are creditors of the Company who cannot be paid. In such an event, the Company would no longer manage the affairs of the Company or the realisation of its assets. As a result of either winding down the business or entering into administration, the Ordinary Shares would be cancelled from the Official List and Shareholders may receive little or no value for their Ordinary Shares.

10 Further Disclosures on Directors and the Senior Manager

10.1 The Directors and the Senior Manager hold or have held the following directorships or are or have been partners in the following partnerships within the five years prior to the date of this Document, other than the Company:

Director	Current directorships and partnerships	Previous directorships and partnerships
Martin Wood	Vicarage Capital Limited Toya Gold SL LHC Mine Finance Limited Hurdwick Golf Course Limited Anromal Gold Limited	Med Web Ltd New Leaf Advisory Limited BrainWorks Limited Nations Resources Limited Petrocapital Resources Limited Cypher Value Metrics Limited
Cédric Simonet	Pinsapo Kenya Limited Akili Mineral Services Limited Swensson & Simonet Minerals (K) Ltd Josephines Investments Limited Red Snapper Limited Monsoon Mines Limited Jahazi Consultants Ltd	Verum Inventa Ltd
Audrey Mothupi	SystemicLogic Group (Pty) Ltd SystemicLogic Pty Ltd SystemicLogic Technologies (Pty) Ltd SystemicLogic Investments (Pty) Ltd SystemicLogic Advertising and Marketing Pick n Pay Stores Limited Life Healthcare Group Holdings Limited Arden Capital Limited Rodean School Findexable Ltd Pick n Pay Holdings Ltd Betvest 88 CC	Blue Stream Education Calabash Seeds Calabash Tree Investments Nordic Female Business Angel Network Orange Babies South Africa EOH Holdings Ltd SystemicLogic Innovation Agency (Pty) Ltd
Simon Charles	Switch Metals Limited Sweet Truck Haul Limited Marriott Harrison LLP MH Secretaries Limited MH Nominees Limited Whites Vehicle Services Limited	The Invicta Film Partnership No. 22, LLP Supply@Me Capital Plc Stubben Edge Group Limited Central Rand Gold Limited
Louise Adrian	The Alliance Multi-Academy Trust	—
Christian Taylor-Wilkinson	GCM Resources Plc Leander PR Ltd 46 Ifield Road Management Ltd	Cadogan Leander Ltd

10.2 At the date of this Document no Director:

a) has had any convictions in relation to fraudulent offences within the previous five years prior to the date of this Document;

b) has been declared bankrupt or has been a director of a company or been a member of an administrative, management or supervisory body or a senior manager of a company within the previous five years prior to the date of this Document which has entered into any bankruptcy, receivership or liquidation proceedings;

c) has been the subject of any official public incrimination and/or sanction by any statutory or regulatory authority (including any designated professional body) within the previous five years prior to the date of this Document;

d) has been disqualified by a court from acting as a director of any company or as a member of the administrative, management or supervisory bodies of any company or from acting in the management or conduct of the affairs of any company within the previous five years prior to the date of this Document;

e) has any family relationship with any of the other Directors;

f) has had any interest, direct or indirect, in any assets which have been or are proposed to be acquired or disposed of by or to the Company, or any such interest in any contract or arrangement subsisting at the date of this Document and which is significant to the business of the Company; and

g) has any potential conflict of interest between his duties to the Company and his private interests or other duties.

11 Capitalisation and indebtedness

Capitalisation

The following table shows the Group's capitalisation as at 31 May 2024 as extracted from the unaudited management accounts of the Group as at that date:

		Unaudited **As at 31 May 2024 £'000**
Total current debt		
– Guaranteed		—
– Secured		—
– Unguaranteed/Unsecured		555
Total non-current debt (excluding current portion of long-term debt)		
– Guaranteed		—
– Secured		—
– Unguaranteed/Unsecured		—
Total debt		**555**
Shareholder's equity		
a)	Share capital	2,283
b)	Share premium	23,089
c)	Other reserves	134
Total capitalisation and shareholders equity		**25,506**

Statement of material change

There has been no material change in the Group's capitalisation between the information above and the date of this Document.

Indebtedness

The following table shows the Group's net indebtedness as at 31 May 2024, as extracted from the unaudited management accounts of the Group as at that date:

		Unaudited **As at 31 May 2024 £'000**
A.	Cash	**26**
B.	Cash equivalents	**—**
C.	Other current financial assets	**—**
D.	**Liquidity (A) + (B) + (C)**	**26**
E.	Current financial debt (including debt instruments, but excluding current portion of non-current financial debt)	**555**
F.	Current portion of non-current financial debt	—
G.	**Current financial indebtedness (E) + (F)**	555
H.	**Net current financial liquidity(G) – (D)**	529
I.	Non-current financial debt (excluding current portion and debt instruments)	**—**
J.	Debt instruments	—
K.	Non-current trade and other payables	—
L.	**Non-current financial indebtedness (I) + (J) + (K)**	**—**
M.	**Total financial indebtedness (H) + (L)**	**529**

Statement of material change

On 27 June 2024:

- the Company entered into an agreement to convert part of the outstanding debt and reprofile the remaining debt facility with Catalyse Capital Limited. This is set out in paragraph 20.12 of this Part VII. The result being the reduction of this outstanding debt to £200,000.
- the Company entered into debt facility agreements with each of Tracarta Limited and Richard Jennings, as set out in paragraphs 20.16 and 20.17 of this Part VII, enabling the Company to drawdown, in aggregate, up to £900,000. £100,000 had been drawn down from these facilities as at the date of this Document. Each loan facility is to be repaid on 25 October 2025 and carry a fixed interest rate of 12%.
- the holders of the Optiva CLN agreed to amend the terms of the Optiva CLN and 96% of the convertible loan note holders signed conversion notices to convert debt of £263,000 into Ordinary shares of £0.01 at par value, conditional on the publication of this Document. See the further information regarding this conversion as set out in paragraph 20.11 of this Part VII.

12 Pension arrangements

12.1 The Company has established a stakeholder pension scheme of which Christian Taylor-Wilkinson is the only participant at the minimum required level. Louise Adrian is also entitled to join the scheme but has elected not to. There are no existing arrangements or proposals existing in connection with the Admission whereby any member of the administrative, management or supervisory bodies of the Company or any other person which provide for benefits upon termination of employment or in connection with retirement from office with the Company or any of its subsidiaries.

13 Employees and premises

13.1 As at the date of this Document, Christian Taylor-Wilkinson, Louise Adrian and Cédric Simonet are the only employees of the Company.

13.2 As at the date of this Document, the Group has no premises.

14 Subsidiaries

14.1 At the date of this Document and on Admission, the Company has seven subsidiaries as noted below.

	Country of Registration	*Holding*	*Nature of business*
Altona Rare Earths Mauritius Limited[2]	Mauritius	100%	Exploration and mining company, incorporated 17 February 2022
Altona Mozambique, Lda	Mozambique	95%	Exploration and mining company, incorporated 27 May 2022
Altona Mozambique II, Lda	Mozambique	95%	Exploration and mining company, incorporated 27 May 2022
Altona Mozambique III, Lda[2]	Mozambique	100%[3]	Exploration and mining company, incorporated 27 May 2022
Altona Rare Earths (Uganda) Limited[2]	Uganda	100%[1]	Exploration and mining company, incorporated 30 March 2021
Altona Rare Earths (Tanzania) Limited[2]	Tanzania	100%[1]	Exploration and mining company, incorporated 5 August 2021
Monte Muambe Mining Lda (Control acquired 11 August 2021 – through Board control)	Mozambique	51%	Exploration and mining company, incorporated 21 August 2019

[1] One share is held by Christian Taylor-Wilkinson as nominee for the Company
[2] Dormant subsidiaries
[3] 0.01% of the capital of the company is held by Cédric Simonet as nominee for the Company
[4] The remaining 5% is held by Ossanzaya Empreendimentos Lda, a Mozambican geological consultancy company.

15 Dilution of Share capital

The issue of the New Ordinary Shares will constitute 87.88 per cent. of the Existing and 46.77 per cent. of the Enlarged Share Capital and, on Admission, the interests of Existing Shareholders will be diluted accordingly.

In the event that all Warrants as granted prior to Admission are exercised in full (including Warrants conditional upon passing of the Resolutions), the Shareholders at Admission will be diluted by 65.25 per cent. In the event that Consideration Shares are issued to their sellers in respect of all of the Projects, the Shareholders will in such an event be diluted by 20.49 per cent.

16 Related party transactions

16.1 During the period covered by the historical financial information and up to the date of this Document, the Company has not completed any related party transactions except that the Company entered into an agreement with Leander PR Limited, of which Christian Taylor-Wilkinson is a director, for the provision to the Company of marketing, public and investor relations services. This agreement was terminated on 30 June 2021, with the outstanding debt of £50,000 being settled through the issue of 1,000,000 shares on 11 July 2023.

17 Sources of cash, liquidity and cash uses

17.1 The Company is of the opinion that, taking into account the Net Proceeds of the Fundraising (comprising the proceeds from the Subscription and the New Loan Facilities) together with the current cash resources of the Company, the working capital available to the Company is

insufficient for its present requirements, that is for at least 12 months from the date of this document. The Company expects to have a funding Shortfall of approximately £370,000 by February 2025 based on current base case projections.

All cash, including the Net Proceeds of the Fundraising will be held in the Company's bank account. It will use such cash primarily to provide working capital to enable it to execute its strategy as described under Part I this Document. As at the date of this Document, the Group had cash resources of approximately £23,980.

18 Significant Change

18.1 Since 31 December 2023 (being the date to which the unaudited historical financial information for the six months ended 31 December 2023 referenced in Part V "Historical Financial Information of the Company" of this Document has been published), the only significant change in the financial position and performance of the Group has been set out below:

- on 20 December 2023, the Company entered into a debt facility agreement with Catalyse Capital Limited, as amended ("**CCL Second Facility**") and has since drawn down £225,000 in total. The terms of the CCL Second Facility are set out in paragraph 20.12 of this Part VII.
- the Company entered into an agreement to convert part of the outstanding debt and reprofile the remaining debt facility with Catalyse Capital Limited. This is set out in paragraph 20.12 of this Part VII. The result being the reduction of this outstanding debt to £200,000.
- the Company entered into debt facility agreements with each of Tracarta Limited and Richard Jennings, as set out in paragraphs 20.16 and 20.17 of this Part VII, enabling the Company to drawdown, in aggregate, up to £900,000. £100,000 had been drawn down from these facilities as at the date of this Document. Each loan facility is to be repaid on 25 October 2025 and carry a fixed interest rate of 12%.
- The holders of the Optiva CLN agreed to amend the terms of the Optiva CLN and 96% of the convertible loan note holders signed conversion notices to convert debt of £263,000 into Ordinary shares of £0.01 at par value, conditional on the publication of this Document. See the further information regarding this conversion as set out in paragraph 20.11 of this Part VII.

19 CREST

19.1 The Shares to be issued in connection with the settlement of the Fundraising, will be in registered form and may be held in either certificated form or uncertificated form, except as otherwise described herein. CREST is a paperless settlement procedure enabling securities to be evidenced otherwise than by certificates and transferred otherwise than by written instrument. The Articles permit the holding of Shares in CREST. Accordingly, settlement of transactions in the Shares following Admission may take place within CREST if any Shareholder so wishes. However, CREST is a voluntary system and Shareholders who wish to receive and retain share certificates are able to do so. The records in respect of Shares held in uncertificated form will be maintained by Euroclear and the Company's Registrars, Share Registrars Limited.

20 Material contracts

The following material contracts are those contracts which have been entered into by the Company: (a) in the two years immediately preceding the date of this Document (other than in the ordinary course of business); and (b) which contain any provision under which the Company has any obligation or entitlement which is material to the Company as at the date of this Document (other than those entered into in the ordinary course of business):

20.1 **Placing Agreement**

The Company entered into a placing agreement with Optiva and Novum on 30 May 2023 pursuant to which Optiva agreed (conditional on Admission taking place no later than 9 June 2023 (or such later date as may be agreed by Optiva and the Company but in any event no

later than 30 June 2023)), as agent for the Company, to use their reasonable endeavours to place placing Shares at the placing price for such fund raise with subscribers selected by them which took place on 9 June 2023.

20.2 **Orana Corporate LLP – Services Agreement**

On 15 February 2019, the Company entered into a services agreement with Orana Corporate LLP ("**Orana**") pursuant to which Orana agreed to provide accounting and bookkeeping services and company secretarial services to the Company. In addition, Orana is to act in the role of chief financial officer for the Company including preparing the financial statements, preparing the audit file for the auditors and assisting with corporation tax returns to HMRC. In addition to termination for cause, either party may terminate the agreement on giving at least 6-months' written notice of termination. The liability of Orana is limited to the fees paid in the previous 12-months.

The fees for the services are based on the time taken in providing the services based on a £800-day rate with a retainer of £4,000 per month.

Louise Adrian is a consultant to Orana Corporate LLP.

20.3 **Financial Adviser Agreement – Novum Securities**

On 1 August 2023 the Company entered into an engagement letter with Novum pursuant to which Novum agreed to act as Financial Adviser for the Company for the Subscription and the publication of this Document. Under the engagement letter Novum is entitled to an initial fee and further fees on submission and publication of this Document. The engagement letter may be terminated by either party giving three months' written notice to the other, and otherwise automatically terminates on the first anniversary of signing.

20.4 **Broker Agreement – Optiva Securities**

On 15 February 2021, the Company entered into an engagement letter with Optiva Securities Ltd pursuant to which Optiva Securities agreed to act as broker to the Company in connection with any fundraising, (the "**Optiva Broker Agreement**"). In consideration for this service, the Company will pay the following fees:

(i) from the Listing Date an annual retainer, 50% of which will be payable in cash quarterly in advance and 50% of which in the first year of engagement will be satisfied by the issue of Shares at the original placing price. Thereafter the price for the Shares to be issued in the following years of engagement will be negotiated by the parties; and

(ii) a commission of 6% of the Gross Proceeds of the total funds raised by Optiva Securities, payable in cash on completion of the original placing.

20.5 **Broker Agreement – Allenby Capital**

On 25 August 2023, the Company entered into an engagement letter with Allenby Capital Ltd pursuant to which Allenby Capital agreed to act as a joint broker to the Company in connection with any fundraising. In consideration for this service, the Company will pay the following fees:

(i) from the engagement date a retainer payable in quarterly instalments in advance;

(ii) a 5 per cent. commission on funds raised from investors through Allenby Capital; and

(iii) 1 per cent. commission on funds procured from other parties and which Allenby Capital administer the settlement of.

20.6 **Optiva Warrant Instrument – IPO Broker Warrants and Performance Warrants**

The Company has entered into the Optiva Warrant Instrument dated 30 May 2023 that provides for the creation of the IPO Broker Warrants and the Performance Warrants.

20.7 **Warrant Instruments**

(a) A warrant instrument dated 21 January 2021 has been created by the Company pursuant to which warrants can be granted by the board of directors. Each warrant shall entitle the holder to subscribe for one Share, such right exercisable from the date of grant to 31 March 2023. Each Warrant is exercisable at 12 pence per Share. On 30 March 2023, the Company convened a meeting of warrant holders which approved the extension of the final exercise date of the outstanding 12 pence warrants granted pursuant to this warrant instrument until 31 March 2025.

(b) A warrant instrument dated 2 March 2021 has been created by the Company pursuant to which warrants over 4,387,395 Shares were issued with an expiry date of 31 March 2025 and an exercise price of 12 pence per Share.

(c) **CCL Warrants**: A warrant instrument dated 5 April 2023, as amended and restated on 26 May 2023 and as further amended, has been created by the Company pursuant to which warrants have been granted to Catalyse Capital Limited ("CCL"). The warrant instrument provides for 37,500,000 warrants over Ordinary Shares to be issued to CCL, which are exercisable at the Issue Price, from grant until the third anniversary of the Listing Date.

(d) **CLN Warrants**: A warrant instrument has been created by the Company as required by the Convertible Loan Note instrument dated 1 February 2023 (as further described in paragraph 20.11 below). The warrant instrument is dated 30 May 2023, as amended ("**CLN Warrant Instrument**") and provides for the Company to grant warrants over 11,000,000 Shares to be issued to the holder of the CLNs, which are exercisable at 5 pence. The warrants are exercisable until 31 December 2025.

(e) **Fundraising Warrants and Piggyback Options**: A warrant instrument dated 30 May 2023 "**Fundraising Warrant Instrument**") has been created by the Company pursuant to which the board of directors have granted the Fundraising Warrants and the Piggyback Options. The Fundraising Warrants entitle the holder to subscribe for one Share for each Fundraising Share subscribed, such right exercisable from the date of grant to the date falling on the 2nd anniversary of the date of grant of the Fundraising Warrants exercisable at 12 pence per Share. If a holder of the Fundraising Warrants elects to exercise all of its Fundraising Warrants within 30 calendar days of the date on which the volume-weighted average price of the Shares exceeds 12 pence (the "Trigger Date"), on delivery of the certificate(s) for the Fundraising Warrants following such exercise, the Company shall issue the same number of Piggyback Options to such Warrantholder within 10-days of the Trigger Date. The Piggyback Options shall entitle the holder to subscribe for one Share for each Fundraising Share subscribed, such right exercisable from the date of grant to date to the date falling on the 3rd anniversary of the date of grant of the Fundraising Warrants exercisable at 18 pence per Share.

(f) **CLN Broker Warrants**: As a fee under the CLN, a warrant instrument dated 30 May 2023 ("**CLN Broker Warrant Instrument**") has been created by the Company pursuant to which the board of directors has granted warrants over 550,000 Ordinary Shares to Optiva. Each Warrant will entitle the holder to subscribe for a Share, such right exercisable from the date of grant to the date falling on the 2nd anniversary of the date of grant, subject to the CLN having been converted rather than repaid and exercisable at 5 pence per Share.

(g) **CCL Warrants 2:** A warrant instrument dated 20 December 2023, as amended, has been created by the Company pursuant to which warrants have been granted to Catalyse Capital Limited ("CCL") as a condition precedent to drawdown under the CCL Second Facility (as described in paragraph 20.12 below). Given the terms of the Subscription, the terms of the warrant instrument provides for 30,000,000 warrants over Ordinary Shares exercisable at the Issue Price.

20.8 **Registrar Agreement**

A registrars agreement dated 17 April 2018 and updated on 1 March 2023 was entered into by the Company and the Registrar ("**Registrar Agreement**"), pursuant to which the Registrar agrees to its appointment as the registrar to the Company for the purpose of providing share registration duties including any duties required under the Companies Act and the London Stock Exchange. The agreement continues in force until terminated by either party on giving

a minimum of 6 months' notice. The fees are determined by reference to the number of Shareholders and the activities undertaken.

20.9 **Monte Muambe Farmout Agreement**

The Company has entered into a Farmout Agreement dated 23 June 2021, with USSOKOTI INVESTIMENTOS SOCIEDADE UNIPESSOAL, LIMITADA (**UIL**), a company registered in Mozambique, MONTE MUAMBE MINING, LDA (**"MMM"**) and the 3 individuals who currently own MMM, being MR. PEDRO JEREMIAS MANJATE ("**PM"**), MRS. ESTHER PALE ("**EP"**) and MR. ROGÉRIO SAMO GUDO ("**RSG"**) (together the "**Sellers"**). UIL currently holds Prospecting Licence 7573L (**Muambe Licence**, granted by the Government of Mozambique on 22 May 2017 and with an initial term expiring on 22 May 2022, for fluorspar, rare earths, and associated minerals, covering a surface area of 3,939.96 Ha, and associated Statutory Licences including land rights (DUAT) as well as prospecting data, located in Tete Province, Mozambique.

There is a two-stage completion under the Farmout Agreement. Under stage one, the effectiveness of the Farmout Agreement is conditional on:

a. PM, EP and RSG transferring an interest in MMM such that Altona holds a 1% shareholding in MMM;

b. the constitutional documents of MMM being amended to provide for a board of directors with 3 directors, 2 of which shall be nominated by Altona; and

c. UIL applying to the National Directorate of Geology and Mines of Mozambique ("**DNGM**") for the Muambe Licence to be transferred to MMM,

together the "**First Closing Conditions**".

On satisfaction of the First Closing Conditions, although Altona will only have a 1% interest in the share capital of MMM, it will have control of the board and Mr. Simonet, Chief Operating Officer of Altona, will also be appointed as Managing Director of MMM, which position under the laws of Mozambique give additional rights of management to Altona. The board of directors of MMM consists of 3 directors, of which 2 are appointed by Altona. Each director shall have one vote and all decisions of the board will be passed by simple majority vote. Therefore, Altona has control of the board and the Company.

Under stage two the conditions to the further farm-in by Altona are as follows:

a. receipt by UIL, of a written consent from the DNGM for MMM to act as an operator;

b. the transfer of the Muambe Licence from UIL to MMM; and

c. consent of the Minister of Mineral Resources and Energy ("**Minister**") to the transfer of any additional interest in MMM to Altona,

together the "**Second Closing Conditions**".

In the period between the date of the First Closing Conditions and the Second Closing Conditions (the "**Interim Period**"), Altona and MMM have the following rights and obligations:

- UIL appoints MMM as its agent to initiate the undertaking of the operations on the Muambe Licence ("**Monte Muambe Project**") as its "**Operator**";
- Altona will provide to MMM all the personnel, expertise, and finance to enable MMM to act as Operator of the Muambe Licence and carry out the Monte Muambe Project;
- establish a work programme and budget for MMM to conduct a 3,000m RC drilling programme with the objective of identifying targets of a workable size with a minimum potential of at least 25 million tonnes at 2% total rare earths oxide ("**TREO**") as "**Phase 1**" of the Monte Muambe Project;
- Altona's paying interest in the Monte Muambe Project will be 100%; and
- Altona will have control of the management of MMM in order to undertake the Monte Muambe Project.

Whether during the Interim Period, or after satisfaction of the Second Closing Conditions, the Monte Muambe Project will be undertaken in 3 phases:

- during Phase 1 Altona is required to expend US$400,000 in undertaking the Monte Muambe Project, and on incurring these costs, becomes entitled to an additional 19% of MMM, to take its holding to 20%;
- if Altona elects to proceed to Phase 2, during Phase 2 Altona is required to expend US$700,000 in undertaking the Monte Muambe Project and on incurring these costs, becomes entitled to an additional 31% of MMM, to take its holding to 51%; and
- if Altona elects to proceed to Phase 3, during Phase 3 Altona is required to expend US$2,000,000 in undertaking the Monte Muambe Project and on incurring these costs, becomes entitled to an additional 19% of MMM, to take its holding to 70%.

In addition to incurring the costs above in the Monte Muambe Project, Altona is required at certain points during the Monte Muambe Project, to issue up to 3,000,000 Consideration Shares to the Sellers and to make certain cash payments to the Sellers as follows:

PHASE	**DATE**	**CONSIDERATION**
Phase 1	Within 5 business days of the satisfaction of the First Closing Conditions.	£40,000.00
Phase 1 extension, should Altona have notified the Sellers of its wish to extend Phase 1 by 10 months, prior to the end of initial Phase 1 period.	Within 5 business days of the notification that Altona wishes to extend Phase 1.	£40,000.00
Phase 2, should Altona wish to proceed to Phase 2.	Within 5 business days of the Phase 1 Completion Notice date.	£40,000.00 Issue to the Sellers of 1,000,000 Shares
Phase 2 extension, should Altona have notified the Sellers of its wish to extend Phase 2 by 12 months, prior to the end of initial Phase 2 period.	Within 5 business days of the notification that Altona wishes to extend Phase 2.	£40,000.00
Phase 3, should Altona wish to proceed to Phase 3.	Within 5 business days of the Phase 2 Completion Notice.	£40,000.00 Issue to the Sellers of 1,000,000 Shares
	6 months from the date of the Phase 2 Completion Notice.	£40,000.00
	12 months from the date of the Phase 2 Completion Notice.	£40,000.00
	18 months from the date of the Phase 2 Completion Notice.	£40,000.00
Phase 3 extension, should Altona have notified the Sellers of its wish to extend Phase 3 by 12 months, prior to the end of initial Phase 3 period.	Within 5 business days of the notification that Altona wishes to extend Phase 3.	£40,000.00
	6 months from the date of the Phase 3 extension notification.	£40,000.00
	Within 5 business days of the Phase 3 Completion Notice.	Issue to the Sellers of 1,000,000 Shares

On 26 October 2022, INAMI formally notified MMM in writing that the Minister, MIREME, approved the renewal of the Licence and its transfer from UIL to MMM. MMM has since then fulfilled the requirements of the INAMI notification, including the payment of required transfer, registration, and annual surface taxes. License 7573L is now displayed on the Mozambique Mining Cadastre as held by MMM, being valid, and expiring on 22 May 2025.

The Licence grants the exclusive right to MMM to explore for fluorite, rare earths and associated minerals in an area known as Monte Muambe.

20.10 **Directors Lock-In and Orderly Marketing Agreements**

Each Director and the Senior Manager has entered into a lock-in and orderly marketing agreement with the Company and Optiva dated 30 May 2023 pursuant to which each Director and the Senior Manager has agreed to the following lock-in restrictions and orderly market arrangements in respect of the Shares held by them (directly or indirectly) on the Listing Date or subsequently acquired after the Listing Date:

(a) they shall not, for a period of 12 months from the Listing Date, dispose of such Shares. This 12-month period has now expired and so the holdings of the Directors and Senior Manager are subject only to the orderly marketing requirements set out in (b) below;

(b) for a further 12 months thereafter agreed to only dispose of such Shares after the Company's Broker has been given an exclusive opportunity to place such shares (on specified minimum pricing terms);

In aggregate, under the lock-in agreements referred to in this paragraph 20.10 of this Part VII a total of 14,924,478 Shares representing approximately 9.16 per cent. of the Enlarged Issued Share Capital will be subject to a 12 month orderly market obligations following the first anniversary of the Listing Date.

20.11 **Convertible Loan Notes, CLN Warrants, and CLN Broker Warrants**

The Company created a convertible loan note by an instrument dated 1 February 2023 in the principal amount of £300,000. £275,000 of which was initially subscribed for by Optiva Securities Limited ("**Loan Notes**"). The Loan Notes have been amended by way of written resolution of Noteholders in June 2024. The Loan Notes, as amended, carry a rate of interest of 15% per annum, which interest shall accrue daily on the principal amount of the Loan Notes. Interest is payable to the noteholder in cash twice a year in July and January. The Loan Notes have a maturity date of 15 months from the date of creation of the Loan Notes, unless earlier redeemed in accordance with their terms. The noteholder has a right to convert the Loan Notes into Ordinary Shares at 1 pence per Ordinary Share. The Loan Notes are freely transferrable. Conversion notices have been received from Noteholders holding 96% of the Loan Notes

The Company has created the CLN Warrant Instrument pursuant to which the Company has granted the Loan Note holder warrants over 11,000,000 Shares ("**CLN Warrants**"). The CLN Warrant Instrument has been amended to provide for the CLN Warrants to be exercisable until 31 December 2025 exercisable at 5 pence.

The Company has created the CLN Broker Warrant Instrument pursuant to which in connection with the subscription for the Loan Notes, the Company will grant the Broker warrants over 550,000 Shares which will be exercisable for a period of two years from the date of grant of the warrants, exercisable at 5 pence ("**CLN Broker Warrants**").

20.12 **Debt Facility Agreement ("CCL Second Facility")**

On 20 December 2023, the Company entered into a further debt facility agreement, as amended on 30 March 2024 with Catalyse Capital Limited ("CCL") enabling the Company to drawdown up to £250,000. The CCL Second Facility has been amended and restated as of 27 June 2024 and provides for the loan to be repaid on 30 October 2025. If the Company seeks to raise additional financing and such financing is to be secured, the loan under the CCL Second Facility will also be secured. The loan carries a fixed interest rate of 12% on the full commitment amount (regardless of any prepayment) which is to be paid on the final

repayment date; provided that CCL may elect to receive the interest in Ordinary Shares at the Issue Price. As part of the Subscription, £70,000 of the principal of the loan was converted into 7,000,000 Ordinary Shares.

20.13 **Subscription Letters**

The Company has entered into a number of subscription letters, substantially in the same form, pursuant to which certain persons have subscribed for the Subscription Shares at the Issue Price pursuant to the Subscription. The letters provide for the Subscription to be conditional on the publication of this Document and the execution of the Loan Facility Agreements described in paragraphs 20.16 and 20.17 of this Part VII. The subscribers give certain warranties and confirmations to the Company.

20.14 **Kabompo South Project**

The Company has entered into a sale and purchase agreement and a deed of assignment, novation and amendment, each dated 27 March 2024, pursuant to which it has acquired from Sustineri Group Limited ("Sustineri"), all of its rights, obligations and interest in a term sheet entered into by Sustineri as buyer and Kevon Bonel and Steven Bonel as the sole shareholders ("Sellers") of the entire issued share capital of Phelps Dodge Mining (Zambia) Limited ("PDMZ"), such term sheet dated 12 May 2021, as amended by the deed of assignment, novation and amendment ("Term Sheet"). In consideration for the assignment of the Term Sheet by Sustineri was paid £40,000, which was utilised by Sustineri to subscribe for 800,000 Ordinary Shares with a subscription price of £0.05. The Term Sheet grants a binding right of exclusivity to acquire PDMZ from the Sellers, subject to agreeing the terms of an acquisition agreement, with terms consistent with the Term Sheet. To acquire PDMZ the Company will be required to make the following payments:

(a) Subject to paragraph (b) below:

(i) US$40,000 on the later of (i) the date of completion of the acquisition of PDMZ and (ii) renewal of the Kabompo South Licence; and (ii) US$150,000 within 12 months of the later of (i) the date of completion of the acquisition of PDMZ and (ii) the date of renewal of the Kabompo South Licence, such amount to be settled in cash or by the issuance of Ordinary Shares in the capital of the Company ("Consideration Shares") to the Sellers, in such proportions as determined by the Company.

Any Consideration Shares issued shall be issued at the 30 day volume-weighted average price of the Consideration Shares up to the date immediately prior to the issuance of such Consideration Shares.

(b) The Company shall, to the extent that it considers appropriate and in its sole discretion, assist the Sellers in maintaining the Kabompo South Licence in good standing and ensuring that PDMZ has good and marketable title to the Kabompo South Licence. In providing this assistance, the Company may, at its election, agree to fund certain costs, including costs of due diligence, licence fees and other payments due in respect of the Kabompo South Licence, as well as costs and fees to implement the acquisition (Cost Contributions). In the event that the Company makes any Cost Contributions to the Sellers and PDMZ, the consideration in paragraph (a) above shall be reduced by an equivalent amount, first against the payment to be made under paragraph (a) (i), and secondly against the payment to be made under paragraph (a)(ii).

20.15 **Sesana Project, Botswana**

The Company has entered into a binding option agreement dated 5 April 2024 ("Option Agreement") with Ignate African Minerals (Pty) Limited, a company incorporated in Botswana ("IAM"). Ignate is the holder of a prospecting licence No. PL2329/2023 granted on 1 April, with an initial term of 3-years ("Tenement"). The Option Agreement grants the Company a 60-day exclusivity period to carry out due diligence and to enter into a binding farm-in agreement. The Company paid an exclusivity fee of US$10,000 and could extend the 60-day period for an additional 30-days on payment of an additional US$5,000. On 3 July 2024 the

Company and IAM entered into an addendum extending the exclusivity period to 17 July 2024 upon payment of US$2,500 to IAM. On 17 July 2024, the Company and IAM entered into a further addendum extending the exclusivity period to 15 August 2024 upon an additional payment of US$5,000 to IAM. In addition, the Company also agreed to advance to IAM upon signing of the addendum the cash payment of US$10,000 that would have been required to be paid within five business days of the Tenement having been transferred to the new Altona subsidiary ("SPV") that will be established pursuant the farm-in agreement. In consideration for IAM transferring the Tenement to the SPV IAM will be issued with a 49% holding in the SPV. The SPV will have a board of directors controlled by Altona, subject to certain matters requiring the consent of Ignate. The farm-in agreement will provide for 3 earn-in periods of 12-months, 18-months and a further 18-months during which the Company shall undertake certain stated work programmes at its sole cost. Within five business days of the transfer of the Tenement to the SPV having being completed the first earn in period shall commence and the Company shall issue IAM with Ordinary Shares valued at US$50,000. At the end of the second earn-in period, the Company will make a cash payment of US$50,000 to IAM and issue IAM with Ordinary Shares valued at US$100,000 in consideration for the transfer of shares in the SPV equal to a 19% interest. At the end of the third earn-in period, the Company will make a cash payment of US$50,000 to IAM and issue IAM with Ordinary Shares valued at US$100,000 in consideration for the transfer of shares in the SPV equal to a 15% interest to give the Company a total holding of 85% of the capital of the SPV.

20.16 **Tracarta Loan Facility Agreement**

The Company has entered into a loan facility agreement with Tracarta Ltd ("**Tracarta**") dated 27 June 2024 pursuant to which Tracarta will make available a total commitment of £600,000 to the Company. This amount will be disbursed by Tracarta over 8 monthly instalments of £75,000 each from 1 July 2024. This loan is non-convertible and will have a fixed interest rate of 12%, with a maturity date of 30 October 2025. The debt facility agreement requires the Company to create a warrant instrument over 105,000,000 warrants for Ordinary Shares, with an exercise price of 1.5 pence per Ordinary Share and an exercise period of 4 years, subject to the Company passing the Resolutions at the General Meeting. The proceeds from the exercise of the warrants will be used in priority to repay the debt facility.

20.17 **Jennings Loan Facility Agreement**

The Company has entered into a debt facility agreement with Richard Jennings ("Jennings") dated 27 June 2024 pursuant to which Jennings will make available a total commitment of £300,000 to the Company. This amount will be disbursed by Jennings over 8 monthly instalments of £37,500 each from 1 July 2024. This loan is non-convertible and will have a fixed interest rate of 12%, with a maturity date of 30 October 2025. The debt facility agreement requires the Company to create a warrant instrument over 30,000,000 warrants for Ordinary Shares, with an exercise price of 1.5 pence per Ordinary Share and an exercise period of 4 years, subject to the Company passing the Resolutions at the General Meeting. The proceeds from the exercise of the warrants will be used in priority to repay the debt facility.

21 General financial matters

21.1 PKF Littlejohn, LLP resigned as auditor on 14 December 2019 and Jeffreys Henry LLP was appointed as auditor on 15 December 2019 following the Company's move from AIM to the NEX Growth Exchange (now the AQSE Growth Market).

Jeffreys Henry LLP resigned as auditor and PKF Littlejohn, LLP was appointed as auditor on 22 March 2021 following the decision made by the Company to move from the AQSE Growth Market to the Standard Segment of the London Stock Exchange.

21.2 There are no effects on the assets and liabilities of the Company as a result of Admission, save for the increase to its assets to the value of the Net Proceeds.

22 Other information

22.1 There are no governmental, legal or arbitration proceedings (including any such proceedings which are pending or threatened, of which the Company is aware), during the period covering at least the previous 12 months prior to the date of this Document which may have, or have had in the recent past, significant effects on the Company's and/or the Group's financial position or profitability.

22.2 Other than as disclosed in this Document, there are no patents, licences or other intellectual property rights, industrial, commercial or financial contracts or new manufacturing processes which are or may be of material importance to the business or profitability of the Group.

22.3 Other than as disclosed in this Document, the Company has made no investments since 23 June 2021, has no investments in progress and there are no future investments on which the Directors have already made firm commitments which are or may be significant to the Company.

22.4 No exceptional factors have influenced the Group's activities.

22.5 The expenses of the Admission of the Subscription Shares and the Fundraising are estimated at £98,270 and are payable by the Company, excluding amounts to be satisfied by the issue of new Shares. The estimated Net Proceeds of the Fundraise, after deducting fees and expenses in connection with the Admission and the Fundraising are approximately £1,195,730.

22.6 PKF Littlejohn LLP, whose registered address is 15 Westferry Circus, London E14 4HD, has given and not withdrawn its written consent to the inclusion of the use of their name in this Document in the form and context in which it is included. PKF Littlejohn LLP is registered to carry out audit work by the Institute of Chartered Accountants in England and Wales and the Financial Reporting Council.

22.7 Snowden-Optiro, whose business address is Level 19/140 St Georges Terrace, Perth WA 6000, Australia, has given and not withdrawn its written consent to the inclusion, in this Document, of the Competent Persons Report set out in Part III in the form and context in which it is included and has authorised the contents of the report. In addition, Snowden-Optiro has given and not withdrawn its written consent to the issue of this Document with the inclusion herein of the references to its name in the form and context in which they appear. The Company confirms that there are no material changes which have occurred since the date of the Competent Person's Report the omission of which would make the Competent Person's Report misleading.

22.8 Except for the industry trends described in this Document, there are no trends, uncertainties, demands, commitments or events that are reasonably likely to have a material effect on the Company's prospects for at least the current financial year.

22.9 There have been no public takeover bids by third parties in respect of the Shares during the period from incorporation to the date of this Document.

22.10 There are currently no Shares in issue, and no Shares will be in issue on Admission, with a fixed date on which entitlement to a dividend arises and there are no arrangements in force whereby future dividends are waived or agreed to be waived.

22.11 The Subscription Shares represent 24.17 per cent. of the Enlarged Share Capital and Voting Rights of the Company immediately following Admission. Following Admission, the issued Shares and Voting Rights of the existing Shareholders shall (assuming that they do not participate in the Fundraising) represent 53.23 per cent. of the Enlarged Share Capital of the Company.

22.12 The Subscription was offered to Subscribers on a non-pre-emptive basis and therefore the existing Shareholders did not have any entitlement to participate in the Subscription.

22.13 Copies of the following documents will be published in electronic form and be available on the Company's website www.altonaRE.com and made available for inspection during normal office hours on any weekday (Saturdays, Sundays and public holidays excepted) at the registered office of the Company, for the period of 12 months following the date of this Document:

(i) the Articles; and

(ii) the historical financial information of the Company as referenced in Part V (*Historical Financial Information*) of this Document.

22.14 Following publication a copy of this document will be available for viewing free of charge at the FCA's National Storage Mechanism at https://data.fca.org.uk#/nsm/nationalstoragemechanism.

22.15 In addition, this Document will be published in electronic form and be available, subject to certain access restrictions applicable to persons located or resident outside the United Kingdom, and free to download from the date of publication from the Company's website at www.altonaRE.com.

PART VIII

NOTICE TO INVESTORS

The distribution of this Document may be restricted by law in certain jurisdictions and therefore persons into whose possession this Document comes should inform themselves about and observe any restrictions, including those set out below. Any failure to comply with these restrictions may constitute a violation of the securities laws of any such jurisdiction.

General

No action has been or will be taken in any jurisdiction that would permit a public offering of the Ordinary Shares, or possession or distribution of this Document or any other offering material in any country or jurisdiction where action for that purpose is required. Accordingly, the Ordinary Shares may not be offered or sold, directly or indirectly, and neither this Document nor any other offering material or advertisement in connection with the Ordinary Shares may be distributed or published, in or from any country or jurisdiction except under circumstances that will result in compliance with any and all applicable rules and regulations of any such country or jurisdiction. Any failure to comply with these restrictions may constitute a violation of the securities laws of any such jurisdiction. This Document does not constitute an offer to subscribe for any of the Ordinary Shares offered hereby to any person in any jurisdiction to whom it is unlawful to make such offer or solicitation in such jurisdiction.

No arrangement has however been made with the competent authority in any other EEA state (or any other jurisdiction) for the use of this Document as an approved prospectus in such jurisdiction and accordingly no public offer is to be made in such jurisdiction. Issue or circulation of this Document may be prohibited in countries other than those in relation to which notices are given below. This Document does not constitute an offer to sell, or the solicitation of an offer to subscribe for, or buy, shares in any jurisdiction in which such offer or solicitation is unlawful.

The distribution of this Document in other jurisdictions may be restricted by law and therefore persons into whose possession this Document comes should inform themselves about and observe any such restrictions.

INVESTORS IN THE UNITED KINGDOM

This Document has been approved by the FCA, as competent authority under the UK Prospectus Regulation. The FCA only approves this Document as meeting the standards of completeness, comprehensibility and consistency imposed by the UK Prospectus Regulation. Such approval should not be considered as an endorsement of the securities that are the subject of the prospectus. Investors should make their own assessment as to the suitability of investing in the securities.

This Document has been filed with the FCA and made available to the public in accordance with Rule 3.2 of the Prospectus Regulation Rules. In relation to the United Kingdom, no Subscription Shares have been offered or will be offered pursuant to the Fundraising to the public in the United Kingdom prior to the publication of the Prospectus has been approved by the FCA, except that the Offer Shares may be made to the public in the United Kingdom at any time:

a) to any legal entity which is a qualified investor as defined under Article 2 of the UK Prospectus Regulation;

b) to fewer than 150 natural or legal persons (other than qualified investors as defined under the UK Prospectus Regulation), subject to obtaining the prior consent of Novum for any such offer; or

c) in any other circumstances falling within Section 86 of the FSMA, provided that no such offer of the Subscription Shares shall require the Company or Novum to publish a prospectus pursuant to Section 85 of the FSMA or supplement a prospectus pursuant to Article 23 of the UK Prospectus Regulation.

Each person in the United Kingdom who acquires any Subscription Shares in the Fundraising or to whom any offer is made will be deemed to have represented, acknowledged and agreed to and with the Company and Novum that it is a qualified investor within the meaning of the UK Prospectus Regulation.

In the case of any Subscription Shares being offered to a financial intermediary as that term is used in Article 5(1) of the UK Prospectus Regulation, each such financial intermediary will be deemed to have represented, acknowledged and agreed to and with the Company and Novum that the Subscription Shares acquired by it in the Fundraising have not been acquired on a non-discretionary basis on behalf of, nor have they been acquired with a view to their offer or resale to, persons in circumstances which may give rise to an offer to the public other than their offer or resale in the United Kingdom to qualified investors, in circumstances in which the prior consent of the Banks has been obtained to each such proposed offer or resale. Neither the Company nor Novum have authorised, nor do they authorise, the making of any offer of Subscription Shares through any financial intermediary, other than offers made by Novum which constitute the final placement of Subscription Shares contemplated in this document.

The Company and Novum and their affiliates will rely upon the truth and accuracy of the foregoing representations, acknowledgements and agreements.

For the purposes of this provision, the expression an "offer to the public" in relation to the Subscription Shares in the United Kingdom means the communication in any form and by any means of sufficient information on the terms of the offer and any Shares to be offered so as to enable an investor to decide to purchase or subscribe for any Shares and the expression.

INVESTORS IN THE EUROPEAN ECONOMIC AREA

In relation to each member state of the European Economic Area ("EEA") (each a "Member State"), no Subscription Shares have been offered or will be offered pursuant to the Subscription to the public in that Member State prior to the publication of a prospectus in relation to the Subscription Shares which has been approved by the competent authority in that Member State or, where appropriate, approved in another Member State and notified to the competent authority in that Member State, all in accordance with the Prospectus Regulation, except the Subscription Shares may be offered to the public in that Member State at any time:

(i) to any legal entity which is a qualified investor as defined under Article 2 the Prospectus Regulation;

(ii) to fewer than 150 natural or legal persons (other than qualified investors as defined under Article 2 of the Prospectus Regulation) subject to obtaining the prior consent of the Joint Global Coordinators for any such offer; or

in any other circumstances falling within Article 1(4) of the Prospectus Regulation, provided that no such offer of Offer Shares shall require the Company or any Bank to publish a prospectus pursuant to Article 3 of the Prospectus Regulation or supplement a prospectus pursuant to Article 23 of the Prospectus Regulation.

Each person in a Member State who acquires any Subscription Shares in the Subscription or to whom any offer is made will be deemed to have represented, acknowledged and agreed to and with the Company and Novum that it is a qualified investor within the meaning of the Prospectus Regulation.

In the case of any Subscription Shares being offered to a financial intermediary as that term is used in Article 5(1) of the Prospectus Regulation, each such financial intermediary will be deemed to have represented, acknowledged and agreed to and with the Company and Novum that the Subscription Shares acquired by it in the offer have not been acquired on a non-discretionary basis on behalf of, nor have they been acquired with a view to their offer or resale to, persons in circumstances which may give rise to an offer to the public other than their offer or resale in a Member State to qualified investors, in circumstances in which the prior consent of Novum has been obtained to each such proposed offer or resale. Neither the Company nor Novum has authorised, nor do they authorise, the making of any offer of Subscription Shares through any financial intermediary, other than offers made by Novum which constitute the final placement of Subscription Shares contemplated in this document.

The Company and Novum and their affiliates will rely upon the truth and accuracy of the foregoing representations, acknowledgements and agreements.

In this context, the expression "an offer to the public" in relation to any Subscription Shares in any Member State means the communication in any form and by any means of sufficient information on

the terms of the Fundraising and any Subscription Shares to be offered so as to enable an investor to decide to purchase, or subscribe for, any Subscription Shares.

NOTICE TO OVERSEAS SHAREHOLDERS

An Overseas Shareholder may not be able to enforce a judgment against some or all of the Directors and executive officers. The Company is incorporated under the laws of England and Wales and a number of the Directors are residents of either Canada or the United Kingdom. Consequently, it may not be possible for an Overseas Shareholder to effect service of process upon the Directors within the Overseas Shareholder's country of residence or to enforce against the Directors judgments of courts of the Overseas Shareholder's country of residence based on civil liabilities under that country's securities laws. There can be no assurance that an Overseas Shareholder will be able to enforce any judgments in civil and commercial matters or any judgments under the securities laws of countries other than the UK against the Directors who are residents of either Canada or the United Kingdom or countries other than those in which judgment is made. In addition, English or other courts may not impose civil liability on the Directors in any original action based solely on the foreign securities laws brought against the Company or the Directors in a court of competent jurisdiction in England or other countries.

NOTICE TO ALL SHAREHOLDERS

Copies of this document will be available on the Company's website, www.altonare.com from the date of this document until the date which is one month from the date of Admission.

INFORMATION TO DISTRIBUTORS

Solely for the purposes of the product governance requirements of Chapter 3 of the FCA Handbook Product Intervention and Product Governance Sourcebook (the "**UK Product Governance Requirements**"), and disclaiming all and any liability, whether arising in tort, contract or otherwise, which any "manufacturer" (for the purposes of the UK Product Governance Requirements) may otherwise have with respect thereto, the Ordinary Shares have been subject to a product approval process, which has determined that such Ordinary Shares are: (i) compatible with an end target market of retail investors and investors who meet the criteria of professional clients and eligible counterparties, each defined in paragraph 3 of the FCA Handbook Conduct of Business Sourcebook; and (ii) eligible for distribution through all permitted distribution channels (the "**Target Market Assessment**"). Notwithstanding the Target Market Assessment, "distributors" should note that: the price of the Ordinary Shares may decline and investors could lose all or part of their investment; the Ordinary Shares offer no guaranteed income and no capital protection; and an investment in the Ordinary Shares is compatible only with investors who do not need a guaranteed income or capital protection, who (either alone or in conjunction with an appropriate financial or other adviser) are capable of evaluating the merits and risks of such an investment and who have sufficient resources to be able to bear any losses that may result therefrom. The Target Market Assessment is without prejudice to any contractual, legal or regulatory selling restrictions in relation to the Fundraising. Furthermore, it is noted that, notwithstanding the Target Market Assessment, Novum will only procure investors who meet the criteria of professional clients and eligible counterparties. For the avoidance of doubt, the Target Market Assessment does not constitute: (a) an assessment of suitability or appropriateness for the purposes of Chapter 9A or 10A respectively of the FCA Handbook Conduct of Business Sourcebook; or (b) a recommendation to any investor or group of investors to invest in, or purchase, or take any other action whatsoever with respect to the Ordinary Shares. Each distributor is responsible for undertaking its own target market assessment in respect of the Ordinary Shares and determining appropriate distribution channels.

19 July 2024

DEFINITIONS

The following definitions apply throughout this Document, unless the context requires otherwise:

"Acquisition"	an acquisition to be identified and undertaken by the Company following Admission;
"Act" or **"Companies Act"**	the Companies Act 2006 (as amended);
"Admission"	the admission of the New Ordinary Shares to trading on the LSE's main market for listed securities;
"AIM"	the AIM, a market of the London Stock Exchange;
"Allenby Capital"	Allenby Capital Limited, a private limited company incorporated in England and Wales with number 06706681;
"Articles"	the articles of association of the Company for the time being;
"AQSE"	the Aquis Stock Exchange, a Recognised Investment Exchange under FSMA;
"CCL Second Facility"	the debt facility agreement as described in paragraph 20.12 of Part VII of this Document;
"CCL Conversion Shares"	the 7,000,000 new Ordinary Shares to be issued to CCL on conversion pursuant to the CCL Second Facility;
"CCL Warrants"	the warrants as described in paragraph 20.7(c) of Part VII of this Document;
"CCL Warrants 2"	the warrants as described in paragraph 20.7(g) of Part VII of this Document;
"City Code"	the UK City Code on Takeovers and Mergers;
"CLN Broker Warrants"	the 550,000 warrants pursuant to the terms of the CLN Broker Warrant Instrument;
"CLN Conversion Shares"	the 26,300,000 Shares to be issued on conversion under the CLN;
"CLN Broker Warrant Instrument"	the warrant instrument created by the Company as more particularly described in paragraph 20.7(f) of Part VII "Additional Information" of this Document;
"CLN Warrant Instrument"	the warrant instrument created by the Company as more particularly described in paragraph 20.7(d) of Part VII "Additional Information" of this Document;
"CLN Warrants"	the 11,000,000 warrants granted pursuant to the terms of the CLN Warrant Instrument;
"Company" or **"Altona"**	Altona Rare Earths Plc a company incorporated with limited liability in England and Wales under the Companies Act 1985 on 2 February 2005, with number 05350512
"Company Financial Information"	the audited financial information of the Company for the period from 1 July 2020 to 30 June 2023 included in Part V;
"Connected Person(s)"	connected persons (within the meaning of section 252 of the Act);
"Consideration Shares"	the Ordinary Shares which may be issued pursuant to the Projects up to a maximum of 42,000,000 Shares;
"Convertible Loan Notes" or **"CLNs"** or **"Loan Notes"**	the convertible loan note created by the Company in the principal amount of £300,000, £275,000 of which has been subscribed for by Optiva, further details of which are set out in paragraph 20.11 of Part VII of this Document;

"Costs"	total expenses incurred (or to be incurred) by the Company in connection with the Fundraising and Admission of the Company totalling approximately £98,270;
"CREST"	the relevant system (as defined in the CREST Regulations) for paperless settlement of share transfers and holding shares in uncertificated form which is administered by Euroclear;
"CREST Regulations"	the Uncertified Securities Regulations 2001 (SI 2001 No. 3755), as amended;
"CRM"	Critical Raw Materials, defined as raw materials, mostly minerals, that are considered strategic to the EU's' economy and that have high supply risk
"Deferred Shares"	together the 1,411,956,853 deferred shares of £0.0009 each and 1,602,434 deferred shares of 9 pence each in issue in the capital of the Company;
"Directors" or **"Board"** or **"Board of Directors"**	The directors of Altona whose names are set out in "Part II – Directors, Senior Management, Consultants and Corporate Governance" or the Board of Directors of the Company from time to time, as the context requires, and "Director" shall be construed accordingly;
"Disclosure Guidance and Transparency Rules" or **"DTR"**	the Disclosure Guidance and Transparency Rules made by the FCA pursuant to section 73A of the FSMA, as amended from time to time;
"Document"	this prospectus;
"Enlarged Issued Share Capital" or **"Enlarged Share Capital"**	the Existing Share Capital of the Company together with the New Ordinary Shares;
"equity securities"	shares, or rights to subscribe for or to convert into shares;
"Equity Shares (Transition) category"	the new listing category replacing the Standard Listing category with effect from 29 July 2024 in accordance with Listing Rules Instrument 2024 (FCA 2024/23) under Chapter 22 of the UKLR;
"ESCC" or **"ESCC Listing"**	the new equity shares in commercial companies segment of the Official List with effect from 29 July 2024 under the UKLR;
"EU IFRS"	International Financial Reporting Standards adopted pursuant to Regulation (EC) No 160/2002 as it applies in the European Union;
"Euro" or **"€"**	Euro, a unit of currency;
"Euroclear"	Euroclear UK & Ireland Limited, a company incorporated under the laws of England and Wales;
"Existing Share Capital' or **"Existing Shares"**	the 86,767,107 Shares in issue immediately preceding Admission;
"FCA"	the UK Financial Conduct Authority;
"Fee Shares"	the 3,548,759 Ordinary Shares to be issued to certain Directors in lieu of fees and various other creditors;
"Fully Diluted Holding"	means at Admission diluted as a result of the exercise in full of all the Warrants (including Piggyback Options, the New Loan Facility Warrants and the New CCL Warrants) and assuming the passing of the Resolutions;
"Fundraising" or **"Fundraise"**	together, the New Loans and the Subscription;
"FSMA"	the Financial Services and Markets Act 2000, as amended;

"Gross Proceeds"	£1,294,000, being the funds received in relation to the Fundraising before Costs;
"Group"	the Company and its subsidiaries;
"HMRC"	HM Revenue and Customs;
"IAM"	Ignate African Minerals (Pty) Limited, a company incorporated in Botswana with registration number UIN BW00004543991;
"INAMI"	the Instituto Nacional de Minas, being the mining regulatory authority, responsible for publishing guidelines for the participation of the public and private sector in the research, exploration, treatment, export and import of mining products and their derivatives in Mozambique;
"IPO Broker Warrants"	the 2,012,760 warrants to subscribe for Shares in the Company granted under the Optiva Warrant Instrument, as more particularly described in paragraphs 20.6 and 20.7 of Part VII *"Additional Information"* of this Document;
"Investor"	means a person who purchases, considers the purchase or holds Shares in the Company;
"Issue Price"	1 pence per Ordinary Share;
"Jennings Loan Facility Agreement"	the loan facility agreement with Richard Jennings details of which are set out in paragraph 20.17 of Part VII of this Document;
"Kabompo South Project"	the prospecting, development and mining activities on the Kabompo South Licence and on any future prospecting licence or mining licences held by the Company over the Kabompo South Licence area, including post-mining rehabilitation and abandonment activities;
"Kabompo South Licence"	the Large Scale Exploration Licence 21403-HQ-LEL, granted by the Government of Zambia and currently in the process of being renewed for a further 3 years term, having a surface area of about 616 km^2, valid for copper, cobalt, nickel, lead, zinc, gold and diamonds, and located in Mufumbe District of Northwestern Province, Zambia;
"Listing Date"	9 June 2023, being the date on which the Shares were first admitted to the Official List, by way of a Standard Listing, and to trading on the LSE's main market for listed securities;
"Listing Rules" or **"LR"**	until 28 July 2024, the listing rules made by the FCA pursuant to section 73A of FSMA, as amended from time to time;
"London Stock Exchange" or **"LSE"**	London Stock Exchange plc;
"Main Market"	the main market of the London Stock Exchange for officially listed securities;
"Market Abuse Regulations"	Regulation (EU) No 596 (2014 of the European Parliament and of the Council on market abuse) as amended by The Market Abuse (Amendment) (EU Exit) Regulations 2019;
"Mining Licence"	has the meaning given to it in paragraph 16.1 of Part I of this document;
"MMM"	Monte Muambe Mining, LDA, a company incorporated in the Republic of Mozambique;
"Monte Muambe Farmout Agreement" or **"Farmout Agreement"**	the farmout agreement entered into by the Company, Ussokoti Investimentos Sociedade Unipessoal, Limitada ("**UIL**"), MMM and the shareholders of MMM dated 23 June 2021;

"Monte Muambe Project"	the prospecting, development and mining activities on the Licence and on any future prospecting licence or mining licences held by the Company over the Mt Muambe mineral deposits, including post-mining rehabilitation and abandonment activities, and including but not limited to the activities envisaged in WP&Bs in respect of the Licence including Phase 1, Phase 2 and Phase 3 (as such terms are defined in the Monte Muambe Farmout Agreement);
"Monte Muambe Licence"	the Prospecting Licence 7573L, granted by the Government of Mozambique on 22 May 2017 and renewed up to 22 May 2025, for fluorite, rare earths and associated minerals, covering a surface area of 3,939.96 Ha, and associated Statutory Licences including but not limited to land rights (DUAT) as well as prospecting data, located in Tete Province, Mozambique;
"Net Proceeds"	£1,195,730 being the funds received or committed in relation to the Fundraising, less Costs;
"New CCL Warrants"	the 40,500,000 new Warrants to be granted to CCL under the Warrant instrument with CCL conditional upon passing of the Resolutions;
"New Loans" or **"New Loan Facility"**	the aggregate of £900,000 loan facilities made available to the Company under the New Loan Facility Agreements;
"New Loan Facility Agreements"	the Tracarta Loan Facility Agreement and the Jennings Loan Facility Agreement;
"New Loan Facility Warrants"	the 135,000,000 new Warrants required to be created under the New Loan Facility Agreements conditional upon passing of the Resolutions;
"New Ordinary Shares"	the 76,248,759 new Shares to be issued on Admission comprising the Subscription Shares, CLN Conversion Shares, CCL Conversion Shares and the Fee Shares;
"Official List"	the Official List of the FCA;
"Optiva" or **"Optiva Securities"**	Optiva Securities Limited, a private limited company incorporated in England and Wales with number 03068464;
"Optiva Broker Agreement"	the agreement between the Company and Optiva dated 15 February 2021 pursuant to which Optiva is appointed as broker;
"Optiva Warrant Instrument"	the warrant instrument created by the Company as more particularly described in paragraph 20.6 of Part VII "*Additional Information*" of this Document;
"PDMZ"	Phelps Dodge Mining (Zambia) Limited, the registered holder of Kabompo South Project and the Kabompo South Licence in Zambia;
"Performance Warrants"	up to 500,000 warrants to subscribe for Shares in the Company issued to Optiva under the Optiva Warrant Instrument, as more particularly described in paragraphs 20.6 and 20.7 of Part VII *"Additional Information"* of this Document;
"Piggyback Options"	up to 40,000,000 conditional options to subscribe for new Shares in the Company that may be granted to Subscribers in accordance with the terms of the Fundraising Warrant Instrument, as more particularly described in paragraph 20.7(e) of Part VII "*Additional Information*" of this Document;
"Premium Listing"	a listing on the Premium Listing Segment of the Official List under Chapter 6 of the Listing Rules;

"Projects"	together the Kabompo South Project, the Monte Muambe Project and the Sesana Project;
"Prospectus Regulation"	EU Regulation No 2017/1129 of the European Parliament and of the Council of 14 June 2017 on the prospectus to be published when securities are offered to the public or admitted to trading on a regulated market;
"Prospectus Regulation Rules"	the prospectus regulation rules made by the FCA pursuant to section 73A of the FSMA, as amended from time to time;
"QCA Code"	the Quoted Companies Alliance Corporate Governance Code 2018 published by the Quoted Companies Alliance (as amended from time to time);
"Rare Earth Elements" or **"REE"**	the series of 17 elements known as the Lanthanides, which include Yttrium and Scandium, that are further divided into Heavy and Light Rare Earths depending on their atomic weight;
"Registrar"	Share Registrars Limited;
"Regulatory Information Service"	a regulatory information service authorised by the UK Listing Authority to receive, process and disseminate regulatory information in respect of listed companies;
"Resolutions"	resolutions to be proposed at the next general meeting of the Company required to be passed by Shareholders in relation to the creation of the New Loan Facility Warrants and the New CCL Warrants;
"Reverse Takeover"	a transaction defined as reverse takeover under Listing Rule 5.6.4;
"Scoping Study"	the scoping study published on 18 October 2023 and included within the Competent Persons Report set out in Part III of this document;
"Securities Act"	the U.S. Securities Act of 1933, as amended;
"Senior Manager"	Christian Taylor-Wilkinson;
"Sesana Project"	the prospecting, development and mining activities on the Sesana Licence and on any future prospecting licence or mining licences held by the Company over the Sesana Licence area, including post-mining rehabilitation and abandonment activities;
"Sesana Licence"	the Prospecting Licence 2329/2023, granted by the Government of Botswana on 1 April 2023 and valid until 31 March 2026, after which it can be renewed twice for periods of up to 2 years each, having a surface area of about 274 km^2, valid for copper, cobalt, gold, silver, lead, zinc, aluminium, chromium, iron, titanium and platinum group metals, and located in Northern Province, Botswana;
"Shares" or **"Ordinary Shares"**	ordinary shares of 1 pence each in the Company;
"Shareholders"	holders of Shares;
"Standard Listing"	a Standard Listing under Chapter 14 of the Listing Rules on the Standard Segment of the Main Market of London Stock Exchange;
"Subscriber"	a party that agrees to subscribe for new Shares in the Subscription;
"Subscription"	the subscription for 39,400,000 new Ordinary Shares in the Company at the Issue Price on the terms set out in the Subscription Letters as detailed in paragraph 20.13 of Part VII of this document;

"Subscription Letters"	the subscription letters entered into by Subscribers pursuant to the Subscription as detailed in paragraph 20.13 of Part VII of this document;
"Subscription Shares"	the 39,400,000 new Ordinary Shares in the Company being issued at the Issue Price to the subscribers in the Subscription;
"Tracarta Loan Facility Agreement"	the loan facility agreement with Tracarta Limited as detailed in paragraph 20.16 of Part VII of this document;
"Sustineri"	Sustineri Group LTD, a company incorporated in England and Wales with company number 13134142 and whose registered office is at 27 High Street, Horley, England, RH6 7BH;
"Takeover Panel"	the UK Panel on Takeovers and Mergers;
"Transition Date"	29 July 2024, being the date the UKLR come into force;
"UK IFRS"	UK-adopted international accounting standards;
"UKLR"	from 29 July 2024, the new UK listing rules made by the FCA pursuant to FSMA, as amended from time to time;
"UK Prospectus Regulation"	means Prospectus Regulation (EU) 2017/1129 as it forms part of domestic law by virtue of the European Union (Withdrawal) Act 2018;
"UK Sterling" or **"£"**	Pound Sterling, the lawful currency of the United Kingdom;
"uncertified" or **"uncertified form"**	in relation to a share or other security, a share or other security, title to which is recorded in the relevant register of the share or other security concerned as being held in uncertificated form (that is, in CREST) and title to which may be transferred by using CREST;
"Uncertified Regulations"	the Uncertificated Securities Regulations 2006 (as amended or replaced from time to time);
"US Dollars" or **"$"**	United States Dollars, the lawful currency of the United States;
"Voting Rights"	all the voting rights attributable to the capital of a company which are exercisable at a general meeting;
"Warrants"	Warrants to subscribe for new Shares in the Company as granted by the Company prior to Admission, including, where the context admits, New Loan Facility Warrants and the New CCL Warrants (the creation of which are subject to the passing of the Resolutions).