

# THE ELK CREEK CRITICAL MINERALS PROJECT

ONE OF NORTH  
AMERICA'S  
PREMIER  
PURE-PLAY  
CRITICAL  
MINERALS  
PROJECTS



The Elk Creek Project plans to develop a large underground hard-rock deposit in southeast Nebraska for four U.S. government-designated critical minerals: **Niobium, Scandium, Titanium, and magnetic Rare Earths**.<sup>1</sup> It is the highest-grade Niobium deposit under development in North America, the second-largest indicated-or-better rare earth resource in the U.S., and it is projected to become one of the largest producers of Scandium in the world.



NI-43-101 Feasibility Study with attractive economic returns.



Large resource with relatively long mine life (38 years)



Much of planned production in 1st 10 years is pre-sold



Key federal and state permits secured to allow construction start



Located on private land adjacent to key infrastructure



Strong support from community and state and local government.



Led by highly experienced leaders in the mining industry



Project designed around the Equator Principles' ESG guidelines

<sup>1</sup> NioCorp is currently evaluating the technical and economic feasibility of adding REEs to its planned product suite.

# ECONOMIC RETURNS

NioCorp's 2022 NI 43-101 Feasibility Study projects very attractive returns for the Elk Creek Project.<sup>2</sup>

**\$2.8B**

Pre-Tax NPV

**29.2%**

Pre-Tax IRR

**\$2.35B**

After-tax NPV

**27.6%**

After-tax IRR

**\$403M**

Averaged EBITDA over Mine Life<sup>2</sup>

**68%**

Averaged EBITDA Margin<sup>2</sup> over Mine Life

**\$21.9B**

Gross Revenue over Mine Life

**\$10.9B**

Cumulative Net Cash Flow over Mine Life<sup>2</sup>

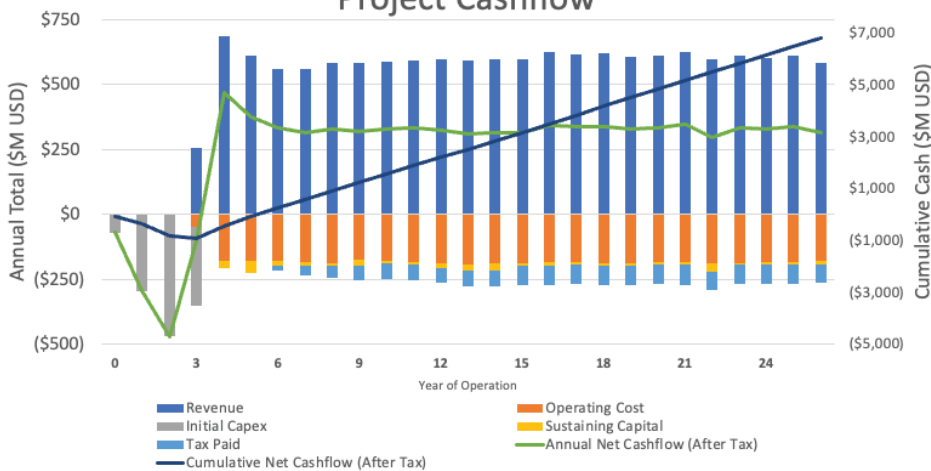
**\$1.14B**

Total Net Up-Front CAPEX

**38 Yrs.**

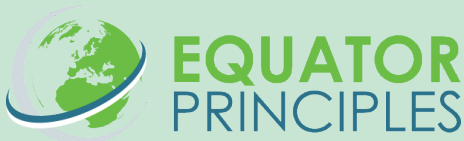
Mine Life

Project Cashflow



## ROBUST CASH FLOW

According to the Elk Creek Project's 2022 Feasibility Study, the Project is projected to generate significant annual and cumulative cash flow. The chart at left shows a cashflow projection over the Project's construction period and first 26 years of operation.



Niocorp has deployed a management system aligned with the latest version (EP4) of the Equator Principles' Environmental, Social, and Governance (ESG) Framework. Niocorp's Environmental and Social Management System formalized and documented many of Niocorp's existing ESG practices, and includes these elements:

- Environmental and Social Risk Assessment
- Climate Change Risk Assessment
- Environmental and Community Assessment, including an Environmental Justice evaluation
- A website-based Grievance Mechanism for members of the local community
- A series of management procedures to guide day-to-day activities
- Environmental and Social Management Plans for Air Emissions and Wastewater



<sup>2</sup> See Cautionary Notes at end of this backgrounder regarding the use of non-GAAP financial measures

# MINERAL RESERVES AS OF MAY 10, 2022

(Does not include rare earths)

2022 Elk Creek Project Mineral Reserve										
Classification	Tonnage (x1000 t)	Nb <sub>2</sub> O <sub>5</sub> Grade (%)	Contained Nb <sub>2</sub> O <sub>5</sub> (t)	Payable Nb (t)	TiO <sub>2</sub> Grade (%)	Contained TiO <sub>2</sub> (t)	Payable TiO <sub>2</sub> (t)	Sc Grade (ppm)	Contained Sc (t)	Payable Sc <sub>2</sub> O <sub>3</sub> (t)
Proven	-	-	-	-	-	-	-	-	-	-
Probable	36,656	0.811	297,278	170,409	2.92	1,071,182	431,793	70.2	2,573	3,677
<b>TOTAL</b>	<b>36,656</b>	<b>0.811</b>	<b>297,278</b>	<b>170,409</b>	<b>2.92</b>	<b>1,071,182</b>	<b>431,793</b>	<b>70.2</b>	<b>2,573</b>	<b>3,677</b>

## NOTES

- The Qualified Person for the Mineral Reserve estimate is Richard Jundis, P.Eng., of Optimize Group Inc. The estimate has an effective date of May 10th, 2022.
- The Mineral Reserve is based on the mine design and mine plan, utilizing an average cut-off grade of 0.68% Nb<sub>2</sub>O<sub>5</sub> with an NSR cut-off of US\$ 180/mt.
- The estimate of Mineral Reserves may be materially affected by metal prices, environmental, permitting, legal, title, taxation, socio-political, marketing, infrastructure development, or other relevant issues.
- The economic assumptions used to define Mineral Reserve cut-off grade are as follows:
  - Annual life of mine (LOM) average production rate of ~7,450 tonnes of FeNb/annum during the years of full production.
  - Mining dilution of ~6% was applied to all stopes and development, based on 3% for the primary stopes, 9% for the secondary stopes, and 5% for ore development.
  - Mining recoveries of 95% were applied in longhole stopes and 62.5% in sill pillar stopes.
  - Price assumptions for FeNb, Sc<sub>2</sub>O<sub>3</sub>, and TiO<sub>2</sub> are based upon independent market analyses for each product.
  - Price and cost assumptions are based on the pricing of products at the "mine-gate," with no additional downstream costs required. The assumed products are a ferri-niobium product (metallic alloy shots consisting of 65%Nb and 35% Fe), a titanium dioxide product in powder form, and scandium trioxide in powder form.
- The Mineral Reserve has an average LOM NSR of US\$ 563 /tonne.

Parameter	Value	Unit
Mining Cost	43.55	US\$/t mined
Processing	108.16	US\$/t mined
Water Management and Infrastructure	13.71	US\$/t mined
Tailings Management	1.35	US\$/t mined
Other Infrastructure	6.96	US\$/t mined
General and Administrative	8.65	US\$/t mined
Royalties/Annual Bond Premium	7.53	US\$/t mined
Total Cost	189.91	US\$/t mined
Nb <sub>2</sub> O <sub>5</sub> to Niobium conversion	69.60	%
Niobium Process Recovery	82.36	%
Niobium Price	39.60	US\$/kg
TiO <sub>2</sub> Process Recovery	40.31	%
TiO <sub>2</sub> Price	0.88	US\$/kg
Sc Process Recovery	93.14	%
Sc to Sc <sub>2</sub> O <sub>3</sub> conversion	1.53	%
Sc Price	3,675.00	US\$/kg

# MINERAL RESOURCE AS OF DEC. 8, 2021

Class	NSR Cut-off	Tonnage (Mt)	La <sub>2</sub> O <sub>3</sub> (%)	La <sub>2</sub> O <sub>3</sub> (kt)	Ce <sub>2</sub> O <sub>3</sub> (%)	Ce <sub>2</sub> O <sub>3</sub> (kt)	Pr <sub>2</sub> O <sub>3</sub> (%)	Pr <sub>2</sub> O <sub>3</sub> (kt)
Indicated	180	188.8	0.0773	145.8	0.1335	251.9	0.0143	26.9
			Nd <sub>2</sub> O <sub>3</sub> (%)	Nd <sub>2</sub> O <sub>3</sub> (kt)	Sm <sub>2</sub> O <sub>3</sub> (%)	Sm <sub>2</sub> O <sub>3</sub> (kt)	Eu <sub>2</sub> O <sub>3</sub> (%)	Eu <sub>2</sub> O <sub>3</sub> (kt)
			0.0524	98.9	0.0129	24.3	0.0046	8.6
			Gd <sub>2</sub> O <sub>3</sub> (%)	Gd <sub>2</sub> O <sub>3</sub> (kt)	Tb <sub>2</sub> O <sub>3</sub> (%)	Tb <sub>2</sub> O <sub>3</sub> (kt)	Dy <sub>2</sub> O <sub>3</sub> (%)	Dy <sub>2</sub> O <sub>3</sub> (kt)
			0.011	20.8	0.0012	2.3	0.0048	9.1
			Ho <sub>2</sub> O <sub>3</sub> (%)	Ho <sub>2</sub> O <sub>3</sub> (kt)	Er <sub>2</sub> O <sub>3</sub> (%)	Er <sub>2</sub> O <sub>3</sub> (kt)	Tm <sub>2</sub> O <sub>3</sub> (%)	Tm <sub>2</sub> O <sub>3</sub> (kt)
			0.0007	1.3	0.0015	2.9	0.0002	0.3
			Yb <sub>2</sub> O <sub>3</sub> (%)	Yb <sub>2</sub> O <sub>3</sub> (kt)	Lu <sub>2</sub> O <sub>3</sub> (%)	Lu <sub>2</sub> O <sub>3</sub> (kt)	Y <sub>2</sub> O <sub>3</sub> (%)	Y <sub>2</sub> O <sub>3</sub> (kt)
			0.001	1.9	0.0001	0.3	0.0199	37.6
			LREO (%)	LREO (kt)	HREO (%)	HREO (kt)	TREO (%)	TREO (kt)
			0.2774	523.6	0.0579	109.3	0.3353	632.9

Class	NSR Cut-off	Tonnage (Mt)	La <sub>2</sub> O <sub>3</sub> (%)	La <sub>2</sub> O <sub>3</sub> (kt)	Ce <sub>2</sub> O <sub>3</sub> (%)	Ce <sub>2</sub> O <sub>3</sub> (kt)	Pr <sub>2</sub> O <sub>3</sub> (%)	Pr <sub>2</sub> O <sub>3</sub> (kt)
Inferred	180	108.3	0.0943	102.1	0.1576	170.6	0.0163	17.7
			Nd <sub>2</sub> O <sub>3</sub> (%)	Nd <sub>2</sub> O <sub>3</sub> (kt)	Sm <sub>2</sub> O <sub>3</sub> (%)	Sm <sub>2</sub> O <sub>3</sub> (kt)	Eu <sub>2</sub> O <sub>3</sub> (%)	Eu <sub>2</sub> O <sub>3</sub> (kt)
			0.0575	62.2	0.0116	12.6	0.0038	4.1
			Gd <sub>2</sub> O <sub>3</sub> (%)	Gd <sub>2</sub> O <sub>3</sub> (kt)	Tb <sub>2</sub> O <sub>3</sub> (%)	Tb <sub>2</sub> O <sub>3</sub> (kt)	Dy <sub>2</sub> O <sub>3</sub> (%)	Dy <sub>2</sub> O <sub>3</sub> (kt)
			0.009	9.8	0.001	1.1	0.0042	4.6
			Ho <sub>2</sub> O <sub>3</sub> (%)	Ho <sub>2</sub> O <sub>3</sub> (kt)	Er <sub>2</sub> O <sub>3</sub> (%)	Er <sub>2</sub> O <sub>3</sub> (kt)	Tm <sub>2</sub> O <sub>3</sub> (%)	Tm <sub>2</sub> O <sub>3</sub> (kt)
			0.0006	0.7	0.0014	1.5	0.0002	0.2
			Yb <sub>2</sub> O <sub>3</sub> (%)	Yb <sub>2</sub> O <sub>3</sub> (kt)	Lu <sub>2</sub> O <sub>3</sub> (%)	Lu <sub>2</sub> O <sub>3</sub> (kt)	Y <sub>2</sub> O <sub>3</sub> (%)	Y <sub>2</sub> O <sub>3</sub> (kt)
			0.001	1.1	0.0001	0.1	0.0182	19.7
			LREO (%)	LREO (kt)	HREO (%)	HREO (kt)	TREO (%)	TREO (kt)
			0.3257	352.6	0.0512	55.5	0.3769	408.1

- Notes:
- The Qualified Person for the Mineral Resource estimate is Matthew Batty, P. Geo, Owner, Understood Mineral Resources Ltd.
  - The reporting standard for the Mineral Resource Estimate uses the terminology, definitions, and guidelines given in the Canadian Institute of Mining, Metallurgy and Petroleum (CIM) Standards on Mineral Resources and Mineral Reserves (May 10, 2014) as required by NI 43-101.
  - Mineral Resources are inclusive of Mineral Reserves. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.
  - The Mineral Resources are reported at a Diluted Net Smelter Return (NSR) Cut-off of US \$180/tonne.
  - The diluted NSR is defined as:
    - Diluted NSR (US \$) = 
$$\frac{\text{Revenue per block Nb}_2\text{O}_5 \text{ (diluted)} + \text{Revenue per block TiO}_2 \text{ (diluted)} + \text{Revenue per block Sc (diluted)}}{\text{Diluted tonnes per block}}$$
    - The diluted revenue from Nb<sub>2</sub>O<sub>5</sub>, TiO<sub>2</sub>, and Sc per block used the following factors:
      - Nb<sub>2</sub>O<sub>5</sub> Revenue: a 94% grade recovery, a 0.696 factor to convert Nb<sub>2</sub>O<sub>5</sub> to Nb, 82.36% assumption for plant recovery, and a US\$ 39.60 kg selling price per kg of ferri-niobium.
      - TiO<sub>2</sub> Revenue: a 94% grade recovery, a 40.31% assumption for plant recovery, and an US\$ 0.88 kg selling price per kg of titanium oxide.
      - Sc Revenue: a 94% grade recovery, a 1.534 factor to convert Sc to Sc<sub>2</sub>O<sub>3</sub>, 93.14% assumption for plant recovery, and a US\$ 3,675 kg is selling price per kg of scandium oxide.
    - The diluted tonnes are a 6% increase in the total tonnes of the block.
    - Price assumptions for FeNb, Sc<sub>2</sub>O<sub>3</sub>, and TiO<sub>2</sub> are based upon independent market analyses for each product.
    - Numbers may not sum due to rounding. The rounding is not considered to be material.
    - Rare Earth Oxides (REO) were evaluated as a potential by-product to the mining of niobium, titanium, and scandium; thus, the estimated values of the REOs are reported using the previously determined diluted NSR as derived from the Nb<sub>2</sub>O<sub>5</sub>, TiO<sub>2</sub>, and Sc Mineral Resources.
      - The stated Light Rare Earth Oxides (LREO) grade (%) is the summation of La<sub>2</sub>O<sub>3</sub> (%), Ce<sub>2</sub>O<sub>3</sub> (%), Pr<sub>2</sub>O<sub>3</sub> (%), and Nd<sub>2</sub>O<sub>3</sub> (%) estimates.
      - The stated Heavy Rare Earth Oxides (HREO) grade (%) is the summation of Sm<sub>2</sub>O<sub>3</sub> (%), Eu<sub>2</sub>O<sub>3</sub> (%), Gd<sub>2</sub>O<sub>3</sub> (%), Tb<sub>2</sub>O<sub>3</sub> (%), Dy<sub>2</sub>O<sub>3</sub> (%), Ho<sub>2</sub>O<sub>3</sub> (%), Er<sub>2</sub>O<sub>3</sub> (%), Tm<sub>2</sub>O<sub>3</sub> (%), Yb<sub>2</sub>O<sub>3</sub> (%), Lu<sub>2</sub>O<sub>3</sub> (%), and Y<sub>2</sub>O<sub>3</sub> (%) estimates.
      - The stated Total Rare Earth Oxide (TREO) grade (%) is the summation of LREO (%) and HREO (%).
    - The effective date of the Mineral Resource, including by-products, is December 8th, 2021 (date of last assay received).

## Cautionary Notes

Certain statements contained in this document may constitute forward-looking statements, including but not limited to statements regarding the Company's ability to secure sufficient project financing to complete construction and commence operation of the Project; the Company's expectation and ability to produce niobium, scandium, titanium and rare earth products at the Project; the outcome of current recovery process improvement testing, and the Company's expectation that such process improvements could lead to greater efficiencies and cost savings in the Project; the Company's expectation to emerge as a producer of magnetic rare earth metals; the potential for the Company's REEs to be mined; the Company's expectation to produce a fuller technical report assessing the feasibility of REE production; the Elk Creek Project's ability to produce multiple critical metals; the Elk Creek Project's projected ore production and mining operations over its expected mine life; and the Company's ongoing evaluation of the impact of inflation, supply chain issues and geopolitical unrest on the Elk Creek Project's economic model. Such forward-looking statements are based on estimates and assumptions made by the Company in light of its experience and its perception of historical trends, current conditions and expected future developments, as well as other factors that the Company believes are appropriate in the circumstances. Readers are cautioned that such forward-looking statements involve known and unknown risks, uncertainties, and other factors that may cause a change in such forward-looking statements and the actual outcomes and estimates to be materially different from those estimated or anticipated future results, achievements, or position expressed or implied by those forward-looking statements. Risks, uncertainties, and other factors that could cause NioCorp's plans or prospects to change include risks related to NioCorp's ability to operate as a going concern; risks related to NioCorp's requirement of significant additional capital; risks related to feasibility study results; changes in demand for and price of commodities (such as fuel and electricity) and currencies; changes or disruptions in the securities markets; legislative, political or economic developments; the need to obtain permits and comply with laws and regulations and other regulatory requirements; the possibility that actual results of work may differ from projections/expectations or may not realize the perceived potential of NioCorp's projects; risks of accidents, equipment breakdowns, and labor disputes or other unanticipated difficulties or interruptions; the possibility of cost overruns or unanticipated expenses in development programs; operating or technical difficulties in connection with exploration, mining, or development activities; the speculative nature of mineral exploration and development, including the risks of diminishing quantities of grades of reserves and resources; the risks involved in the exploration, development, and mining business, and the risks set forth in the Company's filings with Canadian securities regulators at [www.sedar.com](http://www.sedar.com) and the SEC at [www.sec.gov](http://www.sec.gov). NioCorp disclaims any intention or obligation to update or revise any forward-looking statements whether as a result of new information, future events or otherwise.

**Non-GAAP Financial Measures:** This news release includes certain forward-looking non-GAAP financial measures, including EBITDA and EBITDA Margin. These non-GAAP financial measures are included in this news release because these statistics are key performance measures that management uses to monitor performance, to assess how the Company is performing, to plan and to assess the overall effectiveness and efficiency of operations. These performance measures do not have a standard meaning within GAAP and, therefore, amounts presented may not be comparable to similar data presented by other mining companies. These performance measures should not be considered in isolation as a substitute for measures of performance in accordance with GAAP. Reconciliations of these forward-looking non-GAAP financial measures to the most directly comparable GAAP financial measures are not provided because the Company is unable to provide such reconciliations without unreasonable effort, due to the uncertainty and inherent difficulty of predicting the occurrence and the financial impact of such items impacting comparability and the periods in which such items may be recognized. For the same reasons, the Company is unable to address the probable significance of the unavailable information, which could be material to future results.

**SEC Standards Regarding Mineral Resources and Reserves.** Estimates of mineralization and other technical information included or referenced in this news release have been prepared in accordance with NI 43-101. The definitions of proven and probable mineral reserves used in NI 43-101 differ from the definitions in U.S. Securities and Exchange Commission ("SEC") Industry Guide 7. Under SEC Industry Guide 7 standards, a "final" or "bankable" feasibility study is required to report reserves, the three-year historical average price is used in any reserve or cash flow analysis to designate reserves and the primary environmental analysis or report must be filed with the appropriate governmental authority. As a result, the reserves reported by the Company in accordance with NI 43-101 may not qualify as "reserves" under SEC Industry Guide 7 standards. In addition, the terms "mineral resource," "measured mineral resource," "indicated mineral resource," and "inferred mineral resource" are defined in and required to be disclosed by NI 43-101; however, these terms are not defined terms under SEC Industry Guide 7 and normally are not permitted to be used in reports and registration statements filed with the SEC. Mineral resources that are not mineral reserves do not have demonstrated economic viability. Investors are cautioned not to assume that any part or all of the mineral deposits in these categories will ever be converted into reserves. "Inferred mineral resources" have a great amount of uncertainty as to their existence, and great uncertainty as to their economic and legal feasibility. It cannot be assumed that all or any part of an inferred mineral resource will ever be upgraded to a higher category. Under Canadian securities laws, estimates of inferred mineral resources may not form the basis of feasibility or pre-feasibility studies, except in rare cases. Additionally, the disclosure of "contained pounds" in a resource is permitted disclosure under Canadian securities laws; however, the SEC normally only permits issuers to report mineralization that does not constitute "reserves" by SEC standards as in place tonnage and grade without reference to unit measurements. Accordingly, information contained or referenced in this news release containing descriptions of the Company's mineral deposits may not be comparable to similar information made public by U.S. companies subject to the reporting and disclosure requirements of United States federal securities laws and the rules and regulations thereunder. Additionally, in October 2018, the SEC approved final rules requiring comprehensive and detailed disclosure requirements for issuers with material mining operations. The provisions in Industry Guide 7 and Item 102 of Regulation S-K have been replaced with a new subpart 1300 of Regulation S-K ("S-K 1300") under the Securities Act of 1933. The Company will be required to comply with these new rules in its disclosures for the fiscal year ending June 30, 2022, and thereafter. The requirements and standards under S-K 1300 differ from those under Canadian securities laws. The terms "mineral resource," "inferred mineral resource," "indicated mineral resource," "mineral reserve," "probable mineral reserve," and "proven mineral reserve" used in this news release are mining terms as defined in accordance with NI 43-101 under guidelines set out in the Definition Standards for Mineral Resources and Mineral Reserves adopted by the Canadian Institute of Mining, Metallurgy and Petroleum Council. While the terms are substantially similar to the same terms defined under S-K 1300 there are differences in the definitions. Accordingly, there is no assurance any mineral resources or mineral reserves that the Company may report under NI 43-101 will be the same as resource or reserve estimates prepared under the standards adopted under S-K 1300.

**Qualified Persons:** The following Qualified Persons as defined by National Instrument 43-101, have read and approved the technical information contained in this document: Richard Jundis, P. Eng, Director of Mining, Optimize Group, and Ian McKenzie, CPEng, Vice President, Optimize Group, for the Elk Creek Mine Plan and Mineral Reserves; Matthew Batty, P.Geo, Owner, Understood Mineral Resources Ltd. for the Elk Creek Project Mineral Resource; and Scott Honan, M.Sc., SME-RM, NioCorp Developments Ltd., for other technical information contained in this presentation.