Annual Information Form

For the Year
Ended December 31, 2021

February 23, 2022

1500-625 Howe Street
Vancouver, British Columbia
V6C 2T6

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PAN AMERICAN SILVER CORP.
ANNUAL INFORMATION FORM

WHAT'S INSIDE

IMPORTANT INFORMATION ABOUT THIS DOCUMENT

This annual information form ("AIF") provides important information about Pan American Silver Corp. It describes our business, including our goals and strategy, our history, our operations and development projects, our mineral reserves and mineral resources, our approach to environmental, social and governance ("ESG") matters, the regulatory environment that we operate in, the risks we face, and the market for our products, among other things.

We have prepared this document to meet the requirements of Canadian securities laws, which are different from what US securities laws require.

Throughout this document, the term *Pan American* means Pan American Silver Corp. and the terms *we*, *us*, and *our* mean Pan American and its subsidiaries.

Reporting Currency and Financial Information

Unless we have specified otherwise, all references to dollar amounts or $ or USD are United States dollars. Any references to CAD or CAD$ are Canadian dollars.

All financial information presented in this AIF was prepared in accordance with international financial reporting standards ("IFRS") as issued by the International Accounting Standards Board.

Non-GAAP Measures

This AIF refers to various non-generally accepted accounting principles ("non-GAAP") measures, such as cash costs per ounce sold, net of by-product credits ("Cash Costs"), all-in sustaining costs per ounce sold ("AISC"), working capital, net cash, and total debt. Readers should refer to the section entitled "Alternative Performance (Non-GAAP) Measures" in our management's discussion and analysis for the year ended December 31, 2021 (the "2021 MD&A") for a detailed description and reconciliation of these non-GAAP measures. The 2021 MD&A is available under our SEDAR profile at www.sedar.com and on our website at www.panamericansilver.com.

Per Ounce Measures - Cash Costs and AISC

Cash Costs and AISC are non-GAAP financial measures that do not have any standardized meaning prescribed by IFRS and are therefore unlikely to be comparable to similar measures presented by other companies.

Pan American produces by-product metals incidentally to our silver and gold mining activities. We have adopted the practice of calculating a performance measure with the net cost of producing an ounce of silver and gold, our primary payable metals, after deducting revenues gained from incidental by-product production. This performance measurement has been commonly used in the mining industry for many years and was developed as a relatively simple way of comparing the net production costs of the primary metal for a specific period against the prevailing market price of that metal.

Cash costs per ounce metrics, net of by-product credits, is used extensively in our internal decision making processes. We believe the metric is also useful to investors because it facilitates comparison, on a mine-by-mine basis, notwithstanding the unique mix of incidental by-product production at each mine, of our operations' relative performance on a period-by-period basis, and against the operations of our peers in the silver and gold industry. Cash costs per ounce is conceptually understood and widely reported in the mining industry.

We believe that AISC, also calculated net of by-products, is a comprehensive measure of the full cost of operating our business, given it includes the cost of replacing silver and gold ounces through exploration, the cost of ongoing capital investments (sustaining capital), general and administrative expenses, as well as other items that affect our consolidated cash flow.

Silver Segment Cash Costs and AISC are calculated net of credits for realized revenues from all metals other than silver ("silver segment by-product credits"), and are calculated per ounce of silver sold. Gold Segment Cash Costs and AISC are calculated net of credits for realized silver revenues ("gold segment by-product credits"), and are calculated per ounce of gold sold. Consolidated Cash Costs and AISC are based on total silver ounces sold and are net of by-product credits from all metals other than silver ("silver basis consolidated by-product credits").

Included in the Silver Segment for 2021 were the La Colorada, Huaron, Morococha, San Vicente, and Manantial Espejo (including COSE and Joaquin) mines, while the Gold Segment was comprised of the Dolores, Shahuindo, La Arena, Timmins West and Bell Creek mines. The Dolores mine was formerly included in the Silver Segment, but due to the mine's production profile, we have determined that the Dolores mine is better identified as a Gold Segment operation going forward. As such, beginning in 2021, we began to report Dolores Cash Costs and AISC, including recast comparative amounts, on a per ounce of gold basis and include it as part of its Gold Segment Cash Costs and AISC calculations.

Working Capital

Working capital is a non-GAAP measure calculated as current assets less current liabilities. Working capital does not have any standardized meaning prescribed by IFRS and is therefore unlikely to be comparable to similar measures presented by other companies. Pan American and certain investors use this information to evaluate whether Pan American is able to meet its current obligations using its current assets.

Total Debt

Total debt is a non-GAAP measure calculated as the total current and non-current portions of long-term debt, finance lease liabilities, and loans payable. Total debt does not have any standardized meaning prescribed by GAAP and is therefore unlikely to be comparable to similar measures presented by other companies. Pan American and certain investors use this information to evaluate the financial debt leverage of Pan American.

Glossary of Terms

The glossary of terms under "Glossary of Terms" of this AIF contains definitions of certain scientific or technical terms used in this AIF that might be useful for your understanding.

Conversion Table

In this AIF, metric units are used with respect to mineral properties unless otherwise indicated. Conversion rates from imperial to metric units and from metric to units imperial are provided in the table set out below.

Imperial Measure	=	Metric Unit
2.47 acres		1 hectare
3.28 feet		1 metre
0.621 miles		1 kilometre
0.032 ounces (troy)		1 gram
1.102 tons (short)		1 tonne
0.029 ounces (troy)/ton (short)		1 gram/tonne
2205 pounds		1 tonne

Metric Unit	=	Imperial Measure
0.405 hectares		1 acre
0.305 metres		1 foot
1.609 kilometres		1 mile
31.1 grams		1 ounce (troy)
0.907 tonnes		1 ton (short)
34.28 grams/tonne		1 ounce (troy)/ton (short)
0.454 kilograms		1 pound

Caution About Forward-Looking Information

This AIF includes statements and information about our expectations for the future. When we discuss our strategy, plans and future financial and operating performance, or other things that have not yet taken place, we are making statements considered to be forward-looking information or forward-looking statements under Canadian securities laws and the United States Private Securities Litigation Reform Act of 1995. We refer to such forward-looking information and forward-looking statements together in this AIF as forward-looking information.

Key things to understand about the forward-looking information in this AIF are:

- It typically includes words and phrases about the future, such as *believe*, *estimate*, *anticipate*, *expect*, *plan*, *intend*, *predict*, *goal*, *target*, *forecast*, *project*, *scheduled*, *potential*, *strategy* and *proposed* (see examples starting on page 4).
- It is based on a number of material assumptions, including, but not limited to, those we have listed below, that may prove to be incorrect.
- Actual results and events may be significantly different from what we currently expect, because of, among other things, the risks associated with our business. We list a number of these material risks below under

“Material Risks and Assumptions”. We recommend you also review other parts of this AIF, including "Risks Related to Our Business" starting on page 57, and our 2021 MD&A, which includes a discussion of other material risks that could cause our actual results to differ from our current expectations.

Forward-looking information is designed to help you understand management’s current views of our near and longer term prospects. It may not be appropriate for other purposes. We do not intend to update forward-looking information unless we are required to do so by applicable securities laws.

Examples of Forward-Looking Information in this AIF:

- the price of silver, gold and other metals and assumed foreign exchange rates;
- estimated production of silver, gold and other metals forecasted for 2022, as well as our estimated Cash Costs, AISC and expenditures (such as sustaining and project capital, care and maintenance expenditures, and general corporate and administrative expenditures) in 2022;
- the sufficiency of our liquid assets to satisfy our 2022 working capital requirements, fund currently planned capital expenditures (including both sustaining and project capital) for existing operations, and to discharge liabilities as they come due;
- the accuracy of mineral reserve and mineral resource estimates at the La Colorada, Dolores, Huaron, Shahuindo, Timmins West, and Bell Creek mines, as well as the Escobal mine and other projects and properties, including the Morococha mine;
- estimated production rates for silver and other payable metals we produce, timing of production and estimated cash and total costs of production;
- our anticipated operating cash flow and the estimated cost of and availability of funding for working capital requirements and capital replacement, improvement or remediation programs, care and maintenance programs, and for future construction and development projects;
- our ability to take advantage of further strategic opportunities as they are identified and become available;
- expectations with respect to the future anticipated impact of COVID-19 on our operations, assumptions related to the global supply of COVID-19 vaccines and the effectiveness and results of any vaccines, the lessening or increase in pandemic-related restrictions, the impacts on the global supply chain of goods and services resulted to COVID-19, and the anticipated rate and timing for the same;
- the ability of Pan American to continue with its operations, or to successfully maintain our operations on care and maintenance, should the situation related to COVID-19 not be as anticipated;
- the outcome of the International Labour Organization Convention No. 169 (“ILO 169”) consultation process in Guatemala with respect to the Escobal mine, the resolution of other matters ordered by the courts in Guatemala, and our anticipated engagement with local communities and the Xinka population;
- the Escobal and Morococha mines remaining on care and maintenance in 2022;
- our ability to successfully restart the Escobal mine if the ILO 169 consultation-related suspension ends;
- our ability to identify and realize any alternative opportunities for the Morococha mine and what impact such alternatives, if any, may have on our business;
- our ability to obtain necessary permits and licenses, including for current or future operations, project development and expansion;
- future successful development of the Navidad project, the La Colorada skarn and other development projects;
- the effect of the New Mining Law (as defined below) established by the Bolivian government on the current joint venture agreement relating to the San Vicente mine;
- the effects of laws, regulations and government policies affecting our operations, including, without limitation, expectations relating to or the effect of certain highly restrictive laws and regulations applicable to mining in the Province of Chubut, Argentina;
- the estimates of expected or anticipated economic returns from a mining project, as reflected in preliminary economic assessments, pre-feasibility, and feasibility studies or other reports prepared in relation to development of projects;
- estimated exploration expenditures to be incurred on our various silver exploration properties;
- compliance with environmental, health, safety and other regulations;

- our goal to continue to be a responsible company, committed to sustainable development and conducting our activities in an environmentally and socially responsible manner, including the development and implementation of policies and practices in support of these goals
- our plan to release climate-related goals in 2022 and the anticipated nature and effect of climate-related risks;
- our ability to manage physical and transition risks related to climate change and successfully adapt our business strategy to a low carbon global economy;
- the future results of, and impact on the Pan American, of class action claims in Canada and the United States relating to alleged misrepresentations by Tahoe Resources Inc. ("Tahoe");
- the pursuit of legal and commercial avenues to collect amounts owing to us under our contracts with Doe Run Peru and Republic Metals Corporation;
- estimated future closure, reclamation and remediation costs;
- our belief that we are well positioned to take advantage of strategic opportunities as they become available;
- forecast capital and non-operating spending;
- future income tax rates;
- future sales of the metals, concentrates or other products produced by us, the availability and location of refining facilities and sales counterparts, and any plans and expectations with respect to hedging;
- our ability to maintain relationships of trust with our stakeholders and community support for our activities;
- continued access to necessary infrastructure, including, without limitation, access to power, water, lands and roads to carry on activities as planned;
- that we will be, or will continue to be, the world's premier silver producer and one of the world's leading silver mining companies;
- our intention to acquire or discover silver resources that have the potential to be developed economically and to add meaningfully to our production profile while lowering consolidated units costs of production;
- our plans and expectations for our properties and operations, including, without limitation, production estimates, capital expenditures, exploration drilling and development, forecasts regarding investment activities, and other matters discussed under the heading "Outlook for 2022" and under the headings "Capital and Operating Costs" and "Exploration, Development, and Production" with respect to each of our material properties; and
- the results of investment and development activities at our material mineral properties.

Material Risks and Assumptions:

The forward-looking information in this AIF reflects our current views with respect to future events and is based upon a number of assumptions and estimates that, while considered reasonable by us, are inherently subject to significant business, economic, competitive, political, environmental, and social uncertainties and contingencies. Many factors, both known and unknown, could cause actual results, performance or achievements to be materially different from the results, performance or achievements that are or may be expressed or implied by forward-looking information in this AIF and documents incorporated by reference herein, and we have made assumptions based on or related to many of these factors.

Such factors include, without limitation:

- fluctuations in spot and forward markets for silver, gold, base metals and certain other commodities (such as natural gas, fuel oil and electricity);
- restrictions on mining in the jurisdictions in which we operate;
- laws and regulations governing our operation, exploration and development activities, including international laws and legal norms, such as those relating to Indigenous populations and human rights;
- our ability to obtain or renew the licenses and permits necessary for the operation and expansion of our existing operations and for the development, construction and commencement of new operations, including the license and export permits necessary to operate the Escobal mine which are currently suspended or have not been renewed;

- risks relating to our operations in Canada, Mexico, Peru, Bolivia, Argentina, Guatemala and other foreign jurisdictions where we may operate;
- the impact of pandemics such as COVID-19 on our operations, and our and governments' ability to curtail or control the spread of the virus through health protocols, vaccines, and other means, and to mitigate the multitude of negative effects caused by it;
- inherent risks associated with tailings facilities and heap leach operations, including failure or leakages;
- work stoppages or other impacts of roadblocks, civil unrest, riots, terrorism and other similar events;
- relations with and claims by Indigenous populations, local communities and non-governmental organizations;
- the speculative nature of mineral exploration and development;
- diminishing quantities or grades of mineral reserves as properties are mined;
- the inability to determine, with certainty, the production of metals or the price to be received before mineral reserves or mineral resources are actually mined;
- the inability to determine, with certainty, production and cost estimates;
- inadequate or unreliable infrastructure (such as roads, bridges, power sources and water supplies);
- environmental regulations and legislation;
- our ability to maintain or obtain surface rights or other access that are necessary for continuing and future operations and planned developments, including with respect to the Morococha and La Colorada mines;
- risks and hazards associated with the business of mineral exploration, development and mining (including environmental hazards, potential unintended releases of contaminants, industrial accidents, unusual or unexpected geological or structural formations, pressures, cave-ins and flooding);
- reclamation and ongoing post-closure monitoring and maintenance requirements;
- the effects of climate change, extreme weather events, water scarcity, and seismic events, and the effectiveness of strategies to deal with these issues, including risks and strategies related to the transition to a low-carbon global economy;
- risks relating to the creditworthiness and financial condition of our suppliers, refiners and other parties;
- fluctuations in currency markets (such as the Peruvian nuevo sol ("PEN"), Mexican peso ("MXN"), Argentine peso ("ARS"), the Bolivian boliviano ("BOB"), and the Guatemalan quetzal ("GTQ") versus the USD and CAD);
- the volatility of the metals markets, and its potential to impact our ability to meet our financial obligations;
- the inability to recruit and retain qualified personnel, or maintain positive relationships with our employees;
- disputes as to the validity of mining or exploration titles or claims or rights, which constitute most of our property holdings;
- our ability to complete and successfully integrate acquisitions;
- increased competition in the mining industry for properties and equipment;
- limited supply of materials and supply chain disruptions;
- the effectiveness of our internal control over financial reporting;
- claims and legal proceedings arising in the ordinary course of business activities, including the class action claims initiated against Tahoe; and
- those factors identified under the caption "Risks Related to our Business" in this AIF and the documents incorporated by reference herein, if any.

You should not attribute undue certainty to forward-looking information. Although we have attempted to identify important factors that could cause actual results to differ materially, there may be other factors that cause results not to be as described. We do not intend to update forward-looking information to reflect changes in assumptions or changes in circumstances or any other events affecting such information, other than as required by applicable law.

Please see "Cautionary Note to U.S. Investors Concerning Estimates of Mineral Reserves and Mineral Resources" on page 7 of this AIF.

Scientific and Technical Information

Christopher Emerson, FAusIMM, our VP, Business Development and Geology, and Martin Wafforn, P. Eng., our Senior VP, Technical Services and Process Optimization, have reviewed and approved the scientific and technical information in this AIF. Scientific and technical disclosure in this AIF for our material properties is based on reports prepared in accordance with National Instrument 43-101 – *Standards of Disclosure for Mineral Projects* (“NI 43-101”) (collectively, the “Technical Reports”). The Technical Reports have been filed on SEDAR at www.sedar.com. The technical information in this AIF has been updated with more current information where applicable, such updated information having been prepared under the supervision of, or reviewed by, Christopher Emerson and Martin Wafforn. Scientific and technical information relating to current and planned exploration programs set out in this AIF are prepared and/or designed and carried out under the supervision of, or were reviewed by, Christopher Emerson.

The Technical Reports are as follows:

- a report relating to the La Colorada mine entitled “Technical Report for the La Colorada Property, Zacatecas, Mexico”, dated effective December 31, 2019, by M. Wafforn, C. Emerson and A. Delgado;
- a report relating to the Dolores mine entitled “Technical Report for the Dolores Property, Chihuahua, Mexico”, dated effective December 31, 2016, by M. Wafforn, C. Emerson and A. Delgado;
- a report relating to the Huaron mine entitled “Technical Report for the Huaron Property, Pasco, Peru” dated effective June 30, 2014, by M. Steinmann, M. Wafforn and A. Delgado;
- a report relating to the Shahuindo mine entitled “Technical Report on the Shahuindo Mine, Cajabamba, Peru” dated effective January 1, 2016, by C. Defilippi, C. Muerhoff, and T. Williams;
- a report relating to the Timmins West mine entitled “National Instrument 43-101 Technical Report, Updated Mineral Resource and Mineral Reserve Estimate for the Timmins West Mine Property, Bristol Township, Timmins, Ontario, Canada” dated effective June 30, 2021, by A. Mainville, E. Lachapelle, and D. Felsher;
- a report relating to the Bell Creek mine entitled “National Instrument 43-101 Technical Report, Updated Mineral Resource and Mineral Reserve Estimate For the Bell Creek Mine Property, Hoyle Township, Timmins, Ontario, Canada” dated effective June 30, 2021, by A. Mainville, E. Lachapelle, and D. Felsher; and
- a report relating to the Escobal mine entitled “Escobal Mine Guatemala: NI 43-101 Feasibility Study, Southeastern Guatemala” dated effective November 5, 2014, by M3 Engineering & Technology Corp., with authors C. Huss, T. Drielick, D. Roth, P. Tietz, M. Blattman, and J. Caldwell.

Each of Michael Steinmann, P. Geo., Martin Wafforn, P. Eng., Christopher Emerson, FAusIMM, Americo Delgado, P.Eng., Alain Mainville, P.Geo., Eric Lachapelle, P.Eng., Dave Felsher, P.Eng.,Carl Defilippi, M.Sc., Charles Muerhoff, B.Sc., Tim Williams, M.Sc., Conrad Huss, P.Eng., Thomas Drielick, P.Eng., Daniel Roth, P.Eng., Paul Tietz, C.P.G., Matthew Blattman, P.Eng., and Jack Caldwell, P.Eng. is, or was in relation to the Technical Reports, a “Qualified Person” as defined in NI 43-101. A “Qualified Person” means an engineer or geoscientist with a university degree, or equivalent accreditation, in an area of geoscience, or engineering, relating to mineral exploration or mining, with at least five years of experience in mineral exploration, mine development or operation or mineral project assessment, or any combination of these, that is relevant to his or her professional degree or area of practice, has experience relevant to the subject matter of the mineral project, and is a member in good standing of a professional association.

Mineral reserve and mineral resource estimates in this AIF relating to the La Colorada, Dolores, Huaron, Shahuindo, and Escobal mines have been prepared by, or under the supervision of, Christopher Emerson and Martin Wafforn. Mineral reserve and mineral resource estimates in this AIF relating to the Timmins West and Bell Creek mines have been prepared by, or under the supervision of, Alain Mainville and Eric Lachapelle.

Cautionary Note to U.S. Investors Concerning Estimates of Mineral Reserves and Mineral Resources

This AIF and the documents incorporated by reference herein have been prepared and disclosed in accordance with the requirements of Canadian securities laws that differ from the requirements of United States securities laws. Unless otherwise indicated, all mineral reserve and mineral resource estimates included in this AIF and the documents incorporated by reference herein have been disclosed in accordance with NI 43-101 and the Canadian Institute of Mining, Metallurgy and Petroleum - Definition Standards adopted by the CIM Council. NI 43-101 is an instrument developed by the Canadian Securities Administrators that establishes standards for all public disclosure an issuer makes of scientific and technical information concerning mineral projects.

Canadian public disclosure standards, including NI 43-101, differ significantly from the requirements of the U.S. Securities and Exchange Commission (the “SEC”), and information with respect to mineralization and mineral reserves and mineral resources contained or incorporated by reference herein may not be comparable to similar information disclosed by U.S. companies. In particular, and without limiting the generality of the foregoing, these documents use the terms ‘‘Measured Resources’’, ‘‘Indicated Resources’’ and ‘‘Inferred Resources’’. U.S. investors are advised that, while such terms are recognized and required by Canadian securities laws, the SEC does not recognize them. The requirements of NI 43-101 for identification of ‘‘reserves’’ are not the same as those of the SEC, and reserves reported by Pan American in compliance with NI 43-101 may not qualify as ‘‘reserves’’ under SEC standards. Under U.S. standards, mineralization may not be classified as a ‘‘reserve’’ unless the determination has been made that the mineralization could be economically and legally produced or extracted at the time the reserve determination is made. **U.S. investors are cautioned not to assume that any part of a ‘‘Measured Resource’’ or ‘‘Indicated Resource’’ will ever be converted into a ‘‘reserve’’.** U.S. investors should also understand that ‘‘Inferred Resources’’ have a great amount of uncertainty as to their existence and as to their economic and legal feasibility. **It cannot be assumed that all or any part of ‘‘Inferred Resources’’ exist, are economically or legally mineable or will ever be upgraded to a higher category.** Under Canadian securities laws, ‘‘Inferred Resources’’ may not form the basis of feasibility or pre-feasibility studies except in certain cases. Disclosure of ‘‘contained ounces’’ in a mineral resource is a permitted disclosure under Canadian securities laws, however, the SEC normally only permits issuers to report mineralization that does not constitute ‘‘reserves’’ by SEC standards as in place tonnage and grade, without reference to unit measures. Accordingly, information concerning mineral deposits set forth in this AIF and the documents incorporated by reference herein may not be comparable with information made public by companies that report in accordance with U.S. standards.

The SEC has adopted amendments to its disclosure rules to modernize the mineral property disclosure requirements for issuers whose securities are registered with the SEC under the U.S. Securities Exchange Act of 1934, as amended (the “Exchange Act”). These amendments became effective February 25, 2019 (the “SEC Modernization Rules”) with compliance required for the first fiscal year beginning on or after January 1, 2021. Under the SEC Modernization Rules, the historical property disclosure requirements for mining registrants included in Industry Guide 7 under the U.S. Securities Act of 1933, as amended, will be rescinded and replaced with disclosure requirements in subpart 1300 of SEC Regulation S-K. Following the transition period, as a foreign private issuer that is eligible to file reports with the SEC pursuant to the multi-jurisdictional disclosure system (the “MJDS”), Pan American is not required to provide disclosure on its mineral properties under the SEC Modernization Rules and will continue to provide disclosure under NI 43-101. If Pan American ceases to be a foreign private issuer or loses its eligibility to file its annual report on Form 40-F pursuant to the MJDS, then Pan American will be subject to the SEC Modernization Rules, which differ from the requirements of NI 43-101.

As a result of the adoption of the SEC Modernization Rules, the SEC now recognizes estimates of “measured mineral resources”, “indicated mineral resources” and “inferred mineral resources.” In addition, the SEC has amended its definitions of “proven mineral reserves” and “probable mineral reserves” to be “substantially similar” to the corresponding standards under NI 43-101. While the SEC will now recognize “measured mineral resources”, “indicated mineral resources” and “inferred mineral resources”, U.S. investors should not assume that any part or all of the mineralization in these categories will ever be converted into a higher category of mineral resources or into mineral reserves. Mineralization described using these terms has a greater amount of uncertainty as to its existence and feasibility than mineralization that has been characterized as reserves. Accordingly, U.S. investors are cautioned not to assume that any measured mineral resources, indicated mineral resources, or inferred mineral resources that Pan American reports are or will be economically or legally mineable. Further, “inferred mineral resources” have a greater amount of uncertainty as to their existence and as to whether they can be mined legally or economically. Therefore, U.S. investors are also cautioned not to assume that all or any part of the “inferred mineral resources” exist. Under Canadian securities laws, estimates of “inferred mineral resources” may not form the basis of feasibility or pre-feasibility studies, except in rare cases. While the above terms are “substantially similar” to the standards under NI 43-101, there are differences in the definitions under the SEC Modernization Rules. Accordingly, there is no assurance any mineral reserves or mineral resources that Pan American may report as “proven mineral reserves”, “probable mineral reserves”, “measured mineral resources”, “indicated mineral resources” and “inferred mineral resources” under NI 43-101 would be the same had Pan American prepared the reserve or resource estimates under the standards adopted under the SEC Modernization Rules.

CORPORATE STRUCTURE

Incorporation

Pan American is the continuing corporation of Pan American Energy Corporation, which was incorporated under the *Company Act* (British Columbia) on March 7, 1979. Pan American underwent two name changes, the last occurring on April 11, 1995, when the present name of Pan American Silver Corp. was adopted. Amendments to the constating documents of Pan American to that date had been limited to name changes and capital alterations. In May 2006, we amended our memorandum and articles in connection with Pan American's required transition under the Business Corporations Act (British Columbia), and in January 2019, we obtained shareholder approval to increase our authorized share capital from 200,000,000 to 400,000,000 common shares without par value ("Common Shares").

Pan American's head office is situated at 1440 - 625 Howe Street, Vancouver, British Columbia, Canada, V6C 2T6 and our registered and records offices are situated at 1200 Waterfront Centre, 200 Burrard Street, Vancouver, British Columbia, Canada, V7X 1T2. Our website is www.panamericansilver.com.

Capital Structure

Pan American's authorized share capital consisted of 400,000,000 Common Shares as at December 31, 2021 and there were 210,457,524 Common Shares issued and outstanding as at that date. The holders of Common Shares are entitled to: (i) one vote per Common Share at all meetings of shareholders; (ii) receive dividends as and when declared by the directors of Pan American; and (iii) receive a pro rata share of the assets of Pan American available for distribution to the shareholders in the event of the liquidation, dissolution or winding-up of Pan American. There are no pre-emptive, conversion or redemption rights attached to the Common Shares.

In connection with Pan American's acquisition of Tahoe, Pan American issued 313,887,490 contingent value rights (each, a "CVR") to Tahoe shareholders. The CVRs are not entitled to any voting or dividend rights, and the CVRs do not represent any equity or ownership interest in Pan American or any of its affiliates. More details about the Tahoe transaction and the CVRs can be found below under the heading, "Business of Pan American".

Subsidiaries

A significant portion of our business is carried on through various subsidiaries. The table below lists our significant subsidiaries and their jurisdiction of organization, and the chart following shows the structure of our organization as it relates to the countries of our mines. Not all of our operating mines are material properties for the purposes of NI 43-101. This information is provided as at December 31, 2021.

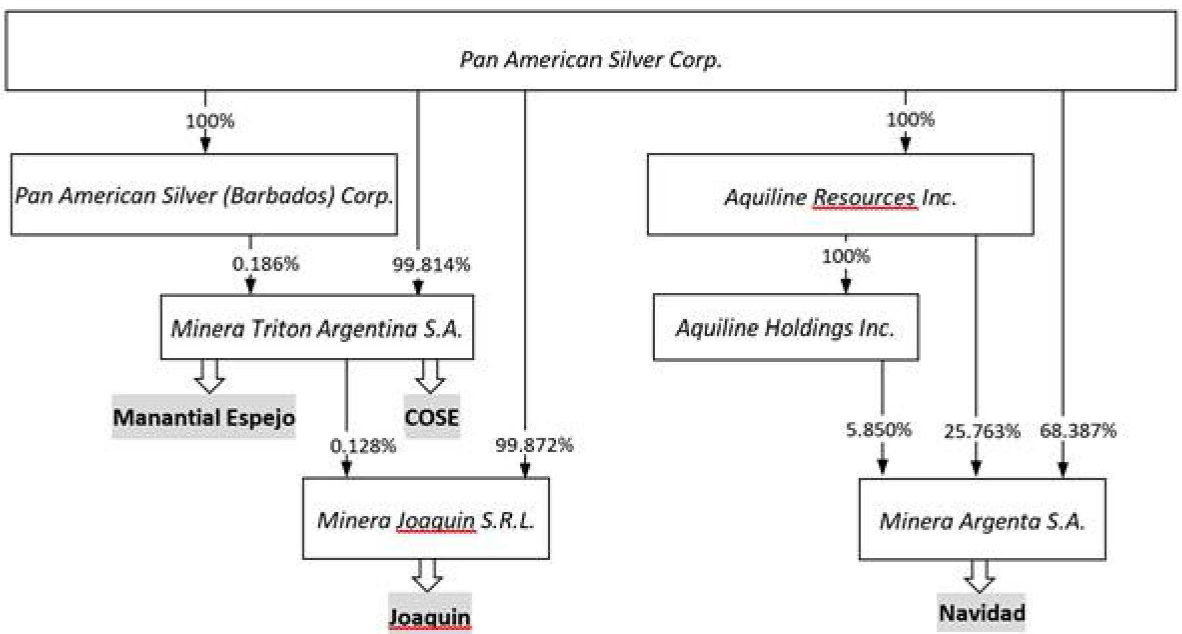
Name of Subsidiary	Jurisdiction
Tahoe Resources Ltd.	Alberta
0799714 B.C. Ltd.	British Columbia
Corner Bay Silver Inc. ("Corner Bay")	Canada
Lake Shore Gold Corp. ("Lake Shore")	Canada
Aquiline Resources Inc. ("Aquiline")	Ontario
Minefinders Corporation Ltd. ("Minefinders")	Ontario
Pan American Silver (Barbados) Corp.	Barbados
Aquiline Holdings Inc.	Barbados
PASCAP Insurance (Barbados) Ltd.	Barbados
Escobal Resources Holdings Ltd.	Barbados
Minera Triton Argentina S.A.	Argentina
Minera Argenta S.A.	Argentina
Minera Joaquín S.R.L.	Argentina
Pan American Silver (Bolivia) S.A. ("PASB")	Bolivia
Pan American Silver Guatemala, S.A. ("PASG", formerly Minera San Rafael S.A.)	Guatemala

Name of Subsidiary	Jurisdiction
PASMEX, S.A. de C.V.	Mexico
Plata Panamericana S.A. de C.V. ("Plata Panamericana")	Mexico
Compañía Minera Dolores, S.A. de C.V. ("CMD")	Mexico
Minera Minefinders S.A. de C.V.	Mexico
Pan American (Netherlands) B.V.	Netherlands
Pan American Silver (Peru) S.A.C.	Peru
Pan American Silver Huaron S.A. ("PAS Huaron")	Peru
Compañía Minera Argentum S.A. ("Argentum")	Peru
Tahoe Resources Peru S.A.C.	Peru
Shahuindo S.A.C.	Peru
La Arena S.A.	Peru

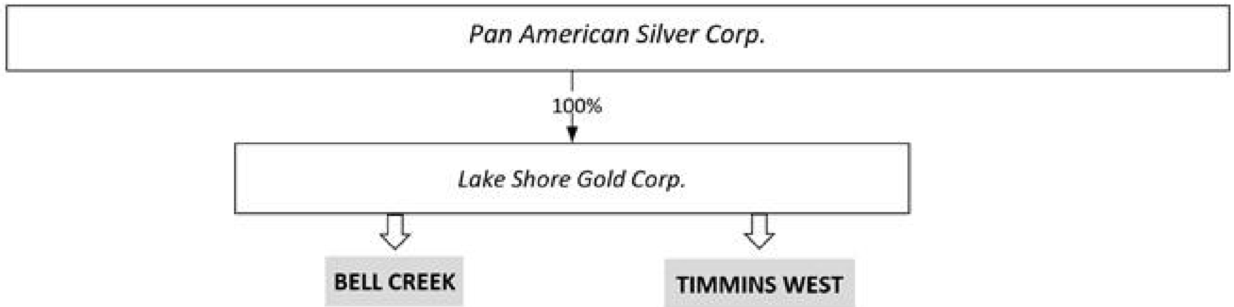
Corporate Organization by Material Mineral Property Location

The following charts depict the corporate organizational structure of our significant subsidiaries as they relate to the country of our material mineral properties as at December 31, 2021, and identify the main property asset interests (including non-material properties, as applicable) held by the respective entities[1].

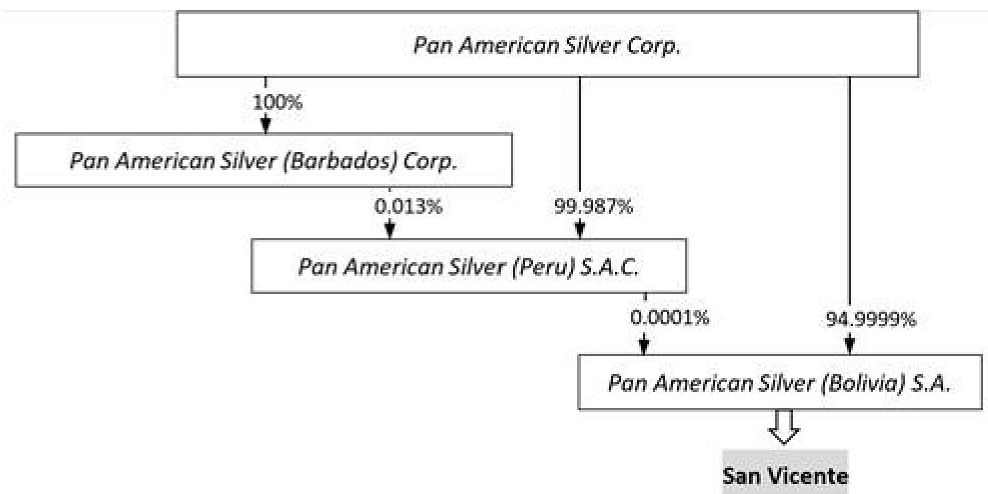
Argentina Properties



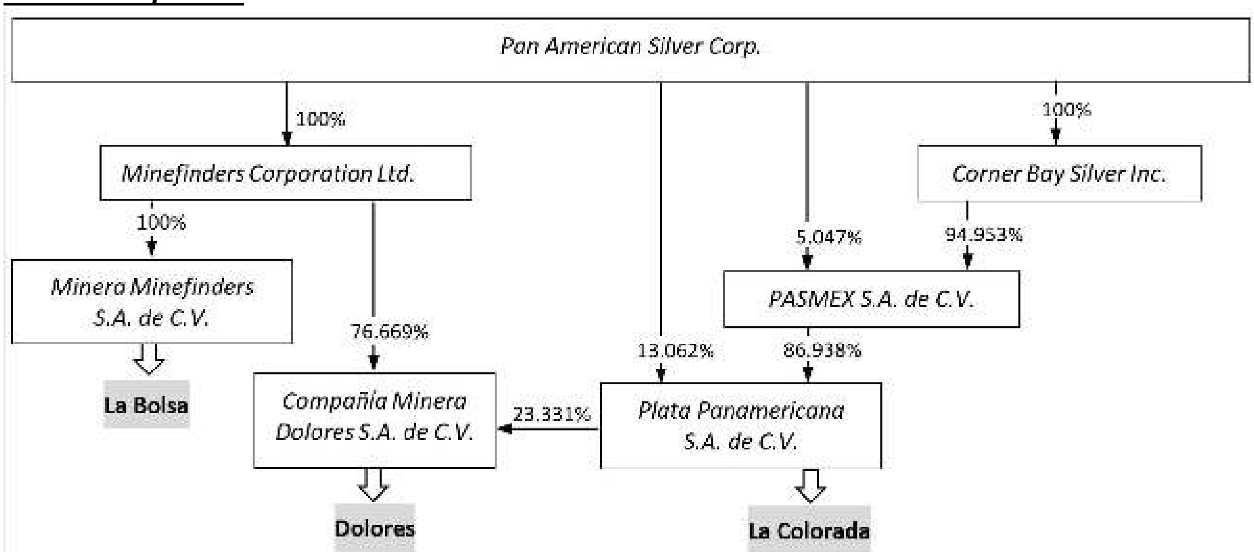
Canada Properties



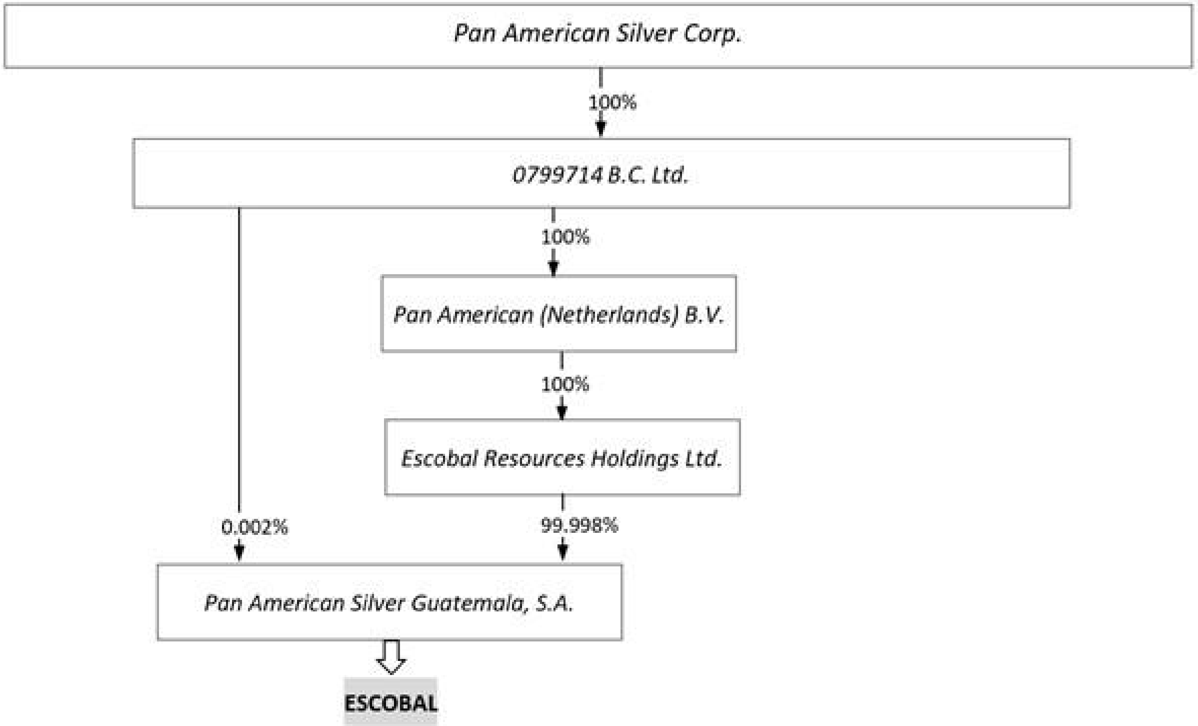
Bolivia Properties



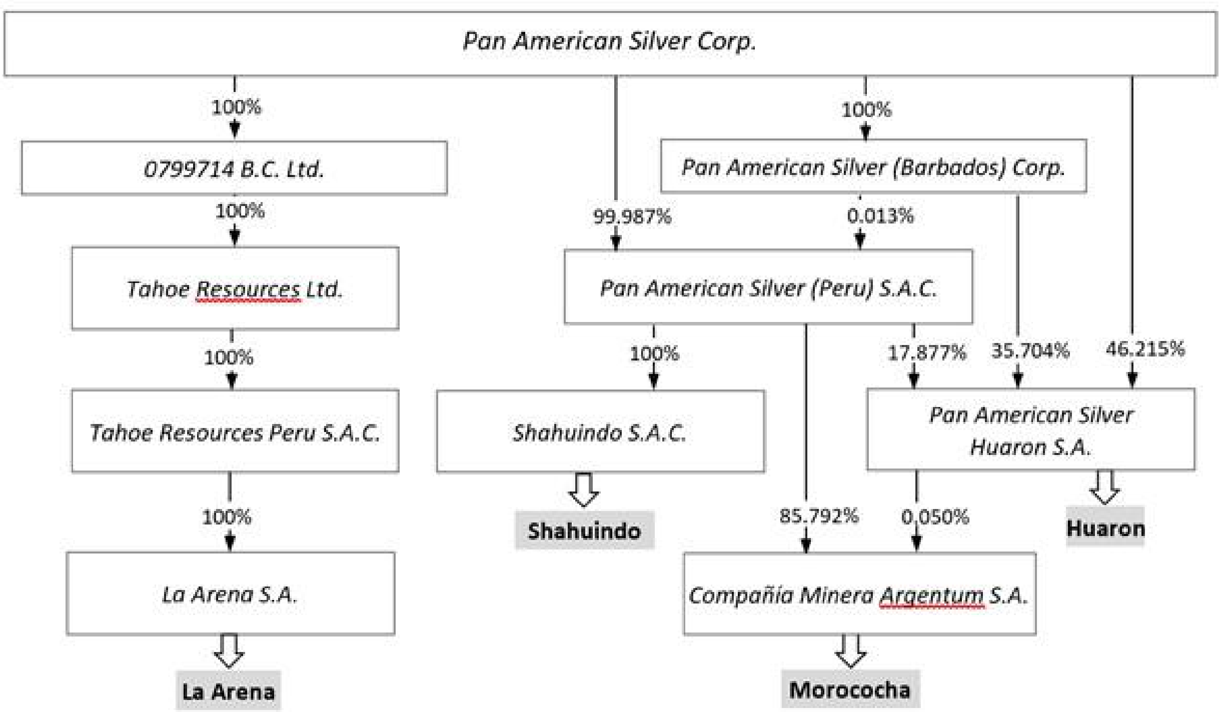
Mexico Properties



Guatemala Properties



Peru Properties



Note:

1 In some jurisdictions in which we operate, laws require that a company operating mineral properties must have more than one shareholder. For those jurisdictions, a nominal interest may be held by an individual or other affiliated entity and this may not be represented on the charts. Percentages shown indicate ownership of common shares and other voting interests and do not include holdings of investment shares in Peru or other non-voting shares. Percentages are rounded (in most cases, to a maximum of three decimal places). Minority interests of less than 0.001% are therefore not shown.

GENERAL DEVELOPMENT OF THE BUSINESS

Business of Pan American

We are principally engaged in the operation and development of, and exploration for, silver and gold producing properties and assets. Our principal products are silver and gold, although we also produce and sell zinc, lead, and copper. As at December 31, 2021, we operated mines and developed mining projects in Mexico, Peru, Canada, Argentina and Bolivia, and had control over non-producing silver assets in each of those jurisdictions, in addition to Guatemala and the United States.

On November 14, 2018, we entered into a definitive agreement for Pan American to acquire all of the outstanding shares of Tahoe pursuant to a plan of arrangement (the "Arrangement"). We completed the Arrangement on February 22, 2019. In aggregate, we paid $275 million in cash and issued 55,990,512 Common Shares to Tahoe shareholders under the Arrangement. In addition, Tahoe shareholders received an aggregate of 313,887,490 CVRs, each CVR having a term of ten years and being exchangeable for 0.0497 of a Common Share upon first commercial shipment of concentrate following restart of operations at the Escobal mine.

With the completion of the Tahoe transaction, we acquired four operating mines in Peru and Canada, as well as the Escobal mining property and facilities in Guatemala. The Escobal mine is currently not operating primarily as a result of the suspension of its mining license in July 2017, pending, among other things, the successful completion of an ILO 169 consultation process with Xinka Indigenous communities to be undertaken by Guatemala's Ministry of Energy and Mines. In addition to supporting the consultation process, we believe that it is important to engage with local communities and the Xinka people in an effort to build long-lasting, trusting relationships for the benefit of all stakeholders.

The following map depicts the location of our operating mines and certain of our exploration and non-operating projects as at December 31, 2021.

Corporate Strategy and Objectives

Our mission is to be the world's premier silver producer with a reputation for excellence in discovery, engineering, innovation and sustainable development. We will continue to strengthen our position as one of the world's leading primary silver mining companies by acquiring or discovering silver resources that have the potential to be developed economically and to add meaningfully to our production profile while, ideally, lowering consolidated unit costs of production.

The key objectives of our strategy are to:

Strategy Objective	Implementation
Increase production	Prior to 2020, our production had increased almost every year since 1995. In 2020, however, we experienced a significant decrease in the production of silver and a decline in gold production where, on average, our operations were placed on care and maintenance for approximately two months of the year due to governmental restrictions and health protocols related to COVID-19. The impacts of COVID-19 continued to be felt on our operations throughout 2021, although to a lesser extent than in 2020. In 2021, we produced 19.2 million ounces of silver, which was more than the 17.3 million ounces produced in 2020. Gold production also increased to 579,300 ounces, about 56,900 ounces more than the 522,400 ounces produced in 2020. Our long-term growth has been accomplished through a combination of acquisition, exploration, development and expansion efforts, with the acquisition of Tahoe in February 2019 contributing significantly to our production, particularly gold. In 2022, Pan American expects to produce between 19.0 and 20.5 million ounces of silver and between 550,000 and 605,000 thousand ounces of gold from its portfolio of assets.
Increase mineral reserves and mineral resources	Historically, we have achieved annual increases in our mineral reserves and mineral resources through exploration and acquisitions. In addition to mineral reserves and resources added through acquisitions, Pan American's history of replacing silver ounces mined at its operations reflects our ability to invest in mine and near-mine exploration programs throughout the silver price cycle and to the exploration potential of our asset portfolio. However, much like production, our ability to conduct exploration in 2020 and 2021 was hampered by COVID-19. Effective June 30, 2021, our proven and probable silver and gold mineral reserves were approximately 529 million and 4.2 million ounces, respectively, which was less than the 550 million ounces of silver and 5.2 million ounces of gold as at June 30, 2020. Similarly, our measured and indicated mineral resources (excluding mineral reserves) were approximately 818 million ounces of silver and 8.3 million ounces of gold effective the end of June 2021, which represents an increase of 13 million ouces of silver and a decrease of 1.1 million ounces of gold compared to our June 30, 2020, estimates. Please refer to the complete mineral resource and mineral reserve information under each of our material properties contained in this AIF, and to the "Reserves & Resources" page of our website at www.panamericansilver.com for additional information.
Continue to be a "Low Cost Producer"	In 2019, with the acquisition of Tahoe, we began reporting Cash Costs[1] and AISC[1] on both a Silver Segment and Gold Segment basis, as well as AISC on a consolidated silver[1] basis, in order to better reflect our assets' production profiles. For 2021, Silver Segment Cash Costs and AISC were $11.51 and $15.62 per silver ounce sold, respectively, and Gold Segment Cash Costs and AISC in 2021 were $899 and $1,214 per gold ounce sold, respectively. Consolidated silver basis AISC in 2021 was $1.44 per silver ounce sold.
Acquire additional silver properties	We actively investigate and evaluate strategic opportunities to acquire promising silver production, development and exploration properties in those jurisdictions where we are presently active, as well as elsewhere throughout the world. In February 2019, we acquired all of the issued and outstanding shares of Tahoe. Among other assets, Tahoe owned two mines in each of Peru and Canada, as well as the Escobal mine in Guatemala. Operations at the Escobal mine are currently suspended pending the completion of an ILO 169 consultation process and further engagement with local communities and Indigenous groups, as well as the renewal of certain other permits. In addition to the more recent acquisition of Tahoe, we acquired the Joaquin and COSE projects in 2017, the Dolores mine and the La Bolsa property by virtue of acquiring Minefinders in 2012, and the Navidad property pursuant to our acquisition of Aquiline in 2010. Please refer to the section of this AIF entitled "Risks Related to Our Business" starting on page 57 for more information about the risks relating to our business and our mining properties, particularly with respect to the Escobal mine, and to our website at www.panamericansilver.com for additional information.
Maintain strong financial performance from mining operations	In an effort to ensure we continue to have a strong and prosperous business, financial performance is monitored against targets for operating earnings and cash flow from operations, as well as against operating measures such as production and cash costs.

Strategy Objective	Implementation
Continue to be a responsible company, committed to sustainable development	We are committed to operating our business in accordance with the highest standards of governance and ethics, and the principles of sustainable development. We also place a high priority and particular emphasis on the health and safety of our personnel. We have operations in a number of countries and across diverse cultures that have the potential to both positively and negatively impact their host communities and nearby populations. Our goal is to minimize the negative impacts and maximize the benefits garnered to local populations, while at the same time achieving success from a business perspective. We conscientiously strive to operate within a framework of moral principles and values and to engage and interact regularly, and in an open and honest way, with governments, shareholders, employees and other stakeholders. We have adopted board-level corporate policies that formalize how we must conduct our business and interact with stakeholders and others. These policies include our: Global Code of Ethical Conduct, Global Anti-Corruption Policy, Environmental Policy, Social Sustainability Policy, Global Human Rights Policy, and Health and Safety Policy. We have also adopted a Supplier Code of Conduct setting out the expectations we have of our suppliers. We are implementing the Towards Sustainable Mining ("TSM") protocols and frameworks of the Mining Association of Canada ("MAC"), a world-class management standard designed to enhance our community engagement processes, drive industry-leading environmental practices and reinforce our commitment to the safety and health of our employees and surrounding communities. By implementing TSM at our operations within and outside of Canada, we are voluntarily exceeding MAC's membership requirements and setting a consistently high performance standard across all of our operating jurisdictions. As part of our commitment to driving global sustainable development and contributing to the United Nations Sustainable Development Goals, we became signatories of the United Nations Global Compact in 2020 and we formed a high-level and multidisciplinary group to guide the implementation and communication of our progress in the 10 principles established in the UN Global Compact. We are aware that our business is in many ways dependent on various stakeholders, and we view establishing relationships of mutual trust and respect as important. By building such relationships and conducting ourselves in a transparent manner, we can further the exchange of information, address specific concerns of stakeholders and work cooperatively and effectively towards achieving mutual goals. We report annually on our sustainability performance in accordance with the Global Reporting Initiative Standards and have begun to align our reporting with the Sustainability Accounting Standards Board ("SASB") and Taskforce on Climate-related Financial Disclosures ("TCFD") reporting frameworks. Our current TCFD disclosure for the year-ended 2020 has been incorporated into our 2020 Sustainability Report and is available on Pan American's website at www.panamericansilver.com, and future reports will similarly be posted to our website.

Note:

1 Cash Costs and AISC are non-GAAP measures and do not have standardized meanings prescribed by IFRS. For additional information, please see "Non-GAAP Measures" on page 2 of this AIF.

Key Developments Over the Last Three Financial Years

Year	Key Developments
2021	• COVID-19 continued to have a significant impact on our mining activities. Most notably, the production rates of our operations and progress on capital projects was affected by the pandemic. The pandemic continued to cause difficulties and hardship in the communities in which we operate. • Produced 19.2 million ounces of silver and 579,300 ounces of gold. Despite ventilation issues at the La Colorada mine, it continued to lead our silver production with 5.2 million ounces of silver produced in 2021. Huaron and Manatial Espejo followed with 3.5 million and 3.2 million ounces respectively. Dolores led gold production with 160,100 ounces of gold produced, followed closely by the Shahuindo mine and the Timmins West and Bell Creek mines (combined) with 134,000 and 133,800 ounces of gold produced, respectively. • At the La Colorada mine, we successfully cleared a blockage that formed during the commissioning of a primary ventilation raise. This relieved the ventilation-driven constraints that have impacted operations since late 2019 and mine development, mining rates and throughput rates have increased as a result. Multi-year ventilation infrastructure projects are being undertaken in parallel to upgrading and expanding existing underground mine ventilation infrastructure to further improve overall mine ventilation performance and ensure the long-term reliability of this critical infrastructure. • Building on the exploration success of 2020 at the La Colorada mine, we successfully completed 72,500 metres of underground and surface drilling on the La Colorada skarn increasing the foot print of the mineralisation from 500x 600 metres to 1,400 meters x 650 metres. • As part of our commitment to ESG practices and responsibilities, in August 2021 we amended and extended our \$500 million corporate credit facility into a sustainability-linked revolving credit facility (the "Facility"). The 4-year Facility features a pricing mechanism that allows for adjustments on drawn and undrawn balances based on third-party sustainability performance ratings, which aligns our ESG performance to our cost of capital. The Facility remains fully undrawn.
2020	• COVID-19 had a significant impact on the world for much of the year and took a toll on human life and well-being. This included the areas where we work, and the effects were felt by local communities and members of our workforce and their families. Most of our mines were also transitioned to care and maintenance for an average of two months during the year as a result of government restrictions and the implementation of protocols to keep our workforce safe and reduce the spread of the virus. Our Huaron and Morococha operations were suspended for approximately three additional months due to COVID. The Timmins operations in Canada remained in operation throughout 2020, operating at reduced rates to accommodate COVID-19 protocols. • Produced 17.3 million ounces of silver and 522,400 ounces of gold. Despite the production disruptions due to COVID-19, the La Colorada mine continued to lead our silver production with 5.0 million ounces of silver produced in 2020, with our Dolores mine producing approximately 3.8 million ounces. Timmins West and Bell Creek (combined) led in gold production, producing nearly 150,000 ounces of gold, followed closely by the Shahuindo mine which produced over 140,000 ounces. Our La Arena and Dolores mines each produced about 100,000 ounces of gold during 2020. • We repaid \$275.0 million on the Facility and distributed approximately \$46.2 million in dividends to shareholders during the year. • Continued exploration of the La Colorada skarn discovery and reported an inferred mineral resource estimate of 100.4 million tonnes with grades averaging 44 g/t silver, 0.20% copper, 1.77% lead and 4.29% zinc, and containing 141.0 million ounces of silver, 4.3 million tonnes of zinc, 1.8 million tonnes of lead, and 199 thousand tonnes of copper using a cut-off value of \$60 per tonne after accounting for transportation, smelting and refining costs. • As part of our commitment to driving global sustainable development and contributing to the United Nations Sustainable Development Goals, we became signatories to the United Nations Global Compact in July 2020. We also made advances on our commitment to inclusion and diversity.
2019	• Completed the acquisition of Tahoe on February 22, 2019, whose assets included the Shahuindo and La Arena mines in Peru, the Timmins West and Bell Creek mines in Ontario, Canada, and the Escobal mine (currently suspended) in Guatemala. • Produced 25.9 million ounces of silver and 559,200 ounces of gold. The La Colorada mine continued to lead our silver production with 8.2 million ounces produced in 2019, and the Timmins West and Bell Creek (combined), Shahuindo, La Arena, and Dolores mines each produced over 100,000 ounces of gold during 2019. Reported 2019 production from the mines acquired through the Tahoe transaction does not include any production prior to February 22, 2019. • Reported proven and probable mineral reserves of 557 million ounces of silver and 5.1 million ounces of gold, as well as measured and indicated mineral resources of 797 million ounces of silver and 10.6 million ounces of gold, each as of June 30, 2019. • Reported an initial inferred mineral resource estimate for the La Colorada skarn discovery on December 11, 2019, of 72.5 million tonnes, averaging 44 grams per tonne silver, 0.17% copper, 2.02% lead and 4.40% zinc, assuming a cut-off value of \$60 per tonne after accounting for transportation, smelting and refining costs. • Amended the Facility to extend the maturity to February 2023 and increase availability from \$300 million to \$500 million.

Outlook for 2022

In 2022, we expect to produce between 19.0 and 20.5 million ounces of silver and between 550,000 and 605,000 ounces of gold. In preparing this forecast, we have assumed, among other things, that operations will continue to be impacted by our comprehensive COVID-19 protocols to protect health and safety, which increase costs and restrict throughput levels, especially at our underground mines. The impact of COVID-19 on our operations is expected to diminish over the course of 2022, however this may improve or worsen relative to our assumptions, depending on further outbreaks, including those with respect to COVID-19 variants, how each jurisdiction manages potential outbreaks of COVID-19, and the supply and effectiveness of vaccines. The Escobal mine is assumed to remain on care and maintenance during 2022, as Guatemala's Ministry of Energy and Mines conducts the court-mandated ILO 169 consultation process. The 2022 production forecast also excludes the Morococha mine which is expected to be placed into care and maintenance in early 2022 because of the decision to decommission and dismantle the mine's processing plant in connection with the planned expansion of the Toromocho open pit copper mine by Minera Chinalco Peru ("MCP"). Please refer to the "Risks Related to Our Business" starting on page 57 for additional information regarding risks related to our Escobal and Morococha mines.

In 2022, we plan on incurring project capital expenditures of approximately $80.0 million to $95.0 million, relating mostly to the La Colorada skarn project for infill and exploration drilling, early stage engineering, completion of a technical report, and investment to advance longer-term infrastructure. The anticipated project capital expenditures also include approximately $12.0 million to $14.0 million relating to the construction of a paste fill plant for Bell Creek to improve backfill quality and availability, as well as for exploration of the Wetmore and Whitney projects in Ontario, Canada.

We expect to spend approximately $200.0 to $210.0 million on sustaining capital in 2022, largely on open pit pre-stripping, leach pads and tailings storage facilities, exploration, site infrastructure and mine equipment overhauls and replacements.

Exploration expenditures in 2022, including both amounts that will be expensed and capitalized, are expected to total approximately $42.0 million to $46.0 million, comprised of: (1) $12.0 million to $13.0 million for 95,000 metres of near-mine brownfield exploration drilling for reserve replacement, which is included in the forecast for 2022 sustaining capital expenditures; (2) $8.0 million to $9.0 million in regional greenfield exploration in Peru, Mexico and Canada and corporate overhead; and (3) $22.0 million to $24.0 million for 88,000 metres of project drilling on the La Colorada skarn discovery and the Wetmore project, which is included in the forecast for 2022 project capital expenditures.

In 2022, we also expect to spend $36.0 million to $38.5 million in care and maintenance expenditures, comprised of $21.0 million to $22.0 million related to the Escobal mine focused on safely completing the actions required by our approved environmental management plan and maintaining the condition of the mine during the government-led ILO 169 consultation process, $12.0 million to $13.0 million for the Morococha mine, as well as $3.0 million to $3.5 million for the Navidad project.

Annual corporate general and administrative expense, including share-based compensation, is forecast to be between $42.0 million and $46.0 million in 2022.

AISC is a non-GAAP measures and does not have a standardized meaning prescribed by Canadian accounting standards. For additional information, please see "Non-GAAP Measures" on page 2 of this AIF.

Please refer to the section of this AIF entitled "Risks Related to Our Business" starting on page 57 for more information about the risks relating to our business and our mining properties.

NARRATIVE DESCRIPTION OF THE BUSINESS

Principal Products and Operations

Our principal products and sources of sales are silver and gold doré and silver bearing zinc, lead, and copper concentrates. In 2021, the La Colorada, Dolores, Huaron, Morococha, Shahuindo, La Arena, Timmins West, Bell Creek, Manantial Espejo and San Vicente mines accounted for all of our production of concentrates and doré.

Consolidated production for the year ended December 31, 2021 was as follows:

	La Colorada	Huaron	Morococha[1]	San Vicente[2]	Manantial Espejo[3]	Dolores	Shahuindo	La Arena	Timmins[4]	Total[5]
Tonnes Milled[6]	572,500	940,300	617,500	356,300	657,100	7,774,400	13,149,300	10,855,200	1,593,100	36,515,600
Grade										
Silver - g/t	312	141	122	244	177	16	6	1		
Gold - g/t	0.25	0.16	0.24		1.75	0.95	0.47	0.36	2.70	
Zinc %	2.05	2.14	2.98	2.81						
Lead %	1.09	1.11	1.04	0.10						
Copper %		0.82	0.48	0.24						
Production										
Ounces Silver[6]	5,171,400	3,513,300	2,175,200	2,548,300	3,235,600	2,239,700	234,700	39,800	16,200	19,174,000
Ounces Gold[6]	2,700	1,100	1,100	300	33,800	160,100	134,000	112,400	133,800	579,300
Tonnes Zinc[7]	9,980	15,370	15,640	8,360						49,360
Tonnes Lead[7]	5,190	7,480	5,140	320						18,130
Tonnes Copper[7]		5,850	2,170	660						8,690

Notes:

1 Morococha data represents our 92.3% interest in mine production based on ownership of the operating entity.

2 San Vicente data represents our 95% interest in mine production based on ownership of the operating entity.

3 Manantial Espejo data includes production from the COSE and Joaquin mines.

4 Timmins refers to the Timmins West and Bell Creek mines.

5 Totals may not add due to rounding.

6 Rounded to the nearest hundred.

7 Rounded to the nearest ten.

Our approximate revenue by product category for the financial years ended December 31, 2021 and December 31, 2020 was as follows:

Product Revenue	2021	2020
	($000's)	($000's)
Silver and Gold Doré	1,177,388	1,047,601
Zinc Concentrate	119,059	65,033
Lead Concentrate	145,524	132,823
Copper Concentrate	133,025	50,081
Silver Concentrate	57,754	43,274
Total	**1,632,750**	**1,338,812**

Additional segmented information is set forth in Note 25 to Pan American's Audited Consolidated Financial Statements for the year ended December 31, 2021, and further information on individual mine performance and other metrics is presented in the 2021 MD&A under the heading "Individual Mine Performance".

Silver and Gold Doré

Our principal buyers of silver and gold doré produced from our La Colorada, Dolores, Manantial Espejo, Shahuindo, La Arena and Timmins mines, once refined, are international bullion banks and traders, except for the gold produced from La Colorada, which is sold to Maverix Metals Inc. ("Maverix") pursuant to the Maverix Gold Stream (as defined below) discussed on page 23 herein. Silver and gold doré is delivered to refineries in Canada, Mexico, Germany, Switzerland, and the United States, and subsequently transferred to the accounts of our buyers.

Zinc, Lead, Copper and Silver Concentrates

The majority of our concentrate production is sold to international concentrate traders and smelters. In 2021, lead concentrate production from the La Colorada mine was delivered to the buyers at the ports of Manzanillo, Mexico, Altimira, Mexico, and Antwerp, Belgium, and zinc concentrate production was delivered to a Torreon smelting facility in Mexico. In 2022, lead concentrate production from the La Colorada mine is expected to be delivered to the buyers at the ports of Manzanillo, Mexico, and Antwerp, Belgium, and zinc concentrate production is expected to be delivered to smelting facilities in Torreon and San Luis Potosi, Mexico. Concentrate production from the Huaron and Morococha mines is delivered to the buyers at the port of Callao, Peru, with the exception of a portion of the zinc concentrate which is delivered to the Cajamarquilla smelting facility in Peru. In 2021, silver concentrate production from the San Vicente mine was delivered to the buyers at the Altonorte smelting facility near Antofagasta, Chile, with the exception of a portion of the silver concentrate which was delivered at the port of Antofagasta, Chile, and zinc concentrate production was delivered to the buyers at the port of Arica, Chile. In 2022, silver concentrate production from the San Vicente mine is expected to be delivered to buyers at the port of Arica, Chile, and zinc concentrate production is expected to be delivered to buyers at the ports of Arica and Antofagasta, Chile. From these ports, the concentrates are shipped by the buyers to various international locations.

Please see the discussion under "Risks Relating to Our Business – Trading Activities and Credit Risk".

Employees and Contractors

At the end of 2021, we had approximately 7,100 employees and about 6,700 contractors. The majority of those employees and contractors were working at our operations in South and Central America, Mexico and Canada. Our Peruvian operations had the largest workforce with approximately 6,880 employees and contractors as of December 31, 2021, while our Mexican operations had approximately 3,960 total employees and contractors. Our Argentina and Bolivia operations had approximately 860 and 790 employees and contractors, respectively, and there were approximately 390 employees and contractors in Guatemala. In Canada, our operations had about 820 employees and contractors, and approximately 70 persons worked for Pan American's head office in Vancouver, British Columbia at year-end.

Protecting the health, safety and wellbeing of our employees, contractors, suppliers, and community partners where we operate is always a priority for us. Unfortunately, we experienced four fatal accidents at our operations in 2021. We are advancing several additional safety initiatives, including expanding training and the technical abilities of our workforce, focussing on the development of leadership skills, and raising even greater awareness and prioritization of safety. Please refer to the Sustainability page of our website at www.panamericansilver.com for further information on our health and safety programs.

Research and Development

While we conduct feasibility work and operational enhancement evaluations in order to improve production processes and exploration and mining operations, we do not, in the normal course, embark on any research and development activities in relation to products or services. Costs associated with this work would usually be expensed as incurred. As such, we did not incur any significant research and development costs during 2019, 2020 or 2021.

Working Capital and Liquidity Position

As at December 31, 2021, we had cash and cash equivalents and short-term investment balances of $335.3 million and working capital of $613.5 million. Total debt of $45.9 million was related to lease liabilities and construction loans.

On April 15, 2015, we entered into the Facility, a $300 million senior secured revolving line of credit available for general corporate purposes, including acquisitions, and originally had a four year term. In 2016, we amended the Facility to extend the term by an additional year. On February 1, 2019, the Facility was increased by $200 million to $500 million, and further extended to mature on February 1, 2023. In August 2021, the term of the Facility was again extended to mature on August 8, 2025, and a sustainability-linked pricing adjustment feature was added. The borrowing costs under the Facility are based on our leverage ratio subject to pricing adjustments based on sustainability performance ratings and scores at either (i) LIBOR plus 1.825% to 2.80% or; (ii) The Bank of Nova Scotia's Base Rate on U.S. dollar denominated commercial loans plus 0.825% to 1.80%. Undrawn amounts under the Sustainability-Linked Credit Facility are subject to a stand-by fee of 0.41% to 0.63% per annum, dependent on our leverage ratio and subject pricing adjustments based on sustainability performance ratings and scores. The outstanding balance on the Facility was zero as at December 31, 2021.

Our financial position at December 31, 2021, and the operating cash flows that are expected over the next twelve months lead management to believe that our liquid assets are sufficient to satisfy our 2022 working capital requirements, fund currently planned capital expenditures (including both sustaining and project capital) for existing operations, and to discharge liabilities as they come due. We also remain well positioned to take advantage of further strategic opportunities as they are identified and become available.

Environment, Social and Governance

Safe production, the environmentally sound development and operation of assets, and fostering positive long-term relationships with employees, shareholders, communities, and local governments are fundamental to our strategy.

We have implemented a number of policies relating to the environment and sustainability, including an Environmental Policy, a Social Sustainability Policy, a Health and Safety Policy, and an Inclusion and Diversity Policy in which we accept our corporate responsibility to practice environmental stewardship, community engagement and development, and provide a safe, healthy, respectful and open and inclusive workplace for our employees. We also joined the BlackNorth Initiative in June 2020 as part of our commitment to inclusion and diversity and to support the fight against racism. Our Global Code of Ethical Conduct, Global Anti-corruption Policy, and Supplier Code of Conduct, which are available on our website at www.panamericansilver.com, further formalize our commitment to operating ethically. Our directors, officers, executives, and senior management provide annual certifications in connection with the Global Code of Ethical Conduct and Global Anti-corruption Policy, and we provide related training across our organization. We comply with relevant industry standards, legislation and regulations in the countries where we carry on business.

Through our membership in the Mining Association of Canada, we continued to implement the Towards Sustainable Mining ("TSM") performance system, a world class management standard designed to help mining companies responsibly drive sustainability performance and manage risk. In 2021, we achieved Level A for all TSM protocols at all operations, except for the Safety protocol at Huaron, San Vicente, La Colorada and Morococha where we had fatal accidents, and the Tailings Management protocol at Morococha, Huaron and Timmins due to management system improvements that are in progress.

During 2021, reviews of the environmental and social performance of our operations were led by our Senior Vice President of Corporate Affairs and Sustainability, our Vice President, Social Sustainability, Inclusion and Diversity, and our Vice President, Environment, and our reviews of our tailings facilities were led by our Vice President, Mineral Processing, Tailings and Dams. The reviews typically include in-person inspections of our mine sites and surrounding areas with key operations and sustainability team personnel, reviews of monitoring programs and operating procedures, and evaluation of the principal environmental and social issues related to each of these operations. In addition to periodic reviews, detailed environmental audits and sustainability audits are conducted at each operation approximately once every two years.

We conduct environmental audits to assess the mines' facilities, operating procedures and control systems to ensure that procedures comply with regulations, are consistent with our corporate standards, and that potential risks are being managed. Due primarily to COVID-19 restrictions, an environmental audit was only undertaken at the La Colorada mine in 2020. The ability to complete the environmental audit program continued to be partially affected by pandemic-related travel restrictions in 2021, however the Timmins, Dolores, Escobal and San Vicente mine audits were completed. In intervening years between audits, the implementation of the corrective actions required by each audit is monitored and confirmed. The La Colorada, La Arena, Shahuindo, and Manantial Espejo mines' corrective actions were found to be satisfactory in 2021.

We continuously work to ensure that all tailings storage facilities, dams, heap leach pads, and waste stockpiles are robustly designed, built, operated, maintained and closed in accordance with our internal standards, the TSM Tailings Management protocol, the Canadian Dam Association guidelines, and known global best practices in order to prevent any incidents or failures. Our tailings storage facilities and water dams are subject to routine inspections, audits, geotechnical and environmental monitoring, annual reviews, and independent reviews to continually improve systems and methods in order to minimize potential harm associated with these long-term facilities. During 2021, tailings management audits and followup reviews were also undertaken at the Morococha, Huaron, La Colorada, Timmins and Manantial Espejo mines. Dam safety reviews, or annual inspections in the case of heap leach facilities, were conducted in 2021 by the respective third-party engineers of record for all tailings storage facilities and heap leach pads. In addition, all operating tailings storage facilities have independent reviews conducted by third parties approximately every five years. In 2021, an independent review was carried out at Huaron, which was an update from its last review in 2015. All tailings storage facilities and heap leach pads are in satisfactory condition and monitoring results are normal.

Our Timmins, La Arena, Shahuindo, Huaron, Morococha, La Colorada, Dolores, and Escobal mines were all inspected by government agencies in 2021 and no material environmental issues were recorded.

In the financial year ended December 31, 2021, our environmental expenditures for concurrent reclamation were approximately $6.0 million. The closure and decommissioning liabilities for all sites other than Timmins West, Bell Creek, and Alamo Dorado were prepared using the standard reclamation cost estimator ("SRCE") methodology developed in the State of Nevada, USA, using quantity estimates and cost data obtained at each mine site. Estimates for Timmins West, Bell Creek and Alamo Dorado were developed by each site using direct estimation with site-specific closure plans, engineering estimates, local rates and contractor quotes. We currently estimate the aggregate present value of expenditures required for future closure and decommissioning costs in respect of the Huaron, Morococha, Shahuindo, La Arena, Alamo Dorado, La Colorada, Dolores, Timmins West, Bell Creek, Manantial Espejo, San Vicente, and Escobal mines, along with our development properties, to be approximately $242.9 million.

We have adopted formal policies, procedures, and industry best practices to manage our impacts and contribute to the social and economic development of local communities. Our social management framework provides a consistent methodology for measuring and tracking social impacts and sustainability performance across our mines, while offering the flexibility needed to tailor our approach to the circumstances of each operation. Our sustainability audits cover human rights, labour, security and social practices. The sustainability audit framework is based on the ISO 26000 guidance standard on social responsibility and is regularly updated to reflect international best practice and standards, such as the TSM Aboriginal and Community Outreach Protocol, the United Nations Guiding Principles on Business and Human Right, UNICEF Canada's Child Rights and Security Checklist, the Voluntary Principles on Security and Human Rights, and the International Labour Organisation's Guide for Enterprise Diagnostics. During 2020, we conducted a social audit of the Manantial Espejo operation in Argentina, and in 2021 we completed sustainability audits at the San Vicente, Huaron, Morococha, Shahuindo, La Arena, La Colorada and Dolores mines. The key observations and recommendations from the reviews are reported monthly to senior management and quarterly to Pan American's board of directors (the "Board of Directors") and its committees, and summary results are presented annually in our Sustainability Reports. In 2021, we established the Communities and Sustainable Development Committee ("CSD Committee") of the Board in order to increase our focus on ESG matters. Together, the CSD Committee and the Health, Safety, and Environment Committee oversee our ESG strategy.

In 2019, we adopted a new human rights policy that is based on the three pillars of the United Nations Guiding Principles on Business and Human Rights and the OECD Guidelines for Multinational Enterprises. This policy consolidates several of our existing objectives in the areas of environment, labour, diversity and social responsibility. It formalizes our approach to fostering a positive human rights culture throughout our organization and our work to prevent, minimize or mitigate adverse impacts from our activities on our employees, communities, and other external stakeholders. We also took additional steps to align with international human rights best practices and launched a gap assessment of our security practices against the requirements of the Voluntary Principles on Security and Human Rights and UNICEF's Child Rights and Security Checklist at two of our three operations with armed security forces: La Colorada in Mexico and Escobal in Guatemala. In 2020, we completed the final assessment at Dolores in Mexico. In 2021, we completed the implementation of the Voluntary Principles on Security and Human

Rights at all of our mines except for Dolores, which is significantly advanced. The full implementation of the UNICEF Childs Rights and Security Checklist was completed for all operations by the end of 2021. In addition to this, we also implemented the World Gold Council's Conflict Free Standard at all of our sites in 2021.

We also recognize and respect the rights, cultures, heritage and interests of Indigenous peoples. We are committed to building and maintaining positive relationships with Indigenous groups through on-going engagement, and identification of mutually beneficial opportunities.

As part of our commitment to driving global sustainable development and contributing to the United Nations Sustainable Development Goals, in 2020, we became signatories to the United Nations Global Compact and established a working group to lead the implementation and develop our first Communications of Progress report, a membership requirement.

To further our sustainability performance and risk management processes, in 2020, we developed a set of ESG Performance Indicators, to measure and monitor the performance progress of the key environmental and social sustainability activities at our operations on a monthly basis. Our social performance indicators cover social risk management, grievance management and community investment. Additionally, we have developed social performance indicators focused on security and human rights standards that measure our progress on implementing the Voluntary Principles on Security and Human Rights, as well as indicators that measure the advancement of our programs focused on inclusion and diversity, bias, racism, and behavioural matters. Our environmental performance indicators cover environmental incidents, audits, water, energy and greenhouse gas emissions, and implementation of the TSM program.

We recognize that climate change is a threat to the global environment, society, our stakeholders and our business. We support the recommendations from the Financial Stability Board TCFD, and published our first TCFD-aligned report as part of our 2020 Sustainability Report. We expect to incorporate our climate-related goals into our 2021 Sustainability Report that will be released in 2022. Climate-related risks are expected to include, but are not necessarily limited to, those described in the "Risk and Uncertainties" section of the 2021 MD&A and in the "Risks Related to Our Business" section of this AIF. We will also continue to report on our emissions, targeted emission reductions, climate risks and other climate-related actions in our annual Sustainability Reports.

Other than specific environmental and social concerns discussed in more detail elsewhere in this AIF, we are not aware of any material environment or social related matter requiring significant capital or operating outlays in the immediate future. Closure and reclamation costs and actual costs may vary, perhaps materially, from estimates and investors are cautioned against attributing undue certainty to these estimates. The reclamation and closure costs estimate for each of the operating mines and development projects was updated to reflect the conditions as of December 31, 2021.

Our 2020 Sustainability Report was prepared in accordance with the Global Reporting Initiative ("GRI") Standards: core option and GRI Mining & Metals Sector Disclosures. The report also took into consideration the SASB reporting framework, and includes detailed information on our environmental, social, socio-economic and health and safety programs and performance. Our 2020 Sustainability Report is available on our website at www.panamericansilver.com. Our 2021 Sustainability Report will be made available on our website once completed.

Please refer to our 2021 MD&A under the heading "Environmental, Social and Governance" for additional details on our ESG strategy and performance.

Operating and Development Properties

Pursuant to National Instrument 51-102 *Continuous Disclosure Obligations* ("NI 51-102"), we have identified the following properties and projects as being material as at December 31, 2021: the La Colorada mine, the Dolores mine, the Huaron mine, the Shahuindo mine, the Timmins West mine, and the Bell Creek mine. We have also identified the currently-suspended Escobal mine as a material property for 2021. We do not consider any of our other mines, development or investment properties to be material properties for the purposes of NI 51-102.

Certain statements in the following property summaries are based on and, in some cases, extracted directly from the relevant Technical Reports identified under the heading "Scientific and Technical Information" beginning on page 7.

Mineral Reserve and Mineral Resource Estimate Information

The process for estimating mineral reserves and mineral resources at our properties is described below in each property section. Pan American is exposed to many risks in conducting its business, both known and unknown, and there are numerous uncertainties inherent in estimating mineral reserves and mineral resources. Although we have no current expectation that our mineral reserve and mineral resource estimates will be materially negatively impacted by external factors such as metallurgical, safety, environmental, permitting, title, access, legal, taxation, availability of resources, and other factors disclosed in this AIF, changes in relation to such factors are not uncommon in the mining industry and there can be no assurance that these factors will not have a material impact. There are numerous uncertainties inherent in estimating mineral reserves and mineral resources. The political, economic, regulatory, judicial and social risks related to conducting business in foreign jurisdictions, and changes in metal and commodity prices, pose particular risk and uncertainty to us and could result in material impacts to our business and performance. In addition to external factors and risks, the accuracy of any mineral reserve and mineral resource estimate is, among other things, the function of the quality and quantity of available data and of engineering and geological interpretation and judgment. Results from drilling, testing, and production, as well as a material change in metal prices or a change in the planned mining method, subsequent to the date of the estimate, may justify revision of such estimates and may differ, perhaps materially, from current estimates, and investors are cautioned against attributing undue certainty to mineral reserves and mineral resources. Readers are encouraged to read the discussion under "Risks Relating to Our Business" beginning on page 57 in this AIF.

I. Operating Properties

A. Mexico

(i) La Colorada Mine

Project Description, Location, and Access

The La Colorada underground silver mine is located in Zacatecas State, Mexico, approximately 100 kilometres south of the city of Durango and 155 kilometres northwest of the city of Zacatecas. The mine is accessed primarily from the cities of Durango and Zacatecas by paved highway and all weather gravel roads.

Our wholly-owned subsidiary, Plata Panamericana, owns and operates the mine. The La Colorada property, including certain exploration concessions outside the mining area, is comprised of 56 mining claims totalling approximately 8,840 hectares. We pay an annual fee to maintain the claims in good standing, and to our knowledge, we have met all of the necessary obligations to retain the property.

We have control over or rights in respect of approximately 1,300 hectares of surface area covering the main workings. All of the La Colorada mineral reserves and mineral resources and all of the known mineralized zones, mine workings, the processing plant, effluent management and treatment systems, and tailings disposal areas are located within the mining claims controlled by us.

In 2016, as part of the transaction with Maverix, Maverix acquired a gold stream equivalent of one hundred percent (100%) of the payable gold production from the La Colorada mine, less a fixed price of USD$650 per ounce for the life of the mine (the "Maverix Gold Stream"). In 2021, the Maverix Gold Stream resulted in Maverix acquiring 2,239 ounces of gold (2020 – 3,608 ounces).

To the best of our knowledge, the La Colorada mine is not subject to any other royalties, overrides, back-in rights, payments, or other agreements and encumbrances, other than governmental taxes, fees and duties. Our Mexican operations are subject to governmental taxes, fees and duties, including: (i) a special mining duty ("SMD") of 7.5% applied to taxable earnings before interest, inflation, taxes, depreciation, and amortization; and (ii) a deductible extraordinary mining duty ("EMD") of 0.5% that is applied to the sale of gold, silver, and platinum.

In late December 2016, the Zacatecas state government also enacted a new set of ecological taxes which took effect on January 1, 2017 (the "Zacatecas Tax"). The Zacatecas Tax applied broadly across a number of industries in the State of Zacatecas that involve extraction, emissions to the air, soil or water, and deposits of residue or waste. The Zacatecas Tax primarily affects the La Colorada mine in respect of the materials placed in its tailings storage facility, with only about 5% of the tax relating to emissions. We paid approximately $4.5 million in respect of the Zacatecas Tax from January 2017 to April 2020. However, pursuant to a challenge of the Zacatecas Tax constitutional grounds, in mid-2020, the Supreme Court of Mexico determined that the tax for the deposit or storage of waste rock was not within the jurisdiction of the State of Zacatecas and that Plata Panamericana was entitled to be reimbursed for payments previously made in respect of the La Colorada mine. In 2021, the State of Zacatecas allowed Plata Panamericana to begin applying the overpayment against other taxes and fees payable to the State, and as of December 31, 2021, Plata Panamericana had successfully applied approximately $235,000 of the original Zacatecas Tax paid.

In its 2020 decision on the Zacatecas Tax, the Court also ruled that the State of Zacatecas was still empowered to impose a tax for the prevention and control of air pollution generated by industrial establishments which are not within the federal competence, and therefore that portion of the tax on Plata Panamericana was upheld. As a result, between mid-2020 and mid-2021 (while Plata Panamericana was applying the previously-paid Zacatecas Tax payments against other taxes and fees payable), Plata Panamericana paid approximately $148,000 related to this component of the Zacatecas Tax.

In December 2020, the State of Zacatecas also modified the original tax on the disposal or storage of waste rock. Plata Panamericana does not currently believe that this tax will be applied to it since the waste rock is part of a waste management plan authorized by the SEMARNAT.

While there are no known significant factors or risks that we currently expect to be reasonably likely to affect access or title, or the right or ability to perform work on the La Colorada mine, certain community and land ownership rights have been asserted over a portion of our La Colorada surface lands. In addition to claims in the Agrarian Courts in Mexico, a process was initiated before the Secretariat of Agrarian, Territorial and Urban Development ("SEDATU") in Zacatecas to declare such lands as national property. While we are seeking to protect our rights, there could be a material adverse impact on La Colorada's future mining operations if we are unable to maintain access to those surface areas. Please refer to "Risks Related to Our Business" starting on page 57 for a general discussion of the risks relating to our operations.

History

The Dorado family operated mines at two locations on the property in 1925. From 1929 to 1955, Candelaria y Canoas S.A., a subsidiary of Fresnillo S.A., installed a flotation plant and worked the old dumps of two previous mines on the La Colorada property. From 1933 to the end of World War II, La Compañía de Industrias Peñoles also conducted mining operations on the property. From 1949 to 1993, Compañía de Minas Victoria Eugenia S.A. de C.V. ("Eugenia") operated a number of mines on the property. In 1994, Minas La Colorada S.A. de C.V. ("MLC") acquired the exploration and exploitation claims and surface rights of Eugenia. Until 1997, MLC conducted mining operations on three of the old mines on the property.

During these time periods, exploration was mainly in the form of development along the veins. Prior to our ownership, 131 diamond drill holes had been drilled. In 1997, we entered into an option agreement with MLC, during which time we conducted exploration and diamond drilling programs as part of our due diligence reviews.

We have been producing from La Colorada since 1998.

Geological Setting, Mineralization, and Deposit Types

The La Colorada mine is located in the Sierra Madre Occidental volcanic belt, at the contact between the Lower Volcanic Supergroup and the Upper Volcanic Supergroup. The oldest rocks exposed on the property are Cretaceous limestones of the Cuesta del Cura Formation and calcareous clastic rocks of the Indidura Formation. They are overlain by conglomerates of the early Tertiary Ahuichilla Formation. East to northeast striking faults form the dominant structures at the property and play a strong role in local mineralization.

Economic mineralization is found in veins, replacement mantos, and skarn. The majority of the mineral resources and mineral reserves are sourced from the NC vein series, the HW vein series, Veta 3, the Amolillo vein system, vein and manto mineralization at the Recompensa system, and the new undeveloped skarn deposit.

Most mineralized veins strike east to northeast and dip moderately to steeply to the south. Most of the mineralization of economic significance is located in quartz veins that average 1 metre to 2 metres wide, but may be significantly wider. Amolillo strikes over 1.5 km to the northeast and dips 60° to the southeast, for over 800 metres down dip. The average vein width is 2.2 metres. The NC vein series lies around 700 m to the southeast of Amolillo. The most significant of these veins, NC2, strikes around 1.2 km to the northeast and dips 75° to the southeast, for over 1 km down dip. The average vein width is 1.9 metres. The HW series is the western continuation of the NC series, strikes east-west, and dips 50° to the south, for over 600 m down dip. The average vein width is 1.8 metres. Veta 3 runs parallel to the HW and NC series, strikes for over 900 m to the northeast, and dips 75° to the northwest, for around 400 m down dip. The average vein width is 1.7 metres.

Manto style mineralization is found near vein contacts where the primary host rock is limestone.

A significant skarn deposit was discovered in 2018 at depth and to the east of the NC2 vein. With increasing depth, mineralization styles progress from epithermal style veins, to manto style mineralization in calcareous sediments, skarn, magmatic hydrothermal breccia skarn, proximal skarn, epithermal veins overprinting porphyry, and copper-molybdenum-silver porphyry. Common minerals include galena and sphalerite, with quartz, carbonate, feldspar, pyroxene, and garnet. The deposit, as currently defined, comprises several zones of mineralization located between 600 metres to 1,900 metres below surface, over an area of approximately 1,400 metres by 650 metres.

Exploration

The mine had been working for several decades prior to any specific exploration work and most major structures became known through mine development. Prior to Pan American's ownership, 131 diamond drillholes for a total of 8,665 metres had been completed by MLC, and between September 1997 and March 1998, while the property was under option, Pan American conducted a geophysical survey comprising very low frequency radio and induced polarization.

Since Pan American acquired the La Colorada mine, staff and consulting structural geologists have carried out near mine surface and underground geological and structural mapping. Underground channel and raise sampling is conducted for grade control and mineral resource and reserve estimates as mining progresses.

Drilling

All drilling is by diamond drilling from surface and underground using industry standard drill machines and downhole survey tools. Drilling is conducted by both our employees and private drilling contractors under the supervision of the mine geology department. Near mine surface and underground diamond drilling exploration campaigns are ongoing on an annual basis for mineral resource and mineral reserve estimates.

Sampling, Analysis, and Data Verification

The drill core is cut in half with a diamond bladed saw and samples are selected with respect to geological features, at 2 metre lengths or less. Channel samples of approximately one metre in width are taken in ore development areas and stopes. The samples are maintained in secure facilities and are under the control of our employees or the independent laboratory at all times. We have no reason to believe that the validity and integrity of the samples has been compromised.

The drillhole samples are prepared by the internal La Colorada mine laboratory, which is operated by our employees, and by independent laboratories including SGS of Durango, Activation Laboratories Ltd ("Actlabs") of Zacatecas, and Bureau Veritas of Hermosillo. Both Actlabs and SGS used fire assay with gravimetric finish for gold and acid digestion with ICP finish for silver, lead, zinc, and copper. Bureau Veritas used fire assay with gravimetric finish for gold and acid digestion with ICP finish for silver, lead, zinc, and copper in their Vancouver, Canada laboratory. The La Colorada mine laboratory used fire assay with gravimetric finish for gold and silver, and acid digestion with atomic absorption ("AA") finish for lead, zinc, and copper.

The mine geology department conducts a quality assurance/quality control ("QAQC") program that is independent from the laboratory. The program includes the insertion of certified standards, blanks and duplicate samples. The results of the QAQC samples demonstrate acceptable accuracy and precision and that no significant contamination is occurring at the mine or external laboratories.

Mineral Processing and Metallurgical Testing

As part of normal plant operation procedures, metallurgical analysis and testing is undertaken as required. The majority of these analyses are to assess mill performance and metallurgical recovery. Metal recovery forecasts used in our mine plans are based on the historical performance of the plant operations and the tonnes and grade of material that is planned to be mined.

Mineral Resource and Mineral Reserve Estimates

Management estimates that mineral reserves at the La Colorada mine, effective June 30, 2021, are as follows:

La Colorada Mineral Reserves [1, 2, 3]

Reserve Category	Tonnes (Mt)	Grams of Silver per tonne	Grams of Gold per tonne	% Zinc	% Lead
Proven	3.9	350	0.25	2.09	1.17
Probable	6.2	289	0.19	2.06	1.18
TOTAL	10.0	312	0.21	2.07	1.18

Notes:

1 Estimated using a price of $18 per ounce of silver, $1,300 per ounce of gold, $2,450 per tonne of zinc and $2,000 per tonne of lead. Totals may not add due to rounding.

2 Mineral reserve estimates for La Colorada have been prepared under the supervision or were reviewed by Christopher Emerson, FAusIMM, and Martin Wafforn, P. Eng., as Qualified Persons as that term is defined in NI 43-101.

3 Lead and zinc grades shown are the average for the deposit. However, the base metals are only payable in the concentrates produced from the sulphide ores and not in the doré produced from the oxide ores.

Management estimates that mineral resources at the La Colorada mine, effective June 30, 2021, are as follows:

La Colorada Mineral Resources [1, 2, 3]

Resource Category	Tonnes (Mt)	Grams of Silver per tonne	Grams of Gold per tonne	% Copper	% Zinc	% Lead
Measured	1.3	185	0.15	0.00	1.42	0.82
Indicated	1.9	175	0.15	0.00	2.12	1.22
Inferred	8.4	190	0.15	0.00	2.48	1.29
Inferred skarn	100.4	44	0.00	0.20	4.29	1.77

Notes:

1 These mineral resources are in addition to mineral reserves. Estimated using a price of $18 per ounce of silver, $1,300 per ounce of gold, $2,450 per tonne of zinc and $2,000 per tonne of lead, except for the skarn deposit, where metal prices of $18.50 per ounce of silver, $6,500 per tonne of copper, $2,600 per tonne of zinc, and $2,200 per tonne of lead were used. At the skarn deposit, a cut-off value of $60 per tonne, which used metallurgical recoveries of 91% silver, 90% lead, 85% zinc, and 38% copper, was used to tabulate resources.

2 Mineral resource estimates for the La Colorada mine have been prepared under the supervision, or were reviewed by Christopher Emerson, FAusIMM, and Martin Wafforn, P. Eng., as Qualified Persons, as that term is defined in NI 43-101.

3 Lead and zinc grades shown are the average for the deposit. However, the base metals are only payable in the concentrates produced from the sulphide ores and not in the doré produced from the oxide ores.

Resource estimates were made for the veins using either two dimensional or three dimensional methods.

Following the two dimensional method, mineral resources are estimated using averaging of the channel and diamond drillhole samples. A long section is produced of each structure and divided into mineable panels. The volume of the panel is estimated from the average width of the vein or mineralization intersection of each drillhole or channel located within a 30 metre radius of the panel. The grade of each panel is estimated by the length weighted average of the sample grade of each intersection within a 30 metre radius of the panel.

Following the three dimensional method, three dimensional interpretations are made in each vein or mineralized structure around spatially continuous trends of drillhole and channel sample grades greater than the sub-marginal cut-off values for each vein. A similar interpretation is made of hangingwall and footwall dilution volumes expected to be mined with each structure. The wireframe interpretations are filled with blocks for the ordinary kriged estimate.

For both estimation methods, a long section is produced of each structure and divided into mineable panels. Average bulk density values are applied to each mining panel volume to estimate the tonnes of each panel. The volumes are depleted annually for mining in the previous year. Mineral resource confidence classifications are based on the proximity and density of sample information in each block, as well as the interpretation and the experience of the mine geologists. Planned dilution and loss is applied to the estimate and a value per tonne is calculated in each panel. Any panel with a value above the mineral resource cut-off is converted to mineral resources. Mineral resources that can be economically mined are converted to mineral reserves.

Mineral resources for the skarn were estimated using inverse distance grade interpolation into three dimensional blocks within mineralised envelopes defined using a mineralized cut-off grade.

The mineral resource estimate is depleted annually for mining in the previous year. Planned dilution and loss is applied to the block model and a value per tonne is applied to each block. Reserve and resource underground stope shapes were prepared on blocks above the economic cut-off. Mineral resources that can be economically mined are converted to mineral reserves.

Mineral reserve estimates are based on a number of assumptions that include metallurgical, taxation, and economic parameters. Increasing costs or increasing taxation could have a negative impact on the estimation of mineral reserves. There are currently no known factors that may have a material negative impact on the estimate of mineral reserves or mineral resources at the La Colorada mine.

Mining Operations

Underground mining currently takes place utilizing cut and fill and long hole open stoping methods. Ore is hoisted to the surface in a shaft, and when required, may also be hauled to the surface using the two mine access ramps present in both mines.

Processing and Recovery Operations

The operation produces both oxide and sulphide ore processed in two separate circuits with a total nominal plant capacity of 2,000 tpd. The oxide plant is a conventional cyanide leach process comprised of crushing, grinding, leaching, Merrill Crowe zinc precipitation, and on-site refining to produce doré. The sulphide plant has a conventional flotation process comprised of crushing, grinding, and selective lead and zinc froth flotation circuits to produce separate precious metal rich lead and zinc concentrates. In the oxide plant, metallurgical recoveries averaged 83.7% for silver and 52.8% for gold in 2021. In the sulphide plant, recoveries in 2021 averaged 91.6% for silver, 61.3% for gold, 83.4% for lead, and 85.0% for zinc.

During 2021, we processed 572.5 thousand tonnes, producing 5.2 million ounces of silver, 2.7 thousand ounces of gold, 10.0 thousand tonnes of zinc, and 5.2 thousand tonnes of lead.

All precious metal doré produced at the La Colorada mine is sent to one of two arm's length precious metals refineries for refining under fixed-term contracts. After refining, the silver is sold on the spot market to various bullion traders and banks, and the gold is sold to Maverix pursuant to the Maverix Gold Stream. All lead and zinc concentrates produced at the La Colorada mine are sold to arm's length smelters and concentrate traders under negotiated fixed-term contracts, which consider the presence of any deleterious elements. To date, we have not experienced difficulty with renewing existing or securing new contracts for the sale of the La Colorada doré or concentrates, however, there can be no certainty that we will always be able to do so or what terms will be available in the future. We regularly review the terms of smelting and refining agreements and the terms are considered to be within industry norms. Please see "Risks Related to our Business – Trading Activities and Credit Risk".

The revenues per type of concentrate and doré produced by the La Colorada mine for the past three years were as follows:

2021	Revenue[1, 2]	Quantity Sold
Silver and Gold in Doré	$18.5 million	892,231 ounces of silver 446 ounces of gold
Lead Concentrate[4]	$85.6 million	10,830 tonnes
Zinc Concentrate[4]	$26.0 million	17,135 tonnes
2020	**Revenue[1, 2]**	**Quantity Sold**
Silver and Gold in Doré	$5.1 million[3]	797,506 ounces of silver 437 ounces of gold
Lead Concentrate[4]	$101.5 million	16,358 tonnes
Zinc Concentrate[4]	$22.2 million	24,148 tonnes
2019	**Revenue[1, 2]**	**Quantity Sold**
Silver and Gold in Doré	$16.8 million	1,145,000 ounces of silver 680 ounces of gold
Lead Concentrate[4]	$121.4 million	20,986 tonnes
Zinc Concentrate[4]	$39.5 million	36,221 tonnes

Notes:

1 Consists of sales to arm's length customers.

2 Calculated as gross revenue plus export credit incentives (as applicable), less treatment and refining charges and export taxes.

3 Reduced by approximately $8.5 million in 2020 as a result of a non-cash adjustments, of which $5.3 million related to prior periods.

4 Lead concentrates contain payable silver and gold. Zinc concentrates contain payable silver.

Infrastructure, Permitting, and Compliance Activities

The mine workings, processing plant, tailings storage facilities, waste disposal areas, effluent management and treatment facilities, roads, and power and water lines have all been constructed and are located within the boundaries of the mining leases and surface rights controlled by us. To the best of our knowledge, all permits and licenses required to conduct our activities on the property have been obtained and are currently in good standing.

The La Colorada mine purchases electrical power from the Mexican national power utility and back up diesel power is also available. Water for the mining operation is supplied from the underground mine dewatering systems.

An environmental impact statement ("EIS") and risk assessment on the La Colorada property was first submitted to the Mexican environmental authorities in early March 1999 and has subsequently been maintained and updated, including a major permit modification for the La Colorada mine expansion in 2017.

The main environmental projects focus on the stability and revegetation of historic tailings facilities. There are no known environmental issues that could materially impact our ability to extract the mineral resources or mineral reserves.

Permitting activities related to the La Colorada skarn deposit commenced in 2020 and applications for twin decline ramps and a new 700m deep shaft to access the deposit were approved by the Mexican environmental authorities in 2021.

The La Colorada mine voluntarily participates in the Mexican Environmental Protection Authority's "Clean Industry" program, which involves independent verification of compliance with all environmental permits and the implementation of good practice environmental management procedures and practices. The La Colorada mine obtained its first certification in 2008 and is periodically re-certified.

A closure cost estimate for La Colorada prepared according to State of Nevada approved SRCE methodology is updated every year for unit costs and discount rates, and every other year for physical disturbance. Pan American has estimated the present value of the final site reclamation costs for the La Colorada mine to be approximately $6.4 million effective December 31, 2021. See "Narrative Description of the Business – Environment, Community and Sustainability" for further disclosure regarding forward-looking statements related to reclamation costs.

Capital and Operating Costs

In 2021, total capital additions at La Colorada were approximately $65.5 million, with $39.5 million invested in expenditures related to the expansion activities, including exploration on the new skarn mineralization.

Capital investments for the La Colorada mine in 2022 are anticipated to total between $96.0 million to $110.0 million. In addition to sustaining capital investments of between $28.0 million and $29.0 million relating to mine deepening, underground ventilation infrastructure improvements, mine equipment replacement and refurbishments, tailing storage facility expansions and near-mine exploration, we also expect to invest between $68.0 million and $81.0 million in project capital spending relating to the skarn project for infill drilling, early stage engineering, metallurgical testing, completion of a preliminary economic assessment, and some investment to advance certain longer-term infrastructure items.

In 2021, direct operating costs at La Colorada were $74.9 million.

Exploration, Development, and Production

In 2022, we anticipate producing between 6.85 million and 7.10 million ounces of silver and between 2.8 thousand and 3.0 thousand ounces of gold from the La Colorada mine. We plan to undertake approximately 72,000 metres of exploration drilling at the La Colorada mine, including the skarn, in 2022.

(ii) Dolores Mine

Project Description, Location, and Access

The Dolores open pit and underground silver-gold mine is located in the state of Chihuahua, approximately 250 kilometres west of the city of Chihuahua. The main road access to the property is by maintained unpaved access road from Yepachic, Chihuahua. Access is also possible by light aircraft landing on a unpaved strip located about eight kilometres from the Dolores mine.

In 2012, Pan American acquired Minefinders and its wholly-owned subsidiary, CMD, that owns and operates the Dolores mine. The mine is comprised of three mineral concessions with an area of approximately 27,700 hectares. We make the required payments to maintain the concessions in good standing, and to our knowledge, we have met all of the necessary obligations to retain the property.

Many of the surface rights on the property are comprised in communal land registered with the National Agrarian Registry of Mexico (such communal land areas are referred to as "ejidos"). We have surface rights agreements with the local ejido community, Ejido Huizopa, and with several individual members of the Ejido Huizopa, dating from 2006, allowing us irrevocable access and the right to carry out exploration and mining activities for a term of 15 years with a right to extend for a further 15 years. These surface rights provide us with access to our mining operations, waste storage areas, heap leach pad areas, and other facilities.

All of the known mineralized zones, mineral resources and mineral reserves, mine workings, processing plant, effluent management and treatment systems, and heap leach pad areas relating to the Dolores mine are located within the boundaries of the concessions and surface rights.

An NSR royalty of 2% payable on all metal production, plus an additional NSR royalty of 1.25% on gold production, is payable to RG Mexico Inc., a subsidiary of Royal Gold Inc. These royalties are only on the portion of the deposit contained within one of the three concessions. To the best of our knowledge, the Dolores mine is not subject to any other royalties, overrides, back-in rights, payments or other agreements and encumbrances. Our Mexican operations are subject to governmental taxes, fees and duties, including the SMD and the EMD, as described in more detail under "La Colorada – Project Description, Location and Access".

While there are no known significant factors or risks that we currently expect to be reasonably likely to affect access or title, or the right or ability to perform work on the property, including permitting and environmental liabilities, please refer to “Risks Related to Our Business” starting on page 57 for a general discussion of the risks relating to our operations.

History

Mining began in the region of the Dolores mine in the 1860s. A stamp mill began treating the Dolores ore from 1915 until early 1929, when it was destroyed by fire. Only sporadic production occurred from 1929 to 1931, after which there are no records of any historical production. Incomplete mining records from between 1922 and 1931 indicate that approximately 372,000 tonnes of ore containing over 116,000 ounces of gold and six million ounces of silver were produced from several underground mine operations, including the Dolores mine.

The property lay idle until 1993 when Minefinders began acquiring a land position in the district. Minefinders began a full exploration program in 1995 and commenced diamond drilling and reverse circulation drilling programmes in 1996. In July 1996, Minefinders granted Echo Bay Mines (“Echo Bay”) an option in the property and Echo Bay commenced drilling, sampling, environmental data collection, and metallurgical testing. Minefinders bought back the option, including the technical information collected by Echo Bay, in 1997.

Following construction, Minefinders commenced mining in 2008. During the 2008 to 2011 period, Minefinders mined 25.5 million tonnes and stacked 18.3 million tonnes of ore on the leach pads, producing 210,660 ounces of gold and 6.2 million ounces of silver.

We have been producing from the Dolores mine since the acquisition of Minefinders in 2012.

Geological Setting, Mineralization, and Deposit Types

Dolores is located in the Sierra Madre Occidental volcanic belt, which comprises calc-alkaline batholiths and volcano sedimentary rocks of the Lower Volcanic Series and ignimbrites of the Upper Volcanic Series.

The San Francisco fault and its footwall host most of the mineralization at Dolores. The immediate footwall and hanging wall of the fault forms a 500 metre wide northwest-striking corridor of igneous intrusions.

Low sulphidation epithermal silver and gold mineralization is hosted in north-northwest trending hydrothermal breccias and sheeted vein zones in the order of 5 metres to 10 metres wide. Most high grade mineralization occurs along three major structures. Silver and gold mineralization identified on the surface lies over an area 4,000 metres long and up to 1,000 metres wide.

The highest grade mineralization occurs within the San Francisco Breccia, a well-defined and continuous hydrothermal breccia and stockwork zone that occurs in the immediate footwall of the San Francisco fault. The breccia trends further away from the fault towards the north until it joins a second major breccia zone known as the Alma Maria Breccia.

Hydrothermal breccias carry the highest silver and gold grades and pass outward into vein stock works. The veins are thin, rarely over 30 mm, and tend to occur as sheeted swarms. Economically mineable grades occur where the veins are sufficiently closely spaced.

Exploration

Minefinders carried out reconnaissance geological mapping, detailed mapping, and geophysical surveys including induced polarization surveys, resistivity surveys, and magnetic surveys. Minefinders also collected rock chip samples from the surface and underground, and followed up on promising targets with both reverse circulation and diamond drilling. Since we acquired the Dolores mine, we have continued with a program of near mine geological mapping and diamond drilling.

Drilling

All drilling is by diamond drilling from surface and underground using industry standard drill machines and downhole survey tools. Drilling is conducted by private drilling contractors under the supervision of the mine geology department. Near mine surface and underground diamond drilling exploration campaigns are ongoing as required for mineral resource and mineral reserve estimates.

Sampling, Analysis, and Data Verification

Reverse circulation drillholes were sampled from the length of each drill rod and diamond drillhole samples are selected according to geological features. Most drill core samples have been taken at 2 metre intervals. The samples are maintained in secure facilities and are under the control of our employees or the independent laboratory at all times. We have no reason to believe that the validity and integrity of the samples has been compromised.

Minefinders sent samples to Bondar Clegg, ALS Chemex, or Inspectorate laboratories for preparation and analysis. Silver assays were mostly prepared using a multi-acid digestion technique and AA spectrometry. Any assay overlimits were re-assayed using fire assay with gravimetric finish. Gold was analyzed using fire assay with AA finish and with gravimetric finish for any AA overlimits. Since acquiring the Dolores mine, we have sent samples to SGS Laboratories in Durango, Mexico. Samples are assayed for gold using fire assay with AA finish, and by fire assay with gravimetric finish for any AA overlimits. Silver is analysed by three acid digestion with ICP-AES finish for trace silver values, by three acid digest with AA finish for ICP-AES overlimits, and by fire assay with gravimetric finish for any AA overlimits.

The mine geology department conducts a QAQC program that is independent from the laboratory. The program includes the insertion of certified standards, blanks and duplicate samples. The results of the QAQC samples demonstrate acceptable accuracy and precision and that no significant contamination is occurring at the mine or external laboratories.

Mineral Processing and Metallurgical Testing

As part of normal mineral processing procedures, metallurgical analysis and testing is undertaken as required. The majority of these analyses are to assess leaching performance and metallurgical recovery. Metal recovery forecasts used in our mine plans are based on the recovery model, historical performance of the leaching operations and the tonnes, grade and type of material that is planned to be mined.

Mineral Resource and Mineral Reserve Estimates

Management estimates that mineral reserves for the Dolores mine, effective June 30, 2021, are as follows:

Dolores Mineral Reserves [1, 2]

Reserve Category	Tonnes (Mt)	Grams of Silver per tonne	Grams of Gold per tonne
Proven	20.8	22	0.74
Probable	6.2	28	0.78
TOTAL	26.9	24	0.75

Notes:

1 Estimated using a price of $18 per ounce of silver and $1,350 per ounce of gold. Totals may not add due to rounding.

2 Mineral reserve estimates for the Dolores mine were prepared under the supervision of, or were reviewed by, Christopher Emerson, FAusIMM, and Martin G. Wafforn, P.Eng., as Qualified Persons as that term is defined in NI 43-101.

Management estimates that mineral resources at Dolores, effective June 30, 2021, are as follows:

Dolores Mineral Resources [1, 2]			
Resource Category	**Tonnes (Mt)**	**Grams of Silver per tonne**	**Grams of Gold per tonne**
Measured	2.8	16	0.30
Indicated	0.8	22	0.62
Inferred	2.7	46	1.25

Notes:

1 These mineral resources are in addition to mineral reserves. Estimated using metal prices of $20.00 per ounce of silver and $1,600 per ounce of gold. Mineral Resources are reported within a final pit outline and above a mineral resource cut-off grade.

2 Mineral resource estimates for the Dolores mine were prepared under the supervision of, or were reviewed by, Christopher Emerson, FAusIMM, and Martin G. Wafforn, P.Eng., as Qualified Persons as that term is defined in NI 43-101.

Mineral resource estimates were prepared using kriging methods within three dimensional geological interpretations. The block model was classified for measured, indicated, and inferred confidence categories depending on the location of the block relative to the number of drillhole intersections available to estimate each block, as well as other factors affecting confidence in the estimate.

The mineral resource estimate is depleted annually for mining in the previous year. Planned dilution and loss is applied to the block model and a value per tonne is applied to each block. Reserve and resource pits and underground stope shapes were prepared on blocks above the mineral resource cut-off grade. Mineral resources that can be economically mined are converted to mineral reserves.

Mineral reserve estimates are based on a number of assumptions that include metallurgical, taxation and economic parameters. Increasing costs, lower metal prices or increasing taxation could have a negative impact on the estimated mineral reserves. There are currently no known factors that may have a material negative impact on the estimated mineral reserves or mineral resources at the Dolores mine.

Mining Operations

Mining at Dolores is by standard open pit methods using shovels, loaders, and haul trucks and by underground methods using sub level open stoping and ramp haulage to the surface.

Processing and Recovery Operations

The Dolores mine uses conventional cyanide heap leaching and Merrill-Crowe technology on the crushed ores to produce gold and silver doré. The high grade portion of the ore is processed through the pulp agglomeration treatment plant and is conveyed with the lower grade portion to the heap leach pads for leaching. The pulp agglomeration plant is comprised of crushing, grinding, particle size classification, filtration, agglomeration, and reagent facilities. The average combined plant throughput of the high grade and low grade portions has been 20,000 tpd. A combined plant throughput of over 21,000 tpd was achieved in 2021.

During 2021, we stacked 7.8 million tonnes on the leach pads and produced approximately 2.2 million ounces of silver and 160.1 thousand ounces of gold.

All production from Dolores is in the form of doré bars, which is refined at arm's length refineries prior to the sale of refined silver and gold to bullion banks and traders. Pan American currently has refining contracts in place with refineries in the USA and Mexico. We have not had any difficulty in securing contracts for the sale of Dolores doré, however, there can be no certainty that we will always be able to do so or what terms will be available at the time. Please see "Risks Related to Our Business – Trading Activities and Credit Risk".

Pan American's revenue from the doré produced by the Dolores mine was as follows:

2021	Revenue[1,2]	Quantity Sold
Silver and Gold in Doré	$342.6 million	2,309,100 ounces of silver 158,071 ounces of gold
2020	**Revenue[1,2]**	**Quantity Sold**
Silver and Gold in Doré	$250.2 million	4,063,450 ounces of silver 96,179 ounces of gold
2019	**Revenue[1,2]**	**Quantity Sold**
Silver and Gold in Doré	$248.7 million	4,924,110 ounces of silver 120,731 ounces of gold

Notes:

1 Consists of sales to arm's length customers.

2 Calculated as gross revenue plus export credit incentives (as applicable), less treatment and refining charges and export taxes.

Infrastructure, Permitting, and Compliance Activities

The mine workings, processing facilities, leach pads, waste disposal areas, effluent management and treatment facilities, roads, and power and water lines have all been constructed and are located within the boundaries of the mining leases and surface rights controlled by us. We constructed the power supply line to the mine, however, it is now owned and operated by the Mexican National power utility. To the best of our knowledge, all permits and licenses required to conduct our activities on the property have been obtained and are currently in good standing. We are required to apply for an extension of the period of our Environmental Impact permit by May 2022 and to adjust certain permit boundaries to cover mine components that are configured differently than what was contemplated in the original 2006 permit. We are in the process of applying for the mine extension and boundary adjustment, but there is no guarantee that the extension will be granted as requested and this could have an impact on mine operations.

Water for the operations is sourced from wells, pit and underground dewatering, and an onsite water storage dam, with a back-up system to supply water from the nearby Rio Tutuaca if required. Power is supplied from the Mexican national grid and backup generators are available when required.

A closure cost estimate for Dolores prepared according to State of Nevada approved SRCE methodology is updated every year. We have estimated the present value of reclamation costs for the Dolores property at December 31, 2021 to be approximately $73.0 million. See "Narrative Description of the Business – Environment, Community and Sustainability" for further disclosure regarding forward-looking statements related to reclamation costs.

Capital and Operating Costs

In 2021, total capital additions at the Dolores mine were approximately $40.6 million, primarily for capitalized pre-stripping and leach pad expansions.

Capital investments in 2022 are anticipated to total between $33.0 million to $34.0 million. The major components of these investments include open pit mine waste pre-stripping, heap leach pad expansions, and mine infrastructure and plant upgrades.

In 2021, direct operating costs at Dolores were $164.5 million.

Exploration, Development, and Production

In 2022, we anticipate producing between approximately 2.85 million and 3.15 million ounces of silver and between 157.5 thousand and 179.0 thousand ounces of gold from the Dolores mine. We plan to complete brownfield exploration in 2022, including 5,000 metres of drilling.

B. Peru

(i) Huaron Mine

Project Description, Location, and Access

Huaron is an underground silver mine located 320 kilometres northeast of Lima in the province of Pasco in Peru. The nearest town is Cerro de Pasco, and access from Lima is available by rail or paved highway.

Huaron is 100% owned and operated by PAS Huaron, a Peruvian entity which is approximately 99.94% held (99.8% including investment shares), directly or indirectly, by Pan American. The area of the PAS Huaron concessions spans approximately 29,344 hectares. The concessions owned by us give us exclusive right to explore, develop, exploit, and market all of the products from the Huaron mine. Mining concession titles have been granted by and are registered with the Institute of Geology, Mining, and Metallurgy of Peru, and we pay an annual fee to keep the licenses in good standing.

The known mineralized zones, mineral resources, mineral reserves, mine workings, processing plant, tailing storage facilities, effluent management and treatment systems, and waste rock storage facilities are located within our concessions.

To the best of our knowledge, the Huaron mine is not subject to any overrides, back-in rights, payments, or other agreements and encumbrances. Our Peruvian operations are subject to governmental taxes, fees and duties, including a mining royalty tax and a special mining tax ("SMT"). The royalty is applied on a company's operating income and is based on a sliding scale with marginal rates ranging from 1% to 12% with a minimum royalty rate of 1% of sales regardless of its profitability.

While there are no known significant factors or risks that we currently expect to be reasonably likely to affect access or title, or the right or ability to perform work on the property, including permitting and environmental liabilities, please refer to "Risks Related to Our Business" starting on page 57 for a general discussion of the risks relating to our operations.

History

The first underground mine, mill, and supporting villages were originally built in 1912 by a subsidiary of the French Penarroya Company and was sold to Mauricio Hochschild & Cia. Ltda. ("Hochschild") in 1987. In April 1998, a portion of the bed of the nearby Lake Naticocha collapsed and flooded the neighbouring Animon underground mine and then the Huaron mine through interconnected tunnels, causing its closure. The water level in the lake, which provided the source of floodwater, is currently maintained well below the level where it flooded into the old workings and we do not expect further flooding.

There is no available exploration data collected by previous operators other than diamond drilling. Channel samples were taken by the French Penarroya Company and by Hochschild, but no details on the nature and results of the samples are available, and none of the channel samples collected by previous owners are used in the estimation of mineral resources and mineral reserves.

Prior to our acquisition of the Huaron mine, approximately 22 million tonnes of silver-rich base metal sulphide ore was produced at the property and processed on site.

We have been producing from the Huaron mine since 2001.

Geological Setting, Mineralization, and Deposit Types

The Huaron mine is located within the Western Cordillera of the Andes Mountains and the regional geology is dominated by Machay Group limestones and Pocobamba continental sedimentary rocks. These groups have been deformed by the Huaron anticline, the dominant structural feature of the area. The limestones and sedimentary rocks are strongly folded and intruded by quartz monzonites and quartz monzonite dikes with associated fracturing. Following the intrusion of the dikes, the sedimentary rocks were further compressed and fractured, and the fractures were subsequently mineralized by hydrothermal fluids.

The main lithology in the area of Huaron is a sequence of continental redbeds which unconformably overlie massive marine limestones. North-south trending sub-vertical porphyritic quartz monzonite dykes crosscut the mine stratigraphy. The Huaron mine is located within an anticline with an axis striking approximately north-south and plunging gently to the north. There are two main fault systems. One system comprises north-south striking thrust faults, parallel to the axis of the anticline, and the other comprises east-west striking tensional faults.

The Huaron mine is a hydrothermal polymetallic deposit of silver, lead, zinc, and copper mineralization hosted within structures likely related to the intrusion of monzonite dikes, principally located within the Huaron anticline. Mineralization is encountered in veins parallel to the main fault systems, in replacement bodies known as "mantos" associated with the calcareous sections of the conglomerates and other favourable stratigraphic horizons, and as dissemination in the monzonitic intrusions at vein intersections.

The mineralized veins vary from a few centimetres to up to 10 metres wide, and may extend along strike for up to 1,800 metres. Vein orientations vary but generally trend east-west or north-south.

Exploration

Exploration work prior to Pan American's ownership is unknown, but since we acquired the Huaron mine, exploration has comprised underground diamond drilling and channel sampling, which is used to estimate mineral resources and mineral reserves.

Drilling

All drilling is by diamond drilling from underground using industry standard drill machines and downhole survey tools. Drilling is conducted by private drilling contractors under the supervision of the mine geology department. Near mine underground diamond drilling exploration campaigns are ongoing on an annual basis for mineral resource and mineral reserve estimates.

Sampling, Analysis, and Data Verification

Diamond drillhole and underground channel samples vary between 0.1 metres and 1.5 metres in length. The samples are maintained in secure facilities and are under the control of our employees or the independent laboratory at all times. We have no reason to believe that the validity and integrity of the samples has been compromised.

Both the channel and the underground diamond drillhole samples are sent to the on-site laboratory, which is not certified by any standards association but is managed and operated by the international commercial laboratory firm, SGS. Assays for silver, zinc, lead, and copper are performed using acid digestion and AA finish.

The mine geology department conducts a QAQC program that is independent from the laboratory. The program includes the insertion of certified standards, blanks and duplicate samples. The results of the QAQC samples demonstrate acceptable accuracy and precision and that no significant contamination is occurring at the mine or external laboratories.

Mineral Processing and Metallurgical Testing

As part of normal plant operation procedures, metallurgical analysis and testing is undertaken as required. The majority of these analyses are to assess mill performance and metallurgical recovery. Metal recovery forecasts used in our mine plans are based on the historical performance of the plant operations and the tonnes and grade of material that is planned to be mined.

Mineral Resource and Mineral Reserve Estimates

Management estimates that mineral reserves at the Huaron mine, effective June 30, 2021, are as follows:

Huaron Mineral Reserves [1, 2]					
Reserve Category	**Tonnes (Mt)**	**Grams of Silver per tonne**	**% Zinc**	**% Lead**	**% Copper**
Proven	6.9	164	2.95	1.46	0.70
Probable	3.6	171	3.10	1.73	0.31
TOTAL	10.5	167	3.00	1.56	0.57

Notes:

1 Estimated using a price of $18 per ounce of silver, $2,450 per tonne of zinc, $2,000 per tonne of lead and $6,500 per tonne of copper. Totals may not add due to rounding.

2 Mineral reserve estimates for the Huaron mine were prepared under the supervision of, or were reviewed by, Christopher Emerson, FAusIMM, and Martin G. Wafforn, P.Eng., as Qualified Persons as that term is defined in NI 43-101.

Management estimates that mineral resources at the Huaron mine, effective June 30, 2021, are as follows:

Huaron Mineral Resources [1, 2]					
Resource Category	**Tonnes (Mt)**	**Grams of Silver per tonne**	**% Zinc**	**% Lead**	**% Copper**
Measured	1.9	162	3.11	1.63	0.21
Indicated	2.5	154	2.78	1.55	0.67
Inferred	5.8	153	2.73	1.51	0.43

Notes:

1 These mineral resources are in addition to mineral reserves. Estimated using a price of $18 per ounce of silver, $2,450 per tonne of zinc, $2,000 per tonne of lead and $6,500 per tonne of copper. Mineral resources are reported within scheduled mine shapes and above a mineral resource cut-off grade.

2 Mineral resource estimates for the Huaron mine were prepared under the supervision of, or were reviewed by, Christopher Emerson, FAusIMM, and Martin G. Wafforn, P.Eng., as Qualified Persons as that term is defined in NI 43-101.

Three dimensional interpretations are made in each vein or mineralized structure around spatially continuous trends of drillhole and channel sample grades greater than the sub-marginal cut-off values for each vein. A similar interpretation is made of hangingwall and footwall dilution volumes expected to be mined with each structure. The wireframe interpretations are filled with blocks for the ordinary kriged estimate.

A long section is produced of each structure and divided into mineable panels. Average bulk density values are applied to each mining panel volume to estimate the tonnes of each panel. The volumes are depleted annually for mining in the previous year. Mineral resource confidence classifications are based on the proximity and density of sample information in each block, as well as the interpretation and the experience of the mine geologists. Planned dilution and loss is applied to the estimate and a value per tonne is calculated in each panel. Any panel with a value above the mineral resource cut-off grade is converted to mineral resources. Mineral resources that can be economically mined are converted to mineral reserves.

Mineral reserve estimates are based on a number of assumptions that include metallurgical, taxation and economic parameters. Increasing costs or increasing taxation could have a negative impact on the estimation of mineral reserves. There are currently no known factors that may have a material negative impact on the estimate of mineral reserves or mineral resources.

Mining Operations

Mining is undertaken using primarily mechanized sub-level long hole stoping methods. Ore is brought to the surface using haul trucks, electric locomotives, or hoisted through a shaft.

Processing and Recovery Operations

The Huaron mine operates a 2,900 tpd nominal capacity mill using froth induced flotation technology to produce silver in copper, lead, and zinc concentrates. Metallurgical recoveries in 2021 averaged approximately 82.9%

for silver, 22.5% for gold, 76.8% for zinc, 71.9% for lead, and 76.7% for copper.

In 2021, the mill processed approximately 0.94 million tonnes of ore producing approximately 3.5 million ounces of silver, 1.1 thousand ounces of gold, 15.4 thousand tonnes of zinc, 7.5 thousand tonnes of lead, and 5.9 thousand tonnes of copper.

The silver rich zinc, lead, and copper concentrates from the Huaron mine are sold under contracts with arm's length smelters and concentrate traders, which consider the presence of any deleterious elements. Huaron receives payment for an agreed percentage of the silver, gold, zinc, lead, or copper contained in the concentrates it sells after deduction of smelting and refining costs, based on average spot prices over defined 30-day periods that may differ from the month in which the concentrate was produced. Under these circumstances, we may, from time to time, fix the price for a portion of the payable base metal content during the month that the concentrates are produced. To date, we have been able to secure contracts for the sale of all Huaron concentrates produced, however, there can be no certainty that we will always be able to do so or what terms will be available at the time. Please see "Risks Related to Our Business – Trading Activities and Credit Risk".

The revenue per type of concentrate produced by the Huaron mine for the past three years were as follows:

2021	**Revenue[1, 2]**	**Quantity Sold (Tonnes)**
Zinc Concentrate[3]	$34.7 million	34,265
Lead Concentrate[3]	$33.2 million	15,106
Copper Concentrate[3]	$86.7 million	26,603
2020	**Revenue[1, 2]**	**Quantity Sold (Tonnes)**
Zinc Concentrate[3]	$22.0 million	24,182
Lead Concentrate[3]	$15.2 million	12,456
Copper Concentrate[3]	$34.9 million	14,537
2019		
Zinc Concentrate[3]	$32.0 million	40,059
Lead Concentrate[3]	$32.5 million	17,755
Copper Concentrate[3]	$52.7 million	25,428

Notes:

1 Consists of sales to arm's length customers.

2 Calculated as gross revenue plus export credit incentives (as applicable), less treatment and refining charges and export taxes.

3 Zinc and lead concentrates contain payable silver. Copper concentrates contain payable silver and gold.

Infrastructure, Permitting, and Compliance Activities

The Huaron mine workings, processing plant, tailings and waste disposal areas, effluent management and treatment facilities, roads, and power and water lines have all been constructed and are located within the boundaries of the mining leases and surface rights controlled by us. To the best of our knowledge, all permits and licenses required to conduct our activities on the property have been obtained and are currently in good standing.

We are authorized to source the water necessary for our operations from a nearby system of lakes. The primary source of power for the mine is the Peruvian national power grid.

The original closure plan for the Huaron mine was filed with the Peru Ministry of Energy and Mines in 2004 and updated in 2006. The closure plan is updated every five years or whenever new infrastructure or modifications are permitted.

The most significant environmental issue currently associated with the mine is relatively high sediment and metal concentrations in the waters discharged from the mine and the mine's tailings storage facilities. All waters are captured and treated in a treatment plant to achieve compliance with discharge limits.

An agreement signed in 2000 allows Volcan Compañia Minera S.A.'s ("Volcan") Chungar mine, which neighbours the Huaron mine, to discharge water from its mine dewatering into the Huaron drainage tunnel. The agreement also requires Volcan to contribute to the costs of tunnel maintenance and water treatment and discharge if its flows exceed a set limit, however provisions of the agreement that would enable accurate water quality and flow measurement between the mines were not implemented and no payments have been made. In 2014, an independent consultant engaged jointly by both companies concluded that the flow from the Chungar mine to the Huaron mine represents 19% of the total flow in the drainage tunnel and recommended the installation of a permanent monitoring system for ongoing verification. Since then, Volcan has improved its mine dewatering system and flows to the Huaron drainage tunnel fell to below the set limit, however we continue to negotiate the details of the joint monitoring and any responsibility for historic and future costs with Volcan. In 2021, we jointly engaged Golder Associates to continue the joint monitoring to support ongoing negotiations between us and Volcan.

A closure cost estimate for the Huaron mine prepared according to State of Nevada approved SRCE methodology is updated every year for unit costs and discount rates, and every other year for physical disturbance. The current present value of closure expenditures at Huaron as at December 31, 2021, is estimated at $11.9 million. See "Narrative Description of the Business – Environment, Community and Sustainability" for further disclosure regarding forward-looking statements related to reclamation costs.

Capital and Operating Costs

Capital additions at Huaron during 2021 totalled $10.9 million, primarily on equipment leases, near mine exploration, a tailings storage facility expansion, and equipment replacements and refurbishments.

We have forecast sustaining capital investments of between $16.0 million and $19.0 million for 2022, primarily related to the completion of a tailings storage facility expansion, mine equipment replacements and lease payments, mine deepening and infrastructure investments, and near-mine exploration.

In 2021, direct operating costs at the Huaron mine were $90.1 million.

Exploration, Development, and Production

In 2022, the Huaron mine is forecast to produce between approximately 3.70 and 3.95 million ounces of silver and 0.5 thousand ounces of gold. We plan to undertake 25,000 metres of exploration drilling in 2022.

(ii) Shahuindo Mine

Project Description, Location, and Access

The Shahuindo mine is an open pit gold mine located in northern Peru, 500 kilometres north-northwest of Lima. The project site can be accessed from Cajamarca via approximately 130 kilometres of paved highway, with unimproved roads accessing the site from the highway. There are daily commercial flights between Lima and Cajamarca.

The Shahuindo mine is 100% owned and operated by Pan American's wholly owned subsidiary, Shahuindo S.A.C. The area of the concession is approximately 7,339 hectares in 26 mineral titles. Shahuindo S.A.C. also controls the neighboring Vikingo and Vikingo I concession covering 1,858 hectares. We pay an annual fee to the Peruvian government to keep the concessions in good standing. To the best of our knowledge, all permits and licenses required to conduct our activities on the property have been obtained and are currently in good standing.

381 surface rights within the Shahuindo mine area cover approximately 2,559 hectares, which is sufficient to operate the mine.

To the best of our knowledge, the Shahuindo mine is not subject to any third-party overrides, back-in rights, payments, or other agreements and encumbrances. Our Peruvian operations are subject to governmental taxes, fees and duties, including the mining royalty tax and the SMT, as described under "Huaron – Project Description, Location and Access".

While there are no known significant factors or risks that we currently expect to be reasonably likely to affect access or title, or the right or ability to perform work on the property, including permitting and environmental liabilities, other than as described above, please refer to “Risks Related to Our Business” starting on page 57 for a general discussion of the risks relating to our operations.

History

Legal rights to the mineral leases of the Shahuindo mine were in dispute between 1996 and 2009. Several Peruvian, Mexican and Canadian companies have been involved in numerous legal processes that were eventually settled in 2009 with 100% ownership being legally registered to Sulliden Shahuindo S.A.C., a wholly owned subsidiary of Sulliden Gold Ltd. (“Sulliden”). Rio Alto Gold (“Rio Alto”) acquired Sulliden in 2014, and in April 2015, Tahoe completed its acquisition of Rio Alto, thereby acquiring control of Sulliden Shahuindo S.A.C. (renamed Shahuindo S.A.C.). Pan American acquired Tahoe in February 2019.

Exploration and mining activities have taken place on the Shahuindo property since 1945. Between 1945 and 1989, Minera Algamarca S.A. (“Algamarca”) conducted mining and exploration work on the property. Between 1990 and 1998, former operators conducted geological mapping, drilling of approximately 200 holes, soil and rock geochemical sampling, and metallurgical testwork. Sulliden conducted a large surface drilling campaign of approximately 640 holes, geophysical surveys, geological mapping and trenching, soil and surface rock sampling, metallurgical testing, and economic analyses between 2002 and 2012. Rio Alto conducted a campaign of 246 holes between 2014 and 2015 and drilling was continued on the property by Tahoe. Mine construction commenced in 2014 and commercial production was achieved in 2016.

We have been producing from the Shahuindo mine since acquiring it in the Tahoe transaction in late February 2019.

Geological Setting, Mineralization, and Deposit Types

The Shahuindo mine is located in the Western Cordillera of the Andes, within a regional fold and thrust belt of predominantly sedimentary rocks. The principal zone of mineralization in the district occurs in a belt between two large amplitude, regional scale folds. Important structural elements include fold limbs and fold axial surfaces, fold-related fractures, faults and related extension fractures, breccia dikes and irregular bodies, and igneous intrusive contacts. Mineralization is hosted within the siliciclastic sandstone-dominant Farrat formation and the underlying sedimentary Carhuaz formation. These sedimentary rocks have been intruded by at least three felsic stocks which tend to be located along faults and axes of anticlinal structures.

Mineralization comprises an intermediate-sulfidation epithermal system, with high-sulfidation mineralization at depth and in the centre of hydrothermal breccias. Oxidation of mineralization extends to a depth of 150 metres below surface.

Exploration

Algamarca conducted exploration work on the Shahuindo property prior to 1990, but no records of that work are available. From 1990 to 1998, Alta Tecnología e Inversión Minera y Metalúrgica SA, Asarco LLC, and Southern Peru Copper Corp. explored the Shahuindo project area, completing mapping, geochemical sampling, and reverse circulation and diamond drilling. Val Dór Geofisica Peru conducted magnetic and induced polarization geophysical surveys between 2002 and 2012 on behalf of the prior owners of Shahuindo.

Most of the accessible underground adits located on the concession were sampled prior to 2012. Detailed soil sampling completed by Sulliden between 2003 and 2012 revealed a series of continuous, parallel gold anomalies in the central and northern areas of the concession. Base metal anomalies were found to the northwest and to the southeast of the concession.

Current exploration at the Shahuindo mine consists of surface geological mapping, geochemical sampling, and drilling.

Drilling

Drilling is by reverse circulation and diamond drilling from surface using industry standard drill machines and downhole survey tools. Drilling is conducted by private drilling contractors under the supervision of the mine geology department. Near mine drilling exploration campaigns are ongoing on an annual basis for mineral resource and mineral reserve estimates.

Sampling, Analysis, and Data Verification

Limited information is available regarding sample preparation and analyses for the drill programs prior to Sulliden's drilling programs in 2003. That data accounts for a small proportion of the data used in the mineral resource and mineral reserve estimates, and many of the holes drilled prior to Sulliden have been twinned or offset with new drillholes.

From 2003 to 2012, Sulliden sampled diamond drillholes after being cut in half, at typically 1.5 metre intervals or according to geological contacts. Reverse circulation drillholes were sampled according to the length of the drill rod. Sulliden sent their samples to ALS in Lima for preparation and analysis using fire assay with AA finish. A QAQC program supervised by the geology department included the submission of certified standards, duplicates, and blanks to the laboratory.

From 2014 to present, the samples have been analyzed by CERTIMIN in Lima using fire assay with AA finish.

The mine geology department conducts a QAQC program that is independent from the laboratory. The program includes the insertion of certified standards, blanks and duplicate samples. The results of the QAQC samples demonstrate acceptable accuracy and precision and that no significant contamination is occurring at the mine or external laboratories.

The samples are maintained in secure facilities and are under the control of our employees or the independent laboratory at all times. We have no reason to believe that the validity and integrity of the samples has been compromised.

Mineral Processing and Metallurgical Testing

As part of normal plant operations and processing procedures, metallurgical analysis and testing is undertaken as required. The majority of these analyses are to assess leaching performance and metallurgical recovery. Metal recovery forecasts used in our mine plans are based on the recovery model, historical performance of the leaching operations and the tonnes, grade and type of material that is planned to be mined.

Mineral Resource and Mineral Reserve Estimates

Management estimates that mineral reserves at the Shahuindo mine, effective June 30, 2021, are as follows:

Shahuindo Mineral Reserves [1, 2]

Reserve Category	Tonnes (Mt)	Grams of Silver per tonne	Grams of Gold per tonne
Proven	54.6	8	0.54
Probable	49.8	6	0.41
TOTAL	104.4	7	0.48

Notes:

1 Estimated using a price of $18 per ounce of silver and $1,350 per ounce of gold. Totals may not add due to rounding.

2 Mineral reserve estimates for the Shahuindo mine were prepared under the supervision of, or were reviewed by, Christopher Emerson, FAusIMM, and Martin G. Wafforn, P.Eng., as Qualified Persons as that term is defined in NI 43-101.

Management estimates that mineral resources at the Shahuindo mine, effective June 30, 2021, are as follows:

Shahuindo Mineral Resources [1, 2]			
Resource Category	Tonnes (Mt)	Grams of Silver per tonne	Grams of Gold per tonne [3]
Measured	19.3	5	0.29
Indicated	24.2	4	0.28
Inferred	17.7	8	0.47

Notes:

1 These mineral resources are in addition to mineral reserves. Estimated using a price of $20.00 per ounce of silver and $1,600 per ounce of gold except for the Shahuindo Sulphide material which was estimated using a price of $15 per ounce of silver and $1,400 per ounce of gold. Mineral resources are reported within a final pit outline and above a mineral resource cut-off grade.

2 Mineral resource estimates for the Shahuindo mine were prepared under the supervision of, or were reviewed by, Christopher Emerson, FAusIMM, and Martin G. Wafforn, P.Eng., as Qualified Persons as that term is defined in NI 43-101.

3 Inferred resources include both oxide and sulphide.

Mineral resource estimates for the Shahuindo mine were prepared using an inverse distance interpolation method within three dimensional geological interpretations. The block model was classified into measured, indicated, and inferred confidence categories depending on the location of the block relative to the number of drillhole intersections available to estimate each block, as well as other factors affecting confidence in the estimate.

The mineral resource estimate was then depleted for previous mining and planned dilution and ore loss was applied. Reserve and resource pits were prepared on blocks above the economic cut-off. Mineral resources that can be economically mined are converted to mineral reserves.

Mineral reserve estimates are based on a number of assumptions that include metallurgical, taxation, and economic parameters. Increasing costs or increasing taxation could have a negative impact on the estimation of mineral reserves. There are currently no known factors that may have a material negative impact on the estimate of mineral reserves or mineral resources at Shahuindo.

Mining Operations

Mining at the Shahuindo mine is by standard open pit methods using shovels, loaders, and dump trucks.

Processing and Recovery Operations

The Shahuindo mine uses conventional cyanide heap leaching and a carbon-in-column adsorption-desorption-regeneration (“ADR”) process to produce a precipitate that is smelted to gold and silver doré. Average throughput is 36,000 tpd. A 36,000 tpd crushing and agglomeration plant is also available but is currently not in use.

In 2021, a total of 13.1 million tonnes of ore were stacked on the pads. Metal production in 2021 was approximately 134.0 thousand ounces of gold and 0.2 million ounces of silver.

All production from the Shahuindo mine is in the form of doré bars, which is refined at arm’s length refineries prior to the sale of refined silver and gold to bullion banks and traders. Pan American currently has refining contracts in place with refineries in the United States and Switzerland. We have not had any difficulty in securing contracts for the sale of Shahuindo doré, however, there can be no certainty that we will always be able to do so or what terms will be available at the time. Please see “Risks Related to Our Business – Trading Activities and Credit Risk”.

The revenues per type of doré produced at the Shahuindo mine since our acquisition in February 2019 are as follows:

2021	Revenue[2, 3]	Quantity Sold
Silver and Gold in Doré	$255.8 million	224,876 ounces of silver 139,456 ounces of gold
2020	**Revenue[2, 3]**	**Quantity Sold**
Silver and Gold in Doré	$270.0 million	295,764 ounces of silver 150,775 ounces of gold
2019[1]		
Silver and Gold in Doré	$189.4 million	83,323 ounces of silver 133,298 ounces of gold

Notes:

1 Consists of production after February 22, 2019.

2 Consists of sales to arm's length customers.

3 Calculated as gross revenue plus export credit incentives (as applicable), less treatment and refining charges and export taxes.

Infrastructure, Permitting, and Compliance Activities

The Shahuindo mine's open pit, leach pads, waste rock dumps, ADR plant, ancillary facilities, roads, and power and water lines have all been constructed and are located within the boundaries of the mining concessions and surface lands owned by us. To the best of our knowledge, all permits and licenses required to conduct our activities on the property have been obtained and are currently in good standing.

The Shahuindo mine operates under an environmental impact assessment approved in 2013 and has been modified to accommodate mine expansion.

The primary source of power for the mine is the Peruvian national power grid. Water for the operation is obtained from water wells, stormwater collection ponds, and pit dewatering.

A closure cost estimate for the Shahuindo mine prepared according to State of Nevada approved SRCE methodology is updated every year. We have estimated the present value of reclamation costs for the Shahuindo property to be approximately $47.0 million at December 31, 2021. See "Narrative Description of the Business – Environment, Community and Sustainability" for further disclosure regarding forward-looking statements related to reclamation costs.

Capital and Operating Costs

In 2021, capital additions at the Shahuindo mine totalled $29.4 million, including $28.8 million of sustaining capital, consisting primarily of leach pad expansions, site infrastructure improvements, near-mine exploration, and payments for leased mining equipment and infrastructure.

The expected sustaining capital budget for 2022 at Shahuindo totals between $37.0 million and $38.0 million, the major components of which include leach pad expansions, site infrastructure improvements, near-mine exploration, payments for leased mining equipment, and repayments on construction loans related to leach pad and other infrastructure.

In 2021, direct operating costs at the Shahuindo mine were $114.4 million.

Exploration, Development, and Production

In 2022, we anticipate producing between 0.21 and 0.26 million ounces of silver and between 136.0 thousand and 150.8 thousand ounces of gold from the Shahuindo mine. We plan to undertake approximately 12,000 metres of exploration drilling at Shahuindo in 2022.

C. Canada

(i) Timmins West Mine

Project Description, Location, and Access

The Timmins West mine is an underground gold mine located approximately 19 kilometres southwest of the city of Timmins, Ontario. All season road access to the property is provided by provincial Highways 101 and 144.

The Timmins West mine property encompasses a total area of approximately 1,548 hectares, including the Timmins Deposit, Thunder Creek, and 144 Gap properties. Through our wholly-owned subsidiary, Lake Shore, we own a 100% interest in most of the Timmins West mine property, subject to underlying royalties.

Surrounding the Timmins West mine property is an additional 12,462 hectares of combined crown patents, 21-year term leases, and cell or boundary cell claims containing mining rights and/or surface rights. These properties are subject to various underlying royalties, most ranging from 1.5% to 3% NSRs, many with buy-back options at Lake Shore's discretion. These properties are 100% owned by Lake Shore, the exception to this is a 55% interest in seventy unpatented mining cell claims. Annual fees and assessment credits are filed on the claims to maintain them in good standing. To the best of our knowledge, all permits and licenses required to conduct our activities on the property have been obtained and are currently in good standing.

In February of 2012 Lake Shore and Franco-Nevada entered into a royalty agreement relating to production from the Timmins West mine. Pursuant to the terms of the royalty agreement, Franco-Nevada paid $35 million for a 2.25% NSR royalty on the sale of minerals from the Timmins West mine. The terms of the royalty agreement provide for, among other things, a right of first refusal in respect of any further royalties granted on the Timmins West mine, as well as a preferential processing right with respect to ore from the Timmins West mine being processed at the Bell Creek mill. The preferential processing right ceases to apply once $35 million in royalty payments are made under the royalty agreement. As at the end of 2021, approximately $30.6 million had been paid to Franco-Nevada pursuant to the terms of the royalty. As of the date of this AIF, the preferential processing right has not required any payment to be made with respect to any replacement material. In addition, Sandstorm Gold Ltd. holds a 1% NSR royalty over certain additional claims relating to the Thunder Creek and 144 Gap deposits.

The Timmins West mine is also subject to government taxes, fees and duties including a 10% Ontario Mining Tax, which is applied to profits from the extraction of mineral substances from mines within the province.

While there are no known significant factors or risks that we currently expect to be reasonably likely to affect access or title, or the right or ability to perform work on the property, including permitting and environmental liabilities, other than as described above, please refer to "Risks Related to Our Business" starting on page 57 for a general discussion of the risks relating to our operations.

History

Gold was discovered in 1911 on the property above what is currently the Timmins West mine, and two shallow shafts were sunk between 1911 and 1914. Shortly after, fire storms swept through large parts of the area and the surface plants at the local mines were destroyed. Orpit Mines Limited completed diamond drilling between 1938 and 1944, and Rusk Porcupine Mines excavated several pits and trenches.

Lake Shore began shaft sinking and mine development in 2008 and commercial production began in January of 2011 at the Timmins Deposit and in January of 2012 at the Thunder Creek Deposit. Subsequently, the Timmins and Thunder Creek Deposits were combined into a single operation called the Timmins West mine. The 144 Gap deposit was discovered later and currently accounts for the majority of the mine production and mineral reserve. Tahoe acquired the mine in 2016 with its acquisition of Lake Shore.

We have been producing from Timmins West since late February 2019, following our acquisition of Tahoe.

Geological Setting, Mineralization, and Deposit Types

Following the discovery of gold at Timmins West area, exploration conducted by a variety of previous operators included mapping, shaft sinking, pitting, trenching, diamond drilling, geophysics, metallurgical testwork, and resource estimates. Following Lake Shore's acquisition of the property in 2003, exploration on the Timmins, Thunder Creek, and 144 Gap deposits has consisted primarily of diamond drilling, as well as mapping, surface sampling, and soil geochemical surveys.

Exploration

Exploration on the Timmins, Thunder Creek, and 144 Gap deposits by Lake Shore has consisted primarily of diamond drilling. Other exploration activities include basic geological and structural mapping, prospecting, outcrop stripping, lithogeochemical sampling, and mobile metal ion soil geochemical surveys. Geophysical surveys, including airborne magnetics and surface and downhole induced polarization surveys, were also completed, along with various research projects to help solidify the current level of geological understanding.

Drilling

Exploration drilling in the Timmins West mine area has taken place since 1938, but much of the historical drilling information is not possible to verify. None of the drill data collected prior to 1984 has been considered in the mineral resource and mineral reserve estimates.

Since 2003, all drilling has been by diamond drilling from surface and underground using industry standard drill machines and downhole survey tools. Drilling is conducted by private drilling contractors under the supervision of the geology department. Near mine diamond drilling exploration campaigns are ongoing on an annual basis for mineral resource and mineral reserve estimates.

Sampling, Analysis, and Data Verification

Surface and some underground exploration drill core is sampled following cutting with a diamond saw, while most of the underground drillholes are whole core sampled. The samples are maintained in secure facilities and are under the control of our employees or the independent laboratory at all times. We have no reason to believe that the validity and integrity of the samples has been compromised.

All samples are analyzed for gold at various independent commercial laboratories using fire assay with either AA or gravimetric finish.

A blind QAQC program supervised by the geology department includes the submission of certified standards, duplicates, and blanks to the laboratory. The results of the QAQC programs indicate that the sample assays are reliable for the estimation of mineral resources and mineral reserves.

Mineral Processing and Metallurgical Testing

All ore produced from the Timmins West mine is processed at our Bell Creek mill. As part of normal plant operation procedures, metallurgical analysis and testing is undertaken. The majority of these analyses are to assess mill performance and metallurgical recovery. Metal recovery forecasts used in our mine plans are based on the historical performance of the plant operations and the tonnes and grade of material that is planned to be mined.

Mineral Resource and Mineral Reserve Estimates

Management estimates that mineral reserves at Timmins West, effective June 30, 2021, are as follows:

Timmins West Mineral Reserves [1, 2]		
Reserve Category	**Tonnes (Mt)**	**Grams of Gold per tonne**
Proven	1.5	3.0
Probable	4.2	2.9
TOTAL	5.7	3.0

Notes:

1 Estimated using prices of $1,450 per ounce of gold. Totals may not add due to rounding.

2 Mineral reserve estimates for the Timmins West mine were prepared under the supervision of, or were reviewed by Alain Mainville, P.Geo, and Eric Lachapelle, P.Eng., as Qualified Persons as that term is defined in NI 43-101.

Management estimates that mineral resources at Timmins West, effective June 30, 2021, are as follows:

Timmins West Mineral Resources [1, 2]		
Resource Category	**Tonnes (Mt)**	**Grams of Gold per tonne**
Measured	0.3	3.7
Indicated	1.0	3.3
Inferred	0.2	4.4

Notes:

1 These mineral resources are in addition to mineral reserves. Estimated using prices of $1,450 per ounce of gold. Mineral resources are modelled to a minimum mining width and reported above economic cut-off grade.

2 Mineral resource estimates for the Timmins West mine were prepared under the supervision of, or were reviewed by Alain Mainville, P.Geo, and Eric Lachapelle, P.Eng., as Qualified Persons as that term is defined in NI 43-101.

Mineral resource estimates were prepared using inverse distance squared interpolation within three dimensional geological interpretations based on a nominal cutoff grade and a minimum mining width. The block model was classified into measured, indicated, and inferred confidence categories depending on the location of the block relative to the number of drillhole intersections available to estimate each block, as well as other factors affecting confidence in the estimate.

The mineral resource estimate was then depleted for previous mining and any inaccessible areas removed before reporting above an economic cut-off grade. Mineral resources that can be economically mined are converted to mineral reserves.

Mineral reserve estimates are based on a number of assumptions that include metallurgical, taxation, and economic parameters. Increasing costs or changes in taxation could have a negative impact on the estimation of mineral reserves. There are currently no known factors that may have a material negative impact on the estimate of mineral reserves or mineral resources at the Timmins West mine.

Mining Operations

The underground mining method utilized at the Thunder Creek, Timmins, and 144 Gap deposits at the Timmins West mine is by long hole stoping. Ore is transported to the surface by ramp and shaft.

Processing and Recovery Operations

All ore produced from the Timmins West mine is hauled via surface highway trucks to the Bell Creek mill for processing. Processing, metal production, and revenue are reported for the combined Timmins West and Bell Creek ore. Please see “Bell Creek – Processing and Recovery Operations”.

All production from the Timmins West mine is in the form of doré, which is refined at arm’s length refineries prior to the sale of refined silver and gold to bullion banks and traders. We have not had any difficulty in securing contracts for the sale of this doré, however, there can be no certainty that we will always be able to do so or what terms will be available at the time. Please see “Risks Related to our Business – Trading Activities and Credit Risk”.

Infrastructure, Permitting, and Compliance Activities

The mine workings, effluent management and treatment facilities, roads, and power and water lines have all been constructed and are located within the boundaries of the mining leases and surface rights controlled by us. To the best of our knowledge, all permits and licenses required to conduct our activities on the property have been obtained and are currently in good standing.

Power is sourced from the provincial power grid and water is sourced from surface and underground mine dewatering.

Consultation is being undertaken with regulatory agencies, the general public, the Métis Nation of Ontario, Wabun Tribal Council and the Indigenous communities of Flying Post First Nation and Mattagami First Nation, who are represented by Wabun Tribal Council. Consultation provides an opportunity to identify and address the impacts of our activities on external stakeholders, and to expedite the authorization process. The consultations have been held in order to comply with federal and the provincial requirements, including Ontario Regulation 240/00 and the Environmental Bill of Rights.

Lake Shore, the Mattagami First Nation, and the Flying Post First Nation, entered into an Impact and Benefits Agreement ("IBA") in February 2011. The IBA outlines how the company and the Indigenous communities will work together in the following areas: education and training of Indigenous community members, employment, business and contracting opportunities, financial considerations, and environmental matters. The IBA was subsequently amended in early 2019.

A closure cost estimate for Timmins West was prepared based on a government-approved closure plan, engineering estimates, local rates, and contractor quotes. The estimate is updated every year. Pan American has estimated the present value of reclamation costs for the Timmins West mine to be approximately $2.9 million effective December 31, 2021. See "Narrative Description of the Business – Environment, Community and Sustainability" for further disclosure regarding forward-looking statements related to reclamation costs.

Capital and Operating Costs

Capital and operating costs are reported for the combined Timmins West and Bell Creek mines. Please see "Bell Creek – Capital and Operating Costs".

Exploration, Development, and Production

Exploration, development and production are reported for the combined Timmins West and Bell Creek mines. Please see "Bell Creek – Exploration, Development, and Production".

(ii) Bell Creek Mine

Project Description, Location, and Access

The Bell Creek mine is an underground gold mine located approximately 14 kilometres northeast of Timmins, Ontario. Access to the property is via an all-weather asphalt and gravel road north of Ontario Provincial Highway 101.

The Bell Creek mine is 100% owned by our wholly-owned subsidiary, Lake Shore. The Bell Creek mine property is comprised of 2 crown leases, one privately leased patent, and 28 patents for a combined area of approximately 851 ha of mining and surface rights. These properties require annual land tenant taxes, mining land taxes, and municipal tax payments and remain in good standings as of this date. The private 20-year leased patent relates to an agreement signed in 2005 with an option to renew for an additional term, and subject to a 2% NSR royalty. To the best of our knowledge, all permits and licenses required to conduct our activities on the property have been obtained and are currently in good standing.

Surrounding the Bell Creek mine property is an additional 2646 ha of combined crown patents, 21-year term leases, and cell or boundary cell claims containing mining rights and/or surface rights. These properties are 100% owned by Lake Shore and are subject to various underlying royalties, most ranging from 1% to 3% NSRs, many with a buy-back options at Lake Shore's discretion. Annual fees and assessment credits are filed on the claims to maintain them in good standing. To the best of our knowledge, all permits and licenses required to conduct our activities on the property have been obtained and are currently in good standing.

In December 2007, Lake Shore acquired the Bell Creek mine from Goldcorp Inc. ("Goldcorp"), subject to a 2% NSR royalty payable to the Porcupine Joint Venture comprised of Goldcorp and Kinross Gold Corporation ("Kinross"). Kinross subsequently assigned its rights under the agreement to Goldcorp, and in July 2016, Tahoe acquired the royalty from Goldcorp. Various underlying royalty agreements affect some of the Bell Creek claims including two agreements with net profit interests that can be purchased outright.

Like the Timmins West mine, the Bell Creek mine is also subject to governmental taxes, fees and duties, including the 10% Ontario Mining Tax.

While there are no known significant factors or risks that we currently expect to be reasonably likely to affect access or title, or the right or ability to perform work on the property, including permitting and environmental liabilities, other than as described above, please refer to "Risks Related to Our Business" starting on page 57 for a general discussion of the risks relating to our operations.

History

Gold mineralization was first discovered on the Bell Creek property following trenching, drilling, and geophysical surveys between 1980 and 1984. The mine was built and operated by Canamax Resources Inc. between 1987 and 1990. Falconbridge Gold Mines Ltd. operated the mine between 1991 and 1992, followed by Kinross in 1993 and 1994 when mining operations ceased. The mine was kept on care and maintenance until 2001, when a decision was made to allow the underground workings to flood.

In 2002, the Porcupine Joint Venture, a joint venture between Placer Dome Canada Ltd. ("Placer") and Kinross, was formed and in 2005 the property was reactivated. Goldcorp acquired Placer's interest later that year and became the operator of the Porcupine Joint Venture. Lake Shore acquired the Bell Creek mine in December 2007.

Lake Shore declared commercial production in January 2012. In April 2016, Tahoe acquired the Bell Creek mine as part of its acquisition of Lake Shore, and Tahoe was subsequently acquired by Pan American in February 2019. We have been producing from the Bell Creek mine since our acquisition of Tahoe.

Geological Setting, Mineralization, and Deposit Types

The Bell Creek deposit is located in the Southern Abitibi Greenstone Belt, a complex of deformed, usually greenschist facies, volcanic dominated oceanic assemblages. Rocks in the Timmins region belong to volcanic and sedimentary assemblages within the Western Abitibi Subprovince of the Superior Province.

The Bell Creek property is underlain by carbonate altered, greenschist facies metavolcanics and metasedimentary rock units belonging to the Tisdale and Porcupine assemblages. The stratigraphy generally strikes east-west to west-northwest, and is steeply dipping and highly deformed.

Mesothermal shear hosted gold mineralization in the Bell Creek mine area occurs along selvages of quartz veins and wall rocks, in stylolitic fractures in quartz veins, in fine grained pyrite, and in association with amorphous carbon. High grade gold mineralization occurs within quartz veins contained in alteration zones.

Exploration

The nature of any surface exploration programs completed by owners of the Bell Creek mine property prior to Lake Shore is unknown, with the exception of diamond drilling and magnetometer surveys. All exploration conducted by Lake Shore and Tahoe on the property was comprised of surface and underground drilling. Lake Shore completed other exploration in the Bell Creek mine area using other methods, including airborne geophysical surveys in 2019.

Drilling

All drilling is by diamond drilling from surface and underground using industry standard drill machines and downhole survey tools. Drilling is conducted by private drilling contractors under the supervision of the geology department. Near mine diamond drilling exploration campaigns are ongoing on an annual basis for mineral resource and mineral reserve estimates.

Sampling, Analysis, and Data Verification

Surface and some underground exploration drill core is sampled following cutting with a diamond saw, while most of the underground drillholes are whole core sampled. The samples are maintained in secure facilities and are under the control of our employees or the independent laboratory at all times. We have no reason to believe that the validity and integrity of the samples has been compromised.

All samples are analyzed for gold at various independent commercial laboratories using fire assay with either AA or gravimetric finish.

A blind QAQC program supervised by the geology department includes the submission of certified standards, duplicates, and blanks to the laboratory. The results of the QAQC programs indicate that the sample assays are reliable for the estimation of mineral resources and mineral reserves.

Mineral Processing and Metallurgical Testing

As part of normal plant operation procedures, metallurgical analysis and testing is undertaken as required. The majority of these analyses are to assess mill performance and metallurgical recovery. Metal recovery forecasts used in our mine plans are based on the historical performance of the plant operations and the tonnes and grade of material that is planned to be mined.

Mineral Resource and Mineral Reserve Estimates

Management estimates that mineral reserves at the Bell Creek mine, effective June 30, 2021, are as follows:

Bell Creek Mineral Reserves [1, 2]

Reserve Category	Tonnes (Mt)	Grams of Gold per tonne
Proven	2.4	3.0
Probable	2.7	2.9
TOTAL	5.1	3.0

Notes:

1 Estimated using prices of $1,450 per ounce of gold. Totals may not add due to rounding.

2 Mineral reserve estimates for the Bell Creek mine were prepared under the supervision of, or were reviewed by Alain Mainville, P.Geo, and Eric Lachapelle, P.Eng., as Qualified Persons as that term is defined in NI 43-101.

Management estimates that mineral resources at the Bell Creek mine, effective June 30, 2021, are as follows:

Bell Creek Mineral Resources [1, 2]

Resource Category	Tonnes (Mt)	Grams of Gold per tonne
Measured	2.4	3.4
Indicated	4.2	2.8
Inferred	3.8	3.1

Notes:

1 These mineral resources are in addition to mineral reserves. Estimated using prices of $1,450 per ounce of gold. Mineral resources are modelled to a minimum mining width and reported above economic cut-off grade.

2 Mineral resource estimates for the Bell Creek mine were prepared under the supervision of, or were reviewed by Alain Mainville, P.Geo, and Eric Lachapelle, P.Eng., as Qualified Persons as that term is defined in NI 43-101.

Mineral resource estimates were prepared using inverse distance squared interpolation methods within three dimensional geological interpretations based on a nominal cut-off grade and a minimum mining width. The block model was classified into measured, indicated, and inferred confidence categories depending on the location of the block relative to the number of drillhole intersections available to estimate each block, as well as other factors affecting confidence in the estimate.

The mineral resource estimate was then depleted for previous mining and any inaccessible areas removed before reporting above an economic cut-off grade. Mineral resources that can be economically mined are converted to mineral reserves.

Mineral reserve estimates are based on a number of assumptions that include metallurgical, taxation, and economic parameters. Increasing costs or changes in taxation could have a negative impact on the estimation of mineral reserves. There are currently no known factors that may have a material negative impact on the estimate of mineral reserves or mineral resources at the Bell Creek mine.

Mining Operations

Underground mining takes place at the Bell Creek mine using long hole stoping methods. Ore is brought to the surface via ramp and by shaft.

Processing and Recovery Operations

Ore from the Bell Creek mine and the Timmins West mine is processed at the Bell Creek mill using grinding, gravity recovery, carbon in leach and carbon in pulp recovery to produce gold doré with minor amounts of silver. The plant has a capacity of approximately 5,400 tpd. Metallurgical recovery averaged approximately 97% for gold in 2021.

In 2021, we processed approximately 1.6 million tonnes of ore producing a combined 133.8 thousand ounces of gold and 16.2 thousand ounces of silver from the Timmins West and Bell Creek mines.

All production from the Bell Creek and Timmins West mines is in the form of doré, which is refined at arm's length refineries prior to the sale of refined silver and gold to bullion banks and traders. Currently, we have refining contracts in place with refineries in Canada. We have not had any difficulty in securing contracts for the sale of Bell Creek and Timmins West mine doré, however, there can be no certainty that we will always be able to do so or what terms will be available at the time. Please see "Risks Related to our Business – Trading Activities and Credit Risk".

Since February 2019, the revenue produced by the Bell Creek and Timmins West mines is as follows:

2021	**Revenue[1, 2]**	**Quantity Sold**
Silver and Gold in Doré	$238.5 million	16,268 ounces of silver 132,000 ounces of gold
2020	**Revenue[1, 2]**	**Quantity Sold**
Silver and Gold in Doré	$262.1 million	17,318 ounces of silver 148,130 ounces of gold
2019[3]		
Silver and Gold in Doré	$201.2 million	17,113 ounces of silver 143,300 ounces of gold

Notes:

1 Consists of sales to arm's length customers.

2 Calculated as gross revenue plus export credit incentives (as applicable), less treatment and refining charges and export taxes.

3 Consists of production after February 22, 2019.

Infrastructure, Permitting, and Compliance Activities

The mine workings, processing plant, tailings and waste disposal areas, effluent management and treatment facilities, roads, and power and water lines have all been constructed and are located within the boundaries of the mining leases and surface rights controlled by us. To the best of our knowledge, all permits and licenses required to conduct our activities on the property have been obtained and are currently in good standing.

Power is supplied from the provincial power grid and water is sourced from surface and underground dewatering.

Consultation is being undertaken with regulatory agencies, the general public, the Métis Nation of Ontario, Wabun Tribal Council and the Indigenous communities of Flying Post First Nation, Mattagami First Nation, and Matachewan First Nation, who are represented by Wabun Tribal Council, and the Wahgoshig First Nation. Consultation provides an opportunity to identify and address the impacts of LSG's activities on external stakeholders and to expedite the authorization process. The consultations have been held in order to comply with federal and provincial requirements, including Ontario Regulation 240/00 and the Environmental Bill of Rights.

An IBA was signed in September 2016 with the Mattagami, Wahgoshig, Matachewan and Flying Post First Nation communities in the Timmins area relating to the Bell Creek mine and surrounding properties. The IBA outlines how the company and the Indigenous communities will work together in the following areas: education/training of Indigenous community members, employment, business and contracting opportunities, financial considerations, and environmental matters.

A closure cost estimate for the Bell Creek mine was prepared based on a government-approved closure plan, engineering estimates, local rates, and contractor quotes. The estimate is updated every year. Pan American has estimated the present value of reclamation costs for the Bell Creek mine to be approximately $10.7 million effective December 31, 2021. See "Narrative Description of the Business – Environment, Community and Sustainability" for further disclosure regarding forward-looking statements related to reclamation costs.

Capital and Operating Costs

Capital additions at the Timmins West and Bell Creek mines during 2021 totalled $42.3 million, including $35.9 million of sustaining capital, consisting mainly of mine equipment refurbishments and replacements, mine infrastructure upgrades, tailings storage facility expansion, near-mine exploration, and lease payments for mining equipment, as well as $6.4 million primarily for exploration of the Wetmore property.

Sustaining capital investments in 2022 at the Timmins West and Bell Creek mines are anticipated to total between $38.0 million and $39.0 million, primarily related to tailings storage facility expansions, underground mine equipment replacements and refurbishments, mill upgrades, and near-mine exploration. We also expect to invest approximately $12.0 million to $14.0 million in project capital for construction of a paste fill plant for Bell Creek to improve backfill quality and availability for more effective ground support systems and increase resource recovery, in addition to exploration expenditures related to the Wetmore and Whitney projects.

In 2021, direct operating costs at the Timmins West and Bell Creek mines were $167.5 million.

Exploration, Development, and Production

In 2022, we anticipate producing 0.01 million ounces of silver and between 135.0 thousand and 143.0 thousand ounces of total gold from the Timmins West and Bell Creek mines. We plan to undertake approximately 71,000 metres of exploration drilling at the mines, including the Wetmore project and regional targets, in 2022.

II. Non-Operating and Development Properties

(i) Escobal Mine

Project Description, Location, and Access

The Escobal mine is an underground silver-gold-lead-zinc mine in Guatemala, approximately 40 kilometres east-southeast of Guatemala City and 2 kilometres east of the town of San Rafael Las Flores. Access to the Escobal mine is via 70 kilometres of paved highway from Guatemala City.

The Escobal mine is 100% owned by Pan American through its wholly-owned subsidiary, PASG, and comprises two mineral licenses covering approximately 29.2 km². These include the Escobal Exploitation License (the "Escobal mining license") covering 20 km². PASG also previously held the Juan Bosco Exploration License covering 9.2 km², which was not renewed and is no longer valid. The Escobal mining license is valid for 25 years from receipt of the license on April 3, 2013 and is renewable for an additional 25 years. Exploration licenses in Guatemala are granted for an initial period of three years, which can be extended for two additional two-year periods, for a total holding period of seven years; after which, application must be made for an exploitation license or new exploration concession.

Some communities and non-governmental organizations ("NGOs") have been vocal and active in their opposition to mining and exploration activities in Guatemala. In July 2017, the Escobal mining license was suspended as a result of a court proceeding initiated by an NGO in Guatemala, based upon the allegation that the Guatemala MEM violated the Xinka Indigenous people's right of consultation. After several decisions and appeals on the matter, a decision of the Constitutional Court of Guatemala was rendered on September 3, 2018, determining that the Escobal mining license would remain suspended until the State of Guatemala completes an ILO 169 consultation process led by MEM. The consultation process is proceeding, and normal operations at the Escobal mine remain suspended. Legal challenges to the consultation process have been filed with the Supreme Court of Justice of Guatemala (the "Supreme Court") by parties opposed to the Escobal mine and have, to date, been rejected by the Court, but the ultimate outcome of the various challenges remains uncertain. The process, timing, and outcome of the ILO 169 consultation also remains uncertain. The pre-consultation process commenced in the first half of 2021 and continued at various points throughout the year. In addition, in June 2017, PASG (at the time, known as Minera San Rafael, S.A. ("MSR")) filed its annual request to renew the Escobal mine's export credential with the Guatemala MEM. However, the Guatemala MEM did not renew the export credential because its renewal had become contingent on the Supreme Court's reinstatement of the Escobal mining license. The export credential therefore expired in August 2017 and has not been renewed.

In addition, since June 7, 2017, a group of protesters near the town of Casillas have blocked the primary highway that connects Guatemala City to San Rafael Las Flores and the Escobal mine. Mining operations were reduced between June 8, 2017 and June 19, 2017 to conserve fuel, and on July 5, 2017, were ceased following the Supreme Court's provisional decision to suspend the Escobal mining license while the case against the Guatemala MEM was heard on the merits. A second roadblock was initiated in 2018 near the community of Mataquescuintla. The attendance at both roadblocks was reduced during 2020 and access to the mine was less restricted. While we continue our efforts to regain trust and repair relationships, there is no guarantee that a positive resolution will be reached or that the roadblocks will be removed.

We make annual payments to the Guatemala MEM for each concession. Annual reports documenting exploration and operation activities have been filed with the Guatemala MEM, as required.

While Escobal is on care and maintenance, we continue to comply with Escobal's environmental management plan which was updated in 2020. As part of these requirements, we are following through on appropriate commitments made by Tahoe, responding to community requests for information and support, and satisfying our reporting obligations to the Government of Guatemala.

In Guatemala, there is a statutory one percent royalty on precious and base metal production. In addition, MSR (now PASG) paid an additional 4% NSR royalty on concentrates sold from the Escobal mine, primarily to nearby municipalities. Payments under the voluntary royalty were suspended in 2017 upon the Escobal license suspension, but some payments of these outstanding royalties have been made more recently.

In addition, MSR (now PASG) established a profit-sharing program that provides a 0.5% NSR royalty to an association of former landowners of the Escobal mine property. Ten percent of this royalty is to be deposited in a special fund, administered by the association's board of directors, and used for improvements in local communities.

Within the Escobal mining licence, PASG owns approximately 300 hectares for the area required for mining operations, processing plant and ancillary facilities, surface operations, and tailings and waste rock disposal. Our ownership of certain of these lands has been challenged in the Guatemalan Courts. Please refer to the "Risks Related to Our Business" for further discussion of this and related risks.

History

Activity at the Escobal property dates back to 1996 when Entre Mares, S.A., the Guatemalan subsidiary of Goldcorp, identified high grade gold values associated with surface quartz veins in the western portion of the Escobal vein. In late 2006, significant silver and gold grades were detected from surface sampling along an extensive alteration zone developed over the Escobal vein. Exploration drilling began on the property in 2007 and resource estimates were prepared in 2010.

In June 2010, Tahoe acquired 100% of the Escobal mine project and associated exploration concessions from Entre Mares, and the Escobal mine was then held by a wholly owned subsidiary of Tahoe, MSR (now PASG). Mine construction began in 2011, and commercial production began in 2013. The mine produced annually until its suspension in 2017. In February 2019, Pan American acquired Tahoe.

Geological Setting, Mineralization, and Deposit Types

The Guatemalan geological setting is comprised of two tectonic terrains juxtaposed across a major tectonic plate boundary. The northern half of Guatemala is on the North American plate, and the southern half is on the Caribbean plate with three major east-west trending faults forming the collision boundary. The Escobal property is situated on the Caribbean plate, south of the faults. The area is characterized by a series of volcanic units derived from multiple eruptive events.

The Escobal deposit is an intermediate sulfidation, fault related vein formed within sedimentary and volcanic rocks. The Escobal vein system hosts silver, gold, lead and zinc, with an associated epithermal suite of elements, within quartz and quartz-carbonate veins. Quartz veins and stockwork up to 50 metres wide, with up to 10% sulfides, form at the centre of the Escobal deposit and grade outward through silicification, quartz-sericite, argillic and propylitic alteration zones.

Precious and base metal mineralization has been identified over a 2,400 metre lateral distance and 1,200 metre vertical range in three zones oriented generally east-west, with variable dips.

Exploration

Exploration at the Escobal mine included surface prospecting, mapping, soil and rock geochemical sampling, geophysical surveys, and drilling.

Drilling

All drilling undertaken between 2007 and 2017 was by diamond drilling from surface and underground using industry standard drill machines and downhole survey tools. Drilling was conducted by both mine employees and private drilling contractors under the supervision of the mine geology department.

Sampling, Analysis, and Data Verification

The drill core was generally sampled at 1.0 metre to 1.5 metre lengths according to geological features, and cut with a saw. The samples are maintained in secure facilities and were under the control of our employees or the independent laboratory at all times. We have no reason to believe that the validity and integrity of the samples has been compromised. The samples were prepared by Bureau Veritas at their sample preparation facility in Guatemala City and analyzed at their Reno, Nevada USA facility. In late 2015, a portion of the underground stope definition core was analyzed at the on site laboratory.

Gold was assayed by fire assay with AA finish and silver was assayed by digestion with AA finish. Higher grade samples were completed using fire assay and gravimetric finish. Lead and zinc were analyzed by induced coupled polarization or by digestion with AA finish with high grade samples completed using titration methods.

A QAQC program supervised by the geology department included the submission of certified standards, duplicates, and blanks to the laboratory. The results of the QAQC programs indicate that the sample assays are reliable for the estimation of mineral resources and mineral reserves.

Mineral Processing and Metallurgical Testing

As part of normal plant operation procedures, metallurgical analysis and testing were undertaken as required. The majority of these analyses were to assess mill performance and metallurgical recovery. Metal recovery forecasts used in the mine plans are based on the historical performance of the plant operations and the tonnes and grade of material that is planned to be mined.

Mineral Resource and Mineral Reserve Estimates

Management estimates that mineral reserves at the Escobal mine, effective June 30, 2021, are as follows:

Escobal Mineral Reserves [1, 2]					
Reserve Category	**Tonnes (Mt)**	**Grams of Silver per tonne**	**Grams of gold per tonne**	**% Lead**	**% Zinc**
Proven	2.5	486	0.42	1.02	1.75
Probable	22.1	316	0.34	0.77	1.25
TOTAL	24.7	334	0.35	0.79	1.30

Notes:

1 Estimated using prices of $20 per ounce of silver and $1,300 per ounce of gold. Totals may not add due to rounding.

2 Mineral reserve estimates for the Escobal mine were prepared under the supervision of, or were reviewed by Christopher Emerson, FAusIMM, and Martin G. Waffon, P.Eng., as Qualified Persons as that term is defined in NI 43-101.

Management estimates that mineral resources at the Escobal mine, effective June 30, 2021, are as follows:

Escobal Mineral Resources [1, 2]					
Resource Category	**Tonnes (Mt)**	**Grams of Silver per tonne**	**Grams of gold per tonne**	**% Lead**	**% Zinc**
Measured	2.3	251	0.23	0.31	0.59
Indicated	14.2	201	0.20	0.38	0.66
Inferred	1.9	180	0.90	0.22	0.42

Notes:

1 These mineral resources are in addition to mineral reserves. Estimated using prices of $20 per ounce of silver and $1,300 per ounce of gold. Mineral resources are reported within scheduled mine shapes and above a mineral resource cut-off grade.

2 Mineral resource estimates for the Escobal mine were prepared under the supervision of, or were reviewed by Christopher Emerson, FAusIMM, and Martin G. Waffon, P.Eng., as Qualified Persons as that term is defined in NI 43-101.

Mineral resource estimates were prepared using inverse power of distance methods within geological interpretations created in plan and section. The block model was classified into measured, indicated, and inferred confidence categories depending on the location of the block relative to the number of drillhole intersections available to estimate each block, as well as other factors affecting confidence in the estimate.

The mineral resource estimate was then depleted for previous mining and planned dilution and loss was applied. Reserve and resource stope shapes were prepared on blocks above the economic cut-off. Mineral resources that can be economically mined are converted to mineral reserves.

Mineral reserve estimates are based on a number of assumptions that include metallurgical, taxation, and economic parameters. Increasing costs or increasing taxation could have a negative impact on the estimation of mineral reserves. Aside from the previously mentioned factors, there are currently no known factors that may have a material negative impact on the estimate of mineral reserves or mineral resources at Escobal.

Mining Operations

Underground mining at Escobal utilized long hole stoping methods, with ore brought to the surface by ramp.

No mining operations have been conducted at Escobal since the Escobal mining license suspension in 2017, and Escobal remains on care and maintenance. We are required to conduct certain activities in order to be in compliance with our environmental management plan, which includes limited community relations activities to respect any existing commitments and to respond to requests for information regarding our activities. The MEM and the Ministry of Environment have conducted a number of site inspections to verify the condition of the mine and facility, our activities, and compliance with the Court Order.

Processing and Recovery Operations

Prior to the suspension of mining operations, ore from the Escobal mine was processed in 4,500 tpd capacity plant using conventional lead-zinc differential flotation to produce silver and gold rich lead and zinc concentrates. No processing has taken place since the Escobal mining license suspension in 2017.

In 2016, the last full-year period in which there was production from the mine, the Escobal mine produced 22.5 thousand tonnes of lead concentrate and 27.6 thousand tonnes of zine concentrate, with total contained metal of 21.2 million ounces of silver, 10.7 thousand ounces of gold, 10.3 thousand tonnes of lead, and 17.4 thousand tonnes of zinc. Metallurgical recoveries for the lead concentrate were 80.6% silver, 54% gold, 87.2% lead, and 12.6% zinc, while recoveries for the zinc concentrate were 6.1% silver, 6.2% gold, 3.0% lead, and 78.6% zinc.

Infrastructure, Permitting, and Compliance Activities

The Escobal mine workings, processing plant, tailings and waste disposal areas, effluent management and treatment systems, ancillary facilities, roads and power lines have all been constructed and are located within the boundaries of the exploitation license and surface lands owned by us. When the mine was in operation, power was provided mainly by on-site diesel generation. Water is supplied from mine dewatering and water wells.

The Escobal mine operations were conducted under an EIS approved by the Ministry of Environment and Natural Resources and an exploitation license issued by the Guatemala MEM. The export of concentrates is licensed through the Guatemala MEM, with annual renewal requirements. Land use changes and vegetation clearing and reforestation are permitted through Guatemala's National Institute of Forests. Archeological clearances were issued by the Ministry of Culture and Sports. Other than an export credential which has not been renewed by the Guatemala MEM following its expiration in August 2017 and the suspension of the Escobal mine mining license, to the best of our knowledge, all other permits and licenses required to conduct its activities at the Escobal Mine have been obtained and are currently in good standing. See " Risks Related to Our Business".

PASG has implemented a comprehensive environmental management plan developed specifically for the conditions at the Escobal mine, which addresses operating, reporting, and mitigation procedures for surface and underground operations. An update to the environmental management plan was approved in 2020.

A closure cost estimate for the Escobal mine prepared according to State of Nevada approved SRCE methodology is updated every year for unit costs and discount rates, and every other year for physical disturbance if necessary. We have estimated the present value of reclamation costs for the Escobal mine to be approximately $7.7 million effective December 31, 2021. See "Narrative Description of the Business – Environment, Community and Sustainability" for further disclosure regarding forward-looking statements related to reclamation costs.

Capital and Operating Costs

During 2021, Escobal was in care and maintenance and incurred $23.1 million in holding costs. Capital additions at Escobal during 2021 totalled $0.8 million.

In 2022, we anticipate spending $21.0 and $22.0 million in care and maintenance costs for the Escobal mine.

Exploration, Development, and Production

In 2022, we do not anticipate any production from the Escobal mine as the operations remain suspended. We plan to continue with our property and infrastructure maintenance requirements, and have no plans to undertake any exploration work in 2022. All expenditures will be expensed as incurred.

III. Non-Material Properties and Interests

We own interests in other mineral properties in each of the jurisdictions in which we operate, including the La Arena and Morococha mines and the Pico Machay property in Peru, the San Vicente mine in Bolivia, the Manantial Espejo, Joaquin and COSE mines and the Navidad property in Argentina, and certain other interests in Mexico and Canada. Our Alamo Dorado mine in Mexico is in the post-reclamation phase and mining activity has ceased. Pan American does not consider these properties to be material properties for the purposes of NI 51-102 or NI 43-101.

Mineral Property Expenditures

The following table sets out our acquisition, exploration and development expenditures (rounded, in thousands) for the periods indicated:

			2021		2020		2019
Acquisition	COSE	$	-	$	-	$	-
	Joaquin		-		-		-
	Shahuindo[1]		-		-		437,275
	La Arena[1]		-		-		192,506
	Timmins[1]		-		-		378,889
	Escobal[1]		-		-		273,838
	TOTAL[2]		-		-		1,282,508
Development	Huaron[3]	$	8,749	$	2,359	$	8,013
	Morococha[3]		6,163		6,563		10,703
	Alamo Dorado		-		-		-
	Dolores		38,928		43,236		47,722
	La Colorada		65,469		29,335		20,139
	Manantial Espejo		5,010		7,849		23,909
	Navidad		90		-		9
	San Vicente		5,340		4,877		4,938
	Shahuindo		24,652		20,330		31,329
	La Arena		45,130		37,300		47,557
	Timmins		41,520		20,081		10,346
	Escobal		778		4,807		-
	Other		1,649		1,818		125
	TOTAL[2]	$	243,478	$	178,555	$	205,807
Exploration	Huaron	$	-	$	-	$	13
	Morococha		686		138		327
	Alamo Dorado		-		-		-
	Dolores		225		338		1,105
	La Colorada		2,643		998		1,445
	Manantial Espejo		-		-		305
	Navidad		-		-		-
	San Vicente		-		-		-
	Shahuindo		828		(5)		787
	La Arena		-		-		358
	Timmins		3,628		3,418		2,259
	Other[4]		3,060		2,209		3,204
	TOTAL[2,5]	$	11,071	$	7,096	$	9,803

Notes:

1 The figures shown relate to the net asset balances as at December 31, 2019.

2 Numbers may not add due to rounding.

3 Net of lease advances.

4 Includes spending on overhead corporate management charges, as well as other indirect exploration spending.

5 The amounts for 2019 exclude $1.9 million from non-cash project development write-downs.

Metals Trading

We take the view that our precious metals production should not be hedged, thereby allowing the maximum exposure to precious metal prices.

We have engaged in forward sales and hedging of base metals production from our mines over the past several years. The forward sales of base metals in 2019, 2020 and 2021 were as follows:

- During 2021, we had 1,500 tonnes of copper exercised at an average strike price of $8,775 per tonne, resulting in a realized loss of $1.1 million.
- During 2020, we did not hedge any base metal production.
- During 2019, we had 800 tonnes of copper exercised at an average strike price of $6,150 per tonne, resulting in a realized gain of $0.3 million. We had 3,600 tonnes of zinc exercised at a strike price of $2,600 per tonne, resulting in a realized gain of $0.9 million.

Please see the discussion below under “Risks Related to Our Business – Trading Activities and Credit Risk”.

RISKS RELATED TO OUR BUSINESS

The risk factors described below could materially affect Pan American's future operating results and could cause actual events and results to differ materially from those described in forward-looking statements and forward-looking information. Additional risks not presently known to us, or that we currently consider immaterial, may also impair our operations. Readers are strongly encouraged to review the following identified risks in detail.

Metal and Commodity Price Fluctuations

The majority of our revenue is derived from the sale of silver, gold, zinc, copper and lead, and therefore fluctuations in the prices of these metals significantly affects our operations and profitability. Our sales are directly dependent on metal prices, and metal prices have historically shown significant volatility and are beyond our control. The Board of Directors continually assesses Pan American's strategy towards our metal exposure, depending on market conditions.

The prices of silver and other metals are affected by numerous factors beyond our control, including:

- global and regional levels of supply and demand;
- sales by government holders and other third parties;
- metal stock levels maintained by producers and others;
- increased production due to new mine developments and improved mining and production methods;
- speculative activities;
- inventory carrying costs;
- availability, demand and costs of metal substitutes;
- international economic and political conditions;
- interest rates, inflation and currency values;
- increased demand for silver or other metals for new technologies; and
- reduced demand resulting from obsolescence of technologies and processes utilizing silver and other metals.

In addition to general global economic conditions that can have a severely damaging effect on our business in many ways, declining market prices for metals could materially adversely affect our operations and profitability. A decrease in the market price of silver, gold and other metals could affect the commercial viability of our mines and production at our mining properties. Lower prices could also adversely affect future exploration and our ability to develop mineral properties and mines, including the development of capital intensive projects such as Navidad and the La Colorada skarn project, all of which would have a material adverse impact on our financial condition, results of operations and future prospects. There can be no assurance that the market prices will remain at sustainable levels.

If market prices of gold and silver remain below levels used in Pan American's impairment testing and reserve prices for an extended period of time, Pan American may need to reassess its long-term price assumptions, and a significant decrease in the long-term price assumptions would be an indicator of potential impairment, requiring Pan American to perform an impairment assessment on related assets. Due to the sensitivity of the recoverable amounts to long term metal prices, as well as to other factors including changes to mine plans and cost escalations, any significant change in these key assumptions and inputs could result in impairment charges in future periods.

The Board of Directors continually assesses Pan American's strategy towards our metal exposure, depending on market conditions. From time to time, we mitigate the market price risk associated with our base metal production by committing some of our forecast base metal production to forward sales and options contracts. However, decisions relating to hedging may have material adverse effects on our financial performance, financial position, and results of operations. As at December 31, 2021, the Company had outstanding collars made up of put and call contracts for its exposure to zinc (3,600 tonnes) with settlement dates on those positions between January 2022 and December 2022. The outstanding contracts have respective weighted average floor and cap prices per tonne of $3,150 and $4,000. The Company recorded gains of $0.1 million and $0.1 million during the three and twelve months ended December 31, 2021, respectively. The Company did not have any zinc contracts outstanding during the comparable periods in 2020.

We take the view that our precious metals production should not be hedged, thereby allowing the maximum exposure to precious metal prices. However, in extreme circumstances, the Board of Directors may make exceptions to this approach. Such decisions could have material adverse effects upon our financial performance, financial position, and results of operations.

Certain commodities used by us in our operations may also be subject to strategic hedging programs. During 2020 and 2021, the Company entered into diesel swap contracts designed to fix or limit the Company's exposure to higher fuel prices. At December 31, 2021, the Company had outstanding positions on its diesel exposure with a notional amount of 3.6 million gallons, with a weighted average fixed price of $1.42 per gallon, expiring between January 2022 and December 2022. The Company recorded gains of $0.3 million and $9.4 million for the three and twelve months ended December 31, 2021, respectively (Q4 2020 and 2020: gains of $4.0 million and $4.7 million, respectively).

Please refer to the 2021 MD&A for more details, including a sensitivity analysis of the effect of certain metal prices on revenue and AISC.

Foreign Operations

In 2021, a significant portion of our production and revenues were derived from our operations in Peru, Mexico, Argentina and Bolivia. We also own the currently-suspended Escobal mine in Guatemala. As a result, we are exposed to a number of risks and uncertainties, including:

- expropriation, nationalization, and the cancellation, revocation, renegotiation, or forced modification of existing contracts, permits, licenses, approvals, or title, particularly without adequate compensation;
- changing political and fiscal regimes, sometimes unexpectedly or as a result of precipitous events, and economic and regulatory instability;
- unanticipated adverse changes to constitutional rights and protections, and other laws and policies, including those relating to mineral title, royalties and taxation;
- delays or inability to obtain or maintain necessary permits, licenses or approvals;
- opposition to mine development projects from governments, communities, and other groups, which may include frivolous or vexatious claims, misinformation, and the potential for violence and property damage;
- restrictions on foreign investment;
- limitations on repatriation of operating cash flows, including legal and practical restrictions to transfer funds from foreign jurisdictions;
- unreliable or undeveloped infrastructure;
- labour unrest and scarcity;
- human rights violations, including Indigenous rights claims;
- inability of governments or governmental bodies to complete, or properly complete, consultation processes and to comply with national and international laws, protocols, standards and/or norms;
- difficulty obtaining key equipment and components for equipment;
- regulations and restrictions with respect to imports and exports;
- high rates of inflation;
- extreme fluctuations in currency exchange rates and restrictions on foreign exchange, currencies and repatriation;
- inability to obtain fair dispute resolution or judicial determinations because of bias, corruption or abuse of power;
- abuse of power of foreign governments who impose, or threaten to impose, fines, penalties or other similar mechanisms, without regard to the rule of law;
- difficulties enforcing judgments, particularly judgments obtained in Canada or the United States, with respect to assets located outside of those jurisdictions;

- difficulty understanding and complying with the regulatory and legal framework with respect to mineral properties, mines and mining operations, and permitting;
- violence and the prevalence of criminal activity, including organized crime, theft and illegal mining;
- civil unrest, terrorism and hostage taking;
- military repression and increased likelihood of international conflicts or aggression; and
- increased public health concerns, including the impact of COVID-19.

Certain of these risks and uncertainties are illustrated well by circumstances in Guatemala, Bolivia, Peru and Mexico.

Some communities and NGOs have been vocal and active in their opposition to mining and exploration activities in Guatemala. In July 2017, the Escobal mining license was suspended as a result of a court proceeding initiated by an NGO in Guatemala, based upon the allegation that the Guatemala MEM violated the Xinka Indigenous people's right of consultation. After several decisions and appeals on the matter, a decision of the Constitutional Court of Guatemala was rendered on September 3, 2018 (the "Court Order"), determining that the Escobal mining license would remain suspended until the State of Guatemala completes an ILO 169 consultation process led by MEM. The consultation process is proceeding, and normal operations at the Escobal mine remain suspended. Legal challenges to the consultation process have been filed with the Guatemalan Supreme Court by parties opposed to the Escobal mine and have, to date, been rejected by the Court, but the ultimate outcome of the various challenges remains uncertain. The pre-consultation process commenced in 2021, however the process, timing, and outcome of the ILO 169 consultation remains uncertain. In addition, in June 2017, PASG (at the time, known as MSR) filed its annual request to renew the Escobal mine's export credential with the Guatemala MEM. However, the Guatemala MEM did not renew the export credential because its renewal had become contingent on the Supreme Court's reinstatement of the Escobal mining license. The export credential therefore expired in August 2017 and has not been renewed.

In 2014, the Bolivian government enacted the New Mining Law. Among other things, the New Mining Law set out a number of new economic and operational requirements relating to state participation in mining projects. Further, the New Mining Law provided that all pre-existing contracts were to migrate to one of several new forms of agreement within a prescribed period of time. As a result, we anticipate that our current joint venture agreement with COMIBOL relating to the San Vicente mine will be subject to such migration and possible renegotiation of key terms. The migration process has been delayed by COMIBOL and has not been completed. The primary effects on the San Vicente operation and our interest therein will not be known until such time as we have, if required to do so, renegotiated the existing contract, and the full impact may only be realized over time. We will take appropriate steps to protect and, if necessary, enforce our rights under our existing agreement with COMIBOL. There is, however, no guarantee that governmental actions, including possible expropriation or additional changes in the law, and the migration of our contract will not impact our involvement in the San Vicente operation in an adverse way and such actions could have a material adverse effect on us and our business.

Criminal activity and violence are also prevalent in some areas that we work in. For example, violence in Mexico is well documented and has, over time, been increasing. Conflicts between the drug cartels and violent confrontations with authorities are not uncommon. Operations at our Dolores mine were temporarily curtailed in 2018 as a result of such violence and the threat of violence on the access roads to the mine. Other criminal activity, such as kidnapping and extortion, is also an ongoing concern. Many incidents of crime and violence go unreported and efforts by police and other authorities to reduce criminal activity are challenged by a lack of resources, corruption and the pervasiveness of organized crime. Incidents of criminal activity have occasionally affected our employees and our contractors and their families, as well as the communities in the vicinity of our operations. Such incidents may prevent access to our mines or offices; halt or delay our operations and production; result in harm to employees, contractors, visitors or community members; increase employee absenteeism; create or increase tension in nearby communities; or otherwise adversely affect our ability to conduct business. We can provide no assurance that security incidents, in the future, will not have a material adverse effect on our operations.

Challenges also exist with respect to inconsistent application of the rule of law, and to sometimes unreliable and biased legal systems and judiciary. In April 2012, Pan American sold all of its interest in the Quiruvilca mine ("Quiruvilca") in Peru, which was previously owned by our subsidiary, Huaron. Since the 2012 sale, a substantial number of labour-related claims have been made by persons alleging to be former or then-current employees working at the Quiruvilca mine. Notwithstanding that an overwhelming majority of these claims were made exclusively against the subsequent owners of Quiruvilca, that Huaron has not owned or been involved with Quiruvilca since 2012, and that Huaron was not afforded the opportunity to participate or challenge the assertions in court, the labour courts in Trujillo, Peru, have in many cases, imputed liability on Huaron. In some cases, the courts ordered seizure of monies from Huaron's local bank accounts and garnishment of funds due to Huaron from certain of its trading partners. In August 2018, the current owner of Quiruvilca declared bankruptcy, further exacerbating the situation. Huaron has challenged the basis of the labour court's decisions in Trujillo, and in the Commercial Court and Constitutional Courts of Peru. Pan American believes it has a strong legal position against liability for these claims and intends to continue to challenge them and seek to enforce certain contractual rights to indemnification. Many of these legal proceedings were delayed as a result of COVID-19 related court closures in Peru, but are expected to resume once the impacts of COVID-19 diminish. There can be no assurance that the outcome of the proceedings or any enforcement of our rights will be favorable to us or that it will not have a material adverse impact on our financial position. Huaron will likely be subject to further labour-related claims, and could also be subject to, directly or indirectly, claims by creditors of the current owner of Quiruvilca and claims relating to the now abandoned mine site, which in aggregate could be material.

In most cases, the effect of these risks and uncertainties cannot be accurately predicted and, in many cases, their occurrence is outside of our control. We have begun the process of evaluating our operations against the World Gold Council Conflict-free Standard in an effort to gain more insights into potential risks related to security and corruption at our operations, but the success of this initiative remains uncertain. Although we are unable to determine the impact of these risks on our future financial position or results of operations, many of these risks and uncertainties have the potential to substantially affect our exploration, development and production activities and could therefore have a material adverse impact on our operations and profitability.

Governmental Regulation

Our operations, exploration, and development activities are subject to extensive laws and regulations in the jurisdictions in which we conduct our business, including with respect to:

- environmental protection, including greenhouse gas emissions, biodiversity, and water, soil and air quality;
- permitting;
- management and use of toxic substances and explosives;
- management and use of natural resources, including water and energy supplies;
- management of waste and wastewater;
- exploration, development, production, and post-closure reclamation of mines;
- imports and exports;
- transportation;
- price controls;
- taxation;
- mining royalties;
- labour standards, employee profit-sharing, and occupational health and safety, including mine safety and COVID-19 related regulations;
- community and Indigenous rights;
- human rights;
- social matters, including historic and cultural preservation, engagement and consultation, local hiring and procurement, development funds;
- anti-corruption and anti-money laundering; and
- data protection and privacy.

The costs associated with compliance with these and future laws and regulations can be substantial, and changes to existing laws and regulations (including the imposition of higher taxes and mining royalties) could cause additional expense, capital expenditures, restrictions on or suspensions of our operations and delays in the development of our properties. In addition, the regulatory and legal framework in some jurisdictions in which we operate are out-dated, unclear and at times, inconsistent. A failure to comply with these laws and regulations, including with respect to our past and current operations, and possibly even actions of parties from whom we acquired our mines or properties, could lead to, among other things, the imposition of substantial fines, penalties, sanctions, the revocation of licenses or approvals, expropriation, forced reduction or suspension of operations, and other civil, regulatory or criminal proceedings.

Many of the jurisdictions in which we operate also have certain laws or policies that impose restrictions on mining activities. For example, there are currently laws in the Province of Chubut, Argentina, which, among other things, prohibit open pit mining and the use of cyanide in mineral processing across the entire Province. As currently enacted, the laws in the Province of Chubut do not permit and would likely render any future construction and development of the Navidad property uneconomic or not possible at all. There is no guarantee that these restrictions on mining will be removed or that they will not become more restrictive, or that new constraints will not be imposed, including those that might have significant economic impacts on our operations and profitability.

Unanticipated or drastic changes in laws and regulations have affected our operations in the past. For example, under previous political regimes in Argentina, the government intensified the use of severe price, foreign exchange, and import controls in response to unfavourable domestic economic trends. These included informal restrictions on dividend, interest, and service payments abroad and limitations on the ability to convert ARS into USD, exposing us to additional risks of ARS devaluation and high domestic inflation. While some of these restrictions had begun to ease after the elections in 2015, the government introduced a new export duty in 2018 on silver and gold doré exported from Argentina. In 2021, we paid approximately $5.7 million in export duties (2020: $3.9 million). Following elections in 2019, the government in Argentina has begun reinstituting some of the previous unfavourable economic policies, such as strict currency controls.

As governments continue to struggle with deficits and concerns over the effects of depressed economies, the mining and metals sector has often been identified as a source of revenue. Taxation and royalties are often subject to change and are vulnerable to increases in both poor and good economic times, especially in many resource rich countries. The addition of new taxes, specifically those aimed at mining companies, could have a material impact on our operations and will directly affect profitability and our financial results. The economic impact of COVID-19 on the global and national economies, the resulting costs to governments, increased fiscal debt, interest rates, and inflation are also expected to result in further taxation pressures, the impacts of which could impact our financial performance.

In late December 2016, for example, the Zacatecas state government enacted a new set of ecological taxes which took effect on January 1, 2017. The Zacatecas Tax applied broadly across a number of industries in the State of Zacatecas that involve extraction, emissions to the air, soil or water, and deposits of residue or waste. The Zacatecas Tax primarily affected the La Colorada mine in respect of the materials placed in its tailings storage facility, with only about 5% of the tax relating to emissions. We paid approximately $4.5 million in respect of the Zacatecas Tax from January 2017 to April 2020. However, pursuant to a challenge of the Zacatecas Tax constitutional grounds, in mid-2020, the Supreme Court of Mexico determined that the tax for the deposit or storage of waste rock was not within the jurisdiction of the State of Zacatecas and that Plata Panamericana was entitled to be reimbursed for payments previously made in respect of the La Colorada mine. As part of this ruling, the Court also ruled that the State of Zacatecas was still empowered to impose a tax for the prevention and control of air pollution generated by industrial establishments, which are not within the federal competence, and therefore that portion of the tax on Plata was upheld and currently being paid by Plata Panamericana. Furthermore, in December 2020, the State of Zacatecas modified the original tax on the disposal or storage of waste rock. Plata Panamericana does not currently believe that this tax is payable in respect of La Colorada because of its SEMARNAT-approved waste management plan.

In April 2021, the Senate of Mexico approved the amendment of various articles of the Federal Labor Law, Social Security Law, Law of the National Workers' Housing Fund Institute, Federal Fiscal Code, Income Tax Law and the Value Added Tax Law. These new regulations significantly limit the ability of operating companies to subcontract and outsource labour to contractors and to employ related service providers. As a consequence of this new legislation, additional employee profit sharing costs, payroll taxes and benefits costs were imposed on our operations, the full impact of which is still being determined.

To manage the COVID-19 pandemic, governments in all of our operating jurisdictions have implemented various regulations, orders, protocols and guidelines, many of which have negatively affected our business and our employees, contractors and local communities. COVID-19 has also impacted governments and national economies, and in addition to impacts on labour, supplies, and services that are needed to conduct our business, this may also increase the likelihood of additional taxes, duties, royalties, or similar burdens being placed on mining operations in an effort to generate municipal, state and federal revenues and boost economies. Please refer to the more detailed discussion of the risks related to COVID-19 on our business under the heading, "Risks Related to our Business - COVID-19 and Other Pandemics" on page 68.

Permits

We are required to obtain and renew governmental permits for the operation and expansion of existing operations or for the development, construction, and commencement of new operations. Obtaining or renewing the necessary governmental permits can be costly and involve extended timelines. We may not be able to obtain or renew permits that are necessary to our operations, or the cost to obtain or renew permits may exceed our expected recovery from a given property once in production.

Failure to obtain or maintain the necessary permits, or to maintain compliance with any permits, can result in fines, penalties, or suspension or revocation of the permits. Our ability to obtain and renew permits is contingent upon certain variables, some of which are not within our control, including, introduction of new permitting legislation, the interpretation of applicable requirements implemented by the permitting authority, the need for public consultation hearings or approvals, and political or social pressure.

As previously discussed, in July 2017, the Escobal mining license was suspended as a result of a court proceeding initiated by an NGO in Guatemala. After several decisions and appeals on the matter, a decision of the Constitutional Court of Guatemala was rendered on September 3, 2018, that the Escobal mining license would remain suspended until the Guatemala MEM completes an ILO 169 consultation. The consultation process is proceeding and the mine remains suspended and on care and maintenance.

In addition, in June 2017, PASG (at the time known as MSR) filed its annual request to renew the export credential with the Guatemala MEM. However, the Guatemala MEM did not renew the credential because its renewal had become contingent on the Supreme Court's reinstatement of the Escobal mining license. The credential therefore expired in August 2017 and has not been renewed.

Any unexpected delays, failure to obtain or renew permits, failure to comply with the terms of the permit, or costs associated with the permitting process could impede or prevent the development or operation of a mine, which could have material adverse impacts on our operations and profitability.

Operational Risks

The ownership, operation, and development of a mine or mineral property involves significant risks and hazards which even the combination of experience, knowledge, and careful evaluation may not be able to overcome.

These risks include:

- environmental and health hazards;
- industrial and equipment accidents, explosions and third party accidents;
- the encountering of unusual or unexpected geological formations;
- ground falls and cave-ins;
- flooding;
- labour disruptions;
- mechanical equipment, machinery, and facility performance problems;
- seismic events;
- extreme temperature variations and air quality issues underground; and
- periodic interruptions due to inclement or hazardous weather conditions.

These risks could result in:

- damage to, or destruction of, mineral properties or production facilities;

- personal injury or death;
- environmental damage and liabilities;
- delayed production;
- labour disruptions;
- increased production costs;
- asset write downs;
- abandonment of assets;
- monetary losses;
- civil, regulatory or criminal proceedings, including fines and penalties, relating to health, safety and the environment;
- community unrest, protests, and legal proceedings at local or international levels;
- loss of social acceptance for our activities; and
- other liabilities.

Advancements in science and technology and in mine design, methods, equipment, and training have created the possibility of reducing some of these risks, but there can be no assurances that such occurrences will not take place and that they will not negatively impact us, our operations, and our personnel. For example, our La Colorada mine experienced ventilation failures in 2019 and 2020 that were partly the result of encountering increased heat and humidity loadings on the rock mass and ground support systems as the mine deepening and eastern extensions advanced. These failures resulted in a loss of forecast production in 2020 and 2021. Remediation work was undertaken to improve ventilation and underground conditions, including the commissioning of the refrigeration plant expected in mid-2022 and the concrete-lined ventilation shaft project, which is anticipated to be completed in mid-2023.

In addition to those other risks identified above, mining operations are also subject to ownership and operating risks relating to the valuable nature of the product being produced. Our Mexican operations have experienced armed robberies of doré within the past three years. We have instituted a number of additional security measures and a more frequent shipping schedule in response to these incidents. We have subsequently renewed our insurance policy to mitigate some of the financial loss that would result from such criminal activities in the future, however, a substantial deductible amount would apply to any such losses in Mexico.

Liabilities that we incur may exceed the policy limits of our insurance coverage or may not be insurable, in which case we could incur significant costs that could adversely impact our business, operations, profitability, or value.

Title to Assets

The validity of mining or exploration titles or claims or rights, which constitute most of our property holdings, can be uncertain and may be contested. Our properties may be subject to prior unregistered liens, agreements or transfers, Indigenous land claims, or undetected title defects. In some cases, we do not own or hold rights to the mineral concessions we mine, including in Bolivia where the government has title to the concessions and our right to mine is contractual in nature. We have not conducted surveys of all the claims in which we hold direct or indirect interests and therefore, the precise area and location of such claims may be in doubt. No assurance can be given that applicable governments will not revoke or significantly alter the conditions of the applicable exploration and mining titles or claims, or that such exploration and mining titles or claims will not be challenged or impugned by third parties. We may be unable to operate our properties as expected, or to enforce our rights to our properties. Any defects in title to our properties, or the revocation of our rights to mine, could have a material adverse effect on our operations and financial condition.

For example, certain individuals have asserted community rights and land ownership over a portion of the La Colorada mine's surface lands in the Agrarian Courts of Mexico. They have also initiated a process before SEDATU in Zacatecas to declare such lands as national property. In 2019, we filed an amparo against such process and obtained an injunction to protect its ownership of these surface rights pending the outcome of the amparo and a further review by SEDATU. Our challenge was dismissed in October 2021, primarily on the basis that no final declaration of national lands had yet been made by SEDATU that would affect our property rights. We have appealed this dismissal and we will continue to oppose the SEDATU process. While we believe that we hold proper title to the surface lands in question, if we are unable to maintain, or maintain access to, those surface rights, there could be material adverse impacts on the La Colorada mine's future mining operations.

Similarly, in Guatemala, the land title system is not well developed and in many cases, relies on informal, hereditary or possessory rights. Such informal systems can create significant uncertainty in obtaining and maintaining ownership or rights of access, in defining precise locations or clear boundaries to properties, and substantiating rights if challenged. It is also difficult to establish the identity of parties who may have, or purport to have, an interest in such property. Many of the surface areas on which the Escobal mine is located are based on such informal rights. PASG is subject to a legal action by an individual claiming to own title to certain lands within the Escobal mine site that PASG had previously purchased. If we are unable to maintain existing lands and access, or to obtain new lands as required, there may be significant adverse impacts to the mine and its future operations.

We operate in countries with developing mining laws, and changes in such laws could materially impact our rights or interests to our properties. We are also subject to expropriation risk in a number of countries in which we operate, including the risk of expropriation or extinguishment of property rights based on a perceived lack of development or advancement. In Peru, for example, the recently elected government has raised the prospect of implementing changes to the Peru Constitution, imposing increased mining taxes and royalties, in addition to changes to mine closure requirements, and formalization of small-scale miners and artisanal miners, all which could materially impact our rights or interest to our properties. There is limited activity at our Navidad property, for example, as a result of legal restrictions relating to mining, and there is a risk that the federal or provincial governments in Argentina are dissatisfied with a lack of advancement. Expropriation, extinguishment of rights and other similar governmental actions would likely have a material adverse effect on our operations and profitability.

In many jurisdictions in which we operate, legal rights applicable to mining concessions are different and separate from legal rights applicable to surface lands. Accordingly, title holders of mining concessions in many jurisdictions must agree with surface land owners on compensation in respect of mining activities conducted on such land. We do not hold title to all of the surface lands at many of our operations and rely on contracts or other similar rights to conduct surface activities.

We do not own most of the surface rights to the areas that overlie our mining concessions comprising the Morococha mine, nor to the areas where administration and operations are taking place, but were used by us pursuant to a usufruct agreement. These surface rights have been the subject of various disputes over the many years of operation at the Morococha mine. In June 2010, we reached an agreement with MCP, a subsidiary of Aluminun Corporation of China, that clearly defined each party's long-term surface rights. Under the terms of the agreement, Argentum is required to shut-down and remove or relocate the core Morococha facilities and the parties were to exchange certain mineral concessions and access rights in order for both parties to proceed with their planned activities. Pursuant to the agreement, the transfer of lands and rights and certain payment obligations would occur over a period of time and were dependent on meeting certain milestones. During the course of the agreement, however, certain adjustments have been made by the parties with respect to the timing of achieving milestones, in some cases informally, and additional adjustments will be required going forward. The Morococha facilities had not been shut-down or removed or relocated within the time period originally established in the agreement, however Argentum and MCP have agreed to extend the time period to do so until early 2022, after which time it is anticipated that the Amistad processing plant will be dismantled and the mine will be placed into care and maintenance while alternative opportunities for the mine are considered. Although this June 2010 agreement, and recent extension, has diminished some of the risks associated with the Morococha land situation, there is no certainty that amended milestones can be agreed upon or achieved by the parties, that the other outstanding obligations in connection with the June 2010 agreement will be fulfilled or resolved, or that the shut-down of the processing plant and placement of the mine on care and maintenance for an undetermined period of time or other costs and activities associated with the commitments in the agreement will not render future operations at the Morococha mine untenable.

Environmental Legislation, Regulations, and Hazards

We are subject to environmental laws and regulation in the various jurisdictions in which we operate that impose requirements or restrictions on our activities, such as mine development, water management, use of hazardous substances, reclamation, and waste transportation, storage and disposal. Compliance with environmental laws and regulations may require significant costs and may cause material changes or delays in our operations. There is no assurance that we will be in full compliance with environmental legislation at all times. Failure to comply with applicable environmental legislation could lead to adverse consequences, including expropriation, suspension or forced cessation of operations, revocation of or restrictions on permits, fines and other penalties, civil or regulatory proceedings, and, in certain circumstances, criminal proceedings. Furthermore, any such failures could increase costs and extend timelines, requiring additional capital expenditures and remedial actions. These negative consequences could significantly impact our financial condition, operations, and cash flow.

Future environmental legislation could also require stricter standards and mandate increased enforcement, fines and penalties for non-compliance, more stringent environmental assessments of proposed projects and a heightened degree of responsibility for companies and their officers, directors and employees.

Environmental hazards may exist on our properties which are currently unknown to us. We may be liable for losses associated with such hazards, or may be forced to undertake extensive remedial cleanup action or to pay for governmental remedial cleanup actions, even in cases where such hazards have been caused by previous or existing owners or operators of the property, or by the past or present owners of adjacent properties, or by natural conditions. The costs of such cleanup actions may have a material adverse effect on our operations and profitability.

We are subject to environmental reclamation requirements to minimize long-term effects of mining exploitation and exploration disturbance by requiring the operating company to control possible deleterious elements and to re-establish, to some degree, pre-disturbance land forms and vegetation. These environmental reclamation requirements vary depending on the location of the property and the managing governmental agency. We are actively providing for and carrying out reclamation activities on our properties as required. Between 2017 and 2019, we completed the active closure and reclamation of the Alamo Dorado mine and have applied some of that experience to closure cost estimates for our other mines. We continue to implement post-closure improvements at Alamo Dorado and apply lessons learned to our other operations. Any significant environmental or social issues that may arise, however, or any changes to current mine closure regulations could lead to increased reclamation expenditures and have a material adverse effect on our financial resources.

Our operations at the Dolores, Shahuindo and La Arena mines involve heap leaching and this method of mineral processing may be employed in the future at other mines and projects. Heap leaching often employs sodium cyanide, a hazardous material, to leach metal-bearing ore and then collect the resulting metal-bearing solution. There is an inherent risk of unintended discharge of hazardous materials in the operation of leach pads. Should sodium cyanide escape from a leach pad and collection infrastructure or otherwise be detected in the downstream surface and ground water points, we could become subject to liability for remediation costs, which could be significant and may not be insured against. In addition, metal production could be delayed or halted to prevent further discharges and to allow for remediation. Such delays or cessations in production could be long-term or, in some cases, permanent, and any interference with production could result in a significant reduction in, or loss of, cash flow and value for us. While appropriate steps may be taken to prevent discharges of sodium cyanide and other hazardous materials into the ground water, surface water, and the downstream environment, there is inherent risk in the operation of leach pads and there can be no assurance that a release of hazardous materials would not occur.

We operate seven tailings storage facilities, have one closed filtered (dry) stack tailings facility at the Alamo Dorado mine, one filtered (dry) stack tailings facility at the Escobal mine, which is currently suspended, and operate a water dam at the Dolores mine. Between 2014 and 2021 we completed dam safety reviews by the Engineers of Record for all our operating tailings facilities. The reviews found that the storage facilities design, construction, operation, maintenance, and monitoring at the tailings and water storage facilities are generally in line with the Canadian Dam Safety Guidelines, TSM Tailings Protocol, and known best practices. We continue to implement the TSM Tailings Protocol and Canadian Dam Safety Guidelines at all of our sites. The development and update of guidelines and standards, such the Canadian Dam Association Technical Bulletin on Tailings Dam Breach Analyses and the Global Industry Standard for Tailings Management, may change requirements, costs, and ultimate capacity of our tailings facilities. Design of all of our tailings and water storage facilities includes detailed consideration of stability under static and dynamic (pseudostatic) seismic conditions to ensure exceedance of relevant safety factors. The design criteria is defined based on the dam classification resulting from the dam breach analyses, and in 2021 the dam breach analyses for the Morococha and Huaron mines were updated. While we believe that appropriate steps have been taken to prevent safety incidents, there are inherent risks involved with tailings facilities, including among other things, seismic activity, particularly in seismically active regions such as Peru and Guatemala, and the ability of field investigations completed prior to construction to detect weak foundation materials. There can be no assurance that a dam or other tailings facility safety incident will not occur and such an incident could have a material adverse effect on our operations and profitability.

Responsibility for the operation of a water treatment plant for the Kingsmill Tunnel and the tailings mitigation program at the Huascacocha tailings facility, near the Morococha mine, have been apportioned by Water Management Consultants Inc. in environmental studies among the Morococha mine and the mining companies operating neighbouring projects. The continued development of the Toromocho project by MCP may alleviate some of our funding requirements. There can be no guarantee, however, that our proportionate share of the costs of such environmental projects will not change and this may affect cash flow from the Morococha mine operations.

In addition to increasing regulatory requirements and operational risks, claims from local communities and NGOs with respect to real or alleged environmental incidents are becoming more common and may impact operations. In the case of legitimate claims, such actions could result in injunctions, suspensions, or other work stoppages, including revocation of permits, or significant fines or awards of damages. In other cases, we may be subject to frivolous or exaggerated claims made in an effort to obstruct or prevent mining operations or to affect our reputation. We have and continue to face such alleged claims in Guatemala related to the Escobal mine, as well as in Peru.

Community Action

The success of our business is, in many ways, dependent on maintaining positive and respectful relationships with communities in the areas where we work. There is an increasing level of public concern relating to the perceived effects of mining activities, particularly on communities and peoples impacted by such activities. Communities and NGOs have become more vocal and active with respect to the impact of mining activities on local communities. Some communities and NGOs have taken actions that could have a material adverse effect on our operations, such as setting up road closures and commencing lawsuits. In certain circumstances, such actions might ultimately result in the cessation of mining activities and the revocation of permits and licenses. These actions relate not only to current activities, but are often in respect of past activities by prior owners of mining properties. The manner with which we respond to civil disturbances and other activities can give rise to additional risks where those responses are perceived to be inconsistent with international standards, including those with respect to human rights.

On June 18, 2014, seven plaintiffs filed an action against Tahoe in the British Columbia Supreme Court alleging battery and negligence regarding a security incident that occurred at the Escobal mine on April 27, 2013. The plaintiffs sought compensatory and punitive damages. In April 2017, three of the seven plaintiffs settled their claims against Tahoe. On July 30, 2019, we settled, on behalf of Tahoe, the remaining four plaintiffs' claims and the British Columbia Supreme Court action was dismissed.

Since June 7, 2017, a group of protesters near the town of Casillas has blocked the primary highway that connects Guatemala City to San Rafael Las Flores and the Escobal mine that we recently acquired. Operations were reduced between June 8 and June 19, 2017 to conserve fuel, and on July 5, 2017, were ultimately ceased following the Supreme Court's provisional decision to suspend the Escobal mining license while the case against the Guatemala MEM was heard on the merits. A second roadblock was initiated in 2018 near the community of Mataquescuintla. The attendance at both roadblocks reduced during 2020 and access to the mine has been less restricted. However, while we continue our efforts to regain trust and repair relationships, there is no guarantee that a positive resolution will be reached or that the roadblocks will be permanently removed.

Artisanal, or informal, mining is associated with a number of negative impacts, including environmental degradation, human rights abuse and funding of conflict. Additionally, effective local government administration is often lacking in the locations where these miners operate informally or illegally. These activities are largely unregulated and work conditions are often unsafe and present health risks to the artisanal miners and local communities, which while unrelated to our operations, may have a material impact on them. Informal miners are active on land adjacent to our Shahuindo operation. These miners, represented by the Asociación de Mineral Artesanal San Blas ("AMASBA"), are in dialogue with the Peruvian government to formalize their operations. We support formalization and are collaborating with the government, local authorities and AMASBA in this regard.

Pan American is continuing with the implementation of TSM, a program designed to enhance our community engagement processes, drive world-class environmental practices and reinforce our commitment to the safety and health of our employees and surrounding communities. As part of TSM, we have implemented response mechanisms which help us manage our social risks by better understanding and responding to community questions or concerns around the perceived or actual impacts of our activities. While we are committed to operating in a responsible manner, there is no assurance that our efforts will be successful at mitigating adverse impacts to our operations, and we may suffer material consequences to our business, including among other things, delays and closures, increased costs, and significant reputational damage.

From time to time, individuals or communities may allege that our activities have impacted or are impacting their human rights. For example, we are currently in discussions with certain individuals regarding a 2015 relocation of worker housing at our La Colorada project. This is being done with the assistance of external relocation consultants and under the observations of the Office of the United Nations High Commissioner on Human Rights in Mexico.

In Canada, recent jurisprudence has permitted foreign claimants to bring legal actions in relation to alleged human rights violations and tort claims which may have occurred in their home country. This includes the adoption of international customary law principles as actionable torts in Canada. In addition, international bodies, such as the Inter-American Commission and the Inter-American Court of Human Rights, may adopt precautionary measures or make orders for member states in respect of human rights violations that could materially impact our operations. In 2019 we established a Global Human Rights Policy, which sets out our commitment to respect human rights. We also appointed a human rights officer. To align with international best practices, we have conducted a gap assessment of our security practices against the requirements of the Voluntary Principles on Security and Human Rights and UNICEF's Child Rights and Security Checklist at our three operations with armed security forces: La Colorada and Dolores in Mexico, and Escobal in Guatemala. As part of our commitment to driving global sustainable development and contributing to the United Nations Sustainable Development Goals, we became signatories to the United Nations Global Compact in July 2020. As a signatory, we will annually report our progress beginning in 2021 on embedding the United Nations Global Compact Principles into business operations. These initiatives were designed, in part, to further reduce the risks of alleged human rights violations. However, there is no assurance that claims of human rights violations will not be asserted against us and we may suffer material consequences to our business, including among other things, damages awards, delays and closures, increased costs, and significant reputational damage.

Developments Regarding Indigenous Peoples

Some of our operations are near areas presently or previously inhabited or used by Indigenous peoples, or have communities nearby. There are many national and international laws, regulations, conventions, codes and other instruments dealing with the rights of Indigenous peoples that impose obligations on governments and entities. Many of these are complex and interwoven in application, and are integrated and applied differently by governments, communities, Indigenous peoples, and other interest groups. These may include a mandate that government consult with Indigenous communities surrounding our projects and mines regarding actions affecting local stakeholders, prior to granting us mining rights, permits or approvals. Applicable conventions, such as the ILO Convention 169 which has been ratified by Argentina, Peru and Guatemala, is an example of such an international convention and one that is presently impacting our operations in Guatemala where the Escobal mine has been suspended pending completion of an ILO 169 consultation process.

The United Nations Declaration on the Rights of Indigenous Peoples ("UNDRIP") was negotiated over a 24-year period with Indigenous peoples, member states and UN experts and was adopted by the UN General Assembly in September 2007. Canada officially endorsed UNDRIP in 2016 and in June 2021, the *United Nations Declaration on the Rights of Indigenous Peoples Act* was enacted into law in Canada to align and harmonize Canadian laws with UNDRIP. The substantive impact of UNDRIP on each member states' obligations to Indigenous peoples, including in Canada, remains uncertain, particularly with respect to the principle of free, prior and informed consent. At minimum, UNDRIP and the UNDRIP Act are likely to result in more robust consultation processes with potentially affected Indigenous peoples where projects trigger their application. Such requirements under UNDRIP and the associated application under Canadian law could impact our operations and our ability to develop new operations.

In Canada, our Timmins West and Bell Creek operations engaged in consultation processes with local First Nations communities, and Lake Shore is a party to IBAs with certain local First Nation communities which outlines a framework for the ongoing relationship between the parties, including with respect to consultation.

New or amended laws, regulations and conventions respecting the rights of Indigenous peoples, including with respect to the acquisition and use of lands, may alter decades old arrangements or agreements made by prior owners of our mines and properties, or even those made by us in more recent years. There can be no guarantee that we have entered into all agreements with Indigenous peoples in accordance with the laws and international standards and norms governing such relationships or that future laws and actions will not have a material adverse effect on our rights or ability to explore or mine, or on our financial position, cash flow, and results of operations. Furthermore, it is not uncommon for Indigenous peoples to challenge agreements or arrangements previously entered into for various reasons. Public opposition, including opposition by NGOs, to mining activities has also increased in recent years, in part due to the perceived effects of those activities on local communities and on Indigenous peoples. There has been an increase in resort to strategic litigation supported by NGOs and other interest groups in reference to laws, regulations and conventions respecting the rights of Indigenous peoples, which if targeted at our operations, could have a material impact on the future operations of our mines.

If we cannot maintain an agreement or positive relationship with Indigenous peoples in respect of our operations, there may be significant disruptions in our operations and activities, we may be subject to legal or administrative proceedings, and we may be precluded from operating, or from continuing to operate, in such areas. There could also be significant harm to our reputation. The risks associated with operating or conducting activities in or near areas presently or previously inhabited by Indigenous peoples could further impact our ability to acquire or advance development projects and complete, or realize benefits from, future acquisitions.

COVID-19 and Other Pandemics

Since the outbreak of the coronavirus (COVID-19) in late 2019, it has spread into areas where we have operations and where our offices are located. In 2020, government efforts to curtail the spread of COVID-19 resulted in the temporary suspensions of our operations in Mexico, Peru, Argentina and Bolivia, and we have reduced throughput at our operations in order to enhance physical distancing and protect our personnel and the community. The spread of COVID-19 has impacted our employees and contractors, not only as it relates to potential health concerns, but also in terms of limitations on movement, availability of food and other goods, and personal well-being, among others. Our suppliers and service providers have also been impacted.

While COVID-19 has already had significant, direct impacts on our operations, our business, our workforce, and our production, the extent to which COVID-19 will continue to impact our operations will depend on future developments which are highly uncertain and cannot be predicted with confidence. These future developments include, but are not limited to, the duration of any outbreak, new information that may emerge concerning the severity of COVID-19, including variants of the disease, and the actions taken to contain COVID-19 or treat it. The impact of governmental restrictions and health and safety protocols could improve or worsen relative to our assumptions, depending on how each jurisdiction manages potential outbreaks of COVID-19, the development and adequate supply of vaccines, and the effectiveness of such vaccines. We assume operations will continue to be impacted by comprehensive COVID-19 protocols in 2022, which would increase costs and restrict throughput levels, especially at our underground mines. Our ability to conduct exploration and development programs was also impacted in 2021 due to COVID-related restrictions, protocols and travel restrictions, and we anticipate that this impact will also be felt in 2022. Our ability to continue with our operations and activities, or to successfully maintain our operations on care and maintenance if so required, or to restart or ramp-up any such operations efficiently or economically, or at all, is unknown.

Moreover, the continued presence of, or spread, of COVID-19, and any future emergence and spread of COVID-19 mutations or other pathogens, globally would likely have material adverse effect on both global and regional economies, including those in which we operate, as we have seen already. Such effects would not only affect our business and results of operations, but also the operations of our suppliers, contractors and service providers, including smelter and refining service providers, and the demand for our production. COVID-19 could also negatively impact stock markets, including the trading price of our shares, adversely impact our ability to raise capital, cause continued interest rate volatility and movements that could make obtaining financing or refinancing our debt obligations more challenging or more expensive (if such financing is available at all), and result in any operations affected by coronavirus becoming subject to quarantine or shut down. Inflationary pressures relating to COVID-19 global financial support measures and current supply chain challenges are also having both direct and indirect impacts on our costs to operate, which could have a material impact on our financial results. Any of these developments, and others, could have a material adverse effect on our business and results of operations.

Exploration and Development Risks

The long-term operation of our business and its profitability is dependent, in part, on the cost and success of our exploration and development programs. Mineral exploration and development is highly speculative and involves significant risks. Few properties that are explored are ultimately developed into producing mines. There is no assurance that our mineral exploration and development programs will result in discoveries of economic quantities of mineralization that are necessary for a property to be brought into commercial production. The commercial viability of a mineral deposit, once discovered, is also dependent upon a number of factors, including, among other things, (i) the particular attributes of the deposit, such as size, grade, and metallurgy; (ii) interpretation of geological data; (iii) feasibility studies; (iv) proximity to infrastructure and availability of labour, power, and water; (v) metal prices; (vi) foreign currency exchange rates; and (vii) government regulations, including regulations relating to development, taxation, royalties, import and export, and environmental protection.

The actual operating results of our projects may differ materially from those we had anticipated due to these and other factors, many of which are beyond our control. There can be no assurance that our acquisition, exploration, and development programs will yield new mineral reserves to replace or expand current mineral reserves, or that they will result in additional production. Unsuccessful exploration or development programs could have a material adverse effect on our operations and profitability.

Imprecision in Mineral Reserve and Mineral Resource Estimates

Our mineral reserves and mineral resources are estimates. No assurances can be given that the estimated levels of mineral reserves or mineral resources are accurate, or that the estimates will result in material being produced or processed profitably. These estimates are expressions of judgment based on knowledge and experience, and are based on assumptions and interpretation of available geological, geochemical and operational data and information. Valid estimates made at a given time may significantly change when new information becomes available. It may take many years from the initial phase of drilling before production occurs, and during that time, the economic feasibility of our projects may change and may ultimately prove unreliable.

Fluctuations in the market price of silver, gold and other metals, as well as increased capital or production costs or reduced recovery rates, may render our mineral reserves uneconomic to develop for a particular project or result in a reduction of mineral reserves. No assurances can be given that any mineral resource estimate will ultimately be reclassified as proven or probable mineral reserves or that mineralization can be mined or processed profitably. Inferred mineral resources have a great amount of uncertainty as to their existence and as to their economic and legal feasibility. Mineral resource estimates may also be recalculated based on actual production experience. The evaluation of mineral reserves or mineral resources is influenced by economic and technological factors, which may change over time. If our mineral reserve or mineral resource figures are reduced in the future, this could have an adverse impact on Pan American's future cash flows, earnings, results of operations, and financial condition.

This AIF and the documents incorporated by reference herein have been prepared and disclosed in accordance with the requirements of Canadian securities laws that differ from the requirements of United States securities laws. Please refer to the section, "Cautionary Note to U.S. Investors Concerning Estimates of Mineral Reserves and Mineral Resources" on page 7.

Production and Cost Estimates

We prepare estimates of future production and future production costs for our operations. No assurance can be given that production and cost estimates will be achieved. These production and cost estimates are based on many factors and assumptions, including: the accuracy of mineral reserve estimates; ground conditions and physical characteristics of ores, such as hardness and the presence or absence of particular metallurgical characteristics; equipment and mechanical availability; labour availability and productivity; access to the mine; facilities and infrastructure; sufficient materials and supplies on hand; and the accuracy of estimated rates and costs of mining and processing, including the cost of human and physical resources required to carry out our activities. Failure to achieve production or cost estimates, or increases in costs, could have an adverse impact on our future cash flows, earnings, results of operations, and financial condition.

Actual production and costs may vary from estimates for a variety of reasons, including actual ore mined varying from estimates of grade, tonnage, dilution and metallurgical and other characteristics; short-term operating factors relating to the mineral reserves**,** such as the need for sequential development of orebodies and the processing of new or different ore grades; and risks and hazards associated with mining. In addition, there can be no assurance that silver recoveries or other metal recoveries in small scale laboratory tests will be duplicated in larger scale tests under on-site conditions or during production, or that the existing known and experienced recoveries will continue. Costs of production may also be affected by a variety of factors, including changing stripping ratios, ore grade metallurgy, labour costs and productivity, costs of supplies and services (such as, for example, fuel and power), general inflationary pressures, and currency exchange rates. Failure to achieve production estimates could have an adverse impact on our future cash flows, earnings, results of operations, and financial condition.

Infrastructure

Mining, processing, development, and exploration activities depend, to one degree or another, on adequate infrastructure. Reliable roads, bridges, power, and water supply are important determinants for capital and operating costs, and sufficient and functional processing equipment and facilities are critical to our operations. The lack of availability or the delay in the availability of any one or more of these items could prevent or delay the development of our projects, result in the failure to achieve the anticipated production volume, and increase the construction costs and ongoing operating costs associated with our projects and operations. Similarly, continued improvements or replacement of existing infrastructure may require high capital investments and involve significant delays. In addition, unusual weather phenomena, sabotage, government, or other interference in the maintenance or provision of such infrastructure could adversely affect our operations and profitability.

Replacement of Reserves

The La Colorada, Dolores, Huaron, Morococha, Shahuindo, La Arena, Timmins West, Bell Creek, San Vicente and Manantial Espejo (including COSE and Joaquin) mines accounted for all of our production in 2021. Current life-of-mine plans provide for a defined production life for mining at each of our mines. For example, active mining at the Alamo Dorado mine ended in 2017 and the mine was transitioned to a reclamation phase. There is no assurance that any of our green field or near mine exploration projects will be successful, and substantial expenditures are required to establish mineral reserves. If our mineral reserves are not replaced either by the development or discovery of additional mineral reserves and/or extension of the life-of-mine at our current operating mines or through the acquisition or development of additional producing mines, this could have an adverse impact on our future cash flows, earnings, results of operations, and financial condition, and this may be compounded by requirements to expend funds for reclamation and decommissioning.

Trading Activities and Credit Risk

The zinc, lead, and copper concentrates produced by us are sold through long-term supply arrangements to metal traders or integrated mining and smelting companies. The terms of the concentrate contracts may require us to deliver concentrate that has a value greater than the payment received at the time of delivery, thereby introducing us to credit risk of the buyers of our concentrates. Should any of these counterparties not honour supply arrangements, or should any of them become insolvent, we may incur losses for products already shipped and be forced to sell our concentrates in the spot market or we may not have a market for our concentrates and therefore our future operating results may be materially adversely impacted.

At December 31, 2021, we had receivable balances associated with buyers of its concentrates of $40.0 million (2020 - $35.1 million) and receivable balances associated with buyers of its doré of $nil (2020 - $nil million). The vast majority of our concentrate is sold to five well-known concentrate buyers.

Doré production is refined under long term agreements with fixed refining terms at five separate refineries worldwide. We generally retain the risk and title to the precious metals throughout the process of refining and therefore are exposed to the risk that the refineries will not be able to perform in accordance with the refining contract and that we may not be able to fully recover our precious metals in such circumstances. For example, in November 2018, Republic, a refinery used by us, filed for bankruptcy. At the time of the bankruptcy, Republic had possession of approximately $4.9 million of our metal and we are pursuing a claim to collect damages. At December 31, 2021, we had approximately $52.3 million (2020 - $61.8 million) of value contained in precious metal inventory at refineries. We maintain insurance coverage against the loss of precious metals at our mine sites and in-transit to refineries.

Refined silver and gold is sold in the spot market to various bullion traders and banks. Credit risk may arise from these activities if we are not paid for metal at the time it is delivered, as required by spot sale contracts.

We maintain trading facilities with several banks and bullion dealers for the purposes of transacting our trading activities. None of these facilities are subject to margin arrangements. Our trading activities can expose us to our counterparties' credit risk to the extent that our trading positions have a positive mark-to-market value.

Supplier advances for products and services yet to be provided are a common practice in some jurisdictions in which we operate. These advances represent a credit risk to us to the extent that suppliers do not deliver products or perform services as expected. As at December 31, 2021, we had made $11.2 million of supplier advances (2020 - $8.2 million), which are reflected in "Trade and other receivables" on Pan American's balance sheet.

Management constantly monitors and assesses the credit risk resulting from our concentrate sales, refining arrangements, and commodity contracts. Furthermore, management carefully considers credit risk when allocating prospective sales and refining business to counterparties. In making allocation decisions, management attempts to avoid unacceptable concentration of credit risk to any single counterparty.

From time to time, we may invest in equity securities of other companies. Just as investing in Pan American is inherent with risks such as those set out in this AIF, by investing in other companies we will be exposed to the risks associated with owning equity securities and those risks inherent in the investee companies.

Taxation Risks

In addition to the risks relating to taxation discussed under the heading "Risks Related to Our Business – Governmental Regulation", we are also exposed to other tax related risks. In assessing the probability of realizing income tax assets recognized, we make estimates related to expectations of future taxable income, applicable tax planning opportunities, expected timing of reversals of existing temporary differences and the likelihood that tax positions taken will be sustained upon examination by applicable tax authorities. In making its assessments, we give additional weight to positive and negative evidence that can be objectively verified. Estimates of future taxable income are based on forecasted cash flows from operations and the application of existing tax laws in each jurisdiction. We consider relevant tax planning opportunities that are within our control, are feasible, and within management's ability to implement. Examination by applicable tax authorities is supported based on individual facts and circumstances of the relevant tax position examined in light of all available evidence. Where applicable tax laws and regulations are either unclear or subject to ongoing varying interpretations, it is reasonably possible that changes in these estimates can occur that materially affect the amounts of income tax assets recognized. Also, future changes in tax laws could limit us from realizing the tax benefits from the deferred tax assets. We reassess unrecognized income tax assets at each reporting period.

Exchange Rate Risk

We report our financial statements in USD; however, we operate in jurisdictions that utilize other currencies. As a consequence, the financial results of our operations, as reported in USD, are subject to changes in the value of the USD relative to local currencies. Since our sales are denominated in USD and a portion of our operating costs and capital spending are in local currencies, we are negatively impacted by strengthening local currencies relative to the USD and positively impacted by the inverse.

From time to time, we mitigate part of this currency exposure by accumulating local currencies, entering into contracts designed to fix or limit our exposure to changes in the value of local currencies relative to the USD, or assuming liability positions to offset financial assets subject to currency risk. Pan American held cash and short-term investments of $60.5 million in CAD, $1.2 million in MXN, $8.6 million in PEN, $12.5 million in ARS, $8.4 million in BOB, and $0.2 million in QTZ as at December 31, 2021. As at December 31, 2021, Pan American had outstanding positions on $36.0 million in foreign currency exposure of MXN purchases, $16.8 million of PEN purchases, and $48.0 million of CAD purchases. The MXN positions had weighted average USD put and call exchange rates of $20.50 and $26.08, respectively, expiring between January 2022 and December 2022. The PEN positions had a weighted average USD fixed exchange rate of $4.13, expiring between January 2022 and December 2022. The CAD positions had weighted average USD put and call exchange rates of $1.26 and $1.32, respectively, expiring between January 2022 and December 2022.

For the year ended December 31, 2021, we recorded losses of $0.2 million (2020 - gains of $1.6 million), losses of $3.7 million (2020 - losses of $2.2 million), and gains of $0.9 million (2020 - losses of $0.6 million) on MXN, PEN, and CAD derivative contracts, respectively.

Our balance sheet contains various monetary assets and liabilities, some of which are denominated in foreign currencies. Accounting convention dictates that these balances are translated at the end of each period, with resulting adjustments being reflected as foreign exchange gains or losses on our income statement.

In addition to the foregoing, governmental restrictions and controls relating to exchange rates also impact our operations. In Argentina, for example, the government has at times established official exchanges rates that were significantly different than the unofficial exchange rates more readily utilized locally to determine prices and value. Our investments in Argentina are primarily funded from outside of the country, and therefore conversion of foreign currencies, like USD, at the official exchange rate has had the effect of reducing purchasing power and substantially increasing relative costs in an already high inflationary market. Maintaining monetary assets in ARS also exposes us to the risks of ARS devaluation and high domestic inflation.

Please refer to the 2021 MD&A for a detailed sensitivity analysis of the effect of changes in the exchange rates of certain currencies against the USD on anticipated cost of sales for 2022.

Liquidity Risk

Liquidity risk is the risk that we will not be able to meet our financial obligations as they come due. The volatility of the metals markets can impact our ability to forecast cash flow from operations. We must maintain sufficient liquidity to meet our short-term business requirements, taking into account our anticipated cash flows from operations, our holdings of cash and cash equivalents, and committed loan facilities.

We manage our liquidity risk by continuously monitoring forecasted and actual cash flows. We have in place a rigorous reporting, planning and budgeting process to help determine the funds required to support our normal operating requirements on an ongoing basis and our expansion plans. We continually evaluate and review capital and operating expenditures in order to identify, decrease, and limit all non-essential expenditures.

We are required to use a portion of our cash flow to service principal and interest on debt, which will limit the cash flow available for other business opportunities. We also maintain and enter into intercompany credit arrangements with our subsidiaries in the normal course. Our ability to make scheduled principal payments, pay interest on or refinance our indebtedness depends on our future performance, our cash flows, and applicable interest rates, which directly impacts our costs of financeing, and which are subject to economic, financial, competitive and other factors beyond our control. Unexpected delays in production, the suspension of our mining licenses, or other operational problems could impact our ability to service the debt and make necessary capital expenditures when the debt becomes due. If we are unable to generate such cash flow to timely repay any debt outstanding, we may be required to adopt one or more alternatives, such as selling assets, restructuring debt or obtaining additional equity capital on terms that may be onerous or highly dilutive. Our ability to refinance our indebtedness will depend on the capital markets, applicable interest rates, and our financial condition at such time. We may not be able to engage in any of these activities or engage in these activities on desirable terms, which could result in a default on our debt obligations.

Limited Supplies and Supply Chain Disruptions

Our operations depend on an uninterrupted supply of reagents (including cyanide at some operations), production inputs, and other supplies and resources such as skilled personnel. Supply may be interrupted due to a shortage or the scarce nature of inputs, especially with regard to chemical reagents. Supply might also be interrupted due to transportation and logistics associated with the remote location of some of our operations, and 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. Any interruptions to the procurement and supply of reagents, production inputs and other supplies, 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.

Competitive Conditions

The mining industry is very competitive, particularly with respect to properties that produce, or are capable of producing, silver, gold, and other metals. Mines have limited lives and, as a result, Pan American continually seeks to replace and expand mineral reserves through the acquisition of new properties. In addition, there is a limited supply of desirable mineral lands available in areas where we would consider conducting exploration and/or production activities. Because we face strong competition for new properties from other mining companies, some of which have greater financial resources than we do, we may be unable to acquire attractive new mining properties on terms that we consider acceptable.

Competition for resources is intense, particularly affecting the availability of manpower, drill rigs, mining equipment, and production equipment. Competition in the mining business for limited sources of capital could adversely impact our ability to acquire and develop suitable silver mines, silver developmental projects, silver producing companies, or properties having significant exploration potential. As a result, there can be no assurance that our acquisition and exploration programs will yield new mineral reserves to replace or expand current mineral reserves, or that we will able to maintain production levels in the future.

Our competitive position is largely determined by our costs compared to other producers throughout the world and our ability to maintain our financial integrity through the lows of the metal price cycles. Costs are governed to a large extent by the location, grade, and nature of mineral reserves as well as by operating and management skills. In contrast with diversified mining companies, we focus on silver production, development, and exploration, and are therefore subject to unique competitive advantages and disadvantages related to the price of silver and to a lesser extent, the price of gold and base metal by-products. If silver prices substantially increase, we will be in a relatively stronger competitive position than diversified mining companies that produce, develop, and explore for other minerals in addition to silver. Conversely, if silver prices substantially decrease, we may be at a competitive disadvantage to diversified mining companies.

Employee Recruitment, Retention and Human Error

Recruiting and retaining qualified personnel is critical to our success. We are dependent on the services of key executives including Pan American's President and Chief Executive Officer and other highly skilled and experienced executives and personnel focused on managing our interests. The number of persons skilled in acquisition, exploration, and development of mining properties is limited and competition for such persons is intense. As our business activity grows, we will require additional key financial, administrative, and mining personnel as well as additional operations staff. In addition, as a result of the implementation of COVID 19 related restrictions, technology, and the growth in work from home or hybrid employment arrangments, employees have become more mobile and available to a wider pool of employers and industries, presenting further challenges in retaining key personnel. There can be no assurance that we will be successful in attracting, training, and retaining qualified personnel as competition for persons with these skill sets increases. If we are not successful in attracting, training, and retaining qualified personnel, the efficiency of our operations could be impaired, which could have an adverse impact on Pan American's future cash flows, earnings, results of operations, and financial condition.

Even when efforts to attract and retain qualified personnel and consultants to manage our interests are successful, people are fallible and human error and mistakes could result in significant uninsured losses to us. These could include, but are not limited to, loss or forfeiture of mineral claims or other assets for non-payment of fees or taxes, erroneous or incomplete filings or non-fulfillment of other obligations, significant tax liabilities in connection with any tax planning effort we might undertake or mistakes in interpretation and implementation of tax laws and practices, and legal claims for errors or mistakes by our personnel.

Employee Relations

Our employees and contractors are free to pursue collective bargaining and unions have been established at many of our operations. Although we have reached agreements with our various unions and place significant emphasis on maintaining positive relationships with the unions and employees, we have experienced labour strikes and work stoppages in the past. Should they occur, some labour strikes and work stoppages have the potential to materially affect our operations and thereby adversely impact our future cash flows, earnings, production, and financial conditions.

Economic Dependence

We have 25 customers that account for 100% of our concentrate and silver and gold sales revenue. We had 7 customers that accounted for 21%, 13%, 12%, 11%, 9%, 7%, and 7% of total sales in 2021. The loss of certain of these customers or curtailment of purchases by such customers could have a material adverse effect on our results of operations, financial condition, and cash flows.

General Economic Conditions

General economic conditions may adversely affect our growth, profitability and ability to obtain financing. Events in global financial markets in the past several years have had a profound impact on the global economy, particularly with the injection of monetary support and the massive increase in government debt in response to the COVID-19 pandemic since early 2020. Many industries, including the silver and gold mining industry, have been and continue to be impacted by these market conditions. Some of the key impacts of the current financial market turmoil include contraction in credit markets resulting in a widening of credit risk, inflation and projected interest rate increases, currency devaluations, high volatility in global equity, commodity, foreign exchange and precious metal markets and a lack of market confidence and 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 our growth, profitability and ability to obtain financing. A number of issues related to economic conditions could have a material adverse effect on our business, financial condition and results of operations, including:

- inflation, volatility and other pressures in credit markets could impact the cost and availability of financing and our overall liquidity;
- the volatility of silver, gold and other metal prices would impact our revenues, profits, losses and cash flow;
- recessionary pressures could adversely impact demand for our production;
- volatile energy, commodity and consumables prices and currency exchange rates could impact our production costs; and
- the devaluation and volatility of global stock markets could impact the valuation of our equity and other securities.

As noted, COVID-19 has had dramatic impacts on many countries and on the global economy. The ongoing efforts against the spread of COVID-19, including with respect to recent mutations, will likely continue to result in governmental restrictions that will impact economies around the world, reduce the availability of workforces, and drive up consumer costs for supplies and services. It is uncertain whether vaccines will be successful in combating the virus, and vaccines have not been made available or distributed adequately or equitably in some jurisdictions. The presence of COVID-19 and its continued spread will likely have ongoing negative impacts on our business and financial performance, and such impacts could be material.

Compliance

We are subject to complex laws and regulatory regimes that differ in the various jurisdictions in which we operate and are sometimes extra-jurisdictional in application. Ensuring that such laws and regulatory requirements are understood and followed by our personnel is difficult and we may inadvertently fail to comply with such laws and requirements or they may be contravened by our personnel. We have established programs, policies, controls, training, and monitoring to reduce and mitigate risks in certain areas, including anti-corruption compliance. In this respect, we have adopted a Global Code of Ethical Conduct and a Global Anti-Corruption Policy, developed a training program, implemented internal controls to identify potential risks, and taken other steps to reduce the risk of non-compliance with applicable anti-corruption laws, including in the United States and Canada. However, there is no guarantee such programs, policies, controls, training or monitoring will prevent violations of the law, particularly by individual employees or agents. Violations of such laws, particularly those relating to corruption, could lead to the imposition of substantial fines, penalties or other civil or criminal prosecution or sanctions, and could severely damage our reputation. Such fines, penalties, and sanctions, and any damage to our reputation, could have a material adverse effect on our business.

Climate Change

There is significant evidence of the effects of climate change on our planet and an intensifying focus on addressing these issues. We recognize that climate change is a global challenge that may have both favorable and adverse effects on our business in a range of possible ways. Mining and processing operations are energy intensive and result in a carbon footprint either directly or through the purchase of fossil-fuel based electricity. As such, we are impacted by current and emerging policy and regulation relating to greenhouse gas emission levels, energy efficiency, and reporting of climate-change related risks. While some of the costs associated with reducing emissions may be offset by increased energy efficiency, technological innovation, or the increased demand for our metals as part of technological innovations, the current regulatory trend may result in additional transition costs at some of our operations. Governments are introducing climate change legislation and treaties at the international, national, and local levels, and regulations relating to emission levels and energy efficiency are evolving and becoming more rigorous. Current laws and regulatory requirements are not consistent across the jurisdictions in which we operate, and regulatory uncertainty is likely to result in additional complexity and cost in our compliance efforts. Public perception of mining is, in some respects, negative and there is increasing pressure to curtail mining in many jurisdictions as a result, in part, of perceived adverse effects of mining on the environment and on local communities. Concerns around climate change may also affect the market price of our shares as institutional investors and others may divest interests in industries that are thought to have more environmental impacts. While we are committed to operating responsibly and reducing the negative effects of our operations on the environment, our ability to reduce emissions, energy and water usage by increasing efficiency and by adopting new innovation is constrained by technological advancement, operational factors and economics. Adoption of new technologies, the use of renewable energy, and infrastructure and operational changes necessary to reduce water usage may also increase our costs significantly. Concerns over climate change, and our ability to respond to regulatory requirements and societal pressures, may have significant impacts on our operations and on our reputation, and may even result in reduced demand for our products.

The physical risks of climate change could also adversely impact our operations. These risks include, among other things, extreme weather events, resource shortages, changes in rainfall and in storm patterns and intensities, water shortages, changing sea levels and extreme temperatures. Climate-related events such as mudslides, floods, droughts and fires can have significant impacts, directly and indirectly, on our operations and could result in damage to our facilities, disruptions in accessing our sites with labour and essential materials or in shipping products from our mines, risks to the safety and security of our personnel and to communities, shortages of required supplies such as fuel and chemicals, inability to source enough water to supply our operations, and the temporary or permanent cessation of one or more of our operations. There is no assurance that we will be able to anticipate, respond to, or manage the risks associated with physical climate change events and impacts, and this may result in material adverse consequences to our business and to our financial results.

Information and Cyber Security

The secure processing, maintenance and transmission of information and data is critical to our business. Furthermore, we and our third-party service providers collect and store sensitive data in the ordinary course of our business, including personal information of our employees, as well as proprietary and confidential business information relating to ourselves and in some cases, our customers, suppliers, investors and other stakeholders. With the increasing dependence and interdependence on electronic data communication and storage, including the use of cloud-based services and personal devices, we are exposed to evolving technological risks relating to this information and data. These risks include targeted attacks on our systems or on systems of third parties that we rely on, failure or non-availability of a key information technology systems, or a breach of security measures designed to protect our systems. While we employ security measures in respect of our information and data, including implementing systems to monitor and detect potential threats, the performance of periodic audits, and penetration testing, we cannot be certain that we will be successful in securing this information and data and there may be instances where we are exposed to malware, cyber-attacks or other unauthorized access or use of our information and data. Any data breach or other improper or unauthorized access or use of our information could have a material adverse effect on our business and could severely damage our reputation, compromise our network or systems and result in a loss or escape of sensitive information, a misappropriation of assets or incidents of fraud, disrupt our normal operations, and cause us to incur additional time and expense to remediate and improve our information systems. For example, in 2020, a silver concentrate customer, on the basis of a fraudulent email received referencing the concentrate delivery details from Bolivia and the precise payment amounts due, made payment for the concentrate shipment into an unknown bank account, impacting both the customer and payment to us. In addition, we could also be subject to legal and regulatory liability in connection with any such cyber-attack or breach, including potential breaches of laws relating to the protection of personal information.

Stakeholder Confidence

Our business and operations require us to develop and maintain strong and trusting relationships with key stakeholders, including local communities, Indigenous peoples, governments and other groups and institutions. Poor management of these relationships, inadequate attention to matters of importance to these stakeholders, and operating in a manner that is perceived as unethical or damaging to the environment or to people could result in an erosion of trust and confidence in us and have negative impacts on our business and our financial and operating results. It can also affect our reputation more broadly, including with shareholders, government bodies, NGOs and other interest groups, the media, and the general public. A loss of trust and confidence and negative public opinion could impact our ability to obtain permits, licenses and other approvals, impede our efforts to find growth opportunities, materially increase our costs and expenses, result in legal claims and challenges, decrease the price of our shares and create negative market sentiment, all of which could have material impacts on our business and profitability. Since 2020, the importance of ESG performance requirements, standards and reporting has increased significantly across all stakeholder groups. While the Company has in place numerous programs and commitments with respect to ESG, there is no assurance that the Company will be able to adequately address all ESG pressures and potential requirements to maintain stakeholder confidence.

Acquisitions and Integration

An element of our business strategy is to make selected acquisitions. For example, we completed the acquisition of Tahoe on February 22, 2019, and spent significant time and effort on integrating the Tahoe operations and workforce during the remainder of 2019 and into 2020. Over our history, we have also completed a number of other important acquisitions, including: the La Colorada mine in 1998; Corner Bay (the Alamo Dorado mine) in 2003; Argentum (the Morococha mine) in 2004; the remaining 50% interest in the Manantial Espejo project in 2006; an additional 40% interest in PASB in respect of the San Vicente mine in May 2007; Aquiline (the Navidad property) in 2010; Minefinders (the Dolores mine) in 2012; and in 2017, the Joaquin and COSE properties in Argentina. We expect to continue to evaluate acquisition opportunities on a regular basis and intend to pursue those opportunities that we believe are in our long-term best interests. The success of our acquisitions will depend upon a number of factors, including the adequacy, completeness, analysis and interpretation of information obtained during due diligence, our ability to effectively manage the integration and operations of entities once we complete an acquisition, and our ability, in some cases, to make improvements or advancements that we anticipated. The process of managing acquired businesses may involve unforeseen difficulties and risks, and may require a disproportionate amount of management resources and expenditures. There can be no assurance that we will be able to successfully manage the integration and operations of businesses we acquire, or that the anticipated benefits of our acquisitions will be realized.

In addition to acquisitions, we periodically enter into joint venture, option and similar arrangements which, among other things, also require an investment in time and capital, and are subject to risks associated with due diligence matters. We also occasionally make investments in other mining companies, such as our investments in Maverix and in New Pacific Metals Corp. Such arrangements may depend, in part, on other parties and may be speculative in nature. There is no guarantee that any of these arrangements will be successful or that we will recover any capital or other investments made in relation thereto.

Internal Control over Financial Reporting

Management of Pan American is responsible for establishing and maintaining an adequate system of internal control, including internal controls over financial reporting. Internal control over financial reporting is a process designed by, or under the supervision of, the President and Chief Executive Officer and the Chief Financial Officer and effected by the Board of Directors, management and other personnel to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with IFRS. Management assesses the effectiveness of our internal control over financial reporting based on the criteria set forth in Internal Control – Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission. We also engage an independent registered public accounting firm to audit and provide independent opinions on the effectiveness of our internal control over financial reporting.

We may fail to achieve and maintain the adequacy of our internal control over financial reporting as such standards are modified, supplemented, or amended from time to time, and we may not be able to ensure that we can conclude on an ongoing basis that we have effective internal control over financial reporting. Also, projections of any evaluation of the effectiveness of internal control over financial reporting to future periods are subject to the risk that the controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate. No evaluation can provide complete assurance that our internal control over financial reporting will prevent or detect misstatements on a timely basis, or detect or uncover all failures of persons employed by us to disclose material information otherwise required to be reported. The effectiveness of our control and procedures could also be limited by simple errors or faulty judgments. In addition, as we continue to expand, the challenges involved in implementing appropriate internal control over financial reporting will increase and will require that we continue to improve our internal control over financial reporting.

Our failure to satisfy these requirements on a timely basis could result in the loss of investor confidence in the reliability of our financial statements, which in turn could harm our business and negatively impact the trading price of our shares or market value of our other securities. In addition, any failure to implement required new or improved controls, or difficulties encountered in their implementation, could harm our operating results or cause us to fail to meet our reporting obligations. There can be no assurance that we will be able to remediate material weaknesses, if any, identified in future periods, or maintain all of the controls necessary for continued compliance, and there can be no assurance that we will be able to retain sufficient skilled finance and accounting personnel, especially in light of the increased demand for such personnel among publicly traded companies. Future acquisitions of companies may provide us with challenges in implementing the required processes, procedures and controls in our acquired operations. Acquired companies may not have disclosure controls and procedures or internal control over financial reporting that are as thorough or effective as those required by securities laws currently applicable to us.

Claims and Legal Proceedings

We are subject to various claims and legal proceedings covering a wide range of matters that arise in the ordinary course of business activities.

Many of these claims are from current or ex-employees, or employees of former or current owners of our operations such as the Quiruvilca-related claims in Peru, which could in the aggregate, be of significant value, and include alleged improper dismissals, workplace illnesses, such as silicosis, and claims for additional profit-sharing and bonuses in prior years.

We may also become subject to class action lawsuits. For example, in mid-2017, Tahoe, which was acquired by us in late February 2019, and certain of its former directors and officers became the subject of three purported class action lawsuits filed in the United States that center primarily around alleged misrepresentations. These U.S. class action lawsuits were later consolidated into one class action suit that is ongoing in Nevada. In October 2018, Tahoe learned that a similar proposed class action lawsuit had been filed against Tahoe and its former chief executive officer in the Superior Court of Ontario. These lawsuits seek significant damages. We have disputed the allegations made in these suits, however the outcomes are not determinable at this time.

We may also be subject to proceedings in our commercial relationships. If we are unsuccessful in our defense of any such claims, we may be subject to significant losses.

Furthermore, we are in some cases the subject of claims by local communities, Indigenous groups or private land owners relating to land and mineral rights, or environmental or social damage, and such claimants may seek sizeable monetary damages against us and/or the return of surface or mineral rights or revocation of permits and licenses that are valuable to us and which may impact our operations and profitability if lost.

Each of these matters is subject to various uncertainties and it is possible that some of these matters may be resolved unfavourably against us. We establish provisions for matters that are probable and can be reasonably estimated. We also carry liability insurance coverage, however such insurance does not cover all risks to which we might be exposed and in other cases, may only partially cover losses incurred by us. In addition, we may be involved in disputes with other parties in the future that may result in litigation, which may result in a material adverse effect on our financial position, cash flow and results of operations.

DIVIDENDS

On February 15, 2010, Pan American's Board of Directors declared its first cash dividend, and has paid a quarterly dividend since that time. Over the past three years, we have declared the following dividends:

Year	Declaration Date	Amount per Common Share
2021	• November 9 • August 10 • May 12 • February 17	• $0.10 • $0.10 • $0.07 • $0.07
2020	• November 4 • August 5 • May 6 • February 19	• $0.07 • $0.05 • $0.05 • $0.05
2019	• November 6 • August 7 • May 8 • February 20	• $0.035 • $0.035 • $0.035 • $0.035

Each of the foregoing dividends was designated to be an eligible dividend for the purposes of the *Income Tax Act* (Canada). Beginning in 2022, we have established a dividend policy to enhance shareholder return when our liquidity position is strong. The quarterly dividend will have a base of $0.10 per common share and will be adjusted variably depending on our net cash position (cash and cash equivalents plus short term investments (other than equity securities) minus total debt) on the balance sheet for the previous quarter, as illustrated in the following table:

Net Cash (Millions)	Base Dividend Per Quarter (Per Common Share)	Variable Dividend Per Quarter (Per Common Share)	Total Dividend Per Quarter (Per Common Share)
Less than $100	$0.10	$0.00	$0.10
$100 to less than $200	$0.10	$0.01	$0.11
$200 to less than $300	$0.10	$0.02	$0.12
$300 to less than $400	$0.10	$0.06	$0.16
$400 or greater	$0.10	$0.08	$0.18

Notes:

Net cash and total debt are non-GAAP measures and do not have standardized meanings prescribed by IFRS. For additional information, please see "Non-GAAP Measures" on page 2 of this AIF.

The Board of Directors may, in the future, modify our dividend policy in its discretion. The Board will consider a variety of factors when making its dividend decisions, including availability of and sources of cash, future anticipated funding needs, general and regional economic conditions, and expectations with respect to operational matters such as anticipated metals production and metals prices.

MARKET FOR SECURITIES

Pan American's Common Shares are listed and posted for trading on the Toronto Stock Exchange and The Nasdaq Stock Market ("Nasdaq") under the symbol "PAAS". The majority of trading of our Common Shares takes place on Nasdaq. The following table outlines the closing share price trading range and volume of shares traded by month in 2021:

Toronto Stock Exchange (CAD$)				Nasdaq Stock Market (USD$)			
Month	**High**	**Low**	**Volume**	**Month**	**High**	**Low**	**Volume**
January	$ 48.53	$ 36.00	12,923,400	January	$ 38.30	$ 28.12	74,492,935
February	$ 46.79	$ 40.24	10,967,400	February	$ 36.78	$ 31.50	80,654,564
March	$ 42.82	$ 37.04	9,911,200	March	$ 34.49	$ 29.34	60,055,328
April	$ 43.31	$ 39.08	8,348,000	April	$ 34.74	$ 31.33	37,741,539
May	$ 42.50	$ 36.27	11,388,800	May	$ 34.99	$ 29.82	59,170,149
June	$ 40.69	$ 34.73	11,914,900	June	$ 33.73	$ 28.15	56,588,633
July	$ 35.91	$ 33.30	6,649,500	July	$ 28.84	$ 26.19	38,760,998
August	$ 35.04	$ 30.66	8,899,100	August	$ 27.94	$ 23.93	41,401,648
September	$ 33.32	$ 29.29	8,799,000	September	$ 26.62	$ 22.96	37,533,104
October	$ 32.89	$ 29.00	8,274,000	October	$ 26.53	$ 23.03	35,267,666
November	$ 35.04	$ 31.33	9,731,300	November	$ 27.79	$ 25.13	37,557,463
December	$ 32.14	$ 28.33	8,600,700	December	$ 25.17	$ 22.09	47,064,834

DIRECTORS AND EXECUTIVE OFFICERS

The names of our directors and executive officers as at December 31, 2021, are set out below, as well as their municipalities of residence, positions with Pan American, and principal occupations for the past five years:

Name and Municipality of Residence	Position with Pan American	Principal Occupation During the Past Five Years
MICHAEL CARROLL[1,2] Walnut Creek, California, U.S.A.	Director since January 1, 2011	Corporate Director
NEIL DE GELDER, Q.C.[1,2,3] Vancouver, B.C. Canada	Director since July 3, 2012	Corporate Director; Exec. VP of Stern Partners, a private diversified investment firm, prior to January 1, 2021
CHARLES JEANNES[2,4,5] Reno, Nevada U.S.A.	Director since February 22, 2019	Corporate Director
JENNIFER MAKI[1,5] Toronto, ON Canada	Director since May 12, 2021	Corporate Director
WALTER SEGSWORTH[2, 3,4] West Vancouver, B.C. Canada	Director since May 12, 2009	Corporate Director

Name and Municipality of Residence	Position with Pan American	Principal Occupation During the Past Five Years
KATHLEEN SENDALL[4,5] Calgary, Alberta Canada	Director since December 16, 2020	Corporate Director
MICHAEL STEINMANN[4,5] North Vancouver, B.C. Canada	Director (since January 1, 2016) and President and CEO	CEO of Pan American since January 1, 2016; President since February 18, 2015; prior to that, other senior management roles with Pan American since 2004
GILLIAN WINCKLER[3] Vancouver, B.C. Canada	Director since May 11, 2016 Board Chair since May 12, 2021	Corporate Director
STEVEN BUSBY Vancouver, B.C. Canada	COO	COO of Pan American since May 13, 2008; prior to that, other senior management roles with Pan American since 2003
BRENT BERGERON NORTH VANCOUVER, B.C. CANADA	SVP, Corporate Affairs & Sustainability	SVP, Corporate Affairs & Sustainability since September 1, 2019; previously Executive VP, Corporate Affairs & Sustainability for Goldcorp Inc.
A. ROBERT DOYLE North Vancouver, B.C. Canada	CFO	CFO of Pan American since January 2004
CHRISTOPHER EMERSON Vancouver, B.C. Canada	VP, Business Development and Geology	VP, Business Development & Geology of Pan American since August 10, 2015
GEORGE GREER Surrey, B.C. Canada	SVP, Project Development	SVP, Project Development of Pan American since January 1, 2012; prior to that, other senior management roles with Pan American since 2007
CHRISTOPHER LEMON Vancouver, B.C. Canada	General Counsel	General Counsel of Pan American since August 2, 2017; previously General Counsel and Corporate Secretary of First Quantum Minerals Ltd.
SEAN MCALEER Guatemala City Guatemala	SVP and Managing Director, Guatemala	SVP and Managing Director, Guatemala since September 2019; prior to that, other senior management roles with Pan American since February 1, 2010

Notes:

1 Member of the Audit Committee.

2 Member of the Human Resources and Compensation Committee.

3 Member of the Nominating and Governance Committee.

4 Member of the Health, Safety and Environment Committee.

5 Member of Communities and Sustainable Development Committee.

The directors of Pan American are elected at each annual general meeting to hold office until the next annual general meeting or until their successors are elected or appointed. As at December 31, 2021, the Board of Directors consisted of eight directors, seven of whom, Michael Carroll, Neil de Gelder, Charles Jeannes, Jennifer Maki, Walter Segsworth, Kathleen Sendall and Gillian Winckler, qualify as unrelated directors who are independent of management. Mr. Steinmann is not independent due to his current management position with us. Jennifer Maki joined the Board of Pan American on May 12, 2021.

The Board of Directors has established five committees: the Audit Committee, the Human Resources and Compensation Committee, the Health, Safety, and Environment Committee, the Communities and Sustainable Development Committee, and the Nominating and Governance Committee. Detailed information regarding the duties and obligations of the Audit Committee is annexed as Appendix "A" to this AIF. The Board of Directors does not have an Executive Committee. The composition of the various committees as at December 31, 2021, is set forth in the preceding table.

As of the close of business on February 22, 2022, the directors and executive officers of Pan American named above as a group exercised control or direction or beneficially owned, directly or indirectly, 475,656 Common Shares, or approximately 0.23% of the issued and outstanding Common Shares of Pan American.

From May 2010 to April 2018, Ms. Sendall was a board member of CGG SA, a French company listed at the time on the New York Stock Exchange and Euronext Paris. On June 15, 2017, following the execution of legally binding agreements in support of the terms of the agreement-in-principle with its key financial creditors, CGG SA began legal processes to implement a comprehensive pre-arranged restructuring, with the opening of a Safeguard proceeding in France and Chapter 11 and Chapter 15 filings in the U.S. The restructuring plan was approved by both the Paris Commercial Court and the New York Bankruptcy Court. The implementation of the financial restructuring plan was finalized in February 2018.

Other than the above, none of Pan American's directors or executive officers:

(a) are, as at the date of this AIF, or have been, within 10 years before the date of this AIF, a director, chief executive officer or chief financial officer of any company (including Pan American) that,

    (i) was subject to cease trade order, an order similar to a cease trade order, or an order that denied the relevant company access to any exemption under securities legislation (collectively, 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

    (ii) 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;

(b) are, as at the date of this AIF, or has been within 10 years before the date of this AIF, a director or executive officer of any company (including Pan American) 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

(c) have, within the 10 years before the date of this AIF, become bankrupt, made a proposal under any legislation relating to bankruptcy or insolvency, or become subject to or instituted any proceedings, arrangement or compromise with creditors, or had a receiver, receiver manager or trustee appointed to hold the assets of the director or executive officer.

In addition, none of Pan American's directors and executive officers has been subject to:

(d) any penalties or sanctions imposed by a court relating to securities legislation or by a securities regulatory authority or has entered into a settlement agreement with a securities regulatory authority; or

(e) any other penalties or sanctions imposed by a court or regulatory body that would likely be considered important to a reasonable shareholder in making an investment decision.

As of the date of this AIF, Pan American is not aware of any shareholder holding a sufficient number of securities of Pan American to affect materially the control of Pan American.

Audit Committee

As at December 31, 2021, the members of the Audit Committee were Michael Carroll (Chair), Neil de Gelder, and Jennifer Maki. The Board of Directors has determined based on the information provided by each director that all members of the Audit Committee meet the independence requirements set out in National Instrument 52-110 – *Audit Committees*, and as defined under Rule 10A-3 of the U.S. Securities Exchange Act of 1934, as amended, and the rules and regulations of the Nasdaq Stock Market. All members of the Audit Committee are financially literate and Michael Carroll, an individual serving on the audit committee of the Board of Directors, is an audit committee financial expert, as that term is defined in General Instruction B(8)(b) of Form 40-F.

The SEC has indicated that the designation of a person as an audit committee financial expert does not make such person an "expert" for any purpose, impose any duties, obligations or liabilities on such person that are greater than those imposed on members of the audit committee and the board of directors who do not carry this designation or affect the duties, obligations or liability of any other member of the audit committee or board of directors.

Relevant Education and Experience of Audit Committee Members

The relevant education and experience of each member of the Audit Committee that is relevant to the performance of the Audit Committee responsibilities are as follows:

Michael L. Carroll (Chair) is a Certified Public Accountant with over 30 years of financial management expertise, primarily with publicly traded mining companies and has previously served on the audit committee of another public company. Mr. Carroll's professional expertise includes equity and debt financing, mergers and acquisitions, strategic planning, IFRS, GAAP, international tax planning and regulatory reporting.

Neil de Gelder, Q.C., has over 25 years of experience as a lawyer specializing in corporate, mergers and acquisitions, and financing matters with a major Canadian law firm, frequently advising boards of publicly traded companies. He is a former Executive Director of the British Columbia Securities Commission, and is currently Vice-Chair of a private diversified investment firm based in Vancouver as well as being an independent director of, and Chair of the Audit Committee for, another publicly listed company. He is routinely involved in reviewing internal management financial reporting and external audited and unaudited financial statements. Mr. de Gelder has served on a wide variety of corporate, Crown, charitable, and community boards over the years, including serving on the audit committee of a B.C. venture capital fund.

Jennifer Maki is an accomplished mining executive and finance expert with strong leadership experience in public mining companies operating in complex international jurisdictions. She is the former Executive Director of Vale Base Metals and CEO of Vale Canada, and previously served as EVP and CFO of Vale Base Metals. Ms. Maki began her professional career in the mining group with PricewaterhouseCoopers. She is presently a Director and Chair of the Audit Committees at two other publicly listed companies. Ms. Maki is a CPA, Chartered Accountant, has a Bachelor of Commerce degree from Queen's University and holds the ICD.D designation from the Institute of Corporate Directors.

External Auditor Service Fees

<u>Audit Fees</u>

The aggregate fees billed by Deloitte LLP, an independent registered public accounting firm who is Pan American's auditor, for the fiscal years ended December 31, 2021 and 2020 for professional services rendered by

Deloitte LLP for the audit of Pan American's annual consolidated financial statements or services that are normally provided by Deloitte LLP in connection with statutory and regulatory filings or engagements for such years were approximately $2,394,100 and $2,497,000, respectively.

Audit-Related Fees

The aggregate fees billed by Deloitte LLP for the fiscal years ended December 31, 2021 and 2020 for assurance and related services rendered by it that are reasonably related to the performance of the audit or review of Pan American's consolidated financial statements, including fees for audit services not required to support the auditor's opinion on Pan American's consolidated financial statements, were approximately $243,400 and $34,400, respectively. The fees in both 2021 and 2020 also include amounts with respect to Pan American's Canadian Public Accountability Board fees that are remitted by Deloitte on behalf of Pan American.

Tax Fees

The aggregate fees billed by Deloitte LLP for the fiscal years ended December 31, 2021 and 2020 for professional services rendered by it for tax compliance, tax advice, tax planning, and other services were approximately $31,300 and $1,600, respectively. In 2021, such fees related primarily to the provision of services related to tax advisory and tax compliance matters.

Other Fees

The aggregate fees billed by Deloitte LLP for the fiscal years ended December 31, 2021 and 2020 for products and services provided by Deloitte LLP, other than those services reported in the preceding three paragraphs, were $0 and $0, respectively.

Audit Committee Pre-Approval Policies

All audit and non-audit services performed by the independent registered public accounting firm are pre-approved by the Audit Committee.

CONFLICTS OF INTEREST

To the best of our knowledge, and other than as disclosed in this AIF, there are no known existing or potential conflicts of interest between us and any of our directors or officers, except that certain officers and directors of Pan American are officers and directors of, or are associated with, other public or private companies. Such associations may give rise to conflicts of interest from time to time between their duties as an officer or director of Pan American and their duties as an officer or director or such other companies. The directors are aware of laws requiring them to act honestly and in good faith with a view to act in the best interests of Pan American and our shareholders and to disclose any conflicts of interest.

LEGAL PROCEEDINGS AND REGULATORY ACTIONS

A description of certain legal proceedings to which we are a party appear under the heading "Contingencies" in Note 28 to our Audited Consolidated Financial Statements for the year ended December 31, 2021, which are available under Pan American's SEDAR profile at www.sedar.com. We have not been subject to any regulatory penalties or sanctions during the financial year, nor entered into any settlement agreements relating to securities legislation.

INTEREST OF MANAGEMENT AND OTHERS IN MATERIAL TRANSACTIONS

Other than as described below, to the best of our knowledge, no director or executive officer of Pan American, nor any person or company that beneficially owns, controls, directs, directly or indirectly, more than 10% of our Common Shares, nor any associate or affiliate of any of the foregoing persons, has or had a material interest in any transaction within the three most recently completed financial years or during the current financial year that has materially affected or is reasonably expected to materially affect Pan American.

TRANSFER AGENTS AND REGISTRAR

The transfer agent and registrar for our Common Shares is Computershare Investor Services Inc. at its principal office in Vancouver, British Columbia, and Computershare Trust Company, N. A. at its office in Denver, Colorado, U.S.A.

MATERIAL CONTRACTS

Except for contracts entered into in the ordinary course of business, no other material contracts have been entered into by Pan American during the financial year ended December 31, 2021 or before such time which are still in effect.

INTERESTS OF EXPERTS

Deloitte LLP, an independent registered public accounting firm, is the auditor of Pan American and is independent of Pan American within the meaning of the Rules of Professional Conduct of the Chartered Professional Accountants of British Columbia and within the meaning of the U.S. Securities Exchange Act of 1933, as amended, and the applicable rules and regulations thereunder adopted by the SEC and the Public Company Accounting Oversight Board (United States).

The Qualified Persons as defined by NI 43-101 who have prepared or supervised the preparation of Pan American's mineral reserve and mineral resource estimates effective June 30, 2021, and who supervised the preparation of and approved the scientific and technical information disclosed in this AIF, as described under the heading "Scientific and Technical Information" on page 7.

Michael Steinmann, P. Geo., Martin Wafforn, P. Eng., Chris Emerson, FAusIMM, Americo Delgado, P.Eng., Alain Mainville, P.Geo., Eric Lachapelle, P.Eng., Dave Felsher, P.Eng., Tim Williams, M.Sc., Carl Defilippi, M.Sc., Charles Muerhoff, B.Sc., Conrad Huss, P.Eng., Thomas Drielick, P.Eng., Daniel Roth, P.Eng., Paul Tietz, C.P.G., Matthew Blattman, P.Eng., Jack Caldwell, P.Eng., and M3 Engineering & Technology Corporation are the persons who have prepared or certified a statement, report, or valuation described in this AIF.

To the best of our knowledge, none of Messrs./Mmes. Steinmann, Wafforn, Emerson, Delgado, Mainville, Lachapelle, Felsher, Williams, Defilippi, Muerhoff, Tietz, Roth, Blattman, Drielick, Huss, Caldwell or M3 Engineering & Technology Corporation beneficially owns, directly or indirectly, 1% or more of any class of Pan American's outstanding securities.

EXCEPTIONS FROM NASDAQ CORPORATE GOVERNANCE REQUIREMENTS

Under Rule 4350(a) of Nasdaq Rules (the "Nasdaq Rules"), a foreign private issuer (as defined in Rule 12b-2 under the Exchange Act) may follow its home country practice in lieu of certain of the corporate governance requirements of the Nasdaq Rules.

Pursuant to Rule 4350(a), Pan American follows British Columbia practice with respect to quorum requirements in lieu of Nasdaq Rule 4350(f). Nasdaq Rule 4350(f) requires that the minimum quorum for a shareholder meeting is 33-1/3% of the outstanding common shares, whereas Pan American's articles provide that the minimum quorum for a meeting of the holders of our Common Shares is two individuals who are shareholders, proxy holders representing shareholders or duly authorized representatives of corporate shareholders personally present and representing shares aggregating not less than 25% of the issued Common Shares of Pan American carrying the right to vote at that meeting. In the event there is only one shareholder, the quorum is one person personally present and being, or representing by proxy, that shareholder, or in the case of a corporate shareholder, a duly authorized representative of that shareholder. Pan American's quorum requirement complies with the *Business Corporations Act* (British Columbia), which requires that unless the articles otherwise provide, two shareholders entitled to vote at a meeting of shareholders, whether in person or represented by proxy, constitute a quorum. Furthermore, the rules of the Toronto Stock Exchange, upon which our Common Shares are also listed, do not contain specific quorum requirements.

ADDITIONAL INFORMATION

Additional information, including directors' and officers' remuneration and indebtedness, principal holders of Pan American's securities, and securities authorized for issuance under equity compensation plans, is contained in our management information circular for the most recent annual meeting of shareholders. Additional financial information is also provided in our audited consolidated financial statements for the years ended December 31, 2021 and 2020, and management's discussion and analysis for the year ended December 31, 2021. The foregoing disclosure documents, along with additional information relating to Pan American, may be found on SEDAR at www.sedar.com, on the SEC website at www.sec.gov, or on our website at www.panamericansilver.com.

GLOSSARY OF TERMS

"mineral resource" - A mineral resource is a concentration or occurrence of solid material of economic interest in or on the earth's crust in such form, grade or quality and quantity that there are reasonable prospects for eventual economic extraction. The location, quantity, grade or quality, continuity and other geological characteristics of a mineral resource are known, estimated or interpreted from specific geological evidence and knowledge, including sampling.

"*inferred mineral resource*" – An inferred mineral resource is that part of a mineral resource for which quantity and grade or quality are estimated on the basis of limited geological evidence and sampling. Geological evidence is sufficient to imply but not verify geological and grade or quality continuity. An inferred mineral resource has a lower level of confidence than that applying to an indicated mineral resource and must not be converted to a mineral reserve. It is reasonably expected that the majority of inferred mineral resources could be upgraded to indicated mineral resources with continued exploration.

"*indicated mineral resource*" – An indicated mineral resource is that part of a mineral resource for which quantity, grade or quality, densities, shape and physical characteristics are estimated with sufficient confidence to allow the application of modifying factors in sufficient detail to support mine planning and evaluation of the economic viability of the deposit. Geological evidence is derived from adequately detailed and reliable exploration, sampling and testing and is sufficient to assume geological and grade or quality continuity between points of observation. An indicated mineral resource has a lower level of confidence than that applying to a measured mineral resource and may only be converted to a probable mineral reserve.

"measured mineral resource" – A measured mineral resource is that part of a mineral resource for which quantity, grade or quality, densities, shape, and physical characteristics are estimated with confidence sufficient to allow the application of modifying factors to support detailed mine planning and final evaluation of the economic viability of the deposit. Geological evidence is derived from detailed and reliable exploration, sampling and testing and is sufficient to confirm geological and grade or quality continuity between points of observation. A measured mineral resource has a higher level of confidence than that applying to either an indicated mineral resource or an inferred mineral resource. It may be converted to a proven mineral reserve or to a probable mineral reserve.

"*mineral reserve*" – A mineral reserve is the economically mineable part of a measured and/or indicated mineral resource. It includes diluting materials and allowances for losses, which may occur when the material is mined or extracted and is defined by studies at pre-feasibility or feasibility level as appropriate that include application of modifying factors. Such studies demonstrate that, at the time of reporting, extraction could reasonably be justified. The reference point at which mineral reserves are defined, usually the point where the ore is delivered to the processing plant, must be stated. It is important that, in all situations where the reference point is different, such as for a saleable product, a clarifying statement is included to ensure that the reader is fully informed as to what is being reported. The public disclosure of a mineral reserve must be demonstrated by a pre-feasibility study or feasibility study.

"probable mineral reserve" - A probable mineral reserve is the economically mineable part of an indicated, and in some circumstances, a measured mineral resource. The confidence in the modifying factors applying to a probable mineral reserve is lower than that applying to a proven mineral reserve.

"proven mineral reserve" - A proven mineral reserve is the economically mineable part of a measured mineral resource. A proven mineral reserve implies a high degree of confidence in the modifying factors.

APPENDIX "A"

AUDIT COMMITTEE CHARTER

PURPOSE

Senior management of Pan American Silver Corp. (the "**Company**"), as overseen by its Board of Directors (the "Board"), has primary responsibility for the Company's financial reporting, accounting systems and internal controls. The Audit Committee (the "**Committee**") is a standing committee of the Board established for the purposes of overseeing:

a. the quality and integrity of the Company's financial and accounting reporting processes and internal accounting and financial control systems;

b. the external auditor's qualifications and independence;

c. management's responsibility for assessing the effectiveness of internal controls; and

d. the Company's compliance with legal and regulatory requirements in connection with financial and accounting matters.

COMPOSITION AND OPERATION

The Committee shall be composed of at least three directors, all of whom shall be independent[1]. All members of the Committee shall, to the satisfaction of the Board, be Financially Literate and at least one member will be a Committee Financial Expert ("**Financially Literate**" and "**Committee Financial Expert**" are defined in the Definitions section of this Charter).

The members of the Committee shall be appointed by the Board annually, and the Board may at any time remove or replace any member of the Committee and may fill any vacancy with another Board member, as required.

The Board shall appoint a chair (the "**Chair**") from among the Committee members. If the Chair is not present at any meeting of the Committee, one of the other Committee members present at the meeting shall be chosen to preside as chairperson at the meeting.

A quorum at meetings of the Committee shall be a majority of members present in person or by telephone or other telecommunication device that permits all persons participating in the meeting to speak and hear one another.

The Committee will make every effort to meet at least four times per year, and shall conduct such additional meetings as required from time to time. Each member is entitled to request that an additional meeting be called. The external auditor may also request that the Chair call a meeting of the Committee to consider any matter that the auditor believes should be brought to the attention of the directors or the shareholders of the Company.

[1] A director's "independence" shall be determined in accordance with the securities laws, rules, regulations and guidelines of all applicable securities regulatory authorities, including without limitation the securities commissions in each of the provinces and territories of Canada and the U.S. Securities and Exchange Commission, and the stock exchanges on which the Company's securities are listed, including without limitation the Toronto Stock Exchange and Nasdaq (collectively, "Securities Laws").

The Committee shall fix its own procedures for meetings, keep records of its proceedings and report to the Board routinely at the next regularly scheduled Board meeting. Copies of meeting records will be made available to the external auditor as requested.

In camera sessions will be scheduled for each Committee meeting.

The Committee may act by unanimous written consent of its members. A resolution approved in writing by members of the Committee shall be valid and effective as if it had been passed at a duly called meeting.

RESPONSIBILITIES AND DUTIES

Overall Committee:

To fulfill its responsibilities and duties the Committee will:

a. oversee the relationship and maintain a direct line of communication with the Company's internal and external auditors and assess their respective performance;

b. assist the Board in the discharge of its responsibilities relating to the quality, acceptability and integrity of the Company's accounting policies and principles, reporting practices and internal controls;

c. review and recommend to the Board for approval the audited annual financial statements, with the report of the external auditor, and corresponding management's discussion and analysis prior to public dissemination and filing with securities regulatory authorities;

d. review and approve, or recommend to the Board for approval, the quarterly financial statements of the Company and corresponding management's discussion and analysis prior to public dissemination and filing with securities regulatory authorities;

e. review any other disclosure documents that contain material financial information about the Company requiring approval by the Board prior to public dissemination and filing with securities regulatory authorities, including, but not limited to, financial information in earnings press releases, annual reports, Form 40-F, annual information forms, information circulars, and prospectuses;

f. review with management any tax matters that could have a material effect on the Company's financial statements;

g. review and approve the Company's financial risk management programs, including any significant commodity, currency or interest rate hedging programs, or if deemed appropriate by the Committee, make recommendations to the Board with respect to such programs;

h. review proposed major financing activities of the Company and make recommendations to the Board with respect to the same;

i. assess policies and procedures for cash management and review investment strategies for the Company's cash balances;

j. review the Company's cash flow projections and liquidity forecasts; and

k. review this Charter periodically, but at least once per annum, and recommend to the Board any necessary amendments.

Public Filings, Policies and Procedures:

The Committee will:

a. satisfy itself that adequate procedures are in place for the review of the Company's disclosure of financial information extracted or derived from the Company's financial statements, other than the Company's financial statements, management's discussion and analysis, and earnings press releases, and periodically assess such disclosure controls and procedures, and management's evaluation thereof, to ensure that financial information is recorded, processed, summarized and reported within the time periods required by law;

b. review disclosures made to the Committee by the Chief Executive Officer and the Chief Financial Officer during their certification process for any significant deficiencies in the design or operation of internal controls or material weaknesses therein and any fraud involving management or other employees who have a significant role in internal controls;

c. review with management and the external auditor any correspondence with securities regulators or other regulatory or government agencies which raise material issues regarding the Company's financial reporting or accounting policies; and

d. review with management, the external auditors and the Company's legal counsel, any claim or other contingency, including tax assessments, that could have a material effect upon the financial position or operating results of the Company and the manner in which these matters have been disclosed in the financial statements.

External Auditors

The responsibilities and duties of the Committee as they relate to the external auditor are to:

a. consider and make recommendations to the Board with respect to the external auditor to be nominated for appointment, re-appointment, or removal by shareholders at each annual general meeting of the Company;

b. make recommendations to the Board with respect to the compensation of the external auditor, assess whether fees and any other compensation to be paid to the external auditor for audit or non-audit services are appropriate to enable an audit to be conducted and to maintain the independence of the external auditor;

c. review the performance of the external auditor and, where appropriate, recommend to the Board appropriate action with respect to the external auditor;

d. confirm the independence and effectiveness of the external auditor, which will require receipt from the external auditor of a formal written statement delineating all relationships between the auditor and the Company and any other factors that might affect the independence of the auditor;

e. actively engage in dialogue with the external auditor with respect to any disclosed relationships or services that may affect the independence and objectivity of the external auditor and take, or recommend that the Board take, appropriate actions to oversee the independence of the external auditor;

f. oversee the work of the external auditor engaged for the purpose of preparing or issuing an auditor's report or performing other audit, review or attest services for the Company, including the resolution of disagreements between management and the external auditor regarding financial reporting, including, review and, as applicable, approval of the following:

i. the external auditor's engagement letter and audit plans;

ii. the form and content of the quarterly and annual audit report, which should include, *inter alia*:

- a summary of the Company's internal controls findings resulting from the annual audit procedures;
- any material issues raised in the most recent meeting of the Committee; and
- any other related audit, review or attestation services performed for the Company by the external auditors;

iii. form and content of other reports of the auditors;

and the Committee shall report to the Board, as necessary, in respect of the above noted matters;

g. review and pre-approve all non-audit services provided to the Company or its subsidiaries by the external auditor prior to the commencement of such services, and in doing so, the Committee may delegate to one or more independent members of the Committee the authority to pre-approve any such non-audit services, provided that the decision of such member(s) on such non-audit services will be presented to the Committee at its next regularly scheduled meeting, and in all cases, pre-approval of non-audit services must satisfy the requirements set out in *National Instrument 52-110 – Audit Committees*;

h. monitor the relationship between management and the external auditor and resolve any disagreements between them regarding financial reporting;

i. engage the external auditor in discussions regarding any amendments to critical accounting policies and practices; alternative treatments of financial information within generally accepted accounting principles related to material items that have been discussed with management, including any potential ramifications and the preferred treatment by the independent auditor; and lastly, written communication between management and the independent auditor, including but not limited to, the management letter and schedules of adjusted and unadjusted differences, as applicable.

Internal Controls and Financial Reporting

The Committee will:

a. obtain reasonable assurance from discussions with (and/or reports from) management, and reports from external and internal auditors that the Company's financial and accounting systems are reliable and that the internal controls are operating effectively;

b. in consultation with the external auditor, the CEO, the CFO, and where necessary, other members of management, review the integrity of the Company's financial reporting process and the internal control structure;

c. review the acceptability of the Company's accounting principles and identify areas of concern and, where appropriate to do so, discuss with the external auditor;

d. request the auditors to undertake special examinations (e.g., review compliance with conflict of interest policies) when it deems necessary;

e. together with management, review control weaknesses identified by the external and internal auditors;

f. consider proposed appointees for the position of chief financial officer and, if deemed appropriate by the Committee, other key financial executives involved in financial reporting;

g. satisfy itself that CEO and CFO certifications pursuant to Securities Laws are prepared and filed and make inquiries and initiate discussion as necessary with management regarding the practices and procedures adopted to permit management's assurance on the underlying controls; and

h. during the annual audit process, consider if any significant matters regarding the Company's internal controls and procedures over financial reporting, including any significant deficiencies or material weaknesses in their design or operation, need to be discussed with the external auditor, and review whether internal control recommendations made by the auditor have been implemented by management.

Internal Audit

The Committee shall be responsible for reviewing:

a. activities, organization structure, and qualifications of the internal audit function;

b. the resources, budget, reporting relationships and planned activities of the internal audit function;

c. internal audit findings and the implementation of any accepted recommendations;

d. the internal audit procedures and recommending changes, if any; and

e. the adequacy of the line of communication between internal audit and the Committee, ensuring that it is maintained.

Ethical and Legal Compliance and Risk Management

The responsibilities and duties of the Committee as they relate to compliance and risk management are to:

a. satisfy itself as to the integrity of the CEO and other senior management and that the CEO and other senior management strive to create a culture of integrity throughout the Company;

b. review the adequacy, appropriateness and effectiveness of the Company's policies and business practices which impact on the financial integrity of the Company, including those relating to hedging, insurance, accounting, information security and systems, cash management and investment strategies, related-party transactions, financial controls and management reporting;

c. receive a report from management on tax issues and planning, including compliance with the Company's source deduction obligations and other remittances under applicable tax or other legislation;

d. receive a report on the annual policy attestation process for the Company's Global Code of Ethical Conduct, Global Anti-Corruption Policy, Gifts and Hospitality Guidelines, and any other relevant policies and guidelines (collectively, the "**Policies**");

e. review annually the adequacy and quality of the Company's financial and accounting staffing, including the need for and scope of internal audit reviews (if any);

f. receive reports from management and other Board committees, as and when appropriate, on the identification, assessment and management of risks;

g. in conjunction with any other committee designated by the Board from time to time, review major financial, audit and accounting related risks, including information security and cyber risks, and the policies, guidelines and mechanisms that management has put in place to govern the process of monitoring, controlling and reporting such risks;

h. oversee the establishment of procedures for:

   i. the receipt, retention and treatment of complaints received by the Company regarding accounting, internal controls, or auditing matters; and

   ii. the confidential, anonymous submission by employees of the Company of concerns regarding questionable accounting or auditing matters.

i. review any material complaints and concerns received regarding accounting, internal controls, or auditing matters or with respect to the Policies, and the investigation and resolution thereof, and, where appropriate to do so, provide all relevant information relating to such complaints and concerns to the Nominating and Governance Committee, taking into account the complainants' confidentiality concerns and the roles and responsibilities of each Committee;

j. review and approve the Company's hiring policies regarding partners, employees and former partners and employees of the present and former external auditor;

k. review and monitor the Company's compliance with applicable legal and regulatory requirements related to financial reporting and disclosure;

l. review all related-party transactions; and

m. review reports from management, internal and external auditors with respect to the Company's compliance with the laws and regulations having a material impact on financial reporting and disclosure.

AUTHORITY

The Committee shall have the authority to:

a. at the Company's expense, engage independent counsel and other advisors as it determines necessary to carry out its duties;

b. set and pay the compensation for any advisors engaged by the Committee; and

c. communicate directly with any such advisors and with the internal and external auditors.

The Committee shall have unrestricted access to all records, facilities, and personnel of the Company necessary to carry out its responsibilities and may meet separately with head of internal audit, the Chief Executive Officer, the Chief Financial Officer, the General Counsel and such other members of management as they may deem necessary.

The Committee shall be provided with the resources necessary to carry out its responsibilities.

At the invitation of the Chair, one or more officers or employees of the Company may, and if required by the Committee, shall, attend a meeting of the Committee.

The Committee may, upon approval by a majority of the members of the Committee, delegate certain of its duties and responsibilities to subcommittees of the Committee, which must report back to the full Committee.

DEFINITIONS

Capitalized terms used in this Charter and not otherwise defined have the meaning attributed to them below:

"**Financially Literate**" shall have the meaning as defined by Securities Laws, which includes, without limitation, 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.

"**Committee Financial Expert**" means a person who has the following attributes:

d. an understanding of generally accepted accounting principles and financial statements;

e. the ability to assess the general application of such principles in connection with the accounting for estimates, accruals and reserves;

f. experience preparing, auditing, analyzing or evaluating financial statements that present a breadth and level of complexity of accounting issues that are generally comparable to the breadth and level of complexity of issues that can reasonably be expected to be raised in the Company's financial statements, or experience actively supervising one or more persons engaged in such activities;

g. an understanding of internal controls and procedures for financial reporting; and

h. an understanding of audit committee functions; acquired through any one or more of the following:

    i. education and experience as a principal financial officer, principal accounting officer, controller, public accountant or auditor or experience in one or more positions that involve the performance of similar functions;

    ii. experience actively supervising a principal financial officer, principal accounting officer, controller, public accountant, auditor or person performing similar functions; or

    iii. experience overseeing or assessing the performance of companies or public accountants with respect to the preparation, auditing or evaluation of financial statements; or other relevant experience.