



ANNUAL INFORMATION FORM

For the Year Ended December 31, 2024

Dated: March 18, 2025

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PRELIMINARY NOTES

This Annual Information Form (“AIF”) takes into account information available up to and including December 31, 2024, unless otherwise indicated. Throughout this document the terms “we”, “us”, “our”, the “Company” and “Titan Mining” refer to Titan Mining Corporation.

All financial information in this AIF is prepared in accordance with International Financial Reporting Standards (“IFRS”). Additional financial information may be found in the Company’s audited consolidated financial statements and management’s discussion and analysis for the year ended December 31, 2024.

Currency

All dollar amounts are expressed in US dollars unless otherwise indicated.

Cautionary Note Regarding Forward-Looking Information

Certain information contained in this document constitutes forward-looking statements. All statements, other than statements of historical facts, are forward looking statements, including but not limited to the nature and extent of future exploration and testing at ESM; that Titan believes that the district surrounding ESM remains underexplored despite the long operating history of ESM; that there is potential for significant resource expansion which is expected to support production growth; that other historic mines and new targets within the district will be a focus for Titan’s exploration team; that other historic mines and new targets within the district will be a focus for Titan’s exploration team with over 80,000 acres of mineral rights controlled throughout the district; exploration plans generally and at the Kilbourne Target; timing and results of such exploration plans; ESM continues to review ways to increase operating efficiencies, particularly by adding incremental ore feed from other historically mined zones outside of the current #4 mine; that the Company will commence production at N2D, timing thereof, and results therefrom; production guidance; that the Company will build the Facility (as defined below), timing thereof, and the results therefrom; that the Company continues to examine various financing options to expand production and to bolster the Company’s treasury; Mineral Resource estimates; results from economic analyses on ESM; and production forecasts.

The forward-looking statements are based on a number of assumptions which, while considered reasonable by the Company, are subject to risks and uncertainties. The Company cautions readers that forward-looking statements involve and are subject to known and unknown risks, uncertainties and other factors which may cause actual results, performance or achievements to differ materially from those expressed in or implied by such forward-looking statements and forward-looking statements are not guarantees of future results, performance or achievement. The Company has made assumptions based on or related to many of these risks, uncertainties and factors. These risks, uncertainties and factors include general business, economic, competitive, political, regulatory and social uncertainties; actual results of exploration activities and economic evaluations; fluctuations in currency exchange rates; changes in project parameters; changes in costs, including labour, infrastructure, operating and production costs; future prices of zinc and other minerals; variations of mineral grade or recovery rates; operating or technical difficulties in connection with exploration, development or mining activities, including the failure of plant, equipment or processes to operate as anticipated; delays in completion of exploration, development or construction activities; changes in government legislation and regulation; the ability to maintain and renew existing licenses and permits or obtain required licenses and permits in a timely manner; the ability to obtain financing on acceptable terms in a timely manner; contests over title to properties; employee relations and shortages of skilled personnel and contractors; the speculative nature of, and the risks involved in, the exploration, development and mining business; assumptions as to mining dilution; assumptions as to closure costs and closure requirements; environmental risks; unanticipated reclamation expenses; unexpected variations in quantity of mineralized material, grade or recovery rates; geotechnical or hydrogeological considerations during mining being different from what was assumed; changes to assumptions as to salvage values; ability to maintain the social

license to operate; changes to interest rates; changes to tax rates, including federal, state and county income and property tax rates; and the factors discussed in the section entitled “Risks Factors” in this document.

Although the Company has attempted to identify important risks, uncertainties and other factors that could cause actual performance, achievements, actions, events, results or conditions to differ materially from those expressed in or implied by the forward-looking information, there may be other risks, uncertainties and other factors that cause performance, achievements, actions, events, results or conditions to differ from those anticipated, estimated or intended. Unless otherwise indicated, forward-looking statements contained herein are as of the date hereof and the Company disclaims any obligation to update any forward-looking statements, whether as a result of new information, future events or results or otherwise, except as required by applicable law.

CORPORATE STRUCTURE

Name, Address and Incorporation

The Company was incorporated under the Business Corporations Act (British Columbia) on October 15, 2012. On November 10, 2016, the Company amended its articles of incorporation to change the name of the Company from “Triton Mining Corporation” to “Titan Mining Corporation”. On June 13, 2017, the Company filed a notice of alteration to amend its authorized share capital by re-designating its Class A shares as Common Shares. A copy of the Company’s Articles of Incorporation is available under the Company’s profile on SEDAR+ at www.sedarplus.ca.

Titan Mining is listed on the Toronto Stock Exchange (“TSX”) under the symbol TI.

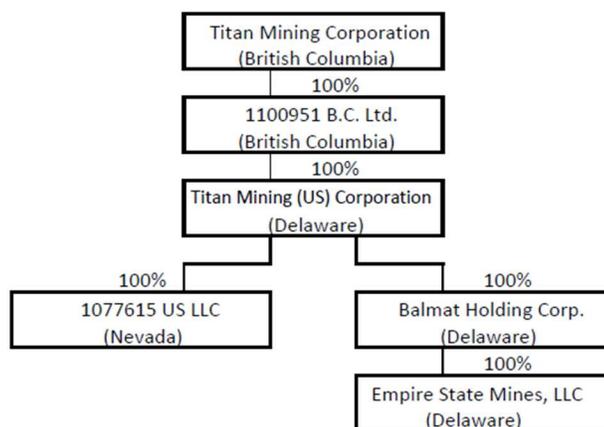
At the date of this AIF the Company’s head office is located at Suite 555 – 999 Canada Place, Vancouver, British Columbia, V6C 3E1 and its the registered office is located at Suite 2900, 550 Burrard Street, Vancouver, BC V6C 0A3.

On November 10, 2016, the Company amended its articles of incorporation to change the name of the Company from “Triton Mining Corporation” to “Titan Mining Corporation”.

On June 13, 2017, the Company filed a notice of alteration to amend its authorized share capital by re-designating its Class A shares as Common Shares.

Intercorporate Relationships

The following chart identifies Titan Mining’s subsidiaries (including jurisdiction of formation or incorporation of the various entities). Except for 1077615 US LLC, all subsidiaries are material subsidiaries.



GENERAL DEVELOPMENT OF THE BUSINESS

Titan Mining is a natural resource company engaged in the acquisition, exploration, development and production of mineral properties. The Company's principal asset is its indirect ownership interest (as illustrated in the chart above) of Empire State Mines, LLC, which owns a group of high-grade zinc mines in St Lawrence County, New York. These past-producing operations include Empire State Mine's #2, #3, #4, Hyatt, Pierrepont and Edwards mines (collectively referred to as "ESM" or the "Empire State Mine"), which had been on care and maintenance since 2008. The Company indirectly acquired ESM on December 30, 2016 as part of its acquisition of 100% of the issued and outstanding shares of Balmat Holdings Corp.

Three Year History

Set out below is a summary of how the Company's business has developed over the last three completed financial years. In accordance with Form 51-102F2 *Annual Information Form*, the below summary includes only events, such as acquisitions or dispositions, or conditions that have influenced the general development of the business.

Operations at the Empire State Mine

On September 6, 2022, the Company announced that ESM had received a permit from New York State Department of Environment and Conservation ("NYSDEC"), allowing it to begin mining activities on the Turnpike project.

On September 8, 2022, the Company announced that its common shares had been approved for trading on the OTCQB Venture Market.

On January 25, 2023, the Company announced that it planned to begin construction of the Turnpike project (formerly Sphaleros). On August 11, 2023, the Company announced work at Turnpike was temporarily suspended in order to preserve cash. The Company is committed to investing in Turnpike when zinc prices recover.

On January 31, 2023, the Company announced a discovery of near-mine proximity to the Company's New Fold and Mahler bodies.

On June 14 and September 14, 2023, the Company announced further updates to its exploration drilling, revealing both surface and underground drilling programs were successful in intercepting significant zinc mineralization.

On October 23, 2023, the Company announced the discovery of the Kilbourne graphite project, an extensively drill tested graphite-bearing trend located almost entirely on the active use permit hosting Titan's currently operating Empire State Mine ("ESM") in upstate New York.

On April 19, 2024, the Company announced initial drill results at the Kilbourne Graphite Project and, on June 16, 2024, the Company announced completion of Phase I drilling at the Kilbourne Graphite Project.

On December 3, 2024, the Company announced an initial maiden mineral resource estimate at its Kilbourne Graphite Project.

Financings

On January 10, 2022, following TSX approval, the Company extended the maturity dates of its credit facilities with each of the Bank of Nova Scotia and a company owned by the Company's Executive Chairman (the "**Lender**"). The maturity date of the Company's senior secured revolving credit facility with a limit of \$10,000,000 with the Bank of Nova Scotia was extended from April 3, 2022 to April 3, 2023. The maturity date of the Company's second ranking secured credit facility of \$20,710,000 with the Lender was extended from April 5, 2022 to April 5, 2023.

In consideration of the extension of the Company's credit facility with the Lender, the Company paid an extension fee to the Lender in the amount of US\$75,000.

On June 7, 2022, the Company announced the closing of the revolving credit facility with National Bank of Canada ("**National Bank**") for \$40 million (the "**Credit Facility**"). In addition to the Credit Facility, National Bank provided the Company with an up to \$15 million treasury line enabling additional access to funds for future zinc contract commitments. Titan used the proceeds to consolidate previous loans held with the Lender and the Bank of Nova Scotia.

On December 21, 2022, the Company extended the maturity date of its \$40 million Credit Facility with National Bank of Canada. The maturity date of the Company's revolving credit facility has been extended from December 6, 2023, to December 6, 2024. Concurrently, the guarantee provided by the Company's Executive Chairman through the Lender was also extended to December 6, 2024.

On November 1, 2023, the Company entered into a promissory note with the Lender (the "**November 2023 Promissory Note**"). The November 2023 Promissory Note is in a principal amount of \$5,000,000 plus an initiation fee of \$350,000, bears interest at 10% compounded annually, and matures on May 1, 2025. The proceeds were used to repay part of the National Bank Credit Facility. In connection with the Promissory Note, the Company issued 6,000,000 warrants to the Lender. Each warrant entitles the Lender to acquire one common share of the Company at an exercise price of C\$0.42 per share until November 1, 2028.

On April 16, 2024, the Company announced a \$10,000,000 bridge loan from the Lender. Proceeds from this loan have been used to repay part of the Credit Facility, bringing the outstanding amount down from \$27.2 million to \$17.2 million following the payment to National Bank. The terms of this loan and of the US\$5M advance made by the Lender earlier in the year are subject to ongoing negotiations between the Company and the Lender.

On December 11, 2024, the Company announced that it had agreed to certain amendments to the Credit Facility, including: (i) principal repayment of \$5 million by December 30, 2024, for an aggregate of \$17 million in principal repaid in 2024; (ii) extension of the Credit Facility maturity date from June 30, 2025 to December 31, 2025; and (iii) extension of the remaining principal repayment from US\$10.2 million by June 30, 2025 to \$5 million by June 30, 2025 and \$5.2 million by December 31, 2025.

Corporate

On March 4, 2022, the Company announced that it had entered into a fixed zinc pricing arrangement with an affiliate of Glencore plc for 50% of the Company's budgeted zinc production for the second quarter of 2022 at a price of \$1.76 per pound of zinc.

On September 6, 2022, Titan announced that it had entered into a fixed zinc pricing arrangement with National Bank for 50% of the Company's budgeted zinc production for the remainder of 2022 at a price of US\$1.61 per pound of zinc.

On February 2, 2023, the Company announced that it had entered into a fixed zinc pricing arrangement with National Bank for approximately 30% of the Company's forecasted zinc production for the eleven-month period covering February 2023 to December 2023 at a price of \$1.55 per pound of zinc.

On March 28, 2024, the Company announced the appointment of Ty Minnick as Interim CFO of the Company. Mr. Minnick has been affiliated with the Augusta Group as a consultant of Augusta Gold Corp. (formerly, Bullfrog Gold Corp.), and was its Chief Financial Officer from 2011 until October 2020. Mr. Minnick is also the Chief Financial Officer of Athena Gold Corp since May 2021 and has 13 years of experience in the mining industry. Since December 2018, Mr. Minnick has acted as a Certified Public Accountant (1993) with Grand Mesa CPAs, LLC.

On September 26, 2024, the Company announced the appointment of Rita Adiani as President of the Company. Ms. Adiani has over 18 years of global experience in the mining industry, with a proven track record in capital markets, project development, and corporate leadership. She was previously Senior Vice President of Corporate Development at Arizona Sonoran Copper Company and has held senior roles at firms such as NRG Capital, La Mancha Resources and Societe Generale in London and Paris, respectively. She also served as Senior Adviser to International Battery Metals and has specific experience in the energy transition sector. Over her career, Ms. Adiani has been involved in raising over US\$10 billion in public equity capital markets.

2025 Outlook

Titan's mission is to deliver extraordinary shareholder value through exploration, development and operational excellence.

Titan believes that the district surrounding ESM remains underexplored despite the long operating history of the district. The Company is focused on discovering and developing additional high-grade, low-cost mineral resources to feed the mill at ESM. ESM's #4 mine is connected to its #2 mine, and there is potential for significant mineral resource expansion which is expected to support production growth. Other historic mines and new targets within the district will be a focus for Titan's exploration team.

Titan management and Board have approved a plan and commenced acquisition of the necessary equipment to recommence mining in the N2D Zone ("**N2D**"). The area is fully developed enabling the Company to ramp up production quickly. N2D is estimated to add approximately 12 million payable zinc pounds per annum. ESM has provided 2025 production guidance of between 75 - 81 million zinc recoverable pounds or 64 - 69 million zinc payable pounds. ESM continues to review ways to increase operating efficiencies, particularly by adding incremental ore feed from other historically mined zones outside of the current #4 mine. See the Company's news release dated February 19, 2025, for further detail on production and cost guidance.

The Company has also outlined parameters of a processing facility for Kilbourne natural graphite mineralized material (the "**Facility**"), to be co-located with the Company's existing zinc operations at ESM. The Company is targeting production from the Facility in 2025. The Facility is the first step towards obtaining product at full run time which will allow ESM to establish customer demand and pricing thresholds. See the Company's news release dated January 16, 2025, for further detail regarding the Facility.

In addition, the Company continues to examine various financing options to advance further development at ESM and bolster the Company's treasury.

DESCRIPTION OF THE BUSINESS

General

Summary - The Company is engaged in the acquisition, exploration, development and extraction of natural mineral resources. The Company's only source of revenue is from sales of zinc concentrates produced at

ESM in New York State. The Company did not recognize revenue on the sales of its zinc concentrates until it reached commercial production on January 1, 2020. Other than mark-to-market adjustments relating to provisional pricing adjustments on concentrate shipments, revenue realized during the pre-commercial operating period at ESM was recorded as a credit to mineral properties, plant and equipment. The zinc concentrates produced by the Company at ESM are 100% sold to Glencore Ltd. pursuant to an off-take agreement between the Company and Glencore Ltd. dated February 26, 2018.

Production and Services - ESM announced commercial production on January 1, 2020. The method of production at ESM's #4 mine consists of underground mining principally through long hole stoping, sub-level drift and pillar slashing, modified or stepped room and pillar, mechanized cut and fill and sub-level drives, access, and stope cross-cut development operations. Extracted ore is trucked to a conventional crushing, milling and processing plant.

Specialized Skill and Knowledge - Various aspects of the Company's business require specialized skills and knowledge. Such skills and knowledge include the areas of permitting, geology, drilling, engineering, mine planning, mining, milling, metallurgy, logistical planning and implementation of exploration and production programs as well as financing and accounting. While competitive conditions exist in the industry, and challenges in hiring at the mine site exists consistent with the industry, the Company has been able to locate and retain employees and consultants with such skills and believes it will continue to be able to do so in the future.

Competitive Conditions - Competition in the mineral exploration and mining industry is intense. The Company competes with other mining companies, many of which have greater financial resources and technical facilities for the acquisition and development of, and production from, mineral concessions, claims, leases and other interests, as well as for the recruitment and retention of qualified employees and consultants and, to a lesser extent, for the supply of raw materials. The price of zinc is also a factor affecting the Company as it is determined by world markets over which the Company has no influence or control as further described below under 'Business Cycles'. Our competitive position is primarily determined by our costs compared to other producers throughout the world and our ability to maintain our financial integrity through metal price cycles. In addition, the mining industry is competitive, particularly in the acquisition of additional mineral reserves and resources in all phases of operation, and we compete with many companies possessing similar or greater financial and technical resources.

Business Cycles - The mining business is subject to mineral price cycles and in the case of the Company, the price of zinc. The marketability of minerals and mineral concentrates (zinc) is also affected by worldwide economic cycles. The ultimate economic viability of ESM is primarily sensitive to the market price of zinc. Metal prices fluctuate widely and are affected by numerous factors such as global supply, demand, inflation, exchange rates, interest rates, forward selling by producers, central bank sales and purchases, production, global or regional political, economic or financial situations and other factors beyond the control of the Company.

Economic Dependence - On February 26, 2018, the Company concluded an offtake agreement with Glencore Ltd. for 100% of the zinc concentrate from ESM's #4 mine. The long-term contract commenced on January 1, 2018 with first concentrate being delivered in March 2018.

Environmental Protection - The Company's exploration, development and production activities are subject to United States laws and regulations regarding the protection of the environment. If required, Titan will make expenditures to ensure compliance with applicable laws and regulations. New environmental laws and regulations, amendments to existing laws and regulations, or more stringent implementation or enforcement of existing laws and regulations could have a material adverse effect on the Company's business, cash flows, earnings, results of operations, financial condition and prospects, by potentially increasing capital and/or operating costs and/or delaying or preventing the exploration and/or development of mineral properties. The

Company intends to control and mitigate the environmental impact from the exploration, development and production of its projects and their future operation. Reclamation plans approved by the NYSDEC are in place for ESM's #4 mine (formerly the Balmat No. 4 Mine) and the Balmat No. 2 shaft area (which is still in use as an alternate exit route and ventilation shaft for ESM's #4 mine) and are the ongoing responsibility of Empire State Mines LLC. ESM and mine tailings reclamation is guaranteed with a \$1,662,870 certificate of deposit.

Employees – At December 31, 2024, the Company had 8 offsite employees and 132 employees at ESM's #4 mine. As operations require, the Company also retains geologists, engineers, geophysicists and other consultants on a fee for service basis. Certain of the employees have responsibilities with other publicly traded companies and, as such, the Company pays a pro-rata portion of the costs of such employees based on their time spent working on the Company's business.

Foreign Operations - Substantially all of the Company's long-term assets, primarily comprising its mineral properties, are located in St. Lawrence County, New York, USA. The Company also has an exploration project in New Mexico, USA.

Social and Environmental Policies - The Company has an Environmental, Health and Safety Policy. The focus of the policy is concern for the environment and the health and safety of individuals and the communities in which it operates. The Company endeavors to provide and maintain safe and healthy working conditions to safeguard its employees and the communities in which it operates. In doing so, the Company considers compliance with the regulatory standards as a minimum.

RISK FACTORS

The Company's activities and related results are subject to a number of different risks at any given time. Exploration and development of mineral resources involves a high degree of risk. A summary of the Company's financial instruments risk exposure is provided in the Financial Instruments section of the Company's 2024 Annual Financial Statements. The following are additional risk factors which the Company's management believes are most important in the context of the Company's business. It should be noted that this list is not fully comprehensive and that other risk factors may apply.

The Company has a limited operating history

The Company has a limited operating history upon which an evaluation of the Company, its current business and its prospects can be based. Further, its sole production mineral property, ESM's #4 mine, was on care and maintenance since 2008 until recommencing operations in 2017. If the Company is unable to generate significant revenues from ESM's #4 mine, it will not be able to earn profits or continue operations. There can be no assurance that the Company will be successful in ever achieving profitable operations. The Company has a limited operating history from which its business and prospects can be evaluated, and forecasts of any potential growth of the business of the Company are difficult to evaluate. The Company's prospects must be considered in light of the risks, expenses and difficulties frequently encountered by single asset companies in the early stages of development, including under-capitalization, cash shortages, limitations with respect to personnel, financial and other resources, and lack of revenues.

Dependence on ESM's #4 mine

The only mineral producing property the Company has is the ESM #4 mine. Because ESM's #4 mine has a limited life based on mineral resource estimates, the Company will be required to replace and expand its mineral resources to continue production beyond the current mine life. In the absence of additional producing mineral projects, the Company will be solely dependent upon ESM's #4 mine for its revenue and profits, if any, and the Company's ability to maintain or increase its annual production will be dependent in significant

part on its ability to expand its mineral resource base at ESM's #4 mine and increase throughput at ESM's #4 mine mill above its initially targeted rate.

There may be requirements for additional capital in the future

Any future mining, production, processing, development and exploration by the Company may require substantial additional financing, including capital for the continuation or expansion of mining operations at ESM's #4 mine. Failure to obtain sufficient financing may result in delaying or indefinite postponement of the Company's business plans. There can be no assurance that additional capital or other types of financing will be available if needed or that, if available, the terms of such financing will be favourable to the Company. This uncertainty casts doubt about the Company's ability to continue as a going concern.

Financial leverage and restrictive covenants may restrict our current and future operations

The Company and its subsidiaries have agreed to various restrictive covenants with its lenders under its existing loan arrangements, including to maintain certain interest coverage ratios and minimum cash balances, make payments of interest and principal when due, to conduct its operations subject to certain restrictions and to comply with restrictions governing current and future indebtedness.

These restrictions prohibit or limit the Company's and its subsidiaries' ability to, among other things, incur additional debt, provide guarantees for indebtedness, create liens, dispose of assets, liquidate, dissolve, wind up, or assign or surrender a material contract. These restrictions may restrict the Company's ability to refinance its existing indebtedness. If the Company defaults in respect of its obligations under its loan arrangements, including without limitation servicing existing indebtedness, or if it is unable to refinance any such indebtedness, its lenders may be entitled to demand repayment and enforce their security against certain assets.

If there is any event of default under its existing loan arrangements, the principal amount owing, plus accrued and unpaid interest, may be declared immediately due and payable. If such an event occurs, or if any extended default under such agreements is ongoing, it could have a material negative impact on the Company financially.

In addition, the degree to which the Company and its subsidiaries are leveraged could have important consequences to shareholders, including: (i) the Company's ability to obtain additional financing for working capital, capital expenditures, acquisitions or other project developments in the future may be limited; (ii) a significant portion of the Company's cash flows from operations may be dedicated to the payment of the principal and interest on their indebtedness, thereby reducing funds available for future operations and flexibility to take advantage of business opportunities; (iii) the Company may be unable to refinance its existing indebtedness on terms favourable to the Company, if at all, and the consequences arising therefrom; and (iv) the Company may be more vulnerable to economic downturns and be limited in its ability to withstand competitive pressures. The inability to meet these debt covenants or obtain lenders' consent to carry out restricted activities could materially and adversely affect the business and results of operations of the Company.

The Company's ability to continue as a going concern is dependent upon the successful execution of its business plan, raising additional capital and/or evaluating strategic alternatives for its mineral property interests. The Company expects to continue to raise necessary funds primarily through securing additional debt or equity in support of its business objectives. There can be no guarantees that debt/equity financing or strategic alternative will be available on acceptable terms to the Company or at all, and therefore, a material uncertainty exists that may cast significant doubt about the Company's ability to continue as a going concern.

United States-Canada Tariffs

Recent executive orders have been issued by the U.S. President, including to direct the U.S. to impose new or increased tariffs on certain imports from its trading partners, including Canada, Mexico and China, and on certain other imports regardless of origin. The executive orders contemplated the imposition of 25% tariffs on most goods imported from Mexico and Canada (excluding certain energy resources from Canada, which were set to face a lesser tariff) and a 10% additional tariff on all goods from China, with originally planned implementation dates of February 4, 2025 and March 4, 2025. Certain other countries have, or have indicated, that they intend to impose retaliatory tariffs. While the U.S. administration recently deferred the implementation of certain tariffs pending negotiations between Canada and the U.S., there is no assurance that these negotiations will result in a successful withdrawal of the tariff proposals or a reduction in tariff rates. It remains unclear the extent to which additional duties, tariffs and/or other trade restrictions or other similar measures may be imposed by the United States or other countries, whether and if any changes to the currently announced tariffs will be applied, how long they may be in effect, the extent to which further retaliatory measures will be imposed, and whether other factors will support a pass through of all or a part of the tariffs to the market.

If high US tariffs are imposed on Canadian products and the products of other countries and Canada and the other countries retaliate with import tariffs on US products, the consequences on global supply chains could adversely impact the Company's ability to source the supplies the Company relies on to perform its planned work programs or operations or, if available, the cost of such supplies could increase, potentially impairing the Company's ability to complete work programs or conduct its operations.

Fluctuations in demand for, and prices of, zinc

As the Company's sole source of revenue is the sale of zinc in separated and/or mixed form, changes in demand for, and the market price of, zinc are expected to have a significant effect on the Company's revenues and results of operations. The value and price of the Common Shares and the Company's financial results may be significantly adversely affected by declines in the prices of zinc. The price of zinc is influenced by many factors beyond the control of the Company. The level of interest rates, the rate of inflation, global and regional consumption patterns, the world supply of and demand for zinc, including zinc's intermediate and end product uses, market behaviour of current supply sources for zinc and the variation in exchange rates can all cause significant fluctuations in prices of zinc. Such external economic factors are in turn influenced by changes in international investment patterns, monetary systems and political developments. The effect of these factors cannot be accurately predicted. The price of zinc and mineral commodities more generally has fluctuated widely in the past decade and future declines in the price of zinc received could cause commercial production to become uneconomic, thereby having a material adverse effect on the Company's business and financial condition and the value and price of the Common Shares. ESM's #4 mine was closed and placed on care and maintenance in the fall of 2008 in the face of a general economic turndown and resulting fall in zinc prices. The Company's results of operations will also be heavily dependent on the costs of consumables, particularly fuel, energy, chemical reagents and other products which may be required to be used in future exploration, development, mining and treatment operations.

A prolonged or significant economic contraction worldwide could put further downward pressure on market prices of zinc. Protracted periods of low prices for zinc could significantly reduce revenues and the availability of required development funds in the future. This could impair asset values and reduce the Company's mineral resources.

In contrast, extended periods of high commodity prices may create economic dislocations that may be destabilizing to supply and demand of zinc and ultimately to the broader markets. Strong prices for zinc may create economic pressure to identify or create alternate technologies using substitutes for zinc that ultimately

could depress future long-term demand for zinc, and at the same time may incentivize development of otherwise marginal mining properties that would compete with the Company.

Ramping up mining operations

As Titan continues to ramp up production, several risks remain for the Company, including: (i) Titan may encounter unforeseen obstacles or costs in operating the mine, some of which may be material and could cause Titan's estimates of time and costs to ramp up production to be significantly understated, (ii) certain lower levels of the mine are considered unsafe, (iii) some equipment may be more unreliable as operations ramp-up, and (iv) production rates and ore grades may not be as predicted. Any of these factors may adversely affect Titan's ability to ramp up production and could place Titan in a position where it has insufficient cash resources to continue mining operations, or which could result in mining operations being uneconomic.

Limited Supplies, Supply Chain Disruptions, and Inflation

Our operations require skilled personnel and a supply of other resources, such as natural gas, diesel, oil and electricity. Supply may be interrupted due to a shortage or the scarce nature of inputs. Supply might also be interrupted due to transportation and logistics associated with government restrictions or regulations which delay importation of necessary items. COVID-19 has had a significant impact on global supply chains, which has impacted our ability to source supplies required for our operations and has increased the costs of those supplies. Global supply chains have been further strained by the current conflict between Russia and the Ukraine and could be strained further by any exacerbation of this conflict. Any interruptions to the procurement and supply of resources, or the availability of skilled personnel, as well as increasing rates of inflation, could have an adverse impact on our future cash flows, earnings, results of operations, and financial condition.

The Company's current production projections and cost estimates for ESM's #4 mine may prove to be inaccurate

A reduction in the amount of, or a change in the timing of, the zinc production as compared to the Company's current projections for ESM's #4 mine may have a material adverse impact on the Company's anticipated future cash flows. The actual effect of such a reduction of the Company's cash flow from operations would depend on the quantity and timing of any such changes in production and on actual prices and costs. A change in the timing of these projected cash flows due to production shortfalls or labour disruptions would result in delays in receipt of such cash flows and in using such cash to fund operating activities and, as applicable, reduce debt levels or fund capital expenditures. This could result in the Company being required to raise additional equity capital or incur additional indebtedness to finance capital expenditures in the future.

The level of production and capital and operating cost estimates which are used for determining and obtaining financing and other purposes are based on certain assumptions and are subject to considerable uncertainties. Actual results of operations at ESM's #4 mine are likely to differ from the Company's current estimates, and these differences may be significant. Moreover, experience from actual mining or processing operations may identify new or unexpected conditions that could decrease production below, and/or increase capital and/or operating costs above, the current estimates. If actual results are less favourable than the Company currently estimates, the Company's business, results from operations, financial condition and liquidity could be materially adversely affected.

Profitability of the Company

There can be no assurance that the Company's business and strategy will enable it to become profitable or sustain profitability in future periods. The Company's future operating results will depend on various factors, many of which are beyond the Company's direct control, including the Company's ability to develop its mining projects and commercialize its mineral resources, its ability to control its costs, the demand and price

for zinc and general economic conditions. If the Company is unable to generate profits in the future, the market price of the Common Shares could decline.

Mining is inherently risky and subject to conditions or events beyond the Company's control

The development and operation of a mine or mine property is inherently dangerous and involves many risks that the Company may not be able to overcome, including:

- unusual or unexpected geological formations;
- metallurgical and other processing problems;
- metal losses;
- environmental hazards;
- power outages;
- labour disruptions;
- industrial accidents;
- periodic interruptions due to inclement or hazardous weather conditions;
- flooding, explosions, fire, rockfalls, rockbursts, cave-ins and landslides;
- ground or soil conditions including seismic activity;
- mechanical equipment and facility performance problems;
- poor ventilation in all or part of ESM; and
- the availability of materials and equipment.

These risks could result in damage to, or destruction of, mineral properties, production facilities or other properties, personal injury or death, including to the Company's employees, environmental damage, delays in mining, increased production costs, asset write downs, monetary losses and legal liability. The Company may not be able to obtain insurance to cover these risks at economically feasible premiums, or at all, or it may choose not to insure against these risks. Insurance against certain environmental risks, including potential liability for pollution and other hazards as a result of the disposal of waste products occurring from production, is not generally available to companies in the mining industry. The Company may suffer a material adverse effect on its business if the Company incurs losses related to any significant events that are not covered by the Company's insurance policies.

Mineral resource calculations are only estimates based on interpretation and assumptions

Any figures presented for mineral resources will only be estimates. There is a degree of uncertainty attributable to the calculation of mineral resources. Until mineralized material is actually mined and processed, the quantity of metal and grades must be considered as estimates only and no assurances can be given that the indicated levels of metals will be recovered. In making determinations about whether to advance any of its projects to development, the Company must rely upon such estimated calculations as to the mineral resources and grades of mineralization on its properties.

The estimation of mineral resources is a subjective process that relies on the judgment of the persons preparing the estimates. The process relies on the quantity and quality of available data and is based on knowledge, mining experience, analysis of drilling results and industry practices. Estimates made at a given time may significantly change when new information becomes available. By their nature, mineral resource estimates are imprecise and depend, to a certain extent, upon analysis of drilling results and statistical inferences that may ultimately prove to be inaccurate.

Estimated mineral resources may have to be recalculated based on changes in mineral prices, further exploration or development activity or actual production experience. This could materially and adversely affect estimates of the volume or grade of mineralization, estimated recovery rates or other important factors that influence mineral resource estimates. The extent to which mineral resources may ultimately be reclassified as mineral reserves is dependent upon the demonstration of their profitable recovery. Any

material changes in mineral resource estimates and grades of mineralization will affect the economic viability of placing a property into production and a property's return on capital. The Company cannot provide assurance that mineralization can be mined and processed profitably.

The Company's mineral 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 price for zinc may render portions of the Company's mineralization uneconomic and result in a reduction in reported mineral resources, which in turn could have a material adverse effect on the Company's results of operations, financial condition or the market price of the Common Shares. The Company cannot provide assurance that mineral recovery rates achieved in small scale tests will be duplicated in large scale tests under on-site conditions or in production scale. In addition, if the Company's projects produce concentrate for which there is no market, this may have an impact on the economic model for ESM.

Production based on mineral resources

The Company based its production decision on the results of a preliminary economic assessment and not on a feasibility study of mineral reserves demonstrating economic and technical viability, and as a result there is increased uncertainty and there are multiple technical and economic risks of failure which are associated with this production decision. These risks, among others, include areas that would be analysed in more detail in a feasibility study, such as applying deeper economic analysis to mineral reserves and mineral resources, more detailed metallurgy and a number of specialized studies in areas such as mining and recovery methods, market analysis, and environmental and community impacts.

Uncertainty exists related to inferred mineral resources

There is a risk that inferred mineral resources referred to in the ESM Technical Report cannot be converted into measured or indicated mineral resources as there may be limited ability to assess geological continuity. Due to the uncertainty related to inferred mineral resources, there is no assurance that inferred mineral resources will be upgraded to mineral resources with sufficient geological continuity to constitute mineral reserves as a result of continued exploration and economic evaluation.

Construction and Commissioning of Processing and Demonstration Facilities

The design and construction of efficient processing and demonstration facilities, such as the Facility (as defined above), the cost and availability of suitable machinery, supplies, equipment and skilled labor, the existence of competent operational management and prudent financial administration, as well as the availability and reliability of appropriately skilled and experienced employees can affect successful project development.

The Company intends to construct the Kilbourne Project Facility, which will rely on new infrastructure. It is common in new processing facilities to experience unexpected problems and delays during construction, development, start-up and commissioning activities. The costs, timing and complexities of developing the Kilbourne Project Facility may be significantly higher than anticipated which can add to the cost of development, production and operation and/or impair production and activities.

Need for Funding and Time of Development

There is a risk that the development of the Kilbourne Project Facility will not be completed on time or on budget, or at all. The development and construction schedule of the Kilbourne Project Facility is based on management's expectations, and may be delayed by a number of factors, some of which are beyond the Company's control. Most, if not all, projects of this kind suffer delays in start-up and commissioning due to late delivery of components, the inadequate availability of skilled labor and mining equipment, adverse

weather or equipment failures, the rate at which expenditures are incurred, delays in construction schedules, or delays in obtaining the required permits or consents, or to obtain the required financing.

Risks Related to Future Sale of Graphite Products

The viability of the Company's Kilbourne Project is dependent on future sales of graphite-based products. No assurance can be given that the Company will be able to sell graphite-based products at such terms and conditions as are favourable for, or necessary to sustain the operations of the Company.

The Company has not entered into any other binding agreements for the sale of graphite-based products. There can be no guarantee that the Company will be able to secure sales agreements, including offtake agreements for future sales and, if so, there can be no guarantee as to the amount of purchase orders or commitments, the quantity of graphite represented by such orders and commitments or the timing for receiving same. Factors that may impact such orders and commitments include the ability of the Company to reliably and consistently produce graphite meeting client specifications and confidence of clients in such ability, market conditions and demand for products requiring graphite, overall market conditions and the strength of the economy.

If the Company, for whatever reason, is not able to produce the products in accordance with the terms and specifications of any sales agreements, such noncompliance or violation, resulting in termination or damages, may have an adverse effect on the Company's operations and financial position. Even if the Company is able to meet the requirements set out therein, there is no assurance that the contract counterparties will be willing or able to purchase the production at the prices or quantities they have agreed to in a particular offtake agreement.

Graphite Supply, Demand, Macroeconomic conditions

Global graphite supply is concentrated in a limited number of countries, particularly China, which accounts for a substantial portion of global production. Geopolitical tensions, export restrictions, trade policies, and environmental regulations in key producing regions may disrupt supply chains, leading to price volatility and potential shortages. Additionally, the development of new graphite projects is capital-intensive and subject to permitting delays, technological challenges, and infrastructure limitations, which may constrain future supply. Given that graphite is not a publicly traded commodity like base and precious metals, and sales agreements are negotiated privately, actual sales prices may differ from the Company's assumptions. This opacity in pricing can further contribute to uncertainty in forecasting and financial performance.

The demand for graphite is influenced by several factors, including the growth of the electric vehicle (EV) and renewable energy sectors, as graphite is a critical component in lithium-ion batteries. Changes in government policies, technological advancements, or slower-than-anticipated adoption of EVs and energy storage systems could reduce graphite demand. Conversely, rapid adoption could drive increased competition for graphite resources and escalate input costs for the Company. Additionally, a limited number of existing producers may seek to protect their market position by increasing production capacity or lowering prices, which could create competitive pressures and impact the Company's ability to secure favorable sales agreements.

Broader economic conditions, including inflation, currency fluctuations, and global economic slowdowns, could impact graphite prices and availability. Economic uncertainty or recessions may reduce industrial activity and the demand for graphite across multiple sectors, while inflationary pressures could increase operational costs and capital expenditures. Furthermore, global supply chain disruptions stemming from pandemics, natural disasters, or geopolitical conflicts may affect the availability and cost of graphite. Foreign currency fluctuations may also influence the cost structure and profitability of graphite operations, particularly when sales agreements are denominated in foreign currencies.

Factors such as foreign currency fluctuation, supply and demand, industrial disruption and actual graphite market sale prices could have an adverse impact on operating costs and stock market prices and on the Company's ability to fund its activities. In each case, the economics of the Kilbourne project could be materially adversely affected, even to the point of being rendered uneconomic.

Title

There is no guarantee that the Company's title to its properties will not be challenged or impugned. The Company's claims may be subject to prior unregistered agreements or transfers and title may be affected by unidentified or unknown defects. If title to the Company's properties is disputed, it may result in the Company paying substantial costs to settle the dispute or clear title and could result in the loss of the property, which events may affect the economic viability of the Company.

Surface Access

In some cases, the Company has ownership title or leasehold rights only to the minerals of certain properties (the mineral estate), while other parties own the non-mineral or surface rights of the properties (the surface estate). In such cases, the Company has the legal right to access the property, and conduct activities on the property to the fullest extent necessary to realize its rights to the mineral estate, subject only to an obligation to avoid unreasonably impacting the surface estate and the activities of owners of the surface estate, and with due regard to their physical safety. Nonetheless, the owners of the surface estate may prove unwilling to coordinate with the Company regarding the timing and other parameters of the Company's access and activities on the property or may obstruct the Company's representatives while they are on the property. In addition, the owners of the surface estate may use or allow others to use the property for hunting or other activities that risk the safety of the Company's representatives while they are on the property. Such factors could delay or otherwise hinder the Company's ability to realize its rights to the mineral estate and give rise to legal claims.

The Company may experience difficulty attracting and retaining qualified management and employees to sustain and grow its business

The Company is dependent on the services of key executives and its skilled employees to advance its corporate objectives and to identify new opportunities for growth and funding. The loss of any executive of the Company and the Company's inability to attract and retain a suitable replacement, or additional highly skilled employees required for the Company's activities, would have a material adverse effect on the Company's business and financial condition.

Competition

The Company competes with other mining companies, many of which are better capitalized, have greater financial resources, operational experience and technical capabilities or are further advanced in their development or are significantly larger and have access to mineral reserves, for the acquisition of mineral claims, leases and other mineral interests as well as for the recruitment and retention of qualified employees and other personnel. If the Company requires and is unsuccessful in acquiring additional mineral properties or qualified personnel, the Company will not be able to grow at the rate it desires, or at all.

Significant governmental regulations

The Company's mining activities are subject to extensive federal, state and local laws, regulations and policies governing various matters, including:

- environmental protection, including regulations with respect to processing concentrates;
- the management and use of toxic substances and explosives;
- the management of natural resources and land;

- the exploration of mineral properties;
- exports;
- price controls;
- taxation and mining royalties;
- labour standards and occupational health and safety, including mine safety; and
- historic and cultural preservation.

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

Market events and general economic conditions

Adverse events in global financial markets can have profound impacts on the global economy. Many industries, including the zinc mining industry, are affected by these market conditions. Some of the key effects of the financial market turmoil experienced over the past decade include contraction in credit markets resulting in a spread of credit risk, devaluations, high volatility in global equity, commodity, foreign exchange and precious metal markets, and a lack of market liquidity. A continued or worsened slowdown in the financial markets or other economic conditions, including but not limited to, consumer spending, employment rates, business conditions, inflation, fuel and energy costs, consumer debt levels, lack of available credit, the state of the financial markets, interest rates and tax rates, may adversely affect the Company's growth and profitability, financial liabilities and results of operations.

Environmental laws and regulations (including in respect of climate change)

All of the Company's exploration, development and production activities are subject to regulation by governmental agencies under various environmental laws. These laws address emissions into the air, discharges into water, management of waste, management of hazardous substances, protection of natural resources, antiquities and endangered species, reclamation of lands disturbed by mining operations and climate change. Environmental legislation is evolving, and the general trend has been towards stricter standards and enforcement, increased fines and penalties for non-compliance, more stringent environmental assessments of proposed projects and increasing responsibility for companies and their officers, directors and employees. Compliance with environmental laws and regulations may require significant capital outlays on the Company's behalf and may cause material changes or delays in the Company's intended activities. Future changes in these laws or regulations could have a significant adverse impact on some portion of the Company's business, requiring the Company to re-evaluate those activities at that time. Non-compliance thereof may result in significant penalties, fines and/or sanctions imposed on the Company by the relevant environmental regulatory authority resulting in a material adverse effect on the Company's reputation and results of its operations.

Threat of legal proceedings

Due to the nature of its business, the Company may be subject to numerous regulatory investigations, civil claims, lawsuits and other proceedings in the ordinary course of its business. The results of these legal proceedings cannot be predicted with certainty due to the uncertainty inherent in litigation, the difficulty of predicting decisions of regulators, judges and juries and the possibility that decisions may be reversed on appeal. The Company's efforts to respond to the legal proceedings could result in a diversion of management

time and attention from revenue-generating activities. There can be no assurances that these matters will not have a material adverse effect on the Company's business. See "Title" above.

Rights, concessions and permits

The Company's current and anticipated future operations, including further exploration, development and production on its mineral properties, including ESM's #4 mine, require concessions and permits from various governmental authorities.

Obtaining or renewing governmental concessions and permits is a complex and time-consuming process. The duration and success of efforts to obtain and renew permits are contingent upon many variables not within the Company's control. The Company cannot provide assurance that all rights, concessions and permits that it requires for its operations will be obtainable or renewable on reasonable terms, or at all. Delays or a failure to obtain or renew such required concessions and permits, or the expiry, revocation or failure to comply with the terms of any such concessions and permits that the Company has obtained, would adversely affect the Company's business.

Social and environmental activism can have a negative effect on exploration, development and mining activities

There is an increasing level of public concern relating to the effects of mining on the natural landscape, on communities and on the environment. Certain non-governmental organizations, public interest groups and reporting organizations ("NGOs") who oppose resource development can be vocal critics of the mining industry. In addition, there have been many instances in which local community groups have opposed resource extraction activities, which have resulted in disruption and delays to the relevant operation. Local communities in St. Lawrence County, NGOs or local community organizations could direct adverse publicity and/or disrupt the operations of the Company in respect of ESM or another of the Company's properties, regardless of its successful compliance with social and environmental best practices, due to political factors, activities of unrelated third parties on lands in which the Company has an interest or the Company's operations specifically. Any such actions and the resulting media coverage could have an adverse effect on the reputation and financial condition of the Company or its relationships with the communities in which it operates, which could have a material adverse effect on the Company's business, financial condition, results of operations, cash flows or prospects.

Land reclamation requirements for the Company's properties may be burdensome

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

- control dispersion of potentially deleterious effluents; and
- reasonably re-establish pre-disturbance land forms and vegetation.

In order to carry out reclamation obligations imposed on the Company in connection with exploration, development and production activities, the Company must allocate financial resources that might otherwise be spent on exploration and contemplated development programs. If the Company is required to carry out unanticipated reclamation work or provide security for further reclamation work, the Company's financial position could be adversely affected.

Tailings management facility and environmental reclamation

The embankment for the tailings management facility ("TMF") at ESM's #4 mine will need to be raised to fully contain the estimated tonnage for ESM's #4 mine as set out in the current mine plan. The Company is not certain how the native surface of the TMF was prepared, what design features were included, what sub-

surface conditions existed prior to construction or the material properties of the fill used for construction. If the Company is unable to complete the embankment raise at the TMF, or if the TMF were to subsequently breach, the Company would be required to delay or cease operations at ESM's #4 mine for a significant period of time. This may also necessitate extensive response and rehabilitation activities. The Company may not receive approvals and consents necessary to proceed with the remaining rehabilitation plans in a timely manner. The Company cannot anticipate the timing and amount of the costs and the liabilities relating to any such TMF failure, or whether such failure would result in the Company being subject to regulatory charges or claims, fines and penalties or the potential quantum thereof.

Insurance

ESM's #4 mine is subject to numerous risks and hazards. Such risks could result in personal injury, environmental damage, damage to and destruction of the facilities, delays in production and liability. For some of these risks, the Company maintains insurance to protect against these losses at levels consistent with industry practice. However, the Company may choose not to insure certain risks or may not be able to maintain current or desired levels of insurance coverage, particularly if there is a significant increase in the cost of premiums. The Company's current policies may not cover all losses and the Company currently does not have specific coverage for environmental risk. Moreover, in the event that the Company is unable to fully pay for the cost of remedying damages, particularly environmental problems, the Company might be required to suspend or significantly curtail its activities or enter into other interim compliance measures.

Health & safety

Mining, like many other extractive natural resource industries, is subject to potential risks and liabilities due to accidents that could result in serious injury or death. The impact of such accidents could affect the profitability of the operations, cause an interruption to operations, lead to a loss of licenses, affect the reputation of the Company and its ability to obtain further licenses, damage community relations and reduce the perceived appeal of the Company as an employer.

There is no assurance that the Company has been or will at all times be in full compliance with all laws and regulations or hold, and be in full compliance with, all required health and safety permits. The potential costs and delays associated with compliance with such laws, regulations and permits could prevent the Company from proceeding with the development of a project or the operation or further development of a project, and any non-compliance therewith may adversely affect the Company's business, financial condition and results of operations.

Amendments to current laws, regulations and permits governing operations and activities of mining companies, or more stringent implementation thereof, could have a material adverse impact on the Company and cause increases in exploration expenses, capital expenditures or production costs, reduction in levels of production at producing properties, or abandonment or delays in development of new mining properties.

The Company is dependent on information technology systems

The Company's operations depend, in part, upon information technology systems. The Company's information technology systems are subject to disruption, damage or failure from a number of sources, including, but not limited to, computer viruses, security breaches, natural disasters, power loss and defects in design. Although to date the Company has not experienced any material losses relating to information technology system disruptions, damage or failure, there can be no assurance that it will not incur such losses in future. Any of these and other events could result in information technology systems failures, operational delays, production downtimes, destruction or corruption of data, security breaches or other manipulation or improper use of the Company's systems and networks, any of which may result in a material adverse effect on the Company's business, financial condition, results of operations, cash flows or prospects.

Fixed Zinc Pricing Arrangements and Other Pricing Hedges

The Company may from time to time enter into fixed zinc pricing arrangements or other hedges in respect of a material amount of its forecasted zinc production. The use of these arrangements involves certain inherent risks including the risk of default on amounts owing to the Company by the counterparties with which the Company has entered into such transactions. In the event that such risks materialize, the Company's future cash flows, profitability, results of operations and financial condition could be materially and adversely affected.

Conflicts of interest

Certain of the Company's directors also serve or may serve as directors or officers of, or have significant shareholdings in, other companies involved in natural resource exploration, development and production or mining-related activities, including in other companies involved in the exploration, development and production of zinc. To the extent that such other companies may participate in ventures in which the Company may participate, or in ventures which the Company may seek to participate in, the Company's directors and officers may have a conflict of interest in negotiating and concluding terms respecting the extent of such participation. In all cases where the Company's directors and officers have an interest in other companies, such other companies may also compete with the Company for the acquisition of mineral property investments. Such conflicts of the Company's directors and officers may result in a material and adverse effect on the Company's profitability, results of operation and financial condition. As a result of these conflicts of interest, the Company may miss the opportunity to participate in certain transactions, which may have a material adverse effect on the Company's financial position.

Risks inherent in acquisitions

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

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

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

Labour and employment retention relations

Production at ESM's #4 mine will be dependent upon the ability of the Company to hire qualified employees and to maintain good relations with its employees. In addition, relations between the Company and its employees may be impacted by changes in the scheme of labour relations which may be introduced by the relevant governmental authorities in the United States. Adverse changes in such legislation or in the relationship between the Company and its employees or the ability to attract employees to ESM's #4 mine may have a negative impact on the Company's business, results of operations and financial condition.

Anti-corruption and bribery regulation, including the Canadian Extractive Sector Transparency Measures Act (“ESTMA”) reporting

The Company is required to comply with anti-corruption and anti-bribery laws in Canada and the United States. In recent years, there has been a general increase in both the frequency of enforcement and the severity of penalties under such laws, resulting in greater scrutiny and punishment of companies convicted of violating anti-corruption and anti-bribery laws. Furthermore, a company may be found liable for violations by not only its employees, but also by its contractors and third-party agents. Although the Company has adopted a Code of Conduct that addresses these matters, no assurance can be given that the Company, or its employees, contractors or third-party agents will comply strictly with such laws. If the Company is the subject of an enforcement action or in violation of such laws, it may result in significant penalties, fines and/or sanctions imposed on the Company resulting in a material adverse effect on the Company’s reputation and results of its operations.

In addition, ESTMA requires public disclosure of payments to governments by mining and oil and gas companies engaged in the commercial development of oil, gas and minerals who are either publicly listed in Canada or with business or assets in Canada. Mandatory annual reporting is required for extractive companies with respect to payments made to foreign and domestic governments at all levels, including entities established by two or more governments, and including aboriginal groups. ESTMA requires reporting on the payments of any taxes, royalties, fees, production entitlements, bonuses, dividends, infrastructure improvement payments, and any other prescribed payment over C\$100,000. Failure to report, false reporting or structuring payments to avoid reporting may result in fines of up to C\$250,000 (which may be concurrent). The Company commenced reporting in 2017. If the Company finds itself subject to an enforcement action or in violation of ESTMA, this may result in significant penalties, fines and/or sanctions imposed on the Company resulting in a material adverse effect on its reputation.

Infrastructure

Mining, processing, development and exploration activities depend on the availability of adequate infrastructure. Reliable roads, bridges and power sources are important factors that affect capital and operating costs. Sabotage, government or other interference in the maintenance or provision of such infrastructure could adversely affect the Company’s operations, financial condition and results of operations.

Enforceability of judgments

Certain directors of the Company reside outside of Canada. As a result, holders of Common Shares may not be able to effect service of process within Canada to such directors, or to enforce Canadian court judgments obtained against such directors in jurisdictions outside of Canada, including those predicated upon the civil liability provisions of applicable Canadian securities laws. Furthermore, it may be difficult for the holders of Common Shares to enforce, in original actions brought in courts in jurisdictions outside of Canada, liabilities predicated upon Canadian securities laws.

Global outbreaks and Coronavirus

The Company’s business could be significantly adversely affected by the effects of any widespread global outbreak of contagious disease. A significant outbreak of contagious diseases in the human population could result in a widespread health crisis that could adversely affect the economies and financial markets of many countries, resulting in an economic downturn that could affect demand for the Company’s products and likely impact operating results.

Russia-Ukraine conflict

In late February 2022, Russia launched a large-scale military attack on Ukraine. The invasion significantly amplified already existing geopolitical tensions among Russia, Ukraine, Europe, NATO and the West, including Canada. In response to the military action by Russia, various countries, including Canada, the United States, the United Kingdom and European Union issued broad-ranging economic sanctions against Russia. Such sanctions (and any future sanctions) and other actions against Russia may adversely impact, among other things, the Russian economy and various sectors of the economy, including but not limited to, financials, energy, metals and mining. Accordingly, the actions discussed above and the potential for a wider conflict could increase financial market volatility and cause severe negative effects on regional and global economic markets. As a result, the Company's business, financial condition, and results of operations may be negatively affected by economic and other consequences from Russia's military action against Ukraine and the sanctions imposed in response to that action.

EMPIRE STATE MINE

The following information on ESM is the Summary exactly as included in and extracted from the Technical Report titled "Empire State Mines 2024 NI 43-101 Technical Report Update" with an effective date of December 3, 2024 (the "**ESM Technical Report**"). The ESM Technical Report is incorporated by reference herein and available on the Company's profile on SEDAR+.

1.1 Introduction

BBA USA Inc. (BBA) was engaged by the Company to update the current National Instrument 43-101 (NI 43-101) Technical Report for the Empire State Mines (ESM) operation. This technical report summarizes the results of this update and was prepared following the guidelines of NI 43-101.

ESM owns the Balmat No. 4 Underground Zinc Mine (the Mine), which is known as ESM No. 4 Mine or #4 Mine. The mine is located in the Balmat-Edwards-Pierrepoint mining district in northern New York State, near Gouverneur and is 25 miles (mi) south of the Port of Ogdensburg.

The district is a mature zinc mining camp with production first recorded in 1915. Mining proceeded over the decades primarily as underground (UG) operations serviced by shafts and portals.

This revision to the technical report provides an update to ESM's zinc resources following additional drilling and mining exposure since the last technical report. Additionally, an initial resource estimate is provided for a graphite target called "Kilbourne".

The currency in the report is United States dollars (US\$), unless stated otherwise. Imperial and metric units are used and defined as required.

1.2 Project Description

The mine is fully developed with shaft access and mobile equipment on-site. Existing surface facilities at the mine include a maintenance shop, offices, mine dry, primary crusher, mine ventilation fans, 12,000-ton (t) covered concentrate storage building, rail siding, warehouse, and storage buildings. The mine and its facilities were maintained to good standards during the period of care and maintenance.

Mineralization is hosted within an Upper Marble rock unit, comprised of metamorphosed and complexly folded (silicified) marbles. The mineralization is located primarily in hinges of large fold structures.

The mine uses a combination of longhole stoping, inclined room and pillar style panel mining, and mechanized Cut and Fill as mining methods. An underground crusher is in place and is capable of feeding a

surface flotation concentrator with name plate capacity of 5,000 tons per day (t/d). The mine plan scales up slightly from the current production rate of 1,750 t/d to 1,775 t/d in 2025. The current mine life is projected to be 9 years with the open pits being started depending on zinc price.

Tailings are being placed in the existing permitted 260-acre conventional impoundment. The Tailings Management Facility (TMF) is categorized as a low-risk dam by the New York State Bureau of Flood Protection and Dam Safety.

The ultimate capacity of the 260-acre footprint has been estimated at 20 million tons (Mt), with immediate capacity of 2.7 Mt, before further embankment construction will be needed. Tailings and waste rock materials at the TMF are non-acid generating due to the high carbonate content of the host rocks. Volunteer vegetation is evident and continues to naturally revegetate inactive areas of the TMF.

1.3 Location, access, and ownership

ESM is located approximately 1.3 miles southwest of Fowler, New York State, in St. Lawrence County. St. Lawrence Zinc Company, LLC (SLZ) owns a total of 2,699 acres of fee simple surface and mineral rights in three towns in St. Lawrence County. The majority of the Property consists of the 1,754 acres in the town of Fowler where the ESM, mill and tailings disposal facility are located. Nine parcels totaling 703 acres are owned in the town of Edwards, which includes the Edwards mine. The remainder of the fee ownership covers the Pierrepont mine, which is located on four owned parcels totaling 242 acres.

1.4 History, exploration, and drilling

The Balmat-Edwards-Pierrepont district consists of four mining regions (Balmat, Hyatt, Edwards, and Pierrepont) with production first recorded out of Edwards in 1915. Balmat operated continuously from 1930 to 2001 when production ceased due to depressed zinc metal prices. Production resumed in 2006 until Hudbay placed the Balmat mine on care and maintenance in the third quarter of 2008 in response to depressed metal prices. ESM resumed production in 2018 and has produced continually since then.

Drilling on site has been exclusively core drilling either with contract drillers such as Cabo, Major, and Boart Longyear, or by company owned and operated drills. The drillhole database contains 9,514 surface and underground drillholes, of which 513 holes totaling 219,095 ft have been drilled since 2020.

The Balmat mine (now ESM) has produced a total of 35.5 Mt grading 8.7% zinc. A history of mine ownership is listed in Table 1-1.

Table 1-1: Balmat (now ESM) ownership history

Date	Company
1930	St. Joe Minerals
1987	Zinc Corporation of America
2003	OntZinc (renamed Hudbay Minerals in December 2004)
2015	Star Mountain Resources Inc.
2017	Titan Mining (US) Corporation

Source: ESM 2024.

1.5 Geology and mineralization

1.5.1 Zinc

The carbonate hosted ESM zinc deposits are comprised of multiple zones in and around Fowler, NY. There are ten deposits currently considered as viable economic targets; American, Cal Marble, Fowler, Mahler, Mud Pond, N2, Northeast Fowler, New Fold, Sylvia Lake, and Turnpike. Historic mining at these locations has provided a good geological understanding of each, with supporting mapping, sampling, and drilling data.

Mining and grade control experience by ESM geologists have supported that the implicit modeling of the mineralized zones as veins in Leapfrog Geo™ version 2023.2.3, results in more accurate geological wireframes.

The zinc mineralization extends from the surface down to a depth of 5,700 ft below surface. The zones are aerially scattered and all zones except NE Fowler and Cal Marble are connected by existing development to the shaft. The zones range in thickness from 2 ft to 50 ft with an overall plunge between 20° to 25° with local dips ranging from 0° to 90°. The deposit footprints are up to 500 ft wide and 9,000 ft long. The veins can display considerable geometrical variability depending on the degree of folding.

1.5.2 Graphite

Graphite mineralization occurs as weakly disseminated flakes within many of the marbles and dolomites, and occurs in the highest grades in the Upper Marble Unit 2 schists with graphitic carbon content averaging around 3% graphitic carbon.

1.6 Metallurgical testing and mineral processing

1.6.1 Zinc

A test program was undertaken in 2005 to confirm the processing requirements of selected mineralized material zones from the ESM mine. These mineralized material zones were selected based on projected tonnage, mineralized material type, and sample availability. The results were used to confirm concentrate grades and recoveries for the re-start of operations in 2005.

Flotation tests were completed under the guidance of Fred Vargas, the metallurgical consultant who developed the pHLOTEC flotation process in use at ESM since 1984.

The 2005 metallurgical test results, and operational results from 2006 to 2008, support a zinc recovery of 96% and a zinc concentrate grade of 58% for the UG operations.

ESM recently discovered two new zones of near-surface mineralization near the existing operation. Metallurgical test work was undertaken on the samples from the new zones to determine the process flowsheet for treating them to produce both lead/silver and zinc concentrates.

The primary objective of the test work undertaken at Resource Development Inc. (RDi) in 2020 was to determine if the ores from the Turnpike and Hoist House prospects can be processed in the existing circuit with minor modifications to produce both lead and zinc concentrates.

Approximately 121 pounds (lb) or 55 kg of each sample, some half core samples, and existing mill feed samples were sent to RDi for metallurgical test work which consisted of Bond's Ball Mill Work Index and abrasion index determination and flotation test work. Reagents, currently employed in the milling circuit at the mine, were also sent for the study.

The conclusions drawn based on the scoping level study undertaken by RDi were that the recently discovered prospects could be processed using sequential flotation process to produce separate lead and zinc concentrate. Mineralization from Turnpike and Hoist House prospects are slightly harder than the current ore being processed in the plant. The lead recovery and concentrate grade are dependent on the feed grade of the ore. The higher the feed grade, the higher the final concentrate recovery and grade.

Due to the low feed lead grade, one would require a large amount of mineralization to run a locked-cycle test. Since limited ore was available, the optimization can be done once new flotation cells for the lead circuit are incorporated into the flowsheet.

1.6.2 Graphite

Mineralogical characterization and metallurgical testing were performed on samples from the Kilbourne Graphite Project (Kilbourne).

Optical microscopy of the samples showed that graphite was acicular to prismatic, and platy in habit. It ranged from <50 µm as individual flakes to 1.5 mm in size as polycrystalline clusters. Graphite was generally finer-grained in the low-grade samples and coarser in the higher-grade samples.

Flotation process development conducted at SGS on a sample grading 1.67% C(g) culminated in a flowsheet and conditions that produced a final concentrate grading 97.4% C(t). The graphite concentrate was classified as finer grained with less than 8% of the concentrate mass reporting to the +100 mesh size fractions. It is noteworthy that even the smallest size fraction of -200 mesh produced a very high total carbon content of 97.4% C(t).

Forte Analytical (Forte) conducted a test work program on two composites grading between 2.4% and 2.5% C(g). The focus of the test program was to produce a concentrate grading at least 95% C(t) while minimizing flake degradation. The optimized flowsheet and conditions produced an upgraded flash concentrate grading 98.3% C(t) with 21.4% of the concentrate mass reporting to the +100 mesh size fractions. The flash concentrate accounted for only 50-60% of the contained graphite and a global concentrate product including the upgraded rougher concentrate was not characterized.

While the execution of the test programs conducted by SGS and Forte varied significantly, the results are consistent. Both programs determined that the flake size distribution in the Kilbourne mineralization is relatively fine but upgraded readily to very high concentrate grades well above 95% C(t).

A review of the drillhole data revealed that the material between the upper and lower zones is almost barren. Sensor-based ore sorting may be an effective technology to reject the barren material, thus upgrading the average mill feed noticeably. Hence, ore sorting will be explored in the next phase of testing, which could significantly increase the mill head grade.

1.7 Mineral Resource Estimates

1.7.1 Zinc

Drillhole database

The drillhole database was exported as CSV files for the resource updates. Assays and associated composites were extracted from drillholes that were used in estimation, of which there were 1,321 in total.

The complete database for ESM consists of 12,264 records. There are 89 sets of channel samples, 2,193 surface core holes, 7,321 UG core holes, and 2,661 holes identified as other (including monitoring wells, blast holes, and un-categorized historic drilling). Smaller subsets of this database were used for geologic modeling

and/or estimation on a lithological unit basis. Each lithological group was modeled separately in isolated geological and estimation projects.

Geologic model

Ten zones were defined and modeled by ESM geologists. Each one is comprised of multiple veins designating variably oriented and spatially-distinct mineralized zones, which were modeled using implicit methods. Input data for these models are based on drilling intercepts and years of surface and underground mapping.

All geological modeling was conducted in Leapfrog Geo™ version 2023.2.3. Each zone has been analyzed and divided where appropriate to facilitate a more accurate estimation of grade. In some cases, this has resulted in splitting of domains based on morphology or orientation for the purposes of estimation. Updates periods for modeling are summarized in Table 1-2.

Table 1-2: Update periods, model methodology, and volumes

Zone	Modeling Method	Years Modeled and Updated	Model Volumes
American	Implicit vein model	2019	4,586,000
Cal Marble	Implicit vein system model	2009, 2017, 2019, 2024	5,206,900
Fowler	Implicit vein system model	2019, 2023	2,598,000
Mahler	Implicit vein model; indicator RBF interpolant	2009, 2017, 2019, 2020, 2021, 2022, 2023, 2024	25,915,000
Mud Pond	Implicit vein system model	2008, 2009, 2017, 2019, 2020, 2021, 2022, 2023, 2024	14,875,000
N2D	Implicit vein system model; indicator RBF interpolant	2019, 2021, 2022, 2023	22,420,000
New Fold	Implicit vein system model; indicator RBF interpolant	2009, 2017, 2020, 2021, 2022, 2023, 2024	15,392,000
Northeast Fowler	Implicit vein model	2017, 2019	6,852,600
Sylvia Lake	Implicit vein system model	2017, 2019, 2024	7,102,000
Turnpike	Indicator RBF interpolant	2019, 2021, 2022, 2023	65,041,000

Source: ESM 2024

Block Model

Separate block models were created for each zone. The parameters for each consist of origins, rotations (in Leapfrog rotation convention), parent block parameters and associated sub-block parameters. The American and Northeast Fowler block models were created in Vulcan and have parameters consistent with Vulcan conventions.

Historical mine workings, or as-built solids, were used for sub-blocking during model creation and mined blocks contained in these wireframes were removed from the estimated material. A comprehensive as-built wireframe was updated as of June 11, 2024, and used to deplete tonnage within the block models.

Due to the high variability of the ESM deposits and the lack of robust variography, inverse distance squared estimates were used to estimate grade into parent blocks within the block model. The control of each estimate was based on sample selection criteria such as minimum and maximum number of composites, minimum number of drillholes, and search distances. For each pass, the search distances were either isotropic (spherical) or anisotropic (ellipsoidal) depending on the geometric control and limits in each vein. For isotropic searches, the geometry of the vein was considered adequate to control sample selection. For anisotropic searches, the direction was defined using a variable orientation algorithm in Leapfrog EDGE called Variable Orientation or in Vulcan called Locally Varying Anisotropy (LVA). This oriented the search ellipse for each block down a plane which paralleled the modeled geologic continuity (i.e., the hanging wall or footwall of the ESM veins). The VO and LVA parameters were defined within the estimator based on the modeled vein surfaces.

Underground Mineral Resources have been modeled (Leapfrog Geo™ version 2023.2.3) and estimated (Leapfrog EDGE) by ESM geologists and reviewed for consistency with industry standards. Don Taylor of Titan Mining Corp. is the qualified person (QP) who has reviewed the geological models and estimates and has conducted multiple site inspections. Mineral Resources for the underground #4 Mine areas have been compiled from ten separate block models including the American, Cal Marble, Fowler, Mahler – Lower, Mahler - Upper, Mud Pond, N2D, New Fold, Northeast Fowler and Silvia Lake areas (Table 1-3).

Table 1-3: Underground Mineral Resource Estimate as of July 16, 2024

Category	Tons (000's US short tons)	Zn (%)	Contained Pounds (000's lb)
Measured	295	17.1	101,086
Indicated	1,158	15.7	363,825
Measured + Indicated	1,453	16.0	464,911
Inferred	4,327	12.1	1,048,630

Source: ESM 2024

Notes:

1. The qualified person for the 2024 MRE, as defined by the NI 43-101 guidelines, is Donald (Don) R. Taylor, of Titan Mining Corp., SME registered member (#4029597).
2. Mineral Resources are not Mineral Reserves and do not have demonstrated economic viability. There is no certainty that any part of the Mineral Resources estimated will be converted into a Mineral Reserves Estimate.
3. Three-dimensional (3D) wireframe models of mineralization were prepared in Leapfrog Geo based on the geological interpretation of the logged lithology on contiguous grade intervals defining mineralized sub-domains. The 2024 underground MRE encompasses 36 vein domains and six indicator RBF interpolant shells totaling 42 individual wireframes.
4. Geological and block models for the underground MRE used data from a total of 1,100 surface and underground diamond drillholes (core). The drillhole database was validated prior to resource estimation and QA/QC checks were made using industry-standard control charts for blanks and commercial certified reference material inserted into assay batches by Empire State Mines personnel.
5. High-grade capping was evaluated and implemented on the raw assay data on a per-zone basis using histograms and log-probability plots. Outliers were further evaluated during estimation and limited if necessary using the Leapfrog Edge clamping method.
6. The MRE was compiled from 10 individual block models that were prepared using Leapfrog Edge. Block models were sub-blocked at domain boundaries and samples were composited using vein length intervals where a single composite is generated for each complete vein intersection with a drillhole. Composites were generated within the indicator RBF interpolant models as 10-ft run-length composites with residuals less than 5 ft added to the prior interval, honoring the modeled geological boundaries. Grade estimation was carried out using inverse distance weighted (IDW) methods coupled with variably orientated search ellipses derived from modeled vein surfaces.

7. The specific gravity (SG) assessment was carried out for all domains using measurements collected during the core logging process. Where there is sufficient sampling, the SG is interpolated into model blocks using IDW techniques. If insufficient sampling exists, then density was assigned to models based on calculated means or by a regression formula.
8. Resources are reported using a 5.3% Zinc cut-off grade, based on actual break-even mining, processing, G&A costs, and smelter terms from the ESM operation at a zinc recovery of 96.4%.
9. Resources stated as in-situ grade at a Zinc price of \$1.30/lb.
10. The resource classification considered the quality, quantity and distance to the data informing blocks in the model, as well as the geological continuity of the mineralized zones. Classification parameters vary slightly depending on the nature and continuity of the individual zones. Block classification was explicitly domained based on a calculation that used quality, quantity, and distance parameters.
11. Quantities and grades in the MRE are rounded to an appropriate number of significant figures to reflect that they are estimations.
12. The Mineral Resource Estimate was prepared following the CIM Estimation of Mineral Resources & Mineral Reserves Best Practice Guidelines (November 29, 2019).
13. CIM definitions and guidelines for Mineral Resource Estimates have been followed.
14. The QP is unaware of any known environmental, permitting, legal, title-related, taxation, socio-political or marketing issues or any other relevant issues that could materially affect this MRE.

Open Pit #2 Mine (Turnpike) Mineral Resources have also been modeled (Leapfrog Geo™ version 2023.2.3) and estimated (Leapfrog EDGE) by ESM geologists and reviewed for consistency with industry standards. Don Taylor of Titan Mining Corp. is the QP who has reviewed the geological models and estimates and has conducted multiple site inspections. Mineral Resources for the Turnpike Open Pit area have been taken from a single block model (Table 1-4).

Table 1-4: Turnpike Open Pit Mineral Resource Estimate as of October 17, 2024

Category	Tons (000's US short tons)	Zn (%)	Contained pounds (000's lb)
Measured	251	3.1	15,679
Indicated	950	3.2	61,088
Measured + Indicated	1,201	3.2	76,767
Inferred	461	3.5	32,360

Source: ESM 2024

Notes:

1. The qualified person for the 2024 MRE, as defined by the NI 43-101 guidelines, is Donald (Don) R. Taylor, of Titan Mining Corp., SME registered member (#4029597).
2. Mineral Resources are not Mineral Reserves and do not have demonstrated economic viability. There is no certainty that any part of the Mineral Resources estimated will be converted into a Mineral Reserves estimate.
3. Three-dimensional (3D) wireframe models of mineralization were prepared in Leapfrog Geo based on the geological interpretation of the logged lithology on contiguous grade intervals defining mineralized sub-domains. The 2024 Open Pit MRE encompasses three vein domains and nine indicator RBF interpolant shells totaling 12 individual wireframes.
4. Geological and block models for the Open Pit MRE used data from a total of 254 surface and underground diamond drillholes (core). The drillhole database was validated prior to resource estimation and QA/QC checks were made using industry-standard control charts for blanks and commercial certified reference material inserted into assay batches by Empire State Mines personnel.
5. High-grade capping was evaluated and implemented on the raw assay data on a per-zone basis using histograms and log-probability plots. Outliers were further evaluated during estimation and limited if necessary using the Leapfrog Edge clamping method.
6. The Open Pit MRE was compiled from a single block model that was prepared using Leapfrog Edge. The block model was sub-blocked at domain boundaries and samples were composited within the indicator RBF interpolant models as 10-ft run-length composites with residuals less than 5 ft added to the prior interval, honoring the modeled geological boundaries. Assays were

composited within the vein models using vein length intervals where a single composite is generated for each complete vein intersection with a drillhole. Grade estimation was carried out using IDW methods coupled with variably orientated search ellipses derived from modeled trend surfaces.

7. The SG assessment was carried out for all domains using measurements collected during the core logging process. Where there is sufficient sampling, the SG is interpolated into model blocks using IDW techniques. If insufficient sampling exists, then density was assigned to models based on calculated means or by a regression formula.
8. Resources stated as internal to an optimized pit shell, above a cut-off grade of 0.6% Zn.
9. Cut-off is based on break-even economics at a Zinc price of \$1.27/lb, with an assumed zinc recovery of 96%, and actual processing, mining, and transportation costs from the ESM operation. No G&A costs were applied as ESM considers the Project accretive. No extra mining dilution was added as a regularized block model was used.
10. The resource classification considered the quality, quantity and distance to the data informing blocks in the model, as well as the geological continuity of the mineralized zones. Classification parameters vary slightly depending on the nature and continuity of the individual zones. Block classification was explicitly domained based on a calculation that used quality, quantity, and distance parameters.
11. Quantities and grades in the MRE are rounded to an appropriate number of significant figures to reflect that they are estimations.
12. The Mineral Resource Estimate was prepared following the CIM Estimation of Mineral Resources & Mineral Reserves Best Practice Guidelines (November 29, 2019).
13. CIM definitions and guidelines for Mineral Resource Estimates have been followed.
14. The QP is unaware of any known environmental, permitting, legal, title-related, taxation, socio-political or marketing issues or any other relevant issues that could materially affect this MRE.

1.7.2 Graphite

Drill Database

The Kilbourne Graphite Project database totals 45 surface-collared diamond drillholes (DDH) and one surface channel, totaling 29,699 ft used for modeling Kilbourne. There are a total of 3,396 assay records in the Kilbourne database, of which 2,088 assay records for graphite (%Cg).

Geology Model

Three-dimensional (3D) wireframe models of mineralization were developed in Leapfrog Geo™ version 2023.2.3 (Leapfrog) by ESM and reviewed by the QP. The wireframes were based on the geological interpretation of the logged lithology and sub-domained based on contiguous grade intervals greater than or less than 0.50-%Cg within the Upper Marble #2 (UM2) formation, defining the Upper, Middle, and Lower sub-domains of UM2 (210, 220, 230). Contiguous grade intervals greater than or equal to 0.50 %Cg were modeled within the higher-grade 210 and 230 sub-domains (UM2 – Upper and Lower, respectively), while contiguous grade intervals less than 0.50 %Cg were modeled as the 220 sub-domain (UM2 – Middle). These 200 series domains form the basis of the Kilbourne Mineral Resource Estimate.

The wireframe solids were imported from Leapfrog into Datamine Studio RM™ version 2.1.125.0 (Datamine) in .dwg format. The solids were validated within Datamine. The modeling is broken down into twelve separate geological domains based on lithology.

The wireframes extend at depth, below the deepest DDH. This is to provide a target for future exploration. The block model extents did not encompass the entire wireframe extents to reduce block model and file sizes. As such the volumes related to the block model may significantly differ in comparison to the wireframe volumes. The volumes were validated with an initial block fill of the entire wireframes and no significant discrepancies were noted.

Block Model

Block modeling was completed in Datamine using industry accepted standard practices. The geological model wireframes were filled with parent block 30' x 30' x 15' and sub-celled to filled the volumes.

Drillhole samples intervals were assigned to the appropriate mineral domain. Geostatistical analysis was completed on each mineral domain for grade capping, compositing, and spatial analysis.

Grades were estimated into the model using a three-pass estimation requiring a minimum and maximum number of samples to estimate a block. Table 1-5 summarizes the pit constrained Mineral Resource using a 1.5% Cg cut-off grade.

Table 1-5: Kilbourne Graphite Mineral Resource summary and in situ metal within pit shell

Classification	Deposit	Cut-Off Grade (% Cg)	Tonnage ('000 Ton)	Grade (% Cg)	Contained Graphite ('000 Ton)
Inferred	Kilbourne	1.50	22,423	2.91	653

Source: BBA 2024

Notes:

1. The independent qualified person for the 2024 MRE, as defined by NI 43-101, is Mr. Todd McCracken (PGO 0631) of BBA USA Inc. The effective date of this Mineral Resource Estimate is December 3, 2024.
2. Three-dimensional (3D) wireframe models of mineralization were based on the geological interpretation of the logged lithology and sub-domained based on contiguous grade intervals greater than or less than 0.50% Cg defining two mineralized sub-domains.
3. Geological and block models for the Mineral Resource Estimate used data from a total of 45 surface diamond drillholes (core) and 1 surface channel sample. The drillhole database was validated prior to resource estimation and QA/QC checks were made using industry-standard control charts for blanks and commercial certified reference material inserted into assay batches by Empire State Mines personnel.
4. Quantities and grades in the Mineral Resource Estimate are rounded to an appropriate number of significant figures to reflect that they are estimations.
5. The Mineral Resource Estimate was constrained using the following optimization parameters, as agreed upon by Empire State Mines and the QP. The parameters include mining costs of \$4.60/ton for mineralized rock, \$3.50/ton for unmineralized rock, and \$2.00/ton for overburden and tailings, with a 5.0% dilution and 95.0% mining recovery. Processing costs are \$14.00/ton milled, with a 91.0% processing recovery and a concentrate grade of 95.0%. No general and administrative (G&A) costs were applied. The selling price is \$1,090/ton of concentrate, with transportation costs of \$50/ton and no additional selling costs. The overall slope angles are 23 degrees for overburden and tailings, and 45 degrees for rock.
6. The resource reported has been tabulated in terms of a pit-constrained cut-off value of 1.50% Cg.
7. The block model was prepared using Datamine Studio RM™. A 30 ft x 30 ft x 15 ft block model was created, and samples were composited at 5 ft intervals. Grade estimation for graphite used data from drillhole data and was carried out using ordinary kriging (OK), inverse distance squared (ID2), and nearest neighbor (NN) methods. The OK methodology is the method used to report the mineral estimate statement.
8. Grade estimation was validated by comparison of the global mean block grades for OK, ID2, and NN by domain and composite mean grades by domain, swath plot analysis, and by visual inspection of the assay data, block model, and grade shells in cross-sections.
9. The SG assessment was carried out for all domains using measurements collected during the core logging process. The mean specific gravity value within the mineralized domains is 2.75.
10. The Mineral Resource Estimate was prepared following the CIM Estimation of Mineral Resources & Mineral Reserves Best Practice Guidelines (November 29, 2019).

1.8 Mining

The mine plan tons at the ESM deposit are extracted using a combination of longitudinal retreat stoping (LRS), Cut and Fill (C&F), Panel Mining (PM) – Primary and Secondary (PAP & PAS), and development drifting underground mining methods with rock backfill. Longhole back-stopes (BCK) are also used in the design where applicable. The mine plan scales up slightly from the current production rate of 1,750 t/d continuing through 2032 winding down in 2033. The current mine life is projected to be 9 years with the Turnpike open pits being dependent on zinc price. For the purposes of this report, the open pits are not included in the economic analysis. A conceptual schedule is included, but the tons are not included in the life of mine (LOM) mineable inventory.

The ESM deposit will be accessed from surface via the No. 4 shaft, and all mineralized material and some waste rock will be hoisted out of the mine via that shaft. In addition to the existing development and raises, new lateral development and ramping will be required to access mineralized zones.

To supplement the ventilation provided by the raises, as the ramps are being driven, shorter internal ventilation drop raises will ensure air delivery to the active development face.

Measured, Indicated, and Inferred Mineral Resources were included in the mine design and schedule optimization process. The Mineral Inventory is based on the Mineral Resource stated as of July 2024 and is estimated at a 5.5% Zinc cut-off grade for the UG mine and 0.6% Zn for open pit mining. The LOM plan is considered to start January 2025 with the production from 2024 being calculated from actuals and short-range estimates.

For the underground mine, dilution was estimated based on typical stope dimensions to calculate unplanned overbreak experienced during mining operations. The rock quality at ESM is considered to be very good geotechnically, so overbreak is considered to be minimal. For LRS and BCK stopes, two sources of dilution were considered. Sloughing was estimated to be 2.0 ft on both the hanging wall and footwall of LRS stopes. For C&F, planned over break dilution of 0.5 ft was applied to both walls. A dilution grade of 0% Zn was assumed for all dilution.

Mine recovery was calculated under the following mine assumptions:

- C&F and waste development passing incremental cut-off, assume 95% mine recovery after losses.
- Longitudinal retreat and back-stopes assume 95% mine recovery.
- Panel mining assumes 75% mine recovery after losses from pillars left behind.

Provided care is taken during blasting and rigorous ore control and monitoring systems are followed, BBA estimates that dilution and ore losses can be minimized for open pit mining. A mining recovery factor and dilution factor were not applied as a regularized block model was used for the mine design and scheduling.

The production schedule for the underground LOM is provided in Table 1-6. A proposed schedule for potential Turnpike Open Pit order of extraction is provided in Table 1-7.

Table 1-6: Mine production schedule

Item	Unit	Total	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Underground Ore Mined	kt	4,467	425	462	467	455	455	455	455	455	455	383
Zinc Grade	%	7.41	8.60	7.80	7.50	7.30	7.30	7.30	7.30	7.30	6.50	7.30
Contained Zinc	M lb	662	73	72	70	66	66	66	66	66	59	56

Source: ESM 2024

Table 1-7: Turnpike Open Pit conceptual schedule

Item	Unit	LOM	Y1	Y2	Y3
Open Pit Ore Mined	kt	399	120	195	84
Total Open Pit Waste	kt	1,364	580	627	158
Stripping Ratio	W:O	4.8	3.2	1.9	3.4
Total Material moved	kt	1,763	700	822	242
Zinc Grade	%	2.79	3.13	3.80	3.17
Contained Zinc	000s lb	6,695	12,210	6,390	25,292

Source: BBA 2024

1.9 Recovery methods

Mineralized material mined in the ESM deposits is processed at the existing ESM concentrator that was commissioned in 1970 and last shut down in 2008. The concentrator was refurbished in late 2017 and began processing ore in 2018. The concentrator flowsheet includes crushing, grinding, sequential lead and zinc flotation circuits, concentrate dewatering circuits, and loadout facilities.

The design capacity of the concentrator is 5,000 t/d. Throughout the history of the Balmat operation (now ESM), the capacity of the concentrator has exceeded that of the mines' capacity. The operating strategy is to operate the concentrator at its rated hourly throughput of 200 tons per hour (t/h) to 220 t/h, but for only as many hours as necessary to suit mine production. It currently is processing between 6,500 to 7,000 tons per week operating on a schedule of one shift per day, 4 days per week. The concentrator suffers no notable losses from intermittent operation.

The zinc flotation circuit consists of rougher flotation followed by scavenger flotation. The scavenger concentrate returns to the head of the rougher circuit. Rougher concentrate undergoes two stages of cleaner flotation. Cleaner tailings are returned to the previous stage of flotation in the traditional manner. Currently, the concentrator is producing zinc concentrate at an average of 59.0% zinc with 3% iron and 0.50% magnesium.

Lead values in the underground ore will be generally very low, and lead concentrate is not planned to be produced. Lead values in the open pit ore are expected to be higher and it will be possible to produce a lead concentrate from this ore source.

While aged, the concentrator is in good working order and runs efficiently. No modifications are required to continue processing underground ore sources and minimal modifications would be required for processing the mineralized material to be mined from the open pits.

1.10 Infrastructure

Access to the ESM facility is by existing paved state, town, and site roads. All access to the mine/mill facility as well as concentrate haulage from the facility is by paved public roads and/or an existing CSX rail short line. The existing facilities at ESM mine are well established and will generally meet the requirements of the planned operations.

The ESM site is located adjacent to State Highway 812, approximately 1.5 mi from the junction with State Highway 58. A mile-long stretch of Sylvania Lake Road currently handles traffic to and from the site, including truck haulage of concentrate. Road maintenance is carried out by the Town and State Government Department of Highways.

There are currently two entries from Sylvania Lake Road providing access to the site. The main entry provides access to the parking lot and the approach to the office complex, and the tailings line entry is the waste truck haulage route to the tailings impoundment. These accesses are adequate, and no improvements are planned.

The existing mine office complex is a two-story steel frame and concrete block/galbestos-sided building with steel joist/concrete plank built up roof system. As part of the first floor, the maintenance vehicle storage garage, the boiler room, and the dry/lamp room is a 60 ft x 273 ft area. The dry, located on the ground floor, accommodates 125 people with individual lockers for clean clothes and hanging baskets for working clothes for all personnel, as well as the appropriate number of showers and toilet facilities.

The ground floor also contains mine offices, a boiler room and lamp room. Hot water for sanitary purposes is provided by quick recovery propane water heater, eliminating the need to operate a steam boiler through the summer months. The second floor contains a warehouse, machine shop, mine rescue room, first aid equipment room and training room.

Power to site is fed by line from Niagara Mohawk's substation at Battle Hill-ESM #5 circuit. On-site power is distributed to the plant and mine. SLZ owns two portable generators for emergency use. One is a 125 kVA portable used for general 480 V / 220 V / 110 V applications. The other is a 100 kVA portable generator which will run the No. 2 emergency egress hoist.

Mill process and cooling water (non-potable) for the site are pumped from the Sylvania Lake pump house to two 100,000-gallon (gal) concrete deluge tanks near the concentrate storage building/rail loadout shed. Water is pumped from the reservoir tanks to the concentrator. Mine water is pumped from the mill basement sump down the 4" shaft water line to the various mine levels.

The tailings disposal facility covers 260 acres approximately 4,000 ft north of the mill. Water from tailings flows through a series of retention ponds before discharge into Turnpike Creek. Discharge is regulated by the New York State Department of Environmental Conservation (NYSDEC) under permit NY0001791.

The mineralized materials and waste rock from the development and operation of the mine is non acid-generating due to the alkaline nature of the host rock. The designated surface pads were designed such that any run-off will drain to the concentrator pond. The capacity of this stockpile area is sufficient for the tonnages in the contained mine schedule.

1.11 Environment and permitting

All permits required to operate the ESM #4 Mine are active and in place. Additionally, there are not any other significant factors or risks that may affect access, title, or the right or ability to perform work on the ESM properties.

Permits have remained active for mining at ESM No. 4 since the previous operating periods. No environmental studies are underway at this time, nor are any required for this existing fully permitted mine. The site is well managed and is in compliance with all environmental regulatory requirements.

Renewals for State Pollutant Discharge Elimination System (SPDES) Permit and Water Withdrawal Permit were submitted to the NYSDEC in a timely manner. Both permits are on the Department’s schedule for technical review due to length of time elapsed since previous review.

Tailings are non-acid generating so conventional reclamation methods can be used to rehabilitate the tailings area. Currently, surface water discharge is in compliance with a SPDES permit and is expected to remain so for operating, closure, and post-closure periods.

The ESM No. 2 Mine site has been partially reclaimed. ESM No. 2 shaft serves as secondary access to the underground operations at the No. 4 Mine and will be included in the final reclamation of the No. 4 Mine and concentrator complex. ESM No. 4 Mine and mine tailings reclamation is assured with a \$1,627,341 certificate of deposit.

1.12 Operating and capital cost estimates

Estimated project capital costs (including closure costs) total \$37.2M, consisting of the following distinct areas:

- No. 4 Mine capital equipment;
- No. 4 infrastructure and process capital.

The capital cost estimate was compiled using a combination of quotations, labor rates, and database costs. Table 1-8 presents the capital estimate summary for each area in 2024 US\$ with no escalation.

Table 1-8: Capital cost summary

Area	Cost Estimate (\$M)
#4 Mine Capital Equipment	13.1
#4 Infrastructure and Process Capital	13.9
Total Capital Cost	27.0
Closure Costs	15.4
Salvage Value	5.2
Total Capital Cost (incl. closure costs)	37.2

Source: ESM 2024

Underground capital costs are estimated to be \$13.1M. This includes an additional mechanical bolter as well as a replacement bolter, replacement of two 6 yd loaders, replacement of two UG haul trucks, replacement of a single boom jumbo, four additional 750 kVA transformers, ventilation fans and doors, a replacement locomotive, a surface exploration drill, and main dewatering pumps.

ESM has assumed that due to the short life of the pits (3 years), a contractor will be used to mine the open pits. Mark-ups on the operating costs have been assumed to cover the contractor’s mining equipment and infrastructure capital costs.

Capital item allowance for the open pit includes upgrade of the railway right of way into a haul road, land acquisition, process plant upgrade for lead circuit, and site facility preparation.

Closure costs were estimated based on the SRK cost estimate to a total of \$15.4M, this will be offset by the estimated \$5.2M in salvage value. This cost is however not included in the economic model due to ongoing mining discoveries and expansions.

Indirect, owner's, and contingency costs are all incorporated into the capital cost estimates.

Preparation of the site operating cost estimate is based on current UG operation performance. The site operating cost is based on Owner-owned and operated mining/services fleets, and minimal use of permanent contractors except where value is provided through expertise and/or packages efficiencies/skills.

Site operating costs in this section of the report are broken into four major sections, which include mining, processing, general and administrative (G&A), and concentrate transportation costs.

Site operating costs are presented in 2024 US\$ on a calendar year basis. No escalation or inflation is included.

Table 1-9: Breakdown of estimated site operating costs

Site Operating Costs	Unit Cost (\$/t milled)	LOM Cost (\$M)
Mining	55	244
Processing	18	80
G&A	20	90
Concentrate Transportation	8	32
Total	101	446

Source: ESM 2024

1.13 Economic analysis

An economic model was developed to estimate annual cash flows and sensitivities of the Project. Pre-tax estimates of project values were prepared for comparative purposes, while after-tax estimates were developed and are likely to approximate the true investment value. It must be noted, however, that tax estimates involve many complex variables that can only be accurately calculated during operations and, as such, the after-tax results are only approximations.

Sensitivity analyses were performed for variations in grade, metal price, operating costs, capital costs, and discount rates to determine their relative importance as project value drivers.

It must be noted that this PEA is preliminary in nature and includes the use of Inferred Mineral Resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as Mineral Reserves, and there is no certainty that the results of the PEA will be realized.

Other economic factors include the following:

- Discount rate of 5%;
- Nominal 2024 US dollars;
- Revenues, costs, and taxes are calculated for each period in which they occur;
- All costs and time prior to January 1, 2024, are considered sunk costs;
- Results are presented on 100% ownership basis.

The Project has been evaluated on an after-tax basis to provide an indicative value of the potential project economics. Corporate income tax was calculated by Titan of \$5.6M for the LOM.

The economic analysis incorporates royalties. A royalty of 0.3% is applied to the NSR for the zinc concentrate.

The results of the economic evaluation indicate that the Project is economic under the current assumptions. The pre-tax cash flow is estimated to be \$104M, with a pre-tax and post-tax net present value (NPV) at a discount rate of 5% of \$88M and \$83M, respectively. The results of the assessment are provided in Table 1-10.

A sensitivity analysis was performed to determine which factors most affected the project economics. The analysis revealed that the Project is most sensitive to zinc price, then zinc grade, followed by operating costs and capital costs. The results of the sensitivity analysis are provided in Table 1-11.

Table 1-10: Summary of the economic analysis results

Summary of Results	Unit	Value
Mine Life	year	9.0
Resource Mined	kt	4,469
LOM Throughput Rate	t/d	1,775
LOM Operating Days per Year	d/y	260
Average Head Zinc Grade	% Zn	7.4
LOM Recovered Zinc	M lb	636
LOM Payable Zinc	M lb	541
Total Revenue	\$M	577
Total Offsite Charges	\$M	107
Royalties	\$M	0.2
NSR (net of royalties)	\$M	577
Capital Costs (including sustaining)	\$M	27
Operating Costs	\$M	446
Operating Costs	\$/t processed	101
Pre-tax Cash Flow	\$M	104
Taxes	\$M	5.6
After-tax Cash Flow	\$M	98
Pre-tax NPV (5% discount)	\$M	88
After-tax NPV (5% discount)	\$M	83

Source: ESM 2024

Table 1-11: Sensitivity analysis results

Variable	Pre-tax NPV @ 5% (\$M)			Post-tax NPV @ 5% (\$M)		
	-10% variance	0% variance	10% variance	-10% variance	0% variance	10% variance
Zinc Price	47	88	133	38	83	125
Zinc Grade	49	88	126	46	83	116
CAPEX	90	88	85	85	83	76
OPEX	116	88	55	109	83	44

Source: ESM 2024

1.14 Conclusions

It is the conclusion of the QPs that the PEA summarized in this Technical Report contains adequate detail and information to support the positive economic result. The PEA proposes the use of industry standard equipment and operating practices. To date, the QPs are not aware of any fatal flaws for the Project.

Risks

The most significant risks associated with the Project are commodity prices, uncontrolled dilution, mineral recovery, operating and sustaining capital cost escalation, ventilation limitations, and Inferred Mineral Resource confidence.

These risks are common to most mining projects, many of which may be mitigated, at least to some degree, with adequate engineering, planning, and proactive management.

Opportunities

The resource potential has not been fully defined, and as such there is opportunity for resource expansion. The mine historically operated with little definition drilling in comparison to greenfield exploration properties. The replacement of ore reserves depended heavily on the ability to follow the mineralized zones through mine development. Additional exploration drilling may yield high returns in the discovery and upgrade of additional Mineral Resources.

There is an opportunity to increase production and project NPV by accelerating the mining of the N2D zone. This would require the purchase \$2.8M of additional mining equipment, a power upgrade of \$2.6M and hiring additional miners and mechanics to add 500 t/d of incremental ore to the mill feed. The expansion would decrease the LOM by 1 year compared to the base case due to accelerated depletion of resources. It would also add \$14M to the project pre-tax NPV calculation and 13 M payable zinc pounds per year during its 3.5-year life.

The dark mineralization hosted within a light dolomitic rock may lend itself to optical sorting technology, which could provide an increase to mill feed head grade while simultaneously providing a source of crushed waste rock for cemented and un-cemented backfill. In addition, a sorted mill feed may permit a lower mine cut-off grade which could increase the Mineral Resources within the PEA mine plan, without requiring additional exploration.

Recommendations

Zinc

The items shown in Table 1-12 are recommended for ESM to improve confidence and performance of the PEA mine plan and economics.

Table 1-12: Project recommendations and estimated cost

Item	Cost (\$)
Infill Drilling and Conversion of Inferred Mineral Resources	150,000
Review Financing for Production Expansion from N2D Zone	5,400,000
Sorting Test Work and Integration Study	100,000
Contractor Quotes for Open Pit Cost Assumptions	15,000
Total Estimate	5,665,000

Source: ESM 2024

Graphite

The items shown in Table 1-13 and Table 1-14 are recommended for ESM to advance Kilbourn to a PEA level and ensure commercial viability.

Table 1-13: Project recommendations and estimated cost

Recommended Study Item	Estimated Cost (\$)
Infill Drilling	950,000
Geotechnical Study	50,000
Phase III Metallurgical Study	47,000
Mining Study	250,000
Optical Sorting Study	30,000
Contractor Quotes	15,000
Permitting	130,000
PEA Technical Report Update	500,000
Preliminary Economic Assessment Subtotal	1,972,000
Contingency (25%)	493,000
Total Estimate	2,465,000

Source: ESM 2024

Table 1-14: Commercial recommendations and estimated cost

Recommended Study Item	Estimated Cost (\$)
Commercial Scoping Study	150,000
Product Qualification Consulting	68,000
Demonstration Plant	6,110,000
Commercial Scoping Subtotal	6,328,000
Contingency (25%)	1,582,000
Total Estimate	7,910,000

Source: ESM 2024

DIVIDENDS

Set out below are all dividends declared by the Company for the three most recently completed financial years:

Year	Declaration Date	Amount per Common Share
2023	• March 7	• C\$0.01
2022	• December 13	• C\$0.01
	• September 20	• C\$0.01
	• June 16	• C\$0.01
	• March 4	• C\$0.01

On December 13, 2022, the Company adopted a dividend policy to declare a quarterly cash dividend of C\$0.01 per common share. On June 14, 2023, the Company temporarily suspended the payment of its quarterly dividend in order to preserve capital. This decision reflected the Company's focus on strengthening its balance sheet as it navigates the downturn in zinc prices. The Company is not currently restricted from issuing dividends and will consider re-instating a dividend policy in due course.

CAPITAL STRUCTURE

General Description of Capital Structure

The Company is authorized to issue an unlimited number of common shares. The common shares of the Company are all without par value and rank equally as to dividends, voting powers and participation in assets and as to all other benefits which might accrue to holders of the common shares. No shares have been issued subject to call or assessment. Each common share carries one vote at shareholder meetings of the Company. All of the common shares outstanding as at the date of this AIF are fully paid and non-assessable. There are no pre-emptive or conversion rights, and no provision for redemption, purchase for cancellation, surrender or sinking funds attached to any of the Company's common shares. Provisions as to the modification, amendment or variation of such rights or provisions are contained in the Company's Articles of Incorporation.

As at the date hereof, there were 136,366,599 common shares issued and outstanding, 6,000,000 warrants outstanding and 10,245,000 options outstanding.

MARKET FOR SECURITIES

Trading Price and Volume

The common shares of the Company trade on the TSX under the symbol “TI”. The following table presents the high, low and closing sale price and volume traded on the TSX for the Company’s common shares during fiscal 2024.

Period (2024)	High	Low	Volume
December	0.34	0.24	1,749,881
November	0.34	0.23	1,200,872
October	0.35	0.25	1,177,681
September	0.25	0.23	509,855
August	0.24	0.20	146,211
July	0.26	0.21	518,568
June	0.33	0.22	1,173,016
May	0.40	0.30	198,037
April	0.44	0.29	608,219
March	0.31	0.24	691,232
February	0.34	0.25	425,736
January	0.38	0.33	172,029

DIRECTORS AND OFFICERS

At the date of this AIF the following were the directors and officers of the Company:

Name, Occupation and Security Holdings

Name, Province or State and Country of Residence	Date First Appointed	Position Held with the Company and Present and Principal Occupation During the Past Five Years ⁽¹⁾
Richard W. Warke British Columbia, Canada	October 15, 2012	Executive Chairman of the Company ; Executive Chairman of Solaris Resources Inc. from January 2020 to December 2024; Executive Chairman of Augusta Gold Corp. since January 2021 and Director of Armor Minerals Inc. since February 2015 and President and CEO since October 2018; Executive Chairman of Tethyan Resource Corp. from January 2019 to March 2020.
Donald R. Taylor Arizona, USA	June 21, 2018	Director and CEO of the Company ; President and CEO of Augusta Gold Corp. since April 2021.
Lenard Boggio ⁽²⁾⁽³⁾⁽⁴⁾ British Columbia, Canada	January 1, 2017	Director of the Company ; Independent corporate director of several publicly listed corporations; Partner of PricewaterhouseCoopers LLP from 1988 and senior member of the firm’s mining industry group until his retirement from the firm in May 2012.
George Pataki ⁽²⁾⁽⁴⁾ New York, USA	June 29, 2017	Director of the Company ; Senior Counsel at Norton Rose Fulbright since March 2007; Co-founder and Chairman of the Pataki-Cahill Group.
John Boehner ⁽²⁾⁽³⁾ Florida, USA	October 9, 2018	Director of the Company ; Strategic Advisor for Squire Patton Boggs since November 2017.

Name, Province or State and Country of Residence	Date First Appointed	Position Held with the Company and Present and Principal Occupation During the Past Five Years ⁽¹⁾
William Mulrow ⁽³⁾⁽⁴⁾ New York, USA	October 9, 2018	Director of the Company ; Senior Advisory Director at Blackstone Group since May 2017; Secretary to New York State Governor Cuomo from January 2015 to April 2017.
Rita Adiani Texas, USA	October 1, 2024	President of the Company ; Senior Vice President, Strategy & Corporate Development at Arizona Sonoran Copper Company from 2021 to 2024; Executive Vice President of Xiana Mining Inc. from 2019-2020.
Ty Minnick Colorado, USA	April 1, 2024	Interim Chief Financial Officer of the Company; Interim CFO of Augusta Gold Corp. since October 2020.
Purni Parikh British Columbia, Canada	November 12, 2021	Senior Vice President, Corporate Affairs and Corporate Secretary of the Company ; Senior Vice President, Corporate Affairs and Corporate Secretary for Augusta Gold Corp. since November 2020 and Solaris Resources Inc. from November 2019 to December 2024.
Kevin Hart British Columbia, Canada	January 6, 2025	VP Finance of the Company ; Chief Financial Officer & Corporate Secretary of Inca One Gold Corp. from 2017 to December 2024
Tom Ladner British Columbia, Canada	November 23, 2020	General Counsel of the Company ; General Counsel and before that, VP Legal, for the Augusta Group of Companies, including Highlander Silver Corp. and Augusta Gold Corp. (and formerly Solaris Resources Inc.) since November 2020; practiced law at Borden Ladner Gervais LLP from August 2014 to November 2020.
Joel Rheault Gouverneur, NY	February 26, 2024	VP Operations of the Company ; Mine General Manager at ESM since July 2018.

- (1) Information has been provided by the directors and officers of the Company.
(2) Member of the Company's Audit Committee.
(3) Member of the Company's Compensation Committee.
(4) Member of the Company's Nominating and Corporate Governance Committee.

The directors of the Company are elected annually and hold office until the next annual meeting of shareholders or until their successors are elected or appointed. There are three committees of the Board, an Audit Committee, a Compensation Committee, and a Nominating and Corporate Governance Committee.

To the knowledge of the Company, the number of common shares of the Company which are beneficially owned, or controlled or directed, directly and indirectly, by all directors and officers of the Company, as a group, as of the date hereof, is 81,320,533 (approximately 59.63% of the Company's issued and outstanding share capital).

Cease Trade Orders and Bankruptcies

Except as disclosed below, no director or executive officer of the Company is, as at the date of the AIF, or was within 10 years before the date of the AIF, a director, chief executive officer or chief financial officer of any company (including the Company), that (a) was subject to an order 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.

Except as disclosed below, no director or executive officer of the Company, or a shareholder holding a sufficient number of securities of the Company to affect materially the control of the Company, or a personal holding company of any such persons, as at the date of this AIF, is or has been within the 10 years before the date of this AIF, a director or executive officer of any company (including the Company) 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 has, within 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 proceedings, an 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.

Mr. Boggio was a director of Great Western Minerals Group Ltd. (“**GWMG**”) from January 2013 until July 2015. In April 2015, GWMG entered a support agreement with certain of the holders of GWMG’s secured convertible bonds and GWMG was subsequently granted protection from its creditors under the Companies’ Creditors Arrangements Act. In May 2015, an order was issued by the Financial and Consumers Affairs Authority of the Province of Saskatchewan that all trading in the securities of GWMG be ceased due to its failure to file financial statements for the year ended December 31, 2014. In December, 2015, GWMG entered bankruptcy proceedings.

Mr. Boggio was a director of Pure Gold Mining Inc. (“**Pure Gold**”) until March 30, 2023. Pure Gold owned the Madsen Mining property, located near Red Lake Ontario. After redeveloping the property and processing facilities, Pure Gold experienced significant start up and operational difficulties. Consequently, on October 31, 2022, Pure Gold applied for and received an initial order for creditor protection from the Supreme Court of British Columbia (the “**Court**”) under the Companies’ Creditors Arrangement Act (“**CCAA**”). KSV Restructuring Inc. was appointed as the monitor. On November 10, 2022, the Court approved a Sales and Investment Solicitation Process Order, among other relief. On March 30, 2023, the Court approved Pure Gold’s appointment of a Chief Administrative Officer and all members of the Pure Gold board of directors resigned immediately. Pure Gold’s common shares were suspended from trading on the NEX Board of the TSX Venture Exchange. Pure Gold was subsequently acquired by West Lake Gold Mines on June 16, 2023 under the CCAA proceedings.

Mr. Hart was an officer of Inca One Gold Corp. (“**Inca One**”) until October 2024. On June 3, 2024, Inca One received an initial order for creditor protection from the Court under the CCAA. On October 7, 2024, the Court made a final receivership order appointing FTI Consulting Canada Inc. as receiver and manager. In connection with the aforementioned matter, Inca One’s common shares were cease traded for failure to file its annual financial statements for the year ended April 30, 2024.

Penalties or Sanctions

No director or officer of the Company, or a shareholder holding a sufficient number of securities of the Company to affect materially the control of the Company, has been subject to 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 since December 31, 2000 that would likely be important to a reasonable investor in making an investment decision, with a securities regulatory authority; or been subject to 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 Company are required by law to act honestly and in good faith with a view to the best interest of the Company and to disclose any interests which they may have in any project or opportunity of the Company. If a conflict of interest arises at a meeting of the Board, any director in a conflict will disclose his interest and abstain from voting on such matter. In determining whether or not the Company will participate in any project or opportunity, that director will primarily consider the degree of risk to which the Company may be exposed and its financial position at that time.

To the best of the Company's knowledge, there are no known existing or potential conflicts of interest among the Company, its promoters, directors, officers or other members of management of the Company as a result of their outside business interests except as described herein and also 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. See "Financings" and "Directors and Officers".

The directors and officers of the Company 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 Company will rely 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), will disclose all such conflicts and they will govern themselves in respect thereof to the best of their ability in accordance with the obligations imposed upon them by law.

LEGAL PROCEEDINGS AND REGULATORY ACTIONS

Legal Proceedings

The Company is from time to time involved in various legal proceedings related to its business. Management does not believe that adverse decisions in any pending or threatened proceeding or that amounts that may be required to be paid by reason thereof will have a material adverse effect on the Company's financial condition or results of operations.

Regulatory Actions

There are no: (a) penalties or sanctions imposed against the Company by a court relating to securities legislation or by a securities regulatory authority during the Company's most recently completed financial period and up to the date of this AIF; (b) other penalties or sanctions imposed by a court or regulatory body against the Company that would likely be considered important to a reasonable investor in making an investment decision; or (c) settlement agreements the Company entered into with a court relating to securities legislation or with a securities regulatory authority during the Company's most recently completed financial period and up to the date of this AIF.

INTEREST OF MANAGEMENT AND OTHERS IN MATERIAL TRANSACTIONS

Other than as set forth earlier in this AIF, to the knowledge of the Company, no director, executive officer, person or company that beneficially owns, or controls, or directs, directly or indirectly, more than ten percent of the Company's voting securities, or associates or affiliates of the foregoing, has had any material interest, direct or indirect, in any transactions in which the Company has participated within the three most recently completed financial years or in the current financial year prior to the date of this AIF, which has materially affected or is reasonably expected to materially affect the Company.

TRANSFER AGENTS AND REGISTRARS

The Registrar and Transfer Agent for the common shares in British Columbia is Computershare Investor Services Inc., at its offices at 4th Floor, 510 Burrard Street, Vancouver, British Columbia, V6C 3B9.

MATERIAL CONTRACTS

The only material contracts, which the Company or its subsidiaries have entered into in the last financial year, or previously if still in effect, other than in the ordinary course of business, are as follows:

- (i) the Credit Facility (see “General Development of the Business – Financings” above for more information);
- (ii) the November 2023 Promissory Note (see “General Development of the Business – Financings” above for more information); and
- (iii) the off-take agreement with Glencore Ltd. dated effective January 1, 2018 (see “Description of Business” above for more information).

Copies of the material contracts set out above are available under the Company’s profile on SEDAR+ at www.sedarplus.ca.

INTERESTS OF EXPERTS

The following are names of persons or companies (a) that have prepared or certified a report, valuation statement or opinion described or included in a filing, or referred to in a filing made under NI 51-102 by the Company during, or relating to, the Company’s most recently completed financial period and (b) whose profession or business gives authority to the report, valuation statement or opinion made by the person or company:

Each of Todd McCracken, Deepak Malhotra, and Oliver Peters, being an independent author of the ESM Technical Report, is a “qualified person” for the purposes of NI 43-101. Each such qualified person has reviewed certain scientific and technical information relating to ESM as more fully described in this AIF or has supervised the preparation of information upon which such scientific and technical information is based as detailed in the ESM Technical Report. As of the date hereof, to the best of the Company’s knowledge, the foregoing experts beneficially own, directly or indirectly, less than 1% of the outstanding securities of the Company and have no other direct or indirect interest in the Company or any of its associates or affiliates.

The auditors of the Company are Ernst & Young, LLP, Chartered Professional Accountants, of Vancouver, British Columbia. Ernst & Young, LLP, has advised the Company that it is independent within the meaning of the CPA Code of Professional Conduct.

Qualified Person

Donald R. Taylor, MSc., PG, SME, Chief Executive Officer of the Company, a qualified person for the purposes of NI 43-101, is a co-author of the ESM Technical Report and has reviewed and approved certain scientific and technical information made in filings made by the Company under NI 51-102 in the most recently completed financial year. Mr. Taylor is a Director and officer of the Company. As of the date of this AIF, Mr. Taylor owns, beneficially, directly or indirectly, 5,126,071 common shares of the Company, nil warrants and 1,900,000 stock options, each to acquire one common share of the Company.

AUDIT COMMITTEE INFORMATION

National Instrument 52-110 – *Audit Committees* (“**NI 52-110**”) requires companies to provide disclosure with respect to their audit committee including the text of the audit committee’s charter, the composition of the audit committee and the fees paid to the external auditor.

The text of the audit committee’s charter is attached as Schedule “A” to this AIF.

For the year ended December 31, 2024, the Company’s audit committee consisted of Messrs. Boggio, Boehner and Pataki. All are independent and financially literate as defined in NI 52-110.

The following is a description of the education and experience of each member of the audit committee during the year ended December 31, 2024, that is relevant to the performance of their responsibilities as an audit committee member.

Lenard Boggio (Chair of Audit Committee) - Mr. Boggio is a former partner of PwC LLP, where he was an audit partner and the leader of the mining industry practice in British Columbia. Mr. Boggio has significant expertise in financial reporting, auditing matters and transactional support, previously assisting, amongst others, clients in the mineral resource and energy sectors, including exploration, development and production stage operations in the Americas, Africa, Europe and Asia. Mr. Boggio previously served as an independent director and audit committee chair of Blue Gold Mining Inc., Augusta Resource Corp., Armor Minerals Inc., Polaris Materials Corporation, Lithium Americas Corp., Pure Gold Mining Inc., and Three Valley Copper Corp., and currently serves as an independent director and audit committee chair of Equinox Gold Corp. and Augusta Gold Corp. Mr. Boggio has a Bachelor of Arts Degree and an Honors Bachelor of Commerce Degree from the University of Windsor. In 1985 Mr. Boggio became a member of the Institute of Chartered Accountants of BC (ICABC, now CPA BC). Mr. Boggio was conferred with a Fellow’s designation in 2007 by the ICABC for distinguished service to the profession and community and in 2018 he was awarded a Lifetime Achievement Award by CPA BC for his outstanding lifetime of service to the profession and community. He is a past president of ICABC and a past Chair of the Canadian Institute of Chartered Accountants. He is also a member of the Canadian Institute of Corporate Directors (ICD.D).

John Boehner – Mr. Boehner served as the 53rd Speaker of the United States House of Representatives from 2011 to 2015. A member of the Republican Party, Mr. Boehner was the U.S. Representative from Ohio's 8th congressional district, serving from 1991 to 2015. He previously served as the House Minority Leader from 2007 until 2011, and House Majority Leader from 2006 until 2007. Following his career in government service, Mr. Boehner joined Squire Patton Boggs, a global law and public policy firm. He earned a Bachelor of Arts in business administration from Xavier University.

George Pataki - Mr. Pataki is the co-founder and Chairman of the Pataki-Cahill Group, a specialized development firm, and serves as Senior Counsel to the international law firm Norton Rose Fullbright. Previously, he served three terms as the 53rd Governor of the State of New York from 1995 to 2006, being elected after serving consecutively as the mayor of Peekskill, an assemblyman in the New York State Legislature, and as a senator in the New York State Senate. Mr. Pataki has significant experience serving on the boards of public and private corporations.

Pre-Approval Policies and Procedures

The audit committee has not adopted any specific policies and procedures for the engagement of non-audit services. However, under its charter, the audit committee must approve all non-audit services to be provided to the Company or its subsidiaries by the Company’s external auditors.

External Auditor Service Fees

The following table sets forth the fees billed to the Company by Ernst & Young, LLP, Chartered Professional Accountants in the last two fiscal periods for services rendered:

Fiscal Period	Audit Fees⁽¹⁾ Cdn\$	Audit Related Fees⁽²⁾ Cdn\$	Tax Fees Cdn\$	All Other Fees⁽³⁾ Cdn\$
December 31, 2024	\$443,724	\$0	\$0	\$0
December 31, 2023	\$306,500	\$0	\$0	\$0

(1) Aggregate fees billed by the Company's auditors for audit and review services.

(2) Aggregate fees billed by the Company's auditors for assurance and related services that are reasonably related to the performance of the audit or review of the Company's financial statements and not contained under "Audit Fees".

(3) Aggregate fees billed by the Company's auditors for services not contained "Audit Fees", "Audit Related Fees" or "Tax Fees".

ADDITIONAL INFORMATION

Additional information about the Company may be found under the Company's profile on SEDAR+ at www.sedarplus.ca.

Additional information, including directors' and officers' remuneration and indebtedness, principal holders of the Company's securities, and securities authorized for issuance under equity compensation plans, where applicable, will be contained in the Company's information circular for the annual meeting of shareholders involving the election of directors.

Additional financial information is provided in the Company's consolidated financial statements and management discussion & analysis for its most recently completed financial year.

Titan Mining Corporation
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Telephone: 604-687-1717; Facsimile: 604-687-1715
Website: www.titanminingcorp.com
Email: info@titanminingcorp.com

SCHEDULE "A"

Attached.

TITAN MINING CORPORATION
(the “Company”)

AUDIT COMMITTEE

CHARTER

The Audit Committee (the “Committee”) is a committee of the Board of Directors (the “Board”) of Titan Mining Corporation (the “Company”) to which the Board delegates its responsibilities for the oversight of the accounting and financial reporting process and financial statement audits.

The Committee will:

- (a) review and report to the Board on the following before they are published:
 - (i) the financial statements and MD&A (management discussion and analysis) (as defined in National Instrument 51-102) of the Company;
 - (ii) the auditors report, if any, prepared in relation to those financial statements; and
 - (iii) all other filings with regulatory authorities and any other publicly disclosed information containing the Company’s financial statements, including any certification, report, opinion or review rendered by the independent accountants, and all financial information and earnings guidance intended to be provided to analysts and the public or to rating agencies, and consider whether the information contained in these documents is consistent with the information contained in the financial statements.
- (b) review the Company’s annual and interim earnings press releases, if any, before the Company publicly discloses this information;
- (c) satisfy itself 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 and periodically assess the adequacy of those procedures;
- (d) recommend to the Board the external auditor to be nominated for the purposes of preparing and issuing an auditor’s report or performing other audit, review or attest services for the Company;
- (e) approve the compensation of such external auditor;
- (f) be directly responsible for overseeing 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, including the resolution of disagreements between management and the external auditor regarding financial reporting;
- (g) monitor and report to the Board on the integrity of the financial reporting process and the system of internal controls that management and the Board have established;
- (h) establish procedures for:

- (i) the receipt, retention and treatment of complaints received by the Company regarding accounting, internal accounting controls, or auditing matters; and
 - (ii) the confidential, anonymous submission by employees of the Company of concerns regarding questionable accounting or auditing matters.
- (i) pre-approve all non-audit services to be provided to the Company or its subsidiary entities by the Company's external auditor, including as contemplated by National Instrument 52-110 and consider such fees in relation to fees for audit services as well as any risk or conflicts of such services;
- (j) review and approve the Company's hiring of partners, employees and former partners and employees of the external auditor of the Company;
- (k) with respect to ensuring the integrity of disclosure controls and internal controls over financial reporting, understand the process utilized by the Chief Executive Officer and the Chief Financial Officer to comply with National Instrument 52-109;
- (l) review any changes proposed by management to accounting policies and report to the Board on such changes;
- (m) oversee the opportunities and risks inherent in the Company's financial management and the effectiveness of the controls thereon;
- (n) review major transactions (acquisitions, divestitures and funding), in respect of which a special committee of the Board is not established;
- (o) review the reports of the Chief Executive Officer and Chief Financial Officer regarding any significant deficiencies or material weaknesses in the design or operation of internal controls and any fraud that involves management or other employees of the Company who have a significant role in managing or implementing the Company's internal controls and evaluate whether the internal control structure, as created and as implemented, provides reasonable assurances that transactions are recorded as necessary to permit the Company's external auditor to reconcile the Company's financial statements in accordance with applicable securities laws;
- (p) review with management the adequacy of the insurance and fidelity bond coverage, reported contingent liabilities, and management's assessment of contingency planning. Review management's plans regarding any changes in accounting practices or policies and the financial impact of such changes, any major areas in management's judgment that have a significant effect upon the financial statements of the Company, and any litigation or claim, including tax assessments, that could have a material effect upon the financial position or operating results of the Company;
- (q) periodically review and discuss with the external auditor all significant relationships the external auditor has with the Company to determine the independence of the external auditor, including a review of service fees for audit and non-audit services; and

consider, in consultation with the external auditor, the audit scope and plan of the external auditor and approve the proposed audit fee and the final fees for the audit.

Composition of the Committee

The Committee shall be composed of at least three independent directors. Independence of the Board members will be as defined by applicable legislation and as a minimum each committee member will have no direct or indirect relationship with the Company which, in the view of the Board, could reasonably interfere with the exercise of a member's independent judgement.

All members of the Committee must be financially literate or must become financially literate within a reasonable period of time after his or her appointment to the Committee. "Financially literate" means that such member has the ability to read and understand a set of financial statements that present a breadth and level of complexity of accounting issues that are generally comparable to the breadth and complexity of the issues that can reasonably be expected to be raised by the Company's financial statements. One or more members of the Committee shall, in the judgment of the Board, have accounting or financial management expertise.

Appointing Members

The members of the Committee shall be appointed or re-appointed by the Board on an annual basis. Each member of the Committee shall continue to be a member thereof until such member's successor is appointed, unless such member shall resign or be removed by the Board or such member shall cease to be a director of the Company. Where a vacancy occurs at any time in the membership of the Committee, it may be filled by the Board and shall be filled by the Board if the membership of the Committee is less than three directors as a result of the vacancy or the Committee no longer has a member who has, in the judgment of the Board, accounting or financial management expertise.

Authority

The Committee has the authority to engage independent counsel and other advisors as it deems necessary to carry out its duties and the Committee will set the compensation for such advisors.

The Committee has the authority to communicate directly with and to meet with the external auditors and the internal auditor, without management involvement. This extends to requiring the external auditor to report directly to the Committee.

The Committee has the authority to approve, if so delegated by the board of directors, the interim financial statements and management discussion and analysis and to cause the filing of the same together with all required documents and information with the securities commissions and other regulatory authorities in the required jurisdictions.

The Committee shall have full access to the books, records and facilities of the Company in carrying out its responsibilities.

The Board shall adopt resolutions which provide for appropriate funding, as determined by the Committee, for (i) services provided by the external auditor in rendering or issuing an audit report, (ii) services provided by any adviser employed by the Committee which it believes, in its sole discretion, are needed to carry out its duties and responsibilities, or (iii) ordinary

administrative expenses of the Committee that are necessary or appropriate in carrying out its duties and responsibilities.

Reporting

The reporting obligations of the Committee will include:

1. reporting to the Board on the proceedings of each Committee meeting and on the Committee's recommendations at the next regularly scheduled directors meeting; and
2. reviewing, and reporting to the Board on its concurrence with, the disclosure required by Form 52-110F2 in any management information circular prepared by the Company.

Meetings

The time and place of meetings of the Committee and the procedure at such meetings shall be determined from time to time by the members thereof provided that:

- A quorum for meetings shall be at least a majority of the members of the Committee, present in person or by telephone or other telecommunication device that permit all persons participating in the meeting to speak and hear each other;
- The Committee shall meet at least quarterly (or more frequently as circumstances dictate); and
- Notice of the time and place of every meeting shall be given in writing or facsimile communication to each member of the Committee and the external auditors of the Company at least 48 hours prior to the time of such meeting.

While the Committee is expected to communicate regularly with management, the Committee shall exercise a high degree of independence in establishing its meeting agenda and in carrying out its responsibilities. The Committee shall submit the minutes of all meetings of the Committee to, or discuss the matters discussed at each Committee meeting with, the Board.

The members of the Committee must elect a chair from among the members of the Committee. On request of the auditor of the Company, the chair of the Committee must convene a meeting of the Committee to consider any matter that the auditor believes should be brought to the attention of the directors or shareholders.

Approved by the Board of Directors of
Titan Mining Corporation on November 10, 2022