

ANNUAL INFORMATION FORM



ALEXCO RESOURCE CORP.

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For the year ended December 31, 2021

Dated as of March 21, 2022

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PRELIMINARY NOTES

In this Annual Information Form (“AIF”), Alexco Resource Corp. is referred to as the “**Corporation**”, “**Company**” or “**Alexco**”. All information contained herein is as at and for the year ended December 31, 2021, unless otherwise specified. All dollar amounts in this AIF are expressed in Canadian dollars unless otherwise indicated.

Cautionary Statement Regarding Forward-Looking Statements

This AIF contains forward-looking statements within the meaning of the United States Private Securities Litigation Reform Act of 1995 and “forward-looking” information within the meaning of applicable Canadian securities laws (together, “**forward-looking statements**”) concerning the Corporation’s business plans, including but not limited to anticipated results and developments in the Corporation’s operations in future periods, planned exploration and development of its mineral properties, plans related to its business and other matters that may occur in the future, made as of the date of this AIF. Forward-looking statements may include, but are not limited to, statements with respect to additional capital requirements to fund further exploration and development work on the Corporation’s properties, future remediation and reclamation activities, future mineral exploration, the estimation of mineral reserves and mineral resources, the realization of mineral reserve and mineral resource estimates, future mine construction and development activities, future mine operation and production, the timing of activities, the amount of estimated revenues and expenses, the success of exploration activities, permitting timelines, requirements for additional capital and sources, uses of funds, and the Company’s ability to successfully withstand the impact of the COVID-19 pandemic. 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, using words or phrases such as “expects”, “anticipates”, “plans”, “estimates”, “intends”, “strategy”, “goals”, “objectives” or stating that certain actions, events or results “may”, “could”, “would”, “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 which could cause actual events or results to differ from those expressed or implied by the forward-looking statements. Such factors include, but are not limited to, risks related to actual results and timing of exploration and development activities; actual results and timing of exploration, development and mining activities; inability of the Corporation to finance the development of its mineral properties; uncertainty of capital costs, operating costs, production and economic returns; actual results and timing of environmental services operations; actual results and timing of remediation and reclamation activities; conclusions of economic evaluations; changes in project parameters as plans continue to be refined; future prices of silver, gold, lead, zinc and other commodities; uncertainties relating to the interpretation of drill results, the geology, grade and continuity of the Corporation’s mineral deposits; possible variations in resources, grade or recovery rates; failure of plant, equipment or processes to operate as anticipated; the Corporation’s need to attract and retain qualified management and technical personnel; accidents, labour disputes and other risks of the mining industry; First Nation rights and title; continued capitalization and commercial viability; global economic conditions; competition; risks related to governmental regulation, including environmental regulation; delays or inability of the Corporation in obtaining governmental approvals necessary to develop and operate mines on the Corporation’s properties; inability of the Corporation to obtain additional financing needed to fund certain contingent payment obligations on reasonable terms or at all; variations in interest rates and foreign exchange rates; and the impact of COVID-19 and the instability thereof, including disruption or delay of exploration and mining activities. Furthermore, forward-looking statements are statements about the future and are inherently uncertain, and actual achievements of the Corporation 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 but not limited to those referred to in this AIF under the heading “Risk Factors” and elsewhere.

Forward-looking statements relate to analyses and other information that are based on forecasts of future results, estimates of amounts not yet determinable and certain assumptions that management believes are reasonable at the time they are made. In making the forward-looking statements included in this AIF, the Corporation has applied several material assumptions, including, but not limited to, the assumption that: (1) additional financing may be needed to fund certain contingent payment obligations to Wheaton (as defined below); (2) additional financing needed for the capacity related refund under the Amended and Restated SPA (as defined below) with Wheaton will be available on reasonable terms; (3) additional financing needed for further exploration and development work on the Corporation’s properties will be available on reasonable terms; (4) the proposed development of its mineral projects will be viable operationally and economically and proceed as planned; (5) market fundamentals will result in sustained silver, gold, lead and zinc demand and prices, and such prices will not be materially lower than those estimated by management in preparing the

annual financial statements for the year ended December 31, 2021; (6) market fundamentals will result in sustained silver, gold, lead and zinc demand and prices, and such prices will be materially consistent with or more favourable than those anticipated in the PFS (as defined below); (7) the actual nature, size and grade of its mineral reserves and mineral resources are materially consistent with the mineral reserve and mineral resource estimates reported in the supporting technical reports, including the PFS; (8) labour and other industry services will be available to the Corporation at prices consistent with internal estimates; (9) the continuances of existing and, in certain circumstances, proposed tax and royalty regimes; and (10) that other parties will continue to meet and satisfy their contractual obligations to the Corporation. Statements concerning mineral reserve and mineral resource estimates may also be deemed to constitute forward-looking information to the extent that they involve estimates of the mineralization that will be encountered as the Keno Hill Silver District (the “**District**” or “**KHSD**”) project is developed. Other material factors and assumptions are discussed throughout this AIF and, in particular, under the heading “*Risk Factors*”.

The Corporation's forward-looking statements are based on the beliefs, expectations and opinions of management on the date the statements are made and should not be relied on as representing the Corporation's views on any subsequent date. While the Corporation anticipates that subsequent events may cause its views to change, the Corporation specifically disclaims any intention or any obligation to update forward-looking statements if circumstances or management's beliefs, expectations or opinions should change, except as required by applicable law. For the reasons set forth above, investors should not place undue reliance on forward-looking statements.

Technical Disclosure Cautionary Note to U.S. Investors – Information Concerning Preparation of Resource Estimates

The material scientific and technical information in respect of Alexco's District project in this AIF, unless otherwise indicated is based upon the information contained in the technical report dated May 26, 2021 with an effective date of April 1, 2021, titled “NI 43-101 Technical Report on Updated Mineral Resource and Reserve Estimate of the Keno Hill Silver District” (the “**PFS**”). Readers are encouraged to read the PFS, which is available under the Corporation's profile on SEDAR, for detailed information concerning KHSD. All disclosure contained in this AIF regarding the mineral reserves and mineral resource estimates and economic analysis on the property is fully qualified by the full disclosure contained in the PFS.

A production decision, which is made without a feasibility study of mineral reserves demonstrating economic and technical viability, carries additional potential risks which include, but are not limited to, the risk that additional detailed work may be necessary with respect to mine design and mining schedules, metallurgical flow sheets and process plant designs, and the noted inherent risks pertaining to the inclusion of approximately 2% Inferred Mineral Resources (as defined herein) in the mine plan.

This AIF has been prepared in accordance with the requirements of Canadian provincial securities laws, which differ from the requirements of U.S. securities laws. As a result, the Corporation reports the mineral reserves and resources of the projects it has an interest in according to Canadian standards. Canadian reporting requirements for disclosure of mineral properties are governed by National Instrument 43 101 - Standards of Disclosure for Mineral Projects (“**NI 43 101**”). NI 43 101 is a rule developed by the Canadian Securities Administrators that establishes standards for all public disclosure an issuer makes of scientific and technical information concerning mineral projects. These standards differ from the requirements of the SEC that are applicable to domestic United States reporting companies under subpart 1300 of Regulation S-K (“**S K 1300**”) under the Exchange Act. As an issuer that prepares and files its reports with the SEC pursuant to the multi-jurisdictional disclosure system of the Exchange Act, the Corporation is not subject to the requirements of S K 1300. Any mineral reserves and mineral resources reported by the Corporation in accordance with NI 43 101 may not qualify as such under or differ from those prepared in accordance with S K 1300. Accordingly, information included or incorporated by reference in this AIF concerning descriptions of mineralization and estimates of mineral reserves and resources under Canadian standards may not be comparable to similar information made public by United States companies subject to the reporting and disclosure requirements of S K 1300.

Qualified Person Under NI 43-101

Except where specifically indicated otherwise, the disclosure in this AIF of scientific and technical information regarding exploration projects on Alexco's mineral properties has been reviewed and approved by Alan McOnie, FAusIMM, while that regarding mine development, operations, and mineral resources has been reviewed and approved by Sebastien D. Tolgyesi, P.Eng., P.Geo., Keno Hill Operations Manager, both of whom are Qualified Persons as defined by NI 43-101.

GLOSSARY OF TECHNICAL TERMS

The following is a glossary of certain mining terms and abbreviations used in this AIF:

Ag	Silver.
Assay	In economic geology, to analyze the proportions of metal in a rock or overburden sample; to test an ore or mineral for composition, purity, weight or other properties of commercial interest.
Au	Gold.
CIM	Canadian Institute of Mining, Metallurgy and Petroleum.
Deposit	A mineralized body which has been physically delineated by sufficient drilling, trenching, and/or underground work, and found to contain a sufficient average grade of metal or metals to warrant further exploration and/or development expenditures; such a deposit does not qualify as a commercially mineable ore body or as containing ore reserves, until final legal, technical, and economic factors have been resolved.
Dip	The angle at which a stratum or vein is inclined from the horizontal.
g/t	Grams per tonne.
Grade	The amount of valuable metal in each tonne of mineralized rock, expressed as grams per tonne (" g/t ") for precious metals, as percent (%) for copper, lead and zinc.
Indicated Mineral Resource	That part of a Mineral Resource for which quantity, grade or quality, densities, shape and physical characteristics are estimated with sufficient confidence to allow the application of Modifying Factors in sufficient detail to support mine planning and evaluation of the economic viability of the deposit. Geological evidence is derived from adequately detailed and reliable exploration, sampling and testing and is sufficient to assume geological and grade or quality continuity between points of observation. An Indicated Mineral Resource has a lower level of confidence than that applying to a Measured Mineral Resource and may only be converted to a Probable Mineral Reserve.
Inferred Mineral Resource	That part of a Mineral Resource for which quantity and grade or quality are estimated on the basis of limited geological evidence and sampling. Geological evidence is sufficient to imply but not verify geological and grade or quality continuity. An Inferred Mineral Resource has a lower level of confidence than that applying to an Indicated Mineral Resource and must not be converted to a Mineral Reserve. It is reasonably expected that the majority of Inferred Mineral Resources could be upgraded to Indicated Mineral Resources with continued exploration.
km	Kilometers.
m	Meters.
Measured Mineral Resource	That part of a Mineral Resource for which quantity, grade or quality, densities, shape, and physical characteristics are estimated with confidence sufficient to allow the application of Modifying Factors to support detailed mine planning and final evaluation of the economic viability of the deposit. Geological evidence is derived from detailed and reliable exploration, sampling and testing and is sufficient to confirm geological and grade or quality continuity between points of observation. A Measured Mineral Resource has a higher level of confidence than

	that applying to either an Indicated Mineral Resource or an Inferred Mineral Resource. It may be converted to a Proven Mineral Reserve or to a Probable Mineral Reserve.
Mineral Reserve, Proven Mineral Reserve, Probable Mineral Reserve	<p>Mineral Reserves are sub-divided in order of increasing confidence into Probable Mineral Reserves and Proven Mineral Reserves. A Probable Mineral Reserve has a lower level of confidence than a Proven Mineral Reserve.</p> <p>A Mineral Reserve is the economically mineable part of a measured and/or Indicated Mineral Resource. It includes diluting materials and allowances for losses, which may occur when the material is mined or extracted and is defined by studies at pre-feasibility or feasibility level as appropriate that include application of Modifying Factors. Such studies demonstrate that, at the time of reporting, extraction could reasonably be justified.</p> <p>The reference point at which Mineral Reserves are defined, usually the point where the ore is delivered to the processing plant, must be stated. It is important that, in all situations where the reference point is different, such as for a saleable product, a clarifying statement is included to ensure that the reader is fully informed as to what is being reported.</p> <p>The public disclosure of a Mineral Reserve must be demonstrated by a Pre-Feasibility Study or Feasibility Study. The terms “Mineral Reserve”, “Proven Mineral Reserve” and “Probable Mineral Reserve” used in this AIF are mining terms defined under CIM standards and used in accordance with NI 43-101. Mineral Reserves, Proven Mineral Reserves and Probable Mineral Reserves presented under CIM standards may not conform with the definitions of “reserves” or “proven reserves” or “probable reserves” under United States SEC standards. See <i>“Preliminary Notes – Technical Disclosure Cautionary Note to U.S. Investors – Information Concerning Preparation of Resource Estimates”</i>.</p>
Mineral Resource, Measured Mineral Resource, Indicated Mineral Resource, Inferred Mineral Resource	<p>Mineral Resources are sub-divided, in order of increasing geological confidence, into inferred, indicated and measured categories. An Inferred Mineral Resource has a lower level of confidence than that applied to an Indicated Mineral Resource. An Indicated Mineral Resource has a higher level of confidence than an Inferred Mineral Resource but has a lower level of confidence than a Measured Mineral Resource.</p> <p>A Mineral Resource is a concentration or occurrence of solid material of economic interest in or on the earth’s crust in such form, grade or quality and quantity that there are reasonable prospects for eventual economic extraction. The location, quantity, grade or quality, continuity and other geological characteristics of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge, including sampling.</p> <p>The terms “mineral resource”, “measured mineral resource”, “indicated mineral resource”, and “inferred mineral resource” used in this AIF are mining terms defined under CIM standards and used in accordance with NI 43-101. See <i>“Technical Disclosure Cautionary Note to U.S. Investors – Information Concerning Preparation of Resource Estimates”</i>.</p>
Mineralization	The concentration of metals and their chemical compounds within a body of rock.
Modifying Factors	The factors used to convert Mineral Resources to Mineral Reserves. These include, but are not restricted to, mining, processing, metallurgical, infrastructure, economic, marketing, legal, environmental, social and governmental factors.

Ore	A metal or mineral or a combination of these of sufficient value as to quality and quantity to enable it to be mined at a profit after the application of Modifying Factors.
Ounce or oz	A troy ounce or twenty penny weights or 480 grains or 31.103 grams.
Pb	Lead.
Probable Mineral Reserve	The economically mineable part of an Indicated Mineral Resource and, in some circumstances, a Measured Mineral Resource. The confidence in the Modifying Factors applying to a Probable Mineral Reserve is lower than that applying to a Proven Mineral Reserve.
Proven Mineral Reserve	The economically mineable part of a Measured Mineral Resource. A Proven Mineral Reserve implies a high degree of confidence in the Modifying Factors.
PFS	A Pre-Feasibility Study is a comprehensive study of a range of options for the technical and economic viability of a mineral project that has advanced to a stage where a preferred mining method, in the case of underground mining, or the pit configuration, in the case of an open pit, is established and an effective method of mineral processing is determined. It includes a financial analysis based on reasonable assumptions on the Modifying Factors and the evaluation of any other relevant factors which are sufficient for a Qualified Person, acting reasonably, to determine if all or part of the Mineral Resource may be converted to a Mineral Reserve at the time of reporting. A Pre-Feasibility Study is at a lower confidence level than a Feasibility Study.
Quartz	A mineral composed of silicon dioxide.
Strike	Direction or trend of a geologic structure as it intersects the horizontal.
Ton (T)	Also referred to as “short ton”, a United States unit of weight equivalent to 2,000 pounds.
Tonne (t)	A metric unit of weight equivalent to volume multiplied by specific gravity; equivalent to 1.102 tons or 1,000 kilograms (2,204.6 pounds).
tpd	Tonnes per day.
Vein	Thin sheet-like intrusion into a fissure or crack, commonly bearing siderite or quartz.
Zn	Zinc.

Metric Equivalents

The following table sets forth the factors for converting between Imperial measurements and metric equivalents:

To Convert From	To	Multiply By
Feet	Meters	0.3048
Meters	Feet	3.281
Miles	Kilometers (" km ")	1.609
Kilometers	Miles	0.6214
Grams	Ounces (Troy)	0.03215
Grams/Tonnes	Ounces (Troy)/Short Ton	0.02917
Tonnes (metric)	Pounds	2,205
Tonnes (metric)	Short Tons	1.1023
One troy ounce	Grams	31.103

CORPORATE STRUCTURE

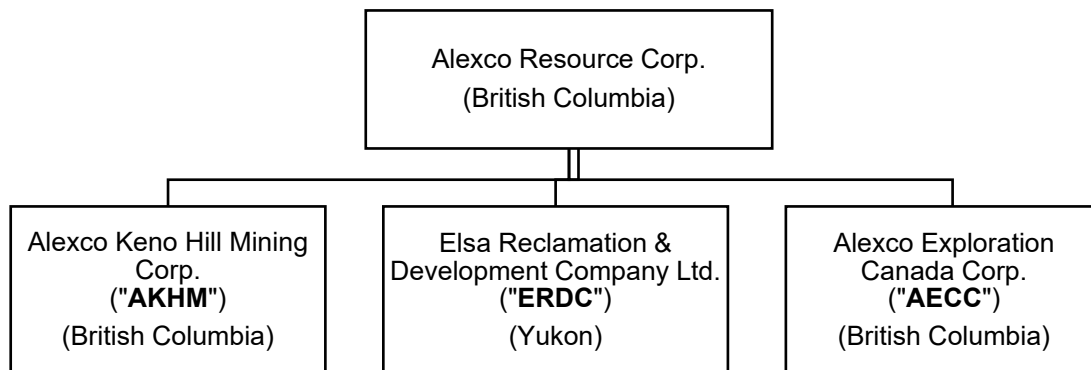
Name, Address and Incorporation

The Corporation was incorporated under the *Business Corporations Act* (Yukon) on December 3, 2004 under the name “Alexco Resource Corp.” Effective December 28, 2007, it was continued under the *Business Corporations Act* (British Columbia).

The Corporation's head office is located at Suite 1225, Two Bentall Centre, 555 Burrard Street, Box 216, Vancouver, British Columbia, V7X 1M9, Canada, and its registered and records office is located at Suite 400, 725 Granville Street, Vancouver, British Columbia, V7Y 1G5, Canada.

Intercompany Relationships

The following chart depicts the Corporation's corporate structure together with the jurisdiction of incorporation of each of the Corporation's subsidiaries at the end of its most recently completed financial year. All ownership of each subsidiary is 100%.



Unless otherwise indicated or the context otherwise requires, reference to the term the “Corporation”, the “Company” or “Alexco” in this AIF includes Alexco Resource Corp. and its subsidiaries.

GENERAL DEVELOPMENT OF THE BUSINESS

Formation of the Corporation

In 2005, the Corporation completed a series of transactions, pursuant to which it acquired a number of mineral property interests and rights to certain operating contracts in Yukon Territory and British Columbia, the most significant of which properties are located in Yukon Territory's Keno Hill Silver District.

In June 2005, the Corporation was selected as the preferred purchaser of the assets of United Keno Hill Mines Limited and UKH Minerals Limited (collectively, “**UKHM**”) by a court appointed interim receiver and receiver-manager of UKHM. In February 2006, following negotiation of a subsidiary agreement (the “**Subsidiary Agreement**”) between the Government of Canada, the Government of Yukon (collectively, the “**Government Group**”) and the Corporation, the Supreme Court of Yukon conditionally approved the purchase of the assets of UKHM by Alexco through its wholly-owned subsidiary, ERDC, final closing of which acquisition was effected in December 2007. Under the terms of the Subsidiary Agreement, the Corporation is indemnified by the Government of Canada for all liabilities, including environmental liabilities, arising directly or indirectly as a result of the pre-existing condition of the Keno Hill mineral rights and other assets acquired from UKHM. The Subsidiary Agreement provides that ERDC may bring any mine into production on the UKHM Mineral Rights (as hereinafter defined) by designating a production unit from the mineral rights relevant to that purpose and then assuming responsibility for all costs of the production unit's water related care and maintenance and water related components of closure reclamation. The Subsidiary Agreement further requires ERDC to pay into a separate reclamation trust a 1.5% net smelter return royalty, up to an aggregate maximum of \$4 million for all production units, from any future production from the UKHM Mineral Rights, commencing once earnings from

mining before interest, taxes and depreciation exceed actual exploration costs, up to a maximum of \$6.2 million, plus actual development and construction capital.

Also, under the Subsidiary Agreement, ERDC is retained through the Government Group as a paid contractor responsible on a continuing basis for the environmental care and maintenance and ultimate closure reclamation of the former UKHM Mineral Rights. The original Subsidiary Agreement provided that ERDC was responsible for the development of the ultimate closure reclamation plan for fees of 65% of agreed commercial contractor rates, and this plan development is currently ongoing. Upon acceptance and regulatory approval, the closure reclamation plan will be implemented by ERDC at full agreed commercial contractor rates. During the period required to develop the plan, the original Subsidiary Agreement also provided that ERDC was responsible for carrying out the environmental care and maintenance of the UKHM Mineral Rights for a reducing fixed annual fee adjusted each year for certain operating and inflationary factors.

In July 2013, an amended and restated Subsidiary Agreement (the “**ARSA**”) was executed with the Government of Canada. Recognizing that developing the closure reclamation plan is more complicated than originally anticipated, the ARSA provides for the Government of Canada to contribute a higher proportion of closure plan development costs than provided for under the Subsidiary Agreement, retroactive to 2009. Going forward, ERDC will receive 95% of agreed commercial contractor rates for ongoing development of the closure reclamation plan. Furthermore, with respect to care and maintenance activity during the closure reclamation planning phase, the original reducing fee scale is replaced by a fixed fee of \$900,000 per year, representing approximately 50% of estimated fully-billable care and maintenance fees.

Wheaton Precious Metals Silver Purchase Agreement

On August 5, 2020, the Company and Wheaton Precious Metals Corp. (“**Wheaton**”) entered into an amended and restated silver purchase agreement (the “**Amended and Restated SPA**”) to simplify and modify the silver purchase agreement originally dated October 2, 2008 (as subsequently amended) by addressing all amendments to date and whereby the silver production payment made by Wheaton will continue to be based on 25% of the silver production but will be based on a new payment formula (the “**Amended Production Payment**”) as outlined below:

- during the earlier of the initial two years or eight million ounces of payable silver production (the “**Initial Period**”), the Amended Production Payment from Wheaton to Alexco will be adjusted on a curve. The Amended Production Payment formula during the Initial Period is a linear equation that pays 90% of spot price at US\$15 per ounce silver (and below) and 10% of spot price at US\$23 per ounce silver (and above); and
- following the Initial Period, the Amended Production Payment formula remains a linear equation and will pay 90% of spot price at US\$13 per ounce silver (and below) and 10% of spot price at US\$23 per ounce silver (and above).

The Corporation issued 2,000,000 common share purchase warrants (the “**Wheaton Warrants**”) to Wheaton as consideration for entering into the Amended and Restated SPA. Each Wheaton Warrant entitles Wheaton to purchase one common share of the Company at an exercise price of \$3.50, expiring August 5, 2025 with a fair value of \$4,806,000 (US\$3,624,000).

Three-Year History

2021 to date

- On January 27, 2022, the Corporation completed an equity financing and issued 2,129,685 flow-through shares with respect to “Canadian exploration expenses” (the “**2022 CEE Shares**”) priced at \$2.70 per 2022 CEE Share, and 1,480,740 flow-through shares with respect to “Canadian development expenses” (the “**2022 CDE Shares**”) priced at \$2.33 per 2022 CDE Share, for aggregate gross proceeds of \$9,200,274.
- On January 18, 2022, the Corporation reported the overall expansion of the Bermingham Indicated Resource (see press release dated January 18, 2022, entitled “Alexco Reports 43% Expansion of Bermingham Indicated Resource to 47 Million Ounces of Silver at 939 Grams per Tonne; Remains Open”).

- On September 23, 2021, the Corporation and the Offtaker amended the existing offtake agreement to allow for an unsecured revolving credit facility (the “**Facility**”) for up to US\$7,500,000. The Facility allows the Corporation to request prepayments, in US\$1,000,000 increments, which are repaid in five monthly instalments against future deliveries of concentrate or in cash. The interest rate on drawn amounts is equal to three month LIBOR + 7.05%. The standby fee on undrawn amounts is 1.5% per annum, payable quarterly. On January 18, 2022, the Corporation and the Offtaker further amended the unsecured revolving credit facility, increasing the total prepayments allowed under the Facility from US\$7,500,000 to US\$10,000,000. All other terms of the Facility remain unchanged. In March 2022, the Corporation received a prepayment under the Facility in the amount of US\$5,000,000.
- On June 10, 2021, the Corporation completed an equity financing and issued 8,214,450 common shares at a price of \$3.50 per share for aggregate gross proceeds of \$28,750,575 (the “**June 2021 Offering**”).
- On May 26, 2021, the Corporation filed an updated technical report (the “**May 2021 Technical Report**”) for the Keno Hill operations, expanding the Mineral Reserve by 22% to 1.44 million tonnes, grading an average 804 g/t Ag, 3.84% Zn, 2.64% Pb, and 0.31 g/t Au, or approximately 1,035 g/t silver equivalent (“AgEq”) (AgEq. calculated using the annual metal price assumptions used for Mineral Reserves as shown in Table 22-3 of the Technical Report). The updated reserve mine plan indicates the mine is projected to produce over 35.5 million ounces of Ag over the next 8 years.
- On January 28, 2021, the Corporation completed an equity financing and issued 2,053,670 flow-through shares with respect to “Canadian exploration expenses” (the “**2021 CEE Shares**”) priced at \$4.48 per 2021 CEE Share, and 651,100 flow-through shares with respect to “Canadian development expenses” (the “**2021 CDE Shares**”) priced at \$3.84 per 2021 CDE Share, for aggregate gross proceeds of \$11,700,666 (the “**January 2021 Offering**”).
- On January 19, 2021, the Corporation reported results from its 2020 surface exploration drilling program that focused on the Bermingham Northeast Deep zone located at depth approximately 150 m below the existing mineral resource that is currently in development for ore production beginning in the second quarter of 2021. The 2020 surface exploration program completed 7,653 m of core drilling in 14 holes and focused on a 550 m long structurally controlled sub-horizontal elongated zone in the same structural and stratigraphic setting that contains the high-grade mineralization initially discovered in 2018 below the Bermingham mineral resource. The 2020 exploration program was designed to drill on approximately 100 m sections to trace the deeper zone southwest and northeast along strike within the favourable mineralization corridor.
- On January 4, 2021, the Corporation sold its NSR royalty in Golden Predator’s Brewery Creek Project to Wheaton Precious Metals (“Wheaton”) for total cash consideration of \$4,500,000.

2020

- On September 15, 2020, the Corporation announced the appointment of Paul Jones as Senior Vice President, Corporate Development. Mr. Jones brings nearly 20 years experience in the mining sector in a variety of roles. Prior to joining the Corporation in September 2020, he was Senior Vice President of Corporate Development for Alio Gold Inc.
- On August 5, 2020, Alexco entered into an amended and restated agreement with Wheaton with respect to the streaming agreement between the two companies. See “*General Development of the Business – Wheaton Precious Metals Silver Purchase Agreement*”.
- On July 27, 2020, the Corporation announced that Mr. Michael Winn resigned from the Corporation’s board of directors in order to focus on his increasing responsibilities with other companies. Mr. Winn remains a strategic advisor to the Company’s board of directors.
- On July 23, 2020, the Corporation received the final amended and renewed water use license (“**WUL**”) for the District from the Yukon Water Board. The WUL authorizes Alexco to source and use water, as well as deposit designated waste streams into approved facilities in and around planned production centers at the Bellekeno,

Flame & Moth, and Bermingham deposits.

- On July 7, 2020, the Corporation completed an equity financing and issued 10,994,000 common shares at a price of \$2.73 per share for aggregate gross proceeds of \$30,013,620 (the **"July 2020 Offering"**).
- On March 30, 2020, the Corporation announced the implementation of a COVID-19 response and management plan to protect the health and safety of its employees and contractors as well as the local communities, in which it operates.
- On March 27, 2020, the Corporation completed a public offering and issued 4,662,675 common shares at a price of \$1.85 per share for aggregate gross proceeds of \$8,625,948 (the **"March 2020 Offering"**).
- On February 14, 2020, the Corporation entered into a share purchase agreement (the **"AEG Sale Agreement"**) for the sale of its environmental services division, Alexco Environmental Group (**"AEG"**) to AEG's executive management (**"AEG Management"**) led by AEG's President, James Harrington (a related party transaction due to the AEG President being a key member of management of Alexco). Under the terms of the AEG Sale Agreement, the AEG Management purchased all of the shares of AEG in consideration for payment to Alexco of \$13,350,000. On closing of the transaction, AEG Management paid \$12,100,000 in cash, with the balance of \$1,250,000 payable pursuant to a promissory note that was originally to mature on February 14, 2021. The maturity date was subsequently amended and now matures on December 31, 2022, bearing interest of 5% for the duration of this period. AEG consisted of four entities: (i) Alexco Environmental Group Inc. (**"AEG Canada"**), (ii) Alexco Water and Environment Inc., (iii) Alexco Environmental Group Holdings Inc., and (iv) Contango Strategies Ltd. AEG was in the business of managing risk at mature, closed or abandoned sites through management of environmental services, implementation of treatment technologies, execution of site reclamation and closure operations, and, if appropriate, rejuvenation of exploration and development activity.

2019

- On June 7, 2019, the Corporation completed a bought deal public offering and issued 6,500,000 common shares at a price of US\$1.00 (\$1.33) per share for aggregate gross proceeds of US\$6,500,000 (\$8,634,000) for net cash proceeds of US\$5,775,000 (\$7,669,000).
- On April 23, 2019, the Corporation completed a private placement, on a bought deal basis, of 1,842,200 flow-through common shares at a price of \$1.90 per share for gross proceeds of \$3,500,000. The flow-through common shares comprised: (i) 1,579,000 flow-through shares with respect to "Canadian exploration expenses" (the **"2019 CEE Shares"**) priced at \$1.90 per 2019 CEE Share; and (ii) 263,200 flow-through shares with respect to "Canadian development expenses" (the **"2019 CDE Shares"**) priced at \$1.90 per 2019 CDE Share.
- On March 28, 2019, the Corporation announced the results of a positive PFS for expanded silver production at Keno Hill Silver District.
- In addition to the mining business described above, the Corporation also operated an environmental services business through its Environmental Group Division, AEG, providing a variety of mine and industrial site related environmental services including management of the regulatory and environmental permitting process, environmental assessments and reclamation and closure planning. On February 14, 2020, the Corporation entered into the AEG Sale Agreement for the sale of AEG to the AEG Management as described above. Alexco retained ownership of ERDC and will execute the clean-up of historical mines in the District under its existing contractual arrangement with the Federal Government of Canada.

DESCRIPTION OF THE BUSINESS

The Corporation operates a mining business, comprised of mineral exploration and mine development and operation in Canada, primarily in Yukon Territory. In addition, the Corporation operates a reclamation management segment of the business focused on the clean-up of historical liabilities of the Keno Hill Silver District through ERDC under a contract with the Federal Government of Canada.

At December 31, 2021, the Corporation had 187 permanent and seasonal employees. A total of 162 were employed for mining operations at the Keno Hill mine site and a further 5 were employed in mineral exploration and evaluation activities. A total of 7 were employed in the reclamation management segment, with the remaining 13 employed in respect of executive management and administrative support. Significant aspects of both the mining business and the reclamation management segment require specialized skills and knowledge in areas that include geology, mining, metallurgy, engineering, environmental contamination treatment, permitting and regulatory compliance, as well as environmental and social policy and governance issues. In addition, there were approximately 18 contractors at the Keno Hill mine site for underground development work. As the Company continues to ramp up mining operations at site, it will necessitate the hiring of additional mine and mill personnel.

Mining Business

The Corporation's principal mining business activities are currently being carried out within the Keno Hill District in Yukon Territory. The District encompasses over 35 former mines that produced variously from approximately 1918 through 1988, with published information from the Yukon Government's Minfile database reporting more than 214 million ounces of silver produced at average grades of 44.7 ounces per tonne silver, 5.6% lead and 3.1% zinc.

The Corporation's mineral property holdings within the Keno Hill district cover the most prospective geological areas to host silver mineralization, including all of the significant historic producing former mines and most of the other mineral occurrences. In addition to the deposits described below that are within the Keno Hill Silver District (previously defined as "**KHSD**") as detailed in the PFS with an effective date of April 1, 2021, the Corporation holds several other less advanced property interests within the District, including but not limited to the Silver King, Elsa, Husky, and Sadie Ladue properties, which potentially could become material properties depending on the results of exploration programs the Corporation may carry out on them in the future, as well as the separate Elsa Tailings Property (see *technical report dated June 16, 2010, entitled "Mineral Resource Estimation, Elsa Tailings Project, Yukon, Canada"*). In the KHSD, Alexco owns 100% of 722 Quartz Mining Leases, 873 Quartz Claims, 24 Placer Mining Claims, one Quartz Mining Licence and 50% of three Quartz Mining Leases, two (2) Crown Grants, in addition to six (6) fee simple lots and seven (7) surface leases. Of those interests, the mineral rights acquired from UKHM (the "**UKHM Mineral Rights**") and therefore subject to the capped 1.5% net smelter return royalty provided for under the Subsidiary Agreement (see "*General Development of the Business – Three Year History*") total 676 quartz mining leases, 121 quartz mining claims and two (2) crown grants.

Other non-material mineral property interests of the Corporation include the Harlan properties in the Yukon, and certain net smelter return royalties in respect of the Brewery Creek (sold on January 4, 2021), Ida-Oro (formerly Klondike) and Sprogge properties in the Yukon and the Telegraph Creek, Iskut River, Kiniskan Lake and Manson Creek properties in British Columbia.

KHSD Property

The Corporation's KHSD property (as detailed in the PFS) encompasses the Flame & Moth, Bermingham, Lucky Queen, Bellekeno, and Onek deposits.

Attached as Schedule "A" to this AIF is the summary contained in the PFS, which has been updated and conformed to be consistent with other disclosure within this AIF. The detailed disclosure contained in the PFS is incorporated by reference into this AIF. See "*Preliminary Notes – Documents Incorporated by Reference*".

Keno Hill Project

As described above (see "*General Development of the Business – Three Year History*"), under the Subsidiary Agreement, Alexco's subsidiary ERDC was retained through the Government Group as a paid contractor responsible on a continuing basis for the environmental care and maintenance and ultimate closure reclamation of the former UKHM Mineral Rights.

Pursuant to the Subsidiary Agreement, ERDC shares the responsibility for the development of the ultimate closure reclamation plan with the Government of Canada, for which it received fees of 65% of agreed commercial contractor rates, and this plan development is currently ongoing. Upon acceptance and regulatory approval, the closure reclamation plan will be implemented by ERDC at full agreed contractor rates. During the period required to develop the plan and until the closure plan is executed, ERDC is also responsible for carrying out the environmental care and maintenance at various sites within the UKHM Mineral Rights, for a fixed annual fee adjusted each year for certain

operating and inflationary factors and determined on a site-by-site basis. Under the Subsidiary Agreement, the portion of the annual fee amount so determined which was billable by ERDC in respect of each site was to reduce by 15% each year until all site-specific care and maintenance activities were replaced by closure reclamation activities; provided however that should a closure reclamation plan be prepared but not accepted and approved, the portion of annual fees billable by ERDC would revert to 85% until the Subsidiary Agreement was either amended or terminated. ERDC received agreed commercial contractor rates when retained by the Government Group to provide environmental services in the Keno Hill District outside the scope of care and maintenance and closure reclamation planning under the Subsidiary Agreement. As a result of these terms, the Corporation has previously recognized an environmental services contract loss provision to reflect aggregate future losses estimated to be realized with respect to care and maintenance activity during the closure planning phase.

In July 2013, the Corporation executed an amended and restated Subsidiary Agreement, the ARSA, with the Government of Canada. Recognizing that developing the closure reclamation plan is more complicated than originally anticipated, the ARSA provides for the Government of Canada to contribute a higher proportion of those costs than provided for under the Subsidiary Agreement. Going forward, ERDC receives 95% of agreed commercial contractor rates for ongoing development of the closure reclamation plan. Furthermore, with respect to care and maintenance activity during the closure planning phase, the original reducing fee scale was replaced by a fixed fee of \$900,000 per year, representing approximately 50% of estimated fully-billable fees.

Competitive Conditions

The exploration and mining business is a competitive business. Significant and increasing competition exists for mining opportunities internationally. The Corporation competes with numerous other companies possessing much greater financial and technical research resources. Competition is particularly intense with respect to the acquisition of desirable undeveloped gold properties. Please see “*Risk Factors*”.

Employees

In the exploration and mining business there is significant and increasing competition for attracting and retaining employees. Please see “*Risk Factors*”.

Social, Environmental and Governance Policies

The Corporation maintains a written *Code of Business Conduct and Ethics* (the “**Code**”), compliance with which is mandatory for all directors, officers and employees, and the full text of which may be viewed at the Corporation’s web site. Included within the Code is a requirement that all directors, officers and employees comply with all laws and governmental regulations applicable to Alexco’s activities, including but not limited to maintaining a safe and healthy work environment, promoting a workplace that is free from discrimination or harassment and conducting all activities in full compliance with all applicable environmental laws. All directors, officers and employees are required to certify in writing their acknowledgement of and compliance with the Code, at the time of hiring and at least annually thereafter. A senior executive of the Corporation is formally appointed to the role of Company Ethics Officer, responsible for ensuring adherence to the Code, investigating any reported violations, and ensuring appropriate responses, including corrective action and preventative measures, are taken when required.

RISK FACTORS

The following are major risk factors management has identified which relate to the Corporation’s business activities. Such risk factors, as well as risks not currently known to the Corporation or that the Corporation currently deems to be immaterial, could materially affect the Corporation’s future business, financial condition, results of operations, earnings and prospects, and could cause events to differ materially from those described in forward-looking statements relating to the Corporation. Although the following are major risk factors identified by management, they do not comprise a definitive list of all risk factors related to the Corporation’s business and operations. Readers are encouraged to review other specific risk factors which are discussed elsewhere in this AIF, as well as in the Corporation’s consolidated financial statements (under the headings “*Description of Business and Nature of Operations*”, “*Summary of Significant Accounting Policies*” and “*Financial Instruments*” and elsewhere within that document) and in the Corporation’s annual and quarterly management’s discussion and analysis (under the headings “*Critical Accounting Estimates and Judgments*” and “*Risk Factors*” and elsewhere within that document) for its most recently completed financial year, being the year ended December 31, 2021, and its other disclosure documents, all as filed on the SEDAR website at www.sedar.com.

Negative Cash Flow From Operating Activities

The Corporation has not yet consistently achieved positive operating cash flow, and there are no assurances that the Corporation will not experience negative cash flow from operations in the future. The Corporation has incurred net losses in the past and may incur losses in the future and will continue to incur losses until and unless it can derive sufficient revenues from its mineral projects. Such future losses could have an adverse effect on the market price of the Corporation's common shares, which could cause investors to lose part or all of their investment.

Forward-Looking Statements May Prove Inaccurate

Readers are cautioned not to place undue reliance on forward-looking statements. By their nature, forward-looking statements involve numerous assumptions, known and unknown risks and uncertainties, of both a general and specific nature, that could cause actual results to differ materially from those suggested by the forward-looking statements. See "Preliminary Notes – Cautionary Statement Regarding Forward-Looking Statements".

Dilution

The Corporation expects to require additional funds to finance its growth and development strategy. If the Corporation elects to raise additional funds by issuing additional equity securities, such financing may substantially dilute the interests of the Corporation's shareholders. The Corporation may also issue additional securities in the future pursuant to existing and new agreements in respect of its projects or other acquisitions and pursuant to existing securities of the Corporation.

Exploration, Evaluation and Development

Mineral exploration, evaluation and development involves a high degree of risk and few properties which are explored are ultimately developed into producing mines. With respect to the Corporation's properties, should any mineral resources exist, substantial expenditures will be required to confirm mineral reserves which are sufficient to commercially mine, and to obtain the required environmental approvals and permitting required to commence commercial operations. Should any mineral resource be defined on such properties there can be no assurance that the mineral resource on such properties can be commercially mined or that the metallurgical processing will produce economically viable and saleable products. The decision as to whether a property contains a commercial mineral deposit and should be brought into production will depend upon the results of exploration programs and/or technical studies, and the recommendations of duly qualified engineers and/or geologists, all of which involves significant expense. This decision will involve consideration and evaluation of several significant factors including, but not limited to: (1) costs of bringing a property into production, including exploration and development work, preparation of appropriate technical studies and construction of production facilities; (2) availability and costs of financing; (3) ongoing costs of production; (4) market prices for the minerals to be produced; (5) environmental compliance regulations and restraints (including potential environmental liabilities associated with historical exploration activities); and (6) political climate and/or governmental regulation and control. Mining operations deplete both mineral resources and mineral reserves. Exploration and evaluation is required to replenish depleted resources.

The ability of the Corporation to sell, and profit from the sale of any eventual production from any of the Corporation's properties will be subject to the prevailing conditions in the marketplace at the time of sale. Many of these factors are beyond the control of the Corporation and therefore represent a market risk which could impact the long-term viability of the Corporation and its operations.

Infrastructure

Mining, processing, development and exploration activities depend, to one degree or another, on adequate infrastructure. Reliable roads, bridges, power sources and water supply are important determinants, which affect capital and operating costs. The lack of availability on acceptable terms or the delay in the availability of any one or more of these items could prevent or delay exploitation and or development of the Corporation's properties. If adequate infrastructure is not available in a timely manner, there can be no assurance that the exploitation and or development of the Corporation's properties will be commenced or completed on a timely basis, if at all; that the resulting operations will achieve the anticipated production volume; or that the construction costs and ongoing operating costs associated with the exploitation and or development of the Corporation's properties will not be higher than anticipated. In addition, unusual or infrequent weather phenomena, sabotage, governmental or other interference in the maintenance or provision of such infrastructure could adversely affect the Corporation's operations and profitability.

Figures for the Corporation's Resources are Estimates Based on Interpretation and Assumptions and May Yield Less Mineral Production Under Actual Conditions than is Currently Estimated

In making determinations about whether to advance any of its projects to development, the Corporation must rely upon estimated calculations as to the mineral resources and grades of mineralization on its properties. Until ore is actually mined and processed, mineral resources and grades of mineralization must be considered as estimates only. Mineral resource estimates are imprecise and depend upon geological interpretation and statistical inferences drawn from drilling and sampling which may prove to be unreliable. Alexco cannot be certain that:

- mineral reserve, mineral resource or other mineralization estimates will be accurate; or
- mineralization can be mined or processed profitably.

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. The Corporation's resource estimates have been determined and valued based on assumed future prices, cut-off grades and operating costs that may prove to be inaccurate. Extended declines in market prices for silver, gold, lead, zinc and other commodities may render portions of the Corporation's mineralization uneconomic and result in reduced reported mineral resources.

Amendments to Share Purchase Agreement with Wheaton

The amendments to the SPA with Wheaton requires that to satisfy the completion test under the Amended SPA, the Corporation will need to recommence operations on the KHSD Property and operate the mine and mill at 400 tonnes per day on or before December 31, 2022. If the completion test is not satisfied by December 31, 2022, the outcome could materially adversely affect the Corporation as it would be required to pay a capacity related refund to Wheaton in the maximum amount of US\$8.8 million. The Corporation would need to raise additional capital to finance the capacity related refund and there is no guarantee that the Corporation will be able to raise such additional capital. In the event that the Corporation cannot raise such additional capital, the Corporation will default under the terms of the Amended SPA. The valuation model for the embedded derivative asset related to the SPA with Wheaton is based on a number of assumptions. The value of the derivative asset as at December 31, 2021 is \$22,768,000. Payments from Wheaton are inversely related to the silver price; if, for example, silver prices were to increase or decrease from the current spot and forward prices as at December 31, 2021 by 10% per ounce and all other assumptions remained the same, the approximate derivative asset value would be \$18,843,000 and \$27,559,000, respectively.

Keno Hill Silver District Exploration

While the Corporation has conducted exploration activities in the District, further review of historical records and additional exploration and geological testing will be required to determine whether any of the mineral deposits it contains are economically recoverable. There is no assurance that such exploration and testing will result in favourable results.

Mining Operations

The business of exploration for minerals and mining involves a high degree of risk. Few properties that are explored are ultimately developed into mineral deposits with significant value. Decisions by the Corporation to proceed with the construction and development of mines are based on development plans which include estimates for metal production and capital and operating costs. Until completely mined and processed, no assurance can be given that such estimates will be achieved. Failure to achieve such production and capital and operating cost estimates or material increases in costs could have an adverse impact on the Corporation's future cash flows, profitability, results of operations and financial condition. The Corporation's actual production and capital and operating costs may vary from estimates for a variety of reasons, including: actual resources mined varying from estimates of grade, tonnage, dilution and metallurgical and other characteristics; short-term operating factors, such as the need for sequential development of resource bodies and the processing of new or different resource grades; revisions to mine plans; risks and hazards associated with mining; natural phenomena, such as inclement weather conditions, water availability, floods, fire, rock falls and earthquakes, unusual or unexpected ground conditions, geological formation pressures, equipment failure and failure of retaining dams around tailings disposal areas which may result in, among other adverse effects, environmental pollution and consequent liability; and unexpected labour shortages or strikes. Costs of production may also be affected by a variety of factors, including changing waste ratios, metallurgical recoveries, labour costs, commodity costs, general inflationary pressures and currency rates. In addition, the risks arising from these factors are further increased while any such mine is progressing through the ramp-up phase of its operations and has not yet

established a consistent production track record. No assurance can be given that minerals will be discovered in sufficient quantities to justify commercial operations or that funds required for development can be obtained on a timely basis.

Employee Recruitment and Retention

Recruitment and retention of skilled and experienced employees is a challenge facing the mining sector as a whole, particularly in light of the COVID-19 pandemic. During the late 1990s and early 2000s, with unprecedented growth in the technology sector and an extended cyclical downturn in the mining sector, the number of new workers entering the mining sector was depressed and a significant number of existing workers departed, leading to a so-called “generational gap” within the industry. Since the mid-2000s, this factor was exacerbated by competitive pressures as the mining sector experienced an extended cyclical upturn. Re-starting mining operations is necessitating the hiring and retention of mine and mill personnel. It may be difficult for Alexco to find and hire qualified people in the mining industry who are situated in the Yukon, or to obtain all of the necessary services or expertise in Yukon or to conduct operations on Alexco’s projects at reasonable rates. If qualified people and services or expertise cannot be obtained in the Yukon, the Corporation may need to seek and obtain those services from people located outside of this area, which may require work permits and compliance with applicable laws and could result in delays and higher costs. However, hiring outside of the Yukon may also be challenging due to the ongoing COVID-19 pandemic and travel restrictions that limit travel between territories, provinces and countries. See “*Risk Factors – Public Health Crisis*”.

Dependence on Management

The success of the operations and activities of the Corporation is dependent to a significant extent on the efforts and abilities of its management team. The Corporation does not maintain key employee insurance on any of its employees. The Corporation depends on key personnel and cannot provide assurance that it will be able to retain such personnel. Failure to retain such key personnel could have a material adverse effect on the Corporation’s business and financial condition.

Permitting and Environmental Risks and Other Regulatory Requirements

The current or future operations of the Corporation, including development activities and commencement of production on its properties require permits or licenses from various federal, territorial and other governmental authorities, and such operations are and will be governed by laws, regulations and agreements governing prospecting, development, mining, production, taxes, labour standards, occupational health, waste disposal, toxic substances, land use, environmental protection, mine safety and other matters. Companies engaged in the development and operation of mines and related facilities and in mine reclamation and remediation activities generally experience increased costs and delays as a result of the need to comply with the applicable laws, regulations and permits. There can be no assurance that all permits and permit modifications, which the Corporation may require for the conduct of its operations will be obtainable on reasonable terms or that such laws and regulations would not have an adverse effect on any project which the Corporation might undertake. Specifically, the Corporation plans to increase production at the District to 550 t/d pursuant to the PFS, which requires an amendment to the Quartz Mining License. There can be no guarantee that the Corporation will receive the amendment. Additionally, delays in receiving any requisite license amendment could adversely affect the Corporation’s profitability.

Any failure to comply with applicable laws, regulations and permitting requirements may result in enforcement actions including orders issued by regulatory or judicial authorities causing operations to cease or be curtailed, and may include corrective measures requiring capital expenditures, installation of additional equipment or remedial actions against the Corporation. The Corporation may be required to compensate those suffering loss or damage by reason of the Corporation’s mining operations or mine reclamation and remediation activities and may have civil or criminal fines or penalties imposed upon it for violation of applicable laws or regulations.

Amendments to current laws, regulations and permits governing operations and activities of mining companies and mine reclamation and remediation activities could have a material adverse impact on the Corporation. As well, policy changes and political pressures within and on federal, territorial and First Nation governments having jurisdiction over or dealings with the Corporation could change the implementation and interpretation of such laws, regulations and permits, also having a material adverse impact on the Corporation. Such impacts could result in one or more of increases in capital expenditures or production costs, reductions in levels of production at producing properties or abandonment or delays in the development of new mining properties.

Greenhouse Gas Emissions Regulations and Climate Change Risks

The Corporation operates in jurisdictions where regulatory requirements are being developed to monitor and report, and, potentially to reduce greenhouse gas emissions. Regulatory uncertainty regarding greenhouse gas emissions and climate change issues may adversely affect the Corporation's operations. The potential physical impacts of climate change on the Corporation's operations are uncertain and may be particular to the unique geographic circumstances associated with its operations. These may include extreme weather events, changes in rainfall patterns, and changing temperatures. Global efforts to transition to a lower-carbon economy may entail policy, legal, technology, and market changes to address mitigation and adaptation requirements related to climate change. Depending on the nature, speed, focus and jurisdiction of these changes, transition risks may pose varying levels of financial and reputational risk to the business.

Surety Bonding Risks

Alexco secures its obligations for reclamation and closure costs with surety bonds provided by leading global insurance companies in favour of regulatory authorities in the Yukon. These surety bonds include the right of the surety bond provider to terminate the relationship with Alexco on providing notice of up to 90 days. The surety bond provider would, however, remain liable to the regulatory authorities for all bonded obligations existing prior to the termination of the bond in the event Alexco failed to deliver alternative security satisfactory to the regulator. Alexco may require additional capital to accomplish its exploration and development plans and fund strategic growth and there can be no assurance that financing will be available on terms acceptable to Alexco, or at all. Alexco may require additional financing to advance the Keno Hill Silver District to commercial production. This potential financing requirement could adversely affect Alexco's ability to access the capital markets in the future. Failure to obtain sufficient financing, or financing on terms acceptable to Alexco, may result in a delay or indefinite postponement of exploration, development or production at its properties. Additional financing may not be available when needed and the terms of any agreement could impose restrictions on the operation of the Corporation's business. Failure to raise financing when needed could have a material adverse effect on the business, financial condition, results of operations and prospects.

Potential Profitability of Mineral Properties Depends Upon Factors Beyond the Control of the Corporation

The potential profitability of mineral properties is dependent upon many factors beyond the Corporation's control. For instance, world prices of and markets for gold, silver, lead and zinc are unpredictable, highly volatile, potentially subject to governmental fixing, pegging and/or controls and respond to changes in domestic, international, political, social and economic environments – including international trade restrictions. During the year ended December 31, 2021 and to date in 2022, the prices of silver, lead and zinc have been extremely volatile. Another factor is that rates of recovery may vary from the rate experienced in tests and a reduction in the recovery rate will adversely affect profitability and, possibly, the economic viability of a property. Profitability also depends on the costs of operations, including costs of labour, materials, equipment, electricity, environmental compliance or other production inputs. Such costs will fluctuate in ways the Corporation cannot predict and are beyond the Corporation's control, and such fluctuations will impact on profitability and may eliminate profitability altogether. Additional impacts to profitability include supply chain delays a lack of supply and replacement parts for mining equipment. Additionally, due to worldwide economic uncertainty, as well as the continued COVID-19 pandemic and the conflict in Ukraine, the availability and cost of funds for development and other costs have become increasingly difficult, if not impossible, to project. These changes and events may materially affect the financial performance of the Corporation.

First Nation Rights and Title

The nature and extent of First Nation rights and title remains the subject of active debate, claims and litigation in Canada, including in the Yukon. Intergovernmental relations between First Nation authorities and federal, provincial and territorial authorities are evolving. There can be no guarantee that such claims and uncertainty will not cause permitting delays, unexpected interruptions or additional costs for the Corporation's projects. These risks may have increased after the Supreme Court of Canada decision of June 26, 2014 in *Tsilhqot'in Nation v. British Columbia*.

There is an increasing level of public concern relating to the perceived effect of mining activities on indigenous communities. The evolving expectations related to human rights, indigenous rights and environmental protection may result in opposition to the Corporation's current or future activities. Such opposition may be directed through legal or administrative proceedings, against the government and/or the Corporation, or expressed in manifestations such as protests, delayed or protracted consultations or other forms of public expression against the Corporation's activities or against the government's position. There can be no assurance that these relationships can be successfully managed.

Intervention by the aforementioned groups may have a material adverse effect on the Corporation's reputation, results of operations and financial performance.

Title to Mineral Properties

The acquisition of title to mineral properties is a complicated and uncertain process. The properties may be subject to prior unregistered agreements of transfer, or land claims, and title may be affected by undetected defects. Although the Corporation has made efforts to ensure that legal title to its properties is properly recorded in the name of the Corporation, there can be no assurance that such title will ultimately be secured. As a result, the Corporation may be constrained in its ability to operate its mineral properties or unable to enforce its rights with respect to its mineral properties. An impairment to or defect in the Corporation's title to its mineral properties would adversely affect the Corporation's business and financial condition.

Capitalization and Commercial Viability

The Corporation will require additional funds to further explore, develop and mine its properties. The Corporation has limited financial resources, and there is no assurance that additional funding will be available to the Corporation to carry out the completion of all proposed activities, for additional exploration or for the substantial capital that is typically required in order to place a property into commercial production. Although the Corporation has been successful in the past in obtaining financing through the sale of equity securities, there can be no assurance that the Corporation will be able to obtain adequate financing in the future or that the terms of such financing will be favourable. Failure to obtain such additional financing could result in the delay or indefinite postponement of further exploration and development of its properties.

Critical Accounting Estimates and Judgments

The preparation of financial statements in conformity with International Financial Reporting Standards requires management to make estimates and assumptions that affect the reported amounts and the valuation of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenditures during the period reported. Actual outcomes could differ from these estimates. The Corporation's consolidated financial statements include estimates which, by their nature, are uncertain. The impacts of such estimates are pervasive throughout the consolidated financial statements, and may require accounting adjustments based on future occurrences. Significant judgments about the future and other sources of estimation uncertainty at the financial position reporting date, including those that could result in a material adjustment to the carrying amounts of assets and liabilities, in the event that actual results differ from assumptions made include, but are not limited to, uncertainties and assumptions with respect to the mineral reserve and resource estimates, impairment and impairment reversals of non-current non-financial assets, decommissioning and rehabilitation provision, and the fair value of derivatives. If the Corporation's management rely on the information in the financial statements in making certain decisions, which information later proves to be inaccurate, it could have an adverse effect on the operating results of the Corporation.

The Corporation prepares budgets and estimates of cash costs and capital costs for its operations. Despite the Corporation's best efforts to budget and estimate such costs, the costs required by the Corporation's projects may be significantly higher than anticipated. The Corporation's actual costs may vary from estimates for a variety of reasons, including: short-term operating factors; risk and hazards associated with mining; continued impact of the COVID-19 pandemic on the economy; natural phenomena, such as inclement weather conditions and unexpected labour shortages or strikes. Operational costs may also be affected by a variety of factors, including: ore grade metallurgy, labour costs, the cost of commodities, general inflationary pressures and currency exchange rates. Many of these factors are beyond the Corporation's control. Failure to achieve estimates or material increases in costs could have an adverse impact on the Corporation's business, results of operations and financial condition. Furthermore, delays in mining projects or other technical difficulties may result in even further capital expenditures being required. Any delays or costs overruns or operational difficulties could have a material adverse effect on the Corporation's business, results of operations and financial condition.

General Economic Conditions May Adversely Affect the Corporation's Growth and Profitability

The unprecedented events in global financial markets have had a profound impact on the global economy and led to increased levels of volatility. Many industries, including the mining industry, are impacted by these market conditions. Some of the impacts of the current financial market instability include contraction in credit markets resulting in a

widening of credit risk, and devaluations and high volatility in global equity, commodity, foreign currency exchange and precious metal markets. If the current instability and volatility levels continue they may adversely affect the Corporation's growth and profitability. Specifically:

- a global credit/liquidity or foreign currency exchange crisis could impact the cost and availability of financing and the Corporation's overall liquidity;
- the volatility of silver and other commodity prices would impact the Corporation's revenues, profits, losses and cash flow;
- volatile and rising energy prices, commodity and consumables prices and currency exchange rates would impact the Corporation's operating costs;
- supply chain issues causing a lack of supply and replacement parts for mining equipment would impact the Corporation's operations; and
- the devaluation and volatility of global stock markets could impact the valuation of the Corporation's equity and other securities.

These factors could have a material adverse effect on Alexco's financial condition and results of operations.

Operating Hazards and Risks

In the course of exploration, development and production of mineral properties, certain risks, including but not limited to unexpected or unusual geological operating conditions including rock bursts, cave-ins, fires, flooding and earthquakes, may occur. It is not always possible to fully insure against such risks and the Corporation may decide not to insure against such risks as a result of high premiums or other reasons. Should such liabilities arise, they could reduce or eliminate any future profitability and result in increasing costs and a decline in the value of the securities of the Corporation.

Adverse weather conditions could also disrupt the Corporation's environmental services business and/or reduce demand for the Corporation's services.

Competition

Significant and increasing competition exists for mining opportunities internationally. There are a number of large established mining companies with substantial capabilities and far greater financial and technical resources than the Corporation. The Corporation may be unable to acquire additional attractive mining properties on terms it considers acceptable and there can be no assurance that the Corporation's exploration and acquisition programs will yield any reserves or result in any commercial mining operation.

Certain of the Corporation's Directors and Officers: Involvement with Other Natural Resource Companies

Some of the Corporation's directors and officers are directors or officers of other natural resource or mining-related companies. These associations may give rise to conflicts of interest from time to time. As a result of these conflicts of interest, the Corporation may miss the opportunity to participate in certain transactions.

The Corporation May Fail to Maintain Adequate Internal Control Over Financial Reporting Pursuant to the Requirements of the Sarbanes-Oxley Act

Section 404 of the Sarbanes-Oxley Act ("**SOX**") requires an annual assessment by management of the effectiveness of the Corporation's internal control over financial reporting. The Corporation may fail to maintain the adequacy of its internal control over financial reporting as such standards are modified, supplemented or amended from time to time, and the Corporation may not be able to ensure that it can conclude, on an ongoing basis, that it has effective internal control over financial reporting in accordance with Section 404 of SOX. The Corporation's 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 its financial statements, which in turn could harm the Corporation's business and negatively impact the trading price or the market value of its securities. In addition, any failure to implement required new or improved controls, or difficulties encountered in their implementation, could harm the Corporation's operating results or cause it to fail to

meet its reporting obligations. Future acquisitions of companies, if any, may provide the Corporation with challenges in implementing the required processes, procedures and controls in its acquired operations. No evaluation can provide complete assurance that the Corporation's internal control over financial reporting will detect or uncover all failures of persons within the Corporation to disclose material information otherwise required to be reported. The effectiveness of the Corporation's processes, procedures and controls could also be limited by simple errors or faulty judgments. Although the Corporation intends to expend substantial time and incur substantial costs, as necessary, to ensure ongoing compliance, there is no certainty that it will be successful in complying with Section 404 of SOX.

Exemption from Section 14 proxy rules and Section 16 of the Securities Exchange Act of 1934

The Corporation is a "foreign private issuer" as defined in Rule 3b-4 under the United States Securities Exchange Act of 1934, as amended (the "**U.S. Exchange Act**"). Equity securities of the Corporation are accordingly exempt from Sections 14(a), 14(b), 14(c), 14(f) and 16 of the U.S. Exchange Act pursuant to Rule 3a12-3 of the U.S. Exchange Act. Therefore, the Corporation is not required to file a Schedule 14A proxy statement in relation to the annual meeting of shareholders. The submission of proxy and annual meeting of shareholder information on Form 6-K may result in shareholders having less complete and timely information in connection with shareholder actions. The exemption from Section 16 rules regarding reports of beneficial ownership and purchases and sales of common shares by insiders and restrictions on insider trading in the Corporation's securities may result in shareholders having less data and there being fewer restrictions on insiders' activities in the Corporation's securities.

Enforcement of judgments

The Corporation is a Canadian corporation and certain of its directors, officers and experts are neither citizens nor residents of the United States. A substantial part of the assets of the Corporation and of certain of these persons are located outside the United States. As a result, it may be difficult or impossible for an investor:

- to enforce in courts outside the United States judgments obtained in United States courts based upon the civil liability provisions of United States federal securities laws against these persons and the Corporation; or
- to bring in courts outside the United States an original action to enforce liabilities based upon United States federal securities laws against these persons and the Corporation.

Information Systems and Cyber Security

The Corporation's information systems, and those of its suppliers and other counterparties, are vulnerable to an increasing threat of continually evolving cyber security risks. Unauthorized parties may attempt to gain access to these systems or the Corporation's information through fraud or other means of deceiving the Corporation's counterparties.

The Corporation's operations depend, in part, on how well the Corporation and its counterparties protect networks, equipment, information technology systems and software against damage from a number of threats. The failure of information systems or a component of information systems could, depending on the nature of any such failure, adversely impact the Corporation's reputation and results of operations.

There can be no assurance that the Corporation will not incur any material losses relating to cyber-attacks or other information security breaches in the future. The Corporation's risk and exposure to these matters cannot be fully mitigated because of, among other things, the evolving nature of these threats. As a result, cyber security and the continued development and enhancement of controls, processes and practices designed to protect systems, computers, software, data and networks from attack, damage or unauthorized access remain an area of attention.

Public Health Crisis

The Corporation's business, operations and financial condition could be materially and adversely affected by the outbreak of epidemics or pandemics or other health crises, including the recent outbreak of COVID-19. To date, there have been a large number of temporary business closures, quarantines and a general reduction in consumer activity in a number of countries including Canada, the United States, Europe and Asia. The outbreak has caused companies and various international jurisdictions to impose travel, gathering and other public health restrictions. While these effects are expected to be temporary and a number of jurisdictions, including in Canada and the United States, have started to lift certain COVID-19 related restrictions, the duration of the various disruptions to businesses locally and internationally and the related financial and other impacts cannot be reasonably estimated at this time. Such public

health crises can result in volatility and disruptions in the supply and demand for silver and other metals and minerals, global supply chains and financial markets, as well as declining trade and market sentiment and reduced mobility of people, all of which could affect commodity prices, interest rates, credit ratings, credit risk, share prices and inflation.

The risks to the Corporation of such public health crises also include risks to employee health and safety, additional slowdowns or temporary suspensions of operations in geographic locations impacted by an outbreak, increased labor, transportation and fuel costs, regulatory changes, political or economic instabilities or civil unrest. In December 2021 and the start of the first quarter of 2022, the Corporation experienced a rise in COVID-19 cases at Keno Hill. The Corporation's COVID-19 response required mandatory self-isolation for affected employees and contractors as dictated by government health protocols, which resulted in reduced workforce availability, significantly reduced production and slower development advancement activity in the fourth quarter of 2021, extending in and through January 2022. It is likely that any future outbreaks of COVID-19 or future variants of COVID-19, and their associated effect on government policy or the Corporation's policies, may have a material adverse effect on the Corporation's business, results of operations and financial condition.

The Corporation continues to have in place a COVID-19 management and response plan. As the Corporation advances into Keno Hill's final development and operations phase, the management plan will continue to be modified as conditions change including government restrictions and protocols. Protocols that are expected to continue during the development and production phases include:

- Vaccination of all employees at site;
- Mandatory hand washing and use of hand sanitizer every time personnel enter the dining hall;
- Sanitation wipes are available in the gym and phone room and must be used;
- Isolation buildings and rooms have been established along with procedures to deal with any potential COVID-19 cases;
- Contingency plans have been established for case management;
- For travel days, physical distancing is maximized to the greatest extent possible;
- Avoiding non-essential travel to remote communities.

Delays and costs related to COVID-19 could affect the Corporation's ability to advance development and reach production with such risks to include challenges in recruiting and retaining staff and personnel, restricted access for employees and contractors at the mine site, equipment and materials not being delivered to site on schedule or at all, supply chain disruptions, and further inefficiencies required to be put in place to health and safety resulting in less productivity.

DIVIDENDS

The Corporation has not paid any dividends on its common shares since its incorporation. Any decision to pay dividends on common shares in the future will be made by the board of directors on the basis of the earnings, financial requirements and other conditions existing at such time.

DESCRIPTION OF CAPITAL STRUCTURE

The authorized capital of the Corporation consists of an unlimited number of common shares, without par value. As at the close of business on March 21, 2022, 155,250,902 common shares of the Corporation were issued and outstanding.

The holders of the common shares are entitled to vote at all meetings of holders of common shares, to receive dividends if, as and when declared by the directors and to participate rateably in any distribution of property or assets upon the liquidation, winding-up or other dissolution of the Corporation. The common shares carry no pre-emptive rights, conversion or exchange rights, or redemption, retraction, repurchase, sinking fund or purchase fund provisions. There are no provisions requiring a holder of common shares to contribute additional capital and no restrictions on the

issuance of additional securities by the Corporation. There are no restrictions on the repurchase or redemption of common shares by the Corporation except to the extent that any such repurchase or redemption would render the Corporation insolvent.

MARKET FOR SECURITIES

Trading Price and Volume

The common shares of the Corporation are listed and posted for trading on the Toronto Stock Exchange (the “**TSX**”) and on the NYSE American Equities Exchange (the “**NYSE American**”) under the symbol “AXU”. The following tables set forth the market price range and trading volumes of the Corporation’s common shares on each of the TSX and NYSE American for the periods indicated in 2021.

Period	TSX			NYSE American		
	High (Cdn\$)	Low (Cdn\$)	Volume	High (US\$)	Low (US\$)	Volume
December	\$2.63	\$1.90	4,257,155	\$2.06	\$1.47	21,490,359
November	\$2.76	\$2.05	4,165,863	\$2.19	\$1.66	17,789,817
October	\$2.39	\$1.84	4,000,528	\$1.94	\$1.45	14,416,500
September	\$2.48	\$1.81	3,737,073	\$1.94	\$1.41	16,025,271
August	\$2.75	\$2.03	4,219,169	\$2.23	\$1.16	21,207,272
July	\$3.16	\$2.53	3,466,279	\$2.59	\$1.99	14,545,306
June	\$4.01	\$3.03	6,103,686	\$3.34	\$2.45	27,965,906
May	\$3.94	\$3.30	4,933,674	\$3.23	\$2.70	18,251,788
April	\$3.54	\$3.19	2,620,870	\$2.88	\$2.53	15,456,791
March	\$3.61	\$2.83	5,328,586	\$2.85	\$2.23	27,047,113
February	\$4.38	\$3.32	7,374,609	\$3.42	\$2.62	31,347,993
January	\$4.38	\$3.15	6,968,161	\$3.45	\$2.46	30,833,143

Securities Not Listed or Quoted

The only classes of securities of the Corporation that are not listed or quoted on a marketplace are stock options, restricted shares units (“**RSUs**”), deferred share units (“**DSUs**”), and warrants. As of December 31, 2021, 9,672,118 stock options, 1,198,067 RSUs, 894,000 DSUs and 2,000,000 warrants were outstanding.

Prior Sales

The following table sets forth, for the financial year ended December 31, 2021, details of the price at which securities have been issued or are to be issued by the Corporation, the number of securities issued at that price and the date on which the securities were issued:

Date of Issue	Type of Securities	Nr. of Securities	Issue or Exercise Price per Security	Reason for Issue
December 22, 2021	Common Shares	29,700	\$2.17	Grant of stock options
December 22, 2021	Common Shares	18,500	\$2.17	Grant of restricted share units
December 15, 2021	Common Shares	545,386	\$1.96	Vesting of restricted share units
December 15, 2021	Common Shares	474,500	\$2.17	Grant of performance share

Date of Issue	Type of Securities	Nr. of Securities	Issue or Exercise Price per Security	Reason for Issue
				units
December 15, 2021	Common Shares	366,000	\$2.17	Grant of deferred share units
December 15, 2021	Common Shares	1,012,450	\$2.17	Grant of restricted share units
December 15, 2021	Common Shares	1,940,300	\$2.17	Grant of stock options
December 13, 2021	Common Shares	78,336	\$2.09	Vesting of restricted share units
November 19, 2021	Common Shares	25,500	\$2.21	Exercise of stock options
June 24, 2021	Common Shares	150,000	\$1.73	Exercise of stock options
June 10, 2021	Common Shares	8,214,450	\$3.50	June 2021 Offering
June 3, 2021	Common Shares	25,000	\$2.07	Exercise of stock options
May 20, 2021	Common Shares	31,000	\$3.19	Exercise of stock options
May 19, 2021	Common Shares	2,433	\$3.19	Exercise of stock options
May 19, 2021	Common Shares	5,000	\$1.27	Exercise of stock options
May 19, 2021	Common Shares	5,000	\$2.07	Exercise of stock options
May 19, 2021	Common Shares	4,000	\$2.32	Exercise of stock options
May 19, 2021	Common Shares	3,666	\$2.61	Exercise of stock options
April 29, 2021	Common Shares	25,000	\$2.07	Exercise of stock options
April 23, 2021	Common Shares	16,000	\$2.12	Exercise of stock options
April 20, 2021	Common Shares	10,600	\$2.07	Exercise of stock options
April 19, 2021	Common Shares	20,000	\$2.32	Exercise of stock options
April 19, 2021	Common Shares	17,000	\$2.12	Exercise of stock options
April 19, 2021	Common Shares	29,400	\$2.07	Exercise of stock options
April 16, 2021	Common Shares	150,000	\$1.78	Exercise of stock options
April 13, 2021	Common Shares	3,600	\$2.07	Exercise of stock options
April 13, 2021	Common Shares	20,000	\$1.27	Exercise of stock options
April 12, 2021	Common Shares	10,000	\$2.32	Exercise of stock options
April 12, 2021	Common Shares	20,000	\$1.27	Exercise of stock options
April 1, 2021	Common Shares	50,000	\$1.76	Exercise of stock options
March 31, 2021	Common Shares	65,000	\$2.07	Exercise of stock options

Date of Issue	Type of Securities	Nr. of Securities	Issue or Exercise Price per Security	Reason for Issue
March 19, 2021	Common Shares	100,000	\$1.27	Exercise of stock options
February 12, 2021	Common Shares	60,000	\$0.84	Exercise of stock options
February 3, 2021	Common Shares	138,700	\$2.32	Exercise of stock options
February 3, 2021	Common Shares	10,666	\$3.19	Exercise of stock options
February 3, 2021	Common Shares	150,000	\$1.73	Exercise of stock options
February 3, 2021	Common Shares	180,000	\$1.27	Exercise of stock options
February 3, 2021	Common Shares	10,000	\$0.84	Exercise of stock options
February 3, 2021	Common Shares	125,000	\$2.07	Exercise of stock options
February 2, 2021	Common Shares	450,000	\$0.84	Exercise of stock options
January 28, 2021	Common Shares	2,053,670	\$4.48	January 2021 Offering
January 28, 2021	Common Shares	651,100	\$3.84	January 2021 Offering
January 21, 2021	Common Shares	25,000	\$1.73	Exercise of stock options

Pursuant to the terms of the underwriting agreement dated June 7, 2021 between the Corporation and Cormark Securities Inc., Cantor Fitzgerald Canada Corporation, R.F. Lafferty & Co., Inc., A.G.P./Alliance Global Partners, and Roth Capital Partners in connection with the June 2021 Offering, the Company agreed not to directly or indirectly, for a period of 90 days following June 10, 2021 (being the closing date of the June 2021 Offering), issue any common shares of the Corporation or any securities convertible into or exercisable or exchangeable for common shares, other than in connection with (i) the grant or exercise of share purchase options and other similar issuances pursuant to the share purchase incentive plan of the Corporation and other share compensation arrangements; and (ii) acquisitions, without the prior written consent of the lead underwriters, such consent not to be unreasonably withheld or delayed. In addition, each of the directors and officers of the Corporation, agreed, in a lock-up agreement executed concurrently with the closing of the Offering, that for a period of 90 days from June 10, 2021, each will not, directly or indirectly, offer, sell, contract to sell, grant any option to purchase, make any short sale, or otherwise dispose of, or transfer, or announce any intention to do so, any common shares of the Corporation, whether then owned or thereafter acquired, directly or indirectly, or under their control or direction, or with respect to which each has beneficial ownership, or enter into any transaction or arrangement that has the effect of transferring, in whole or in part, any of the economic consequences of ownership of common shares, whether such transaction is settled by the delivery of common shares, other securities, cash or otherwise other than pursuant to a take-over bid or any other similar transaction made generally to all of the shareholders of the Corporation.

DIRECTORS AND OFFICERS

Name, Occupation and Security Holding

The name, province or state, country of residence, position or office held with the Corporation and principal occupation during the past five years of each director and executive officer of the Corporation as at December 31, 2021 and as at the date hereof are described as follows:

Name and Address ⁽¹⁾	Office or Position Held	Principal Occupation During the Past Five Years	Previous Service as a Director
Clynton R. Nauman	Chairman, Chief Executive Officer and	Chairman and Chief Executive Officer of the	Since December 3,

Name and Address ⁽¹⁾	Office or Position Held	Principal Occupation During the Past Five Years	Previous Service as a Director
Washington, USA	Director	Corporation, since December 2004.	2004
Elaine Sanders British Columbia, Canada	Director ⁽²⁾⁽⁵⁾	VP and Chief Financial Officer of Trilogy Metals Inc., a mineral exploration and development company, since November 2011.	Since June 28, 2016
Karen McMaster Northwest Territories, Canada	Director ⁽³⁾⁽⁴⁾	Since 2003, Ms. McMaster, BA, LLB, MBA has worked as an independent consultant focusing on strategic and economic development of organizations including risk assessment, contract management, EHS excellence, governance and capacity building at the community level.	Since April 11, 2018
Richard N. Zimmer British Columbia, Canada	Lead Director ⁽²⁾⁽⁴⁾⁽⁵⁾	Member of the Board of Directors of three other publicly-listed companies.	Since May 2, 2012
Rick Van Nieuwenhuysen Alaska, USA	Director ⁽³⁾⁽⁴⁾	President and CEO of Contango Ore Inc., which is developing the Peak Gold deposit on the Tetlin Tribal Village lands in Alaska. Prior to joining Contango Ore Inc., Mr. Van Nieuwenhuysen was President and Chief Executive Officer of Trilogy Metals, founder, President and CEO of NovaGold Resources Inc., and Vice President of Exploration for Placer Dome Inc.	Since January 11, 2005
Terry Krepiakovich British Columbia, Canada	Director ⁽²⁾⁽³⁾⁽⁵⁾	Member of the Board of Directors of several publicly-listed and private companies since July 2011.	Since July 22, 2009
Mike Clark British Columbia, Canada	Chief Financial Officer, Corporate Secretary and Company Ethics Officer	Chief Financial Officer of the Corporation, since December 2014.	N/A
Bradley Thrall Washington, USA	President	President of the Corporation since December 2004.	N/A
Paul Jones British Columbia, Canada	Senior Vice President, Corporate Development	Senior Vice President, Corporate Development of the Corporation since September 8, 2020. Prior to joining Alexco, Mr. Jones was Senior Vice President of Corporate Development for Alio Gold and prior to that he worked more than five years with an intermediate copper producer in operations, financial planning and analysis, investor relations, and business development.	N/A

- (1) The information as to the jurisdiction of residence and principal occupation, not being within the knowledge of the Corporation, has been furnished by the respective individuals individually.
- (2) Member of the Audit Committee.
- (3) Member of the Nominating & Corporate Governance Committee.
- (4) Member of the Environmental, Health, Safety & Technical Committee.
- (5) Member of the Compensation Committee.

Each of the Corporation's directors is elected by the Corporation's shareholders at an annual meeting to serve until the next annual meeting of shareholders or until a successor is elected or appointed. The board of directors appoints the Corporation's executive officers annually after each annual meeting, to serve at the discretion of the board of directors.

Based on information provided by such persons, as at the date hereof the directors and executive officers of the Corporation as a group beneficially owned, directly or indirectly, or exercised control or direction over, an aggregate of 6,068,420 common shares of the Corporation (including 1,940,299 shares owned by ALM Investments ULC (formerly

Asset Liability Management Group ULC), a company controlled by Mr. Nauman), representing 3.9% of the issued and outstanding common shares of the Corporation. In addition, the directors and executive officers of the Corporation as a group also hold stock options for the purchase of an aggregate of 5,418,400 common shares in the capital of the Corporation, representing 62% of all outstanding stock options of the Corporation. Lastly, the directors and executive officers of the Corporation as a group held RSUs and DSUs that can be settled by way of shares issued from treasury for a further 587,001 and 894,000 common shares, respectively.

Cease Trade Orders, Bankruptcies, Penalties or Sanctions

To the knowledge of the Corporation, none of the Corporation's directors or executive officers is, as at the date of this AIF, or has been, within ten years before the date of this AIF, a director, chief executive officer or chief financial officer of any Corporation (including the Corporation) that:

- (a) was subject to an Order (as defined below) that was issued while the director or executive officer was acting in the capacity as director, chief executive officer or chief financial officer; or
- (b) was subject to an Order that was issued after the director or executive officer ceased to be a director, chief executive officer or chief financial officer and which resulted from an event that occurred while that person was acting in the capacity as director, chief executive officer or chief financial officer.

"Order" means a cease trade order, an order similar to a cease trade order, or an order that denied the relevant corporation access to any exemption under securities legislation and, in each case, that was in effect for a period of more than 30 consecutive days.

None of the Corporation's directors or executive officers or, to the Corporation's knowledge, any shareholder holding a sufficient number of securities of the Corporation to affect materially the control of the Corporation:

- (a) is, as at the date of this AIF, or has been within the 10 years before the date of this AIF, a director or executive officer of any corporation (including the Corporation) that, while that person was acting in that capacity, or within a year of that person ceasing to act in that capacity, became bankrupt, made a proposal under any legislation relating to bankruptcy or insolvency or was subject to or instituted any proceedings, arrangement or compromise with creditors or had a receiver, receiver manager or trustee appointed to hold its assets; or
- (b) has, within the 10 years before the date of this AIF, become bankrupt, made a proposal under any legislation relating to bankruptcy or insolvency, or become subject to or instituted any proceedings, arrangement or compromise with creditors, or had a receiver, receiver manager or trustee appointed to hold the assets of the director, executive officer or shareholder; or
- (c) has been subject to:
 - (i) any penalties or sanctions imposed by a court relating to securities legislation or by a securities regulatory authority or has entered into a settlement agreement with a securities regulatory authority; or
 - (ii) any other penalties or sanctions imposed by a court or regulatory body that would likely be considered important to a reasonable investor in making an investment decision.

Conflicts of Interest

The directors of the Corporation are required by law to act honestly and in good faith with a view to the best interest of the Corporation and to disclose any interests, which they may have in any project or opportunity of the Corporation. If a conflict of interest arises at a meeting of the board of directors, any director in a conflict will disclose his or her interest and abstain from voting on such matter. In determining whether or not the Corporation will participate in any project or opportunity, that director will primarily consider the degree of risk to which the Corporation may be exposed and its financial position at that time.

To the best of the Corporation's knowledge, other than as discussed below, there are no known existing or potential conflicts of interest among the Corporation, its promoters, directors, officers or other members of management of the

Corporation as a result of their outside business interests except that certain of the directors, officers, promoters and other members of management serve as directors, officers, promoters and members of management of other public companies, and therefore it is possible that a conflict may arise between their duties as a director, officer, promoter or member of management of such other companies.

As described above under “*General Development of the Business – Three Year History – 2020*”, AEG was sold on February 14, 2020. James Harrington, MSc., the Senior Vice President and Chief Technical Officer of AEG Canada, owns a holding company (“**Arete**”) which holds all of the shares of Alexco Environmental Group (US) Inc., a former subsidiary of the Corporation (“**AEG US**”). The sale of AEG US to Mr. Harrington’s holding company is not considered a material transaction and was reviewed and approved by a special committee of independent directors, as well as the board of directors of the Corporation prior to completion of the transaction. The purpose of the transaction was to enable Arete to complete the purchase of a redevelopment project, which involves significant environmental work, and which could, if purchased, provide an opportunity for the Corporation’s environmental group with respect to the environmental work without exposing the Corporation to environmental risk from ownership of such project.

The directors and officers of the Corporation are aware of the existence of laws governing accountability of directors and officers for corporate opportunity and requiring disclosures by directors of conflicts of interest and the Corporation relies upon such laws in respect of any directors’ and officers’ conflicts of interest or in respect of any breaches of duty by any of its directors or officers. Such directors or officers in accordance with the *Business Corporations Act* (British Columbia) are required to disclose all such conflicts and to govern themselves in respect thereof to the best of their ability in accordance with the obligations imposed upon them by law.

AUDIT COMMITTEE INFORMATION

Audit Committee Charter

The following is the text of the Audit Committee’s Charter:

“GENERAL

The primary function of the Audit Committee, under the supervision of the Board of Directors of the Company (the “**Board**”), is to assist the Board in fulfilling its oversight responsibilities regarding the integrity of the Company’s accounting and financial reporting processes and provision of financial information to the shareholders and others, the systems of internal controls and disclosure controls, the Company’s internal and external audit process, the Company’s policies with regard to ethics and business practices, and monitoring compliance with the Company’s legal and regulatory requirements with respect to its financial statements.

The Audit Committee is accountable to the Board. In the course of fulfilling its specific responsibilities hereunder, the Audit Committee is expected to maintain open communications between the Company’s external auditor, senior management and the Board.

The Audit Committee does not plan or perform audits or warrant or attest to the accuracy or completeness of the Company’s financial statements or financial disclosure or compliance with generally accepted accounting procedures as these are the responsibilities of management and the external auditor.

COMPOSITION

The Audit Committee shall be comprised of at least three directors of the Company, who generally shall be appointed or confirmed by the Board annually. The Chair of the Audit Committee shall be appointed by the Board, failing which the members of the Audit Committee may designate a Chair by a majority vote of the full Audit Committee membership. All members of the Audit Committee shall be directors and shall meet the independence, financial literacy and experience requirements under applicable laws, rules and regulations binding on the Company from time to time, including without limitation the applicable rules of any stock exchanges upon which the Company’s shares are listed and the requirements for independence and financial literacy under National Instrument 52-110 – *Audit Committees* (“**NI 52-110**”) in Canada, Section 803A of the NYSE Amex Company Guide and Rule 10A-3 of the United States Securities Exchange Act of 1934, as amended (the “**Exchange Act**”). Subject to certain exemptions outlined in NI 52-110, every member of the Audit Committee must be “independent” and “financially literate”, as such terms are defined in NI 52-110.

Furthermore, at least one member of the Audit Committee shall qualify as a “financial expert” as such term is defined in Item 407 of Regulation S-K under the Exchange Act.

PROCEDURAL MATTERS

The Audit Committee:

- (a) Shall meet at least four times per year on a quarterly basis, either by telephone conference or in person. Any member of the Audit Committee may call such a meeting. A majority of the members appointed to the Audit Committee shall constitute a quorum. For clarity, quorum may be reached in person, or by telephone, video conference, or other communication facilities acceptable to the Board. Matters decided by the Audit Committee shall be decided by majority votes, and the Chair of the Audit Committee shall only have an ordinary vote with no additional tie-breaking powers.
- (b) May invite the Company's external auditor, the CFO, and such other persons as deemed appropriate by the Audit Committee to attend meetings of the Audit Committee. As part of its mandate to foster open communication, the Audit Committee shall meet at least annually with the CFO and the external auditor in separate sessions, and to that end the Audit Committee generally shall have as a standing agenda item an in-camera meeting with the external auditors for any meeting at which they attend.
- (c) Shall report material decisions and actions of the Audit Committee to the Board, together with such recommendations as the Audit Committee may deem appropriate, at the next Board meeting.
- (d) Shall review the performance of the Audit Committee on an annual basis and report the results of such review to the Nominating & Corporate Governance Committee.
- (e) Shall review and assess this Charter for the Audit Committee at least annually and submit any proposed revisions to the Board for approval.
- (f) Shall review from time to time as required and recommend to the Board for approval as necessary the indemnification policies, and director and officer insurance policy, if any, of the Company;
- (g) Has the power to conduct or authorize investigations into any matter within the scope of its responsibilities. The Audit Committee has the right to engage independent counsel and other advisors as it determines necessary to carry out its duties, and the right to set and pay, without restriction, the compensation for any such counsel or advisors engaged by the Audit Committee.
- (h) Has the right to communicate directly with the CFO and other members of management who have responsibility for the audit process (“**Internal Audit Management**”), as well as directly with the external auditor.
- (i) Has the right to require payment of (i) compensation to any external auditor engaged for the purpose of preparing or issuing an audit report or performing audit, review or attest services for the Company and (ii) all ordinary expenses of the Audit Committee that are necessary or appropriate in carrying out its duties.

RESPONSIBILITIES

Subject to the powers and duties of the Board, the Board hereby delegates to the Audit Committee the following powers and duties to be performed by the Audit Committee on behalf of and for the Board.

Financial Reporting, Accounting and Financial Management

The Audit Committee has primary responsibility for overseeing the actions of management in all aspects of financial management and reporting. The Audit Committee shall:

- (a) Review and recommend to the Board for approval the Company's annual and interim financial statements, annual and interim Management's Discussion and Analysis, Annual Information Form, annual report filed pursuant to the Exchange Act on Form 40-F (or such other form as may apply), future-oriented financial information or pro-forma information, and other financial disclosure in continuous disclosure documents, including within any annual or interim profit or loss press releases, and any certification, report, opinion or review rendered by the external auditor, before the Company publicly discloses such information. (See also "*Interim Financial Statements*" below.)
- (b) Ensure that it is satisfied that adequate procedures are in place for the review of the Company's public disclosure of financial information extracted or derived from the Company's financial statements (other than public disclosure referred to in subsection (a) immediately above) and periodically assess the adequacy of those procedures as necessary.
- (c) Review material financial risks with management, the plan that management has implemented to monitor and deal with such risks, and the success of management in following such plan.
- (d) Consult annually, and otherwise as required, with the Company's CEO and CFO respecting the adequacy of the internal controls and review any breaches or deficiencies.
- (e) Review as necessary the process with regard to certifications, and ensure certifications by the CEO and CFO attesting to disclosure controls and procedures and internal control over financial reporting are obtained and filed as required under National Instrument 52-109 – *Certification of Disclosure In Issuers' Annual and Interim Filings* and the Exchange Act in connection with the Company's annual and interim financial reporting filings.
- (f) Review management's response to significant written reports and recommendations issued by the external auditor and the extent to which such recommendations have been implemented by management. Review such responses with the external auditor as necessary.
- (g) Review with management the Company's compliance with applicable laws and regulations respecting financial matters.
- (h) Review with management proposed regulatory changes and their impact on the Company.
- (i) Review with management and approve public disclosure of the Audit Committee Charter.

External Auditor

The Audit Committee has primary responsibility for the selection, appointment, dismissal, compensation and oversight of the external auditor, subject to the overall approval of the Board. For this purpose, the Audit Committee may consult with management, but the external auditor shall report directly to the Audit Committee. The specific responsibilities of the Audit Committee with regard to the external auditor are to:

- (a) Recommend to the Board annually:
 - (i) the external auditor to be nominated (whether the current external auditor or a suitable alternative) for the purpose of preparing or issuing an auditor's report or performing other audit, review, or attest services for the Company; and
 - (ii) the compensation of the external auditor.
- (b) Oversee the work of the external auditor engaged for the purpose of preparing or issuing an auditor's report or performing other audit, review or attest services for the Company.
- (c) Resolve disagreements, if any, between management and the external auditor regarding financial reporting. To resolve such disagreements, the Audit Committee shall query management and the external auditor and take other steps as necessary. The Audit Committee shall provide the Board with

such recommendations and reports with respect to the financial statements of the Company as it deems advisable.

- (d) Take reasonable steps to confirm the independence of the external auditor, including but not limited to ensuring receipt from the external auditor of a formal written statement delineating all relationships between the external auditor and the Company, actively engaging in a dialogue with the auditor with respect to any disclosed relationship or services and pre-approving any non-audit related services provided by the external auditor to the Company or the Company's subsidiaries, if any, with a view to ensuring independence of the auditor. If necessary, recommend to the Board to take appropriate corrective action to ensure the independence of the external auditor.
- (e) Review and pre-approve all audit and audit-related services and the fees related thereto, provided by the Company's external auditor.
- (f) Review and pre-approve all non-audit services to be performed by the Company's external auditor in accordance with any applicable regulatory requirements, including but not limited to NI 52-110, the Exchange Act and the requirements of any stock exchange upon which the Company's shares are listed. The Audit Committee may delegate pre-approval authority for non-audit services to one or more independent members of the Audit Committee provided that any such pre-approval decisions must be presented to the full Audit Committee at its next meeting thereafter. The Audit Committee may also satisfy this pre-approval requirement if it first adopts specific policies and procedures respecting same in accordance with NI 52-110 such that the pre-approval policies and procedures are detailed as to the particular service, the Audit Committee is informed of each such non-audit service, and the procedures do not include delegation of the Audit Committee's responsibilities to management.
- (g) Obtain from the external auditor confirmation that the external auditor is a 'participating audit' firm for the purpose of National Instrument 52-108 – *Auditor Oversight* and is registered with the Public Company Accounting Oversight Board in the United States, and is otherwise in compliance with all applicable governing regulations.
- (h) Review and evaluate the performance of the external auditor.
- (i) Review and approve the Company's hiring policies regarding partners, employees and former partners and employees of the Company's present and former external auditors.

Audit and Financial Reporting Process

The Audit Committee has a duty to receive, review and make any inquiry regarding the completeness, accuracy and presentation of the Company's financial statements to ensure that the financial statements fairly present the financial position and risks of the organization and are prepared in accordance with the applicable generally accepted accounting principles. To accomplish this, the Audit Committee shall:

- (a) Review at least annually the Company's internal system of audit and financial controls, internal audit procedures and results of such audits, and receive regular, generally quarterly, updates from management on such controls, procedures and audit activities.
- (b) Prior to the annual audit by the external auditor, consider the scope and general extent of the external auditor's review, including its engagement letter. Review with management the external auditor's audit plan and intended template for financial statements.
- (c) Ensure the external auditor has full, unrestricted access to required information and has the cooperation of management.
- (d) Review with the external auditor, in advance of the audit, the audit process and standards, as well as regulatory or Company-initiated changes in accounting practices and policies and the financial impact thereof, and selection or application of appropriate accounting principles.

- (e) Review with the external auditor and, if necessary, legal counsel, any litigation, claim or contingency, including tax assessments, or significant judgments made by management that could have a material effect upon the financial position of the Company and the manner in which these matters are being disclosed in the financial statements. Review the appropriateness and disclosure of any off-balance sheet matters. Review disclosure of any related-party transactions.
- (f) Receive and review with the external auditor the external auditor's audit report and the audited financial statements. Make recommendations to the Board respecting approval of the audited financial statements.
- (g) Review annually the integrity of the Company's internal and external financial reporting and accounting principles, including the clarity, completeness and accuracy of financial disclosure and the degree of conservatism or aggressiveness of the accounting policies and estimates, performance of Internal Audit Management, any significant disagreements or difficulties in obtaining information, adequacy of internal controls over financial reporting and the degree of compliance of the Company with prior recommendations of the external auditor. The Audit Committee shall direct management to implement such changes as the Audit Committee considers appropriate, subject to any required approvals of the Board arising out of the review.
- (h) Meet at least annually with the external auditor, independent of management, consider external auditor's judgments about the quality and appropriateness of the Company's accounting principles and practices, and report to the Board on such meetings.

Interim Financial Statements

Pursuant to its mandate, the Board shall generally approve the Company's annual and interim financial statements. Notwithstanding the foregoing, on an exceptions basis the Board may from time to time delegate to the Audit Committee the power to approve the Company's interim financial statements.

The Audit Committee shall:

- (a) Review on an annual basis the Company's practice with respect to review of interim financial statements by the external auditor.
- (b) Review the interim financial statements with the external auditor if the external auditor conducts a review of the interim financial statements.
- (c) Conduct all such reviews and discussions with the external auditor and management as the Audit Committee deems appropriate.
- (d) Review and, if such authority has been delegated to the Audit Committee by the Board, approve the interim financial statements.
- (e) If authority to approve the interim financial statements has not been delegated to the Audit Committee, make appropriate recommendation to the Board respecting approval of the interim financial statements.

Code of Ethics

The Audit Committee has primary responsibility for overseeing the application of, and compliance with, the Company's Code of Business Conduct and Ethics (the "**Code**"). The Audit Committee shall review at least annually:

- (a) the Code,
- (b) management's approach to business ethics and corporate conduct; and

- (c) programs used by management to monitor compliance with the Code.

COMPLAINTS UNDER WHISTLEBLOWER POLICY

To ensure that the Company has adequate procedures in place for the confidential and anonymous (where permitted by law) receipt, retention, and treatment of complaints received by the Company regarding (a) accounting, internal accounting controls, or auditing matters, and (b) compliance with the Code and all applicable government laws, rules and regulations, the Audit Committee has recommended, established procedures for and the Board has adopted a Company Whistleblower Policy. All such complaints shall be dealt with under the terms of that Policy."

Composition of the Audit Committee

As at December 31, 2021 and the date of this AIF, the members of the Audit Committee are Terry Krepiakovich, Elaine Sanders and Richard Zimmer, with Mr. Krepiakovich serving as the Chair of the Audit Committee. All of these members are financially literate and independent for the purposes of National Instrument 52-110 ("**NI 52-110**").

Mr. Krepiakovich and Ms. Sanders qualify as financial experts and are financially sophisticated, in that they have an understanding of generally accepted accounting principles and financial statements; are able to assess the general application of accounting principles in connection with the accounting for estimates, accruals and reserves; have experience analyzing or evaluating financial statements that entail accounting issues of equal complexity to the Corporation's financial statements (or actively supervising another person who did so); and have a general understanding of internal controls and procedures for financial reporting and an understanding of audit committee functions.

Mr. Krepiakovich is a member of the board of directors of several publicly-listed and private companies since July 2011. From June 2006 to July 2011, Mr. Krepiakovich was the Chief Financial Officer of SouthGobi Resources Ltd., a publicly-listed mining company focused on exploring and developing coal deposits in Mongolia's South Gobi Region. Previously, Mr. Krepiakovich was Chief Financial Officer for Extreme CCTV Inc., a publicly traded company on the TSX involved in manufacturing high tech surveillance equipment, and Vice-President Finance and Chief Financial Officer of Maynards Industries Ltd., a private firm specializing in retailing, auctioneering, liquidating, and mergers and acquisition services. Prior to his position with Maynards, Mr. Krepiakovich was a senior officer in a number of private and public issuers. He is a Canadian qualified Chartered Professional Accountant and was employed with the international accounting firm Peat Marwick Thorne (KPMG), where he worked with a number of companies in mining and related industries.

Ms. Sanders is the Vice President, Chief Financial Officer and Corporate Secretary for Trilogy Metals Inc. Prior to Trilogy Metals Inc. Ms. Sanders served as Vice President, Chief Financial Officer and Corporate Secretary for NovaGold Resources Inc. Ms. Sanders has over 25 years of experience in audit, finance, and accounting with public and private companies and Bachelor of Commerce degree from the University of Alberta, is a Canadian qualified Chartered Professional Accountant and a Certified Public Accountant in the United States.

Mr. Zimmer is a corporate director and is the former President and Chief Executive Officer of Far West Mining Ltd., which was acquired by Capstone Mining Corp. in 2011. Prior to Far West, Mr. Zimmer worked for Teck Corporation, Teck-Cominco and Teck-Pogo Inc. From 1992 to 2007 he served in various engineering and operating roles and from 1998 to 2007, as Vice President and Project Manager for Teck-Pogo Inc. on the design and construction of the Pogo Mine near Fairbanks, Alaska. Before joining Teck, Mr. Zimmer was employed with Bow Valley Industries as a Senior Staff Engineer responsible for evaluation of new mining ventures. Mr. Zimmer has over 40 years of experience in the mining industry and has a B.Sc. degree, B. Eng., MBA and is a P.Eng. in the Province of British Columbia.

Reliance on Certain Exemptions

At no time since the commencement of the Corporation's most recently completed financial year has the Corporation relied on the exemption in Section 2.4 of NI 52-110 (De Minimis Non-audit Services), Section 3.2 of NI 52-110 (Initial Public Offerings), Section 3.3(2) of NI 52-110 (Controlled Companies), Section 3.4 of NI 52-110 (Events Outside Control of Member), Section 3.5 of NI 52-110 (Death, Disability or Resignation of Audit Committee Member), Section 3.6 of NI 52-110 (Temporary Exemption for Limited and Exceptional Circumstances) or Section 3.8 of NI 52-110 (Acquisition of Financial Literacy), or an exemption from NI 52-110, in whole or in part, granted under Part 8 of NI 52-110 (Exemptions).

Audit Committee Oversight

At no time since the commencement of the Corporation's most recently completed financial year was a recommendation of the Committee to nominate or compensate an external auditor not adopted by the board of directors.

Pre-Approval Policies and Procedures

The Audit Committee nominates and engages the independent auditors to audit the financial statements, and approves all audit, audit-related services, tax services and other services provided by the Corporation's independent registered public accounting firm, PricewaterhouseCoopers LLP, Chartered Professional Accountants ("**PwC**"). Any services provided by PwC that are not specifically included within the scope of the audit must be pre-approved by the audit committee prior to any engagement. The Audit Committee is permitted to approve certain fees for audit-related services, tax services and other services pursuant to a de minimus exception before the completion of the engagement. No fees paid to PwC in either of the fiscal years ended December 31, 2021 or 2020 were approved pursuant to the de minimus exception.

External Auditor Service Fees (By Category)

PwC, is the independent registered public accounting firm for the Corporation and have acted as the Corporation's independent auditor for the years ended December 31, 2021 and 2020. The chart below sets forth the total amount billed the Corporation by PwC for services performed in these periods and breaks down these amounts by category of service (for audit fees, audit-related fees, tax fees and all other fees):

External Auditor Service Fees (By Category)

Financial Period	Audit Fees⁽¹⁾	Audit Related Fees⁽²⁾	Tax Fees⁽³⁾	All Other Fees⁽⁴⁾
Year ended December 31, 2021	\$451,244	\$Nil	\$Nil	\$Nil
Year ended December 31, 2020	\$409,283	\$Nil	\$Nil	\$Nil

- (1) "Audit Fees" are the aggregate fees billed by PwC for the following: (a) audits of the Corporation's consolidated annual financial statements; (b) audits of internal control over financial reporting that are provided in connection with statutory and regulatory filings or engagements; (c) reviews of the Corporation's quarterly financial statements; and (d) comfort letter, consents, and other services related to the SEC.
- (2) "Audit-Related Fees" are fees charged by the PwC for assurance and related services that are reasonably related to the performance of the audit or review of the Company's financial statements and are not reported under "Audit Fees".
- (3) "Tax Fees" are fees charged by PwC for tax compliance, tax advice and tax planning.
- (4) "All Other Fees" are fees charged by PwC for products and services other than as set out under the heading "Audit Fees", "Audit-Related Fees" and "Tax Fees".

LEGAL PROCEEDINGS AND REGULATORY ACTIONS

The Corporation is not a party to any legal proceedings involving a claim for damages in excess of ten percent of the Corporation's current assets, nor is a party to any regulatory actions, and is not aware of any such proceedings or actions known to be contemplated.

INTEREST OF MANAGEMENT AND OTHERS IN MATERIAL TRANSACTIONS

The directors, executive officers and principal shareholders of the Corporation or any associate or affiliate of the foregoing have had no material interest, direct or indirect, in any transactions in which the Corporation has participated within the three most recently completed financial periods prior to the date of this AIF or in the current financial year, and do not have any material interest in any proposed transaction, which has materially affected or is reasonably expected to materially affect the Corporation, except as set out elsewhere in this AIF or as follows:

Certain directors and/or officers of the Corporation have subscribed for common shares of the Corporation pursuant to the public and private placement financings of the Corporation.

TRANSFER AGENTS AND REGISTRARS

The registrar and transfer agent for the common shares of the Corporation in British Columbia and Ontario is Computershare Investor Services Inc., at its offices in Vancouver, British Columbia.

MATERIAL CONTRACTS

The Wheaton SPA, as amended (as described under the heading "General Development of the Business – Three Year History and Significant Acquisitions"), is the only material contract entered into by the Corporation within the year ended December 31, 2018 or before such time that are still in effect, other than in the ordinary course of business. The Wheaton SPA and subsequent amendments are available on the SEDAR website at www.sedar.com under the Corporation's profile.

INTERESTS OF EXPERTS

Names of Experts

The following sets forth each person named as having prepared or certified a report, valuation, statement or opinion described or included in a filing (including this AIF), or referred to in a filing, made under National Instrument 51-102 by the Corporation during, or relating to, its most recently completed financial year and whose profession or business gives authority to the report, valuation, statement or opinion made by the person or company:

- Kourosh Tarighi P.Eng., Zach Allwright, P.Eng., and Paul Hughes, Ph.D., P.Eng., of Mining Plus, Gilles Arseneau, Ph.D., P.Geo. and Cliff Revering, P.Eng. of SRK Consulting (Canada) Inc., and Hassan Ghaffari, P.Eng. of Tetra Tech Canada Inc. prepared the PFS described under "*Description of the Business – KHSD Property*".
- Alan McOnie, FAusIMM, and Sebastien D. Tolgyesi, P.Eng., P.Geo., Keno Hill Operations Manager, an employee of the Corporation, are both responsible for certain information of a scientific or technical nature relating to the Corporation's properties in this AIF.

The Corporation's independent auditors are PwC, who have issued the Report of Independent Registered Public Accounting Firm dated March 21, 2022 in respect of the Corporation's annual financial statements as at December 31, 2021 and December 31, 2020 and for each of the years ended December 31, 2021 and December 31, 2020 and the Corporation's internal control over financial reporting as at December 31, 2021.

Interests of Experts

Alan McOnie is currently a consultant and Sebastien D. Tolgyesi is currently an employee of the Corporation, as described above. Both Alan McOnie and Sebastien D. Tolgyesi have been granted stock options of the Corporation through the course of their respective employments; however, the individual interests held by each of them throughout their respective employment terms at all times represented less than one percent of the issued and outstanding common shares of the Corporation.

The Corporation's independent auditors are PwC. PwC has advised the Corporation that they are independent with respect to the Corporation within the meaning of the Chartered Professional Accountants of British Columbia Code of Professional Conduct and within the meaning of the Public Company Accounting Oversight Board Rule 3520, Auditor Independence.

ADDITIONAL INFORMATION

Additional information relating to the Corporation may be found on SEDAR at www.sedar.com, as well as at the Corporation's web site at www.alexcoresource.com.

Additional information, including directors' and officers' remuneration and indebtedness, principal holders of the Corporation's securities, and securities authorized for issuance under equity compensation plans, where applicable, is contained in the Corporation's information circular for its most recent annual general meeting of securityholders that involved the election of directors.

Additional financial information is provided in the Corporation's consolidated financial statements and management's discussion and analysis for its most recently completed financial period, being the year ended December 31, 2021.

SCHEDULE "A"

Summary from PFS

SUMMARY

1.1 Executive Summary

Mining Plus Canada Consulting Ltd. (Mining Plus) was retained by Alexco Resource Corp. (Alexco) to update the Prefeasibility Study (PFS) and independent technical report on the Keno Hill Silver Project (the Project) that was published in February 2020 (Alexco, 2020). The purpose of this independent report, entitled "Technical Report on Updated Mineral Resource and Reserve Estimate of the Keno Hill Silver District", is to disclose the results of that work and replace the preceding Alexco, 2020 report. This Technical Report conforms to NI 43-101 Standards of Disclosure for Mineral Projects.

Alexco is a public company with its headquarters in Vancouver, B.C. Alexco, through wholly owned subsidiaries, owns the mineral rights for the Keno Hill Silver District (KHSD, Keno Hill or the District) following its successful bid for the assets of United Keno Hill Mines Ltd in 2006. Alexco acquired the properties with all pre-existing liabilities subject to indemnification from the federal Government of Canada (GoC).

The Project contemplates the conventional mining and milling of silver-lead-zinc ore from four deposits in the District. There is an existing conventional flotation mill which will process high grade silver-lead-zinc ore from four deposits across the District. Over the eight-year mine life contemplated in this report, the mines will produce 1.44 million (M) tonnes (t) of mill feed (the Probable Mineral Reserves) at an average 804 grams per tonne (g/t) silver (Ag), 2.64% lead (Pb), 3.84% zinc (Zn) and 0.31 g/t gold (Au). The mill will produce two concentrates: a high grade silver-lead concentrate averaging 18,186 g/t Ag, 54% Pb, and 3.9 g/t Au, and a zinc-silver concentrate averaging 750 g/t Ag and 52.8% Zn. The total Ag production is 35.5 M ounces (oz) over the mine life, corresponding to an annualized silver product in concentrate of 4.4 M oz.

The KHSD is a historic mining district, with the first production recorded in 1913. Since that time, an estimated 200 Moz of Ag has been produced from over 30 small mines across the District. Due to the high grade, steeply dipping veins which host the mineralization, the historic mines were typically small underground operations "chasing the vein", followed by open pit operations beginning in the 1970's to recover selected crown pillars.

In the late 1980's, the then-owner United Keno Hill Mines Limited (UKHM) declared bankruptcy and the site was eventually declared abandoned in 2001, reverting to the GoC. Alexco was the successful bidder in a commercial sale and purchase process and in 2006 became the 100% owner of the assets. Through this transaction, Alexco has the right to mine the deposits and the obligation to develop, permit and implement a reclamation and closure plan for the legacy liabilities across the District. Alexco is fully indemnified for the historic liabilities.

Alexco has been actively developing the District since 2006. Alexco built a new mill complex in 2010, which operated for three years, processing material from the Bellekeno Mine. Since suspending mining operations in 2013, Alexco has maintained the District on a care and maintenance status and focused on additional exploration which led to increases in the estimated Mineral Resources for the Bermingham and Flame & Moth deposits. Phased underground development of these deposits commenced in 2018 and, as of the date of this report, Alexco has completed over 1,000 meters (m) of underground development work including a new portal and decline at the Bermingham deposit and a new portal and ramp at the Flame & Moth deposit. In Q4 of 2020 the District mill returned to operation and Alexco began shipping concentrate in Q1 2021.

The estimated Mineral Resource for the KHSD includes the Bellekeno, Lucky Queen, Flame & Moth, Onek, and Bermingham deposits. The total estimated Mineral Resource inclusive of estimated Probable Mineral Reserves is shown in Table 1-1.

Table 1-1 Keno Hill Mineral Resources at January 01, 2021

Category	Tonnes (t)	Ag (g/t)	Au (g/t)	Pb (%)	Zn (%)	Contained Ag (oz)
Indicated	3,826,800	596	0.34	2.1	5.4	73,352,000
Inferred	1,719,600	442	0.2	1.4	3.9	24,413,000

Notes:

1. All Mineral Resources are classified following the CIM Definition Standards for Mineral Resources and Mineral Reserves (May 2014) of NI 43-101.
2. Indicated Mineral Resources are inclusive of Probable Mineral Reserves estimates.
3. Mineral Resources are not Mineral Reserves and do not have demonstrated economic viability. All numbers have been rounded to reflect the relative accuracy of the estimates.
4. The Mineral Resource estimates comprising Lucky Queen and Flame & Moth, Onek and Bermingham are supported by disclosure in the news release dated March 28, 2019 entitled "Alexco Announces Positive Pre-Feasibility Study for Expanded Silver Production at Keno Hill Silver District" and the Technical Report filed on SEDAR dated February 13, 2020 with an effective date of March 28, 2019.
5. The Mineral Resource estimate for the Bermingham deposit is based on Mineral Resource estimates having an effective date of March 28, 2019.
6. The Mineral Resource estimate for the Lucky Queen, Flame & Moth and Onek deposits have an effective date of January 3, 2017.
7. The Mineral Resource estimate for the Bellekeno deposit is based on an internal Mineral Resource estimate completed by Alexco Resource Corp. and externally audited by SRK Consulting Inc., having an effective date of January 01, 2021. This Mineral Resource estimate has been depleted to reflect all mine production from Bellekeno to the end of December 2020.

The estimated Probable Mineral Reserves calculated by the Qualified Person (from Mining Plus) for this Project are 1.44 Mt grading 804 g/t Ag, 2.64% Pb, 3.84% Zn and 0.31 g/t Au for an overall Ag equivalent (AgEq) grade of 1,035 g/t as of April 1, 2021.

The mine plan for this Project comprises mining from four deposits (also referred to as "mines"); Bermingham, Flame & Moth, Bellekeno, and Lucky Queen. The majority of the mill feed (over 94%) will come from Bermingham and Flame & Moth deposits. Two mines will be operating at any given time, with the exception of the initial ramp up period of ore from Bellekeno only.

The mine plan is based on conventional mechanized mining methods. Based on the orientation, width of the veins, review of historic mining in the District, and geotechnical information, a combination of mechanized overhand cut and fill, and longhole stoping with cemented rock fill have been selected as the appropriate mining methods for all four deposits. The deposits require the use of mining methods that can adequately support the vein and that are flexible and selective while minimizing the direct mining costs. The backfill is planned to be a mixture of waste rock fill and tailings from the dry stack tailings facility (DSTF) with cement added as required.

The District mill has been recommissioned at the currently permitted average throughput of 400 tonnes per day (tpd) or 157,000 tonne per year (tpy) with a planned increase in throughput in Year 3, for an overall life-of-mine (LOM) average throughput of 483 tpd. Tailings are thickened, filtered, and placed in a conventional DSTF, which will be progressively reclaimed.

The Bellekeno, Bermingham, and Flame & Moth mines have all permits and authorizations in place to commence full scale mine production. An amendment to the Water Licence will be required to bring Lucky Queen into production.

The Project risks are substantially minimized compared to a greenfields project by a combination of Alexco's previous operations at Keno Hill, the recently completed underground development and drilling, the existing and well-maintained infrastructure both onsite and offsite (including grid power) and the safe jurisdiction of the Yukon.

The working (pre-positive monthly cash flow) capital cost of \$10.0 M comprises the following cost components: \$13.0 M of mine development, PP&E (property, plant and equipment), mill upgrades, site-wide infrastructure modifications and contingency costs, plus an additional \$19.3 M of capitalized operating costs. The costs incurred during the working capital period are offset by the \$22.3 M in revenue generated to produce a net working capital of \$10.0 M prior to reaching positive cash flow. This net working capital covers the first five month period of mine development and mill ramp up. The LOM sustaining capital cost, following the working capital expenditure period, is \$95.6 M comprising primarily underground development costs.

The direct operating costs for the Project are estimated at a total of \$436 M or \$310 per milled tonne of ore. This comprises \$277 M direct mine costs, \$80 M of direct mill costs, and \$79 M for site general and administrative (G&A) costs (excluding working capital period operating costs and corporate costs). AISC life-of-mine average \$11.59 per ounce of silver, including corporate costs and working capital. The AISC is a non-GAAP (generally accepted accounting principles) financial measure that does not have any standardized meaning. Alexco has adopted the practice of calculating this performance measure as the net cost of producing an ounce of Ag (our primary payable metal) after deducting revenues gained from incidental by-product production.

Revenue derives from selling four metals (Ag as main product and Pb, Zn, and Au as by-products), reporting to two concentrates; a Ag-Pb concentrate and a Zn-Ag concentrate. The Project will produce a total of 62,053 t of Ag-Pb concentrate and 76,398 t of Zn-Ag concentrate over the eight year mine life. Over the LOM, the total payable of these metals in these concentrates totals 33.5 M oz Ag, 69.8 M pounds ("lbs") Pb, 75.8 M lbs Zn and 5,082 oz Au.

Metal pricing was based on information from external sources. The LOM net revenue (Net Smelter Return) is \$831 M and the total pre-tax cash flow is at \$263 M. These are based on metal pricing assumptions as follows:

- Ag ranging from US\$25.50/oz in 2021, US\$24.10/oz in 2022, US\$22.60/oz in 2023, US\$21.80/oz in 2024 to the long-term price of US\$21.00/oz;
- Zn: US\$1.17/lb in 2021, US\$1.10/lb in 2022 and 2023, US\$1.12/lb in 2024 and US\$1.09/lb thereafter;
- Pb: US\$0.91/lb in 2021, US\$0.92/lb in 2022, US\$0.93/lb in 2023, US\$0.92/lb in 2024 and US\$0.93/lb thereafter; and
- Au: US\$1,910/oz in 2021, US\$1,870/oz in 2022, US\$1,760/oz in 2023, US\$1,710/oz in 2024 and US\$1,600/oz thereafter.

The Project economics show this to be a robust project with low capital and high returns with a pre-tax net present value at a 5% discount rate (NPV5) of \$210.4 M and after-tax NPV5 of \$154.3 M. The pre-tax internal rate of return (IRR) is 326% and after-tax IRR is 295%. Considering the Project on a stand-alone basis, the undiscounted after-tax cash flow totals \$189.7 M over the mine life, simple payback occurs approximately 15 months from start of production.

Exploration will continue at Keno Hill, with the objective to expand current resources and in the short term is particularly focused on the Bermingham deposit. Alexco plans approximately 25,000 m of surface diamond drilling at Bermingham and other areas in Galena Hill; this exploration drilling is not included in the Project costs summarized in this Technical Report. It is recognized that there remains estimated Mineral Resources in the Indicated category after extraction of the Probable Mineral Reserves considered herein.

1.2 TECHNICAL SUMMARY

1.2.1 PROPERTY DESCRIPTION AND OWNERSHIP

The Keno Hill Silver District is located in the central Yukon. The site is located approximately 350 km north of Whitehorse, Yukon, Canada in central Yukon and is in the traditional territory of First Nation of Na-Cho Nyäk Dun (FNNND). Access to the property is via the Alaska, Klondike and Silver Trail highways from Whitehorse to Mayo (407 km) and an all-weather gravel road northeast from Mayo to Elsa (45 km); a total distance of 452 km.

Alexco Keno Hill Mining Corp. (AKHM) is a wholly-owned subsidiary of Alexco and has been incorporated for operation of mineral extraction and development in the KHSD. Elsa Reclamation and Development Company Ltd. (ERDC), a wholly owned subsidiary of Alexco, continues to advance the development and eventual implementation of the District wide closure plan (the Reclamation Plan), which addresses the historic environmental liabilities of the District from past mining activities. The potential liabilities associated with the historic operations in the KHSD are indemnified by the GoC under the terms and conditions of the commercial agreement subject to the requirement for ERDC to develop, permit and implement the site Reclamation Plan. The Reclamation Plan for the historic liabilities is currently being reviewed by the Yukon Environmental and Socio-economic Assessment Board (YESAB).

Alexco has been actively developing the KHSD since 2006 under this unique contractual arrangement with the GoC whereby it can enter into production at historic and newly discovered deposits within the District while it undertakes reclamation activities to remediate historic environmental impacts.

The KHSD quartz mining claims and quartz mining leases are held by one of two wholly-owned subsidiaries of Alexco: ERDC or AKHM. The current property ownership, access and licences cover the areas included in the geological model, Mineral Resources and Mineral Reserves in this study.

Alexco has exploration, maintenance, and camp facilities near the location of the historic mining town of Elsa, which is located just off the Silver Trail Highway, and administration, mill and mine facilities at the mill complex located near Keno City, as shown in Figure 1-1. The KHSD is well connected by a network of public and private gravel roads. A large number of roads constructed for past mining operations are still serviceable. The KHSD is supplied with electrical power by Yukon Energy Corporation from two hydroelectric plants near Mayo as well as an interconnection to the larger Whitehorse hydropower generating facility. The area is covered by NTS map sheets 105M/13 and 105M/14.

The central Yukon is characterized by a subarctic continental climate with cold winters and warm summers. Exploration and mining work can be carried out year-round. Annual precipitation averages 28 centimeters (cm). Half of this amount falls as snow, which starts to accumulate in October and remains into May or June. The landscape surrounding the KHSD is characterized by rolling hills and mountains with a relief of up to 1,600 m. The highest elevation is Keno Hill at 1,975 m. Slopes are gentle except the north slopes of Keno Hill and Sourdough Hill.



Figure 1-1 View of the Existing District Mill Showing the Dry Stack Tailings Facility and Christal Lake

1.2.2 HISTORY

The Keno Hill mining camp area has a rich history of exploration and mining dating back to the beginning of the 1900s. Notable periods of interest in the historic evolution of the Keno Hill mining camp included:

- Early gold prospecting near Mayo, particularly after the Klondike gold rush of 1898;
- The first silver was found in 1903 and small-scale mining commenced in 1913 at the Silver King mine;
- The end of the First World War and high silver prices led to renewed exploration and production activity by the Yukon Gold Company and later Keno Hill Limited;
- In the early 1920s, the Treadwell Yukon Company Limited (TYC) started mining.
- After the Second World War there was a sharp decline in activity in the Keno Hill camp until a new company, Keno Hill Mining Company Ltd., later United Keno Hill Mines Ltd. (UKHM, purchased all TYC properties, started production and sparked increased exploration activity. Production was primarily from underground mining, following the silver veins;
- The peak activity occurred in the 1950s and early 1960s, with new discoveries across the district adding to mineral inventory and production from the larger underground complexes such as the Hector Calumet camp;
- Open pit mining began in the late 1970's, mainly to recover crown pillars; from 1982 to 1985 Sadie-Ladue and Shamrock were mined on a small scale basis, and from 1989 to 1990 Shamrock, Silver King, Hector-Calumet, Lucky Queen, and Keno were mined;
- UKHM stopped production from the KHSD permanently in early 1989; and
- The mine was declared abandoned in 2001 by the GoC and the assets reverted to the Crown.

Alexco acquired the KHSD in 2006 and produced from Bellekeno mine from 2011 to 2013. Exploration has resulted in development and identification of the Lucky Queen, Flame & Moth, Onek, and Birmingham deposits.

1.2.3 GEOLOGY

The Keno Hill mining camp is located in the northwestern part of the Selwyn Basin in an area characterized by the Robert Service and Tombstone Thrust Sheets that are overlapping and trend northwest. The area is underlain by Upper Proterozoic to Mississippian rocks that were deposited in a shelf environment during the formation of the northern Cordilleran continental margin. The KHSD geology is dominated by the Mississippian Keno Hill Quartzite comprising the Basal Quartzite Member and conformably overlying Sourdough Hill Member. The unit is overthrust in the south by the Upper Proterozoic Hyland Group Yusezyu Formation and is conformably underlain in the north by the Devonian Earn Group (McOnie and Read, 2009).

Mineralization is of the polymetallic silver-lead-zinc vein type that typically exhibits a succession of hydrothermally precipitated minerals from the vein wall towards the vein centre. However, in the KHSD, multiple pulses of hydrothermal fluids or fluid boiling, probably related to repeated reactivation and breccia formation along the host fault structures, have formed a series of vein stages with differing mineral assemblages and textures. Supergene alteration may have further changed the nature of the mineralogy in the veins. Much of the supergene zone may have been removed due to glacial erosion.

In general, common gangue minerals include (manganiferous) siderite and, to a lesser extent, quartz and calcite. Silver predominantly occurs in argentiferous galena and argentiferous tetrahedrite (freibergite). In some assemblages, silver is also found as native silver, in polybasite, stephanite, and pyrargyrite. Lead occurs in galena and zinc in sphalerite, which at the KHSD can be either an iron-rich or iron-poor variety. Other sulphides include pyrite, pyrrhotite, arsenopyrite, and chalcopyrite.

The Keno Hill mining camp has long been recognized as a polymetallic silver-lead-zinc vein district with characteristics possibly similar to other well-known mining districts in the world. Examples of this type of mineralization include the Kokanee Range (Slocan), British Columbia; Coeur d'Alene, Idaho; Freiberg and the Harz Mountains, Germany; and Příbram, Czech Republic.

In the KHSD, the largest accumulation of minerals of economic interest occur in areas of increased hydrothermal fluid flow in structurally prepared competent rocks such as the Basal Quartzite Member and Triassic Greenstone. Incompetent rocks like phyllites tend to produce fewer and smaller (if any) open spaces, limiting fluid flow and resulting mineral precipitation.

1.2.4 EXPLORATION AND DRILLING

The exploration conducted by Alexco since 2005 is the first comprehensive exploration effort in the KHSD since 1997. The work has included a program of geologic data compilation, aerial geophysical surveying, and surface core drilling. Alexco converted the historic maps and documents from nearly 70 years of mining in the District to digital form. The digital data has been used to construct district scale maps and three-dimensional (3D) mine models.

Since acquiring the Keno Hill property, Alexco has completed a total of 782 surface diamond drill holes for a total of 205,503 m. In addition, a total of 431 underground holes for 29,673 m has also been completed, mainly at Bellekeno, but also includes 24 holes for 4,213 m drilled in 2018 from the Birmingham exploration decline.

Exploration drilling by Alexco has primarily been conducted to test targets immediately adjacent to historic resource areas and, to a lesser extent, to evaluate targets based on interpretation of exploration data. The objective has been to locate structurally controlled vein mineralization.

Standard logging and sampling conventions are used to capture information from the drill core. Since 2010 all core logging data has been directly digitally entered to the geology database with data including comments captured in separate tables including lithology, structure, mineralization type, intensity of oxidation, phases and abundance of veining, alteration, stratigraphy, and geotechnical.

1.2.5 MINERAL RESOURCE ESTIMATE

Definitions for resource categories used in this report are consistent with the Canadian Institute of Mining, Metallurgy and Petroleum (CIM) definitions incorporated by reference into NI 43-101. The Mineral Resources have been estimated in conformity with the generally accepted CIM *Estimation of Mineral Resources and Mineral Reserves Best Practices Guidelines* (CIM, 2014) and are reported in accordance with NI 43-101. Mineral Resources are not Mineral Reserves and have not demonstrated economic viability.

In the opinion of the Qualified Persons (QPs) from SRK Consulting (Canada) Inc. (SRK), the resource evaluations reported herein are a reasonable representation of the global polymetallic Mineral Resources in the Bellekeno, Lucky Queen, Flame & Moth, Onek, and Bermingham deposits given the current level of sampling. The databases used to update the Bellekeno mine and Flame & Moth Mineral Resource estimates were audited by the QPs. The QPs are of the opinion that the current drilling information is sufficiently reliable to interpret with confidence the boundaries for the polymetallic mineralization and that the assay data are sufficiently reliable to support Mineral Resource estimation.

Mintec's MineSight software was used to construct the geological shapes model for all five deposits. The Lucky Queen and Onek, geological models and database were imported into GEMS format Access databases for geostatistical analysis, block model construction, metal grades estimates, and the tabulation of the Mineral Resources. Maptek's Vulcan software was used for geostatistical analysis and block model estimation for the Bermingham Mineral Resource estimate. Isatis was used for geostatistical analysis and variography, block model construction, estimating metal grades, and Mineral Resource tabulation for Bellekeno. The Lucky Queen, Flame & Moth, and Onek block models were estimated using GEMS.

Methodology for the five deposits employed the following procedures:

- Database compilation and verification;
- Construction of wireframe models for the boundaries of the polymetallic mineralization;
- Definition of resource domains;
- Estimation of bulk density;
- Data conditioning (compositing and capping) for geostatistical analysis and variography;
- Block modelling and grade interpolation;
- Resource classification and validation;
- Assessment of "reasonable prospects for economic extraction" and selection of appropriate cutoff grades; and
- Preparation of the Mineral Resource Statement.

A summary of the Mineral Resource estimate for the Project is shown in Table 1-2.

Table 1-2 Summary of Mineral Resource Estimates at January 01, 2021

Category	Deposit	Tonnes	Ag (g/t)	Au (g/t)	Pb (%)	Zn (%)	Contained Ag (oz)
<i>Indicated</i>	Bellekeno	213,000	620	<i>n/a</i>	5.5%	5.5%	4,246,000
	Lucky Queen	132,300	1,167	0.2	2.4%	1.6%	4,964,000
	Flame & Moth	1,679,000	498	0.4	1.9%	5.3%	26,883,000
	Onek	700,200	191	0.6	1.2%	11.9%	4,300,000
	Birmingham	1,102,300	930	0.1	2.4%	1.7%	32,959,000
Total Indicated		3,826,800	596	0.34	2.1%	5.4%	73,352,000
<i>Inferred</i>	Bellekeno	302,000	359	<i>n/a</i>	2.5%	5.4%	3,486,000
	Lucky Queen	257,900	473	0.1	1.0%	0.8%	3,922,000
	Flame & Moth	365,200	356	0.3	0.5%	4.3%	4,180,000
	Onek	285,100	118	0.4	1.2%	8.3%	1,082,000
	Birmingham	509,400	717	0.2	1.7%	1.5%	11,743,000
Total Inferred		1,719,600	442	0.2	1.4%	3.9%	24,413,000
Notes: <ol style="list-style-type: none"> 1. All Mineral Resources are classified following the CIM Definition Standards for Mineral Resources and Mineral Reserves (May 2014) of NI 43-101. 2. Indicated Mineral Resources are inclusive of Probable Mineral Reserves estimates. 3. Mineral Resources are not Mineral Reserves and do not have demonstrated economic viability. All numbers have been rounded to reflect the relative accuracy of the estimates. 4. The Mineral Resource estimates comprising Lucky Queen and Flame & Moth, Onek and Birmingham are supported by disclosure in the news release dated March 28, 2019 entitled "Alexco Announces Positive Pre-Feasibility Study for Expanded Silver Production at Keno Hill Silver District" and the Technical Report filed on SEDAR dated February 13, 2020 with an effective date of March 28, 2019. 5. The Mineral Resource estimate for the Birmingham deposit is based on Mineral Resource estimates having an effective date of March 28, 2019. 6. The Mineral Resource estimate for the Lucky Queen, Flame & Moth and Onek deposits have an effective date of January 3, 2017. 7. The Mineral Resource estimate for the Bellekeno deposit is based on an internal Mineral Resource estimate completed by Alexco Resource Corp. and externally audited by SRK Consulting Inc., having an effective date of January 01, 2021. This Mineral Resource estimate has been depleted to reflect all mine production from Bellekeno to the end of December 2020. 							

1.2.6 MINERAL RESERVE ESTIMATE

The Mineable Shape Optimizer (MSO) tool was used to create mineable shapes using the NSR values coded into the block models. The results generated from the MSO process were used as guidance to generate detailed development layouts and crosscut designs. The economic viability of all stope blocks and levels were tested to ensure that all the Probable Mineral Reserves are economically viable.

The Mineral Reserves (Table 1-3) show the total Mineral Reserves for the KHSD; all Mineral Reserves are Probable Mineral Reserves. External dilution and mineable recovery has been applied to the Mineral Reserves. Please note that rounding of tonnes, average grades, and contained metal may result in apparent discrepancies with totals rounded.

Table 1-3 Mineral Reserves, Alexco Resource Corp. – Keno Hill Silver District Project

Deposit ³	Category	Tonnes	Ag (g/t)	Pb (%)	Zn (%)	Au (g/t)	Contained Metal			
							Ag (000 oz)	Au (000 oz)	Pb (M lbs)	Zn (M lbs)
Bellekeno	Proven	-	-	-	-	-				
	Probable	12,809	936	13.00	7.30	0	385	0	4	2
Bellekeno Surface Stockpile	Proven									
	Probable	3,397	1150	21.70	4.50	0	126	0	2	0
Lucky Queen	Proven	-	-	-	-	-	-		-	-
	Probable	70,648	1,269	2.71	1.56	0.13	2,883	0	4	2
Flame and Moth	Proven	-	-	-	-	-	-		-	-
	Probable	721,322	672	2.69	6.21	0.49	15,590	11	43	99
Birmingham	Proven	-	-	-	-	-	-		-	-
	Probable	630,173	899	2.26	1.30	0.13	18,209	3	31	18
Total	Proven	-	-	-	-	-	-		-	-
	Probable	1,438,349	804	2.64	3.84	0.31	37,193	14	84	122

Notes:

1. Mineral Reserves are reported herein based on an NSR cutoff value using estimated metallurgical recoveries, assumed metal prices and smelter terms, which include payable factors, treatment charges, penalties, and refining charges
2. Tonnage and grade measurements are in metric units. Contained gold and silver ounces are reported as troy ounces
3. The Bellekeno, Lucky Queen, Flame & Moth and Birmingham deposits are incorporated into the current mine plan supported by disclosure in the news release dated May 26, 2021 entitled "Alexco Announces 22% Increase to Silver Reserves; Updated Technical Report Demonstrates Robust Economics at Keno Hill".
4. Rounding as required by reporting guidelines may result in apparent summation differences between tonnes, grade and contained metal content.

The Mineral Reserves identified comply with CIM definitions and standards for a NI 43-101 technical report. Detailed information on mining, processing and other relevant factors are contained in the following sections and combined demonstrate that the KHSD Project is an economically viable project.

1.2.7 MINING METHODS

The Project contains four separate deposits: Bellekeno, Bermingham, Flame & Moth, and Lucky Queen. All are characterized by high-grades and narrow vein widths. A photo of the existing Bellekeno portal is shown in Figure 1-2, and similarly of the current Bermingham portal in Figure 1-3.



Figure 1-2 View of the Bellekeno Portal (2018)



Figure 1-3 View of the Current Bermingham Portal

The KHSD is historically known for locally challenging ground conditions encountered that limit the applicable mining methods to fully supported methods with limited spans, such as cut and fill or small scale longhole. For most of its historic mining life, the most successful method was square set stoping with timber.

Historical mining methods used in the KHSD have included cut and fill, small scale longhole stoping, shrinkage stoping, and square set stoping. The veins typically have dips around 70 to 80 degrees but vary between deposits from approximately 50 degrees at Lucky Queen to 80 degrees at Flame & Moth.

Numerous geotechnical studies have been carried out on the KHSD most recently by Jacobs Engineering (Jacobs, 2019). Geotechnical data for this study was only available for the Flame & Moth and Birmingham deposits which comprise approximately 94% of the Project mill feed. Operational experience gained during previous production mining at the Lucky Queen and Bellekeno deposits has been used to guide (but not directly influence) the development of geotechnical mine design parameters for the report. At a feasibility level the geotechnical conditions of the Lucky Queen and Bellekeno would need to be verified.

To understand the ground conditions at the KHSD Project, geotechnical domains were created for the Birmingham and Flame & Moth deposits. Preliminary geotechnical parameters were assessed using major lithology types as identified by Alexco geology personnel. The geotechnical domains are outlined below on which ground support designs have been based:

- Domain 1: Quartzite (waste development);
- Domain 2 Schist (waste development);
- Domain 3: Faults (waste and production development); and
- Domain 4: Mineralization (production development).

Based on the estimated rock mass classification Q values, ground support classes were developed for standard lateral development and production drifts for the Flame & Moth and Birmingham deposits. Mining of the Lucky Queen and Bellekeno deposits will exploit existing underground development. For this study, previously used ground support standards or the standards outlined for the Flame & Moth and Birmingham deposits (whichever provides greater capacity) will be used in the limited additional development that is planned. The ground support uses conventional technology; a combination of shotcrete, rock bolts and mesh.

In general, the infrastructure and development excavations are open for the long-term, and support has been designed accordingly. The infrastructure has been designed to avoid areas with potential poor ground conditions; in some situations, this is unavoidable, and support will be increased to provide long term stability.

The mine design strategy for the Project was to design as many areas as practical using small scale longhole mining methods while planning mechanized overhand cut and fill for areas where ground conditions were poor, or where the combination of vein dip and true width was not compatible with longhole stoping methods. A 3D design of the development and stope shapes was completed for all four deposits using Deswik Software.

Based on the orientation, width of the veins, review of historic mining in the District, and geotechnical information, a combination of mechanized overhand cut and fill, and longhole stoping with cemented rock fill has been selected as the appropriate mining methods for all four deposits. The deposits require the use of mining methods that can adequately support the vein and that are flexible and selective while minimizing the direct mining costs. The backfill is planned to be a mixture of waste rock fill and tailings from the DSTF with cement added as required.

For the majority of the mine life two deposits will be providing mill feed at all times. The only exceptions are early in the mine life when only the Bellekeno mine will be producing the mill feed and late in the mine life when the Lucky Queen deposit will be contributing ore feed to the mill. There will be a four month development period at Flame & Moth and a one month development period at Bermingham with steady state production being reached in Year 1 of the 8 year mine life. Steady state production over the 8-year mine life will average about 175,000 tpy.

Revenue comes from selling four metals (silver as main product and lead, zinc and gold as by-products), reporting to two concentrates; a silver lead concentrate and a zinc-silver concentrate. Stope shapes and mining areas were created and manually validated based upon an NSR value per tonne cut-off that was variable by mine and method as shown in Table 1-4. This NSR cut-off value was calculated by using the operating cost estimate. Mining recovery was applied at 95% for Bellekeno, Flame & Moth, Bermingham and Lucky Queen which is in line with Alexco's historic operational experience. All stope shapes and mining areas were reviewed to remove any unprofitable areas.

Table 1-4 Mine Design Criteria – NSR Cutoff Values

Mine	Cutoff Value -MCF (\$/t)	Cutoff Value -LHOS (\$/t)
Bellekeno	-	365
Lucky Queen	460	-
Bermingham	350	275
Flame & Moth	350	275
Notes; 1. The NSR cutoff value was based on estimated metallurgical recoveries, assumed metal prices and smelter terms, which include payable factors, treatment charges, penalties, and refining charges		

Stope dilution was determined based on available geotechnical data and the use of empirical methods to produce an estimate of the Equivalent Linear Overbreak Slough (ELOS) and contains both planned and unplanned dilution. To factor in unplanned dilution outside of the stope shape boundaries, a dilution skin of 0.5 m was applied to both the hanging wall (HW) and footwall (FW) during the stope optimizer process. This dilution was considered when evaluating whether or not shapes are economic to ensure only diluted economic stope shapes are included in the mine plan.

Internal dilution (Planned Dilution) is primarily a function of the width of the orebody and minimum mining width. Minimum mining width for cut and fill method in both Bermingham and Flame & Moth deposits is 3.5 m wide and for the Lucky Queen deposit is 2.5 m wide which is determined from the size of the equipment selected and consistent with the geotechnical design parameters. For longhole stoping, the minimum mining width is planned at 1.8m. Dilution for the three deposits is: Flame & Moth 11%, Bermingham 33%, Lucky Queen 33%. The underground mine design for all four deposits results in total Probable Mineral Reserves of 1,438,349 t (diluted and recovered) with an average grade of 804 g/t Ag, 2.64% Pb, 0.31 g/t Au, and 3.84% Zn. The overall NSR value for the reserve is \$578/t.

A monthly production schedule was generated for each task associated with mine development and production. This schedule was created using Deswik Scheduling software and targeted approximately 12,000 t ore per month coming from two deposits at any given time increasing to 16,000 t ore per month in Q3 2023 to LOM. The total annual mill feed and waste production from the four mines are summarized in Table 1-5 below.

Table 1-5 Mine Production Summary

[illegible]

Key equipment requirements during the development and production period will include jumbos, load-haul-dumps (LHDs), haulage trucks, bolters, shotcrete sprayers and longhole drills. Raise development will be carried out using alimaks. Alexco currently owns a large portion of the mining equipment required; the additional major equipment required is assumed to be leased for the Project.

Manpower will consist of technical staff, mining crews, mechanics, electricians, and other support staff. Manpower reaches 225 personnel at full production with up to 130 personnel on site at any given time.

The ventilation system for each deposit is designed to meet Yukon regulations. Permanent fans will be located on surface at the raise collars. All intake air entering the mine workings will be heated above freezing point during the winter months.

1.2.8 METALLURGY AND MINERAL PROCESSING

The KHSD property is of a polymetallic silver-lead-zinc vein type mineralization. There are four deposits included in the mine plan and mill feed. Production will commence with feed from the Bellekeno deposit during the ramp up, followed by ore from both the Flame & Moth and Bermingham deposits, and finally from Lucky Queen. The mill will ramp up to process ore at 400 tpd in the first two years before reaching the peak capacity 550 tpd at year three. Bellekeno material was processed in the District mill at 250 tpd from 2011 and 2013.

Metallurgical test work has been conducted independently on each of the four deposits included in the production plan. Testwork performed from 1996 through 2009 was the basis for the design and construction of the mill facility in 2010. The Bellekeno mine and mill complex achieved commercial production in January 2011, processing an average of 253 tpd in 2012. Since 2011, samples from Lucky Queen, Flame & Moth, and Bermingham deposits were tested to assess flotation performance and inform mill or process modifications.

Based on metallurgical test work described in Section 13.0 and previous operation experience, a conventional sequential flotation process with regrinding stages on both lead and zinc rougher concentrates has been selected for this Project to produce silver-lead concentrate and zinc concentrate. The target primary grind size P80 was designed to be 100 to 120 μm to recover liberated lead and zinc minerals in rougher flotation circuits. A regrind mill in each of the lead and zinc cleaner flotation circuits will be included for further liberation and upgrading.

Based on the mill capacity/modification reviews, modifications to the existing District mill were required in three areas including grinding circuit, flotation circuit, and tailings dewatering circuit. Since the PFS (Alexco, 2020), two regrind mills have been purchased and will be installed prior to processing Bermingham ore, and the new ball mill has been installed and is to be tied in with the new grinding circuit when the higher throughput is required. The larger tailings filter has also been installed and commissioned. To reach the higher rate 550 tpd, campaigns will be run to identify additional modifications in the initial operation. An allowance of \$1.1 M has been included in this Project for this purpose.

Ore will be crushed and then processed in a conventional flotation mill producing two concentrates. Concentrates will be thickened, filtered, and trucked off site for sale. Tailings will be also thickened, filtered, and stored in a dry stack tailing facility adjacent to the mill. Process water will be stored in the mill pond adjacent to the mill complex and recycled to the plant for varied applications. A simplified process flowsheet is included in Section 17.0 (Figure 17-2). The primary makeup water source is from the Flame & Moth underground mine which will be treated within the already constructed water treatment plant.

The total concentrate production and grades over the life of mine are shown in Table 1-6. The corresponding expected metallurgical recoveries and total recovered metal are shown in Table 1-7.

Table 1-6 LOM Expected Concentrate Production

	LOM
Ag-Pb Concentrate	
Dry tonnes	62,053
Ag g/t	18,186
Pb %	54.0
Au g/t	3.9
Zn Concentrate	
Dry tonnes	76,398
Ag g/t	750
Zn % ²	52.8
Notes:	
Notes:	
1. Based on the rs presented in Section 15 and mine plan(Section 16).	
2. Grades are calculated weighted averages	

Table 1-7 LOM Expected Metal Recovery to Concentrate

	Average Recovery (%)	Total Recovery
Into Ag-Pb Concentrate		
Ag	91.0	33.8 M oz
Pb	88.2	33,508 tonnes
Au	49.0	6,956 oz
Into Zn-Ag Concentrate		
Ag	4.6	1.70 M oz
Zn	73.4	40,491 tonnes
Notes:		
1. Based on the total Probable Mineral Reserves presented in Section 15 and mine plan presented in Section 16, metallurgical testing presented in Section 13.		

1.2.9 PROJECT INFRASTRUCTURE

There is considerable infrastructure on site from the previous Alexco mining operations, from 2011 to 2013. This infrastructure has remained either in use (by the site activities for Care and Maintenance) or has been regularly maintained. In Elsa, there are administrative, training and exploration offices.

The nearby Flat Creek camp facilities include bunkhouses, a kitchen facility, recreation facilities, two miners dry facilities, as well as houses at the old Flat Creek town site (part of Elsa).

At the District mill, to the east of Elsa and adjacent to the Flame & Moth portal, there are mine and mill offices and dry facilities, an assay lab, equipment maintenance facility, and the mill and DSTF complex as shown in Figure 1-1 above. A new warehouse will be constructed in Q2 2021.

Power, water, roads, and communications are in place and maintained throughout the site. There is a network of access roads and haul roads throughout the district. Haul roads have been upgraded between Bermingham and the mill, and a bypass constructed around Keno City to reduce traffic and noise for the residents.

There is minimal additional infrastructure required. The capital projects required for mine development, such as ventilation raises, are included in the mine planning and costing.

Offsite infrastructure includes highway access to between Whitehorse and the Keno Hill site as well as to Skagway (for concentrate shipping). Alexco has an administrative office in Whitehorse. No additional offsite infrastructure is required for this Project.

1.2.10 MARKET STUDIES AND CONTRACTS

The principal commodities at KHSD are freely traded at prices that are widely known, so that prospects for sale of any production are virtually assured. Future production will continue to be sold in concentrate form and revenue will be based on terms provided by traders or smelters to which the concentrate is sold. For the economic analysis herein, concentrate sales terms were developed from discussions with various traders or smelters, and compared with other current projects.

Alexco has entered into a number of contracts to support the operations of the Project including:

- Transportation of lead and zinc concentrates to a smelter in North America and to back haul supplies to the site;
- Yukon Energy Corp. provides power under contract to various substations located across Keno Hill;
- Consumables such as propane, fuel, and reagents; and
- Services including camp and catering services, drilling (exploration) and mine development.

1.2.11 ENVIRONMENTAL STUDIES, PERMITTING, AND SOCIAL OR COMMUNITY IMPACT

Alexco and its wholly-owned subsidiary, ERDC, have a unique commercial agreement with the GoC in which Alexco is responsible for the care, maintenance, and closure of the historical mines, with government and company funding provided to address the historical liabilities. Under the agreement, Alexco is indemnified from the historic environmental liabilities. Alexco, along with territorial, federal, and First Nation governments, is responsible for developing a District-wide closure plan that addresses these historic environmental liabilities arising from past mining activities. The Reclamation Plan completed the Yukon environmental assessment process under the Yukon Environment and Socio-economic Assessment Act (YESAA) in 2020 and is currently entering into water licencing. That work is not part of this Technical Report.

All permitting and licencing applications are complete for the activities contemplated in this report.

1.2.11.1 Environment and Water Quality

The KHSD has an extensive database of environmental monitoring and environmental impacts assessments, going back twenty years in some areas. This is in large part due to the historic operations and the reclamation planning requirements. The additional environmental requirements for both operations and closure have been clearly defined through the permitting processes.

Geochemical and water quality studies consistently show that the site is not a source of acid rock drainage. However, oxidation of sulphides and metal leaching under circumneutral conditions does occur, with local zones of acidity in areas of higher sulphide material, particularly proximal to the mineralized veins. The tailings are neither net acid generating nor a source of metal leaching. Tailings are deposited in a lined dry stack tailings facility which is progressively reclaimed during operations. There are comprehensive waste management, water management and monitoring programs defined by permits and in effect on site to ensure compliance with water licence requirements.

1.2.11.2 Environmental Assessment and Permitting

The Bellekeno, Bermingham, and Flame & Moth mines have all permits and authorizations in place for full scale mine production. The Quartz Mining Licence is in place for Lucky Queen, however a minor amendment will be required to the Water Licence to commence production from Lucky Queen. The Quartz Mining Licence is also in place for Onek, although there are currently no plans to bring this deposit into production. The existing approvals and amendments are for mill throughput of 400 tpd (based upon a 12-month average); an amendment to the QML would be required to increase mine throughput to 550 tpd.

1.2.11.3 Community and First Nations

The KHSD is situated in the traditional territory of the First Nation of Nacho Nyak Dun (FNNND). Alexco meets regularly with stakeholders and First Nations regarding their ongoing operations as well as the new plans, presenting detailed information about the site operations, and seeking expression of concerns and interests.

Alexco has signed a Comprehensive Cooperation and Benefits Agreement (CCBA) with the FNNND that recognizes the rights, obligations, and opportunities of the two parties. The Agreement includes detailed discussion about respecting and protecting the environment, including enhanced opportunities for FNNND to be involved in environmental management of all operations, from mining through to closure and reclamation. There are regular business meetings between Alexco and the FNNND to review matters under the Agreement.

1.2.11.4 Mine Reclamation and Closure

An updated AKHM Reclamation and Closure Plan was approved by the Government of Yukon (YG) in 2018 that encompasses all of the active mining and processing activities in the KHSD (Alexco, 2018). Alexco will have a site presence for many years while reclamation of the historical liabilities occurs. Therefore, monitoring of the Bellekeno, Lucky Queen, Flame & Moth, and Bermingham mine areas can be integrated with KHSD monitoring programs over the long term. This is expected to improve the efficiency of these ongoing water treatment and monitoring activities.

YG requires financial security in the form of a letter of credit to cover potential liabilities associated with the cost of reclamation and closure. Alexco has posted a total of \$10.2M of security for the Bellekeno, Bermingham, Lucky Queen, Flame & Moth, and Onek mine operations, the mill area, and the DSTF. This total follows a third-party review of Alexco's costs under the QML-0009 and all requirements under Water Licence QZ18-044.

1.2.12 CAPITAL AND OPERATING COSTS

Capital costs were developed by Alexco, and the QPs from Mining Plus and Tetra Tech (process plant only). The QPs from Mining Plus and Tetra Tech reviewed the costs in detail and modified as required to be consistent with a PFS level study and the Project. All costs are in Canadian (CA\$) dollars unless otherwise noted. Mining Plus considers the accuracy of capital cost estimate components to be at a prefeasibility level of +/- 25%. A 12.5% contingency has been included in the capital cost estimate based upon a review of the capital estimate details.

The capital cost estimates are based primarily on quotations by vendors on equipment, mill modifications, materials, and supplies. The remaining estimates were developed from first principles and previous site experience. Escalation has not been included in the estimate. The capital cost estimates were generated by Alexco and were reviewed and modified based upon detailed review by the QP.

The capital costs include the completion of development of the Flame & Moth deposit, completion of development of the Birmingham deposit and the reopening of the Lucky Queen plus the necessary modifications to process plant and infrastructure for ramping up operations. The working (pre-positive monthly cash flow) capital cost of \$10.0 M comprises the following cost components: \$13.0 M of mine development, PP&E (property, plant and equipment), mill upgrades, site wide infrastructure modifications and contingency costs, plus an additional \$19.3 M of capitalized operating costs. The costs incurred during the working capital period are offset by the \$22.3 M in revenue generated to produce a net working capital of \$10.0 M prior to reaching positive cash flow. This net working capital covers the first five month period of mine development and mill ramp up from April 2021 to Aug 2021.

Total sustaining capital including underground development and PP&E is estimated to be \$95.6 M which excludes the working capital of \$10.0 M. The sustaining capital is mainly the major mine development in the deposits to be mined.

The LOM direct operating costs total \$436 M comprising \$277 M of direct mine costs (primarily mine development), \$80.0 M of direct processing costs, and \$79 M for site G&A costs (excluding corporate) as shown in Table 1-8. This corresponds to a LOM unit cost of \$310 per tonne of ore. These costs were developed by Alexco and reviewed by the QPs from Mining Plus (model and all components except processing plant) and Tetra Tech (processing plant only). Operating costs do not include contingency and are in Canadian dollars. Operating costs are based on vendor quotations or build up from first principles estimates.

Table 1-8 Life of Mine Direct Operating Cost Summary

Area	LOM Site Opex (\$ M)	Unit Cost (\$/tonne milled)
Mine	\$277	\$196
Mill	\$80	\$57
G&A	\$79	\$56
LOM Total Site	\$436	\$310
Notes:		
1. Excludes working capital period from April 2021 to Aug 2021		

1.2.13 ECONOMIC ANALYSIS

The Project presented herein will process 1.44 M t of mill feed (the Probable Mineral Reserves) and produce two concentrates; 62,053 t of Ag-Pb concentrate and 76,398 t of Zn-Ag concentrate. The LOM total payable Ag in concentrate is 33.5 M oz. At the upgraded processing throughput averaging 483 tpd over the mine life, the current project life totals 8 years and 2 months. The Project economics are based on assumptions for marketing of concentrate directly to a smelter. This financial analysis does not include any sunk costs for exploration and project advancement prior to the effective date of this study.

The project value is determined on a pre-tax and after-tax basis at 5% discount rate with the following additional economic criteria:

- Metal prices as shown in Figure 1-4;
- 25% of silver is sold to Wheaton Precious Metals Corp. (Wheaton) under a streaming agreement at a priceranging from US\$2.41/oz to US\$5.46/oz silver;
- NSR includes shipping, treatment, and refining costs;
- There is a 1.5% NSR (to a maximum of \$4 M) to the GoC;
- Revenue is recognized at the time of production; and
- Revenue is generated in Month 1 and a further 5 month Working Capital period (Apr 2021 – Aug 2021) willbe required until the operation is cash-flow positive.

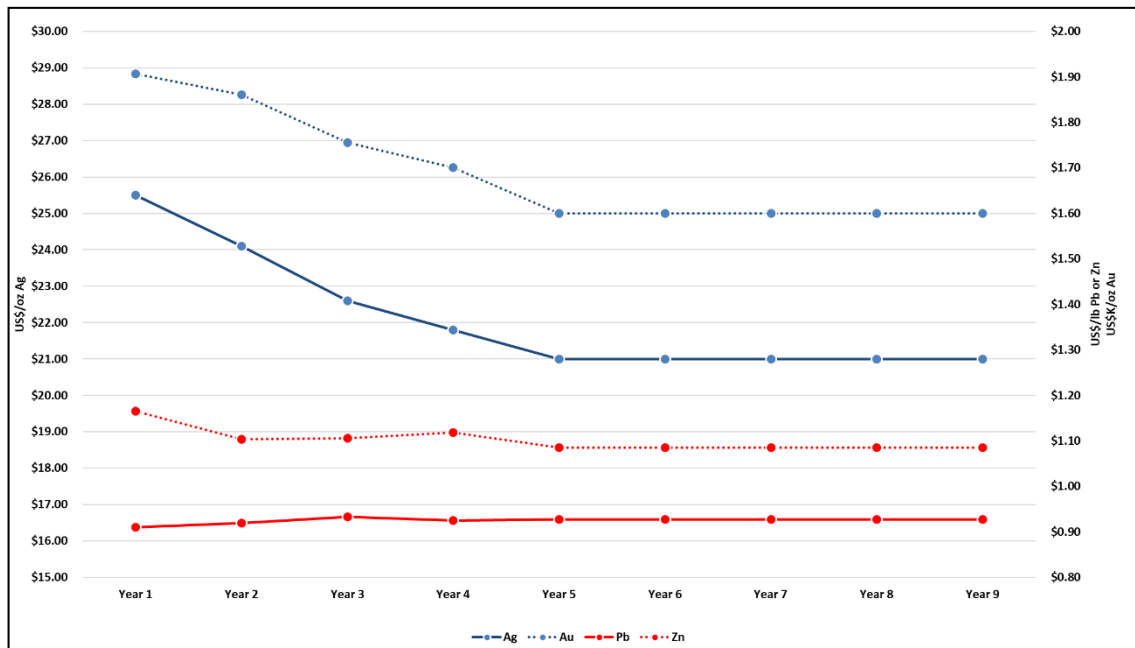


Figure 1-4 Metal Price Projection

An exchange rate of \$0.781 US\$/CA\$ in Year 1, increasing to \$0.787 US\$/CA\$ in Year 2, decreasing to \$0.781 US\$/CA\$ in Year 3 and then holding at \$0.775 US\$/CA\$ from Year 4 for long-term was assumed to convert US\$ market price projections and particular components of the initial capital cost estimates into CA\$. No provision was made for the effects of inflation. Current Canadian tax regulations were applied within the financial model by Alexco Management with support from Alexco's tax advisors.

1.2.14 CASH FLOW ANALYSIS

Considering the Project on a stand-alone basis, the undiscounted after-tax cash flow totals \$189.7 M over the mine life. Simple payback occurs approximately 15 months from start of production, approximately 10 months after the project start date of April 1, 2021.

An estimate of the LOM AISC per contained Ag oz on a by-product basis was calculated. Corporate G&A after mine closure is not considered in the project economic evaluation. All costs below are calculated in United States Dollars (US\$). Metal price and foreign exchange assumptions are presented in Section 22.1. The AISC is US\$11.59/contained oz Ag. Pricing and AISC assumptions are detailed in Section 21.3.

The after-tax NPV5 is \$154.3 M, and the after-tax IRR is 295%. The pre-tax NPV5 is \$210.4 M, and the pre-tax IRR is 326%.

1.2.15 SENSITIVITY ANALYSIS

Project risks can be identified in both economic and non-economic terms. Key economic risks were examined by running cash flow sensitivities:

- Silver price;
- Silver recovery;
- Exchange rate;
- Silver head grade;
- Operating costs; and
- Capital costs.

After-tax NPV and IRR sensitivity over the base case has been calculated for a range of variations. The after-tax sensitivities are shown in Table 1-9. The after-tax sensitivities are shown in Table 1-1, Figure 1-5, and Figure 1-6.

From both NPV and IRR analysis, project value is most sensitive to Ag head grade and Ag recovery. For $\pm 10\%$ variance in Ag head grade, project NPV can vary by $\pm 26\%$. For $\pm 10\%$ variance in Ag recovery, project NPV can vary by $\pm 25\%$. With the historical data from Alexco on mill performance, there is sufficient confidence in the recovery estimation. It is recognized that the various mill feed ore sources considered in this evaluation (from different properties) represent slight variances in mineral composition, however this does not constitute major risk in terms of silver recovery or project cashflows.

Project value is also sensitive to silver price, a $\pm 10\%$ variance in silver price resulted in a $\pm 24\%$ variance in NPV.

Table 1-9 After-Tax Results of Sensitivity Analysis

Project Variables	Factors (%)	5% NPV (\$M)	IRR (%)
Silver Price (US\$/oz)	-30%	\$27	29%
	-20%	\$77	83%
	-10%	\$117	164%
	0%	\$154	295%
	10%	\$191	509%
	20%	\$228	879%
	30%	\$265	1549%
Silver Recovery(%)	-30%	\$25	28%
	-20%	\$75	85%
	-10%	\$116	168%
	0%	\$154	295%
	10%	\$192	489%
	20%	\$230	792%
	30%	\$267	1281%
Silver Head Grade(g/t)	-30%	\$18	22%
	-20%	\$72	78%
	-10%	\$114	160%
	0%	\$154	295%
	10%	\$194	519%
	20%	\$234	912%
	30%	\$273	1646%
Operating Cost(\$'000)	-30%	\$225	720%
	-20%	\$202	525%
	-10%	\$178	391%
	0%	\$154	295%
	10%	\$131	221%
	20%	\$107	165%
	30%	\$83	122%
Capital Cost(\$'000)	-30%	\$182	661%
	-20%	\$173	488%
	-10%	\$164	374%
	0%	\$154	295%
	10%	\$145	237%
	20%	\$135	194%
	30%	\$126	160%

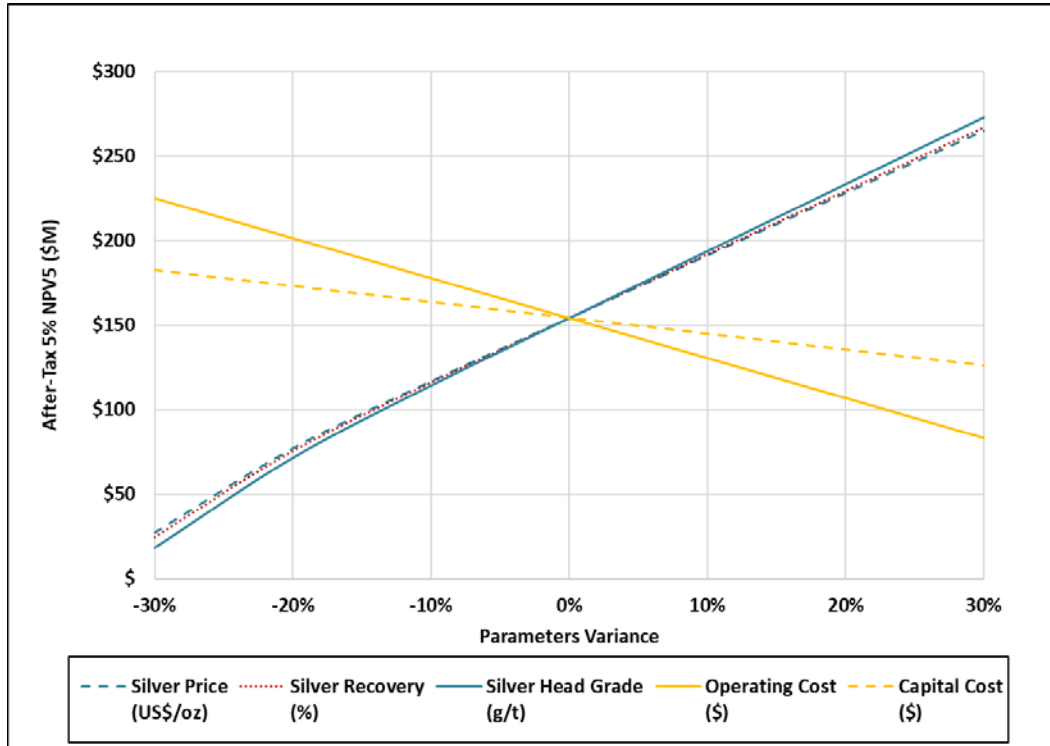


Figure 1-5 After-Tax 5% NPV Sensitivity

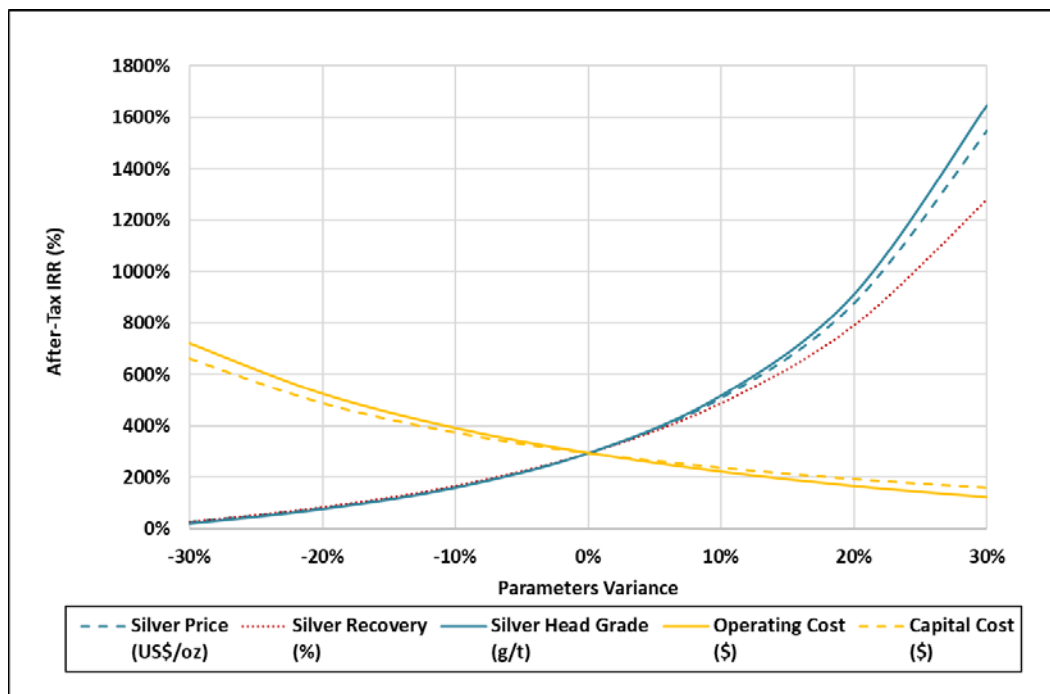


Figure 1-6 After-Tax IRR Sensitivity

Amongst the selected parameters, project value is least sensitive to capital cost. The result is reflective of the low project capital requirements, leveraging the existing development and infrastructure.

1.3 RECOMMENDATIONS

The authors provide the following recommendations, the majority of which are opportunities to improve the level of detail for the next stage of project study:

- The QP's from Mining Plus and SRK consider that there is an opportunity to extend the mine life via an update of the Mineral Resources. Additional drilling and sampling may enable the *in situ* remaining Resources (net of Reserves) to be converted to Reserves;
- The QPs from Tetra Tech consider that more detailed metallurgical predictions of production could be achieved with additional variability locked cycle testing of different blends (that is, of ore from different mines) according to the LOM production plan. There may be an opportunity to improve concentrate grades with further testing;
- During the first year of operation, it is recommended that the Company conduct campaigns of higher plant throughput above the 400 tpd to identify potential bottlenecks and requirements for mill modifications to achieve 550 tpd throughput;
- Additional work on the geomechanics is recommended at a feasibility level including verification of the geotechnical conditions of the LQ and BK, and 3D inelastic modeling to confirm stope geometry stability and extraction sequence. It is recommended that geotechnical mapping and estimation of Q values, along with collection of excavation performance should commence once development begins; and,
- The QP from Mining Plus recommends that due to the multiple orebodies to be mined, along with their varying grade, that a comprehensive global optimization process be done. This should consider timing of Lucky Queen orebody development as well as the timing of increasing the mill capacity.