

REFINITIV

# DELTA REPORT

## 10-K

TRILOGY METALS INC.

10-K - NOVEMBER 30, 2023 COMPARED TO 10-K - NOVEMBER 30, 2022

The following comparison report has been automatically generated

TOTAL DELTAS	2366
CHANGES	345
DELETIONS	981
ADDITIONS	1040

UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
Washington, D.C. 20549

FORM 10-K

☒ ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the Fiscal Year Ended November 30, 2022 2023

OR

☐ TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the Transition Period from to

Commission File Number: 1-35447



Graphic

**TRILOGY METALS INC.**

(Exact Name of Registrant as Specified in Its Charter)

British Columbia

(State or Other Jurisdiction of  
Incorporation or Organization)

98-1006991

(I.R.S. Employer  
Identification No.)

Suite 1150, 609 Granville Street

Vancouver, British Columbia

Canada

(Address of Principal Executive Offices)

V7Y 1G5

(Zip Code)

(604) 638-8088

(Registrant's Telephone Number, Including Area Code)

Title of Each Class	Trading Symbol	Name of Each Exchange on Which Registered
Common Shares, no par value	TMQ	NYSE AMERICAN

Securities registered pursuant to Section 12(g) of the Act: **None**

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ☐ No ☒

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes ☐ No ☒

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ☒ No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large Accelerated Filer ☐ Accelerated Filer ☐ Non-accelerated Filer ☒ Smaller reporting company ☒ Emerging growth company ☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Indicate by check mark whether the registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report. ☐

If securities are registered pursuant to Section 12(b) of the Act, indicate by check mark whether the financial statements of the registrant included in the filing reflect the correction of an error to previously issued financial statements. ☐

Indicate by check mark whether any of those error corrections are restatements that required a recovery analysis of incentive-based compensation received by any of the registrant's executive officers during the relevant recovery period pursuant to § 240.10D-1(b). ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ☐ No ☒

As at **May 31, 2022** **May 31, 2023**, the aggregate market value of the registrant's Common Shares held by non-affiliates was approximately **\$93.8 million** **\$98.1 million**. As of **February 14, 2023** **February 9, 2024**, the registrant had **148,722,699** **159,749,073** Common Shares, no par value, outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Certain portions of the registrant's definitive proxy statement to be filed with the Securities and Exchange Commission pursuant to Regulation 14A not later than **March 30, 2023** **March 29, 2024**, in connection with the registrant's 2023 annual meeting of shareholders, are incorporated herein by reference into Part III of this Annual Report on Form 10-K.


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Unless the context otherwise requires, the words “we,” “us,” “our,” the “Company” and “Trilogy” refer to Trilogy Metals Inc., formerly NovaCopper Inc. (“Trilogy” or “Trilogy Metals”), a British Columbia corporation, either alone or together with its subsidiaries as the context requires, as of [November 30, 2022](#) [November 30, 2023](#).

## CURRENCY

All dollar amounts are in United States currency unless otherwise stated. References to C\$ or CDN\$ refer to Canadian currency, and \$ or US\$ to United States currency.

## FORWARD-LOOKING STATEMENTS

The information discussed in this Annual Report on Form 10-K includes “forward-looking information” and “forward-looking statements” within the meaning of Section 21E of the Securities Exchange Act of 1934 (the “Exchange Act”), and applicable Canadian securities laws. These forward-looking statements may include statements regarding perceived merit of properties, exploration results and budgets, mineral reserves and resource estimates, work programs, capital expenditures, operating costs, cash flow estimates, production estimates and similar statements relating to the economic viability of a project, timelines, strategic plans, statements relating anticipated activity with respect to the Ambler Mining District Industrial Access Project (“Ambler Access Project” or “AAP”), the Company’s plans and expectations relating to the Upper Kobuk Mineral Projects (as defined herein), completion of transactions, market prices for precious and base metals, the results of the NI 43-101 Arctic Report and S-K 1300 Arctic Report (as defined herein), [the timing of the final SEIS \(as defined herein\) and a Record of Decision](#), or other statements that are not statements of fact. These statements relate to analyses and other information that are based on forecasts of future results, estimates of amounts not yet determinable and assumptions of management.

Statements concerning mineral resource estimates may also be deemed to constitute “forward-looking statements” to the extent that they involve estimates of the mineralization that will be encountered if the property is developed. Any statements that express or involve discussions with respect to predictions, expectations, beliefs, plans, projections, objectives, assumptions or future events or performance (often, but not always, identified by words or phrases such as “expects”, “is expected”, “anticipates”, “believes”, “plans”, “projects”, “estimates”, “assumes”, “intends”, “strategy”, “goals”, “objectives”, “potential”, “possible” or variations thereof or stating that certain actions, events, conditions or results “may”, “could”, “would”, “should”, “might” or “will” be taken, occur or be achieved, or the negative of any of these terms and similar expressions) are not statements of historical fact and may be forward-looking statements. Forward-looking statements are subject to a variety of known and

unknown risks, uncertainties and other factors that could cause actual events or results to differ from those reflected in the forward-looking statements, including, without limitation:

- risks related to the COVID-19 pandemic;
- risks related to inability to define proven and probable reserves;
- risks related to our ability to finance the development of our mineral properties through external financing, strategic alliances, the sale of property interests or otherwise;
- uncertainty as to whether there will ever be production at the Company's mineral exploration and development properties;
- risks related to our ability to commence production and generate material revenues or obtain adequate financing for our planned exploration and development activities;
- risks related to lack of infrastructure including but not limited to the risk whether or not the Ambler Access Project will receive the requisite permits and, if it does, whether the Alaska Industrial Development and Export Authority ("AIDEA") will build the AAP;

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- risks related to inclement weather which may delay or hinder exploration activities at our mineral properties;

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- risks related to our dependence on a third party for the development of our projects;
- none of the Company's mineral properties are in production or are under development;
- commodity price fluctuations;
- uncertainty related to title to our mineral properties;
- our history of losses and expectation of future losses;
- risks related to increases in demand for equipment, skilled labor and services needed for exploration and development of mineral properties and related cost increases;
- uncertainties relating to the assumptions underlying our resource estimates, such as metal pricing, metallurgy, mineability, marketability and operating and capital costs;
- uncertainty related to inferred, indicated and measured mineral resources;
- mining and development risks, including risks related to infrastructure, accidents, equipment breakdowns, labor disputes or other unanticipated difficulties with or interruptions in development, construction or production;
- uncertainty related to successfully acquiring commercially mineable mineral rights;
- risks and uncertainties relating to the interpretation of drill results, the geology, grade and continuity of our mineral deposits;
- risks related to governmental regulation and permits, including environmental regulation, including the risk that more stringent requirements or standards may be adopted or applied due to circumstances unrelated to the Company and outside of our control;
- the risk that permits and governmental approvals necessary to develop and operate mines at our mineral properties will not be available on a timely basis or at all;

- risks related to the need for reclamation activities on our properties and uncertainty of cost estimates related thereto;
- risks related to the acquisition and integration of operations or projects;
- risks related to industry competition in the acquisition of exploration properties and the recruitment and retention of qualified personnel;
- our need to attract and retain qualified management and technical personnel;
- risks related to conflicts of interests of some of our directors and officers;
- risks related to potential future litigation;
- risks related to market events and general economic conditions;
- risks related to future sales or issuances of equity securities decreasing the value of existing Trilogy common shares ("Common Shares"), diluting voting power and reducing future earnings per share;

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- risks related to the voting power of our major shareholders and the impact that a sale by such shareholders may have on our share price;

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- uncertainty as to the volatility in the price of the Company's Common Shares;
- the Company's expectation of not paying cash dividends;
- adverse federal income tax consequences for U.S. shareholders should the Company be a passive foreign investment company;
- risks related to global climate change;
- risks related to adverse publicity from non-governmental organizations;
- uncertainty as to our ability to maintain the adequacy of internal control over financial reporting as per the requirements of Section 404 of the Sarbanes-Oxley Act ("SOX"); and
- increased regulatory compliance costs, associated with rules and regulations promulgated by the United States Securities and Exchange Commission ("SEC"), Canadian Securities Administrators, the NYSE American, the Toronto Stock Exchange ("TSX"), and the Financial Accounting Standards Boards, and more specifically, our efforts to comply with the Dodd-Frank Wall Street Reform and Consumer Protection Act ("Dodd-Frank"); and
- risks related to the future effects of the COVID-19 pandemic.

This list is not exhaustive of the factors that may affect any of our forward-looking statements. Forward-looking statements are statements about the future and are inherently uncertain, and our actual achievements or other future events or conditions may differ materially from those reflected in the forward-looking statements due to a variety of risks, uncertainties and other factors, including, without limitation, those referred to in this report under the heading "Risk Factors" and elsewhere.

Our forward-looking statements are based on the beliefs, expectations and opinions of management on the date the statements are made. In connection with the forward-looking statements contained herein, we have made certain assumptions about our business, including about:

- our ability to achieve production at our Arctic and Bornite Projects (as defined herein);

- the accuracy of our mineral resource estimates;
- the results, costs and timing of future exploration drilling and engineering;
- timing and receipt of approvals, consents and permits under applicable legislation;
- the adequacy of our financial resources;
- the receipt of third party contractual, regulatory and governmental approvals for the exploration, development, construction and production of our properties;
- our expected ability to develop adequate infrastructure and that the cost of doing so will be reasonable;
- continued good relationships with South32 (as defined below), local communities and other stakeholders;
- there being no significant disruptions affecting operations, whether relating to labor, supply, power, damage to equipment or other matters;
- expected trends and specific assumptions regarding metal prices and currency exchange rates; and

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- prices for and availability of fuel, electricity, parts and equipment and other key supplies remaining consistent with current levels.

We have also assumed that no significant events will occur outside of our normal course of business. Although we have attempted to identify important factors that could cause actual actions, events or results to differ materially from those described in forward-looking statements, there may be other factors that cause actions, events or results not to be as anticipated, estimated or intended. We believe that the assumptions inherent in the forward-looking statements are reasonable as of the date hereof. However, forward-looking statements are not guarantees of future performance and, accordingly, undue reliance should not be put on such statements due to the inherent uncertainty therein. We do not assume any obligation to update forward-looking statements if circumstances or management's beliefs, expectations or opinions should change, except as required by law. For the reasons set forth above, investors should not place undue reliance on forward-looking statements. All forward-looking statements contained herein are qualified by these cautionary statements.

## TECHNICAL INFORMATION

Richard Gosse, a Qualified Person under NI 43-101 and S-K 1300 (as defined herein) and an employee and Vice President Exploration of the Company has reviewed and approved the scientific and technical information contained in this Annual Report on Form 10-K.

## PART I

### Item 1. BUSINESS

Our principal business is the exploration and development of the Upper Kobuk Mineral Projects ("Upper Kobuk Mineral Projects" or "UKMP" or "UKMP Projects") located in the Ambler mining district Mining District in Northwest Alaska, United States. The Upper Kobuk Mineral Projects are held by Ambler Metals LLC ("Ambler Metals"), a limited liability company owned equally by Trilogy and South32 Limited ("South32"), and is comprised of the (i) Arctic Project, which contains a high-grade polymetallic volcanogenic massive sulfide ("VMS") deposit ("Arctic Project"); and (ii) Bornite Project, which contains a carbonate-hosted copper - cobalt deposit ("Bornite Project"). Our goals include expanding mineral resources and advancing the UKMP Projects through technical, engineering and feasibility studies so that production decisions can be made on those projects. Our interest in Ambler Metals is held by a wholly-owned subsidiary, NovaCopper US Inc. (dba Trilogy Metals US) ("Trilogy Metals US"), registered to do business in the State of Alaska. We also conduct early-stage exploration through a wholly owned subsidiary, 995 Exploration Inc.

#### Name, Address and Incorporation

Trilogy Metals Inc. was incorporated on April 27, 2011 under the name NovaCopper Inc. pursuant to the terms of the *Business Corporations Act* (British Columbia). NovaCopper Inc. changed its name to Trilogy Metals Inc. on September 1, 2016 to better reflect its diversified metals

resource base. Our registered office is located at Suite 2600, Three Bentall Centre, 595 Burrard Street, Vancouver, British Columbia, Canada, and our executive office is located at Suite 1150, 609 Granville Street, Vancouver, British Columbia, Canada.

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#### Corporate Organization Chart

The following chart depicts our corporate structure together with the jurisdiction of incorporation of our subsidiaries at **November 30, 2022** **November 30, 2023**. All ownership is 100% unless otherwise stated.



Graphic

On February 11, 2020, the Company's Upper Kobuk Mineral Projects were transferred to Ambler Metals, a newly incorporated limited liability company incorporated under the laws of Delaware. Each of Trilogy and South32 hold a 50% interest in Ambler Metals. All mineral resources and mineral reserve estimates with respect to the Arctic Project and Bornite Project that are disclosed in this Annual Report on Form 10-K are reported on a 100% basis unless otherwise noted. **See "Significant Developments in 2020".**

#### Business Cycle

Our business, at its current exploration phase, is cyclical. Exploration activities are conducted primarily during snow-free months in Alaska. The optimum field season at the Upper Kobuk Mineral Projects is from late May to late September. The length of the snow-free season at the Upper Kobuk Mineral Projects varies from about May through November at lower elevations and from July through September at higher elevations.

#### Trilogy's Strategy

Our business strategy is focused on creating value for stakeholders through our ownership and advancement of the Arctic Project and exploration and advancement of the Bornite Project with our joint venture partner, South32, and through the pursuit of similarly attractive mining projects. We plan to:

- advance the Arctic Project towards development with key activities including increased definition of the NI 43-101 **and S-K 1300** mineral resources and reserves contained in the Arctic FS, additional metallurgical and geotechnical studies and the advancement of baseline environmental studies;



- advance exploration in the Ambler **mining district Mining District** and, in particular, at the Bornite Project, pursuant to the NANA Agreement (as more particularly described under "History of Trilogy – Agreement with NANA Regional Corporation") through resource development and initial technical studies; and
- pursue project level or corporate transactions that are value accretive.

#### Significant Developments in 2023

- On January 25, 2023, the Company announced the second set of drilling results from the 2022 field season at the Upper Kobuk Mineral Projects and on February 27, 2023, the Company announced the third set of drilling results from the 2022 field season at the UKMP.
- On February 14, 2023, the Company announced an updated feasibility study technical report for the Arctic Project and an updated resource for the Bornite Project, and filed NI 43-101 technical reports for both projects with the Canadian securities regulators. In addition, the Company announced technical report summaries for both projects prepared in accordance with S-K 1300 and which were filed as exhibits with the annual report on Form 10-K.
- On April 25, 2023, the Company completed non-brokered private placement of 5,854,545 Common Shares at a price of \$0.55 per Common Share for gross proceeds of \$3.2 million. After legal and stock exchange fees, the Company received net proceeds of \$3.1 million.
- On September 11, 2023 the Company provided an update on the activities at the UKMP with the Bornite camp opening.
- On October 19, 2023, the Company announced that the United States Bureau of Land Management's ("BLM") had filed the draft Supplemental Environmental Impact Statement ("SEIS") on its website <https://eplanning.blm.gov/eplanning-ui/project/57323/570> and anticipated being in the federal register on October 20, 2023. The draft SEIS was open for a 60-day public comment period, until December 19, 2023. The BLM reconfirmed they anticipate a final SEIS is expected in the first quarter of 2024, and a Record of Decision within the second quarter of 2024.

#### Significant Developments in 2022

- On January 11, 2022, the Company announced the 2022 program and budget of approximately \$28.5 million for the advancement of the **Upper Kobuk Mineral Projects ("UKMP") UKMP** located in Northwestern Alaska. The budget **is was** 100% funded by Ambler Metals.
- On January 20, 2022, the Company announced an updated mineral resource for the Bornite Project.
- On February 7, 2022, the Company announced that the AIDEA had formally approved the proposed plan and budget for the 2022 summer field season activities and services of up to \$30.8 million for the Ambler Access Project. The cost **will be was** shared 50/50 by AIDEA and Ambler Metals.
- On February 23, 2022, the Company announced that the United States Department of the Interior ("DOI") filed a motion to remand the Final Environmental Impact Statement ("FEIS") and suspend the right-of-way permits issued to AIDEA for the Ambler Access Project. The DOI has stated that the suspension of the road permits will allow it to carry out additional supplemental work on the FEIS. The motion also indicated that the DOI has requested that the lawsuits filed against the DOI by a coalition of national and Alaska environmental non-government organizations be suspended. The lawsuits had been filed in response to the **United States Bureau of Land Management's ("BLM") BLM** issuance of the Joint Record of Decision ("JROD"), that authorized a right-of-way across federally managed lands for AIDEA and the AAP.

- On June 8, 2022, the Company announced that Ambler Metals had commenced mobilization for the upcoming exploration field program at the UKMP.
- On September 21, 2022, the Company announced that the BLM had published in the Federal Register a Notice of Intent ("NOI") that it will prepare **a Supplemental Environmental Impact Statement ("SEIS") the SEIS** for the proposed Ambler Mining District Industrial Access Road. The NOI indicates that:

- The BLM will accept comments related to the SEIS for 45 days so that the BLM can determine which, if any, additional impacts and resources related to identified deficiencies should be more thoroughly assessed to facilitate integrating the BLM's National Environmental Policy Act ("NEPA") analysis with its ongoing Alaska National Interest Lands Conservation Act Section 810 and National Historic Preservation Act Section 106 processes;
- Input by Alaska Native Tribes and Corporations will continue to be of critical importance and that BLM will continue to consult with these entities under applicable guidance; and
- Preparation of the SEIS in compliance with NEPA will additionally help the BLM to fulfill its obligations under applicable law.
- On November 23, 2022, the Company announced that the BLM submitted a status report in accordance with the Voluntary Remand dated May 17, 2022 stating that the comment period ended on November 4, 2022 for the scoping process of the SEIS and that the BLM currently anticipates publishing a draft SEIS during the second quarter of calendar year 2023, which will be open for public comment upon publication. The BLM also anticipates publishing a final SEIS, conducting final pre-decision consultation with Alaska Native Tribes and Corporations, and issuing a Record of Decision, all within the fourth quarter of calendar year 2023.

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**Significant Developments in 2021**

- On January 6, 2021, the BLM, the National Park Service and the AIDEA signed Right-of-Way agreements giving AIDEA the ability to cross federally owned and managed lands along the route for the Ambler Road Project approved in the Joint Record of Decision. The agreements grant a 50-year right-of-way on federally owned and managed land by the federal agencies for the future development of the Ambler Mining District Industrial Access Road. The authorizing documents with the two agencies are the final federal permits required for the Ambler Road Project.
- In a press release dated February 11, 2021, the Company announced its approval for Ambler Metals to enter into an Ambler Access Development Agreement (the "Development Agreement") with AIDEA. The Development Agreement defines how AIDEA and Ambler Metals will work cooperatively together on the pre-development work for the Ambler Access Project to address funding and oversight of the project's feasibility and permitting activities until the parties reach a decision on the construction of the project. The cost of the pre-development work and activities will be paid 50% by AIDEA and 50% by Ambler Metals based on an annually agreed program and budget. Under the Development Agreement, Ambler Metals and AIDEA agree to contribute up to \$35 million each for pre-development costs of the Ambler Access Project through December 31, 2024.
- In a press release dated April 19, 2021, the Company announced that the AIDEA had formally approved the proposed plan and budget for the 2021 summer field season activities and services of up to \$13 million for the Ambler Access Project. The cost was to be shared 50/50 by AIDEA and Ambler Metals. The Board of AIDEA authorized up to \$6.5 million for field season activities. These funds were to be matched by up to another \$6.5 million from Ambler Metals under the terms of the Ambler Access Development Agreement that was approved by the AIDEA Board on February 10, 2021 and subsequently executed by both parties, resulting in a total budget for 2021 of up to \$13 million. The AAP is a proposed 211-mile, east-west running controlled industrial access road that would provide industrial access to the Ambler Mining District in northwestern Alaska.

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- In a press release dated May 17, 2021, the Company announced that Ambler Metals had finalized the details of the 2021 exploration field program at the UKMP for the previously approved \$27 million exploration budget. The exploration program was aligned with a strategy developed by the Company and South32 which prioritizes the exploration budget within the UKMP. The strategy defines a program that advances the highest priority projects and exploration targets, both VMS and Carbonate-Hosted Copper ("CHC"), ranging from early-stage geophysical anomalies that were identified during the 2019 airborne Versatile Time Domain Electromagnetic ("VTEM") survey to advanced VMS and CHC prospects with historical resources. The site camp opened on June 1, 2021.

## Significant Developments in 2020

- On April 10, 2017, we entered into an option agreement, as amended (the "South32 Option Agreement") with South32 Group Operations Pty Ltd ("South32 Operations"), a wholly-owned subsidiary of South32 Limited, which agreement was later assigned by South32 Operations to its affiliate, South32 USA Exploration Inc. (together with South32 Operations, "South32"). The South32 Option Agreement granted to South32 a three-year option to form a 50/50 joint venture with respect to Trilogy's Alaskan assets which includes the Upper Kobuk Mineral Projects. South32 was required to contribute a minimum of \$10 million each year, for a maximum of three years, to keep the option in good standing (the "Initial Funding"). If South32 elected to exercise the option, the subscription price less certain deductions for Initial Funding was to be paid in one tranche within 45 business days. Had South32 not made its annual minimum payment or elected to withdraw, the option would lapse and South32 would have no claim to ownership or to the funds it had already spent. In order to exercise its option to form the Joint Venture, South32 was required to contribute a minimum of \$150 million, plus (i) any amounts Trilogy spent on matched parallel funding to a maximum of \$16 million over the three year period and (ii) \$10 million, less the amount of the Initial Funding contributed by South32. On December 19, 2019, we

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announced in a press release that South32 had exercised its option to acquire a 50% interest in a joint venture company to be named "Ambler Metals LLC" which now owns the UKMP Projects.

- On February 11, 2020, we announced that the formation of Ambler Metals had completed, with the Company contributing its assets associated with the UKMP Projects, and South32 contributing a subscription price payment of US\$145 million, to the joint venture.
- In a press release dated February 26, 2020, the Company announced that Ambler Metals had approved a 2020 program budget of \$22.8 million for the advancement of the UKMP Projects. The budget was to be 100% funded by Ambler Metals. The 2020 program budget included 10,000 meters of drilling at the Arctic Project, 2,500 meters of drilling within the Ambler VMS belt and geological mapping and geochemical soil sampling at the Bornite Project.
- Subsequent to the approval of the 2020 program budget, the Company and its joint venture partner, South32, decided not to proceed with the 2020 exploration program after assessing the coronavirus (COVID-19) environment. Ambler Metals gave due consideration to the merits of carrying out an abridged work program at the UKMP Projects. However, given the continued uncertainty resulting from COVID-19, ongoing safety concerns (despite added safety protocols including physical distancing, protective equipment and testing) and the fact that, due to COVID-19, the planned field season had already been delayed to the point at which any field season would provide limited critical path benefits, the decision was made not to proceed with a 2020 field season.
- On April 20, 2020, we issued a press release announcing the appointment of Tony Giardini as President and Chief Executive Officer effective June 1, 2020. Mr. Giardini has been a director of the Company since 2012 when the Company was formed and will continue to be an executive director. James (Jim) Gowans, the Interim President and Chief Executive Officer, remained in his role as a director of the Company.
- In a press release dated July 23, 2020, the Company, along with our joint venture partner, South32, announced the signing of the Record of Decision by BLM for the Ambler Access Project. The Record of Decision approves the development of the northern route, which is to be a 211-mile private gravel access road in the southern Brooks Range foothills to provide industrial access to the Ambler Mining District.
- In a press release dated August 20, 2020, the Company announced the positive results of its feasibility study for the Arctic Project (the "2020 Arctic FS"). The 2020 Arctic FS was prepared on a 100% ownership basis, of which Trilogy's share is 50%. The 2020 Arctic 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 12-year mine life. See the 2020 Arctic Report (as defined below) and "Properties" for additional information.
- On August 25, 2020, we issued a press release to announce that the board of Ambler Metals had appointed Ramzi Fawaz as President and Chief Executive Officer of Ambler Metals effective as of September 1, 2020. Mr Fawaz joined Ambler Metals from Newmont Corporation ("Newmont") where he was Senior Vice President Projects from February 2011 to October 2019, with responsibility for the development and execution of Newmont's major gold and copper projects globally.
- On September 3, 2020, we issued a press release announcing that the Company had hired Richard Gosse as Vice President Exploration of the Company with immediate effect.

- On October 2, 2020, we filed the technical report for the Company's Arctic Project entitled "Arctic Feasibility Study Alaska, USA NI 43-101 Technical Report" with an effective date of August 20, 2020, prepared by Ausenco Engineering Canada Inc., Wood Canada Limited and SRK Consulting (Canada) Inc. (the "2020 Arctic Report").

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The technical report describes the 2020 Arctic FS on the Arctic Project as discussed above. The 2020 Arctic Report has been superseded by the Company's NI 43-101 Arctic Report (as defined below).

- On November 19, 2020, we issued a press release announcing that Ambler Metals had approved the 2021 program and budget of approximately \$27 million for the advancement of the UKMP Projects. The budget will be 100% funded by Ambler Metals.

## History of Trilogy

### *Spin-Out*

We were formerly a wholly-owned subsidiary of NovaGold Resources Inc. ("NovaGold"). In April 2012, Trilogy Common Shares were distributed to NovaGold shareholders pursuant to a Plan of Arrangement under the *Companies Act* (Nova Scotia) and were listed and posted for trading on the TSX and on the NYSE American.

### *Name Change*

We changed our corporate name to Trilogy Metals Inc. from NovaCopper Inc. in 2016 to better reflect the diversity of minerals at our UKMP Projects. On September 8, 2016, upon the opening of the markets our shares began trading on the TSX and the NYSE American under the symbol "TMQ".

### *Agreement with NANA Regional Corporation*

On October 19, 2011, NANA Regional Corporation, Inc. ("NANA"), an Alaska Native Corporation headquartered in Kotzebue, Alaska, and Trilogy Metals US entered an Exploration Agreement and Option Agreement (as amended, the "NANA Agreement") for the cooperative development of NANA's respective resource interests in the Ambler **mining district Mining District** of Northwest Alaska. Upon the formation of Ambler Metals, the Company assigned its rights and obligations under the NANA Agreement to Ambler Metals. The NANA Agreement consolidates Ambler Metals' and NANA's land holdings into an approximately 142,831-hectare land package and provides a framework for the exploration and any future development of this high-grade and prospective poly-metallic belt.

The NANA Agreement grants Ambler Metals the nonexclusive right to enter on, and the exclusive right to explore, the Bornite lands and the Alaska Native Claims Settlement Act ("ANCSA") lands (each as defined in the NANA Agreement) and in connection therewith, to construct and utilize temporary access roads, camps, airstrips and other incidental works. In consideration for this right, Trilogy Metals US previously paid to NANA \$4 million in cash. Ambler Metals is also required to make payments to NANA for scholarship purposes in accordance with the terms of the NANA Agreement. Ambler Metals has further agreed to use reasonable commercial efforts to train and employ NANA shareholders to perform work for Ambler Metals in connection with its operations on the Bornite lands, ANCSA lands and Ambler lands (as defined in the NANA Agreement) (collectively, the "Lands"). The NANA Agreement has a term of 20 years, with an option in favour of Ambler Metals to extend the term for an additional 10 years. The NANA Agreement may be terminated by mutual agreement of the parties or by NANA if Ambler Metals does not meet certain expenditure requirements on the Bornite lands and ANCSA lands.

If, following receipt of a feasibility study and the release for public comment of a related draft environmental impact statement, Ambler Metals decides to proceed with construction of a mine on the Lands, Ambler Metals will notify NANA in writing and NANA will have 120 days to elect to either (a) exercise a non-transferrable back-in-right to acquire an undivided ownership interest between 16% and 25% (as specified by NANA) of that specific project; or (b) not exercise its back-in-right, and instead receive a net proceeds royalty equal to 15% of the net proceeds realized by Ambler Metals from such project (following the recoupment by Ambler Metals of all costs incurred, including operating, capital and carrying costs). The cost to exercise such back-in-right is equal to the percentage interest in the project multiplied by the difference between (i) all costs incurred by Ambler Metals or its affiliates on the project, including historical costs

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incurred prior to the date of the NANA Agreement together with interest on the costs; and (ii) \$40 million (subject to

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exceptions). This amount will be payable by NANA to Ambler Metals in cash at the time the parties enter into a joint venture agreement and in no event will the amount be less than zero.

In the event that NANA elects to exercise its back-in-right, the parties will as soon as reasonably practicable form a joint venture, with NANA's interest being between 16% to 25% and Ambler Metals owning the balance of the interest in the joint venture. Upon formation of the joint venture, the joint venture will assume all of the obligations of Ambler Metals and be entitled to all the benefits of Ambler Metals under the NANA Agreement in connection with the mine to be developed and the related Lands. A party's failure to pay its proportionate share of costs in connection with the joint venture will result in dilution of its interest. Each party will have a right of first refusal over any proposed transfer of the other party's interest in the joint venture other than to an affiliate or for the purposes of granting security. A transfer by either party of any net proceeds royalty interest in a project other than for financing purposes will also be subject to a first right of refusal. A transfer of NANA's net smelter return on the Lands is subject to a first right of refusal by Ambler Metals.

In connection with possible development of a mine on the Bornite lands or ANCSA lands, Ambler Metals and NANA will execute a mining lease to allow Ambler Metals or the joint venture to construct and operate a mine on the Bornite lands or ANCSA lands. These leases will provide NANA a 2% net smelter royalty as to production from the Bornite lands and a 2.5% net smelter royalty as to production from the ANCSA lands. If Ambler Metals decides to proceed with construction of a mine on the Ambler lands, NANA will enter into a surface use agreement with Ambler Metals which will afford Ambler Metals access to the Ambler lands along routes approved by NANA on the Bornite lands or ANCSA lands. In consideration for the grant of such surface use rights, Ambler Metals will grant NANA a 1% net smelter royalty on production and an annual payment of \$755 per acre (as adjusted for inflation each year beginning with the second anniversary of the effective date of the NANA Agreement and for each of the first 400 acres (and \$100 for each additional acre) of the lands owned by NANA and used for access which are disturbed and not reclaimed.

Ambler Metals has formed an oversight committee with NANA, which consists of four representatives from each of Ambler Metals and NANA (the "Oversight Committee"). The Oversight Committee is responsible for certain planning and oversight matters carried out by us under the NANA Agreement. The planning and oversight matters that are the subject of the NANA Agreement will be determined by majority vote. The representatives of each of Ambler Metals and NANA attending a meeting will have one vote in the aggregate and in the event of a tie, the Ambler Metals representatives jointly shall have a deciding vote on all matters other than Subsistence Matters, as that term is defined in the NANA Agreement. There shall be no deciding vote on Subsistence Matters and Ambler Metals may not proceed with such matters unless approved by majority vote of the Oversight Committee or with the consent of NANA, such consent not to be unreasonably withheld or delayed.

#### **Principal Markets**

We do not currently have a principal market. Our principal objective is to become a producer of copper.

#### **Specialized Skill and Knowledge**

All aspects of our business require specialized skills and knowledge. Such skills and knowledge include the areas of geology, mining and accounting. See "*Executive Officers of Trilogy*" for details as to the specific skills and knowledge of our directors and management.

#### **Environmental Protection**

Mining is an extractive industry that impacts the environment. Along with our joint venture partner, South32, our goal is to evaluate ways to minimize that impact and to develop safe, responsible and profitable operations by developing natural resources for the benefit of our employees, shareholders and communities and maintain high standards for environmental performance at the UKMP Projects. We strive to meet or exceed environmental standards at the UKMP Projects. One way Ambler Metals does this is through collaborations with local communities in Alaska, including Native

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Alaskan groups. Ambler Metals' environmental performance will be overseen at the Ambler-board and Trilogy-board

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level and environmental performance is the responsibility of the project manager. All new activities and operations will be managed for compliance with applicable laws and regulations. In the absence of regulation, best management practices will be applied to manage environmental risk. Furthermore, we will strive to limit releases to the air, land or water and appropriately treat and dispose of waste.

For a more detailed discussion of the various government laws and regulations applicable to our operations and potential negative effects of these laws and regulations, see Item 1A. *Risk Factors*, and Item 2 Properties, *Environmental, Permitting, Social and Closure Considerations below*.

### Employees

As of November 30, 2022 November 30, 2023, we had 5 full-time employees, all of whom except our CEO, were employed at our executive office in Vancouver, BC. We have entered into executive employment agreements with the CEO and CFO (each as defined herein). In the past, the number of individuals we employed fluctuated throughout the year depending on the season; however, during 2020, we contributed the UKMP Projects to Ambler Metals and no longer directly employ any seasonal staff.

### Information About Our Executive Officers

As of November 30, 2022 November 30, 2023, we had two executive officers, namely Tony Giardini and Elaine Sanders. The following information is presented as of November 30, 2022 November 30, 2023.

Name and Residence	Age	Held Office Since	Business Experience During Past Five Years
Tony Giardini	63 64	June 1, 2020 <sup>(1)</sup>	Chief Executive Officer of Trilogy (2020 – present); President of Ivanhoe Mines Ltd. (May 2019 – March 2020); Chief Financial Officer of Kinross Gold Corporation (December 2012 - April 2019)
British Columbia, Canada			
Rome, Italy			
Director, President and Chief Executive Officer			
Elaine Sanders	53 54	January 30, 2012 <sup>(2)</sup>	Vice President and Chief Financial Officer of Trilogy (2012 – present); Corporate Secretary of Trilogy (2011 – present)
British Columbia, Canada			
VP, Chief Financial Officer and Corporate Secretary			

<sup>(1)</sup> Mr. Giardini was appointed President and Chief Executive Officer on June 1, 2020.

(2) Ms. Sanders was appointed Chief Financial Officer on January 30, 2012. She became a full-time employee of the Company on November 13, 2012.

### Competitive Conditions

The mineral exploration and development industry is competitive in all phases of exploration, development and production. There is a high degree of competition faced by us in Alaska and elsewhere for skilled management employees, suitable contractors for drilling operations, technical and engineering resources, and necessary exploration and mining equipment, and many of these competitor companies have greater financial resources, operational expertise, and/or more advanced properties than us. Additionally, our operations are in a remote location where skilled resources and support services are limited. We have in place experienced management personnel and continue to evaluate the required expertise and skills to carry out our operations. As a result of this competition, we may be unable to achieve our exploration and development in the future on terms we consider acceptable or at all. See "Item 1A. Risk Factors."

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### Available Information

We make available, free of charge, on or through our website, at [www.trilogymetals.com](http://www.trilogymetals.com) our Annual Report on Form 10-K, which includes our audited financial statements, our Quarterly Reports on Form 10-Q, and our Current Reports on

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Form 8-K and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act. The SEC maintains a website that contains reports, proxy and information statements, and other information at [www.sec.gov](http://www.sec.gov). Our website and the information contained therein or connected thereto are not intended to be, and are not incorporated into this Annual Report on Form 10-K.

## Item 1A. RISK FACTORS

Investing in our securities is speculative and involves a high degree of risk due to the nature of our business and the present stage of exploration of our mineral properties. The following risk factors, as well as risks currently unknown to us, could materially adversely affect our future business, operations and financial condition and could cause them to differ materially from the estimates described in forward-looking information relating to Trilogy, or our business, property or financial results, each of which could cause purchasers of securities to lose all or part of their investments.

### Risks Related to the future of the COVID Pandemic

*The outbreak of the coronavirus (COVID-19) may affect our operations.*

The Company faces risks related to health epidemics and other outbreaks of communicable diseases, which could significantly disrupt its operations and may materially and adversely affect its business and financial conditions.

The Company's business could be adversely impacted by the effects of the coronavirus or other epidemics. In December 2019, a novel strain of the coronavirus (COVID-19) ("COVID-19") emerged in China and the virus has now spread around the world, including Canada and the U.S. The extent to which COVID-19 impacts the Company's business, including exploration and development activities at Ambler Metals and the market for its securities, will depend on future developments, which are uncertain and cannot be predicted at this time, and include the duration, severity and scope of the outbreak and the actions taken to contain or treat the coronavirus outbreak. In particular, the continued

spread of the coronavirus and travel and other restrictions established to curb the spread of the COVID-19, has and could continue to materially and adversely impact the Company's business including without limitation, the planned exploration programs at Ambler Metals. (see "Significant Developments in 2020" above), employee health, workforce productivity, increased insurance premiums, limitations on travel, the availability of industry experts and personnel, the timing to process drill and other metallurgical testing, interruption of supplies from third parties upon which the Company relies and other factors that will depend on future developments beyond the Company's control, which may have a material and adverse effect on the its business, financial condition and results of operations.

There can be no assurance that the Company's personnel will not be impacted by these pandemic diseases and ultimately see its workforce productivity reduced or incur increased medical costs or insurance premiums as a result of these health risks.

#### Risks Related to the Company's Mineral Properties

*We may not have sufficient funds to develop our mineral projects or to complete further exploration programs.*

We have limited financial resources. We currently generate no mining operating revenue and must primarily finance exploration activity and the development of mineral projects by other means. Although South32 funded Ambler Metals in the amount of US\$145 million upon formation of the joint venture as discussed above, in 2020, in the future, once our share of such amount has been expended or we wish to acquire any other properties outside of Ambler Metals, our ability to continue exploration, development and production activities, if any, will depend on our ability to obtain additional external financing. Any unexpected costs, problems or delays could severely impact our ability to continue exploration

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and development activities. The failure to meet ongoing obligations on a timely basis could result in a loss or a substantial dilution of our interests in projects.

The sources of external financing that we may use for these purposes include project or bank financing or public or private offerings of equity and debt. In addition, we may enter into one or more strategic alliances or joint ventures, in

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addition to our joint venture with South32, sell marketable securities held by the Company, decide to sell certain property interests, or utilize one or a combination of all of these alternatives. The financing alternative we choose may not be available on acceptable terms, or at all. If additional financing is not available, we may have to postpone further exploration or development of, or sell our interest in, one or more of our principal properties.

*Even if one of our mineral projects is determined to be economically viable to develop into a mine, such development may not be successful.*

If the development of one of our projects is found to be economically feasible and approved by our Board board of directors (the "Board") and in the case of the UKMP Projects, by our joint venture partner, South32, such development will require obtaining permits and financing, the construction and operation of mines, processing plants and related infrastructure, including road access. As a result, we are and will continue to be subject to all of the risks associated with establishing new mining operations, including:

- the timing and cost, which can be considerable, of the construction of mining and processing facilities and related infrastructure;
- the availability and cost of skilled labor and mining equipment;



- the availability and cost of appropriate smelting and refining arrangements;
- the need to obtain necessary environmental and other governmental approvals and permits and the timing of the receipt of those approvals and permits;
- the availability of funds to finance construction and development activities;
- potential opposition from non-governmental organizations, environmental groups or local groups which may delay or prevent development activities; and
- potential increases in construction and operating costs due to changes in the cost of fuel, power, materials and supplies.

The costs, timing and complexities of developing our projects may be greater than anticipated because our property interests are not located in developed areas, and, as a result, our property interests are not currently served by appropriate road access, water and power supply and other support infrastructure. Cost estimates may increase significantly as more detailed engineering work is completed on a project. It is common in new mining operations to experience unexpected costs, problems and delays during construction, development and mine start-up. In addition, delays in the early stages of mineral production often occur. Accordingly, we cannot provide assurance that we will ever achieve, or that our activities will result in, profitable mining operations at the UKMP Projects or any other property that we may acquire.

In addition, there can be no assurance that our mineral exploration activities will result in any discoveries of new mineralization. If further mineralization is discovered there is also no assurance that the mineralization would be economical for commercial production. Discovery of mineral deposits is dependent upon a number of factors and significantly influenced by the technical skill of the exploration personnel involved. The commercial viability of a mineral deposit is also dependent upon a number of factors which are beyond our control, including the attributes of the deposit, commodity prices, government policies and regulation and environmental protection.

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*The Upper Kobuk Mineral Projects are located in a remote area of Alaska, and access to them is limited. Exploration and any future development or production activities may be limited and delayed by infrastructure challenges, inclement weather and a shortened exploration season.*

We cannot provide assurances that the proposed AAP that would provide access to the Ambler **mining district Mining District** will be built, that it will be built in a timely manner, that the cost of accessing the proposed road will be reasonable, that it will be built in the manner contemplated, or that it will sufficiently satisfy the requirements of the Upper Kobuk Mineral Projects. The proposed AAP requires significant permitting and approvals, and the JROD issued in 2020 is currently subject to lawsuits which could delay or prevent the project. Further, changes in the U.S. federal administration may result in changes in interpretations or **priorities priorities** which may further delay or prevent the proposed AAP.

In addition, successful development of the Upper Kobuk Mineral Projects will require the development of the necessary infrastructure. If adequate infrastructure is not available in a timely manner, there can be no assurance that:

- the development of the Upper Kobuk Mineral Projects will be commenced or completed on a timely basis, if at all;
- the resulting operations will achieve the anticipated production volume; or
- the construction costs and operating costs associated with the development of the Upper Kobuk Mineral Projects will not be higher than anticipated.

As the Upper Kobuk Mineral Projects are located in a remote area, exploration, development and production activities may be limited and delayed by inclement weather and a shortened exploration season. The exploration of the UKMP Projects has also been impacted by COVID-19. See “Risks Related to **the future of COVID-19**” above.

*We are dependent on a third party that participates in exploration and development of our Upper Kobuk Mineral Projects.*

In December 2019, South32 exercised its option to acquire a 50% interest in Ambler Metals. The formation of Ambler Metals was completed in February 2020 and Ambler Metals now owns the Upper Kobuk Mineral Projects. Our success with respect to the Upper Kobuk Mineral Projects depends on the efforts and expertise of South32 with whom we have contracted; we hold a 50% interest and the remaining 50% interest is held

by South32, who is not under our control or direction. We are dependent on them for the progress and development of the Upper Kobuk Mineral Projects. South32 may also have different priorities which could impact the timing and cost of development of the Upper Kobuk Mineral Projects. The third party may also be in default of its agreement with us, without our knowledge, which may put the mineral property and related assets at risk. The existence or occurrence of one or more of the following circumstances and events could have a material adverse impact on our ability to achieve our business plan, profitability, or the viability of our interests held with the third party, which could have a material adverse impact on our business, future cash flows, earnings, results of operations and financial condition: (i) disagreement with our business partner on how to develop and operate the Upper Kobuk Mineral Projects efficiently; (ii) inability to exert influence over certain strategic decisions made in respect of the jointly-held Upper Kobuk Mineral Projects; (iii) inability of our business partner to meet its obligations to the joint business or third parties; and (iv) litigation with our business partner regarding joint business matters.

*We have no history of production and no revenue from mining operations.*

We have a very limited history of operations and to date have generated no revenue from mining operations. As such, we are subject to many risks common to such enterprises, including under-capitalization, cash shortages, limitations with respect to personnel, financial and other resources and lack of significant revenues. There is no assurance that the Upper Kobuk Mineral Projects, or any other future projects will be commercially mineable, and we may never generate revenues from our mining operations.

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*Changes in the market price of copper, zinc and other metals, which in the past have fluctuated widely, will affect our ability to finance continued exploration and development of our projects and affect our operations and financial condition.*

Our long-term viability will depend, in large part, on the market price of copper, zinc and other metals. The market prices for these metals are volatile and are affected by numerous factors beyond our control, including:

- global or regional consumption patterns;
- the supply of, and demand for, these metals;
- speculative activities;
- the availability and costs of metal substitutes;
- expectations for inflation; and
- political and economic conditions, including interest rates and currency values.

We cannot predict the effect of these factors on metal prices. A decrease in the market price of copper, zinc and other metals could affect our ability to raise funds to finance the exploration and development of any of our mineral projects, which would have a material adverse effect on our financial condition and results of operations. The market price of copper, zinc and other metals may not remain at current levels. In particular, an increase in worldwide supply, and consequent downward pressure on prices, may result over the longer term from increased copper production from mines developed or expanded as a result of current metal price levels. There is no assurance that a profitable market may exist or continue to exist.

*Title and other rights to our properties may be subject to challenge.*

We cannot provide assurance that title to our properties will not be challenged. We (through our interest in Ambler Metals) indirectly own mineral claims which constitute our property holdings. We may not have, or may not be able to obtain, all necessary surface rights to develop a property. Title insurance is generally not available for mineral properties and our ability to ensure that we have obtained a secure claim to individual mining properties may be severely constrained. Our mineral properties may be subject to prior unregistered agreements, transfers or claims, and title may be affected by, among other things, undetected defects. We have not conducted surveys of all of the claims in which we hold direct or indirect interests. A successful claim contesting our title to a property will cause us to lose our rights to explore and, if warranted, develop that property or undertake or continue production thereon. This could result in our not being compensated for our prior expenditures relating to the property. In addition, our ability to continue to explore and develop the property may be subject to agreements with other third

parties including agreements with native corporations and first nations groups, for instance, the lands at the Upper Kobuk Mineral Projects are subject to the NANA Agreement (as more particularly described under "History of Trilogy - Agreement with NANA Regional Corporation").

*We will incur losses for the foreseeable future.*

We expect to incur losses unless and until such time as our mineral projects generate sufficient revenues to fund continuing operations. The exploration and development of our mineral properties will require the commitment of substantial financial resources that may not be available.

The amount and timing of expenditures will depend on a number of factors, including the progress of ongoing exploration and development, the results of consultants' analyses and recommendations, the rate at which operating losses are incurred, the execution of any joint venture agreements with strategic partners and the acquisition of additional property interests, some of which are beyond our control. We cannot provide assurance that we will ever achieve profitability.

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*High metal prices in past years have encouraged increased mining exploration, development and construction activity, which has increased demand for, and cost of, exploration, development and construction services and equipment.*

The relative strength of metal prices in past years has encouraged increases in mining exploration, development and construction activities around the world, which has resulted in increased demand for, and cost of, exploration, development and construction services and equipment. Increased demand for and cost of services and equipment could result in delays if services or equipment cannot be obtained in a timely manner due to inadequate availability and may cause scheduling difficulties due to the need to coordinate the availability of services or equipment, any of which could materially increase project exploration, development and/or construction costs.

**Risks Relating to the Mining Industry and Mineral Reserves**

*Mineral resource and reserve calculations are only estimates.*

Any figures presented for mineral resources or reserves in this Form 10-K and in our other filings with securities regulatory authorities and those which may be presented in the future are and will only be estimates. There is a degree of uncertainty attributable to the calculation of mineral reserves and mineral resources. Until mineral reserves or mineral resources are actually mined and processed, the quantity of metal and grades must be considered as estimates only and no assurances can be given that the indicated levels of metals will be produced. In making determinations about whether to advance any of our projects to development, we must rely upon estimated calculations as to the mineral resources or reserves and grades of mineralization on our properties.

The estimating of mineral reserves and mineral resources is a subjective process that relies on the judgment of the persons preparing the estimates. The process relies on the quantity and quality of available data and is based on knowledge, mining experience, analysis of drilling results and industry practices. Valid estimates made at a given time may significantly change when new information becomes available. While we believe that the mineral resource estimates included in this Form 10-K for the Upper Kobuk Mineral Projects are well-established and reflect management's best estimates, by their nature mineral resource estimates are imprecise and depend, to a certain extent, upon analysis of drilling results and statistical inferences that may ultimately prove to be inaccurate. There can be no assurances that actual results will meet the estimates contained in feasibility studies or pre-feasibility studies. As well, further studies are required.

Estimated mineral reserves or mineral resources may have to be recalculated based on changes in metal prices, further exploration or development activity or actual production experience. This could materially and adversely affect estimates of the volume or grade of mineralization, estimated recovery rates or other important factors that influence mineral reserve or mineral resource estimates. The extent to which mineral resources may ultimately be reclassified as mineral reserves is dependent upon the demonstration of their profitable recovery. Any material changes in mineral resource estimates and grades of mineralization will affect the economic viability of placing a property into production and a property's return on capital. We cannot provide assurance that mineralization can be mined or processed profitably.

Our mineral resource estimates have been determined and valued based on assumed future metal prices, cut-off grades and operating costs that may prove to be inaccurate. Extended declines in market prices for copper, zinc, lead, gold and silver may render portions of our mineralization uneconomic and result in reduced reported mineral resources, which in turn could have a material adverse effect on our results

of operations or financial condition. We cannot provide assurance that mineral recovery rates achieved in small scale tests will be duplicated in large scale tests under on-site conditions or in production scale.

A reduction in any mineral reserves that may be estimated by us could have an adverse impact on our future cash flows, earnings, results of operations and financial condition. No assurances can be given that any mineral resource estimates for the Upper Kobuk Mineral Projects will ultimately be reclassified as mineral reserves. See "Cautionary Note to United States Investors."

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*Significant uncertainty exists related to inferred mineral resources.*

There is a risk that inferred mineral resources referred to in this Form 10-K cannot be converted into measured or indicated mineral resources as there may be limited ability to assess geological continuity. It is reasonably expected that the majority of inferred mineral resources could be upgraded to indicated mineral resources with continued exploration. See "Cautionary Note to United States Investors."

*Mining is inherently risky and subject to conditions or events beyond our control.*

The development and operation of a mine is inherently dangerous and involves many risks that even a combination of experience, knowledge and careful evaluation may not be able to overcome, including:

- unusual or unexpected geological formations;
- metallurgical and other processing problems;
- metal losses;
- environmental hazards;
- power outages;
- labor disruptions;
- industrial accidents;
- periodic interruptions due to inclement or hazardous weather conditions;
- flooding, explosions, fire, rockbursts, cave-ins and landslides;
- mechanical equipment and facility performance problems; and
- the availability of materials and equipment.

These risks could result in damage to, or destruction of, mineral properties, production facilities or other properties, personal injury or death, including to our employees, environmental damage, delays in mining, increased production costs, asset write downs, monetary losses and possible legal liability. We may not be able to obtain insurance to cover these risks at economically feasible premiums, or at all. The Company's insurance premiums have increased in recent years and in other circumstances the scope of insurance coverage has been reduced. The Company also expects insurance premiums to increase due to the impacts of COVID-19. Insurance against certain environmental risks, including potential liability for pollution and other hazards associated with mineral exploration and production, is not generally available to companies within the mining industry. We may suffer a material adverse effect on our business if we incur losses related to any significant events that are not covered by our insurance policies.

*We cannot provide assurance that we will successfully acquire commercially mineable mineral rights.*

Exploration for and development of copper properties involves significant financial risks which even a combination of careful evaluation, experience and knowledge may not eliminate. While the discovery of an ore body may result in substantial rewards, few properties which are explored are ultimately developed into producing mines. Major expenses may be required to establish reserves by drilling, constructing mining and processing facilities at a site, developing metallurgical processes and extracting metals from ore. We cannot ensure that our current exploration and development programs will result in profitable commercial mining operations.

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The economic feasibility of development projects is based upon many factors, including the accuracy of mineral resource estimates; metallurgical recoveries; capital and operating costs; government regulations relating to prices, taxes, royalties, land tenure, land use, importing and exporting and environmental protection; and metal prices, which are highly volatile. Development projects are also subject to the successful completion of feasibility studies, issuance of necessary governmental permits and availability of adequate financing.

Most exploration projects do not result in the discovery of commercially mineable ore deposits, and no assurance can be given that any anticipated level of recovery of ore reserves, if any, will be realized or that any identified mineral deposit will ever qualify as a commercially mineable (or viable) ore body which can be legally and economically exploited. Estimates of mineral reserves, mineral resources, mineral deposits and production costs can also be affected by such factors as environmental permitting regulations and requirements, weather, environmental factors, unforeseen technical difficulties, the metallurgy of the mineralization forming the mineral deposit, unusual or unexpected geological formations and work interruptions. If current exploration programs do not result in the discovery of commercial ore, we may need to write-off part or all of our investment in our existing exploration stage properties and may need to acquire additional properties.

Material changes in mineral reserves, if any, grades, stripping ratios or recovery rates may affect the economic viability of any project. Our future growth and productivity will depend, in part, on our ability to develop commercially mineable mineral rights at our existing properties or identify and acquire other commercially mineable mineral rights, and on the costs and results of continued exploration and potential development programs. Mineral exploration is highly speculative in nature and is frequently non-productive. Substantial expenditures are required to:

- establish mineral resources and reserves through drilling and metallurgical and other testing techniques;
- determine metal content and metallurgical recovery processes to extract metal from the ore; and
- construct, renovate or expand mining and processing facilities.

In addition, if we discover ore, it would take several years from the initial phases of exploration until production is possible. During this time, the economic feasibility of production may change. As a result of these uncertainties, there can be no assurance that we will successfully acquire commercially mineable (or viable) mineral rights.

#### **Risks Relating to Government Regulation**

*We are subject to significant governmental regulations.*

Our exploration activities are subject to extensive federal, state, provincial and local laws and regulations governing various matters, including:

- environmental protection;
- the management and use of toxic substances and explosives;
- the management of natural resources;
- the exploration and development of mineral properties, including reclamation;
- exports;
- price controls;
- taxation and mining royalties;
- management of tailing and other waste generated by operations;

- labor standards and occupational health and safety, including mine safety;
- historic and cultural preservation; and
- transportation.

Failure to comply with applicable laws and regulations may result in civil or criminal fines or penalties or enforcement actions, including orders issued by regulatory or judicial authorities enjoining, curtailing or closing operations or requiring corrective measures, installation of additional equipment or remedial actions, any of which could result in significant expenditures. We may also be required to compensate private parties suffering loss or damage by reason of a breach of such laws, regulations or permitting requirements. It is also possible that future laws and regulations, or more stringent enforcement of current laws and regulations by governmental authorities, could cause us to incur additional expense or capital expenditure restrictions, suspensions or closing of our activities and delays in the exploration and development of our properties.

*We require further permits in order to conduct current and anticipated future operations, and delays in obtaining or failure to obtain such permits, or a failure to comply with the terms of any such permits that we have obtained, would adversely affect our business.*

Our current and anticipated future operations, including further exploration, development and commencement of production on our mineral properties, require permits from various governmental authorities. Obtaining or renewing governmental permits is a complex and time-consuming process. The duration and success of efforts to obtain and renew permits are contingent upon many variables not within our control. Due to the preliminary stages of the Upper Kobuk Mineral Projects, it is difficult to assess what specific permitting requirements will ultimately apply.

Shortage of qualified and experienced personnel in the U.S. federal and Alaskan State agencies to coordinate a federally led joint environmental impact statement process could result in delays or inefficiencies. Backlog within the permitting agencies could affect the permitting timeline or potential of the Upper Kobuk Mineral Projects, as may negative public perception of mining projects in general due to circumstances unrelated to the Company and outside of its control. Other factors that could affect the permitting timeline include (i) the number of other large-scale projects currently in a more advanced stage of development which could slow down the review process for the Upper Kobuk Mineral Projects and (ii) significant public response regarding the Upper Kobuk Mineral Projects.

We cannot provide assurance that all permits that we require for our operations, including any for construction of mining facilities or conduct of mining, will be obtainable or renewable on reasonable terms, or at all. Delays or a failure to obtain such required permits, or the expiry, revocation or failure to comply with the terms of any such permits that we have obtained, would adversely affect our business.

*Our activities are subject to environmental laws and regulations that may increase our costs and restrict our operations.*

All of our exploration, potential development and production activities are subject to regulation by governmental agencies under various environmental laws. These laws address emissions into the air, discharges into water, management of waste, management of hazardous substances, protection of natural resources, antiquities and endangered species and reclamation of lands disturbed by mining operations. Environmental legislation is evolving, and the general trend has been towards stricter standards and enforcement, increased fines and penalties for noncompliance, more stringent environmental assessments of proposed projects and increasing responsibility for companies and their officers, directors and employees. Compliance with environmental laws and regulations may require significant capital outlays on our behalf and may cause material changes or delays in our intended activities.

Several regulatory initiatives are currently ongoing within the State of Alaska that have the potential to influence the permitting process for the Upper Kobuk Mineral Projects. These include revisions to Alaska's Water Quality Standards regarding mixing zones regulations, which are currently under Environmental Protection Agency review, and which revisions may be required in order to authorize a mixing zone for discharge in Subarctic Creek. Future changes in these

laws or regulations could have a significant adverse impact on some portion of our business, requiring us to re-evaluate those activities at that time.

Environmental hazards may exist on our properties that are unknown to us at the present time and that have been caused by previous owners or operators or that may have occurred naturally. We may be liable for remediating such damage.

Failure to comply with applicable environmental laws, regulations and permitting requirements may result in enforcement actions thereunder, including orders issued by regulatory or judicial authorities, causing operations to cease or to be curtailed, and may include corrective measures requiring capital expenditures, installation of additional equipment or remedial actions.

*Land reclamation requirements for our exploration properties may be burdensome.*

Land reclamation requirements are generally imposed on mineral exploration companies (as well as companies with mining operations) in order to minimize long term effects of land disturbance. Reclamation may include requirements to:

- treat ground and surface water to applicable water quality standards;
- control dispersion of potentially deleterious effluents; and
- reasonably re-establish pre-disturbance landforms and vegetation.

In order to carry out reclamation obligations imposed on us in connection with exploration, potential development and production activities, we must allocate financial resources that might otherwise be spent on further exploration and development programs. In addition, regulatory changes could increase our obligations to perform reclamation and mine closing activities. If we are required to carry out unanticipated reclamation work, our financial position could be adversely affected.

#### **Risks Related to the Acquisition of New Projects**

*Risks inherent in acquisitions of new properties.*

We may actively pursue the acquisition of exploration, development and production assets consistent with our acquisition and growth strategy. From time to time, we may also acquire securities of or other interests in companies with respect to which we may enter into acquisitions or other transactions. Acquisition transactions involve inherent risks, including but not limited to:

- accurately assessing the value, strengths, weaknesses, contingent and other liabilities and potential profitability of acquisition candidates;
- ability to achieve identified and anticipated operating and financial synergies;
- unanticipated costs;
- diversion of management attention from existing business;
- potential loss of our key employees or key employees of any business acquired;
- unanticipated changes in business, industry or general economic conditions that affect the assumptions underlying the acquisition;
- decline in the value of acquired properties, companies or securities;

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- assimilating the operations of an acquired business or property in a timely and efficient manner;
- maintaining our financial and strategic focus while integrating the acquired business or property;
- implementing uniform standards, controls, procedures and policies at the acquired business, as appropriate; and
- to the extent that we make an acquisition outside of markets in which it has previously operated, conducting and managing operations in a new operating environment.

Acquiring additional businesses or properties could place increased pressure on our cash flow if such acquisitions involve a cash consideration. The integration of our existing operations with any acquired business will require significant expenditures of time, attention and funds. Achievement of the benefits expected from consolidation would require us to incur significant costs in connection with, among other things, implementing financial and planning systems. We may not be able to integrate the operations of a recently acquired business or restructure our previously existing business operations without encountering difficulties and delays. In addition, this integration may require significant attention from our management team, which may detract attention from our day-to-day operations. Over the short-term, difficulties associated with integration could have a material adverse effect on our business, operating results, financial condition and the price of our Common Shares. In addition, the acquisition of mineral properties may subject us to unforeseen liabilities, including environmental liabilities, which could have a material adverse effect on us. There can be no assurance that any future acquisitions will be successfully integrated into our existing operations.

Any one or more of these factors or other risks could cause us not to realize the anticipated benefits of an acquisition of properties or companies and could have a material adverse effect on our financial condition.

*We face industry competition in the acquisition of exploration properties and the recruitment and retention of qualified personnel.*

We compete with other exploration and producing companies, many of which are better capitalized, have greater financial resources, operational experience and technical capabilities or are further advanced in their development or are significantly larger and have access to greater mineral reserves, for the acquisition of mineral claims, leases and other mineral interests as well as for the recruitment and retention of qualified employees and other personnel. If we require and are unsuccessful in acquiring additional mineral properties or in recruiting and retaining qualified personnel, we will not be able to grow at the rate we desire, or at all.

#### **Risks Related to the Company's Executive Officers and Board of Directors**

*We may experience difficulty attracting and retaining qualified management and technical personnel to grow our business.*

We are dependent on the services of key executives and other highly skilled and experienced personnel to advance our corporate objectives as well as the identification of new opportunities for growth and funding. Mr. Giardini and Ms. Sanders are currently our only executive officers. It will be necessary for us to recruit additional skilled and experienced executives. Our inability to do so, or the loss of any of these persons or our inability to attract and retain suitable replacements for them, or additional highly skilled employees required for our activities, would have a material adverse effect on our business and financial condition.

*Some of our directors and officers have conflicts of interest as a result of their involvement with other natural resource companies.*

Certain of our directors and officers also serve as directors or officers, in other companies involved in natural resource exploration and development or mining-related activities, including, in particular, NovaGold. To the extent that such other companies may participate in ventures in which we may participate in, or in ventures which we may seek to

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participate in, our directors and officers may have a conflict of interest in negotiating and concluding terms respecting the extent of such participation. In all cases where our directors and officers have an interest in other companies, such other companies may also compete with us for the acquisition of mineral property investments. Any decision made by any of these directors and officers involving Trilogy will be made in accordance with their duties and obligations to deal fairly and in good faith with a view to the best interests of Trilogy and its shareholders. In addition, each of the directors is required to declare and refrain from voting on any matter in which these directors may have a conflict of interest in accordance with the procedures set forth in the *Business Corporations Act* (British Columbia) and other applicable laws. In appropriate cases, the Company will establish a special committee of independent directors to review a matter in which several directors, or management, may have a conflict. Nonetheless, as a result of these conflicts of interest, the Company may not have an opportunity to participate in certain transactions, which may have a material adverse effect on the Company's business, financial condition, results of operation and prospects.

*In the future, we may be subject to legal proceedings.*



Due to the nature of our business, we may be subject to numerous regulatory investigations, claims, lawsuits and other proceedings in the ordinary course of our business. The results of these legal proceedings cannot be predicted with certainty due to the uncertainty inherent in litigation, including the effects of discovery of new evidence or advancement of new legal theories, the difficulty of predicting decisions of judges and juries and the possibility that decisions may be reversed on appeal. There can be no assurances that these matters will not have a material adverse effect on our business.

#### General Risk Factors

*General economic conditions may adversely affect our growth, future profitability and ability to finance.*

The unprecedented events in global financial markets in the past several years and the **current** impact of COVID-19 have had a profound impact on the global economy. Many industries, including the copper mining industry, are impacted by these market conditions. Some of the key impacts of the current financial market turmoil include contraction in credit markets resulting in a widening of credit risk, devaluations, high volatility in global equity, commodity, foreign exchange and precious metal markets and a lack of market liquidity. A worsening or slowdown in the financial markets or other economic conditions, including but not limited to, consumer spending, employment rates, business conditions, inflation, fuel and energy costs, consumer debt levels, lack of available credit, the state of the financial markets, interest rates and tax rates, may adversely affect our growth and ability to finance. Specifically:

- the volatility of copper, zinc, lead and other metal prices would impact our estimates of mineral resources, revenues, profits, losses and cash flow, and the feasibility of our projects;
- negative economic pressures could adversely impact demand for our future production, if any;
- construction related costs could increase and adversely affect the economics of any project;
- volatile energy, commodity and consumables prices and currency exchange rates could impact our estimated production costs; and
- the devaluation and volatility of global stock markets would impact the valuation of our equity and other securities.

*Future sales or issuances of equity securities could decrease the value of any existing Common Shares, dilute investors' voting power and reduce our earnings per share.*

We may sell additional equity securities (including through the sale of securities convertible into Common Shares) and may issue additional equity securities to finance our operations, exploration, development, acquisitions or other projects. We are authorized to issue an unlimited number of Common Shares. We cannot predict the size of future sales

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and issuances of equity securities or the effect, if any, that future sales and issuances of equity securities will have on the market price of the Common Shares. Sales or issuances of a substantial number of equity securities, or the perception that such sales could occur, may adversely affect prevailing market prices for the Common Shares. With any additional sale or issuance of equity securities, investors will suffer dilution of their voting power and may experience dilution in our earnings per share.

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*Our largest shareholder has significant influence on us and may also affect the market price and liquidity of the securities.*

Electrum Strategic Opportunities Fund L.P. ("Electrum") is our single largest shareholder, controlling approximately 20% of the outstanding voting securities. Accordingly, Electrum will have significant influence in determining the outcome of any corporate transaction or other matter submitted to the shareholders for approval, including mergers, consolidations and the sale of all or substantially all of our assets and other significant corporate actions. Unless significant participation of other shareholders takes place in such shareholder meetings, Electrum may be able to approve such matters itself. The concentration of ownership of the shares by Electrum may: (i) delay or deter a change of control of the Company; (ii) deprive shareholders of an opportunity to receive a premium for their shares as part of a sale of the Company; and (iii) affect the market price and liquidity of the shares. Without the consent of Electrum, we could be prevented from entering into transactions that are otherwise beneficial to us. The interests of Electrum may differ from or be adverse to the interests of our other shareholders. The effect of these rights and Electrum's influence may impact the price that investors are willing to pay for securities. If Electrum sells a substantial number of shares in the public market, the market price of the shares could fall. The perception among the public that these sales will occur could also contribute to a decline in the market price of the shares.

*Our Common Shares are subject to various factors that have historically made share prices volatile.*

The market price of our Common Shares may be subject to large fluctuations, which may result in losses to investors. The market price of the Common Shares may increase or decrease in response to a number of events and factors, including: our operating performance and the performance of competitors and other similar companies; volatility in metal prices; the arrival or departure of key personnel; the number of Common Shares to be publicly traded after an offering; the public's reaction to our press releases, material change reports, other public announcements and our filings with the various securities regulatory authorities; changes in earnings estimates or recommendations by research analysts who track the Common Shares or the shares of other companies in the resource sector; changes in general economic and/or political conditions; acquisitions, strategic alliances or joint ventures involving us or our competitors; and the factors listed under the heading "Cautionary Statement Regarding Forward-Looking Information."

The market price of the Common Shares may be affected by many other variables which are not directly related to our success and are, therefore, not within our control, including other developments that affect the market for all resource sector securities, the breadth of the public market for the Common Shares and the attractiveness of alternative investments.

*We do not intend to pay any cash dividends in the foreseeable future.*

We have not declared or paid any dividends on our Common Shares. Our current business plan requires that for the foreseeable future, any future earnings be reinvested to finance the growth and development of our business. We do not intend to pay cash dividends on the Common Shares in the foreseeable future. We will not declare or pay any dividends until such time as our cash flow exceeds our capital requirements and will depend upon, among other things, conditions then existing including earnings, financial condition, restrictions in financing arrangements, business opportunities and conditions and other factors, or our Board determines that our shareholders could make better use of the cash.

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*We may be a "passive foreign investment company" in future periods, which may have adverse U.S. federal income tax consequences for U.S. shareholders.*

U.S. investors in the Company should be aware that we believe we were not a passive foreign investment company ("PFIC") for the **tax** years ending **November 30, 2015, 2016, 2017, 2020** **November 30, 2020** and 2021, but we believe we were a PFIC for the **tax** years ending November 30, 2018, 2019, **2022** and **2022 2023** and may be a PFIC in future tax years. If we are a PFIC for any year during a U.S. Holder's (as defined below under *Certain U.S. Federal Income Tax Considerations – U.S. Holders*) holding period, then such U.S. Holder generally will be required to treat any gain realized upon a disposition of Common Shares and any so-called "excess distribution" received on its Common Shares as ordinary income, and to pay an interest charge on a

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portion of such gain or distributions, unless the shareholder makes a timely and effective "QEF Election" or a "Mark-to-Market Election" (each as defined below under "*Certain U.S. Federal Income Tax Considerations – Default PFIC Rules under Section 1291 of the Code*"). A U.S. Holder who makes a QEF Election generally must report on a current basis its share of our net capital gain and ordinary earnings for any year in which we are a PFIC, whether or not we distribute any amounts to our shareholders. A U.S. Holder who makes the Mark-to-Market Election generally must include as ordinary income each year the excess of the fair market value of the Common Shares over the U.S. Holder's tax basis therein. This paragraph is qualified in its entirety by the discussion below the heading "*Certain U.S. Federal Income Tax Considerations*." Each U.S. shareholder should consult its own tax advisor regarding the PFIC rules and the U.S. federal income tax consequences of the acquisition, ownership, and disposition of Common Shares.

Proposed legislation in the U.S. Congress, including changes in U.S. tax law, and the Inflation Reduction Act of 2022, may adversely impact the Company and the value of Common Shares.

Changes to U.S. tax laws (which changes may have retroactive application) could adversely affect the Company or holders of Common Shares. In recent years, many changes to U.S. federal income tax laws have been proposed and made, and additional changes to U.S. federal income tax laws are likely to continue to occur in the future.

The U.S. Congress is currently considering numerous items of legislation which may be enacted prospectively or with retroactive effect, which legislation could adversely impact the Company's financial performance and the value of Common Shares. Additionally, U.S. states in which we operate or own assets may impose new or increased taxes. If enacted, most of the proposals would be effective for the current or later years. The proposed legislation remains subject to change, and its impact on the Company and purchasers of Common Shares is uncertain.

In addition, the Inflation Reduction Act of 2022 includes provisions that will impact the U.S. federal income taxation of corporations. Among other items, this legislation includes provisions that will impose a minimum tax on the book income of certain large corporations and an excise tax on certain corporate stock repurchases that would be imposed on the corporation repurchasing such stock. It is unclear how this legislation will be implemented by the U.S. Department of the Treasury and we cannot predict how this legislation or any future changes in tax laws might affect the Company or purchasers of Common Shares.

*Global climate change is an international concern and could impact our ability to conduct future operations.*

Global climate change is an international issue and receives an enormous amount of publicity. We would expect that the imposition of international treaties or U.S. or Canadian federal, state, provincial or local laws or regulations pertaining to mandatory reductions in energy consumption or emissions of greenhouse gasses could affect the feasibility of our mining projects and increase our operating costs.

*Adverse publicity from non-governmental organizations could have a material adverse effect on us.*

There is an increasing level of public concern relating to the effect of mining production on our surroundings, communities and environment. Non-governmental organizations ("NGOs"), some of which oppose resource development, are often vocal critics of the mining industry. While we seek to operate in a socially responsible manner, adverse publicity generated by such NGOs related to extractive industries, or our operations specifically, could have an adverse effect on our reputation and financial condition or our relationship with the communities in which we operate.

*We may fail to achieve and maintain the adequacy of our internal control over financial reporting as per the requirements of the Sarbanes-Oxley Act.*

We are required to document and test our internal control procedures in order to satisfy the requirements of Section 404 of SOX. It requires an annual assessment by management of the effectiveness of our internal control over financial reporting. We may in the future fail to achieve and maintain the adequacy of our internal control over financial reporting, as such standards are modified, supplemented or amended from time to time, and we may not be able to ensure that

we can conclude on an ongoing basis that we have effective internal control over financial reporting in accordance with Section 404 of SOX. Our failure to satisfy the requirements of Section 404 of SOX on an ongoing, timely basis could result in the loss of investor confidence in the reliability of our financial statements, which in turn could harm our business and negatively impact the trading price of our Common Shares. In addition, any failure to implement required new or improved controls, or difficulties encountered in their implementation, could harm our operating results or cause us to fail to meet our reporting obligations. Future acquisitions of companies may provide us with challenges in implementing the required processes, procedures and controls in our acquired operations. Acquired companies may not have disclosure control and procedures or internal control over financial reporting that are as thorough or effective as those required by securities laws currently applicable to us.

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*Our business is subject to evolving corporate governance and public disclosure regulations that have increased both our compliance costs and the risk of noncompliance, which could have an adverse effect on our stock price.*

We are subject to changing rules and regulations promulgated by a number of United States and Canadian governmental and self-regulated organizations, including the SEC, the Canadian Securities Administrators, the NYSE American, the TSX, and the Financial Accounting Standards Board. These rules and regulations continue to evolve in scope and complexity and many new requirements have been created in response to laws enacted by the United States Congress, making compliance more difficult and uncertain. Our efforts to comply with new rules and regulations, including those promulgated under Dodd-Frank, have resulted in, and are likely to continue to result in, increased general and administrative expenses and a diversion of management time and attention from revenue-generating activities to compliance activities.

*In the future, we may be subject to legal proceedings.*

*Due to the nature of our business, we may be subject to numerous regulatory investigations, claims, lawsuits and other proceedings in the ordinary course of our business. The results of these legal proceedings cannot be predicted with certainty due to the uncertainty inherent in litigation, including the effects of discovery of new evidence or advancement of new legal theories, the difficulty of predicting decisions of judges and juries and the possibility that decisions may be reversed on appeal. There can be no assurances that these matters will not have a material adverse effect on our business.*

## Item 1B. UNRESOLVED STAFF COMMENTS

None.

## Item 1C. CYBERSECURITY

Not applicable.

## Item 2. PROPERTIES

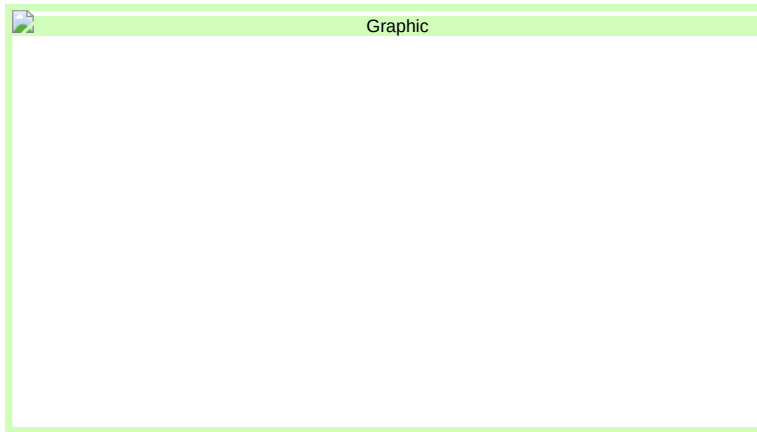
Trilogy's principal business is the exploration and development of the Upper Kobuk Mineral Projects located in the Ambler **mining district Mining District** in Northwest Alaska, United States. The Upper Kobuk Mineral Projects are held by Ambler Metals LLC ("Ambler Metals"), a limited liability company owned equally by Trilogy and South32 Limited, and is comprised of the (i) Arctic Project, a development stage property, which contains a high-grade polymetallic volcanogenic massive sulfide deposit; and (ii) Bornite Project, an exploration stage property, which contains a carbonate-hosted copper - cobalt deposit.

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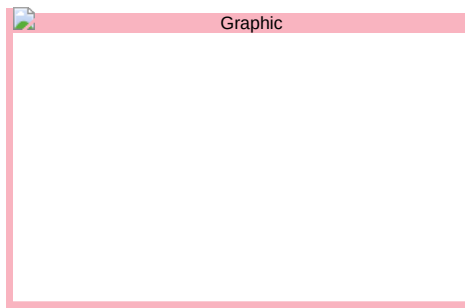


Graphic



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Mineral Resource Summary Table as of **November 30, 2022** **November 30, 2023**

Project	Resource	Tonnage	Average Grade					Contained Metal Content				
			Cu	Pb	Zn	Au	Ag	Cu	Pb	Zn	Au	Ag
Alaska	Category	(Mt)	(%)	(%)	(%)	(g/t)	(g/t)	(Mlb)	(Mlb)	(Mlb)	(koz)	(Moz)
Arctic – 50% Attributable Interest	Inferred	2.25	1.92	0.70	2.93	0.43	35.6	94.5	34.5	144	31	2.5
Bornite – 50% Attributable Interest	Inferred	101.3	1.46					3,257				

Notes:

1. Mineral Resources are A Qualified Person and an employee of the Company, has approved the mineral reserves and mineral resources included in this Annual Report on Form 10-K as of November 30, 2023 and reviewed the reserves and resources in the S-K 1300 Arctic Report and the S-K 1300 Bornite Report and confirmed that the reserves and resources remain current as of November 30, 2022 and were verified by a Wood QP, November 30, 2023.
2. Mineral Resources were prepared in accordance with the standards and definitions of S-K 1300 and represent first-time disclosure of Mineral Resources under S-K 1300 standards and definitions.
3. The Mineral Resource estimate is reported exclusive of those Mineral Resources that were converted to Mineral Reserves. There are no Mineral Reserves estimated on the Bornite property.
4. Trilogy Metals' 50% attributable interest is stated in the table.
5. Figures may not sum due to rounding.
6. The mineral resources are reported in place (point of reference).

Arctic Notes:

7. Mineral Resources stated are contained within a conceptual pit shell developed using metal prices of \$3.00/lb Cu, \$0.90/lb Pb, \$1.00/lb Zn, \$1,300/oz Au and \$18/oz Ag and metallurgical recoveries of 92% Cu, 77% Pb, 88% Zn, 63% Au and 56% Ag and operating costs of \$3/t mining and \$35/t process and general and administrative costs. The assumed average pit slope angle is 43°.
8. As a result of flattening the north end of the reserve pit to stabilize the pit wall due to the presence of talc, a portion of the reserve pit extended beyond the resource constraining pit shell and a second pass of mineral resource tabulation was performed exterior to the constraining resource pit and interior to the constraining reserve pit which is included in the Mineral Resource tabulation.
9. The cut-off grade is 0.5% copper equivalent:  $CuEq = (Cu\% \times 0.92) + (Zn\% \times 0.290) + (Pb\% \times 0.231) + (Au \text{ g/t} \times 0.398) + (Ag \text{ g/t} \times 0.005)$ .

Bornite Notes:

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10. Mineral resources are constrained by: an open pit shell at a cut-off grade of 0.5% Cu, with an average pit slope of 43 degrees; and underground mining shapes with a cut-off grade of 1.79% Cu. The cut-off grades include the considerations of a \$4.05/lb Cu price, process recovery of 87.2%, open pit mining costs of \$3.21/t mined, underground mining cost of \$73.62/t mined, process cost of \$19.14/t processed, G&A cost of \$4.14/t processed, treatment, refining, sales cost of \$0.73/lb Cu in concentrate, road use cost of \$8.04/t processed, 2% NSR royalty.

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Mineral Reserve Estimate as of **November 30, 2022** **November 30, 2023** for the Arctic Project, Alaska USA

Classification	Volume	Average Grade				
	Mt	Cu (%)	Pb (%)	Zn (%)	Au (g/t)	Ag (g/t)
Probable Mineral Reserves – 50% Attributable Interest	23.33	2.11	0.30	2.30	0.42	31.0

Notes:

1. Mineral Reserves estimates are A Qualified Person and an employee of the Company, has approved the mineral reserves and mineral resources included in this Annual Report on Form 10-K as of November 30, 2023 and reviewed the reserves and resources in the S-K 1300 Arctic Report and the S-K 1300 Bornite Report and confirmed that the reserves and resources remain current as of November 30, 2022 and were prepared by a Wood QP, November 30, 2023.
2. Mineral Reserves were estimated assuming open pit mining methods and 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, 62% Pb in Pb concentrate, 88% Zn in Zn concentrate, 47% Au in Cu concentrate, 33% Ag in Cu concentrate, 26% 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 in Cu concentrate, and \$10/oz Au, \$1.25/oz Ag in Pb concentrate; and transport cost \$270.98/t concentrate.
9. Fixed royalty percentage of 1% NSR.
10. Trilogy Metals' 50% attributable interest is stated in the table.
11. The point of reference for the Mineral Reserves is defined at the point where the ore is delivered to the processing plant.
12. The metal prices and costs were fixed over the 13-year mine life.

The following descriptions summarize selected information about the Upper Kobuk Mineral Projects, which are located in the Ambler **mining district Mining District** of Alaska and include the Arctic Project and the Bornite Project. The Arctic Project and the Bornite Project are held by Ambler Metals, of which Trilogy holds a 50% interest. All mineral resources and mineral reserve estimates with respect to the Arctic Project and Bornite Project that are disclosed in this Annual Report on Form 10-K are reported on a 100% basis unless otherwise noted. Please also see "Management's Discussion and Analysis—Project Activities" for more information on the development and nature of our interest in the Upper Kobuk Mineral Projects.

The Company's book value of its investment in **the Upper Kobuk Mineral Projects Ambler Metals** is **\$142.8 million** **\$135.2 million** as of **November 30, 2022** **November 30, 2023**.

**Arctic Project**

The Company is subject to and required to disclose mineral resources and mineral reserves in accordance with Subpart 229.1300 of Regulation S-K – Disclosure by Registrants Engaged in Mining Operations ("S-K 1300"). While the S-K 1300 rules are similar to National Instrument 43-101 Standards of Disclosure for Mineral Projects ("NI 43-101") rules in Canada, they are not identical and therefore two reports have been produced for the Arctic Project. The information in Item 2, Properties, contains pertinent information required under both NI 43-101 and S-K 1300.

Except as otherwise stated, the scientific and technical information relating to the Arctic Project contained in this Form 10-K is derived from the (i) 2023 S-K 1300 report for Arctic titled "Arctic Project Technical Report Summary, Ambler Mining District, Alaska" dated November 30, 2022 prepared by Ausenco Engineering Canada Inc., Wood Canada Limited, SRK Consulting (Canada) Inc. and Brown and Caldwell, each of whom are not affiliated with Trilogy ("S-K 1300 Arctic

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Report") and the (ii) 2023 Arctic Report titled "Arctic Project NI 43-101 Technical Report on Feasibility Study, Ambler Mining District, Alaska" with an effective date of January 20, 2023, prepared by Ausenco Engineering Canada Inc., Wood Canada Limited, SRK Consulting (Canada) Inc. and Brown and Caldwell ("NI 43-101 Arctic Report"). The information regarding the Arctic Project is based on assumptions, qualifications and procedures which are not fully described herein. Reference should be made to the full text of the S-K 1300 Arctic Report and the NI 43-101 Arctic Report which has been filed, as applicable, with the relevant US and Canadian securities regulatory authorities. The NI 43-101 Arctic Report is available for review on [SEDAR](#) [SEDAR+](#) at [www.sedar.com](http://www.sedar.com) [www.sedarplus.ca](http://www.sedarplus.ca) and the S-K 1300 Arctic Report is available for review on EDGAR at [www.sec.gov](http://www.sec.gov).

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### ***Arctic Project Description, Location and Access***

#### ***Project Description***

NovaGold acquired the Arctic Project from Kennecott Exploration Company and Kennecott Arctic Company (collectively, "Kennecott") in 2004. In 2011, NovaGold transferred all copper projects to NovaCopper Inc. and spun-out NovaCopper to its then existing shareholders in 2012. NovaCopper Inc. subsequently underwent a name change to Trilogy Metals Inc. in 2016. Under the Kennecott Purchase and Termination Agreement, Kennecott retained a 1% net smelter return ("NSR") royalty that was subsequently sold by Kennecott. The 1% NSR runs with the lands and is purchasable at any time from the royalty holder for a one-time payment of \$10 million.

The Arctic Project is directly held by Ambler Metals LLC ("Amber Metals"), in a 50/50 joint venture formed between South32 and Trilogy in February 2020. Upon the formation of the joint venture, Trilogy contributed all of its Alaskan assets, including the Arctic Project and the NANA Agreement, to Ambler Metals in exchange for a 50% membership interest and at the same time, South32 contributed \$145 million in cash for a 50% membership interest.

The land tenure consists of 2,136 contiguous State claims totaling 230,736 acres (93,336 [ha](#) [hectares](#)), including 905 40-acre claims, 1231 160-acre claims, and 18 Federal patented claims comprising 271.9 acres (110 [ha](#) [hectares](#)) held in the name of Ambler Metals. Surface use of the private land held as Federal patented claims is limited only by reservations in the patents and by generally-applicable environmental laws. Surface use of State claims allows the owner of the mining claim to make such use of the surface as is "necessary for prospecting for, extraction of, or basic processing of minerals."

NANA controls lands granted under the Alaska Native Claims Settlement Act to the south of the Arctic Project boundary. Ambler Metals and NANA are parties to the NANA Agreement that consolidates the parties' land holdings into an approximately 190,929 [ha](#) [hectares](#) land package and provides a framework for the exploration and development of the area. The NANA Agreement has a term of 20 years, with an option in favour of Ambler Metals to extend the term for an additional 10 years. If, following receipt of a feasibility study and the release for public



comment of a related draft environmental impact statement, a decision is made to proceed with construction of a mine on the lands subject to the NANA Agreement, NANA will have 120 days to elect to either (a) exercise a non-transferrable back-in-right to acquire between 16% and 25% (as specified by NANA) of that specific project; or (b) not exercise its back-in-right, and instead receive a net proceeds royalty equal to 15% of the net proceeds realized from such project. In the event that NANA elects to exercise its back-in-right, the parties will, as soon as reasonably practicable, form a joint venture with NANA electing to participate between 16% to 25%, and Ambler Metals owning the balance of the interest in the joint venture. If Ambler Metals decides to proceed with construction of a mine on its own lands subject to the NANA Agreement, NANA will enter into a surface use agreement which will afford Ambler Metals access to the Arctic Project along routes approved by NANA. In consideration for the grant of such surface use rights, NANA will receive a 1% net smelter royalty on production and provide an annual payment on a per acre basis.

Location and Access

The Arctic Project is located in the Ambler **mining district** **Mining District** of the southern Brooks Range, in the Northwest Arctic Borough (“NWAB”) of Alaska. The Arctic Project is geographically isolated with no current road access or nearby power infrastructure. The Arctic Project is about 270 km east of the town of Kotzebue, 37 km northeast of the village of Kobuk,

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and 260 km west of the Dalton Highway, an all-weather State maintained public road, at geographic coordinates N67.17° latitude and W156.39° longitude and Universal Transverse Mercator (UTM) North American Datum (NAD) 83, Zone 4 coordinates 7453080N, 613110E.

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Graphic

Primary access to the Arctic Project is by air, using both fixed wing aircraft and helicopters. There are four well-maintained, approximately 1,500 m-long gravel airstrips located near the Arctic Project, capable of accommodating charter fixed wing aircraft. These airstrips are located 64 km west at Ambler, 46 km southwest at Shungnak, 37 km southwest at Kobuk, and 34 km southwest at Dahl Creek. There is daily commercial air service from Kotzebue to the village of Kobuk, the closest community to the Arctic Project. During the summer months, the Dahl Creek Camp airstrip is suitable for larger aircraft, such as a C-130 and DC-6.

In addition to the four 1,500 m airstrips, there is a 700 m airstrip located at the Bornite Camp. The airstrip at Bornite is suited to smaller aircraft, which support the Bornite Camp with personnel and supplies. There is also a 450 m airstrip (Arctic airstrip) located at the base of Arctic Ridge that can support smaller aircraft.

A winter trail and a one-lane dirt track suitable for high-clearance vehicles or construction equipment links the Arctic Project's main camp located at Bornite to the Dahl Creek airstrip southwest of the Arctic deposit. An unimproved gravel track connects the Arctic airstrip with the Arctic deposit.

#### **History**

Prospectors in search of gold, travelling up the Kobuk River in 1898-99 (Grinnell, 1901), found small gold placer deposits in the southern Cosmos Hills, south of the Arctic deposit, which were worked intermittently over the ensuing decades. Around this time, copper mineralization at Ruby Creek and Pardner Hill in the northern Cosmos Hills was explored using small shafts and adits (Smith and Eakin, 1911). In 1947, Rhinehart "Rhiny" Berg staked claims over the Ruby Creek prospects, carried out extensive trenching and the first diamond drilling, and constructed an airstrip for access (alaskamininghalloffame.org 2012).

Bear Creek Mining Company ("BCMC"), an exploration subsidiary of Kennecott, optioned the Ruby Creek property from Berg in 1957. The prospect became known as Bornite and Kennecott conducted extensive exploration over the next

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decade, culminating in the discovery of the high-grade No. 1 zone and the sinking of an exploration shaft to conduct underground drilling.

While exploring the Bornite deposit, BCMC carried out reconnaissance exploration throughout the western Brooks Range, including a large regional stream sediment survey in 1962. Initial follow up did not identify mineralization of interest however in 1965, Riz Bigelow (BCMC) and his team of geologists found boulders of massive sulphides at an anomaly (1400 ppm Cu) located 28 km northeast of Bornite that led to the discovery of outcropping mineralization the following year. The area was subsequently staked and, in 1967, nine core holes were drilled at the Arctic deposit, eight of which yielded massive sulphide intercepts over an almost 500-m strike length.

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BCMC conducted intensive exploration on the property until 1977 and then intermittently through to 1998. No drilling or additional exploration was conducted on the Arctic Project between 1999 and 2003.

In addition to drilling and exploration at the Arctic deposit, BCMC also conducted exploration at numerous other prospects in the Ambler Mining District (most notably Dead Creek, Sunshine, Cliff, and Horse). The abundance of VMS prospects in the district resulted in a series of competing companies in the area, including Sunshine Mining Company, Anaconda Company, Noranda Exploration Company, GCO Minerals Company, Cominco American Resource Inc. (Cominco), Teck Cominco, Resource Associates of Alaska, Watts, Griffis and McQuat Ltd., and Houston Oil and Minerals Company, culminating into a claim staking war in the district in 1973. Falconbridge and Union Carbide also conducted work later in the district.

District exploration by Sunshine Mining Company and Anaconda resulted in two additional significant discoveries in the district; the Sun deposit located 60 km east of the Arctic deposit, and the Smucker deposit located 36 km west of the Arctic deposit. These two deposits are outside the current Arctic Project area.

District exploration continued until the early 1980s on the four larger deposits in the district (Arctic, Bornite, Smucker and Sun) when the district fell into a hiatus due to depressed metal prices.

In 1987, Cominco acquired the claims covering the Sun and Smucker deposits from Anaconda. Teck Resources Limited, as Cominco's successor company, continues to hold the Smucker deposit. In 2007, Andover Mining Corporation purchased a 100% interest in the Sun deposit for \$13 million and explored the property through 2013. The Sun deposit and adjacent lands were acquired by Valhalla Metals Inc., a private company, which staked over the Sun deposit in 2017 after the creditors for the bankrupt Andover Mining Corporation failed to pay the annual rent of the state claims and submit the Annual Labour Statement.

In 1981 and 1983, Kennecott received three US Mineral Survey patents (MS2245 totaling 240 acres over the Arctic deposit – later amended to include another 32 acres; and MS2233 and MS2234 for 25 claims totaling 516.5 acres at Bornite). The Bornite patented claims and surface development were subsequently sold to NANA Regional Corporation, Inc. in 1986.

No production has occurred at the Arctic deposit or at any of the other deposits within the Ambler Mining District.

Prior Ownership and Ownership Changes – Arctic Deposit and the Ambler Lands

BCMC initially staked federal mining claims covering the Arctic deposit area beginning in 1966. The 1960's drill programs defined a significant high-grade polymetallic resource at the Arctic deposit and, in the early 1970s, Kennecott began the patent process to obtain complete legal title to the Arctic deposit. In 1981, Kennecott received US Mineral Survey patent M2245 covering 16 mining claims totaling 240.018 acres. In 1983, US Mineral Survey patent M2245 was amended to include two additional claims totaling 31.91 acres.

With the passage of the Alaska National Interest Lands Conservation Act in 1980, which expedited native land claims outlined in the ANSCA and State lands claims under the Alaska Statehood Act, both the State of Alaska and NANA selected significant areas of land within the Ambler Mining District. State selections covered much of the Ambler schist belt, host

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to the volcanogenic massive sulphide deposits including the Arctic deposit, while NANA selected significant portions of the Ambler Lowlands to the immediate south of the Arctic deposit as well as much of the Cosmos Hills including the area immediately around Bornite.

In 1995, Kennecott renewed exploration in the Ambler schist belt containing the Arctic deposit patented claims by staking an additional 48 state claims at Nora and 15 state claims at Sunshine Creek. In the fall of 1997, Kennecott staked 2,035 state claims in the belt consolidating their entire land position and acquiring the majority of the remaining prospective terrain in the VMS belt. Five more claims were subsequently added

in 1998. After a short period of exploration which focused on geophysics and geochemistry combined with limited drilling, exploration work on the Arctic Project again entered a hiatus.

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On March 22, 2004, Alaska Gold Company ("Alaska Gold"), a wholly-owned subsidiary of NovaGold completed an Exploration and Option Agreement with Kennecott to earn an interest in the Ambler land holdings.

Previous Exploration and Development Results – Arctic Deposit

Kennecott's ownership of the Arctic Project saw two periods of intensive work from 1965 to 1985 and from 1993 to 1998, before optioning the property to NovaGold in 2004.

Though reports, memos, and files exist in Kennecott's Salt Lake City office, only limited digital compilation of the data exists for the earliest generation of exploration at the Arctic deposit and within the VMS belt. Beginning in 1993, Kennecott initiated a re-evaluation of the Arctic deposit and assembled a computer database of previous work at the Arctic deposit and in the district. A computer-generated block model was constructed in 1995 and an updated resource estimate was performed using the block model. Subsequently, Kennecott staked a total of 2,035 State of Alaska claims in 1997 and, in 1998 undertook the first field program since 1985.

Due to the number of companies and the patchwork exploration that occurred as a result of the 1973 staking war, much of the earliest exploration work on the Ambler Schist belt was lost during the post-1980 hiatus in district exploration. The following subsections outline the best documented data at the Arctic deposit as summarized in the 1998 Kennecott exploration report, including the assembled computer database; however, this outline is not considered to be either exhaustive or in-depth.

In 1982, geologists with Kennecott, Anaconda and the State of Alaska published the definitive geologic map of the Ambler schist belt (Hitzman et al. 1982).

The S-K 1300 Arctic Report and the NI 43-101 Arctic Report both summarize the known exploration mapping, geochemical, and geophysical programs conducted for VMS targets in the Ambler Mining District. Table 1 below summarizes the exploration mapping, geochemical, geophysical, and mining studies conducted on the Arctic deposit.

***Geological Setting, Mineralization and Deposit Types***

Regional Geology – Southern Brooks Range

The Ambler Mining District occurs along the southern margin of the Brooks Range within an east-west trending zone of Devonian to Jurassic age submarine volcanic and sedimentary rocks (Hitzman et al., 1986). The district covers both: 1) VMS-like deposits and prospects hosted in the Devonian age Ambler Sequence (or Ambler Schist belt or Schist Belt), a group of metamorphosed bimodal volcanic rocks with interbedded tuffaceous, graphitic and calcareous volcanoclastic metasediments; and 2) epigenetic carbonate-hosted copper deposits occurring in Silurian to Devonian age carbonate and phyllitic rocks of the Bornite Carbonate Sequence. The Ambler Sequence occurs in the upper part of the Anirak Schist, the thickest member of the Schist belt or Coldfoot subterrane (Moore et al., 1994). VMS-like stratabound mineralization can be found along the entire 110 km strike length of the district. Immediately south of the Schist belt, in the Cosmos Hills, a time equivalent section of the Anirak Schist that includes the approximately 1 km thick Bornite Carbonate

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Sequence. Mineralization of both the VMS-like deposits of the Schist belt and the carbonate-hosted deposits of the Cosmos Hills has been dated at 375 to 387 Ma (Selby et al., 2009; McClelland et al., 2006).

The Ambler Mining District is characterized by increasing metamorphic grade to the north, perpendicular to the strike of the east-west trending units. The district shows isoclinal folding in the northern portion and thrust faulting to south (Schmidt, 1983). The Devonian to Late Jurassic age Angayucham basalt and the Triassic to Jurassic age mafic volcanic rocks are in low-angle over thrust contact with various units of the Ambler Schist belt and Bornite Carbonate Sequence along the northern edge of the Ambler Lowlands.

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### [Ambler Sequence Geology](#)

Rocks that form the Ambler Sequence consist of a lithologically diverse sequence of lower Devonian age carbonate and siliciclastic strata with interlayered mafic lava flows and sills. The clastic strata, derived from terrigenous continental and volcanic sources, were deposited primarily by mass-gravity flow into the sub-wavebase environment of an extending marginal basin.

The Ambler Sequence underwent two periods of intense, penetrative deformation. Sustained upper greenschist-facies metamorphism with coincident formation of a penetrative schistosity and isoclinal transposition of bedding marks the first deformation period. Pervasive similar-style folds on all scales deform the transposed bedding and schistosity, defining the subsequent event. At least two later non-penetrative compressional events deform these earlier fabrics. Observations of the structural and metamorphic history of the Ambler Mining District are consistent with current tectonic evolution models for the Schist belt, based on the work of others elsewhere in the southern Brooks Range (Gottschalk and Oldow, 1988; Till et al., 1988; Vogl et al., 2002).

### [Arctic Deposit Geology](#)

Previous workers at the Arctic deposit (Russell 1995 and Schmidt 1983) describe three mineralized horizons: the Main Sulphide Horizon, the Upper South Horizon and the Warm Springs Horizon. The Main Sulphide Horizon was further subdivided into three zones: the southeast zone, the central zone and the northwest zone. Previous deposit modelling was grade-based resulting in numerous individual mineralized zones representing relatively thin sulphide horizons.

Recent Earlier work by Ambler Metals defines defined the Arctic deposit as two or more discrete horizons of sulphide mineralization contained in a complexly deformed isoclinal fold with an upright upper limb and an overturned lower limb hosting the main mineralization. Nearby drilling suggests suggested that a third upright lower limb, likely occurs beneath the currently explored stratigraphy.

### [Mineralization](#)

Mineralization occurs as stratiform semi-massive sulphide ("SMS") to massive sulphide ("MS") beds within primarily graphitic schists and fine-grained quartz mica schists. The sulfide beds average 4 m in thickness but vary from less than 1 m up to as much as 18 m in thickness. The sulfide mineralization occurs within eight modelled zones lying along the upper and lower limbs of the Arctic isoclinal anticline. The zones are all within an area of roughly 1 km<sup>2</sup> km<sup>2</sup> with mineralization extending to a depth of approximately 250 m below the surface. There are five zones of MS and SMS that occur at specific pseudo-stratigraphic levels which make up the bulk of the Mineral Resource estimate. The other three zones also occur at specific pseudo-stratigraphic levels, but are too discontinuous.

Unlike more typical VMS deposits, mineralization is not characterized by steep metal zonation or massive pyritic zones. Mineralization dominantly consists of sheet-like zones of base metal sulfides with variable pyrite and only minor zonation, usually on a small scale.

Mineralization is predominately coarse-grained sulphides comprising chalcopyrite, sphalerite, galena, tetrahedrite-tennantite, pyrite, arsenopyrite, and pyrrhotite. Sulphides occur as disseminated (<30%), semi-massive (30 to 50% sulphide) to massive (greater than 50% sulphide) layers. Trace amounts of electrum are also present. Gangue minerals associated with the mineralized horizons include quartz, barite, white mica, chlorite, stilpnomelane, talc, calcite, dolomite and cymrite.

Deposit Types

The mineralization at the Arctic deposit and at several other known occurrences within the Ambler Sequence stratigraphy of the Ambler Mining District consists of Devonian age, polymetallic (zinc-copper-lead-silver-gold) VMS-like occurrences.

Observations and interpretations at the Arctic deposit such as: 1) the tectonic setting with Devonian volcanism in an evolving continental rift; 2) the geologic setting with bimodal volcanic rocks including pillow basalts and felsic volcanic tuffs; 3) an alteration assemblage with well-defined magnesium-rich footwall alteration and sodium-rich hanging wall alteration; and 4) typical polymetallic base-metal mineralization with massive and semi-massive sulphides, are indicative of a VMS deposit that has undergone high strain and complex folding and faulting.

A variety of VMS types have been well documented in the literature (Franklin et al., 2005), with the Ambler Schist belt deposits most like deposits associated with bimodal felsic dominant volcanism related to incipient rifting. However, the abundance of volcanoclastic rocks with argillaceous sedimentary rocks and the tabular nature of mineralization are considered by Piercey (2022) to be similar to felsic siliclastic VMS environments.

Evidence exists for both exhalation and emplacement on the seafloor and replacement of rocks in the sub-seafloor, either via filling of void space or via dissolution of original rocks and replacement by new minerals (Piercey, 2022). For example, the presence of barite, attributed to the mixing of  $\text{BaCl}_2(\text{aq})$   $\text{BaCl}_2(\text{aq})$  from hydrothermal fluids with seawater sulphate  $(\text{SO}_4(\text{aq}) (\text{SO}_4(\text{aq})))$  at the vent-seawater interface supports some of the mineralization at Arctic likely precipitated on the seafloor. In contrast, there is ample textural evidence of subseafloor replacement at Arctic, such as the presence of transitions from massive sulphides into selective replacement of interpreted permeable tuff beds in the hanging wall mudstones.

The tonnage, grades, and stratigraphic setting of the Arctic deposit, and its broader tectonostratigraphic setting, are similar to other felsic siliclastic VMS environments globally. The deposit has strong similarities to deposits found the Finlayson Lake VMS district, Yukon, Bathurst district, New Brunswick, and some parts of the Iberian Pyrite Belt, Spain-Portugal (Piercey, 2022).

A VMS model is considered applicable for use in exploration targeting in the Arctic Project area.

**Exploration**

Table 1 summarizes the exploration work conducted by NovaGold, Trilogy (formerly, NovaCopper) and Ambler Metals from 2004 to the present. 2022. Field exploration was largely conducted during the period between 2004 to 2007 and 2021 to 2022 with associated engineering and characterization studies between 2008 and 2019, 2021.

**Table 1 - Summary of Overall Exploration Activities Targeting VMS Style Mineralization in the Ambler Sequence Stratigraphy and the Arctic Deposit**

Work Completed	Year	Details	Focus
<b>Geological Mapping</b>			
-	2004	-	Arctic deposit surface geology

-	2005	-	Ambler Sequence west of the Arctic deposit
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Work Completed	Year	Details	Focus
-	2006	-	COU, Dead Creek, Sunshine, Red
-	2015, 2016	SRK	Geotechnical Structural Mapping
-	2016	-	Arctic deposit surface geology
-	2021	-	Snow, Ambler, Nani, DH, Cliff, Sunshine, Dead Creek, BT, 98-9/Pipe, COU, SE Arctic, Nora

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Work Completed	Year	Details	Focus
-	2022	-	Snow, Ambler, Nani, DH, Bud, Sunshine, Dead Creek, BT, 98-9/Pipe, COU, East Arctic, Nora, South Cliff, SK, Cynbad, Z, Tom Tom, Kogo/White Creek
<b>Geophysical Surveys</b>			
SWIR Spectrometry	2004	2004 drill holes	Alteration characterization
TDEM	2005	2 loops	Follow-up of Kennecott DIGHEM EM survey
	2006	13 loops	District targets
	2007	6 loops	Arctic extensions
Downhole EM	2007	4 drill holes	Arctic deposit
VTEM Plus (Versatile Time Domain Electromagnetic) airborne helicopter geophysical	2019	400m line spacing with 200m infill with tie lines 4000m spacing	Ambler Mining District and Cosmos Hills with infill over Arctic, Sunshine and Horse-Cliff
ZTEM (Z-Axis Tipper Electromagnetic) airborne helicopter geophysical	2019	400m line spacing with tie lines 4000m spacing	Ambler Mining District and Cosmos Hills with infill over Arctic, Sunshine and Horse-Cliff
<b>Geochemistry</b>			
-	2005	-	Stream silts – core area prospects
-	2006	-	Soils – core area prospects

-		-	Stream silts – core area prospects
-	2007	-	Soils – Arctic deposit area
-	2021	-	Soils - VTEM 26-29, JA Creek, West Dead Creek, Dead Creek
-	2022	-	Soils - Sub Arctic Valley, South Cliff, VTEM 26-29, VTEM-41, VTEM-23 , East and West Sunshine, Tom, Tom, Kogo/White Creek, SK, Cynbad, East Arctic, West Dead Creek, Dead Creek, 98-9/Pipe, Z, Nora, Ambler, Nani
-			Streams silts - Core area prospects
<b>Survey</b>			
Collar	2004 to 2011,	DGPS	All 2004 to 2019 NovaCopper drill holes

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Work Completed	Year	Details	Focus
			Tom, Kogo/White Creek, SK, Cynbad, East Arctic, West Dead Creek, Dead Creek, 98-9/Pipe, Z, Nora, Ambler, Nani
-			Streams silts - Core area prospects
<b>Survey</b>			
Collar	2004 to 2011, 2018, 2019, 2021, 2022	DGPS	All 2004 to 2019 NovaCopper drill holes
	2004, 2008	Resurveys	Historical Kennecott drill holes
Photography/Topography	2010	-	Photography/topography
LiDAR Survey	2015, 2016	-	LiDAR over Arctic Deposit
<b>Technical Studies</b>			
Geotechnical	2010	BGC	Preliminary geotechnical and hazards
ML/ARD	2011	SRK	Preliminary ML and ARD
Metallurgy	2012	SGS	Preliminary mineralogy and metallurgy
Geotechnical and Hydrology	2012	BGC	Preliminary rock mechanics and hydrology
Geotechnical and Hydrology	2015, 2016, 2018, 2019, 2021, 2022	SRK	Arctic P FS and FS slope design



ML/ARD	2015, 2016, 2017, 2018, 2019	SRK	Static kinetic tests and ABA update - ongoing
Metallurgy	2015, 2016, 2017, 2018, 2019, 2021	SGS, ALS	Cu-Pb Separation Testwork; Flotation and Variability Testwork; SAG Mill Comminution (SMC) Testwork, filtration Testwork, thickener Testwork, and tailings settling testing
<b>Project Evaluation</b>			
Resource Estimation	2008	SRK	Resource estimation
PEA	2011	SRK	PEA - Underground
	2012	Tetra Tech	PEA – Open Pit

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Work Completed	Year	Detail	Focus
PFS	2018	Ausenco	Pre-Feasibility Study
FS	2020	Ausenco	Feasibility Study

Note: SWIR = short wave infrared; LiDAR = light detection and ranging; ML = metal leaching; BGC = BGC Engineering Inc.; SGS = SGS Canada; ALS = ALS Metallurgy; PEA = preliminary economic assessment.

#### Drilling

Drilling at the Arctic deposit and within the Ambler Mining District has been ongoing since the initial discovery of mineralization in 1966. Approximately 67,639 m of drilling has been completed within the Ambler Mining District,

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including 55,038 m of drilling in 285 drill holes at the Arctic deposit or on potential extensions in 32 campaigns spanning 56 years.

All drill holes, except 11 geotechnical holes in 2017, 24 geotechnical holes drilled in 2018, 8 geotechnical holes from the 2021 program and 34 exploration holes from the 2022 program, for which assay results were not available - were considered for use in the estimate of Mineral Resources.

Geotechnical drilling is summarized in Table 2 and Table 3. The number of holes reported for each year are the holes that were staffed by a geotechnician at the rig and the primary purpose was to gather geotechnical data.

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**Table 2 – Summary of Geotechnical Drilling**

	2011	2015	2016	2017	2018	2019	2021	2022
Number of Holes	5	2	3	11	24	4	8	5
Oriented core	X	X	X			X	X	X
Water level monitoring	X	X	X	X	X	X	X	X
Falling head packer tests	X							
Point load tests	X	X	X			X	X	X
Uniaxial compressive strength		X	X			X		
Direct shear testing		X	X			X	X	X
Modulus testing		X	X			X		
Triaxial testing		X	X			X	X	X
Acoustic Televiewer			X					
Falling Head, Single or Straddle packer tests	X		X					
Airlift pump test			X					
Hydraulic conductivity testing (slug testing)				X				
Cohesive and residual shear strength tests on soils				X	X			
Compressive strength test on core and rock				X	X			
Extended duration injection tests						X		

**Table 3 – Summary of Geotechnical Drilling by Year and Purposes**

Year	Purpose
2011	Obtain geotechnical data in areas of the deposit that may host underground infrastructure or could pose issues with underground mining.
2015	Collect geotechnical and hydrological data to better understand the wall rock characteristics and hydrology within the open pit area.
2016	Complete the 3 drill holes that were deferred/not completed from the 2015 program.
2017	Collect geotechnical and hydrological data for tailings management and waste rock facilities within the entire Sub Arctic Creek valley.
2018	Collect geotechnical and hydrological data for waste rock dump, tailings management facility, and surface infrastructure in the Upper Sub Arctic Creek Valley.
2019	Provide additional geotechnical and hydrological data for pit design for the Feasibility Study.
2021	Define talc horizons on east side of pit for pit design.
2022	Define extent of lower talc horizons on northeast side of pit for pit design.

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NovaGold re-surveyed collars of selected historical holes in 2004 and again in 2008. The re-surveys showed little variation compared to the historical surveys. The downhole survey data show a pronounced deviation of the drill holes toward an orientation more normal to the foliation.

Incomplete Kennecott data exist with regards to overall core recovery but based on 917 intervals of 3.05 m or less in the historical database, the average recovery was 92%. Kennecott RQD measurements in the 1998 program averaged 87.0%. There has been no systematic evaluation of recovery by rock type.

Core recovery during NovaGold/NovaCopper/Trilogy Metals and Ambler Metals drill programs were was good to excellent, resulting in quality samples with little to no bias.

### **Sampling, Analysis and Data Verification**

#### Sampling and Analysis

The data for the Arctic deposit were generated over three primary drilling campaigns: 1966 to 1986 when BCMC, a subsidiary of Kennecott was the primary operator, 1998 when Kennecott resumed work after a long hiatus, and 2004 to present under NovaGold, Trilogy (formerly, NovaCopper), and Ambler Metals.

Between 2004 and 2005, NovaGold conducted a systematic drill core re-logging and re-sampling campaign of Kennecott and BCMC era drill holes AR-09 to AR-74. NovaGold either took 1 to 2 m samples every 10 m or sampled entire lengths of previously unsampled core within a minimum of 1 m and a maximum of 3 m intervals. The objective of the sampling was to generate a full ICP geochemistry dataset for the Arctic deposit and ensure continuous sampling throughout the deposit.

From 2004 to 2019, sample intervals are determined by the geological relationships observed in the core and limited to a 2.5 m maximum length and 1 m minimum length. Sample intervals terminate at lithological and mineralization boundaries.

After logging, the core was cut in half using diamond core saws. If core was not competent, it was split by using a spoon to transfer half of the core into the sample bag. One-half of the core was returned to the core box for storage on site and the other half was bagged, labelled, and sent to ALS Minerals Laboratories in Vancouver for analysis via the (ALS preparation facility in Fairbanks Alaska) and the other half was archived in the core storage facility at the Bornite Camp

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facilities or at the Ambler Metals warehouse in Fairbanks. For the 2021 metallurgical holes, ¼ core was sampled for analysis at ALS, ¼ retained, and ½ sent for metallurgical testing.

Samples were logged into a tracking system on arrival at ALS Minerals, and weighed. Samples were then crushed dried, and a 250 g split pulverized to greater than 85% passing 75 µm.

Samples were submitted for multielement analysis of a 0.25 gram sample by Inductively Coupled Plasma (ICP) Mass Spectrometry (MS) following a 4-acid digestion, and for gold analysis of a 30 gram sample by Fire Assay (FA) with an Atomic Absorption (AA) finish. Over limit ICP-MS Cu, Pb, and Zn samples were resubmitted for analysis of a 0.4 gram sample by ICP-Atomic Emission Spectroscopy (AES) or AA following a 4 acid digestion. The overlimit value for Cu, Pb, and Zn is 10,000 ppm. Over limit gold results were resubmitted for analysis of a 30

gram sample by FA with a Gravimetric finish. The overlimit value for Au is 10 ppm. The Lower detection limits for Cu, Pb, and Zn by ICP-MS are 0.2 ppm, 0.5 ppm, and 2 ppm respectively. The lower detection limit for Au by FAAA is 0.05 ppm.

Between 2004 and 2005 NovaGold completed a resampling program of historic drill holes. As a result, 85% of the assay intervals now have recent assay results from ALS Minerals.

All core and pulp reject samples submitted to the ALS Minerals laboratory since 2004 were accompanied by standard, blank and duplicate control samples. Secondary laboratory check samples were analysed at Acme in Vancouver or SGS Burnaby. The secondary laboratory check samples were selected to represent the data population using a random selection of 5% of the samples within percentile range groups.

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GeoSpark Consulting has prepared several reports summarizing the control sample results received between 2004 and 2019.

Paired laboratory and field determinations **from** for mineralized zone SG measurements from 1998 and the 2004 program show very low variation.

SRK conducts monthly QA/QC review of kinetic test leachates for all operating kinetic tests.

#### Data Verification

Wood qualified persons reviewed database verification and laboratory QA/QC reports and made data entry error spot checks, inspected down hole survey results for anomalous kinks and excessive bends in the drill hole traces, reviewed reports summarizing the results of drill core sampling and assaying completed since 2004, reviewed the assay database for gaps and overlaps, and reviewed the historic re-assay program results. The following two significant issues were observed:

- A significant high bias in historic Cu and low bias in historic Pb assay results
- Apparent low bias in Random Forest assisted specific gravity predictions

In the current assay table historic sample interval assay results are given priority over the historic sample interval re-assay results. This is not expected to have a material impact on the grade estimation but using the re-assay results would further mitigate the risk associated with the observed biases in the historic Cu and Pb values.

Overall, the database verification and management and the laboratory QAQC monitoring completed by NovaGold, Trilogy Metals, and Ambler Metals has resulted in a reasonably reliable drill hole database suitable for supporting the Mineral Resource estimated for the Arctic deposit. Some deficiencies exist that when rectified will make the drill hole database even more robust.

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#### **Mineral Processing and Metallurgical Testing**

Since 1970, metallurgical testwork has been conducted to evaluate the ability of the Arctic deposit to produce copper, lead and zinc concentrates. In general, the samples tested produced similar metallurgical performances and the Arctic Project has seen the development of a robust metal recovery process to support the current operational plans. Work conducted included mineralogy and flotation testing, locked cycle tests, comminution tests, copper/lead separation testwork, talc optimization testwork, and thickening and filtration testing.

Testwork can be broken into four key time periods:

1. Historical testwork completed prior to 2012, primarily by Kennecott Research Centre in Utah, and Lakefield Research Ltd., Lakefield, Ontario;
2. Preliminary Trilogy testwork conducted at SGS Mineral Services, Vancouver ("SGS Vancouver"), in 2012 to 2015;
3. Detailed Trilogy testwork conducted at ALS Metallurgy in Kamloops, BC ("ALS Metallurgy") in 2015 to 2019; and
4. Amber Metals testwork conducted at ALS Metallurgy and SGS Mineral Services in 2021 to 2022.

In 2012, SGS Vancouver conducted a metallurgical test program to further study metallurgical responses of the samples produced from Zones 1, 2, 3, and 5 of the Arctic deposit. The flotation test procedures used talc pre-flotation, conventional copper-lead bulk flotation and zinc flotation, followed by copper and lead separation. In general, the 2012-2015 test results indicated that the samples responded well to the flowsheet tested. The average results of the locked cycle tests (without copper and lead separation) were as follows:

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- The copper recoveries to the bulk copper-lead concentrates ranged from 89% to 93% excluding the Zone 1 & 2 composite which produced a copper recovery of approximately 84%; the copper grades of the bulk concentrates were 24% to 28%.
- Approximately 92% to 94% of the lead was recovered to the bulk copper-lead concentrates containing 9% to 13% lead.
- The zinc recovery was 84.2% from Composite Zone 1 & 2, 93.0% from Composite Zone 3 and 90.5% from Composite Zone 5. On average, the zinc grades of the concentrates produced were higher than 55%, excluding the concentrate generated from Composite Zone 1 & 2, which contained only 44.5% zinc.
- Gold and silver were predominantly recovered into the bulk copper-lead concentrates. Gold recoveries to this concentrate ranged from 65% to 80%, and silver recoveries ranged from 80% to 86%.

Using an open circuit procedure, the copper and lead separation tests on the bulk copper-lead concentrate produced from the locked cycle tests generated reasonable copper and lead separation. The copper concentrates produced contained approximately 28% to 31% copper, while the grades of the lead concentrates were in the range of 41% to 67% lead. In this testwork program, it appeared that most of the gold reported to the copper concentrate and on average the silver was equally recovered into the copper and lead concentrates. Subsequent testwork to better define the copper and lead separation process was conducted in 2017, including a more detailed evaluation of the precious metal deportment in the copper and lead separation process.

Grindability testing was completed during both the SGS Vancouver and ALS Metallurgy testwork programs to support the design and economics of efficient grinding of the Arctic materials. SAG mill test results included a single JKTech drop-weight test and 19 SAG media competency tests using variability samples. Test results show the material is amenable to SAG milling and is relatively soft, with a reported breakage (axb) average value of 189.7. Bond ball mill work index (BWi) tests were completed on 44 samples and values ranged from 5.4 to 13.1 kWh/t with an average BWi of 8.82 kWh/t. Abrasion index (Ai) tests were completed on five samples and values fluctuated from 0.017 to 0.072 g for the measured

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samples. The data indicate that the samples are neither resistant nor abrasive to ball mill grinding. The materials are considered to be soft or very soft in terms of grinding requirements. The grinding testwork was used to support detailed grinding circuit design.

In 2017, ALS Metallurgy conducted detailed copper and lead separation flotation testwork using a bulk sample of copper– lead concentrate produced from the operation of a pilot plant. This testwork confirmed high lead recoveries in **lockedcycle locked cycle** testing of the copper–lead separation process and confirmed precious metal recoveries into the representative copper and lead concentrates. This testwork indicated a clear tendency of the gold values to follow the lead concentrate, giving it a significant gold grade and value. Detailed mineralogical analysis showed that a majority of gold values were occurring as liberated fine-grained gold particles.

The conclusions of testwork conducted both in 2012 and 2017 indicate that the Arctic materials are well-suited to the production of high-quality copper and zinc concentrates using flotation techniques which are industry standard. Copper and zinc recovery data were reported in the range of 88% to 92%, which reflected the high-grade nature of the deposit as well as the coarse-grained nature of these minerals. Grade variations within the deposit will be observed as indicated by the grade variations observed in variability samples, however, mill feed variability is expected to be limited and readily manageable with good plant operational practices. Lead concentrates have the potential to be of good quality and can also be impacted by zones of very high talc. Considerable care will be required to ensure maximum talc recovery to remove talc, which has the potential to dilute lead concentrate grades. The lead concentrate is also shown to be rich in precious metals, which has some advantages in terms of marketability of this material.

Ancillary testwork was completed by third party consultants on representative concentrate samples, to provide thickening and filtration data for the various concentrates. Settling and filtration rates were observed to be typical for sulfide concentrates and moisture contents in final filter cakes were observed to be lower than expected.

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Metallurgical testwork was completed to provide representative tailings samples for use in detailed solids settling and compaction testwork to provide data for tailings design studies.

A detailed study of water treatment chemistry was undertaken to evaluate and confirm the option of destroying cyanide contained in solutions from the proposed copper–lead separation process. The use of an SO<sub>2</sub>/air process in a small-scale pilot plant demonstrated removal of 99% of the contained cyanide and supported the concept of maintaining low cyanide concentrations within the proposed tailings pond solutions.

In 2021, various metallurgical testwork programs were conducted at ALS Metallurgy, SGS, and MO Group. ALS Metallurgy completed several testwork programs, including flotation testing with the Preflotation circuit only to establish talc performance; further flowsheet development test work to investigate the benefits of sequential flotation versus the original bulk flow sheet; and a variability testwork to support the development of improved metallurgical recovery models.

The objective of the ALS Metallurgy program was to investigate bulk and sequential flotation flowsheets with composites formed from two parent composites, and then select a flowsheet for a geo-metallurgical evaluation through testing with variability samples.

The mineralization was amenable to either a bulk flowsheet followed by copper-lead separation, or a sequential flowsheet, both following a pre-flotation stage to remove talc.

Table 4 shows average performance obtained for the Avg Talc Composite in the Flowsheet Development phase of the testing.

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**Table 4 – Comparison of Bulk versus Sequential Locked-Cycle Test Results – ALS 2021**

Composite	Assays						Distribution (%)				
	Cu (%)	Pb (%)	Zn (%)	Ag (g/t)	Au (g/t)	Mg (%)	Cu	Pb	Zn	Ag	Au
Avg Talc Bulk											
Copper concentrate	28.0	0.86	4.27	181	4.17	0.46	87.3	8.3	9.1	36.0	60.9
Lead concentrate	7.90	39.0	6.30	1124	4.75	1.23	5.1	78.1	2.8	46.0	14.3
Zinc concentrate	0.87	0.38	55.9	41	0.35	0.04	1.9	2.6	83.3	5.7	3.5
Avg Talc - Sequential											
Copper concentrate	27.6	0.87	2.05	168	3.23	1.96	90.2	8.9	4.7	34.9	48.7
Lead concentrate	2.72	49.3	9.71	1360	5.31	1.40	1.2	69.9	3.1	39.4	11.2
Zinc concentrate	0.98	1.09	54.5	47	0.77	0.17	2.1	7.3	83.5	6.5	7.7

Copper recovery to the copper concentrate was slightly higher for the sequential flowsheet; however, gold recovery to the copper concentrate was substantially lower. The lead concentrate grade for the Avg Talc composite could likely be improved over that shown above with optimization of copper-lead separation conditions given the higher lead concentrate grade measured with other composites.

Zinc circuit performance was similar for the two flowsheets, although higher zinc recovery to the copper concentrate was recorded for the bulk circuit. Magnesium content in the copper concentrate was higher for the sequential circuit, but similar in the lead concentrate for both circuits.

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Based on economic analysis comparing the bulk and sequential circuit, the bulk circuit flowsheet was selected for the Variability testing.

An overall metallurgical balance for the project is summarized in Table 5. The projected metallurgical recoveries are based on an expected average recovery over the life-of-mine (LOM), and results of metallurgical variability testwork conducted in 2021 and 2022.

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**Table 5 – Summary of Overall Metal Recovery – Arctic Project**

Process stream	Mass %	Concentrate Grade	Metal Recoveries

		Cu %	Pb %	Zn %	Au g/t	Ag g/t	Cu %	Pb %	Zn %	Au %	Ag %
Process Feed	100	2.1	0.5	2.8	0.4	31.1	-	-	-	-	-
Copper Conc.	6.3	30.3	1.7	0.7	3.4	160.5	92.1	19.4	1.6	52.2	32.4
Lead Conc.	0.6	2.0	53.9	5.9	14.1	2425.8	0.6	61.3	1.3	21.4	48.8
Zinc Conc.	4.7	1.0	0.5	53.6	0.3	38.3	2.2	4.4	88.4	3.2	5.7
Tailings	88.4	0.1	0.1	0.3	0.1	4.6	5.1	14.8	8.7	23.2	13.1

SGS conducted SAG Power Index (SPI®) tests to investigate the effect of friable ores on the plant throughput.

MO Group conducted talc circuit modelling using the data obtained from the ALS Metallurgy Preflotation test work program to investigate the benefits of talc circuit open and closed-circuit cleaning. The MO Group also conducted dewatering and filtration test work on the talc concentrate and final tailings generated from the Preflotation test work program.

Thickening and filtration testwork were completed by the MO Group on representative preflotation concentrate and tailings samples, to investigate opportunities to improve water recovery and reduce operating costs. The results were used to incorporate a tailings thickener in the process plant flow sheet.

#### **Mineral Resource and Mineral Reserve Estimates**

##### Mineral Resource Estimate

Mineral Resources have not been previously disclosed under S-K 1300 standards prior to fiscal year ended November 30, 2022 and definitions in a filing with the United States Securities and Exchange Commission (SEC). A description of the key assumptions, parameters, and methods used in the mineral resource estimate are included in Chapter 11 of the S-K 1300 Arctic Report . A brief discussion of the material assumptions and criteria used in the mineral resource estimation are as follows: Mineral resource estimates are performed from a 3D block model based on geostatistical applications using LeapFrog software. The block model has a parent block size measuring 10 x 10 x 5 m with a sub-block size measuring 2 x 2 x 1 m and uses data derived from 171 drill holes within the Arctic deposit. The resource estimate was generated using drill hole sample assay results and the interpretation of a geological model which relates to the spatial distribution of copper, lead, zinc, gold and silver. Interpolation characteristics were defined based on the geology, drill hole spacing, and geostatistical analysis of the data. The effects of potentially anomalous high-grade sample data, composited to 2 m intervals, are controlled by capping each mineralization zone. The grade models have been validated using a combination of visual and statistical methods. The resources were classified according to their proximity to the sample data locations and are reported using the 2014 CIM Definition Standards in the NI 43-101 Arctic Report and standards and definitions

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in S-K 1300 in the S-K 1300 Arctic Report. The tonnes, grade, and classification are the same under the two standards. Model blocks estimated by three or more drill holes spaced at a maximum distance of 100 m are included in the Indicated category. Inferred blocks are within a maximum distance of 150 m from a drill hole.

The deposit is amenable to open pit extraction methods. Reasonable prospects for economic extraction were established by constraining mineralization within a pit shell based on technical and economic assumptions presented in Table 6. As

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a result of flattening the north end of the reserve pit to stabilize the pit wall due to the presence of talc, a portion of the reserve pit extended beyond the resource constraining pit shell. A second pass of resource tabulation was performed on the Indicated and Inferred classified blocks exterior to the resource constraining pit shell and interior to the reserve constraining pit shell, above a 0.5% copper equivalent (CuEq) cut-off. The formula for the CuEq is shown in footnote 5 of Table 7.

**Table 6 - Parameters Used to Generate a Resource-Constraining Pit Shell**

Optimization Parameter	Unit	Value
Open Pit Mining Cost	\$/t mined	3
Milling Cost + G&A	\$/t processed	35
Pit Slope	degree	43
Copper Price	\$/lb	3.00
Lead Price	\$/lb	0.90
Zinc Price	\$/lb	1.00
Gold Price	\$/oz	1,300
Silver Price	\$/oz	18
Metallurgical Recovery: Copper	%	92
Lead	%	77
Zinc	%	88
Gold	%	63
Silver	%	56

Note: no adjustments for mining recovery or dilution. The metal prices and costs were fixed over the 13-year mine life. The metal prices are within the range of industry consensus of long-term average metal prices based on an assessment of industry peers, over the past year, and long-term forecast prices by banks at the time of the mineral resource estimate.

Trilogy's attributable interest in the Mineral Resource estimate exclusive of Mineral Reserves is stated in Table 7a. The Mineral Resource estimate inclusive of Mineral Reserves is stated in Table 7b. All Indicated Mineral Resources have been converted to Mineral Reserves. Mineral Resources are reported in place (point of reference) and on a 100% basis; however, Trilogy Metals attributable interest is 50% of the tonnes and metal content. The Mineral Resource estimate is listed in

**Table 7. Mineral Resources are reported inclusive of those Mineral Resources that were converted to Mineral Reserves.** [Contents](#)

**Table 7a – S-K 1300 Mineral Resource Summary Table, Exclusive of Mineral Reserves**

Resource	Tonnage	Average Grade					Contained Metal Content					Tonnage	Average Grade							
		Cu	Pb	Zn	Au	Ag	Cu	Pb	Zn	Ag	Tonnage		Cu	Pb	Zn	Au	Ag	Cu		
Category	(Mt)	(%)	(%)	(%)	(g/t)	(g/t)	(Mlb)	(Mlb)	(Mlb)	(koz)			(Moz)	(Mt)	(%)	(%)	(g/t)	(g/t)	(Mlb)	
Inferred -100%	4.5	1.92	0.70	2.93	0.43	35.6	189	69	288	62	5	4.5	1.92	0.70	2.93	0.43	35.6	189		

Inferred – 50% Attributable Interest	2.25						94.5	34.5	144	31	2.5	2.25	1.92	0.70	2.93	0.43	35.6	94.5
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Notes:

1. Mineral Resources are A Qualified Person and an employee of the Company, has approved the mineral reserves and mineral resources included in this Annual Report on Form 10-K as of November 30, 2023 and reviewed the resources in the S-K 1300 Arctic Report confirmed that the resources remain current as of November 30, 2022 and were verified by a Wood QP. November 30, 2023.

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2. Mineral Resources were prepared in accordance with the standards and definitions of S-K 1300 and represent first-time disclosure of Mineral Resources under S-K 1300 standards and definitions. 1300.
3. Mineral Resources stated are contained within a conceptual pit shell developed using metal prices of \$3.00/lb Cu, \$0.90/lb Pb, \$1.00/lb Zn, \$1,300/oz Au and \$18/oz Ag and metallurgical recoveries of 92% Cu, 77% Pb, 88% Zn, 63% Au and 56% Ag and operating costs of \$3/t mining and \$35/t process and general and administrative costs. The assumed average pit slope angle is 43°.
4. As a result of flattening the north end of the reserve pit to stabilize the pit wall due to the presence of talc, a portion of the reserve pit extended beyond the resource constraining pit shell and a second pass of mineral resource tabulation was performed exterior to the constraining resource pit and interior to the constraining reserve pit which is included in the Mineral Resource tabulation.
5. The cut-off grade is 0.5% copper equivalent:  $CuEq = (Cu\% \times 0.92) + (Zn\% \times 0.290) + (Pb\% \times 0.231) + (Au \text{ g/t} \times 0.398) + (Ag \text{ g/t} \times 0.005)$ .
6. The Mineral Resource estimate is reported exclusive of those Mineral Resources that were converted to Mineral Reserves.
7. Trilogy Metals' 50% attributable interest is stated in the table.
8. Figures may not sum due to rounding.

**Table 7b – NI 43-101 Mineral Resource Summary Table, Inclusive of Mineral Reserves**

Resource	Tonnage	Average Grade					Contained Metal Content				
		Cu	Pb	Zn	Au	Ag	Cu	Pb	Zn	Au	Ag
Confidence Category	(Mt)	(%)	(%)	(%)	(g/t)	(g/t)	(Mlb)	(Mlb)	(Mlb)	(koz)	(Moz)
Indicated	35.7	2.98	0.79	4.09	0.59	45.2	2,347	621	3,216	675	52
Inferred	4.5	1.92	0.70	2.93	0.43	35.6	189	69	288	62	5

Notes:

1. Mineral Resources are current as of November 30, 2022 and were verified by a Wood QP.
2. Mineral Resources were prepared in accordance with the standards and definitions of S-K 1300.
3. Mineral Resources stated are contained within a conceptual pit shell developed using metal prices of \$3.00/lb Cu, \$0.90/lb Pb, \$1.00/lb Zn, \$1300/oz Au and \$18/oz Ag and metallurgical recoveries of 92% Cu, 77% Pb, 88% Zn, 63% Au and 56% Ag and operating costs of \$3/t mining and \$35/t process and G&A. The assumed average pit slope angle is 43°.
4. 3. The cut-off grade is 0.5% copper equivalent.  $CuEq = (Cu\% \times 0.92) + (Zn\% \times 0.290) + (Pb\% \times 0.231) + (Au \text{ g/t} \times 0.398) + (Ag \text{ g/t} \times 0.005)$ .
5. 4. As a result of flattening the north end of the reserve pit to stabilize the pit wall due to the presence of talc, a portion of the reserve pit extended beyond the resource constraining pit shell. Approximately 568kt of 1.72% Cu, 0.77% Pb, 0.23 g/t Au

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and 21.3 g/t Ag in the Indicated category, and approximately 319 kt of 2.01% Cu, 0.87% Pb, 2.53% Zn, 0.50 g/t Au and 37.5 g/t Ag in the Inferred category were added to the Mineral Resource tabulation.

6.5. The Mineral Resource estimate is reported inclusive of those Mineral Resource Resources that were converted to Mineral Reserves.

7.6. Trilogy Metals' attributable interest is 50% in the table.

8.7. Figures may not sum due to rounding.

Factors that may affect the mineral resource estimate are listed below:

- Uncertainties in sampling and drilling methods, data processing and handling.
- Metal price assumptions.
- Uncertainties in the cost assumptions used to determine the cut-off grade.
- Uncertainties in the geological and mineralization shapes, and geological and grade continuity assumptions.

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- Uncertainties in the historically predicted (estimated) SG values determined by Random Forest Regressor.
- Uncertainties in the geotechnical, mining, and metallurgical recovery assumptions.
- Uncertainties represented by historical assay values for payable metals.
- Uncertainties in the resource estimation parameters including parameters such as capping values, search ellipsoids, variogram models, number of composites.
- Changes in the Mineral Resource Classification criteria.
- Uncertainties to the input and design parameter assumptions that pertain to the conceptual pit constraining the estimates.
- Uncertainties in the assumptions made to the concentrate marketability, payability and penalty terms.
- Uncertainties in the assumptions regarding the continued ability to access the site, retain mineral and obtain surface rights titles, obtain environment and other regulatory permits, and maintain the social license to operate.

## [Mineral Reserve Estimates](#)

Mineral Reserves have were not been previously disclosed under S-K 1300 standards and definition prior to fiscal year ended November 30, 2022 in a filing with the SEC. A description of the key assumptions, parameters, and methods used in the mineral reserve estimate are included in Chapter 12 of the S-K 1300 Arctic Report . A brief discussion of the material assumptions and criteria used in the mineral reserve estimation are as follows: Mineral Reserves were classified in accordance with the CIM Definition Standards for Mineral Resources and Mineral Reserves (May 10, 2014) in the NI 43-101 Arctic Report and in accordance with the standards and definitions of S-K 1300 in the S-K 1300 Arctic Report. There are no differences in the resulting tonnes, grade, or classification between the two reporting standards. Modifying factors were applied to the Indicated Mineral Resources to convert them to Probable Mineral Reserves. All of the Indicated Mineral Resources were converted to Probable Mineral Reserves. The point of reference for reporting the Mineral Reserves is at delivery to the mill, as such, the Mineral Reserves for the Arctic deposit incorporate appropriate mining dilution and mining recovery estimations.

The pit shell that defines the ultimate pit limit was derived in Whittle using the Pseudoflow pit optimization algorithm. The optimization procedure uses the block value and pit slopes to determine a group of blocks representing pits of valid slopes that yield the maximum profit. The block value is calculated using information stored in the geological block model, commodity prices, mining and processing costs, process recovery, and the sales cost for the metals produced.

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The pit slopes are used as constraints for removal precedence of the blocks (Xiaoyu Bai, et al., 2017). Table 8 provides a summary of the primary optimization inputs. Metal prices and costs were fixed over the 13-year mine life .

**Table 8 – Optimization Inputs**

Parameter	Unit	Value	Cu Conc.	Pb Conc.	Zn Conc.
Metal Prices					
Copper	\$/lb	3.46			
Lead	\$/lb	0.91			
Zinc	\$/lb	1.12			
Gold	\$/oz	1,615			
Parameter	Unit	Value	Cu Conc.	Pb Conc.	Zn Conc.
Metal Prices					
Copper	\$/lb	3.46			
Lead	\$/lb	0.91			
Zinc	\$/lb	1.12			
Gold	\$/oz	1,615			
Silver	\$/oz	21.17			
Discount Rate	%	8			
Dilution and Mine Losses	%	Estimated in a block-by-block basis, adding up 30% to 40%.			
Mining Cost					
Reference Bench Elevation	m	790			
Base Cost	\$/t	2.52			
Incremental Mining Cost					
Uphill (below 790m)	\$/t/5m	0.02			
Downhill (above 790m)	\$/t/5m	0.012			
Process Costs					
Operating Cost	\$/t milled	18.31			
G&A	\$/t milled	5.83			
Sustaining Capital	\$/t milled	2.37			
Road Toll Cost	\$/t milled	8.04			
Closure	\$/t milled	4.27			
Processing Rate	kt/d	10			
Process Recovery					
Copper	%		89.9	2.4	2.7
Lead	%		8.1	79	2.2
Zinc	%		3.4	0.4	90.6
Gold	%		10.9	62.1	5.4
Silver	%		26.4	63.1	3.4
Payable – Main Element	%		96.5	95	85



			Royalties	
NANA Surface Use		%NSR	1	
Note: IRA = inter ramp angle				
The Mineral Reserves statement is shown in Table 9Trilogy9. Trilogy Metals attributable interest is 50% of the tonnes of the Minera				
Table 9 – Mineral Reserve E				
Confidence Category	Tonnage	Probable Mineral Reserves – 100%		

			<p>extending west from the Dalton Highway where it would connect to the Dalton Highway. The project is currently seeking financing in the form of a public-private partnership to construct the road (including the Arctic Project) in order to pay back the costs of financing the road and other users of the road which could also include commercial users. The road could also possibly provide goods and commercial materials to villages in the area.</p> <hr/>
			<p><a href="#">Table of Contents</a></p> <p>The Mineral Reserve estimation assumes toll payments of \$5.52 per tonne of ore processed. There is a risk that a negotiated road toll agreement may not be reached.</p> <p><b>Mining Operations</b></p> <p>The Arctic Project is designed as a conventional truck-shovel open-pit mine with concentrator requirements.</p> <p>The design parameters include a ramp width of 30 m, road grade of 10%, and a minimum mining width of 30 m.</p> <p>The smoothed final pit design contains approximately 46.7 Mt of ore with grades of 2.90% Zn, 0.56% Pb, 0.42 g/t Au and 31.8 g/t Ag.</p> <hr/>
			<p><a href="#">Table of Contents</a></p> <p>The scheduling constraints set the maximum mining capacity at 10,000 t/d for the mine (LOM) of 15 years, including 2 years of pre-production and 2 years of decommissioning.</p> <p><b>Processing and Recovery Operations</b></p> <p>The 10,000 t/d process plant design is conventional for the industry and produces three concentrates: 1) copper concentrate, 2) zinc concentrate, and 3) lead concentrate.</p> <p>While there are several deleterious elements reporting to the concentrate, the presence of naturally hydrophobic talc minerals was consistently removed from the flotation process prior to base metal flotation, ensuring the quality of the lead concentrate.</p> <p>The mill feed will be hauled from the open pit to a primary crusher and then to a secondary crusher.</p> <p>The crushed material will be ground by two stages of grinding, with the first stage approximately 80% passing 70 µm will first undergo talc pre-flotation. The bulk rougher concentrate will be cleaned and followed by copper and lead cleaning to a tailing management facility ("TMF"). Copper, lead, and zinc concentrates will be stockpiled at the TMF.</p>

Based on the mine plan developed for the NI 43-101 Arctic Rep table [Table 10](#).

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Tabl

Description	Units	Cu con	Pb con	Zn con
LOM Production	t/y	234,132	23,300	174,202
Grade	%	30.3% Cu	53.9% Pb	53.7% Zn
Recovery	%	92.1% Cu 52.2% Au 32.5% Ag	61.3% Pb 21.6% Au 48.6% Ag	88.5% Zn

The recovery plan includes provision for reagents, and water and

*Infrastructure, Permitting and Compliance Activities*

Infrastructure

The Arctic Project site is a remote, greenfield site that is remote

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- Open pit mine
- Stockpiles and Waste Rock Facility ("WRF")
- Truck workshop, truck wash, mine offices, mine dry facility
- Power house
- Administration building
- Mill dry facility
- Plant workshop and warehouse
- Primary crushing building
- Fine ore stockpile building
- Process plant and laboratory
- Concentrate loadout building
- Reagent storage and handling building
- Explosive storage silos and magazines



			<ul style="list-style-type: none"><li>• Avalanche mitigation structures</li><li>• TMF</li><li>• Surface water diversion and collection channels, culverts</li><li>• Waste rock collection pond ("WRCP")</li></ul> <hr/>
			<p><a href="#">Table of Contents</a></p> <ul style="list-style-type: none"><li>• Process water pond</li><li>• Water treatment plant ("WTP")</li><li>• Camp</li></ul> <p><a href="#">Access</a></p> <p>The Arctic Project site will be accessed through a combination of existing and proposed roads. A proposed road is proposed by AIDEA to connect the Ambler Mining District to the Arctic Project site and the existing exploration camp to the proposed Arctic Project site.</p> <p>The State of Alaska-owned, public Dahl Creek airport will require a capital cost estimate.</p> <hr/>
			<p><a href="#">Table of Contents</a></p> <p><a href="#">Power</a></p> <p>Power generation will be by five diesel generators, producing a total of 10,000 kW. Fuel will be supplied by fuel supply networks in the region and shipped along the AAP road.</p> <p><a href="#">Accommodation</a></p> <p>The Arctic Project will require three self-contained camps, in two locations. The existing 90-person Bornite Camp currently serves as the main camp. This Bornite Camp will be expanded and available prior to the start of the Arctic Project. A new camp will be located near the intersection of the AAP road and Arctic Mine road. This new camp will consist of camp modules. A Permanent Accommodations Facility ("PAF") will be located near the intersection of the AAP road and Arctic Mine road and will be operating for about 2 years prior to the commissioning of the Arctic Project. The PAF will provide accommodation for the Arctic Project and support personnel required for the Arctic Project.</p> <p><a href="#">Waste Rock Facility</a></p>

			<p>The WRF will be developed north of the Arctic pit in the upper portion of the adjacent footprint. The total volume of waste rock is expected to have a final height of 340 m to an elevation of 990 masl and is planned to be placed in the WRF. Most of the waste rock is anticipated to be potentially acid-generating.</p> <hr/> <p><a href="#">Table of Contents</a></p> <p><a href="#">Overburden Stockpiles</a></p> <p>There will also be three small overburden stockpiles to store the overburden stockpile will be able to store up to 325,000 m<sup>3</sup> while the overburden stockpile will be able to store up to 325,000 m<sup>3</sup>.</p> <p><a href="#">Tailings Management Facility</a></p> <p>The TMF will be located at the headwaters of Subarctic Creek. Containment will be provided by an engineered dam, buttressed and constructed to elevation 830 m. Three subsequent raises will bring the TMF to a final capacity of 37.4Mm<sup>3</sup> (37.4Mm<sup>3</sup>) (41.2 Mt) of tailings produced over the 13-year life of the mine.</p> <p><a href="#">Water Management</a></p> <p>The proposed mine development is located in the valley of Subarctic Creek. Non-contact water will be managed in a series of ponds and channels.</p> <hr/> <p><a href="#">Table of Contents</a></p> <p>diverted around mine infrastructure to Subarctic Creek. A ground water monitoring system will be installed to monitor groundwater levels and quality. Groundwater will be conveyed to treatment facilities prior to discharge to the receiving environment.</p> <p>A WRCP will be located directly below the toe of the WRF and will be used to manage water from the WRF and the mine.</p> <p>The Arctic Project water and load balance model was updated to include the water requirements for the WRF and the mine. The model was used to determine the water requirements for the WRF and the mine prior to discharge to the receiving environment. During closure, water will be managed in a series of ponds and channels.</p> <p><a href="#">Water Treatment Plant</a></p> <p>It was assumed the site will be assigned water quality-based effluent limits for the WRF and the mine. The WRF and the mine will be required to discharge effluent to the WQS of Subarctic Creek.</p> <p>A single WTP, built in stages, will be used. During Operations phase 1, the WTP will be used for water treatment with reverse osmosis ("RO") filtration. During operation phase 2, the WTP will be used for water treatment with reverse osmosis ("RO") filtration. During operation phase 3, a biological/chemical/physical plant will be added to the WTP.</p> <p><a href="#">Market Studies</a></p> <p>Metal pricing was guided by 3-year trailing average prices and local market conditions.</p>
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			<p>The metal price assumptions used in the economic analysis:</p> <ul style="list-style-type: none"><li>• Copper: \$3.65/lb</li></ul> <hr/>
			<p><a href="#">Table of Contents</a></p> <ul style="list-style-type: none"><li>• Zinc: \$1.15/lb</li><li>• Lead: \$1.00/lb</li><li>• Gold: \$1,650/oz</li><li>• Silver: \$21.00/oz</li></ul> <p>Smelter terms were prepared in January 2023 by StoneHouse C would be to a smelter in the Asia Pacific region at currently avail</p> <p><i>Environmental, Permitting, Social and Closure Considerations</i></p> <p><u>Environmental Considerations</u></p> <p>The Arctic Project area includes the Ambler lowlands <b>Lowlands</b> area including surface and groundwater quality sampling, surface studies, meteorological monitoring, and ML/ARD studies.</p> <hr/>
			<p><a href="#">Table of Contents</a></p> <p><u>Permitting Considerations</u></p> <p>Current mineral exploration activities are conducted at the Arctic the end of 2022 and will be renewed.</p> <p>Mine development permitting will be largely driven by the underlying (private land under separate ownership by Ambler Metals and N</p> <p>Because the infrastructure for the Arctic Project is situated to a Cost Estimate) from the Alaska Department of Natural Resources Safety Unit) as well as water use and discharge authorizations, and from ADN</p> <p>The Alaska Department of Environmental Conservation ("ADEC an air permit, and an Alaska Pollutant Discharge Elimination System review the US Army Corps of Engineers Section 404 permit to c</p> <p>The Alaska Department of Fish and Game would have to authorize affecting fish habitat.</p>

The U.S. Army Corps of Engineers ("USACE") would require a 404 permitting action would require the USACE to comply with the NEPA process. USACE is likely to be the lead federal agency for the NEPA process. As part of the permit process, USACE would evaluate impacts on waters of the US including wetlands.

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## Social and Community

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## Closure Planning

WBS Level 1	WBS Level 1 Description
1000	Mining
2000	Crushing
3000	Process Plant
4000	Tailings
5000	On-site Infrastructure
6000	Off-site Infrastructure
Sub-total Direct Costs	
7000	Indirects
8000	Provisions (Contingency)
9000	Owner Costs
Sub-total Indirect Costs	

				Project Total							
				Project Total – Closure							
				<u>Operating Costs</u>							
				An average operating cost was estimated for the Arctic Project LOM operating cost for the Arctic							
				<u>Table of Contents</u>							
				Project is estimated to be \$59.83/t milled. The breakdown of cost All pre-production costs have been included in the capital cost es							
				<u>Table of Contents</u>							
				<table><tr><th>Description</th></tr><tr><td>Mining</td></tr><tr><td>Processing</td></tr><tr><td>G&amp;A</td></tr><tr><td>Road toll and maintenance</td></tr><tr><td>Water treatment</td></tr><tr><td>Total Operating Cost</td></tr></table>	Description	Mining	Processing	G&A	Road toll and maintenance	Water treatment	Total Operating Cost
Description											
Mining											
Processing											
G&A											
Road toll and maintenance											
Water treatment											
Total Operating Cost											
				* Excludes pre-production costs							
				<u>Economic Analysis</u>							
				The results of the economic analyses discussed in this section several known and unknown risks, uncertainties, and other fac Proven and Probable Mineral Reserves that have been modifie production plan; projected mining and process recovery rates; at batches; sustaining costs and proposed operating costs; assum timeframe of such development and assumed toll charges; assu							
				An economic analysis was undertaken on a 100% project own interest in the Arctic Project though its ownership in Ambler Meta							
				The pre-tax financial model incorporated the production schedu costs, including the applicable refining and treatment costs, p determine the NSR. The operating cash flow was then produce capital was deducted from the operating cash flow in the years							

			<p>Year -3 to Year -1 inclusive. First production occurs at the beginning of Year 0, after the completion of the rehabilitation. The model includes an allocation of a 1% NSR attributable to the first 10 years of production.</p> <p>With total capital costs of \$1,719 million over LOM (\$1,177 million in Year 0 and \$542 million in Year 1), the IRR is 25.8% and payback period of 2.9 years. Post-tax financials have been calculated using a 25% corporate tax rate.</p> <p>The estimated cash flow forecast over LOM is \$3,942.6 million of cash flow and \$1,108.1 discounted post-tax cash flow at an 8% discount rate.</p>
			<hr/> <p><a href="#">Table of Contents</a></p> <p>25.8% and payback period of 2.9 years. Post-tax financials have been calculated using a 25% corporate tax rate.</p> <p>The estimated cash flow forecast over LOM is \$3,942.6 million of cash flow and \$1,108.1 discounted post-tax cash flow at an 8% discount rate.</p>
			<hr/> <p><a href="#">Table of Contents</a></p> <p><a href="#">Sensitivity Analysis</a></p> <p>Ausenco investigated the sensitivity of the Arctic Project's pre-tax IRR to changes in the following variables:</p> <ul style="list-style-type: none"><li>• Copper price</li><li>• Zinc price</li><li>• Lead price</li><li>• Gold price</li><li>• Silver price</li><li>• Capital costs</li><li>• On-site operating costs</li><li>• Off-site operating costs (royalties, refining and treatment)</li></ul> <p>Each variable was changed in increments of 10% between -20% and +20%. The most significant sensitivities were to copper price, followed by off-site operating costs, on-site operating costs, zinc price, and capital costs.</p> <p><b>Exploration, Development, and Production</b></p> <p><a href="#">Constraints and Interfaces</a></p> <p>The Arctic Project will be an integrated development with several interfaces with other projects, including the construction of an Arctic access road, and the construction camps, generally on a "first-come, first-served" basis.</p> <p>It is essential that these parties work together to ensure data compatibility and consistency of protocols.</p> <p>The early design interfaces for the Arctic Project will include at least the following:</p> <ul style="list-style-type: none"><li>• Mine development</li></ul>

			<ul style="list-style-type: none"><li>• Waste Rock placement and Tails Dam</li><li>• Arctic Project water management and treatment</li><li>• Arctic Access Road design and construction, in particular</li></ul> <hr/> <p><a href="#">Table of Contents</a></p> <ul style="list-style-type: none"><li>• Bornite, Construction and Permanent Camps. <b>Camps</b></li></ul> <p>The Interface Management procedures will be developed to ens</p> <hr/> <p><a href="#">Table of Contents</a></p> <p><a href="#">Key Project Milestones</a></p> <p>Key project milestones will be developed once the project is com</p> <p>The Mine requires nominally two years of pre-strip operations, ta</p> <p>For that pre-strip work to start, the Arctic access road from the facilities to be delivered, built and made operational.</p> <p>Tailings pond construction must be to a height to allow natural co</p> <p><a href="#">Proven Technology</a></p> <p>The Arctic Project will utilize proven technology and equipment th</p> <p>The Design Criteria, Technical Specifications and Data sheets sh</p> <p><a href="#">Engineering, Procurement and Construction Management Appro</a></p> <p>Two engineering, procurement and construction management (" basis for the capital and operating cost estimate.</p> <p><a href="#">Early Engineering Only with 2-Stage Procurement</a></p> <p>There is a need to establish the mine facilities and assemble the will be a significant amount of detailed engineering requiring com infrastructure. This has been assessed as requiring detailed eng</p> <p>In particular, the pioneer access road design and contracts and early works for simple plant layout and construction coordinatio selection of the major process equipment items and the receipt o</p>
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			<p>Effectively, the detailed design phase will need to follow the construction of support facilities will be designed some two years in advance of the start of the plant.</p> <hr/> <p><a href="#">Table of Contents</a></p> <p>With the early equipment order placement, the supply phase could be completed eighteen months prior to plant start-up.</p> <p>An unorthodox but proven option to this extended design, supply and construction period is to procure the equipment early.</p> <hr/> <p><a href="#">Table of Contents</a></p> <ul style="list-style-type: none"><li>• Step 1: Procure only the vendor certified engineering drawings to avoid a delay of around twelve to fifteen months.</li><li>• Step 2: Based on agreed vendor manufacturing duration</li></ul> <p>This strategy provides the following advantages:</p> <ul style="list-style-type: none"><li>• Engineering can start and continue to completion using the drawings.</li><li>• Procurement functions can work in parallel with the engineering.</li><li>• The procurement team can generally disband early in the schedule to allow the engineering team to focus on the design.</li><li>• The expediting team can mobilize later in the schedule to focus on the equipment deliveries.</li><li>• Equipment deliveries can be orchestrated to suit the construction schedule.</li><li>• Reduced cashflow demands.</li></ul> <p>Potential issues to be mitigated with this approach are:</p> <ul style="list-style-type: none"><li>• The vendors need to be clearly briefed as to what the system requirements are.</li><li>• A payments formula needs to be in place to account for the early procurement.</li><li>• Some vendors have difficulty in determining just what the requirements are.</li></ul> <p><u>Early EPCM Leading to Plant Care and Maintenance</u></p> <p>Under this approach, the EPCM would work to conventional design and construction of the total process plant and supporting infrastructure to a mechanical completion stage.</p> <p>The plant could not be commissioned through lack of ore and the plant operation was completed earlier than scheduled, and sufficient vendors and maintenance requirements in that environment for that duration.</p>
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			<div><div><a href="#">Table of Contents</a></div><div><div>Interpretations and Conclusions</div><div>The Arctic deposit will be mined at an maximum annual rate of 323 kt of lead, and 174 kt of zinc, all in concentrates for provision contact water will be treated and discharged to the environment</div></div></div>
			<div><div><a href="#">Table of Contents</a></div><div><div>there are deleterious elements reporting to the concentrates at le In terms of project execution, the mine requires nominally two commence. For that pre-strip work to start, the Arctic access road from the and the support facilities to be delivered, built, and made operati Based on \$1,177 million of initial capital costs, sustaining capital costs, pre-tax financial results show a project IRR of 25.8% and \$1,108 million at an 8% discount rate and a 3.1-year payback pe</div></div></div>
			<div><div><b><u>Bornite Project</u></b></div><div><div>The Company is subject to and required to disclose mineral res identical and therefore two reports have been produced for the A Except as otherwise stated, the scientific and technical informat Summary on the Initial Assessment of the Bornite Mineral Res Bornite Report”) and the (ii) technical report titled “NI 43-101 T prepared by Wood Canada Limited (the “NI 43-101 Bornite Rep Reference should be made to the full text of the S-K 1300 Bornit to NI 43-101. The NI 43-101 Bornite Report is available for www.sec.gov.</div></div></div> <div><div><b><i>Property Description, Location, and Access</i></b></div><div><div>The Bornite property is located in the Ambler Mining District of th sections 4, 5, 8 and 9. The Bornite Project is located 248 km eas at geographic coordinates N67.07° latitude and W156.94° longitu</div></div></div>
			<div><div><a href="#">Table of Contents</a></div></div>



			<p>Under the NANA Agreement, NANA is required to complete a Department of Environmental Conservation standards. Cleanup will hold Trilogy Metals harmless for any loss, cost, expense, or any activities prior to the date of the agreement.</p> <p>Reclamation of mineral exploration activities at the Bornite project Department of Natural Resources Division of Mining, Land, and Natural Resources.</p> <p><u>Permits</u></p> <p>Multiple permits are required during the exploration phase of the project. The Alaska Department of Natural Resources Division of Mining, Land, and Natural Resources, Alaska Department of Fish and Game ("AHEA") Permit, is obtained and renewed every five years through the Alaska Department of Fish and Game. The Bornite project has done so each year since 2004 under Alaska Gold. The Bornite project also has a permit for the operation of a landfill. The Bornite camp, Bornite landfill, and the operation of a landfill are all required for exploration and related camp operations.</p> <p>As the Bornite Project progresses, additional permits for environmental and regulatory compliance will be required.</p> <p>The QP is not aware of any significant factors and risks that may affect the project, and the S-K 1300 Bornite Report.</p>
			<p><u><a href="#">Table of Contents</a></u></p> <p>The mineral resource estimates with respect to the Bornite Project are based on the following information:</p> <p><i>History</i></p> <p><u>Kennecott and Bear Creek Mining Tenure</u></p> <p>Prospectors in search of gold, travelling up the Kobuk River in 1898. Around this time, copper mineralization at Ruby Creek and Park River. Pyrite filling open spaces in brecciated zones in limestone and in the surrounding area.</p> <p>In 1947, Rhinehart "Rhiny" Berg staked claims over the Ruby Creek area. Kennecott's exploration subsidiary, optioned the property from Berg. The property was then known as the "No. 1 Ore Body" is a historical term used by BC. The property was then known as the "No. 1 Ore Body" is a historical term used by BC. The specific area that was previously referred to as the Ruby Creek area. In 1965 through 1966, the development of an exploration drift and limited drilling occurred up until 1997.</p> <p>In the late 1990s, Kennecott resumed its evaluation of the Bornite project. The project was evaluated using element inductively couple plasma ("ICP") analyses. Grid soil samples (85 samples) from key historical drill holes were also analyzed in the region.</p> <p>Kennecott completed numerous geophysical surveys as an intermediate-scale exploration project. The Lake City exploration office indicated that geophysical work included:</p> <ul style="list-style-type: none"><li>• Airborne magnetic and EM surveys (fixed-wing INPUT) (1997-1998)</li><li>• Gravity, single point, audio-frequency magnetotelluric, EM (1999-2000)</li><li>• Gravity, airborne magnetic, and controlled-source audio-frequency magnetotelluric (2001-2002)</li></ul>

			<p>We have minimal information or documentation associated with the coordinate systems, and data reduction procedures limit their use. A gravity survey from the Bornite deposit into the Ambler Lowland, Ambler Lowlands and near the Aurora Mountain and Pardner Hill Ambler mining district <b>Mining District</b> in 1974-1975.</p> <p>Several studies have been undertaken reviewing the geology of the area. A dissertation at Harvard University, Bernstein and Cox reported on</p> <hr/> <p><a href="#">Table of Contents</a></p> <p>to the historical work, Ty Connor at the Colorado School of Mines. Kennecott conducted two technical reviews of the groundwater conditions from five drill holes to support preliminary metallurgical test work.</p> <p><b><i>Geological Setting, Mineralization and Deposit Types</i></b></p> <p><u>Geology</u></p> <p>The Bornite Project is located within the Arctic Alaska Terrane, a geologic subdivision, which together with the higher-metamorphic Cretaceous Brookian orogeny. The southern margin of the Phyllite gradational with the higher-grade metamorphic rocks of the Schist.</p> <p>The geology of the Bornite resource area is composed of alternating zones of mineralization and is considered hydrothermally altered; however, recent re-logging has questioned this view.</p> <p>In 2015, Trilogy tried to improve the understanding of the distribution of lithogeochemical signatures of the various units along with their interfingering upward sequence of increasingly argillaceous breccias capped by</p> <p>Two mineralized stacked debris successions were named the L debris supply. Based on this interpretation, a series of individual low calcium (Ca) phyllites are abundant in the allochthonous Arctic depositional lithostratigraphy, a cross-cutting mineralized breccia Breccia zone—which contains excellent copper grade—lies at the structural, hydrothermal or solution-collapse breccia.</p> <p>A short lithostratigraphic project carried out during the 2021 field compared to the previously summarized interpretations. The Breccia zone is a contemporaneous shallow-marine carbonate factory, variably mineralized normal slope strata are locally impressive thicknesses of dolomite but are commonly ductilely deformed, producing the variably lineament brittleness to Brookian stress and show no</p> <hr/> <p><a href="#">Table of Contents</a></p>
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			<p>significant shearing or plastic deformation. Instead, plastic deformation is observed in the form of folding and transposition of foliation. It is unclear to what extent it is transposed. The pervasive foliation commonly reflected by colour banding and/or stylolamination (folds) at the base of Coral Hill, also exhibit a stretching lineation. Corals cleavage. S2 is folded gently on a 10 m scale forming an upright fold.</p> <p>Structural mapping in 2021 recognized a well-developed stretching lineation in the south-southwest direction. The stretching lineation directions indicate movement to the south or south-southwest along the foliation. The dolomite bodies, have been boudinaged into 3D ellipsoids. Slip is associated with the distribution of copper mineralization.</p> <p>Owing to their greater rigidity, dolostone bodies of secondary dolomite (diagenetic?) dolostone may exhibit unusual, contorted forms, such as centimetric to hectametric lenses (augens) encased in plastically deformed sedimentological interpretations.</p> <p>Mineralization at Bornite forms tabular mineralized zones that have been identified by drilling and include: 1) the Lower Reef, a dolomite Reef, a 100 m to 150 m thick dolomite horizon that sits roughly 300 m below the surface.</p> <p>The Lower Reef dolostone outcrops along the southern margin of the Ruby Zone as well as higher grade mineral resources down-dip. The Upper Reef appears to lie at an important northeast-trending fault zone to the southeast.</p> <p>Drill results from 2013 show dolomitization and copper mineralization in the Ruby Zone and South Reef areas also coalesce into a roughly 1,000 m thick interval that the mineralized dolomite interval continues for at least another 1,000 m.</p> <p><u>Mineralization</u></p> <p>Copper mineralization at Bornite comprises chalcopyrite, bornite, and malachite. Mineralization occurs, in order of increasing grade, as disseminated, vein, and replacement, and stratabound massive sulphides. The distribution of mineralization progressing outward to a fringe of chalcopyrite-pyrite. Additionally, sphalerite occur above and around the copper zones and locally in the Ruby Zone.</p> <p>Significant cobalt mineralization is found accompanying bornite-grains. Preliminary geometallurgical work by Trilogy showed that the mineralization is associated with cobaltite (CoAsS) and cobaltite (CoAsS).</p> <p>Some appreciable silver values are also found at Bornite, particularly in the Ruby Zone.</p> <p><u>Deposit Type</u></p>
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			<p>Copper-cobalt-silver-zinc mineralization at Bornite forms disseminated, cross-cutting nature of the mineralization along with the presence of host strata. Re-Os dating supports this interpretation.</p> <p>Data are limited regarding the sources and nature of the copper mineralization with mafic volcanic rocks in the area.</p> <p>An early epigenetic carbonate-hosted Cu-Co model is applicable to the area.</p> <p><b>Exploration</b></p> <p>Exploration work completed by Kennecott is summarized above. This work includes surface geochemical sampling, regional and property scale mapping, and geophysical surveys for renewed exploration that targets Bornite-style mineralization in the area.</p> <p><b>2006 NOVAGOLD</b></p> <p>In 2006, NOVAGOLD contracted Fugro Airborne Surveys to conduct a geophysical survey of a rectangular block approximately 18 km by 49 km which totalled approximately 1,000 line-km. The survey collected detailed profile data of magnetics, EM responses and radiometric data. The results of the survey and radiometric responses.</p> <p><b>2010 NOVAGOLD</b></p> <p>In 2010, in anticipation of completing the NANA Agreement, NOVAGOLD conducted a geophysical survey using a Niton™ portable XRF. In addition to the 2010 re-logging of the area, NOVAGOLD conducted a District from Kennecott, Alaska DNR, and NOVAGOLD airborne geophysical survey.</p>
			<p><b>Table of Contents</b></p> <p><b>2011 NOVAGOLD</b></p> <p>In 2011, NOVAGOLD contracted Zonge International Inc. ("Zonge") to conduct a geophysical survey over the northern end of Bornite to develop tools for additional exploration. The survey collected NSAMT data were acquired along two lines totaling 5.15 line-km. The survey area. CRIP data were acquired on five lines: four east-west lines and one north-south line to investigate geological structures and the distribution of sulphides in the area.</p> <p>Results from the paired surveys show that wide-spaced dipole-dipole and mineralization appear to define the limits of the fluid flow system. The results also have strong chargeability signatures. NSAMT shows similar results to the CRIP data.</p> <p><b>2012 NovaCopper</b></p> <p>Considering the success of the 2011 geophysical program, we completed an extensive physical property characterization study of the various areas. The results show a well-defined low resistivity area. The target areas occur in the immediate Bornite area with lesser target areas. A single drill hole was targeted on a low resistivity area approximately 1 km from the Bornite area. At appropriate stratigraphy, no significant sulphides were encountered.</p>

			<p>In addition to the extensive ground IP survey, Zonge also completed a ground resistivity survey of the South Reef. Extensive physical property data including resistivity, magnetic susceptibility, and density were collected from the airborne EM and magnetic surveys.</p> <p>In addition to geophysical focused exploration, a district wide geochemical program was initiated.</p> <p><u>2013 NovaCopper</u></p> <p>The emphasis of the 2013 program was to further validate and define the South Reef deposit, using various partial leaches and pH measurements on soil and rock samples. Follow-up is warranted to the north of the deposit.</p> <hr/>
			<p><u>Table of Contents</u></p> <p><u>2014 NovaCopper</u></p> <p>During 2014, exploration work was limited to a re-logging and re-sampling of the South Reef deposit.</p> <p><u>2015 NovaCopper</u></p> <p>As a follow-up to the 2013 field program, a deep penetrating geochemical desktop study and a comprehensive update to the geochemical database were completed.</p> <p><u>2017 Trilogy</u></p> <p>The 2017 field program extended the 2013 and 2015 deep penetrating geochemical program to the north of the South Reef deposit. Trilogy also completed a close spaced ground gravity survey over the South Reef deposit. A Bouguer anomaly residual plot (removes a strong decreasing trend) was generated. The plot shows a gradually decreasing down-dip to the northeast.</p> <p>As part of the overall gravity program, Mira Geosciences created a forward model of the gravity data. This forward model matches very closely with the actual data. The model shows that the gravity anomalies that may reflect shallow mineralization up-dip along the South Reef deposit. Two areas of high gravity (&gt;2.9 g/cc) were identified. The first area extends up to 750m to the north of the South Reef deposit. The second anomaly is located just above the Anirak contact (Lower Anirak). This area falls along the northwest-southeast high grade thickness zone.</p> <p><u>2018 Trilogy</u></p> <p>During the 2018 field season, Trilogy Metals carried out additional exploration work. Soil sampling was completed on the westerly extension of the South Reef deposit to corroborate gravity anomalies defined during the 2017 field season.</p> <p>A 2D seismic survey was completed by HiSeis (3D seismic imaging). The survey was designed to understand the logistics of any future 3D seismic survey over the deposit. The survey was designed to image hanging wall and footwall shears; other faults and shears; and any alteration associated with mineralization. The survey was measured on a fully active line of 1,189 geophone receivers which were acquired from drill core stored in Fairbanks, Alaska.</p> <p>Mira Geosciences completed a 3D inversion model of the 100 m gravity data. The model shows three areas of anomalously higher gravity were defined. The first area is located just above the Anirak contact (Lower Anirak). This area falls along the northwest-southeast high grade thickness zone.</p>





			<p>mudstone centimetrically interbedded with terrigenous mudstone varying degrees producing phyllites and recrystallized, strained li</p> <p>Importantly, superimposed on the active limestone slope system (fossil fragments) and are likely derived from subaqueous horst b of a seafloor paleotopographic system that developed during reg</p> <p>Also initiated in 2021 was structural mapping around Pardner H Mountain, are fault klippen in allochthonous contact with the stru deformed phyllites and, in some places, calc-mylonites (limeston been juxtaposed southward from the position of the Ambler Low contact with the overlying Beaver Creek phyllite is likely a low-an</p> <p>Two diamond drill holes targeting the Bornite copper-hosting c northeast projection of the Bornite carbonate sequence under c Coxcomb Ridge □ Pardner Hill saddle, 3.5 km west of the Bornit</p> <p>Hole ALL21-001 intercepted alternating units of limestone clas argillaceous phyllite, argillaceous limey phyllite, argillaceous phy that are similar to Beaver Creek phyllites. Unfortunately, the hole</p> <p>Hole RC21-0267 tested the down-dip projection of weakly mine Beaver Creek) followed by Bornite sequence: alternating tan phy clastic breccias and dolostone clastic breccia. Trace to locally 1 mostly as disseminations within the breccia matrix and in this ca zone at 435 m.</p> <p><u>Ambler Metals (2022)</u></p> <p>During the 2022 field season, structural mapping around Pardne two holes were drilled,</p>
			<hr/> <p><a href="#">Table of Contents</a></p> <p>hole RC22-0268 at Bornite West to follow up the mineralized inte</p> <hr/> <p><a href="#">Table of Contents</a></p> <p>at Pardner Hill, hole PH22-0180 to test the down-dip potential of</p> <p><i>Drilling</i></p> <p>From 1957 to 2019, a total of 273 holes targeted the Bornite d campaigns prior to 2011 were completed by Kennecott or its exp</p>

			<p>In the summer of 2017, Trilogy Metals initiated eleven holes, but from the previous drill holes; these were distances considered to</p> <p>In the summer of 2018, Trilogy Metals conducted a drilling program in the central area between the Ruby Zone and South Reef area. Three</p> <p>In the summer of 2019, Trilogy Metals completed another drilling program with targets located about 1 km south and southeast of the deposit.</p> <p>Between 2012 and 2014, Trilogy Metals geologists re-logged and analyzed. These assays were used in the estimation of the current mineral resource priority in the mineral resource database.</p> <p>In the initial years of drilling at Bornite, Kennecott relied on AX-100 implemented to help limit deviation. From 1966 to 1967, drilling was "Ore Body". In 1968, drilling activity moved back to the surface and in 2011, core size increased to NQ (47.6 mm diameter) and HQ (63.5 mm diameter).</p> <p>There is limited information with respect to the specific drill core logs stored in the Kennecott office in Salt Lake City, Utah. Electronic logs, half was submitted to various assay laboratories and the remaining core logs and the down-hole collar survey data into an electronic database. The data was merged into a Microsoft™ SQL database. Sampling of core logs containing roughly &gt;0.5% to 1% Cu were selected for analysis by the company. During the 2012 exploration program, core logs were sampled in the historical drill core. During the 2012 exploration program, core logs were sampled in the historical drill core. During the 2012 exploration program, core logs were sampled in the historical drill core.</p> <p>Throughout our tenure at Bornite, the following core handling procedures were used: by truck or all-terrain vehicle from the drill rig to the core-logging facility.</p> <hr/> <p><a href="#">Table of Contents</a></p> <p>boxes for any irregularities. They first mark the location of each core</p> <hr/> <p><a href="#">Table of Contents</a></p> <p>on the blocks into metric equivalents. Geo-technicians or geologists use a metal tag stapled to the end of each box. Geo-technicians then run over 12 cm. The total length of core in each run is measured and captured on observed interval breaks. Mineralization data, including each sample interval with an average interval of approximately 2 m intervals. Sample intervals of core are typically between 1 m and 2 m sample intervals have been used. Geologists staple sample tags to the approach is considered sound and appropriate for this style of</p>
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			<p>attention to core orientation is maintained during core sawing at the warehouse, and the other half is bagged and labeled for analysis.</p> <p>In 2013 and 2014, 33 historical drill holes and 37 historical drill holes were re-logged by Kennecott. Entire holes were re-logged using Trilogy protocol (sufficient volume of material was provided for analysis). Sample objectives of the re-assay/re-logging program were threefold: 1) to verify lower grade (0.2%-0.5% Cu), which was not previously sampled; 2) to verify the presence of cobalt; and 3) to verify the presence of silver.</p> <p>Preliminary geotechnical data was collected from drill core such as core orientation, core recovery, and core orientation. The data is available in the sections that follow.</p> <p><b>Sampling, Analysis and Data Verification</b></p> <p>There is limited documentation available describing the sample collection process, including sample certificates and some sample ledgers with mixed in QA/QC check samples from the sampling program of the historical drill holes. As a result, 67% of the samples were not analyzed.</p> <p>The drill core sampling procedures are described above. After the samples were collected, they were transported to Vancouver, British Columbia for analyses. Core samples were stored in poly-bagged core samples, containing two to four individual poly-bagged core sample bags. Rice bags were secured with a pre-numbered plastic seal. The samples were transported to ALS Minerals preparation facility by a contracted expeditor. Control samples were logged into a tracking system on arrival.</p> <hr/> <p><a href="#">Table of Contents</a></p> <p>at ALS Minerals and weighed. Samples were then crushed, dried, and analyzed.</p> <hr/> <p><a href="#">Table of Contents</a></p> <p>Security measures taken during historical Kennecott and BCMC samples were not tampered with. The 2011 to 2019 samples were either in the custody of ALS Minerals or in the custody of the company.</p> <p>Copper and cobalt data were derived using a 48-element suite of elements using a four-acid digestion. The lower detection limits for copper and cobalt were determined using atomic absorption (AA), following a four-acid digestion. In 2011 to 2013 or 2014. The lower detection limit was 0.005 ppm Au; the lower detection limit was 0.005 ppm Au; the lower detection limit was 0.005 ppm Au.</p> <p>ALS Minerals has attained International Organization for Standardization (ISO) 9001 certification for a number of specific test procedures including fire assay. The company has also attained ISO 14001 certification for any of the primary or check assay labs used on the Bornite Project.</p>
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In 2012, 2013, 2014, and 2017 through to 2019, Trilogy Metals retained independent consultant GeoSpark Consulting Inc. ("GeoSpark") to conduct and report on the 2012, 2013 and 2014 re-assays; the 2015, 2016 and 2017 campaigns conducted in 2012, 2013, 2014, 2017, 2018 and 2019; and the 2018 and 2019 assay results from certified reference standards, blanks and duplicates.

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			<p>Metallurgical testwork to date indicates that the Bornite mineral recoveries range</p> <p><b>Mineral Resource Estimates</b></p> <p>The mineral resources were prepared in accordance with CIM Definition Standards for Mineral Resources and Mineral Reserve analytical procedures adequate to support an Inferred mineral resource estimate.</p> <p>The Bornite database comprises a total of 273 diamond drill (core) holes in the database are exploratory in nature and test for safety. Drill holes used in the mineral resource estimate contains a plus a few select historical holes drilled by Kennecott, contain data for economic extraction.</p> <p>During the 2012, 2013 and 2014 field seasons, Trilogy collected samples visually, they did not exhibit the presence of high-grade copper mineralization grade of 0% Cu. At this current stage, the majority of the core data is less extensive. Where assay data are not available, these intervals are less extensive. Individual sample intervals range from 3 cm to 39.58 m long and</p> <p>Drill hole spacing at the Ruby Zone varies from approximately 1 m from surface and typically intersect mineralization at approximately</p>
			<p><a href="#">Table of Contents</a></p> <p>Specific gravity ("SG") measurements were conducted on 7,476 samples sufficient to support resource estimation.</p> <p>The geologic model interpreted for the Bornite deposit consists of a model comprises 18 individual phyllite domains and 16 separate schist), and the overlying overburden. Some of the phyllite and c</p> <p>The parts of the deposit with the highest grades occur within are these massive sulphide domains, and a probability shell approach</p> <p>Two probability shells were generated: one at a threshold of 2% bornite and chalcopyrite mineralization, and the 0.2% Cu shell mineralization. The higher grade shell occurs mainly in the South higher grade copper mineralization occurs above a threshold grade relatively small (&gt;2%) copper probability shell is also generated i</p> <p>Approximately one half of the samples in the carbonate domains rocks and is still below the anticipated cut-off grade of the mineral contain appreciable copper grades (above the 0.2% Cu threshold</p> <p>Indicator values are assigned to 2 m composites at the grade threshold locations are controlled dynamically using elevations relative to the distribution of the underlying sample data. The higher grade shell where there is a greater than 50% probability that the grade will e</p> <p>At this stage of project evaluation, copper is the only economic mineral. Metallurgical testwork to establish the appropriate process option</p>

economic recovery of cobalt or a market for the pyrite-cobalt con

surface to depths of more than 800 m below surface. The depos

fill methods with an average assumed mining cost \$73.62/t min

determined. The underground mining shape is based on a 1.79%

reasonable prospects for eventual economic extraction. A 20 m p

The Wood QP considers industry consensus on a long-term pri

metal prices for the mineral resource

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estimates than the pricing used for mineral reserves. The coppe

Mineral Resources are classified in accordance with S-K 1300 an

The Wood QP reviewed and performed validation checks on the

resource estimates are based on a combination of open pit and c

above a marginal cut-off grade of 0.5% Cu and those amenable

resource is well above the 1.79% Cu cut-off and would be amena

**Table 1 – M**

Class	Type/Area	Cut-off (Cu )	Tonnes (Mt)	Average Grade Cu (%)	
					Inferred
					Total Inferred -
					Total Inferred -
					Note:
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