

Vital outlines 2024 Exploration and Development Strategy for Nechalacho Rare Earths Project

Targeting Tardiff Scoping Study in H2 2024 to support a North American Rare Earths Supply Chain

Key Highlights

- Updated Tardiff Mineral Resource Estimate (**MRE**) near completion and due for release in Mar Qtr 2024
- Remaining results from 2023 exploration drilling to be released in early 2024 (34 holes)
- 2024 exploration drilling to focus on expanding shallow high-grade rare earth mineralization, and testing of undrilled lithium-bearing pegmatites
- New Vice President of Exploration to head detailed geological model revision and mineralogical and element deportment studies to inform resource modelling and hydrometallurgical flowsheet analysis
- Trade-off and characterization studies to examine benefits of selective mechanical sorting and flotation techniques; operations scalability potential also under assessment, due to Tardiff deposit's world class size
- Updated MRE for Tardiff is anticipated by Dec 2024, informed by new drilling results
- Tardiff Scoping Study continues; completion is anticipated by Dec Qtr 2024, with mine design to be informed by March Qtr MRE.

Vital Metals Limited (ASX: VML) ("**Vital**" or "**the Company**") is pleased to outline its 2024 plans which aim to demonstrate the economic potential of a larger scale production centre on its Nechalacho rare earths project in the Northwest Territories, Canada.

The Company enters the year with a new team and a solid balance sheet, with primary focus on maturing value on the Nechalacho rare earth project through the delivery of key exploration and development-related milestones in 2024.

Vital Metals Managing Director and CEO Geordie Mark commented, *"Vital is on track to deliver an exciting range of milestones for the world-class Nechalacho project over 2024. We are focused on delivering the first economic study on the upper Tardiff deposit, and this will be informed by a combination of detailed geological and process flowsheet work to augment and de-risk study outcomes. The geological potential of the area remains undertested and we aim to target the*

expansion potential of shallow higher-grade mineralization, as well as examine undrilled lithium-bearing pegmatites on the project area over the course of the year.

Vital believes Tardiff is a world-class rare earths asset, having both size and grade that offers a differential value proposition to operate at a material scale to build into a North American rare earths supply chain for multi-decades. The tabling of our new strategy for the conservative development of a large, longer life rare earths operation on Nechalacho provides us a template to engage with our local stakeholders where we envisage the potential of the project over the short and long-term.”

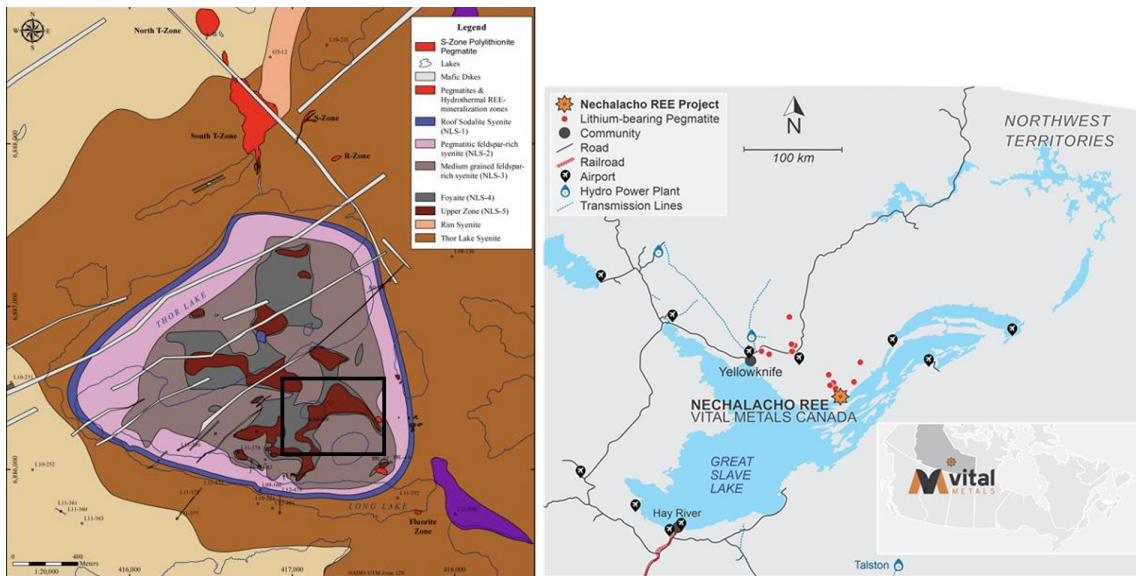


Figure 1: Left – A geological sketch map of the geology at Nechalacho (after Volker, 2016). The black box outline indicates the approximate area location of Vital’s 2023 drilling program.

Figure 2: Right – Regional location of Vital’s Nechalacho project in the Northwest Territories, Canada.

Nechalacho Exploration

Vital completed a 74-hole drill program at the Tardiff deposit in 2023 with results on 40 holes released. Results for 34 holes remaining outstanding and will be released throughout early 2024. To date, Vital’s 2023 drilling has revealed exciting results highlighting several areas of shallow, higher-grade mineralization that remain open for expansion (Figures 3 and 4). Areas to the west, northwest and south of the 2023 drill pattern are primary targets to test for expansion of shallow high-grade rare earth mineralization in a follow-up program planned for 2024.

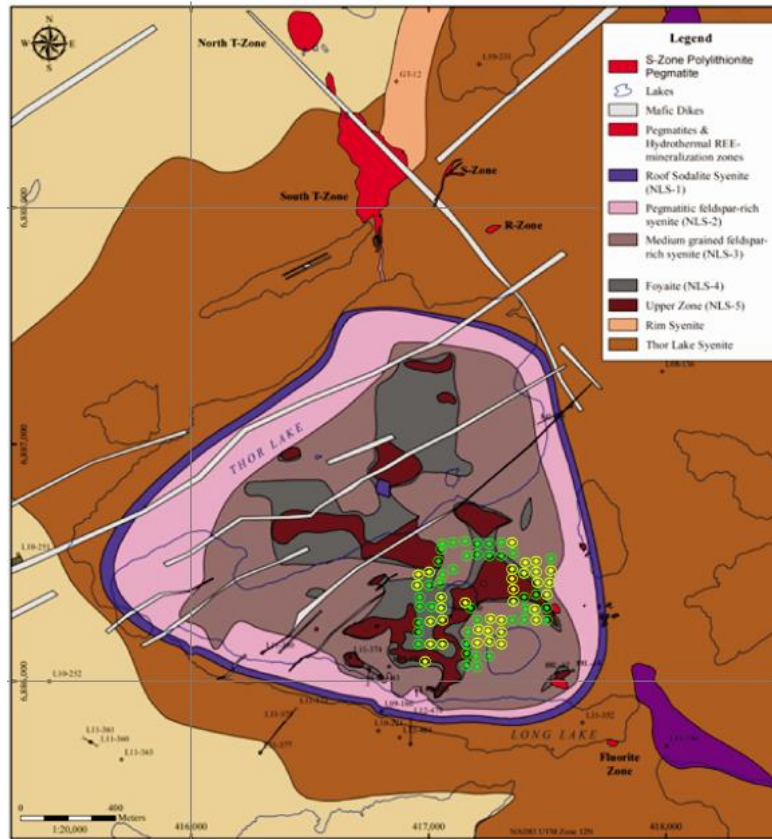


Figure 3: Tardiff Deposit Area showing drill hole locations of Vital’s 2023 drill program collars, with holes differentiated by colour to indicate results already reported (green), and those pending release (yellow). Geological underlay modified after Volker, 2016.

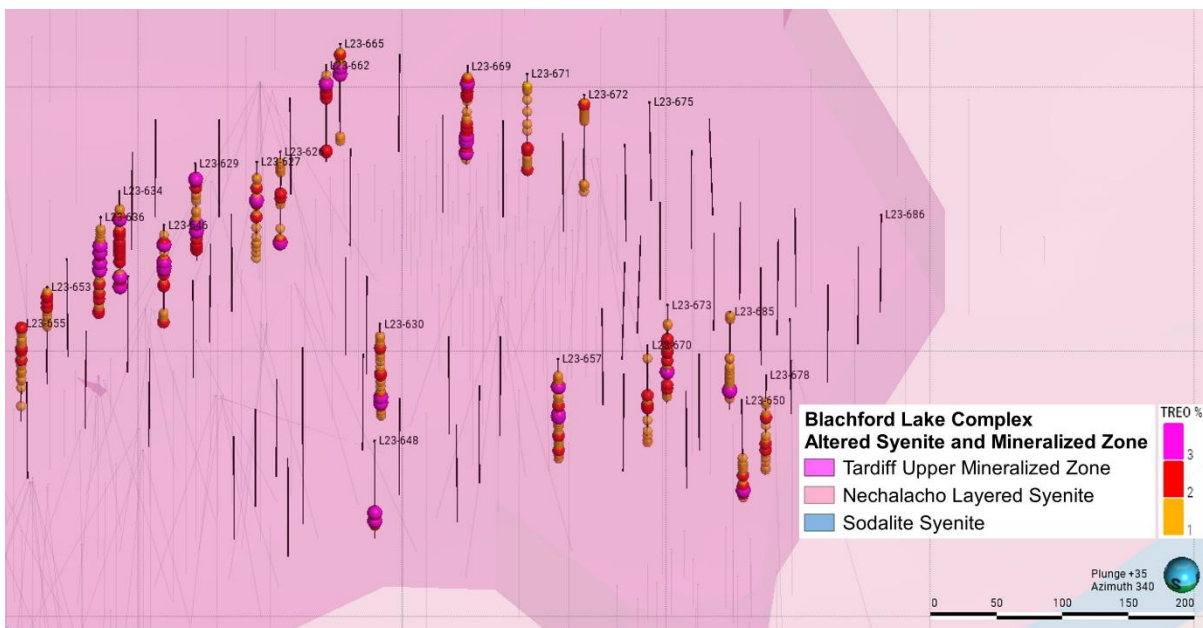


Figure 4: Projected drill strings highlighting (in colour) down-hole assays of 23 drillholes released in November 2023 from the 2023 drill program with a simplified geological underlay of the Blachford Lake Complex. Assay results: Yellow 1-2% TREO, Red 2-3% TREO and Fuchsia >3% TREO.

Vital's Vice President Exploration Natalie Pietrzak-Renaud said: *"We are pleased and encouraged with the continued positive results from Tardiff, which will inform our future drill targets and processing testwork. We look forward to integrating the results into our ongoing modelling and mineralogical studies to get a clear and comprehensive picture of our targeted LREE deposit metrics."*

Highlights from 2023 drilling at Tardiff:

- 81.85m at 1.6% TREO from 8.15m
- 33.45m at 2.2% TREO from 47.00m
- 31.76m at 2.1% TREO from 34.24m
- 23.85m at 2.0% TREO from 9.15m
- 15.50m at 2.7% TREO from 30.50m
- 14.00m at 2.8% TREO from 76.00m
- 20.45m at 2.2% TREO from 6.25m
- 38.25m at 1.7% TREO from 21.35m
- 56.00m at 1.2% TREO from 34.00m
- 85.40m at 1.6% TREO from 4.60m

Vital's 2024 exploration activities will include:

1) Continued exploration and definition drilling of the REE Tardiff resource

This work will look to test areas where high-grade mineralization remains open based on 2023 drill results and concurrently looked to heighten resource confidence via resource conversion

2) Exploration drilling of other higher-grade targets

This work will test other areas that show shallow higher-grade mineralization on Nechalacho to test for expansion potential and validate the geological model

3) Explore for and drill-test Li-bearing pegmatite-hosted targets

This work will look to drill-test lithium-bearing pegmatites on the project area, with field mapping to explore for outcropping lithium-bearing pegmatite swarms known to be distributed across the region: generally along north-south trending dyke swarms.

Drilling results released in 2023 and 2024 will be incorporated into a MRE update later in 2024, which will inform an open pit mine plan for a Tardiff scoping study planned for release in the Dec Qtr 2024.

As part of the 2024 exploration program and geological review process, Vital aims to mature its understanding of how-to best vector toward high grade domains within altered igneous complexes that could help identify other potential targets beyond the defined resource on Tardiff, as well as refine the process of understanding grade predictability. A key output from this year's work will be to refine the geological and metallurgical domains to identify the geological controls on REE distribution, and in particular deportment of Nd and Pr across the deposit. This integrated and augmented geological, mineralogical and chemical approach will aide in the formation of an optimized metallurgical domain model that allows for more predictive process flowsheet characterization and lower variability in feed composition.

Tardiff Scoping Study

This study represents an exciting opportunity for Vital to deliver the first assessment of the economic potential for the development of rare earth production from the LREE-rich Upper Tardiff deposit. Given the shallow nature of the mineralization and the scale of the system, Vital believes that Tardiff offers a differential quality of asset endowment with potential for operational scale and longevity from a single open-pit mining operation exploiting higher grade REE mineralization.

The Tardiff study will look at the various opportunities for project scale and scalability in the context of flowsheet design, aided by market analysis of revenue factors for various rare earth products.

Mineral Resource Estimates

Vital is nearing the completion of a pit-constrained MRE update on Tardiff that it expects to report in the Mar Qtr 2024 to update the previous resource estimate on Tardiff that comprises 119 Mt grading 1.40 % TREO (total).

Furthermore, an updated MRE on Tardiff is anticipated to be completed later in 2024 and is planned to include drill results released in 2023 and 2024, and comprise a revised geological model that also considers modified wireframes and mineralogical associations that better characterize differences between mineralized domains, altered host rock and primary intrusive rock types. This MRE will be employed to inform the mine plan design for the Tardiff Scoping Study expected to be released in the Dec Qtr 2024.

Processing

In the consideration of process design, Vital is very keen to apply adaptive instrumentation (e.g., sorting, sizing and chemistry) for effective minerals processing that marries best with the rock qualities and mineralogical character of the Tardiff deposit. Previous mineralogy work indicated carbonate minerals to be the dominant host of LREE. Zircon groups and other minerals are present, but not a deemed material host of HREE, or REE in general: somewhat in contrast to the HREE endowment of the basal zone. Initial studies conducted on Upper Tardiff (north Tardiff area) indicate flowsheet approaches to recover and concentrate the LREE predominantly hosted within carbonate minerals. Vital's strategy is to expand on initial work and carry out detailed ore characterization and deportment studies at successive stages of the workflow to evaluate and adapt a processing flowsheet design to maximize REE recovery and cost-benefit trade-offs.

Financing

Given the equity financing completed in December 2023, and the noted inventory sales agreement, the Company is positioned well to advance Tardiff towards its maiden scoping study.



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This announcement has been approved by the Board of Vital Metals Limited.

About Vital Metals

Vital Metals Limited (ASX: VML) is developing the large Nechalacho Rare Earth Project in Canada's Northwest Territories. Nechalacho has the potential to underpin a significant rare earths supply chain for North America with responsibly sourced critical minerals for the green economy transformation.

Qualified/Competent Persons Statement

Nechalacho Rare Earth Project

The information in this report relating to the Nechalacho Rare Earths Project is based on, and fairly represents, information and supporting documentation prepared for Vital Metals Limited by Dr. Natalie Pietrzak-Renaud. Dr. Pietrzak-Renaud is a Competent Person and a member of the Association of Professional Geoscientists of Ontario, Canada and a contract consultant for the Company. Dr. Pietrzak-Renaud has sufficient experience that is relevant to the style of mineralization and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the 'Australian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Dr. Natalie Pietrzak-Renaud consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

ASX Listing Rule Information

This announcement contains information relating to Mineral Resource Estimates in respect of the Nechalacho Project extracted from ASX market announcements reported previously and published on the ASX platform on 14 February 2023. The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcements and that all material assumptions and technical parameters underpinning the estimates in the original market announcements continue to apply and have not materially changed. The Mineral Resource estimate of 119.0Mt @ 1.4% TREO comprises 108.1Mt @ 1.39% TREO Inferred, 6.3Mt @ 1.45% TREO Indicated and 4.6Mt @ 1.59% TREO Measured.

This announcement contains information relating to Exploration Results extracted from ASX market announcements reported previously in accordance with the 2012 edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves" ("2012 JORC Code") and published on the ASX platform on 30 May 2023 and 21 November 2023. The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcements.

Forward Looking Statements

This release includes forward looking statements. Often, but not always, forward looking statements can generally be identified by the use of forward-looking words such as "may", "will", "expect", "intend", "plan", "estimate", "anticipate", "continue", and "guidance", or other similar words and may include, without limitation statements regarding plans, strategies and objectives of management, anticipated production or construction commencement dates and expected costs or production output.

Forward looking statements inherently involve known and unknown risks, uncertainties and other factors that may cause the company's actual results, performance and achievements to differ materially from any future results, performance or

achievements. Relevant factors may include, but are not limited to, changes in commodity prices, foreign exchange fluctuations and general economic conditions, increased costs and demand for production inputs, the speculative nature of exploration and project development, including the risks of obtaining necessary licences and permits and diminishing quantities or grades of resources or reserves, political and social risks, changes to the regulatory framework within which the company operates or may in the future operate, environmental conditions including extreme weather conditions, recruitment and retention of personnel, industrial relations issues and litigation.

Forward looking statements are based on the company and its management's good faith assumptions relating to the financial, market, regulatory and other relevant environments that will exist and affect the company's business and operations in the future. The company does not give any assurance that the assumptions on which forward looking statements are based will prove to be correct, or that the company's business or operations will not be affected in any material manner by these or other factors not foreseen or foreseeable by the company or management or beyond the company's control.

Although the company attempts to identify factors that would cause actual actions, events or results to differ materially from those disclosed in forward looking statements, there may be other factors that could cause actual results, performance, achievements or events not to be anticipated, estimated or intended, and many events are beyond the reasonable control of the company. Accordingly, readers are cautioned not to place undue reliance on forward looking statements.

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