

# Trilogy Metals Announces Updated Feasibility Study Results for the Arctic Project

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VANCOUVER, Feb. 14, 2023 - [Trilogy Metals Inc.](#) (TSX: TMQ) (NYSE American: TMQ) ("Trilogy Metals" or the "Company") pleased to announce the updated results of its Feasibility Study ("2023 FS") for the Arctic Copper-Zinc-Lead-Silver-Gold ("Arctic" or the "Arctic Project") in the Ambler Mining District of northwestern Alaska. The Arctic Project is held by Ambler Metals LLC ("Ambler Metals"), the joint venture operating company equally owned by Trilogy and a wholly-owned subsidiary of South32 Limited (ASX, LSE, JSE: S32; ADR: SOUHY) ("South32"). Neither South32 nor Ambler Metals has reviewed the results of the 2023 FS. The 2023 FS was prepared on a 100% ownership basis, of which Trilogy's share is 50%. All amounts are in U.S. dollars unless otherwise stated.

Trilogy Metals will host a conference call on February 15, 2023 at 10:00am (Pacific Time) or 1:00pm (Eastern Time) to discuss these results. Please use this link to access the live webcast of the conference call: <https://www.c-meeting.com/web3/joinTo/38ZLQJQ93P2A84/T1ca8GcVZNRtr5E7NaQ9SQ>

Highlights of the updated, 2023 Arctic feasibility study

- Pre-tax Net Present Value ("NPV")<sub>8%</sub> of \$1.5 billion and an Internal Rate of Return ("IRR") of 25.8%.
- After-tax NPV<sub>8%</sub> of \$1.1 billion and after-tax IRR of 22.8%.
- At current spot metals prices of \$4.02/lb copper, \$1.39/lb zinc, \$0.95/lb lead, \$1,853/oz gold and \$22/oz silver, the NPV<sub>8%</sub> is \$2.1 billion and IRR is 31.5%, and after-tax NPV<sub>8%</sub> is \$1.6 billion and IRR is 27.8%.

Trilogy Metals has updated its feasibility study on the Arctic Project in response to the Company's regulatory requirements and disclosure and file a SK-1300 technical report summary on S-K 1300 standards with the U.S. Securities and Exchange Commission as part of the Company's annual filings on Form 10-K. This news release presents the results of the Arctic feasibility study in accordance with National Instrument 43-101 ("NI 43-101"). More information on the S-K 1300 technical report summary can be found on Edgar at [www.sec.gov](http://www.sec.gov). Both NI 43-101 and S-K 1300 reports are available on the Company's website.

The Company has updated capital and operating costs to the fourth quarter of 2022, along with long-term commodity prices. The 2023 FS describes the technical and economic viability of establishing a conventional open-pit copper-zinc-lead-silver-gold mine-and-mill complex for a 10,000 tonne-per-day operation for a minimum 13-year mine life. The 2023 FS utilizes long-term commodity prices of \$3.65/lb for copper, \$1.15/lb for zinc, \$1.00/lb for lead, \$1,650/oz for gold and \$21.00/oz for silver in its economic model.

Tony Giardini, President and Chief Executive Officer of Trilogy Metals commented, "Arctic continues to be an extremely attractive project even in a high inflationary environment. We have updated the capital and operating costs to reflect high-inflationary supply-chain challenges and yet the economics continue to stand out."

The salient details of the 2023 FS are displayed in Tables 1, 2, 3 and 4 below, with comparative information to the Company's 2020 Arctic feasibility study from 2020.

Table 1. Metal Production and Metal Prices

Annual Payable Metals Production	2020 FS	2023 FS
Copper ('000'lb)	155,369	148,683
Zinc ('000'lb)	192,023	172,598
Lead ('000'lb)	32,367	25,753
Gold (oz)	32,165	32,538
Silver ('000'oz)	3,382	2,773
LOM Payable Metals Production		
Copper ('000'lb)	1,864,427	1,932,882
Zinc ('000'lb)	2,304,277	2,243,771
Lead ('000'lb)	338,406	334,785
Gold (oz)	386,000	423,000
Silver ('000'oz)	40,586	36,047
Metal Price Assumptions for Financial Analysis		
Copper (\$/lb)	3.00	3.65
Zinc (\$/lb)	1.10	1.15
Lead (\$/lb)	1.00	1.00
Gold (\$/oz)	1,300.00	1,650.00
Silver (\$/oz)	18.00	21.00

Table 2. Operating and Capital Costs

On-Site Operating Costs	2020 FS	2023 FS
Mining (\$/t milled)	18.48	22.49
Processing (\$/t milled)	18.31	22.60
G&A (\$/t milled)	5.15	5.85
Surface Service (\$/t milled)	0.68	1.17
Road Toll (\$/t milled)	8.04	7.72
Total Operating Cost (\$/t milled)	50.65	59.83
Capital Expenditure		
Initial Capital (\$ million)	905.6	1,176.8
Sustaining Capital (\$ million)	113.8	114.4
Mine Closure & Reclamation (\$ million)	205.4	428.4
Total Capex (\$ million)	1,224.7	1,719.6

Table 3. Financial Results and Other Information

Financial Summary	2020 FS	2023 FS
Pre-tax NPV (\$ million) at 8%	1,550.9	1,500.3
Pre-tax Cash Flow (\$ million) at 8%	3,768.0	3,942.6
After-tax NPV (\$ million) at 8%	1,134.7	1,108.1
After-tax Cash Flow (\$ million)	2,843.4	3,019.9
Cash Costs, Net of By-product Credits (\$/lb Cu payable)	0.32	0.72
All-in Cost, Net of By-product Credits (\$/lb Cu payable)	0.98	1.61
Pre-tax IRR (%)	30.8	25.9
Pre-tax Payback Period (years)	2.4	2.9
After-tax IRR (%)	27.1	22.8
After-tax Payback Period (years)	2.6	3.1
Mine Life	12 years	13 years
LOM Stripping Ratio	6.9	7.3

Table 4. Mineral Reserve Statement

Class	Tonnage	Grades				
	(Mt)	Cu (%)	Zn (%)	Pb (%)	Au (g/t)	Ag (g/t)
Probable Mineral Reserves	46.7	2.11	2.90	0.56	0.42	31.8

## Notes:

1. Mineral Reserves estimates have an effective date of November 15, 2022 and are current as of November 30, 2022 and were prepared by a Wood QP.
2. Mineral Reserves were estimated assuming open pit mining methods and are reported at the point of delivery to the process plant (point of reference). Mineral Reserves include a combination of internal and contact dilution. Total dilution is expected to be between 30% and 40%. Pit slopes vary by sector and range from 26° to 56°. A marginal NSR cut-off of \$38.8/t is used.
3. Mineral Reserves are based on prices of \$3.46/lb Cu, \$0.91/lb Pb, \$1.12/lb Zn, \$1,615/oz Au, and \$21.17/oz Ag.
4. Variable process recoveries averaging 92% Cu in Cu concentrate, 61% Pb in Pb concentrate, 88% Zn in Zn concentrate, 52% Au in Cu concentrate, 32% Ag in Cu concentrate, 22% Au in Pb concentrate and 49% Ag in Pb concentrate.
5. Mineral Reserves are based on mining cost of \$2.52/t incremented at \$0.02/t/5m and \$0.012/t/5m below and above 790 m elevation, respectively.
6. Costs applied to processed material following process operating cost of \$18.31/t, G&A of \$5.83/t, sustaining capital cost of \$2.37/t, closure cost of \$4.27/t, road toll cost of \$8.04/t.
7. Strip ratio (waste: ore) is 7.3:1.
8. Selling terms following payables of 96.5% of Cu, 95% of Pb and 85% of Zn, treatment costs of \$80/t Cu concentrate, \$160/t Pb concentrate and \$215/t Zn concentrate; refining costs of \$0.08/lb Cu, \$10/oz Au, \$1.25/oz Ag; and transport cost \$270.98/t concentrate.
9. Fixed royalty percentage of 1% NSR.

The 2023 FS was prepared by independent consultant, Ausenco Engineering Canada Inc. ("Ausenco") of Vancouver, British Columbia, Canada. The Company also engaged Wood Canada Limited ("Wood") to complete the mineral resources and mineral reserve estimation and mine planning, SRK Consulting (Canada) Inc. ("SRK") to complete pit geotechnics and hydrogeology, tailings and waste design, hydrology and water management studies, and Brown and Caldwell to complete water treatment facility. The technical report titled "Arctic NI 43-101 Technical Report on Feasibility Study" with an effective date of January 20, 2023 and a release date of February 14, 2023 (the "Arctic Technical Report") will be filed on SEDAR today.

The 2023 FS is based on a 10,000-tonne-per-day open-pit mining rate with a conventional milling and flotation process that results in the production of separate copper, zinc and lead concentrates. Based on the feasibility-level metallurgical work on the sulphide mineralization, the average recoveries are projected to be 92.1% for copper, 88.5% for zinc and 61.3% for lead, in their respective concentrates. Life-of-mine strip ratio (waste:ore) is approximately 7.3 to 1.

The 2023 FS forecasts an average annual payable production to be 149 million pounds of copper, 173 million pounds of zinc, 26 million pounds of lead, 32,538 ounces of gold and 2.8 million ounces of silver. Total life-of-mine 13-year production is projected at 1.9 billion pounds of copper, 2.2 billion pounds of zinc, 335 million pounds of lead, 423,000 ounces of gold and 36 million ounces of silver.

Initial capital expenditure is \$1,176.8 million and sustaining capital is \$114.4 million for total estimated capital

expenditures of \$1,291.2 million. In addition, closure and reclamation costs are estimated at \$428.4 million. Estimated pre-tax and after-tax payback of initial capital are 2.9 years and 3.1 years respectively. Estimated cash costs are \$0.72/lb of payable copper (cash costs include on-site mining and processing costs, road tolls and maintenance, transport, royalties, and is net of by-product credits). Total "all-in" cash costs (initial/sustaining capital, operating, closure costs and is net of by-product metal credits) are estimated at \$1.61/lb of payable copper.

The 2023 FS has been prepared on a 100% ownership basis. The Arctic Project is held by Ambler Metals, the joint venture operating company equally owned by Trilogy and South32. NANA Regional Corporation, Inc. ("NANA") has the right, following a construction decision, to elect to purchase a 16% to 25% direct interest in the Arctic Project or, alternatively, to receive a 15% Net Proceeds Royalty ("NPR"). This 2023 FS does not include the impact on Trilogy Metals if NANA elects to purchase an interest in the Arctic Project or, alternatively, the impact on Trilogy Metals and the Arctic Project if the NPR becomes applicable. The 2023 FS does include the 1.0% Net Smelter Royalty to be granted to NANA in exchange for a surface use agreement.

#### 2023 FS Contributors

The 2023 FS for the Arctic Project was prepared by Ausenco and the contributors listed below, each of whom is a Qualified Person under 43-101.

Qualified Person	Scope of Responsibility
Kevin Murray, Ausenco	Plant and infrastructure design, metallurgy, recovery methods, consolidation of the capital costs and operating costs and the overall financial model
Piers Wendlandt, P.E., Principal Mining Engineer, Wood	Mine design and mineral reserve estimates
Henry Kim, P.Geo, Principal Resource Geologist, Wood	Geology and mineral resource estimate
Calvin Boese, P. Eng., M.Sc., Principal Consultant, Geotechnical, SRK Consulting (Canada) Inc.	Tailings and waste design
Bruce Murphy, P.Eng., Principal Consultant, Rock Pit slope design and hydrogeology Mechanics, SRK Consulting (Canada) Inc.	
Andrea Bowie, P.Eng., Senior Consultant, Water Management, SRK Consulting (Canada) Inc.	Hydrology and water management
Dennis Fink, Brown and Caldwell	Water treatment

#### Data Verification

Messrs. Kim, Boese, and Murphy have visited the site of the Arctic Project. The 2023 FS Contributors have had discussions with relevant site personnel and Company management and have reviewed supporting documentation. Additional information can be found in the Arctic Technical Report.

#### Qualified Persons

The 2023 FS Contributors prepared or supervised the preparation of the information that forms the basis of the 2023 FS disclosure in this news release.

Richard Gosse, P.Geo., Vice President, Exploration for Trilogy, is a Qualified Person as defined by National Instrument 43-101. Mr. Gosse has reviewed and approved the scientific and technical information in this news release.

#### Conference Call

The conference call to discuss results of the 2023 FS will be held on February 15, 2023 at 10:00am (Pacific Time) or 1:00pm (Eastern Time).

Participants can access the Company's presentation by a live webcast of the conference call at the following link:

<https://www.c-meeting.com/web3/joinTo/38ZLQJQ93P2A84/T1ca8GcVZNRtr5E7NaQ9SQ>

There will be a question-and-answer session following the presentation.

A replay of this conference call will be available on the Company's website at [www.trilogymetals.com](http://www.trilogymetals.com).

#### About Trilogy Metals

[Trilogy Metals Inc.](#) is a metal exploration and development company that holds a 50 percent interest in Ambler Metals LLC which has a 100 percent interest in the Upper Kobuk Mineral Projects in Northwestern Alaska. On December 19, 2019, South32, a globally diversified mining and metals company, exercised its option to form a 50/50 joint venture with Trilogy. The UKMP is located within the Ambler Mining District, one of the richest and most-prospective known copper-dominant districts in the world. It hosts world-class polymetallic volcanogenic massive sulphide deposits that contain copper, zinc, lead, gold and silver, and carbonate replacement deposits that have been found to host high-grade copper and cobalt mineralization. Exploration efforts have been focused on two deposits in the Ambler Mining District - the Arctic VMS deposit and the Bornite carbonate replacement deposit. Both deposits are located within a land package that spans approximately 190,929 hectares. Ambler Metals has an agreement with NANA Regional Corporation, Inc., an Alaska Native Corporation that provides a framework for the exploration and potential development of the Ambler Mining District in cooperation with local communities. Trilogy's vision is to develop the Ambler Mining District into a premier North American copper producer while protecting and respecting subsistence livelihoods.

#### About Ausenco

Ausenco is a global company based across 26 offices in 14 countries, with projects in over 80 locations worldwide. Combining deep technical expertise with a 30-year track record, Ausenco delivers innovative, value-add consulting studies, project delivery, asset operations and maintenance solutions to the mining and metals, oil & gas and industrial sectors.

#### Cautionary Note Regarding Forward-Looking Statements

This news release includes certain "forward-looking information" and "forward-looking statements" (collectively "forward-looking statements") within the meaning of applicable Canadian and United States securities legislation including the United States Private Securities Litigation Reform Act of 1995. All statements, other than statements of historical fact, included herein, including, without limitation, mineral resources and reserve statements; the future price of copper, zinc, lead, gold and silver; the timing and amount of estimated future production; net present values and internal rates of return at Arctic; recovery rates; payback periods; costs of production; capital expenditures; costs and timing of the development of projects; mine life; planned activities at the UKMP; the potential future development of Arctic and the future operating or financial performance of the Company, are forward-looking statements. Forward-looking statements are frequently, but not always, identified by words such as "expects", "anticipates", "believes", "intends", "estimates", "potential", "possible", and similar expressions, or statements that events, conditions, or results "will", "may", "could", or "should" occur or be achieved. These forward-looking statements may include statements regarding perceived merit of properties; exploration plans and budgets; mineral reserves and resource estimates; work programs; capital expenditures; timelines; strategic plans; market prices for precious and base metals; or other statements that are not statements of fact. Forward-looking statements involve various risks and uncertainties. There can be no assurance that such statements will prove to be accurate, and actual results and future events could differ materially from those anticipated in such statements. Important factors that could cause actual results to differ materially from the Company's expectations include the Company's ability to finance the development of its mineral properties; assumptions and discount rates being appropriately applied to the 2023 FS, uncertainty as to whether there will ever be production at the Company's mineral exploration and development properties; risks related to the Company's ability to commence production and generate material revenues or obtain adequate financing for its planned exploration and development activities; risks related to lack of infrastructure including but not limited to the risk whether or not the Ambler Mining District Industrial Access Project, or AMDIAP, will receive the requisite permits and, if it does, whether the Alaska Industrial Development and Export Authority will build the

AMDIAP; risks related to inclement weather which may delay or hinder activities at the Company's mineral properties; risks related to the Company's dependence on a third party for the development of its projects; commodity price fluctuations; uncertainties relating to the assumptions underlying resource and reserve estimates; mining and development risks, including risks related to infrastructure, accidents, equipment breakdowns, labor disputes, bad weather, non-compliance with environmental and permit requirements or other unanticipated difficulties with or interruptions in development, construction or production; the geology, grade and continuity of the Company's mineral deposits; the uncertainties involving success of exploration, development and mining activities; permitting timelines; risks pertaining to the outbreak of the coronavirus (COVID-19); government regulation of mining operations; environmental risks; unanticipated reclamation expenses; prices for energy inputs, labour, materials, supplies and services; uncertainties involved in the interpretation of drilling results and geological tests and the estimation of reserves and resources; the need for cooperation of government agencies and native groups in the development and operation of properties as well as the construction of the AMDIAP; unanticipated variation in geological structures, metal grades or recovery rates; fluctuations in currency exchange rates; unexpected cost increases in estimated capital and operating costs; the need to obtain permits and government approvals; uncertainty related to title to the Company's mineral properties and other risks and uncertainties disclosed in the Company's Annual Report on Form 10-K for the year ended November 30, 2022 filed with Canadian securities regulatory authorities and with the United States Securities and Exchange Commission and in other Company reports and documents filed with applicable securities regulatory authorities from time to time. The Company's forward-looking statements reflect the beliefs, opinions and projections on the date the statements are made. The Company assumes no obligation to update the forward-looking statements or beliefs, opinions, projections, or other factors, should they change, except as required by law.

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