SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549
FORM 40-F
[ ] REGISTRATION STATEMENT PURSUANT TO SECTION 12 OF THE SECURITIES EXCHANGE ACT OF 1934

[X] ANNUAL REPORT PURSUANT TO SECTION 13(a) OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the fiscal year ended December 31, 2016 Commission File Number 000-13727

Pan American Silver Corp.
(Exact name of Registrant as specified in its charter)

British Columbia	**1044**	**Not Applicable**
(Province or other Jurisdiction of Incorporation or Organization)	(Primary Standard Industrial Classification Code Number)	(I.R.S. Employer Identification No.)

1500 – 625 Howe Street
Vancouver, British Columbia
V6C 2T6
(604) 684-1175
(Address and telephone number of Registrant's principal executive offices)

CT Corporation
111 Eighth Avenue, 13th Floor
New York, NY 10011
(212) 894-8940
(Name, address (including zip code) and telephone number (including area code) of agent for service in the United States)

Securities registered or to be registered pursuant to Section 12(b) of the Act.

Title of Each Class	Name of Each Exchange on Which Registered
Common Shares, No Par Value	The NASDAQ Stock Mark

Securities registered or to be registered pursuant to Section 12(g) of the Act.
None

Securities for which there is a reporting obligation pursuant to Section 15(d) of the Act.
None

For annual reports, indicate by check mark the information filed with this Form:

[**X**] Annual information form [**X**] Audited annual financial statements

Indicate the number of outstanding shares of each of the issuer's classes of capital or common stock as of the close of the period covered by this annual report:

The Registrant had 152,334,652 Common Shares outstanding as at December 31, 2016.

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

Indicate by check mark whether the Registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this Chapter) during the preceding 12 months (or for such shorter period that the Registrant was required to submit and post such files).
Yes ____ No __

NOTE TO UNITED STATES INVESTORS CONCERNING
ESTIMATES OF MEASURED, INDICATED AND INFERRED MINERAL RESOURCES

Unless otherwise indicated, all reserve and resource estimates included in this Annual Report on Form 40-F have been prepared in accordance with Canadian National Instrument 43-101 — *Standards of Disclosure for Mineral Projects* ("NI 43-101") and the Canadian Institute of Mining, Metallurgy and Petroleum classification system. NI 43-101 is a rule developed by the Canadian Securities Administrators that establishes standards for all public disclosure an issuer makes of scientific and technical information concerning mineral projects. Canadian standards, including NI 43-101, differ significantly from the requirements of the United States Securities and Exchange Commission (the "SEC"), and reserve and resource information included herein may not be comparable to similar information disclosed by U.S. companies. In particular, and without limiting the generality of the foregoing, this Annual Report on Form 40-F uses 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 the identification of "reserves" are also not the same as those of the SEC, and reserves reported by the Registrant 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 rules, estimated "inferred resources" may not form the basis of feasibility or pre-feasibility studies except in rare cases. In addition, disclosure of "contained ounces" in a mineral resource is permitted disclosure under Canadian regulations. 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 Annual Report on Form 40-F may not be comparable with information made public by companies that report in accordance with U.S. standards.

A. Disclosure Controls and Procedures

Disclosure controls and procedures are defined in Rules 13a-15(e) and 15d-15(e) under the U.S. Securities Exchange Act of 1934, as amended (the "Exchange Act"), as those controls and other procedures that are designed to ensure that information required to be disclosed by the Registrant in reports filed or submitted by it under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms. Rules 13a-15(e) and 15d-15(e) also provide that disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by the Registrant is accumulated and communicated to the Registrant's management as appropriate to allow timely decisions regarding required disclosure.

As of December 31, 2016, the end of the period covered by this Annual Report on Form 40-F, the Registrant carried out an evaluation, under the supervision and with the participation of the Registrant's management, including the Registrant's Chief Executive Officer and Chief Financial Officer, of the effectiveness of the design and operation of the Registrant's disclosure controls and procedures, as defined in Rules 13a-15(e) and 15d-15(e) of the Exchange Act. Based on that evaluation, the Chief Executive Officer and Chief Financial Officer have concluded that, as of December 31, 2016, the Registrant's disclosure controls and procedures were effective. See "Disclosure Controls and Procedures" in Management's Discussion and Analysis for the fiscal year ended December 31, 2016, filed as Exhibit No. 1.2 to this Annual Report on Form 40-F.

B. Management's Annual Report on Internal Control Over Financial Reporting

See "Management's Report on Internal Control over Financial Reporting" in Management's Discussion and Analysis for the fiscal year ended December 31, 2016, filed as Exhibit 1.2 to this Annual Report on Form 40-F.

C. Attestation Report of the Independent Registered Public Accounting Firm

The attestation report of Deloitte LLP, the Registrant's Independent Registered Public Accounting Firm, on management's assessment of the Registrant's internal control over financial reporting is included in the "Report of Independent Registered Public Accounting Firm" filed with the Registrant's Audited Consolidated Financial Statements for the fiscal years ended December 31, 2016 and 2015, as Exhibit 1.3 to this Annual Report on Form 40-F.

D. Changes in Internal Control Over Financial Reporting

There was no change in the Registrant's internal control over financial reporting that occurred during the period covered by this report that has materially affected, or is reasonably likely to materially affect, the Registrant's internal control over financial reporting.

E. Notice of Pension Fund Blackout Period

The Registrant was not required by Rule 104 of Regulation BTR to send any notice to any of its directors or executive officers during the fiscal year ended December 31, 2016.

F. Audit Committee Financial Expert

The Registrant's board of directors has determined that Michael Carroll, an individual serving on the Audit Committee of the Registrant's board of directors, is an audit committee financial expert, as that term is defined in General Instruction B(8)(b) of Form 40-F and is independent under Rule 10A-3 under the Exchange Act and the rules and regulations of the Nasdaq Stock Market.

The Commission 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.

G. Code of Ethical Conduct

The Registrant has adopted a global code of ethical conduct (the "Code") that applies to all directors, officers and employees. A copy of the Code may be obtained at www.panamericansilver.com. No waivers from the requirements of the Code were granted in the fiscal year ended December 31, 2016.

H. Principal Accountant Fees and Services and Audit Committee Pre-Approval Policies

Information about the Registrant's principal accountant fees and services and a description of the Registrant's pre-approval policies and procedures is included under the heading "External Auditor Service Fees" of the Registrant's Annual Information Form for the fiscal year ended December 31, 2016, filed as Exhibit 1.1 to this Annual Report on Form 40-F.

I. Off-Balance Sheet Arrangements

The Registrant is not a party to any off-balance sheet arrangements that have or are reasonably likely to have a current or future effect on its financial condition, changes in financial condition, revenues or expenses, results of operations, liquidity, capital expenditures or capital resources that is material to investors.

J. Tabular Disclosure of Contractual Obligations

The required disclosure can be found under the heading "Contractual Commitments and Contingencies" of Management's Discussion and Analysis for the fiscal year ended December 31, 2016, filed as Exhibit 1.2 to this Annual Report on Form 40-F.

K. Nasdaq Stock Market Exemptions

On March 16, 2005, the Registrant informed the Nasdaq Stock Market that as permitted by Rule 4350(a)(1) of the Nasdaq Marketplace Rules, it intended to follow British Columbia practice with respect to quorum requirements in lieu of those required by Rule 4350(f) of the Nasdaq Marketplace Rules (which provides that a quorum for a shareholder meeting of a Nasdaq-listed company must be at least 33-1/3% of the outstanding common shares of the company). The Registrant's by-laws provide that the minimum quorum for a meeting of holders of Common Shares is two individuals who are shareholders, proxy holders or duly authorized representatives of corporate shareholders personally present and representing shares aggregating not less than 25% of the issued shares of the Registrant carrying the right to vote. The Registrant's quorum requirements are not prohibited by the requirements of the *Business Corporations Act* (British Columbia) and the Registrant intends to continue to comply with the requirements of the *Business Corporations Act* (British Columbia). The rules of the Toronto Stock Exchange, upon which the Common Shares are also listed, do not contain specific quorum requirements.

L. Identification of the Audit Committee

The Registrant has a separately-designated standing Audit Committee established in accordance with Section 3(a)(58)(A) of the Exchange Act. The members of the Audit Committee are Gillian D. Winckler, Neil de Gelder and Michael Carroll. Gillian D. Winckler, Neil de Gelder and Michael Carroll are independent as such term is defined under Rule 10A-3 under the Exchange Act and the rules and regulations of the Nasdaq Stock Market. Further information about the Registrant's Audit Committee can be found under the heading "Audit Committee" of the Registrant's Annual Information Form for the fiscal year ended December 31, 2016, filed as Exhibit 1.1 to this Annual Report on Form 40-F.

M. Interactive Data File

The Registrant is not currently required to submit to the Commission, nor post to its corporate Web site, an Interactive Data File.

N. Mine Safety

The Registrant is not currently required to disclose the information required by Section 1503(a) of the Dodd-Frank Wall Street Reform and Consumer Protection Act.

UNDERTAKING AND CONSENT TO SERVICE OF PROCESS

A. Undertaking

The Registrant undertakes to make available, in person or by telephone, representatives to respond to inquiries made by the Commission staff, and to furnish promptly, when requested to do so by the Commission staff, information relating to the securities in relation to which the obligation to file an annual report on Form 40-F arises; or transactions in said securities.

B. Consent to Service of Process

The Registrant has previously filed with the Commission a Form F-X in connection with its Common Shares. Any change to the name and address of the agent for service of process shall be communicated promptly to the Commission by an amendment to Form F-X.

EXHIBITS

The following exhibits are filed as part of this report:

Exhibit Number	Title
1.1	Annual Information Form for the fiscal year ended December 31, 2016.
1.2	Management's Discussion and Analysis for the fiscal year ended December 31, 2016.
1.3	Audited Consolidated Financial Statements for the fiscal years ended December 31, 2016 and 2015.
23.1	Consent of Deloitte LLP.
23.2	Consent of Martin Wafforn.
23.3	Consent of Michael Steinmann.
23.4	Consent of Pamela De Mark.
23.5	Consent of Americo Delgado.
23.6	Consent of Christopher Emerson.
31.1	Certification of CEO pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
31.2	Certification of CFO pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
32.1	Certification of CEO and CFO pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.

Exhibits 1.1, 1.2 and 1.3 are incorporated by reference into the Registrant’s Registration Statement on Form F-10 (File No. 333-212468) and Registration Statements on Form S-8 (File Nos. 333-180494, 333-180495 and 333-206162).

SIGNATURE

Pursuant to the requirements of the Exchange Act, the Registrant certifies that it meets all of the requirements for filing on Form 40-F and has duly caused this annual report to be signed on its behalf by the undersigned, thereto duly authorized.

PAN AMERICAN SILVER CORP.

Dated: March 22, 2017

/s/ "Delaney Fisher"

By: Delaney Fisher

Title: Vice President Legal Affairs and Corporate Secretary

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Annual Information Form

For the Year

Ended December 31, 2016

March 22, 2017

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

www.panamericansilver.com

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APPENDIX "A" – AUDIT COMMITTEE CHARTER A-1

IMPORTANT INFORMATION ABOUT THIS DOCUMENT

This annual information form ("AIF") provides important information about Pan American Silver Corp. It describes our history, our markets, our operations and development projects, our mineral reserves and mineral resources, sustainability, our regulatory environment, the risks we face in our business and the market for our shares, among other things.

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.

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

Reporting Currency and Financial Information

Unless we have specified otherwise, all references to dollar amounts or $ are to United States dollars. Any references to CAD or CAD$ mean 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 cost per payable ounce of silver, net of by-product credits ("cash costs"), all-in sustaining costs per silver ounce sold ("AISCSOS"), working capital and total debt.

Cash Costs

This AIF presents information about our cash costs of a payable ounce of silver produced, net of by-product credits for our operating mines. Except as otherwise noted, cash costs is calculated by dividing total cash costs net of by-product credits by total payable silver ounces produced at the relevant mine or mines. Total cash costs include mine operating costs such as mining, processing, administration and royalties, but exclude amortization, reclamation costs, financing costs and capital development and exploration. Certain amounts of stock-based compensation are excluded as well.

Cash costs is included in this AIF because certain investors use this information to assess our performance and also to determine our ability to generate cash flow for use in investing and other activities. The inclusion of cash costs may enable investors to better understand year-over-year changes in our production costs, which in turn affect profitability and cash flow. Cash costs does not have a standardized meaning or a consistent basis of calculation prescribed by IFRS. Investors are cautioned that cash costs should not be considered in isolation or construed as a substitute to costs determined under IFRS as an indicator of performance. Our method of calculating cash costs may differ from the methods used by other entities and, accordingly, our cash costs may not be comparable to similarly titled measures used by other entities. Readers should refer to our management's discussion and analysis for the year ended December 31, 2016 (the "2016 MD&A") for a detailed description and reconciliation of this non-GAAP measure.

All-In Sustaining Costs Per Silver Ounce Sold

This AIF includes information about our calculation of AISCSOS. The Company believes that AISCSOS reflects a comprehensive measure of the full cost of operating its consolidated business given it includes the cost of replacing ounces through exploration, the cost of ongoing capital investment (sustaining capital), general and administrative expenses, direct operating costs ("direct operating costs") as well as other items that affect the Company's consolidated earnings and cash flow. AISCSOS does not have a standardized meaning or a consistent basis of calculation prescribed

by IFRS. Our method of calculating AISCSOS may differ from the methods used by other entities and, accordingly, our AISCSOS may not be comparable to similarly titled measures used by other entities. Readers should refer to the 2016 MD&A for a detailed description and reconciliation of this non-GAAP measure.

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. The Company and certain investors use this information to evaluate whether the Company 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. The Company and certain investors use this information to evaluate the financial debt leverage of the Company.

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.

Caution About Forward-Looking Information

Our 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 them 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 3).
- 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 74, and our 2016 MD&A, which include a discussion of other material risks that could cause our actual results to differ from 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 and other metals;
- the sufficiency of our current working capital, anticipated operating cash flow or our ability to raise necessary funds;
- the accuracy of mineral reserve and mineral resource estimates, estimates of future production and future cash, and total costs of production, as applicable, at Huaron, Morococha, La Colorada, Dolores, Alamo Dorado, Manantial Espejo, Navidad, San Vicente, or other properties;
- estimated production rates for silver and other payable metals we produce, timing of production and estimated cash and total costs of production, including forecasted cash costs of production;
- the estimated cost of and availability of funding for ongoing capital replacement, improvement or remediation programs, and the availability of funding for future construction and development projects;
- estimated costs of construction, development and ramp-up of our projects;
- future successful development of the Navidad property and our other development projects;
- 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, feasibility and pre-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;
- estimated future closure, reclamation and remediation costs;
- forecast capital and non-operating spending;
- estimates of foreign exchange rates and future income tax rates;
- future sales of the metals, concentrates or other products produced by us;
- continued access to necessary infrastructure, including, without limitation, access to power, water, lands and roads to carry on activities as planned;
- our plans and expectations for our properties and operations, including, without limitation, production estimates, forecasts regarding investment activities, and other matters discussed under the heading “Outlook for 2017” and under the headings “Capital and Operating Costs” and “Exploration, Development, and Production” with respect to each of our material properties;
- the expected investment and development activities at the La Colorada mine;
- the expected investment and development activities at the Dolores mine; and
- the ability to obtain permits, including for future project development and expansion.

Material Risks and Assumptions:

The forward-looking information in this AIF reflects our current views with respect to future events and are necessarily based upon a number of assumptions and estimates that, while considered reasonable by us, are inherently subject to significant business, economic, competitive, political 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 such forward-looking information contained in this AIF and documents incorporated by reference, 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;
- 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;
- risks and hazards associated with the business of mineral exploration, development and mining (including environmental hazards, industrial accidents, unusual or unexpected geological or structural formations, pressures, cave-ins and flooding);
- inherent risks associated with tailings facilities and heap leach operations, including failure or leakages;
- 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;
- reclamation requirements;
- risks relating to our operations in Peru, Mexico, Argentina, Bolivia and other foreign jurisdictions where we may operate;
- 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”) and Bolivian boliviano (“BOB”) versus the U.S. dollar and Canadian dollar);
- 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;
- employee relations;
- 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;
- relations with and claims by indigenous populations;
- relations with and claims by local communities and non-governmental organizations;
- the effectiveness of our internal control over financial reporting;
- claims and legal proceedings arising in the ordinary course of business activities; 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 Resources” on page 7 of this AIF.

Conversion Table

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

Imperial Measure = Metric Unit		Metric Unit = Imperial Measure	
2.47 acres	1 hectare	0.4047 hectares	1 acre
3.28 feet	1 metre	0.3048 metres	1 foot
0.62 miles	1 kilometre	1.609 kilometres	1 mile
0.032 ounces (troy)	1 gram	31.1 grams	1 ounce (troy)
1.102 tons (short)	1 tonne	0.907 tonnes	1 ton (short)
0.029 ounces (troy)/ ton (short)	1 gram/tonne	34.28 grams/tonne	1 ounce (troy)/ton (short)
2205 pounds	1 tonne		

Scientific and Technical Information

Mineral reserve and mineral resource estimates in this AIF relating to La Colorada, Alamo Dorado, Dolores, Huaron, Morococha, San Vicente, and Manantial Espejo are based on information prepared under the supervision of, or has been reviewed by, Christopher Emerson, FAusIMM, Vice President of Business Development and Geology for Pan American, and Martin Wafforn, P.Eng., Senior Vice President, Technical Services and Process Optimization of Pan American. Scientific or technical information in this AIF relating to La Colorada, Alamo Dorado and Manantial Espejo is based on information prepared under the supervision of, or has been reviewed by, Michael Steinmann, P.Geo., President and Chief Executive Officer of Pan American, and Martin Wafforn. Scientific and technical information relating to Huaron, Morococha, and San Vicente is based on information prepared and reviewed by Michael Steinmann, Martin Wafforn and Americo Delgado, P. Eng., Director of Metallurgy for Pan American. Scientific and technical information relating to Dolores is based on information prepared and reviewed by Martin Wafforn, Christopher Emerson, and Americo Delgado. Scientific or technical information relating to the geology of particular properties, and the current and planned exploration programs described in this AIF, are prepared and/or designed and carried out under the supervision of, or have been reviewed by, Christopher Emerson. Scientific and technical information herein relating to the Navidad property is based on information contained in the Navidad Report (as defined below) and the disclosure in this AIF about the Navidad property has been reviewed and consented to by Michael Steinmann, Martin Wafforn and Pamela De Mark, P.Geo., Director of Resources for Pan American, the experts involved in the preparation of the applicable sections of the Navidad Report. In particular, scientific or technical information in this AIF relating to the estimation of mineral resources for the Navidad property was prepared by Pamela De Mark. All other disclosures of scientific and technical information contained in the descriptions of our mineral properties were prepared under the supervision of Michael Steinmann and Martin Wafforn. Each of Christopher Emerson, Michael Steinmann, Martin Wafforn, Pamela De Mark, and Americo Delgado is a "Qualified Person" as defined in National Instrument 43-101 – *Standards of Disclosure for Mineral Projects* ("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.

Scientific and technical disclosure in this AIF for our material properties is based on technical reports prepared for those properties in accordance with NI 43-101 (collectively, the "Technical Reports"). The Technical Reports have been filed on SEDAR at www.sedar.com. The technical information in our AIF has been updated with current information where applicable. The Technical Reports are as follows:

- a report entitled “Technical Report – Preliminary Economic Analysis for the Expansion of the La Colorada Mine, Zacatecas, Mexico”, with an effective date of December 31, 2013 (the “La Colorada Report”) relating to the La Colorada mine;
- a report entitled “Feasibility Study Volume I – NI-43-101 Technical Report for Alamo Dorado Project, Alamos, Sonora, Mexico” dated March 31, 2005 (the “Alamo Report”) relating to the Alamo Dorado mine;
- a report entitled “Technical Report for the Dolores Property, Chihuahua, Mexico”, with an effective date of December 31, 2016 (the “Dolores Technical Report”) relating to the Dolores mine;
- a report entitled “Technical Report for the Huaron Property, Pasco, Peru” dated effective June 30, 2014 (the “Huaron Report”) relating to the Huaron mine;
- a report entitled “Technical Report for the Morococha Property, Yauli, Peru” dated effective June 30, 2014 (the “Morococha Report”) relating to the Morococha mine;
- a report entitled “Technical Report for San Vicente Property, Potosi, Bolivia” dated effective December 31, 2014 (the “San Vicente Report”) relating to the San Vicente mine;
- a report entitled “Manantial-Espejo Project Canadian Standard NI 43-101, Santa Cruz Province, Argentina” dated March 2006 (the “Manantial Report”) relating to the Manantial Espejo mine; and
- a report entitled “Pan American Silver Corp.: Navidad Project, Chubut Province, Argentina: Preliminary Assessment” dated January 14, 2011 (the “Navidad Report”) relating to the Navidad property.

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

This AIF and the documents incorporated by reference in it, if any, have been prepared in accordance with the requirements of Canadian securities laws that differ from the requirements of U.S. 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 prepared in accordance with NI 43-101 and the Canadian Institute of Mining, Metallurgy and Petroleum (“CIM”) - Definition Standards adopted by the CIM Council. NI 43-101 is a rule developed by the Canadian Securities Administrators that establishes standards for all public disclosure an issuer makes of scientific and technical information concerning mineral projects.

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. 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. **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’’. 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. 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. 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.

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, Pan American obtained shareholder approval to amend our memorandum and articles, including the increase in our authorized share capital from 100,000,000 to 200,000,000 common shares without par value ("Common Shares"), in connection with Pan American's required transition under the *Business Corporations Act* (British Columbia).

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 consists of 200,000,000 Common Shares. 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.

Subsidiaries

A significant portion of our business is carried on through various subsidiaries. The table below lists our significant subsidiaries and the chart following shows the structure of our organization by jurisdiction as it relates to our material mineral properties. This information is provided as at December 31, 2016.

Name of Subsidiary	Jurisdiction
Corner Bay Silver Inc. (“Corner Bay”)	Canada
Aquiline Resources Inc. (“Aquiline”)	Ontario
Minefinders Corporation Ltd. (“Minefinders”)	Ontario
Absolut Resources Inc. (“Absolut”)	Yukon
Pan MacKenzie Resources Inc.	Delaware
PAS (Lux) S.á r.l.[1]	Luxembourg
Pan American Silver (Barbados) Corp. (“Pan American Barbados”)	Barbados
Aquiline Holdings Inc. (“Aquiline Barbados”)	Barbados
PASCAP Insurance (Barbados) Ltd. (“PASCAP”) [1]	Barbados
Pico Machay Cayman Limited (“PM Cayman”)	Cayman Islands
Minera Triton Argentina S.A. (“MTA”)	Argentina
Minera Aquiline Argentina S.A. (“MAA”)	Argentina
Minera Argenta S.A. (“MASA”)	Argentina
PASMEX, S.A. de C.V. (“PASMEX”)	Mexico
Minera Corner Bay S.A. de C.V. (“MCB”)	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 Silver Peru S.A.C. (“Pan American Peru”)	Peru
Pan American Silver Huaron S.A. (“PAS Huaron”)	Peru
Compañía Minera Argentum S.A. (“Argentum”)	Peru
Minera Calipuy S.A.C. (“Minera Calipuy”)	Peru
Pan American Silver (Bolivia) S.A. (“PASB”)	Bolivia

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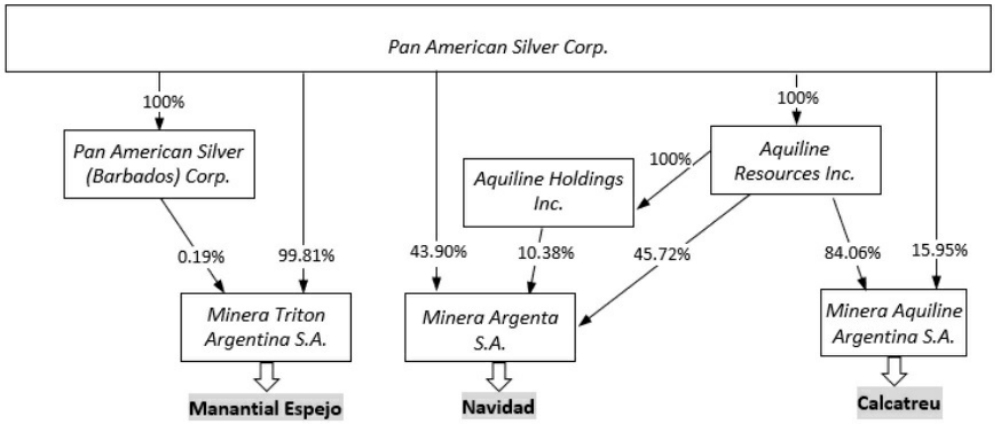
Note:

PAS (Lux) S.á r.l. and PASCAP are 100% owned by Pan American, but do not appear on the follow organization charts.

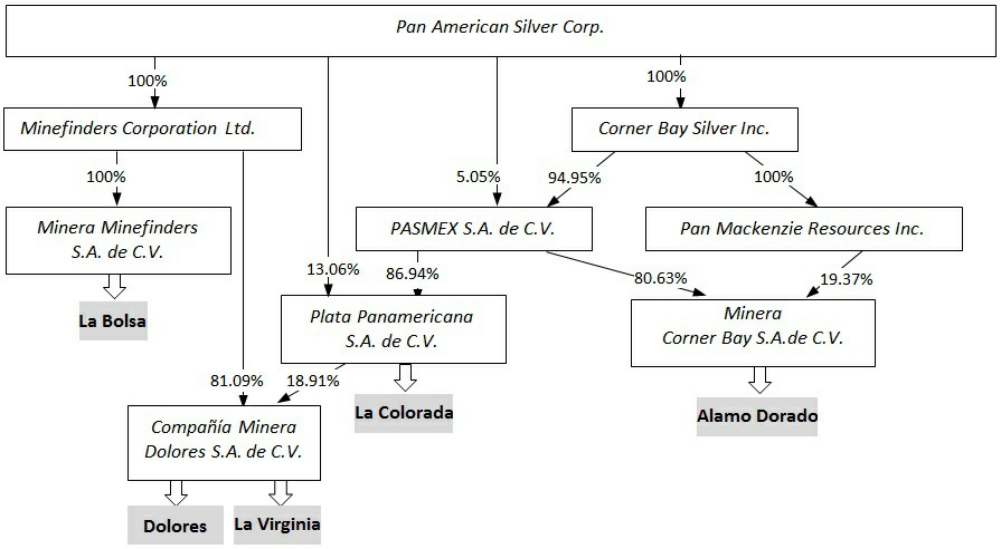
Corporate Organization by Jurisdiction

The following charts depict the corporate organizational structure of our significant subsidiaries by jurisdiction as at December 31, 2016, and identify the main property asset interests held by the respective entities.

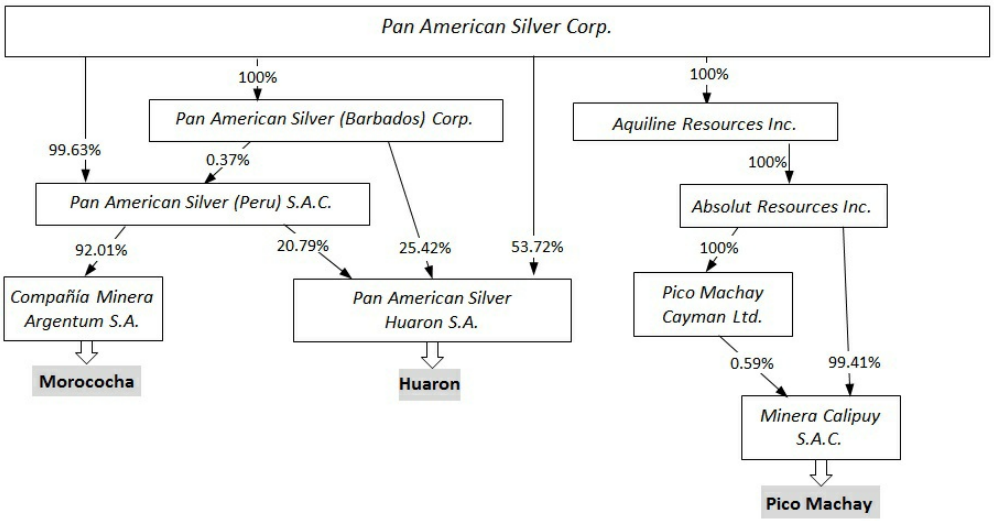
Argentina Properties



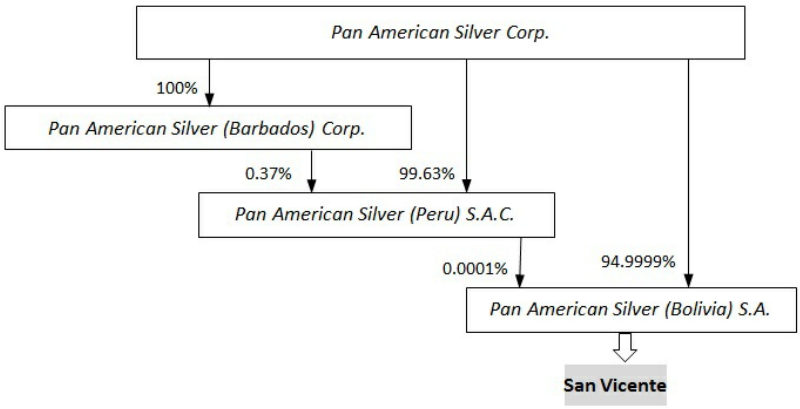
Mexico Properties



Peru Properties



Bolivia Properties



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Note:

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 share 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 two decimal places).

GENERAL DEVELOPMENT OF THE BUSINESS

Business of Pan American

We are principally engaged in the operation and development of, and exploration for, silver producing properties and assets. Our principal product is silver, although we also produce and sell gold, zinc, lead, and copper. At present, we carry on mining operations and are developing mining projects in Mexico, Peru, Argentina and Bolivia, and have control over non-producing silver assets in each of those jurisdictions and in the United States. Exploration work is carried out in all of those countries, as well as elsewhere throughout the world.

Corporate Strategy and Objectives

Our mission is to be the world's preeminent 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 lowering consolidated unit costs of production.

The key objectives of our strategy are to:

Strategy Objective	Implementation
Increase production	After acquiring our first operating mine (Quiruvilca in Peru) in 1995, we have increased annual silver production almost every year. We also increased gold production to a record high 183,900 ounces in 2016. This long-term growth has been accomplished through a combination of acquisition, development and expansion efforts. In 2017, Pan American expects to produce between 24.5 and 26.0 million ounces of silver and between 155,000 and 165,000 ounces of gold, which includes a small amount of remaining production from Alamo Dorado.
Increase mineral reserves and mineral resources	During the last 13 years, our mine-site exploration efforts (excluding acquisitions) have added 330.7 million ounces of silver to our mineral reserves, which more than replaced the 323 million ounces of silver mined in that same period. In 2016 we added 38.1 million ounces of new silver mineral reserves, more than replacing the 32.4 million ounces depleted through mining. Pan American's history of replacing silver ounces mined reflects our ability to invest in mine and near-site exploration programs throughout the silver price cycle and the exploration potential of our asset portfolio. At December 31, 2016, our proven and probable silver and gold mineral reserves were approximately 285.8 million and 2.0 million ounces, respectively, up from the 280.1 million ounces of silver and slightly down from the 2.1 million ounces of gold at the end of 2015. Our measured and indicated mineral resources were approximately 696 million ounces of silver and 1.1 million ounces of gold as at the end of 2016. 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"	Full year 2016 consolidated cash costs[1] to produce an ounce of silver were approximately $6.29, net of by-product credits, which was approximately 35% lower than 2015 cash costs. AISCSOS[1] for the full year 2016 declined by 32% from 2015 to $10.17. Our strategy continues to emphasize reducing overall unit production costs. For the full year 2017, cash costs are forecast at between $6.45 and $7.45 per ounce of silver, net of by-product credits, while AISCSOS is expected to be between $11.50 and $12.90.
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. This includes our acquisition of the Joaquin project from Coeur Mining Inc. ("Coeur") in 2017, our acquisition of the Dolores mine and the La Bolsa property by virtue of acquiring Minefinders in 2012, and the acquisition of the Navidad, Calcatreu and Pico Machay properties pursuant to our acquisition of Aquiline in 2010.
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.
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 impact their host communities and nearby populations both positively and negatively. 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, local communities, business partners and other stakeholders affected by our operations. We have adopted, among other things, a Global Code of Ethical Conduct and a Global Anti-Corruption Policy, an Environmental Policy and a Corporate Social Responsibility Policy, that formalize how we must conduct our business and interact with stakeholders and others. We are aware that our business is in many ways dependent on these 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 sustainable development performance according to the Global Reporting Initiative Framework, with the current report available on Pan American's website.

Note:

1 Cash costs and AISCSOS 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
2014	• Produced 26.1 million ounces of silver, slightly more than in 2013, and increased gold production to 161,500 ounces. La Colorada became our largest silver producer at approximately 5.0 million ounces for the year, followed by Dolores with approximately 4.0 million ounces of silver. • Paid total cash dividends of $75.8 million on our Common Shares, representing $0.50 per Common Share on an annualized basis. • Spent $16.6 million on mine-site exploration and completed over 152.5 kilometres of diamond drilling. • Spent approximately $17.9 million on the La Colorada expansion project and another $17.3 million on the second phase of the Dolores' pad 3 expansion. • Spent $16.6 million on mine-site exploration and completed over 152.5 kilometres of diamond drilling.
2015	• Achieved record annual silver production of just over 26.1 million ounces and increased gold production to 183,700 ounces. La Colorada continued to be our largest silver producer at approximately 5.3 million ounces for the year. Dolores was our second largest silver producer with approximately 4.3 million ounces of silver. • Established a $300 million revolving credit facility in the second quarter of 2015. • Paid total cash dividends of $41.7 million on our Common Shares. • Spent approximately $10.9 million on mine-site exploration and completed over 105 kilometres of diamond drilling. • Announced that we would proceed with the Dolores expansion project and made a number of advances throughout the year, including on the underground ramp and power line construction. We also continued the La Colorada expansion activities, with the shaft 50% complete by year-end, and the new sulphide processing plant approximately 70% complete. • Spent approximately $76.1 million in long-term project capital to advance the La Colorada and Dolores mine expansions.

2016	• Produced 25.4 million ounces of silver and achieved record annual gold production of 183,900 ounces. La Colorada was our largest silver producer at approximately 5.8 million ounces for the year, followed by San Vicente with approximately 4.4 million ounces of silver. • Completed the divestiture of 13 non-core royalties, streams and payment agreements to Maverix Metals Inc. ("Maverix") in exchange for shares and warrants in Maverix (the "Maverix Transaction"). As at December 31, 2016, we held approximately 40% of Maverix on a non-diluted basis. • Commissioned the new Beaty Cimarron mine shaft and sulphide plant at La Colorada, and made significant advancements at the Dolores mine expansion project. • Sold 75% of our interest in the Shalipayco project in Peru to Votarntim Metais – Cajamarquilla S.A. for $15 million cash, a free carried interest of our remaining 25% to commercial production, and a one percent (1%) net smelter returns royalty (which we subsequently sold to Maverix).

Outlook for 2017

In 2017, Pan American expects to produce between 24.5 and 26.0 million ounces of silver at consolidated cash costs of between $6.45 and $7.45 per ounce of silver, net of by-product credits. In addition, we expect to produce between 155,000 and 165,000 ounces of gold. Consolidated AISCSOS are expected to be between $11.50 and $12.90 for 2017. The Company has assumed by-product prices of Au $1,200/oz, Zn $2,500/tonne, Pb $2,100/tonne and Cu $5,400/tonne in the calculation of the forecast 2017 cash costs and AISCSOS.

Also in 2017, Pan American expects to invest between $82.0 million and $88.0 million in sustaining capital at its operating mines, and approximately $58.0 million to $62.0 million in project capital relating to the mine expansion projects at the La Colorada and Dolores mines. 2017 is expected to be the final year of project capital spending relating to these two expansion projects.

Pan American is planning to invest approximately $21 million in its 2017 exploration program to complete about 137 kilometres of diamond drilling at our operating mines and another 22 kilometres of drilling on select regional exploration programs.

In the first quarter of 2017, Pan American completed the acquisition of the Joaquin project in Santa Cruz, Argentina from Coeur Mining, Inc. The Joaquin project is located approximately 145 kilometres from Pan American's Manantial Espejo mine, well within trucking distance, and the plant will have available capacity once open-pit mining is completed at the Manantial Espejo mine in 2017. We have begun work on technical studies for the Joaquin project to determine how much of the high-grade portion of Joaquin's mineralized material can be economically treated at Manantial Espejo.

Cash costs and AISCSOS are non-GAAP measures and do not have standardized meanings prescribed by Canadian accounting standards. For additional information, please see "Non-GAAP Measures" on page 2 of this AIF.

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 2016, the Huaron, Morococha, Alamo Dorado, Dolores, La Colorada, Manantial Espejo and San Vicente mines accounted for all of our production of concentrates and doré.

Consolidated production for the year ended December 31, 2016 was as follows:

	La Colorada	Dolores	Alamo Dorado	Huaron	Morococha[1]	San Vicente[2]	Manantial Espejo	Total
Tonnes Milled[3]	529,000	6,306,000	1,833,000	904,000	673,000	339,000	754,000	11,338,000
Grade								
Silver - g/t	377	37	45	157	135	443	143	89
Gold - g/t	0.28	0.75	0.18	0.23	0.22		2.94	N/A
% Zinc	2.63%			3.01%	3.15%	2.05%		N/A
% Lead	1.31%			1.51%	0.75%	0.32%		N/A
% Copper				0.90%	1.44%			N/A
Production								
Ounces Silver[3]	5,795,000	3,838,000	1,864,000	3,812,000	2,541,000	4,433,000	3,136,000	25,419,000
Ounces Gold[4]	2,930	102,760	8,380	810	2,140	-	66,890	183,920
Tonnes Zinc[4]	11,400			19,940	15,460	5,090		51,890
Tonnes Lead[4]	6,000			10,720	2,940	590		20,250
Tonnes Copper[4]			30	6,070	7,740	550		14,400

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 Rounded to the nearest thousand.

4 Rounded to the nearest ten.

Our approximate revenue by product category for the financial years ended December 31, 2016 and December 31, 2015 was as follows:

Product Revenue	**2016**	**2015**
	($000's)	($000's)
Silver and Gold Doré	399,339	400,790
Zinc Concentrate	93,237	54,239
Lead Concentrate	164,217	135,926
Copper Concentrate	117,982	83,733
Total[1]	**774,775**	**674,688**

Additional segmented information is set forth in Note 26 to Pan American's Audited Consolidated Financial Statements for the year ended December 31, 2016, and further information on individual mine performance and other metrics is presented in the 2016 MD&A under the heading "2016 Operating Performance".

Silver and Gold Doré

Our principal buyers of silver and gold doré produced from our Dolores, Alamo Dorado, La Colorada, and Manantial Espejo mines, once refined, are international bullion banks and traders, except that the gold produced from La Colorada is sold to Maverix pursuant to the Maverix Gold Stream as discussed on page 19 herein. Silver and gold doré is delivered to refineries in Mexico, Germany, and the United States, and subsequently transferred to the accounts of our buyers.

Zinc, Lead and Copper Concentrates

Our principal markets for copper concentrates produced from Morococha, Huaron, and occasionally from San Vicente, as well as a unique copper precipitant product from Alamo Dorado, are Canada, Chile, and China through a number of contracts with smelters and traders. Copper concentrates are delivered to customers first via truck to seaports, and from there by ship.

Our principal markets for zinc concentrates produced from La Colorada, Morococha, Huaron and San Vicente, are Peru, South Korea and Japan through a number of contracts with smelters and traders. Zinc concentrates are delivered to Peruvian customers by truck. Zinc concentrates are delivered to customers in South Korea and Japan first via truck, or truck and train, to seaports, and from there by ship.

Our principal markets for lead concentrates produced from La Colorada, Morococha, Huaron and San Vicente, are Japan, South Korea, China, and Belgium through a number of contracts with traders. Lead concentrates are delivered first via truck to seaports and from there by ship.

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

Employees

At the end of 2016, we had approximately 4027 employees and almost 2,650 contractors. The majority of those employees and contractors were working at our operations in South America and in Mexico. Pan American also had 40 employees and 1 contractor at our head office in Vancouver as at December 31, 2016. Our Peruvian operations had over 2,800 total employees and contractors, while our Bolivian operations had almost 600 employees and contractors, our Argentinean operations had approximately 700 employees and contractors and our Mexican operations had over 2,500 employees and contractors.

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 are usually expensed as incurred. As such, we did not incur any significant research and development costs during 2014, 2015 or 2016.

Working Capital and Liquidity Position

As at December 31, 2016, we had cash and cash equivalents and short-term investment balances of $217.6 million and working capital of $428.6 million, and our total debt outstanding at the end of 2016 was $43.3 million.

On April 15, 2015, we entered into a senior secured revolving credit facility (the "Facility") with a syndicate of eight lenders. The Facility is a US$300 million secured revolving line of credit available for general corporate purposes, including acquisitions, and originally had a 4-year term. In 2016, we amended the Facility to extend the term by an additional year. The terms of the Facility provide the Company with the flexibility of various borrowing and letter of

credit options. With respect to loans drawn based on the average annual rate of interest at which major banks in the London interbank market are offering deposits in US dollars ("LIBOR"), the interest margin on such loan is between 2.125% and 3.125% over LIBOR, depending on the Company's leverage ratio at the time of a specified reporting period. $36.2 million was drawn from the Facility in December 2015 and remains outstanding as of the date of this AIF.

Our financial position at December 31, 2016, 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 2017 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 become available.

Environment

All phases of our operations are subject to environmental regulation in the various jurisdictions in which we operate. To the best of management's knowledge, our activities in 2016 were, and continue to be, in compliance in all material respects with such environmental regulations applicable to our mining operations, development, and exploration activities. We have implemented an environmental policy, a corporate social responsibility policy, and a health and safety policy in which we accept our corporate responsibility to practice environmental protection and provide a safe and healthy workplace for our employees, and commit to comply with all relevant industry standards, environmental legislation and regulations in the countries where we carry on business.

During 2016, reviews of the environmental performance of all the operations and projects were conducted by Pan American's Vice President, Environment and Sustainability. The reviews included inspections of the mine and project sites with key operations personnel, a review of environmental monitoring program procedures and results and a review of the principal environmental issues related to each of these operations. The key observations and recommendations from the reviews are reported monthly to senior management and quarterly to the Board of Directors of Pan American (the "Board of Directors"). In addition to the periodic reviews, detailed Corporate Environmental Audits are conducted at each mine at least once every two years, in accordance with the charter of the Board's Health Safety and Environment Committee. These audits review environmental compliance and implementation of best practice procedures and management systems. During 2015, audits were undertaken at Alamo Dorado, La Colorada, Dolores, and Manantial Espejo, and in 2016, Morococha, San Vicente, and Huaron were audited. In intervening years between audits, the implementation of the corrective actions required by each audit is checked at each mine and the Alamo Dorado, La Colorada, Dolores, and Manantial Espejo corrective actions were found to be satisfactory in 2016.

Our Huaron, Morococha, La Colorada, Alamo Dorado, Dolores, and Manantial Espejo operations were all inspected by government agencies in 2016 and no material environmental issues were observed during these inspections.

The Peruvian government modified its receiving water quality limits in December 2015. The new limits remove a controversial sulphate limit which was previously proposed, bringing the limits in line with current international standards and significantly reducing potential cost impacts to our Peruvian operations. We continue to evaluate the potential impact of the 2015 changes to water treatment practices at our Peruvian operations. New "Adaptation Plans" will be submitted in 2017 if any treatment upgrades are required to meet the new limits at either Huaron or Morococha. Once approved, we would have three years to implement any necessary upgrades. We completed the implementation of voluntary measures such as water treatment plant automation at Huaron and separation of clean runoff and contact water at Morococha in 2016, which improves our ability to comply with the 2015 water quality limits when they come into force.

We completed our comprehensive Sustainability Report for 2015 in accordance with the Global Reporting Initiative G4 guidelines and improved our disclosure and report quality. The report includes detailed information on our environmental, social, economic, and health and safety performance. The complete Sustainability Report is available on our website at www.panamericansilver.com.

In the financial year-end dated December 31, 2016, our environmental expenditures for concurrent reclamation were approximately $6.1 million. The closure and decommissioning liabilities were prepared using the

standard reclamation cost estimator methodology developed in the State of Nevada, USA, using quantity estimates and cost data obtained at each mine site. We currently estimate the aggregate present value of expenditures required for closure and reclamation costs in respect of the Huaron, Morococha, Alamo Dorado, La Colorada, Dolores, Manantial Espejo, and San Vicente mines, along with our development properties, to be approximately $55.6 million.

Other than specific environmental concerns discussed in more detail elsewhere in this AIF, we are not aware of any material environmental matter requiring significant capital 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, 2016.

Health and Safety

We have implemented a health and safety policy in which we accept corporate responsibility to provide a safe and healthy workplace for our employees and contractors, and commit to comply with all relevant industry standards, legislation, and regulations in the countries where we carry on business. The policy is reviewed annually to ensure that we remain current, if not ahead, of industry standards and best practices.

Periodically, both formal and informal corporate health and safety audits are conducted at our operating mines and active development properties. In 2016, six of our seven operating mines were subject to internal safety audits conducted by a team of safety managers and operations supervisors from some of our other operations and led by Pan American's Director of Health and Safety. Management reports health and safety findings and mitigation progress to our Board of Directors on a regular basis.

During 2016, we continued to focus on introducing new safety programs and training at our operating mines, as well as maintaining excellent safety records at the other mines and development projects. The total hours worked at operating mines and active development and exploration projects was similar to 2015 while the number of lost time injuries ("LTI") decreased by 6 to 13, which is the lowest number of LTI's in the Company's history. We recorded a lost time injury frequency ("LTIF") of 0.74 during 2016, compared to 1.09 during 2015 and 1.14 during 2014. The LTIF in 2016 was also the best in the Company's history. LTIF is calculated as follows:

$$LTIF = \frac{(\#\ of\ accidents) * (1{,}000{,}000)}{Total\ hours\ worked}$$

During 2016, the Company continued efforts on mine safety and implemented a fatal accident reduction initiative to bolster its existing programs and to create even greater awareness amongst our personnel in order to significantly reduce the occurrences of unpredictable events that are often at the root of serious incidents. Unfortunately, despite these efforts and establishing new records for LTIF and total LTI's, there was a fatality at our San Vicente mine during the year.

In 2005, we introduced the "Chairman's Safety Award" which is presented to our mine with the best overall safety performance. In 2016, our three mines in Mexico and our Huaron mine in Peru had excellent safety records. The winner of the Chairman's Safety Award for 2016 was the Huaron mine.

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: the La Colorada mine, the Dolores mine, the Huaron mine, the Morococha mine, the San Vicente mine, and the Navidad property. We have also identified the Alamo Dorado and the Manantial Espejo mines as material properties for 2016. We do not consider any of our other 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 6.

Mineral Reserve and Mineral Resource Estimate Information

The process for economic assessment of the mineral reserves and mineral resources at our properties is described below in each property section. Although we believe that our mineral reserve and mineral resource estimates will not be materially impacted by external factors such as metallurgical, safety, environmental, permitting, legal, taxation, and other factors disclosed in this AIF, there can be no assurance that these factors will not have an impact. There are numerous uncertainties inherent in estimating mineral reserves and mineral resources. The accuracy of any mineral reserve and mineral resource estimation is the function of the quality 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, and investors are cautioned against attributing undue certainty to mineral reserves and mineral resources.

I. Operating Properties

A. Mexico

(i) La Colorada Mine

Project Description, Location, and Access

The La Colorada underground silver mine is located in the Chalchihuites district in Zacatecas State, Mexico, approximately 99 kilometres south of the city of Durango and 156 kilometres northwest of the city of Zacatecas. The La Colorada 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 8,395 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 project.

We have control over approximately 1,119 hectares of surface rights 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 Maverix Transaction, 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 US$650 per ounce for the life of the mine (the “Maverix Gold Stream”). In 2016, the Maverix Gold Stream resulted in Maverix acquiring 604 ounces of gold.

To the best of our knowledge, La Colorada is not subject to any other royalties, overrides, back-in rights, payments, or other agreements and encumbrances, other than governmental taxes, fees and duties. The Company’s 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 applies broadly across a number of industries that involve extraction, emissions to the air, soil or water, and deposits of residue or waste. It is unclear in the regulations on the exact calculation of these taxes and how it will be applied, but it will primarily effect the La Colorada mine in respect of the materials placed in its tailings storage facility. The validity of the Zacatecas Tax has been challenged on constitutional grounds.

While there are no known significant factors or risks that we currently anticipate will 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 74 for a general discussion of the risks relating to our operations.

History

In 1925, the Dorado family operated mines at two locations on the La Colorada property. From 1929 to 1955, Candelaria y Canoas S.A., a subsidiary of Fresnillo S.A., installed a 100 tonne per day 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. operated a number of mines on the La Colorada property. In 1994, Minas La Colorada S.A. de C.V. (“MLC”) acquired the exploration and exploitation claims and surface rights of Compañía de Minas Victoria Eugenia S.A. de C.V. Until 1997, MLC conducted mining operations on three of the old mines on the La Colorada property at a rate of approximately 150 tonnes per day (“tpd”).

Historically, exploration has been in the form of development drifting on 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 acquired the La Colorada mine from MLC in April 1998 and have focussed our production on the Candelaria, Estrella, and Recompensa mines. No activity takes place at the Campaña mine.

Geological Setting, Mineralization, and Deposit Types

The La Colorada property is located on the eastern flanks of the Sierra Madre Occidental mountain range at the contact between the Lower Volcanic Complex and the Upper Volcanic Supergroup. The oldest rocks exposed in the mine area are carbonates and calcareous clastic rocks overlain by a conglomerate unit. Most of the outcrop in the mine area is altered dacite of the regional Lower Volcanic Complex. The stratigraphically highest rocks in the mine area are felsic tuffs correlated with the Upper Volcanic sequence.

Thirteen breccia pipes up to 100 metres in diameter have been identified on the property, which can extend vertically more than 400 metres below the surface. The breccias contain clasts of limestone and trachyte, often mineralized, in an altered trachyte matrix. Clasts of vein material have been found in the breccias suggesting that the pipes postdate the vein emplacement.

East to northeast striking faults dipping mostly moderately to steeply to the south form the dominant structures in the project area and controlled the deposition of mineralization by acting as conduits for mineralizing hydrothermal fluids.

La Colorada is a typical epithermal silver-gold deposit, with a transition in the lower reaches of the deposit to a more base metal predominant system. There are three separate active mining areas on the property, including the Candelaria, Estrella, and Recompensa areas. The main structure at Candelaria strikes generally east west. The west part of the vein is referred to as HW and the east part is referred to as NC2, and there are a number of off-splits from these veins. The Estrella area includes the Amolillo vein, which is a split from the HW vein, and the Palomas vein, which is a split from Amolillo. The Recompensa zone produces or has produced from three areas: the Recompensa vein; Erika, which is a split from the Recompensa vein; and the Yuri replacement body, which lies between Erika and Recompensa.

Four dominant styles of mineralization are present at La Colorada, including breccia pipes, vein-hosted mineralization, replacement mantos within limestone, and deeper seated transitional mineralization.

Mineralization in the breccia pipes generally has lower silver values and elevated base metal values. Mineralization is associated with intense silicification and occurs as disseminated galena and sphalerite with minor chalcopyrite and bornite. Sulphides are found in the clasts and the matrix.

Most mineralized veins on the property strike east to northeast and dip moderately to steeply to the south and are generally less than two metres in width. The HW Corridor at the Candelaria mine strikes east-west and dips moderately to the south, with true widths of approximately up to 15 metres, but most of the economic mineralization is located in quartz veins, which are on average one to two metres wide. Where the veins are unoxidised, galena, sphalerite, pyrite, native silver, and silver sulphosalts are present. The major mineralized veins are strongly brecciated and locally oxidised.

Manto style mineralization is found near vein contacts where the primary host rock is limestone. This style of mineralization was previously mined at Recompensa and is also present in areas of the Candelaria zone. The mantos can form bodies up to six metres wide. The mineralogy of the mantos is characterized by galena and sphalerite with minor pyrite and chalcopyrite.

The deep seated transition mineralization, also known as NC2 Deep at the Candelaria mine, consists of both vein type mineralization and more diffuse stockwork and breccia zones.

Deep drilling has defined a restricted manto replacement body with lower silver-gold grades and higher lead zinc grades at the 1,000 metre level and remains open to depth. It is adjacent to the known vein system which continues at that depth.

The current mineral resource and mineral reserve currently comprises vein and manto hosted mineralization. The economically most important veins are the NC2 and NCPHW veins at the Candelaria mine, which together comprise 35% of the total mineral reserve ounces of silver as well as the Amolillo vein at the Estrella mine, which contains a further 37% of the total mineral reserve. The majority of the silver mineralization is found in the quartz veins which range from 2.0 to 2.9 metres wide.

The NC2 vein contains approximately 16% of the mineral resource and mineral reserve ounces of silver. It is a narrow, one to seven metre wide mainly sulphide and partly oxide vein with a strike length of over 900 metres. It is open to the east where it is cut by a trachyte dyke, and has been confirmed by drilling and drifting to continue in both width and grade on the other side of the dike. We drilled a hole that intersected the vein 300 metres below the current mineral reserves and believe the down-dip exploration potential is significant. There are a number of other splits from this vein numbered NC1 to NC9 that combined contain approximately 32% of the mineral resource and mineral reserve ounces of silver (including NC2).

The HW vein, also at the Candelaria mine, is a one to two metre thick vein with a strike length of over 1.1 kilometres. The HW Corridor consists of four structures. The majority of the silver mineralization is found in quartz veins which average two metres wide but can widen up to six to seven metres at the intersections with the HW vein.

At the Estrella mine, the Amolillo oxide/sulphide vein is located 500 metres north of the NC2 and HW vein complex and approximately along strike to the east of the Recompensa vein. The vein has an average width of 1.8 metres and a strike length of approximately 1,300 metres. Our drilling results indicate that the Amolillo vein could be key to a possible mine expansion. Diamond drilling has intersected the vein 450 metres below the deepest mining level, and expanded the lateral extension to the east and west by 900 metres for a total of 1,300 metres of current strike length.

The Recompensa mine contributes the fewest silver ounces to the mineral resources and mineral reserves. The main zones being exploited are the Recompensa and Erika veins and the Yuri manto replacement body located between the two veins. The Recompensa and Yuri are located more than a kilometre northwest of the NC2 and HW vein complex. The vein mineralization averages about 1.6 metres wide in the economically mineable zones, and contains a minor amount of oxide but mostly sulphide material. Erika is a hangingwall split from the Recompensa vein and is relatively narrow at an average width of 0.7 metres in the economically mined zone. It contains only sulphide material.

Exploration

Mining had taken place at La Colorada for several decades prior to any modern exploration work, identifying most of the major structures. For this reason there has been little surface sampling or geophysics and other surveys. For the past several years we have typically drilled on the order of 100 to 200 drillholes each year from surface and underground.

Drilling

The mine undertakes drilling on an annual basis for mineral resource and reserve definition. The drilling database contains on the order of thousands of drillholes from both surface and underground. All drilling at La Colorada is diamond core drilling and is performed from both surface and underground by either Company employees with a Company owned drill or by specialized drilling contractors under the supervision of the La Colorada mine geology department. In the past, underground holes were drilled BQ size until 2000 when the drillhole diameter in the HW corridor was increased to HQ size to improve core recovery. From 2008 to present the surface hole size has been increased to HQ and underground holes are drilled either at HQ, NQ or BQ sizes depending on the location and/or depth of the holes.

Sampling, Analysis, and Data Verification

Channel sampling is performed in ore development areas and stopes by sampling crews under the supervision of the mine geologist. Both channel and drill core sample intervals are approximately a metre in width. There are no known drilling, sampling, or recovery issues that could materially impact the reliability of the results. Underground channel samples are brought directly from one of the portals to the on-site laboratory at the end of each shift. Underground drill cores are brought from underground to the core shack, which is fenced and locked when there are no geology department employees present. Once the drillhole has been logged and sampled, the samples are transported to the on-site laboratory. We have no reason to believe that the integrity of the samples has been compromised.

We have used four commercial labs in the past for exploration assaying at La Colorada, including Bondar Clegg (Vancouver, B.C.), ALS Chemex (Vancouver, B.C.), Luismin (Durango, Mexico) and ALS Chemex de México (Guadalajara, México). All gold and silver assays by the commercial labs have been done using fire assay with either an atomic absorption (“AA”) or gravimetric finish. Base metals were assayed using acid digestion and AA determination. All samples are now prepared at the La Colorada mine laboratory, which is ISO9001:2008 certified and operated by our employees. Samples are analyzed for gold and silver using fire assay with gravimetric finish, and for lead, zinc, and copper by acid digestion followed by AA.

The La Colorada mine geology department conducts a quality assurance/quality control (“QAQC”) program that is independent from the laboratory. The program includes the insertion of standards and blanks to the on-site laboratory and the submission of pulp duplicate samples to an external laboratory. The results of the QAQC samples demonstrate acceptable accuracy and precision and that no significant contamination is occurring at the mine laboratory.

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 La Colorada, as at December 31, 2016, 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	3.7	432	0.33	3.08	1.72
Probable	4.0	362	0.32	2.06	1.24
TOTAL	7.7	396	0.32	2.55	1.47

Notes:

1 Estimated using a price of $18.50 per ounce of silver, $1,300 per ounce of gold, $2,200 per tonne of zinc and $2,000 per tonne of lead.

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 La Colorada, as at December 31, 2016, are as follows:

La Colorada Mineral Resources [1, 2, 3]					
Resource Category	**Tonnes (Mt)**	**Grams of Silver per tonne**	**Grams of Gold per tonne**	**% Zinc**	**% Lead**
Measured	0.5	206	0.31	0.85	0.45
Indicated	2.0	200	0.18	0.63	0.39
Inferred	1.8	313	0.35	4.58	2.65

Notes:

1 These mineral resources are in addition to mineral reserves. Estimated using a price of $18.50 per ounce of silver, $1,300 per ounce of gold, $2,200 per tonne of zinc and $2,000 per tonne of lead.

2 Mineral resource 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.

Mineral resources are estimated using a polygonal method based on the data collected from both diamond drilling and underground channel samples. A long section is produced of each structure and then divided into mineable blocks. The volume of the block 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 mining block. The grade of each block is estimated using inverse distance squared from the centre of the block by the length weighted average of the grade of the vein or mineralization of each intersection within a 30 metre radius of the block. The samples are assessed and treated for extreme sample grades prior to averaging. Weighted average bulk density values are applied to each mining block volume to estimate the tonnes of each block. The data is processed using Excel software for each structure, then combined to arrive at the total tonnes and grade of the mineral resource estimate. The mineral resource estimates are updated annually with new information and updated geological interpretations and depleted annually for mining in the previous year.

Planned dilution is applied to each intersection to achieve a minimum mining width and to account for backfill, which is inadvertently mucked each lift during the cut and fill stoping. Additional unplanned dilution is also applied in order to correlate with the reconciliation between the mineral reserve and the plant results. Mining recovery is estimated depending on vein width and based on experience and observation at each mining area. A value per tonne is calculated in each block considering the value paid for each metal, the expected metallurgical recovery of each metal to concentrate or to doré, and costs including insurance, penalties, refining, and transport.

Mineral resource confidence classifications are based on the proximity and density of geological and grade information in each block, as well as the interpretation and the experience of the mine geologist. Mineral resources are then converted to mineral reserves depending on the resource classification and whether they can be economically mined.

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 La Colorada.

Mining Operations

The mining method used at all three mines is cut and fill stoping. This method allows for improved ore recovery and selectivity from irregular, steeply dipping veins. Ground support is provided by rock bolts, with screen and shotcrete as required, as well as by backfilling the voids created by mining with development rock or mill tailings as the ore extraction advances.

Mine levels are 30 metres vertically apart. Cut and fill stoping begins at the bottom of each 30 metre panel and works upward in horizontal slices that follow the strike, dip, and width of the ore zone. Ore extraction begins by cutting a 2 metre thick slice from the bottom of the ore zone and removing the broken ore from the stope. As each successive slice of the stope is taken, the void below is backfilled to support the side walls and to provide a stable working platform for mining the next ore slice.

Either hand-held drills or electric hydraulic jumbo drills are used for development mining to access the ore, depending on the size of the excavation required.

Ore extracted from the Candelaria and Estrella mines is currently hoisted through the new Beaty Cimarron Shaft and hauled to the mill crusher stockpile. When required, Candelaria and Estrella ore can be hauled up to the

surface using one of the mine access ramps. Ore extracted from the Recompensa mine is hauled by truck up a ramp and to the mill crusher stockpile.

Processing and Recovery Operations

The operation produces both oxide and sulphide ore, which is processed through separate circuits. The daily processing capacity of the oxide plant is nominally 650 tonnes of ore. A new sulphide ore processing plant began operating in 2016 as part of the mine's expansion project, which is expected to increase annual silver production to approximately 7.7 million ounces in 2018, while also resulting in significant increases in zinc and lead production. The total throughput at both plants is expected to reach 1,800 tpd by the end of 2017 with the current life of mine plan projecting processing of 1,400 tpd of sulphide ore and 400 tpd of oxide ore.

The oxide plant comprises a conventional cyanide leach plant consisting of crushing, grinding, leaching, Merrill Crowe zinc precipitation, and on-site refining to produce precious metal doré. The sulphide plant is a conventional flotation plant comprised of crushing, grinding and selective lead and zinc froth flotation circuits to recover precious and base metals into separate lead and zinc concentrates. Tailings from both plants are delivered as slurry to separate lined tailings storage facilities. Tailings from the sulphide plant are directed, as required, to a hydraulic backfill plant for re-use underground as backfill in the stopes.

The new Beaty Cimarron shaft, which is located between the Candelaria and Estrella mines, was commissioned in 2016 and has increased hoisting capacity to 2,300 tpd. During 2016, we processed 154,000 tonnes in the oxide plant and 375,000 tonnes in the sulphide plant, producing 5.8 million ounces of silver, 2,900 ounces of gold, 11,400 tonnes of zinc, and 6,000 tonnes of lead. In 2016, silver recovery averaged 82.3% from the oxide processing circuit and 93.0% from the sulphide processing circuit.

All precious metal doré produced at La Colorada 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 La Colorada 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:

2016	Revenue[1, 2]	Quantity Sold	
Silver and Gold in Doré	$21.0 million	1,310,000	ounces of silver
		540	ounces of gold
Lead Concentrate[3]	$78.0 million	13,940	tonnes
Zinc Concentrate[3]	$19.3 million	19,270	tonnes
2015			
Silver and Gold in Doré	$21.5 million	1,410,000	ounces of silver
		880	ounces of gold
Lead Concentrate[3]	$56.9 million	9,400	tonnes
Zinc Concentrate[3]	$11.2 million	14,930	tonnes
2014			
Silver and Gold in Doré	$21.5 million	1,165,000	ounces of silver
		860	ounces of gold
Lead Concentrate[3]	$62.8 million	8,666	tonnes
Zinc Concentrate[3]	$13.7 million	13,201	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 Lead concentrates contain payable silver and gold. Zinc concentrates contain payable silver.

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 already 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 project have been obtained and are currently in good standing.

The mine purchases electrical power from the Mexican national power utility and back up diesel power is also available. As part of the expansion project that is nearing completion, the mine is constructing a new 115 kV power line that is expected to be complete in 2017. Water for the mining operation is supplied from the underground mine dewatering systems and is adequate for the existing and planned future requirements of the mine.

An environmental impact statement ("EIS") and risk assessment on the La Colorada property was submitted to the Mexican environmental authorities in early March 1999. The EIS described the impact of proposed development and mining activities and provided conceptual plans for closure and remediation. The EIS was approved by the Mexican authorities in November 1999 and renewed in late 2010. In 2013, the Mexican authorities approved a modification to the existing environmental permits that allow the proposed expansion of the mine and process plant up to 2,000 tpd. A modification application to the plant expansion permit was approved in early 2015.

La Colorada has voluntarily participated in the Mexican Environmental Protection Authority's ("PROFEPA") "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 mine obtained its first certification in 2008 and has been re-certified every two years since, with the most recent certificate awarded in 2014. The mine is currently going through the re-certification process.

The main environmental projects at La Colorada focus on the stability and revegetation of historic tailings facilities and an upgrade to the existing mine water treatment infrastructure completed in 2016.

A closure cost estimate for La Colorada was prepared according to State of Nevada approved SRCE methodology in 2011 and is updated every year. Pan American has estimated the present value of the final site

reclamation costs for the La Colorada property to be approximately $5.8 million as at December 31, 2016. See “Narrative Description of the Business – Environmental Protection” for further disclosure regarding forward-looking statements related to reclamation costs.

Safety audits are conducted by Pan American’s Director of Health and Safety and safety managers from some of our other mines. As of the end of December, 2016, the mine had accumulated more than 8.8 million hours of work without an LTI.

La Colorada was the recipient of the prestigious “Casco de Plata” award for 2007, 2009, 2013, 2014, and 2015 for the best safety record for underground mines in Mexico with in excess of 500 employees, and took second place in the same category in 2013. In both 2009 and 2014, La Colorada was awarded our Chairman’s Safety Award. During 2016, personnel employed at the mine attended over 55,000 hours of training.

Capital and Operating Costs

In 2016, total capital additions at La Colorada were approximately $62.8 million, with $52.9 million invested in expenditures related to the expansion project. The new sulphide plant and mine shaft were completed in 2016, and apart from some additional work to complete the new 115 kV power line, some underground development in the Estrella vein, and completion of the ventilation circuits, the project is complete. The remainder of the $62.8 million was invested in sustaining capital additions consisting of ventilation raises, equipment replacement and overhaul, diamond drilling, tailings facility expansion and access road works.

Capital investments relating to the remaining work on the expansion project is expected to total $6.5 million to $7.5 million. Sustaining capital investments at La Colorada in 2017 are expected to be between $10.5 million and $11.5 million, including approximately: $3.7 million in underground ventilation raises, additional ore passes, equipment replacements and overhauls; $3.5 million in tailings storage expansion work; $1.4 million in near-mine exploration activities; and $1.0 million in camp improvements.

In 2016, direct operating costs at La Colorada were $50.9 million.

The La Colorada expansion project was approved in December 2013 based on positive results from the La Colorada Report. In the period from 2014 to 2023, the La Colorada Report indicates that, at metal prices of $16 per ounce of silver, the incremental after tax net present value of the expansion project is estimated at $22.0 million at a 10% discount rate, with an internal rate of return of 18.0%, and a payback period of 2.9 years. Over the same period, at metal prices of $19 per ounce of silver, the incremental after tax net present value of the expansion project is estimated at $38.6 million at a 10% discount rate, with an internal rate of return of 22% and a payback period of 2.5 years.

The La Colorada Report, on which the foregoing is based, is a preliminary economic assessment. The results of this preliminary economic assessment are preliminary in nature, in that it includes inferred mineral resources that are considered too geologically speculative to have the economic considerations applied to them that would enable them to be categorized as mineral reserves, and there is no certainty that the assessment will be realized. Mineral resources that are not mineral reserves have no demonstrated economic viability.

Exploration, Development, and Production

In 2017, we anticipate producing between 6.4 million and 6.9 million ounces of silver, between 3,300 and 3,500 ounces of gold, 14,000 and 14,500 tonnes of zinc, and between 7,500 and 7,800 tonnes of lead. The 2017 mine plan contemplates a production rate of 1,800 tpd by the end of the year as the new sulphide plant and shaft are phased into production. With a combination of greater sulphide tonnages mined throughout the year and the additional capacity in the sulphide plant, it is expected that base metal by-product production will be increasing throughout the year. We plan to undertake approximately 25,500 metres of exploration drilling in 2017.

(ii) Dolores

Project Description, Location, and Access

The Dolores open pit silver-gold mine is located in the Sierra Madre Occidental mountain range in the state of Chihuahua, in the municipality of Madera, approximately 250 kilometres west of the city of Chihuahua. The main road access to the property is by maintained dirt access road from Yepachic, Chihuahua. Access is also possible by light aircraft landing on a dirt strip located about eight kilometres from the mine.

In 2012, Pan American acquired all of the issued and outstanding shares of Minefinders and assumed control of the Dolores mine which was held by a Mexican subsidiary of Minefinders, CMD. The area of the concessions is 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 project. To the best of our knowledge, all permits and licenses required to conduct our activities on the project have been obtained and are currently in good standing.

Much of the surface rights on the property are owned by Ejido Huizopa. We have surface rights agreements with Ejido Huizopa and with several individual members of the Ejido 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 Dolores are located within the boundaries of the concessions and surface rights.

A net smelter return royalty of 2% payable on all metal production, plus an additional net smelter return 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. The Company's Mexican operations are subject to governmental taxes, fees and duties, including the SMD and the EMD.

While there are no known significant factors or risks that we currently anticipate will 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 74 for a general discussion of the risks relating to our operations.

History

Placer mining began in the region of the Dolores mine in the 1860s and was followed by lode mining in 1898. A 25-tonne per day stamp mill began treating the Dolores ore from 1915 to early 1929 until 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 Dolores.

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 acquired the Dolores mine at the end of March 2012 and began to operate the mine in April 2012.

Geological Setting, Mineralization, and Deposit Types

Dolores occurs within the Sierra Madre Occidental volcanic belt, a metallogenic terrane well known for its epithermal precious metal deposits. The lower part of the arc comprises late Cretaceous to early Tertiary calc-alkaline batholiths and equivalent volcano sedimentary rocks referred to as the 'Lower Volcanic Series'. They represent magmatic activity about 80 to 40 million years ago and were followed by two periods of major ignimbrite eruption in the early Oligocene and early Miocene. Collectively these constitute the 'Upper Volcanic Series'.

The most important faults, from west to east, are the Chupacabras, San Francisco, and East faults. The San Francisco fault and its footwall host most of the mineralization at Dolores. The immediate footwall and hanging wall of the San Francisco fault form a 500 metre ("m") wide northwest-striking corridor of igneous intrusions broadly following the fault.

Silver and gold mineralization at Dolores is hosted in north-northwest trending hydrothermal breccias and sheeted vein zones in the order of 5 m to 10 m wide. Most high grade mineralization occurs along three major structures that provided the conduit for metal-bearing hydrothermal fluids. Silver and gold mineralization identified on the surface at Dolores lies over an area 4,000 m long and up to 1,000 m wide. The extent of mineralization at depth and along strike has not yet been fully defined.

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 post-mineral 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 property, we have continued with a program of near mine surface geological mapping and diamond drilling.

Drilling

The mine undertakes drilling on an annual basis for mineral resource and reserve definition. Drillholes on the project include both reverse circulation and diamond drilling methods. Since we acquired the project in 2012, diamond drilling has been performed using PQ, HQ, and NQ sized diamond drill rigs by Rock Drill of Aguascalientes, Mexico. Approximately 1,400 drillholes have been completed at the project, mostly focussed on a pattern over the mineral resources and mineral reserves, and roughly spaced 25 metres along strike. The majority of the drillholes were drilled from surface. In 2016 we began drilling from underground.

Sampling, Analysis, and Data Verification

Reverse circulation drillholes were drilled either wet or dry, depending on ground conditions, and a 10 to 13 kilogram sample was selected from the length of the drill rod, which was 1.52 metres. Diamond drillhole samples are marked according to geological features by the project geologist after logging. Most drill core samples have been taken at 2 metre intervals. There are no known drilling, sampling, or recovery issues that could materially impact the reliability of the results.

All samples are transported from the drill rig to the core logging shed by company employees and the shed is locked when no geological staff is present. Samples are collected from the mine by the commercial laboratory where they are maintained under the control of the laboratory. We have no reason to believe that the 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 atomic absorption spectrometry. Any sample with an assay greater than 100 or 200 grams per tonne silver was re-assayed using fire assay with gravimetric finish. Gold was analyzed using fire assay with atomic absorption finish and with gravimetric finish if the assay was greater than one or two grams per tonne, depending on which laboratory was used. Since acquiring the project, we have sent samples to SGS Laboratories in Durango, Mexico. Samples are assayed for gold using fire assay with atomic absorption spectrometry finish, and by fire assay with gravimetric finish for samples greater than 10 grams per tonne of gold. Silver is analysed by three acid digestion with ICP-AES finish for trace silver

values, by three acid digest with atomic absorption spectrometry finish for samples less than 300 grams per tonne silver, and by fire assay with gravimetric finish for samples containing greater than 300 grams per tonne silver.

Since acquiring the Dolores mine, we have implemented an industry standard QAQC program including the submission of certified standards, blanks, and duplicate samples to the laboratory and review the results regularly to ensure the appropriate action is taken in the event of a QAQC failure.

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 recovery model, historical performance of the plant 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, as at December 31, 2016, are as follows:

Dolores Mineral Reserves [1, 2]			
Reserve Category	**Tonnes (Mt)**	**Grams of Silver per tonne**	**Grams of Gold per tonne**
Proven	41.6	27	0.77
Probable	22.5	25	0.65
TOTAL	64.1	26	0.73

Notes:

1 Estimated using a price of $18.50 per ounce of silver and $1,300 per ounce of gold.

2 Mineral reserve estimates for Dolores 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, as at December 31, 2016, are as follows:

Dolores Mineral Resources [1, 2]			
Resource Category	**Tonnes (Mt)**	**Grams of Silver per tonne**	**Grams of Gold per tonne**
Measured	1.9	13	0.22
Indicated	3.2	24	0.43
Inferred	1.7	37	1.01

Notes:

1 These mineral resources are in addition to mineral reserves. Estimated using metal prices of $25 per ounce of silver and $1,400 per ounce of gold.

2 Mineral resource estimates for Dolores 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 multiple indicator kriging and ordinary kriging within three dimensional geological interpretations using industry standard mining software. 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 was then depleted for previous surface and underground mining. Planned dilution was applied to the block model and a value per tonne was estimated and applied to each block based on estimated gold and silver grades, estimated metallurgical recoveries, resource and reserve metal prices as given in the tables above, and mining and processing costs. A reserve pit design and underground stope shapes were prepared using reserve metal prices on measured and indicated blocks. Resources and reserves are reported separately within the reserve pit design and stope shapes.

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 Dolores.

Mining Operations

Mining at Dolores is by standard open pit methods using shovels, loaders, and haul trucks. Each bench is 7.5 metres high. Angled reverse circulation drill holes perpendicular to the strike of mineralization are used for grade control to provide high-quality data for interpreting the ore/waste contacts in advance of mining. Medium grade material may be placed on stockpiles allowing for the preferential crushing and stacking of higher grade material.

In May, 2015 the Board of Directors approved an expansion project that, when completed, will include the construction of a pulp agglomeration treatment plant and an underground mine that is scheduled to reach 1,500 tpd by the end of 2017. The underground mine schedule indicates a mine life that extends until 2025. The projected mine life of the mining operations may increase if additional mineral resources are defined and can be converted to mineral reserves.

Processing and Recovery Operations

The mine uses conventional cyanide heap leaching technology to produce gold and silver doré. Broken ore is trucked from the open pit to the crushing plant, where it is crushed, conveyed to the leach pads, and placed on the pads using conveyors and a radial stacking system. A distribution piping and nozzle system is used to irrigate the heaps with cyanide solution. The leaching period can cover years, and continues as subsequent lifts are placed on the pads. The pregnant solution is collected in a pond, clarified, and processed through a Merrill-Crowe circuit to precipitate gold and silver from solution onto zinc dust. The solution is pumped to filter presses, where the resulting material containing gold, silver and zinc is dried in a retort oven where trace amounts of mercury is removed. The dried material is then melted in a furnace to form doré bars.

The expansion project involves increasing the overall processing rate from 16,200 to 20,000 tpd by processing the high grade portion of the mined material through a pulp agglomeration treatment plant and conveying the agglomerated material with the crushed lower grade portion of the mined material to the heap leach pads for leaching. The pulp agglomeration plant will be comprised of crushing, grinding, particle size classification, filtration, agglomeration, and reagent facilities. The pulp agglomeration process of liberating metals by grinding has the advantage of improved leaching kinetics and ultimate recovery of precious metals in the high grade ore relative to the current heap leach method.

The Company anticipates meeting a scheduled start-up of the pulp agglomeration plant by mid-2017.

During 2016, we stacked 6.3 million tonnes on the leach pads and produced 3.8 million ounces of silver and approximately 102,800 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 a multi-year refining contract in place with a refiner in the USA. 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:

2016	Revenue[1,2]	Quantity Sold
Silver and Gold in Doré	$189.3 million	3,839,000 ounces of silver 98,590 ounces of gold
2015		
Silver and Gold in Doré	$166.1 million	4,448,000 ounces of silver 82,510 ounces of gold
2014		
Silver and Gold in Doré	$156.6 million	3,911,600 ounces of silver 64,301 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 already been constructed and are located within the boundaries of the mining leases and surface rights controlled by us. Water for the operations is sourced from wells, pit and underground ramp dewatering activities, the nearby Rio Tutuaca, and from the Chabacan dam.

Pan American holds all necessary environmental and operating permits for the development and operation of the existing mine and is in compliance with Mexican law. The Mexican Secretariat of Environment and Natural Resources ("SEMARNAT") approved permit applications for the construction and operation of Dolores, including an Environmental Impact Study or Manifestation ("MIA"), a Technical Justification Study for Change of Land-Use, and an Environmental Risk Study. These studies include a full assessment of the environmental and social impacts of the mine and environmental management plans, which describe the ongoing management and environmental monitoring programs. Other principal permits include an Accident Prevention Program, a Surface Water Extraction Authorization, an MIA for an underground exploration ramp, and a Waste Management Plan. These permits are renewed regularly and as far as Pan American is aware, all of the permits required for the mine and processing operations are in good standing.

The most significant environmental liabilities associated with the Property include surface disturbance and reclamation liabilities and issues related to the stability and containment system of heap leach Pad 1, which developed prior to Pan American's acquisition of the Property. A tear in the liner of Pad 1 developed in June 2010 following movement in the stability berm and significant leakage was collected by the leak collection system. Minefinders ceased stacking and irrigation on Pad 1 and relocated approximately 2 million tonnes of ore to heap leach Pad 2. The pad under the excavated material was examined and stabilized with an additional retaining wall structure, and the damaged liner was repaired. No sodium cyanide was detected in the downstream surface and ground water sampling points as a result of the failure, and continued soil and water sampling below Pad 1 has confirmed that no residual cyanide is present.

Approximately 7 million tonnes of ore remain in a stable state on Pad 1, awaiting transfer to another operational pad. Full remediation of the Pad 1 liner system will be required as the life of mine plan and leach pad capacity estimates indicate that the pad will be required for use in the future. The additional costs associated with moving the ore and reconstructing the pad, as well as the additional metal production from the partially spent ore currently on Pad 1, have been accounted for in the life of mine plan.

Pan American has implemented additional contingency measures in and around the heap leach pads, including the installation of well riser type over-liner solution collection systems, additional under drain and leak collection systems, and a network of containment, monitoring, and demonstration wells. Pan American also engages in construction and expansions to the pads after application of rigorous quality control to both the design and construction of the facilities.

New permits for a pulp agglomeration plant were obtained in 2016 as part of the mine expansion project. An exploration permit for the construction of the underground mine ramp was extended and a new application for the expansion of leach pad 3 was made.

A closure cost estimate for Dolores was prepared according to State of Nevada approved SRCE methodology in 2012 and is updated every year. We have estimated the present value of reclamation costs for the Dolores property at December 31, 2016 to be approximately $15.6 million. See "Narrative Description of the Business – Environmental Protection" for further disclosure regarding forward-looking statements related to reclamation costs.

Safety audits are conducted by Pan American's Director of Health and Safety and safety managers from some of our other mines. As of the end of December, 2016 the mine has accumulated more than 4.1 million hours of work without an LTI. During 2016, personnel employed at Dolores attended nearly 154,000 hours of safety-related training. Dolores was the recipient of the Chairman's Safety Award for safety performance during 2013. In 2015, Dolores was the recipient of the prestigious "Casco de Plata" award for the best 2014 safety record for open pit mines in Mexico with in excess of 500 employees.

Capital and Operating Costs

In 2016, total capital additions at Dolores were approximately $106.5 million, including $40.4 million of sustaining capital, primarily for capitalized pre-stripping and leach pad expansions, as well as $66.1 million invested in the expansion project, including $6.8 million relating to the completion of the construction of a power line, $40.4

million for advances on the pulp agglomeration expansion, and $17.2 for the development of a new underground mine.

Sustaining capital investments at Dolores during 2017 are expected to be between $39.0 million and $40.0 million. The major components of these investments include approximately: $20 million for open pit mine pre-stripping; $7.0 million in equipment replacements and rehabilitations; $8.4 million in leach pad and solution pumping expansion works; $2.3 million in various projects including electrical system upgrades, crusher dust suppression system upgrades, and other equipment replacements and refurbishments; and $1.2 million for camp and ancillary upgrades. In addition, capital investments relating to the expansion project are expected to require $51.5 million to $54.5 million in 2017.

In 2016, direct operating costs at Dolores were $121.2 million.

Exploration, Development, and Production

In 2017, we anticipate producing between 4.0 and 4.5 million ounces of silver and between 109,100 and 115,000 ounces of gold from the Dolores mine. The underground mine is scheduled to reach 1,500 tpd by the end of 2017, and the pulp agglomeration plant is scheduled to start production in mid-2017 and ramp up its processing rate to 5,600 tpd by the end of the year. We plan to undertake 5,900 m of exploration drilling in 2017.

(iii) Alamo Dorado

Project Description, Location, and Access

The Alamo Dorado open pit silver mine is located 45 kilometres south-southeast of the town of Alamos in the southeast corner of the state of Sonora, near the border with the state of Sinaloa in northwest Mexico. Alamo Dorado is accessed by paved highway from the cities of Hermosillo and Ciudad Obregon into the town of Alamos, and from Alamos by an unpaved road. Major airports in the state of Sonora are located in Hermosillo and Ciudad Obregon, and the town of Alamos is also serviced by a sealed airstrip.

On February 20, 2003, Pan American acquired Corner Bay and its subsidiaries pursuant to a plan of arrangement. Our wholly-owned subsidiary, MCB, owns and operates the mine. The mine consists of two mining concessions, the 509 hectare Alamo Ocho concession and the 4,865 hectare Alamo Dorado concession, and five exploration concessions covering 6,014 hectares, and surface rights covering 763.64 hectares. We pay an annual fee to maintain the concessions in good standing, and to our knowledge, we have met all of the necessary obligations to retain the project.

Much of the surface rights with respect to Alamo Dorado are owned by an “ejido”, which is a communal land tenure held by local community groups. We have surface rights agreements with a number of local ejido groups and with certain other private land owners allowing us access and use in connection with our exploration and mining activities. Our mining operations, waste storage areas, and other facilities fall within these surface rights agreements.

All of the mine workings, the processing plant, effluent management and treatment systems, and tailings disposal areas relating to Alamo Dorado are located within the boundaries of the Alamo Ocho and Alamo Dorado concessions and surface rights.

To the best of our knowledge, the Alamo Dorado mine is not subject to any royalties, overrides, back-in rights, payments or other agreements and encumbrances. The Company’s Mexican operations are subject to governmental taxes, fees and duties, including the SMD and the EMD.

While there are no known significant factors or risks that we currently anticipate will 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 74 for a general discussion of the risks relating to our operations.

History

There is no record of any modern exploration conducted at Alamo Dorado prior to 1997, nor are there any records of production, although there is evidence of a few old adits in the general area. All recorded drilling at the property has been undertaken since 1997. Prior to our acquisition of the project in 2003, exploration at Alamo Dorado was primarily comprised of reverse circulation drill campaigns conducted annually from 1998 to 2001.

Site construction commenced in April 2005 and production of silver commenced in 2007. Open pit mining finished by year end of 2015, and the mine will process the remaining stockpiles during 2017.

Geological Setting, Mineralization, and Deposit Types

The Alamo Dorado mine is located in the Sierra Madre Occidental mountain range, a volcanic plateau that extends for hundreds of kilometres through northwestern Mexico. The volcanic sequence is divided into the Upper and Lower Volcanic Series. The Lower Volcanic Series consists of tuffs, flows, and volcanic breccias and the Upper Volcanic Series consists of ash flow and ash fall tuffs that unconformably overlie the Lower Volcanic Series.

Mining districts in the Sierra Madre are typically located along sheared and faulted structural zones formed in the Lower Volcanic Series. The rocks hosting mineralization at the mine consist of a sequence of deformed and metamorphosed, steeply dipping, marine rocks that contain minor intercalated siliceous exhalite and pillow basalt. The marine sedimentary rocks were intruded by a number of dykes and granodiorite stocks. Silver mineralization is mostly hosted by the metamorphosed volcanic rocks.

Stratiform, low sulphidation epithermal mineralization and alteration of the rocks at Alamo Dorado is controlled by a structural zone that has been folded and metamorphosed by regional deformation events. Silver and gold mineralization may have been associated with the emplacement of a diorite feldspar porphyry dyke and/or a granodiorite stock, both of which display hydrothermal alteration and contain silver mineralization.

Hypogene silver mineralization occurs predominantly as argentite with fine disseminated pyrite in quartz veins, within quartz crystals of siliceous gangue, and within fractures in siliceous gangue. It also occurs as tetrahedrite intergrown with pyrite, galena, and sphalerite. In the upper oxide environment the silver mineralization occurs in the form of silver chloride minerals, acanthite, and silver sulphosalts.

Exploration

The main form of exploration on the property has been through drilling campaigns using reverse circulation and diamond drill coring methods carried out by a third party under the supervision of the Alamo Dorado mine geology department. There are no known sample recovery, contamination, or bias issues that could have a material impact on the reliability of the sample results.

Drilling

Approximately 120 reverse circulation and 160 diamond drillholes have been drilled in or in the vicinity of the deposit, mainly on a 25 metre grid pattern. No diamond drilling has taken place at the mine since 2014, in anticipation of the closure of the mine. In the recent past, drillholes were drilled using diamond drilling methods with HQ diameter surface drill rigs.

Sampling, Analysis, and Data Verification

Samples from reverse circulation drillholes were collected at 1.52 metre intervals, and split to obtain a 3.5 to 5 kilogram sample. Drill core samples were usually selected at approximately 1.5 metre intervals. Drill core recovery was good, while recovery for reverse circulation drilling was approximately 70%. There are no known drilling, sampling, or recovery factors that have had a material impact on the results of the data.

The drillholes were brought from the drill rig to the core shack and kept in a secure location. Once the drillhole was logged and sampled, the samples were collected by the commercial laboratory where they were maintained under the control of the laboratory. We have no reason to believe that the validity and integrity of the samples were compromised.

Drill core samples were prepared and analysed by ALS Chemex in Durango, Mexico, using fire assay with gravimetric finish methods for the analysis of gold and for silver. Trace silver content below the detection limit of the fire assay method was determined using aqua regia digest with inductively coupled plasma – atomic emission spectroscopy ("ICP-AES") finish. The Alamo Dorado mine geology department conducted a QAQC program including the insertion of standards and blanks to the laboratory and the results of the QAQC samples demonstrate acceptable accuracy and precision.

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

Mineral Resource and Mineral Reserve Estimates

We are currently processing stockpiled material and there are effectively no remaining mineral resources or reserves at Alamo Dorado.

Mining Operations

Until 2015, Alamo Dorado operated as a conventional surface mine utilizing hydraulic shovels, front end loaders, and mechanical trucks to mine on 5 metre high benches. At the end of 2015, the open pit mining operations were completed and the mine is processing the lower grade stockpile material for as long as it is economically viable to do so or there is stockpiled material remaining. We presently anticipate that the mine will process all of the remaining stockpiles during 2017.

Processing and Recovery Operations

Stockpiled ore is treated by conventional crushing and semi-autogenous and ball mill grinding followed by thickening, agitated cyanide leaching, leach residue filtration, direct electrowinning to produce a cathode sludge, AVR (acidify, volatilize, and re-neutralize) cyanide recovery and recirculation, leach residue washing with AVR product solutions, dry stack tailings, and conventional silver and gold doré production from melting of the cathode sludge. The nominal design treatment rate is 4,000 tpd of ore. The mine's tailings treatment process recovers approximately 45% of the sodium cyanide used and also neutralizes mill tailings, thus reducing the mine's environmental impact and reclamation costs. During 2016, we processed 1.8 million tonnes of ore, producing 1.9 million ounces of silver and 8,400 ounces of gold with metallurgical recoveries of 68.8% of silver and 76.5% of gold.

Most production from Alamo Dorado 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. We enter into multi-year refining contracts with refiners for the production from Alamo Dorado. The mine also produces a small amount of silver and gold in the form of a copper-lead rich precipitate from the AVR circuit. This material is typically sold to concentrate traders under annual contracts, which consider the presence of any deleterious elements. We have not had any difficulty in securing contracts for the sale of Alamo Dorado doré and concentrates, 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 and doré produced by the Alamo Dorado mine for the past three years were as follows:

2016	Revenue[1, 2]	Quantity Sold	
Silver and Gold in Doré	$45.0 million	1,935,000	ounces of silver
		10,670	ounces of gold
AVR copper/silver Concentrates[3]	$0.9 million	400	tonnes
2015			
Silver and Gold in Doré	$68.2 million	2,882,882	ounces of silver
		20,324	ounces of gold
AVR copper/silver Concentrates[3]	$1.0 million	600	tonnes
2014			
Silver and Gold in Doré	$90.5 million	3,590,000	ounces of silver
		17,500	ounces of gold
AVR copper/silver Concentrates[3]	$0.0 million	320	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 AVR concentrates contain payable silver and gold.

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 already been constructed and are located within the boundaries of the mining leases and surface rights controlled by us. Power is purchased from the Mexican national power utility and supplied by a 115 kilovolt power transmission line from a hydroelectric station located 35 kilometres from the mine. Water is supplied from wells located 27 kilometres to the southwest and pumped through a pipeline to the mine.

To the best of our knowledge, all permits and licenses required to conduct our activities on the project have been obtained and are currently in good standing.

The original environmental permitting work for Alamo Dorado considered options developed for the 2002 feasibility study, and was provided by MCB in conjunction with Aguayo Consultoría Ambiental, MCB's environmental consultant and coordinator. An EIS and risk assessment study, as well as ancillary documents, were submitted by MCB to the Secretariat of Environment and Mineral Resources ("SEMARNAT") to identify potential major deficiencies and for appropriateness for permitting Alamo Dorado. SEMARNAT recommended a finding of no significant impact in the original impact statement/permitting document. Following completion of the updated feasibility study, the original EIS and risk assessment study documents were revised, resubmitted, and approved by SEMARNAT. Project construction commenced in 2005 based on the approved EIS and an improved modification of the SEMARNAT Temporary Land Use Permit for the operation of a mill and disposal of non-toxic tailings in a dry stack tailings area.

MCB had an agreement with SEMARNAT for compensation activities for mitigation of the environmental impact of the Alamo Dorado project. MCB conducted its compensation activities on schedule during the term of the agreement (2005-2007) and within the framework of its agreement with SEMARNAT. Confirmation was received in August 2007 from SEMARNAT acknowledging the end of the third and final stage of the agreement.

The main environmental projects at Alamo Dorado focus on revegetation and mine closure studies. Full scale reclamation of the waste dumps at Alamo Dorado commenced in 2016 following the cessation of open pit mining. Reclamation work included regrading of waste dumps, placement of topsoil, and revegetation using hydroseeding and replanting native species from the Company's greenhouse. Cover material was hauled to the tailings stack and water diversion and passive treatment structures were constructed. Closure and care and maintenance activities will continue in 2017. An updated closure plan for the mine was submitted to SEMARNAT in November 2016.

Alamo Dorado has voluntarily participated in the PROFEPA "Clean Industry" Program which involves independent verification of compliance with all environmental permits and the implementation of good practice environmental management procedures and practices. PROFEPA awarded Alamo Dorado the "Clean Industry" distinction in 2013, and the certification was renewed in 2015.

A closure cost estimate for Alamo Dorado was prepared according to State of Nevada approved SRCE methodology in 2011 and is updated every year. We have estimated the present value of reclamation costs for the Alamo Dorado property at December 31, 2016 to be approximately $5.6 million. This estimate decreased from 2015 mainly due to the advance of mine reclamation and changes to the closure plan for the open pit and tailings stack. See "Narrative Description of the Business – Environmental Protection" for further disclosure regarding forward looking statements related to reclamation costs.

Safety audits are conducted by Pan American's Director of Health and Safety and safety managers from some of our other mines. During 2016, personnel employed at Alamo Dorado attended nearly 9,000 hours of safety related training. Alamo Dorado was awarded the "Casco de Plata" award in the open pit category for the best safety record in Mexico during 2008 and during 2010. In 2015, Alamo Dorado was runner up in the Casco de Plata for open pit mines with fewer than 500 employees. In 2013, Alamo Dorado was the recipient of the Chairman's Safety Award for safety performance during 2012. The mine has recorded only one LTI since the start of the project and as of the end of 2016 had accumulated more than 7.1 million hours worked without an LTI.

Capital and Operating Costs

Due to the completion of mining in 2015, no expenses were capitalized during the year. Similarly, no capital expenditures have been planned for 2017 due to the fact that the Alamo Dorado mine is nearing the end of its life. Decommissioning obligations are expected to be incurred starting in 2016 and carrying on through 2018.

In 2016, direct operating costs at Alamo Dorado were $40.2 million.

Exploration, Development, and Production

As the mine is at the end of its life, no exploration or development activities are planned. In 2017, we anticipate producing between 250,000 and 300,000 ounces of silver and between 1,400 and 1,500 ounces of gold as we complete processing of the remaining stockpiled material.

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 the Central Highlands of Peru. The nearest town is Cerro de Pasco, a major mining center, and is connected to Lima by road and rail. Access to the mine is by a paved highway. There is also a light aircraft strip at the town of Vicco, which is located approximately 30 minutes flying time from Lima, at which point an additional 30 minutes of driving is required to reach Huaron.

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. 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, the processing plant, existing tailing impoundments, effluent management and treatment systems, and waste rock storage facilities are located within our concessions.

To the best of our knowledge, Huaron is not subject to any overrides, back-in rights, payments, or other agreements and encumbrances. The Company's 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 anticipate will 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 74 for a general discussion of the risks relating to our operations.

History

The underground mine, mill, and supporting villages were originally built in 1912 by a subsidiary of the French Penarroya Company. In 1987, the mine was sold to Mauricio Hochschild and Cia Ltda ("Hochschild"). In April, 1998, a portion of the bed of the nearby Lake Naticocha collapsed and flooded the neighbouring Animon underground mine. Through interconnected tunnels, the lake water entered and flooded the Huaron mine, causing its closure.

After the April 1998 flooding, the Huaron mine operations were shut down, the labour force was terminated, the camp closed, and work was undertaken to clean up the flood damage, drain the workings, and prepare for an eventual mine re-opening. 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. In September 2000, the operators of the Animon mine, in accordance with a settlement agreement reached with Cía. Minera Huaron S.A., constructed a channel to route water around the lake to provide water for the Huaron mine operation.

We acquired a majority interest in the Huaron mine from Hochschild in 2000 and began full-scale operations in 2001. We subsequently acquired the remaining interest in the mine and, following a demerger from Pan American Silver Mina Quiruvilca S.A. in connection with the sale of the Quiruvilca mine in 2013, Pan American now holds, directly or indirectly, approximately 99.94% of PAS Huaron.

Prior to our acquisition of the mine, approximately 22 million tonnes of silver-rich base metal sulphide ore were produced at the property. Ore from the mine was processed on site by crushing, grinding, and flotation to produce copper, lead, and zinc concentrates, as it is today.

Geological Setting, Mineralization, and Deposit Types

The Huaron property 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 and 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 cross cut the mine stratigraphy. Huaron 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.

Huaron 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. Most of the structures show open mineralization at depth and along strike and have excellent exploration potential. Vein orientations vary but generally trend east-west or north-south. The current mineral reserves are based on approximately 100 different structures which have been grouped into 13 families of mineralized trends according to location and orientation.

The most important economic minerals are tennantite-tetrahedrite (containing most of the silver), sphalerite, and galena, but more than 90 other minerals have been identified. The principal gangue minerals are pyrite, quartz, calcite, and rhodochrosite. Enargite and pyrrhotite are common in the central copper core of the mine and zinc oxides and silicates are encountered in structures with deep weathering. Silver is also found in pyrargyrite, proustite, polybasite, and pearceite.

Exploration

Since Huaron is an active mining operation, current exploration is conducted using a combination of underground diamond drilling and channel sampling from drifts excavated along the mineralized zones. Vein intersections and sample grade information from both the channel samples and the diamond drillholes are used to estimate mineral resources and mineral reserves. Underground diamond drilling is undertaken by an external drilling contractor supervised by us.

Drilling

The mine undertakes drilling on an annual basis for mineral resource and reserve definition. All underground holes are drilled by an external drilling contractor under our supervision using BQ, NQ, and HQ diameter industry standard underground diamond drill rigs.

Sampling, Analysis, and Data Verification

Diamond drillhole samples are split in half with a diamond bladed saw after the core has been logged and the sample intervals have been marked by the geologist. Channel samples weighing between 4 kilograms and 6 kilograms are collected with a hammer and chisel every 4 metres across the vein in stoping areas, every 2 metres across the vein in sublevels and drifts, and every 1 metre in vertical developments. Samples from both channel samples and diamond drillholes vary between 0.1 metres and 1.5 metres in length. There are no known drilling, sampling, or recovery issues that could materially impact the reliability of the results.

No out of the ordinary security measures are taken with the samples, but as the samples are prepared and analysed within the confines of the general mine security enclosures, there is no reason to believe that the validity and integrity of the samples have been compromised.

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

The laboratory conducts a routine internal QAQC program. For each batch of samples at least one blank sample and one certified standard is submitted by the laboratory. A QAQC program supervised by the geology department is also implemented which includes the submission of certified standards, duplicates, and blanks on a daily basis to the onsite laboratory. Duplicate samples are also submitted to a second laboratory to act as a check on the onsite laboratory.

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, as at December 31, 2016, are as follows:

Huaron Mineral Reserves [1, 2, 3]					
Reserve Category	**Tonnes (Mt)**	**Grams of Silver per tonne**	**% Zinc**	**% Lead**	**% Copper**
Proven	5.7	169	3.02	1.46	0.37
Probable	3.8	167	3.10	1.62	0.38
TOTAL	9.5	168	3.06	1.52	0.37

Notes:

1 Estimated using a price of $18.50 per ounce of silver, $2,200 per tonne of zinc, $2,000 per tonne of lead and $5,000 per tonne of copper.

2 Mineral reserve estimates for Huaron 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 Numbers may not add due to rounding.

Management estimates that mineral resources at the Huaron mine, as of December 31, 2016, are as follows:

Huaron Mineral Resources [1, 2]					
Resource Category	**Tonnes (Mt)**	**Grams of Silver per tonne**	**% Zinc**	**% Lead**	**% Copper**
Measured	2.2	165	2.93	1.57	0.27
Indicated	1.7	164	2.99	1.56	0.33
Inferred	6.2	164	2.81	1.56	0.34

Notes:

1 These mineral resources are in addition to mineral reserves. Estimated using a price of $18.50 per ounce of silver, $2,200 per tonne of zinc, $2,000 per tonne of lead and $5,000 per tonne of copper.

2 Mineral resource estimates for Huaron 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 are prepared on an annual basis and updated with the additional diamond drilling and channel samples collected during the year, using a variation of the polygonal method in AutoCAD and Excel software. Each vein structure is projected onto a longitudinal section and divided into a series of geometrical blocks. The average true width of the vein intersections is applied to the block area to determine the volume. Sample grades are reviewed and treated for extreme values if necessary, and then the average grade of the intersections within each block is assigned to the block. Bulk density values are applied to the volume of the block to estimate the tonnes of each block, based on the average of bulk density measurements.

The blocks are then depleted for previous mining. Planned mining dilution is applied to each block considering the width, dip angle, mining method, and expected ground conditions of each vein and an allowance is made for expected mining losses. A value per tonne is applied to each block based on metal content, metal prices, concentrate sales terms, concentrate quality, processing recovery, transportation, refining, and other selling costs such as storage fees, port fees, etc. Metallurgical recoveries are determined separately for each group of veins or structures to account for variability in the recovery. Any blocks that do not meet the criteria of resources are removed. Each block is classified for measured, indicated, and inferred confidence categories depending on the location of the block relative to mine workings, the type of sample available in each block, and the number of samples available to estimate each block.

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 a combination of conventional cut and fill, mechanized cut and fill, and mechanized sub-level long hole stoping methods, using unconsolidated development waste and mill tailings for back fill. Mechanized sub-level long hole stoping is the primary mining method at the mine. A combination of haul trucks and electric locomotives are in place for haulage from the upper parts of the mine. A shaft with a hoist is used for hoisting ore and occasionally waste to the surface. Ore sourced from below the 500 level is hauled to the surface crusher using a combination of diesel haul trucks and hoisting in the mine shaft. Over the past several years, Pan American has undertaken efforts to mechanize the mining operations of the wider veins and ore bodies at Huaron, with the aim of improving efficiency and operating costs. This work is now continuing on the narrower veins.

Processing and Recovery Operations

Huaron operates an 870,000 tonne per year nominal capacity mill using froth induced flotation technology to produce silver in copper, lead, and zinc concentrates. The mill flowsheet consists of three-stage crushing, ball mill grinding, and selective flotation of the ore to concentrates, followed by thickening and filtering of the concentrates. Tailings from the processing plant are either returned underground hydraulically to act as backfill material in the cut and fill mining areas or delivered to a tailing impoundment area via a pipeline.

In 2016, the mill processed approximately 904,400 tonnes of ore with metallurgical recoveries averaging 84.2% for silver, 74.4% for zinc, 79.4% for lead, and 75.5% for copper. Metal production during the year was approximately 3.8 million ounces of silver, 19,900 tonnes of zinc, 10,700 tonnes of lead, and 6,100 tonnes of copper.

The silver rich zinc, lead, and copper concentrates from Huaron 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, 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 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:

2016	**Revenue[1, 2]**	**Quantity Sold (Tonnes)**
Zinc Concentrate[3]	$30.6 million	42,558
Lead Concentrate[3]	$35.7 million	19,896
Copper Concentrate[3]	$39.4 million	25,219
2015		
Zinc Concentrate[3]	$15.7 million	28,899
Lead Concentrate[3]	$19.5 million	13,707
Copper Concentrate[3]	$40.5 million	25,949
2014		
Zinc Concentrate[3]	$21.3 million	30,058
Lead Concentrate[3]	$19.3 million	12,095
Copper Concentrate[3]	$54.3 million	22,497

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 mine workings, processing plant, tailings and waste disposal areas, effluent management and treatment facilities, roads, and power and water lines have already 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 project have been obtained and are currently in good standing. We are authorized to source the water necessary for our operations from a system of nearby lakes. The primary source of power for the mine is the Peruvian national power grid and is sufficient for the mine's current requirements.

In October 2003, the Peruvian government passed legislation requiring active mining operations to file closure plans. In October 2005, administrative rules associated with this legislation were promulgated, which laid out detailed closure requirements and required that detailed closure plans and cost estimates be filed by October 2006.

The original closure plan for Huaron was filed by mid-year 2004, and in August of 2006, we submitted a comprehensive closure plan for Huaron to the Ministry of Energy and Mines ("MEM") in accordance with that ministry's regulations and the updated rules. The closure plan was prepared by third party consultants registered with the Peruvian authorities as qualified to present closure plans to the MEM. The closure plan includes a summary of the proposed closure scheme for each of the major areas of impact such as mine water, tailings areas, waste rock dumps, plant site infrastructure, and underground mine. A detailed cost estimate was prepared based on our and the consultant's shared experience with closure works and experience with other projects in Peru. As required by the MEM, the costs were summarized in three phases: concurrent closure, final closure, and post closure. Updated closure plans are filed as required.

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 deposit. All waters are captured and treated in a treatment plant to achieve compliance with discharge limits.

The Peruvian government modified its receiving water quality limits in December 2015. The new limits remove a controversial sulphate limit which was previously proposed, bringing the limits in line with current international standards and significantly reducing potential cost impacts to our Peruvian operations. We continue to evaluate the potential impact of the 2015 changes to water treatment practices at Huaron. New "Adaptation Plans" will be submitted in 2017 if any treatment upgrades are required to meet the new limits. Once approved, we would have three years to implement any necessary upgrades. We completed the implementation of voluntary measures, such as water treatment plant automation at Huaron in 2016, which improves our ability to comply with the 2015 water quality limits when they come into force.

An agreement signed in 2000 allows Volcan Compañia Minera S.A.'s ("Volcan") Chungar mine, which neighbours Huaron, 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, however provisions of the agreement that would enable 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 Chungar to Huaron represents 19% of the total flow in the drainage tunnel and recommended the installation of a permanent monitoring system for ongoing verification. Measured flows from Chungar decreased significantly in 2015 and remained low in 2016, however, we continue to negotiate the details of the joint monitoring and any responsibility for costs with Volcan.

A closure cost estimate for Huaron was prepared according to State of Nevada approved Standard Reclamation Cost Estimator methodology in 2011 and is updated every year. The current present value of closure expenditures at Huaron as at December 31, 2016, is estimated at $9.4 million. See "Narrative Description of the Business – Environmental Protection" for further disclosure regarding forward-looking statements related to reclamation costs.

Safety audits are conducted by Pan American's Director of Health and Safety and safety managers from some of our other mines. During 2016, personnel at Huaron attended nearly 202,000 hours of training. The Huaron mine was the recipient of the Chairman's Safety Award for 2016.

Capital and Operating Costs

Since the mine is in operation, any sustaining capital expenditures are justified on an on-going basis. Capital additions at Huaron during 2016 totalled $11.1 million, primarily on mining equipment, tailings storage facility expansion, mine development, and exploration drilling.

We have forecasted sustaining capital investments of between $8.0 million and $9.0 million for 2017, primarily for mine development, mine equipment refurbishment and replacement, and near mine diamond drilling.

In 2016, direct operating costs at Huaron were $67.9 million.

Exploration, Development, and Production

In 2017, Huaron is forecast to produce between approximately 3.7 and 3.8 million ounces of silver and between 300 and 400 ounces of gold. Base metal production is expected to be between 16,000 and 16,500 tonnes of zinc, between 7,200 and 7,400 tonnes of lead, and between 6,000 and 6,200 tonnes of copper. We plan to undertake 20,000 metres of exploration drilling in 2017.

(ii) Morococha Mine

Project Description, Location, and Access

The Morococha mine is an underground silver mine located 137 kilometres east of Lima in the province of Yauli. The nearest city is La Oroya, approximately 38 kilometres to the east. Morococha is accessible via Peru's paved central highway and an all-weather gravel road. Rail service from Lima is also available via a national rail line that passes adjacent to the operations.

Morococha is owned and operated by Argentum, a Peruvian company in which Pan American, through our subsidiary Pan American Peru, has a 92.01% voting common share interest (the remaining interest is held by Alejandro Gubbins and Compañía Minera Casapalca S.A.). In addition, we have, directly or indirectly, the majority of the non-voting investment shares resulting in a total ownership interest of approximately 92.3% as at December 31, 2016 (excluding certain investment shares held by Argentum itself).

Morococha is comprised of three economic administrative units ("UEAs") and various concessions held outside of these UEAs, for a total of 541 mining concessions with an area of approximately 10,522 hectares, as well as two processing concessions. The three UEAs contain 454 mining concessions and two processing concessions owned outright by Argentum and 11 concessions transferred to Argentum from Silver Lead Mining Company S. A. There are also 36 concessions under a lease agreement with Corporación Minera Sacracancha S.A.C., 31 concessions under option from Minera Chinalco Peru ("MCP"), and nine concessions held by agreement with different third parties. The majority of the mining concessions comprising Morococha are contiguous.

The known mineralized zones, mineral reserves and mineral resources, mine workings, processing plants, effluent management and treatment systems, and the mine's tailings and waste disposal areas are contained within the boundaries of these concessions. These mining concessions give us the exclusive right to explore, develop, and exploit, as well as the right to market all of the products. Mining concession titles for these properties have been granted by and are registered with the Public Registry of Peru, and we pay an annual fee to keep the licenses in good standing, and to our knowledge, we have met all of the necessary obligations to retain the project. To the best of our knowledge, all permits and licenses required to conduct our activities on the project have been obtained and are currently in good standing.

Argentum did not hold registered legal title to most of the surface lands that overlie the mining concessions which comprise Morococha when we acquired Morococha in 2004, including lands on which Morococha's process plants, shafts and access roads were located. These rights were all formerly owned by Centromin. Centromin granted Argentum a right to use certain of Centromin's surface lands throughout the useful life of its mining operations, provided such use does not interfere with the development of a mine in respect of the Toromocho disseminated copper system, which overlies certain of Argentum's mining concessions and underground mining operations. Argentum had an obligation to pay Centromin $60,000 (adjusted annually for inflation) quarterly commencing May 28, 2003 as consideration for this right. Argentum's and its predecessors' use of these surface lands have been exercised for decades with Centromin's knowledge and Argentum's claim to its continued use of these surface rights was based on concepts of rights acquired through long term use often referred to as adverse possession.

Peru Copper Inc. (“Peru Copper”), a copper mining company carrying on business in Peru, acquired mining concessions and surface rights to the Toromocho property from Centromin. In June 2007, Aluminum Corporation of China (“Chinalco”) purchased 100% of the outstanding shares in Peru Copper and formed MCP.

In 2005, Argentum, with the opposition of Centromin, engaged in a number of administrative and judicial proceedings to obtain legal title to surface lands and underground access that comprise part of the rights that were acquired by Peru Copper from Centromin. Following Peru Copper’s acquisition of Centromin’s rights, we began preliminary discussions with Peru Copper, and later with Chinalco and MCP, in respect of negotiating a resolution to the surface rights issues between the parties.

In May 2008, MCP acquired certain surface rights from Centromin (currently, Activos Mineros S.A.) covering the main Morococha area that had been reserved for the Toromocho project by the Government of Peru. In addition, MCP acquired rights including surface lands in the Morococha area where the Morococha mine administration and operations are taking place, as well as certain underground areas. Certain of the underground areas acquired by MCP would also provide Pan American with easier and less costly underground access to some areas of the Morococha concessions.

In June 2010, we reached an agreement with MCP that defined each party’s long term surface rights and therefore provides certainty to the land situation for the Morococha property. The primary focus of the agreement is on the lands and concessions around the Morococha mine and MCP’s Toromocho copper project. Under the terms of the agreement, Argentum is required to relocate the core Morococha facilities, including the administration offices, warehouse, maintenance facilities, mine compressors, and some camp facilities and construct a new concentrator over a five-year period and transfer certain mineral concessions and access rights to MCP that it needs in order to proceed with the development of Toromocho, including the surface lands within the planned open pit mining area of the Toromocho project. In exchange, Argentum is to receive a package of surface rights, easements, and other rights to relocate the facilities and to continue uninterrupted operations, and would also obtain rights to a number of mineral concessions outside the planned Toromocho pit area where high grade silver veins have been identified. Lastly, Argentum is to receive periodic cash payments from MCP totalling $40 million, which would offset a portion of the capital required for the facility relocation. Pursuant to the agreement, the transfer of lands and rights and the cash payments will occur over a period of time and are dependent on meeting certain milestones. In addition to the foregoing, the parties agreed to dismiss the judicial and administrative claims between them. To date, Minera Argentum has received a total of $24.0 million (pre-tax) from MCP and has completed a number of phases of the relocation effort. We have completed the abandonment and demolition of all buildings in the Central Shaft area, the construction of the replacement facilities located north of the central highway, but have not yet relocated the plant. We continue to operate the plant, the location of which is projected to eventually interfere with the advance of the Toromocho open pit. Depending on economic justification, mineral reserve growth, and the advance of the Toromocho open pit, the plant will need to be replaced or relocated. Although no up-to-date engineering studies are available, the estimated cost of a new 800,000 tonne per annum processing plant could be significant. This cost might be partially offset by the remaining payments due from MCP in relation to the June 2010 agreement. Please see “Risks Related to Our Business – Title to Assets”.

To the best of our knowledge, and other than as described above, Morococha is not subject to any overrides, back-in rights, payments, or other agreements or encumbrances. The Company’s 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 anticipate might 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 74 for a general discussion of the risks relating to our operations.

History

Mining began in the region around Morococha before the 1500s, and production has been continuous in the district since the late 1800s. Most of the exploration undertaken by former owners of Morococha was limited to underground development along strike of known structures. The Morococha District has excellent exploration

potential owing to the prevalence of carbonate units favourable for replacement mineralization as well as the significant vertical extents of known mineralization. As a result, drilling was not typically part of the exploration efforts. Prior to our acquisition of Morococha, little effort was given to the exploration and economic evaluation of areas that were not immediately adjacent to the existing mine workings. Previous operators utilized both surface and underground diamond drilling only to test for potential economic mineralization. Once the presence of economic mineralization was confirmed, the vein or manto was accessed underground for further exploration.

Between 1915 and 1918, much of the district was reorganized and incorporated into Cerro de Pasco Mining Company ("Cerro de Pasco"). By 1924, Cerro de Pasco was producing at a rate of 1,500 tpd from primarily copper ores. Between 1929 and 1934, Cerro de Pasco excavated the 11.5 kilometre long Kingsmill Tunnel, successfully dewatering all of the Morococha District mine workings above the 4,020 metre elevation of the tunnel. The Kingsmill Tunnel is still in use and is a vital feature of the Morococha mining district.

In the 1940s, the Gubbins family began operating mines in the Morococha District through Minera Santa Rita S.A. and Minera Yauli S.A., which were subsequently consolidated in the late 1990s into Sociedad Minera Corona S.A. ("SMC"). Cerro de Pasco continued to operate in other areas around the Morococha District until 1974, when its mines were nationalized by the Peruvian government. Production from the Cerro de Pasco mines in the district continued under the Peruvian national mining company, Centromin, until 2003, when SMC acquired these operations from Centromin through privatization.

On January 20, 2004, we entered into an agreement with 14 individuals, estates and companies, all of whom were arm's length to us and are members of the Gubbins family or entities in which members of the Gubbins family hold beneficial interests (the "Morococha Vendors"), to purchase 92.014% of the voting shares of Argentum, a sociedad anónima organized under Peruvian company law, for approximately $35.4 million in cash. Argentum acquired, through a corporate restructuring undertaken under Peruvian company law, the Anticona and Manuelita mining units and related infrastructure and processing assets from SMC. At the time of acquisition, Argentum held in its treasury as cash all profits earned by SMC's Anticona and Manuelita mining operations since November 1, 2003. The transaction was subject to regulatory approval and a number of conditions, including: (i) the completion of the corporate restructuring; (ii) the listing on the Lima Stock Exchange of 100% of the shares of Argentum, including those issued in connection with the corporate restructuring; and (iii) our successfully undertaking a public bid for not less than 92.014% of the voting shares of Argentum through the Lima Stock Exchange.

On February 24, 2004, we entered into a further agreement with the Morococha Vendors to purchase all of the issued and outstanding shares of Empresa Minera Natividad S.A. ("Natividad"), a corporation organized under Peruvian company law which holds mining concessions and operations that are complementary to the Anticona and Manuelita mining units, for $1.5 million in cash. Closing of the acquisitions of Argentum and Natividad occurred contemporaneously in August 2004, with effect as of July 1, 2004 and in 2005, Argentum amalgamated with Natividad. Argentum made all necessary applications for delisting its shares from the Lima Stock Exchange and the delisting process was completed in 2006. In addition, Pan American Peru continues to acquire the labour shares in Argentum when able to do so. The labour shares were created as a means through which workers would be able to take part in our success (but do not afford the holders of such shares influence over our decision-making, as they are non-voting), and are held either by current workers, former workers or by third parties who have bought labour shares in the free market.

Extensive mining has taken place at the property prior to Pan American's acquisition in 2004, but there are no known reliable historical production figures. For the 15 years between 1989 and 2003, approximately 7.9 million tonnes of ore was mined at a grade of 227 ppm Ag, 0.5% Cu, 1.7% Pb, and 4.6% Zn.

Geological Setting, Mineralization, and Deposit Types

Morococha is located on the eastern side of the Western Cordillera of the Andes Mountains. The host rocks for the mineralization in the Morococha district comprise schists, volcanic rocks, and predominantly carbonate sediments cut by a series of intrusions. The structures that account for the majority of the vein mineralization in the Morococha district trend predominantly northeast to east-northeast.

The structural setting of the area is dominated by shallowly northwest plunging folds, the most important of which is the anticlinal feature referred to as the Yauli Dome, which trends north-northwest and divides the district roughly in half. Compression apparently gave rise to early northwest trending shears, and the uplifting effect of the intrusion of quartz monzonite stocks produced an arching of the Yauli Dome and an associated phase of tension faulting generally trending perpendicular (northeast-southwest) to the axis of the anticline. This latter set is the most heavily mineralized set of fractures and accounts for the majority of fault hosted mineralization in the Morococha District.

Vein mineralization formed along the dominant system of northeast trending tensional faults. Mineralization associated with the veins is mostly fracture filling in nature. Replacement manto mineralization is generally restricted to receptive stratigraphic horizons where favourable lithologies are intersected by mineralized veins or are proximal to pre-mineral intrusives. Some of the replacement mineralization occurs as structurally controlled irregular chimneys within generally favourable stratigraphic horizons.

Mineralization at Morococha includes epi-mesothermal silver-zinc-lead-copper veins, bedded silver-base metal replacements or mantos, intrusive-sediment contact skarns, and the quartz porphyry-hosted Toromocho disseminated copper system. Shoots range up to 400 metres in length with some traced for over 800 metres down plunge. Economic widths in the veins range from 0.5 metres to more than 6.0 metres. Vein width averages in the district are on the order of 1.2 metres.

Replacement manto mineralization is generally restricted to receptive stratigraphic horizons where favourable lithologies, especially carbonates, are intersected by mineralized veins or are proximal to pre-mineral intrusive rocks. Mantos can have a significant strike extent where the veins are closely spaced, and can range from less than one metre to up to 12 metres in width.

Sphalerite, galena, and chalcopyrite are the most important primary minerals for zinc, lead, and copper while silver is generally present as freibergite (silver-tetrahedrite) or argentiferous galena.

Exploration

Since Morococha is an active mining operation, exploration is conducted using a combination of underground diamond drilling and channel sampling from drifts excavated along the mineralized zones. Channel samples weighing between 4.0 kilograms and 6.0 kilograms are collected by our employees from the backs of drifts, the ribs of crosscuts, the backs of stopes, and the ribs of raises. The channel samples are taken every two metres across the veins or mantos in exploration drifts and the stopes are sampled on two metre centres along strike. Sample intervals are usually between 0.2 metres and 2.0 metres wide. Vein intersections and sample grade information from both the channel samples and the diamond drillholes are used to estimate mineral resources and mineral reserves.

Drilling

The mine undertakes drilling on an annual basis for mineral resource and reserve definition. Both surface and underground holes are drilled by external drilling contractors under Pan American supervision using BQ, NQ, and HQ diameter industry standard underground diamond drill rigs.

Sampling, Analysis, and Data Verification

Diamond drill hole sample intervals within the veins vary in length between 0.10 and 1.5 metres while unmineralized intervals less than 6 metres wide between the veins are sampled at a maximum length of 1.5 metres. The channel samples weigh between 4 kilograms and 6 kilograms and are taken every two metres across the veins or mantos in exploration drifts and the stopes are sampled on two metre centres along strike. There are no known drilling, sampling, or recovery issues that could materially impact the reliability of the results.

No out of the ordinary security measures are taken with the samples, but as the samples are prepared and analysed within the confines of the general mine security enclosures, there is no reason to believe that the validity and integrity of the samples have been compromised.

Both the channel and underground diamond drillhole samples are prepared by the on-site laboratory at the mine, which is not certified by any standards association but is managed and operated by the international commercial laboratory firm, SGS. Assays are performed using acid digestion and atomic absorption spectroscopy, and analysed for silver, zinc, lead, and copper content.

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 for the Morococha mine, as at December 31, 2016, are as follows:

Morococha Mineral Reserves [1, 2, 3]					
Reserve Category	**Tonnes (Mt)**	**Grams of Silver per tonne**	**% Zinc**	**% Lead**	**% Copper**
Proven	2.6	173	3.78	1.18	0.58
Probable	2.2	181	4.21	1.64	0.44
TOTAL	4.8	176	3.98	1.39	0.52

Notes:

1 Estimated using a price of $18.50 per ounce of silver, $2,200 per tonne of zinc, $2,000 per tonne of lead and $5,000 per tonne of copper.

2 Mineral reserve estimates for Morococha 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 Tonnes are shown for 92.3% of the Morococha property. Through our subsidiary, Pan American Peru, we have a 92.3% interest in the Morococha property.

Management estimates that mineral resources at the Morococha mine, as at December 31, 2016, are as follows:

Morococha Mineral Resources [1, 2, 3]					
Resource Category	**Tonnes (Mt)**	**Grams of Silver per tonne**	**% Zinc**	**% Lead**	**% Copper**
Measured	0.4	161	3.31	1.09	0.25
Indicated	1.1	127	3.26	0.93	0.56
Inferred	3.9	214	3.58	1.30	0.29

Notes:

1 These mineral resources are in addition to mineral reserves. Estimated using a price of $18.50 per ounce of silver, $2,200 per tonne of zinc, $2,000 per tonne of lead and $5,000 per tonne of copper.

2 Mineral resource estimates for Morococha 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 Tonnes are shown for 92.3% of the Morococha property.

Mineral resource estimates are prepared on an annual basis and updated with the additional diamond drilling and channel samples collected during the year, using a variation of the polygonal method in AutoCAD and Excel software. Each vein structure is projected onto a longitudinal section and divided into a series of geometrical blocks. The average true width of the vein intersections is applied to the block area to determine the volume. Sample grades are reviewed and treated for extreme values if necessary, and then the average grade of the intersections within each block is assigned to the block. Bulk density values are applied to the volume of the block to estimate the tonnes of each block, based on the average of bulk density measurements.

The blocks are then depleted for previous mining. Planned mining dilution is applied to each block considering the width, dip angle, mining method, and expected ground conditions of each vein, and an allowance is made for expected mining losses. A value per tonne is applied to each block based on metal content, metal prices, concentrate sales terms, concentrate quality, processing recovery, transportation, refining, and other selling costs such as storage fees, port fees, etc. Any blocks which are considered uneconomic after these parameters are applied either remain as mineral resources or may be removed from the inventory completely if they do not meet the criteria of mineral resources. The mineral reserves are classified as proven or probable depending on the resource classification.

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

Underground mining operations at Morococha consist primarily of long hole open stoping, and some conventional and mechanized overhand cut and fill. Classified tailings pumped hydraulically to stopes and waste rock are used for backfill where needed. Drilling is undertaken with hand held drills or electric hydraulic jumbo drills and the broken ore is removed using scoop trams. Over the past several years, Pan American has undertaken efforts to mechanize the mining operations of the wider veins and ore bodies at Morococha, with the aim of improving efficiency and operating costs. This work is now continuing on the narrower veins.

In the Manuelita and Sulfurosa areas of the mine, locomotives transport the ore in rail cars from the chutes to the shafts for hoisting. Other locomotives then transport the ore in rail cars to an adit where highway dump trucks then haul the ore to the stockpiles at the mill. In the Codiciada and Alapampa areas of the mine, ore is transported to underground stockpiles using scoop trams and then loaded onto haul trucks for transportation to surface via a haulage ramp.

We are developing the Manuelita and Sulfurosa areas of the mine to 70 metres below the Kingsmill drainage tunnel. This development was started by a previous operator and is now in the process of being extended and expanded using trackless mining equipment and a small inclined shaft to haul waste and a limited amount of ore up to the Kingsmill tunnel elevation, where it is transferred to the Manuelita shaft. The Manuelita (also known as Yauli) shaft has been deepened, and following the completion of construction of a new loading system, is expected to be available for production hoisting from the mine level 70 meters below the Kingsmill tunnel during the second quarter of 2017. The Manuelita shaft is equipped with two 2.6 tonne skips which feed into chutes at an underground adit level from where material is transported in rail cars by a small locomotive to an adjacent surface truck loading facility. Ore is then trucked to the processing plant. The deepening project includes the development of a pumping station and other infrastructure to permit stoping operations.

Subsequent to an agreement with Chinalco, we no longer utilize the Maria shaft to haul ore to surface.

Processing and Recovery Operations

Morococha operates an 803,000 tonne per year capacity mill, known as the Amistad mill, using froth induced selective flotation technology to produce silver in zinc, lead, and copper concentrates. The mill flowsheet consists of two-stage crushing, ball mill grinding, selective flotation of the ore to concentrates, followed by thickening and filtering of the concentrates. About half of the tailings from the concentrator are pumped to the Huascacocha tailings facility and the other half is transported back underground where it is used for hydraulic backfill.

The life of mine plan is based on the mineral reserves and contemplates, on a 100% basis, an annual processing rate of 1,726 tpd and then gradually increasing as more mining areas become available. The Morococha deposit is extensive and if current mineral resources can be converted to mineral reserves and/or if new mineral resources are defined and can be converted to mineral reserves, then a new plant may be required to replace the current Amistad plant. The future economic justification of a new plant will rely primarily on mineral reserve growth and metal prices. Although no up-to-date engineering studies are available, the estimated cost of a new 800,000 tonne per annum processing plant could be significant, on the order of $100 million. This cost might be partially offset by the remaining payments due from MCP to honour the June 2010 agreement.

In 2016, the mill processed approximately 729,200 tonnes of ore with metallurgical recoveries of 88.4% for silver, 73.2% for zinc, 60.0% for lead, and 82.6% for copper. Total metal production for the year was approximately 2.8 million ounces of silver, 16,800 tonnes of zinc, 3,200 tonnes of lead, and 8,400 tonnes of copper.

The silver-rich zinc, lead, and copper concentrates from Morococha are sold under contracts with arm's length smelters and concentrate traders, which consider the presence of any deleterious elements. Morococha receives payment for an agreed percentage of the silver, zinc, lead, and copper contained in the concentrates it sells, after the deduction of smelting and refining costs. We have not had any difficulty securing contracts for the sale of Morococha concentrates; 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 Morococha for the past three years were as follows:

2016	**Revenue[1, 2]**	**Quantity Sold (Tonnes)**
Zinc Concentrate[3]	$26.6 million	35,280
Lead Concentrate[3]	$11.5 million	5,948
Copper Concentrate[3]	$54.9 million	43,820
2015		
Zinc Concentrate[3]	$13.3 million	25,927
Lead Concentrate[3]	$9.2 million	5,473
Copper Concentrate[3]	$42.2 million	47,627
2014		
Zinc Concentrate[3]	$25.5 million	35,893
Lead Concentrate[3]	$17.8 million	10,113
Copper Concentrate[3]	$35.7 million	15,557

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 mine workings, processing plant, tailings and waste disposal areas, effluent management and treatment facilities, roads, and power and water lines have already 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 project have been obtained and are currently in good standing. The mine is authorized to source the water necessary for operations from nearby lakes. Several mine development waste disposal and tailings disposal sites exist and are sufficient to meet the needs of mining operations. The primary source of power for the mine is the Peruvian national power grid and is sufficient for the mine's current requirements.

In October 2003, the Peruvian government passed legislation requiring active mining operations to file closure plans. In October 2005, administrative rules associated with this legislation were promulgated, which laid out detailed closure requirements and required that detailed closure plans and cost estimates be filed by October 2006.

The original closure plan for Morococha was filed by mid-year 2004, and in August of 2006, we submitted a comprehensive closure plan for Morococha to the MEM in accordance with that ministry's regulations and new rules. The closure plan was prepared by third party consultants registered with the Peruvian authorities as qualified to present closure plans to the MEM. The closure plan includes a summary of the proposed closure scheme for each of the major areas of impact such as mine water, tailing facilities areas, waste rock facilities, plant site infrastructure, and the underground mine. A detailed cost estimate was prepared based on Pan American's and the consultant's shared experience with closure works and experience with other projects in Peru. As required by the MEM, the costs were summarized in three phases: concurrent closure, final closure, and post closure. Updated closure plans are filed as required.

The Peruvian government modified its receiving water quality limits in December 2015. The new limits remove a controversial sulphate limit which was previously proposed, bringing the limits in line with current international standards and significantly reducing potential cost impacts to our Peruvian operations. We continue to evaluate the potential impact of the 2015 changes to water treatment practices at Morococha. New "Adaptation Plans" will be submitted in 2017 if any treatment upgrades are required to meet the new limits. Once approved, we would have 3 years to implement any necessary upgrades. We completed the implementation of voluntary measures such as separation of clean runoff and contact water at Morococha in 2016 which improve our ability to comply with the 2015 water quality limits when they come into force. The most significant environmental liability identified at the Morococha mine is the mine's potential share of the cost to operate the Kingsmill Tunnel water treatment plant. The Kingsmill Tunnel is an 11.5 kilometre long underground opening excavated between 1929 and 1934 to dewater the Morococha district mine workings above 4,020 metres above sea level. The water treatment plant was built and is currently being operated by MCP to treat the 1.5 to 1.8 cubic metres per second of water draining from the Kingsmill Tunnel into the Rio Yauli. Morococha's share of the cost was defined by a hydrogeological study completed in 1997 which apportioned responsibility for the costs of constructing and operating the treatment plant as follows: (i) Centromin (72.2%); (ii) our Morococha operations (12.3%); (iii) Soc. Minera Puquiococha (8.5%); (iv) Soc. Minera Austria Duvaz (4.9%); and (v) Minera Centrominas (2.1%). Subsequent to the apportionment of costs, it appears that in connection with the acquisition by MCP of the mining concessions near Morococha, MCP assumed the cost of the construction of the Kingsmill water treatment plant.

The treatment and operating costs for the water treatment facility are directly proportional to both constituent load and flow determined in the 1997 study. The distribution of responsibility stated in the 1997 study was accepted by all involved parties. Our potential share of the responsibility for treatment of the baseline flows, 12.3%, was included in the terms of its purchase of the applicable mining concessions. As a purchase contract entered into during 2003 between Natividad and Argentum establishes that the purchaser is responsible for incremental flows in those concessions, subsequent studies in 2004 were carried out to further characterize the baseline flow conditions

in order to establish benchmarks for the determination of responsibility for potential future increases. The results of this 2004 study estimated that 38.46% of the baseline flows were derived from Natividad and Corona concessions now under our control. We challenged this estimate but our challenge was not accepted. The scope of the 2004 study and the resulting recommendations exceeded the terms of the study and presented conclusions that conflicted with previous conclusions and the terms of our purchase of the applicable concessions. It appears that in connection with the acquisition by MCP of the mining concessions near Morococha, MCP also assumed the cost of treatment of the Kingsmill tunnel water so it can be used to supply MCP mineral processing plant.

A closure cost estimate for Morococha was prepared according to State of Nevada approved SRCE methodology in 2011 and is updated every year. The current present value of closure expenditures at Morococha as at December 31, 2016, is approximately $6.6 million. See “Narrative Description of the Business – Environmental Protection” for further disclosure regarding forward looking statements related to reclamation costs.

Safety audits are conducted by Pan American’s Director of Health and Safety and safety managers from some of our other mines. During 2016, personnel employed at Morococha attended a total of over 112,000 hours of training. The Morococha mine was the recipient of the Chairman’s Safety Award for 2015. During 2015, the Morococha mine was also awarded first place in the underground mining category by the mining safety institute (ISEM) in Peru for safety performance.

Capital and Operating Costs

Capital additions at Morococha during 2016 totalled $10.3 million, primarily on long-term mine development advances and infrastructure including the Manuelita shaft deepening project, exploration drilling, plant upgrades, and equipment acquisitions.

In 2017, we anticipate investing between approximately $9.0 million and $10.0 million in sustaining capital. The capital expenditure forecast includes the completion of the deepening of the Manuelita zone. Other capital projects include in and near mine exploration, mine development, as well as new and replacement mining equipment.

In 2016, direct operating costs at Morococha were $58.9 million.

Exploration, Development, and Production

In 2017, based on an ownership interest of approximately 92.3% of Argentum, our proportionate interest in Morococha’s production is forecast to be between 2.5 and 2.6 million ounces of silver, between 2,900 and 3,100 ounces of gold, between 20,200 and 21,000 tonnes of zinc, between 4,000 and 4,500 tonnes of lead, and between 2,100 and 2,400 tonnes of copper. We plan to undertake approximately 32,000 metres of exploration drilling in 2017.

C. Bolivia

(i) San Vicente

Project Description, Location, and Access

The San Vicente underground silver-zinc mine is located in the south of Bolivia in the Province of Sud-Chichas, Department of Potosí. San Vicente is located 100 kilometres west of the town of Tupiza and 120 kilometres south of the town of Uyuni. The property is accessible by gravel road from Tupiza and Uyuni. Daily commercial flights operate between Uyuni and La Paz. Both Uyuni and Tupiza are connected through the Bolivian rail system to the ports of Arica and Antofagasta in Chile.

Pan American holds a 95% interest in PASB. The remaining 5% of PASB is owned by Urion Holdings (Malta) Ltd. ("Urion"), an affiliate of Trafigura Baheer B.V. ("Trafigura"). PASB has a joint venture agreement (Contrato de Riesgo Compartido) with Corporación Minera de Bolivia ("COMIBOL") the state mining company of the Plurinational State of Bolivia, pursuant to which PASB holds a 62.5% interest in the cash flow from the operations and is the operator of the San Vicente Property.

The mine property concessions cover an area of 7,021 hectares and consist of 11 concessions, all of which are held in the name of COMIBOL, and PASB is contractually responsible for paying the annual mining tenure tax to maintain the concessions. All of the concessions include the rights for mining, water, and surface usage. As far as we are aware, all of the concessions are in good standing, and to our knowledge, we have met all of the necessary obligations to retain the project.

The known mineralized zones, mineral resources and mineral reserves, mine workings, the processing plant, tailings storage facilities, waste rock storage facilities, and effluent management and treatment systems are located within the concessions held by COMIBOL which are subject to the agreement between PASB and COMIBOL.

Pursuant to a joint venture agreement entered into with COMIBOL in June 1999 (as subsequently amended) with respect to the development of the San Vicente property, PASB became obligated to pay COMIBOL a participation fee of 37.5% (the "Participation Fee") of the operations cash flow and to fund additional development of the mine. Once full commercial production of the expanded San Vicente mine began in 2009, the Participation Fee was reduced to approximately 9.4% until PASB recovered its investment in the San Vicente property, which occurred in December 2012. Thereafter, the Participation Fee reverted back to its original 37.5%. In 2016, the royalties to COMIBOL amounted to approximately $14.3 million (2015 - $8.1 million).

A 2% royalty on 80% of the net smelter returns is also payable to Empresa Minera Unificada S.A. ("EMUSA"), a former partner of PASB on the project. The royalty became payable only after PASB recovered its capital investment in the project and applies only when the average price of silver in a given financial quarter is $9.00 per ounce or greater. The first royalty payment was made in 2012 and payments have been made annually since then. $1.0 million was paid in respect of this royalty in 2016.

A Bolivian state mining royalty is applied to gross metal value of sales before smelting and refining deductions, and the royalty percentage is a sliding scale of 1% to 6% depending on metal prices. The royalty is deductible from our taxable income only when the international metal price of silver is above $5.50 per ounce. If the international metal price is below $5.50 per ounce of silver, the royalty is creditable against corporate income tax otherwise payable. For the year ended December 31, 2016, the royalty amounted to $5.6 million (2015 - $5.2 million).

To the best of our knowledge, the San Vicente mine is not subject to any other royalties, overrides, back-in rights, payments, or other agreements and encumbrances. PASB is subject to Bolivian taxes, fees and duties.

In early 2009, a new constitution was enacted in Bolivia that further entrenches the government's ability to amend or enact certain laws, including those that may affect mining. On May 1, 2011, the Bolivian President announced the formation of a multi-disciplinary committee to re-evaluate several pieces of legislation, including the mining law and this has caused some concerns amongst foreign companies doing business in Bolivia due to the government's policy objective of nationalizing parts of the resource sector.

On May 28, 2014, the Bolivian government enacted Mining Law No. 535 (the “New Mining Law”). Among other things, the New Mining Law has established a new Bolivian mining authority to provide principal mining oversight (varying the role of COMIBOL) and sets out a number of new economic and operational requirements relating to state participation in mining projects. Further, the New Mining Law provides that all pre-existing contracts are to migrate to one of several new forms of agreement within a prescribed period of time. As a result, we anticipate that the current joint venture agreement with COMIBOL relating to the San Vicente mine will be subject to migration to a new form of agreement and may require renegotiation of some terms in order to conform to the New Mining Law requirements. We are assessing the potential impacts of the New Mining Law and are awaiting further regulatory developments, but 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.

On June 25, 2015, the Bolivian government further enacted the new Conciliation and Arbitration Law No. 708 (the “New Conciliation and Arbitration Law”), which endeavors to set out newly prescribed arbitral norms and procedures, including for foreign investors. However, whether the New Conciliation and Arbitration Law applies specifically to pre-existing agreements between foreign investors and COMIBOL, and how this new legislation interacts with the New Mining Law, remains somewhat unclear. As a result, we await clarification by regulatory authorities and will continue to assess the potential impacts of the New Conciliation and Arbitration Law on our business.

Additional risks of doing business in Bolivia include being subject to new higher taxes and mining royalties, some of which have already been proposed or threatened, and threatened expropriation of assets, all of which could have a material adverse effect on the operation and the operation’s profitability. Please see the discussion under “Risks Relating to Our Business - Foreign Operations” for a further discussion of this risk.

While there are no known significant factors or risks that we currently anticipate might 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 74 for a general discussion of the risks relating to our operations.

History

Surface mining of veins in the area of San Vicente has occurred sporadically since colonial times. Several different owners operated the mine from 1911 through 1950. From 1950 to 1952, the mine was operated by the Aramayo Mining Company. In 1952, the Bolivian government nationalized the mine and placed it under the control of COMIBOL. Following the discovery of new silver and zinc veins in the late nineteen sixties, COMIBOL constructed the 400 tpd Vetillas concentrating plant in 1972, which produced a silver rich zinc concentrate.

The mine was operated by COMIBOL until 1993, at which time mining was suspended pending the privatization of mining in Bolivia. In 1995, the San Vicente mine was made available as part of a joint venture arrangement with COMIBOL. On June 21, 1999, PASB, at that time a wholly-owned subsidiary of Pan American, signed a joint venture agreement with COMIBOL. Under the original terms of the agreement, COMIBOL was entitled to a participation fee equal to 20% to 30% of cash flow for each financial term once the recovery period for PASB’s initial investment ended. The contract had a term of 30 years and required a minimum investment by PASB of $20 million.

Between late 2001 and early 2009, PASB and COMIBOL entered into a number of toll mining agreements with EMUSA to process San Vicente’s ore at EMUSA’s nearby Chilcobija mill. In 2003, PASB entered into a share purchase agreement with EMUSA, whereby EMUSA could acquire up to 49% of the outstanding shares of PASB. This agreement required EMUSA to fund feasibility and development related expenses to an aggregate of $2.5 million by May 1, 2005. EMUSA subsequently met the funding requirement and acquired the 49% interest.

In the fourth quarter of 2005, Pan American negotiated a shareholders’ agreement with EMUSA and Trafigura (a minority stakeholder of EMUSA), which agreement contemplated an increase in our shareholding in PASB from 50% to 55%. Pursuant to this shareholders’ agreement, which was signed in January 2006, EMUSA would hold 40% of the shares of PASB and Trafigura would hold the remaining 5%.

In July 2006, PASB and COMIBOL renegotiated the terms of the main joint venture contract, changing COMIBOL's participation fee to a fixed percentage participation fee of 37.5% of the operating cash flow, subject to certain deductions in respect of development costs and a reduction in the rate during the recovery period of PASB's investment. Pursuant to an amendment to the contract signed in June 2006, PASB committed to build a new mill, tailings storage facilities and other civil works at San Vicente during an 18-month time period which began in June 2007. The total investment to expand San Vicente and build the new processing facilities was approximately $72 million, excluding recoverable value-added tax. As part of the 2007 amendments, certain other terms were renegotiated, including changing COMIBOL's participation fee to a fixed percentage of 37.5% of the operating cash flow, subject to certain deductions in respect of development costs.

In 2007, Pan American purchased EMUSA's 40% interest in PASB, increasing our share ownership from 55% to the current 95%, and Trafigura continued to hold its 5% interest in PASB. Between 2008 and 2009, we completed construction of a new 750 tpd capacity selective flotation plant and infrastructure as well as continued mining and toll treating ores under an agreement with COMIBOL. Commercial production commenced at the end of the first quarter of 2009. Pan American and Trafigura entered into a new shareholders' agreement in 2010 to reflect the new shareholder relationship. Trafigura assigned its 5% interest in PASB to its affiliate, Urion, in 2013.

Geological Setting, Mineralization, and Deposit Types

San Vicente is located 2.5 kilometres west of the prominent north-south striking San Vicente thrust fault, which forms the eastern limit of the intermountain Bolivian Altiplano basin. Mineralization at the mine site is hosted by conglomerates over-thrusted by a turbidite sequence which outcrops on the east side of the mine.

The regional sedimentary sequence consists of a basement of marine siliciclastic sediments that was folded and later unconformably overlain by continental sediments and a thick sequence of continental clastic sediments (the Potoco and San Vicente formations).

San Vicente is a polymetallic vein deposit formed by hydrothermal systems forming vein type and disseminated polymetallic deposits. Mineralization in the district is known to cover an area of three by four kilometres to a depth of 300 metres. It consists of replacement veins filling pre-existing faults, replacements in brecciated conglomerates in the San Vicente fault, and mineralization in dacitic dykes. Wide veins form in the west-northwest trending structures, with widths of between two and six metres, while veins present in the northwest structures are thinner and shorter. The widest and highest grade veins form in northeast trending faults.

The minerals of economic importance are sphalerite, tetrahedrite, chalcopyrite, and galena. Cassiterite, covellite, and bornite are found in some veins. The primary gangue minerals are quartz, pyrite, marcasite, and barite.

Exploration

Prior to our involvement in the project, there was no known modern exploration on the property aside from the exploitation of silver from exposed veins. Our exploration program began in 1999 following the execution of the joint venture agreement with COMIBOL. Surface diamond drilling was undertaken using HQ sized drill rigs and underground diamond drilling was done using NQ sized drill rigs. In addition to the diamond drilling, an extensive channel sampling program was undertaken in the mine, initially by COMIBOL and later by PASB.

The results of the underground channel samples and the surface and underground drillholes are used for the estimation of mineral resources and mineral reserves. Channel sampling was originally partially done by COMIBOL and later by PASB employees under the supervision of PASB geologists. Diamond drilling is executed by third party contractors under the supervision of PASB geologists.

Drilling

The mine undertakes drilling on an annual basis for mineral resource and reserve definition. Diamond drilling at the mine has been undertaken using a combination of HQ sized drill rigs at the surface and NQ sized drill rigs from underground. Drillhole spacing is variable and ranges from between 35 to 100 metres, depending on the vein.

Sampling, Analysis, and Data Verification

Channel samples are taken by PASB from the backs of drifts, the ribs of crosscuts, the backs of stopes, and the ribs of raises, every four metres across the veins in 20 centimetre wide channels approximately three centimetres deep. Stopes are channel sampled every 1.6 metres vertical cut on two metre centres along strike. The sample interval varies from 0.2 to 10.8 metres.

During the entire procedure from drilling, sampling, and analysis, sample security is controlled by PASB employees or by the commercial laboratories once the samples have been delivered to the preparation facilities. We have no reason to believe that the validity and integrity of the samples have been compromised.

In the past, the channel samples are prepared by Bondar-Clegg laboratories (now ALS Chemex) in Oruro, Bolivia or by SGS in La Paz, and then sent to their respective Lima facilities for analysis of silver, zinc, lead, and copper content using atomic absorption spectroscopy. The samples are now prepared and analysed by the San Vicente site laboratory. The drill core samples are crushed, split, and pulverised by ALS Chemex, then analysed for silver, zinc, lead, and copper content using atomic absorption spectroscopy. Any sample with a silver grade greater than 500 grams per tonne is re-assayed by fire assay, and samples with greater than 10% zinc are performed using titrimetric analysis.

The QAQC program includes the submission of blanks, standards, and duplicate samples to the primary laboratory and the submission of check samples to a secondary 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 San Vicente mine, as at December 31, 2016, are as follows:

San Vicente Mineral Reserves [1, 2, 3]					
Reserve Category	**Tonnes (Mt)**	**Grams of Silver per tonne**	**% Zinc**	**% Lead**	**% Copper**
Proven	2.0	464	3.00	0.39	0.46
Probable	0.5	531	2.52	0.45	0.56
TOTAL	2.5	478	2.90	0.40	0.48

Notes:

1 Estimated using a price of $18.50 per ounce of silver, $2,200 per tonne of zinc, $2,000 per tonne of lead, and $5,000 per tonne of copper

2 Mineral reserve estimates for San Vicente 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 Tonnes are shown for 95% of the San Vicente property as Pan American holds a 95% interest in PASB.

Management estimates that mineral resources at the San Vicente mine, as at December 31, 2016, are as follows:

San Vicente Mineral Resources [1, 2, 3]					
Resource Category	**Tonnes (Mt)**	**Grams of Silver per tonne**	**% Zinc**	**% Lead**	**% Copper**
Measured	0.8	202	2.45	0.14	0.30
Indicated	0.1	194	2.30	0.17	0.33
Inferred	2.8	330	2.42	0.33	0.28

Notes:

1 These mineral resources are in addition to mineral reserves. Estimated using a price of $18.50 per ounce of silver, $2,200 per tonne of zinc, $2,000 per tonne of lead, and $5,000 per tonne of copper

2 Mineral resource estimates for San Vicente 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 Tonnes are shown for 95% of the San Vicente property as Pan American holds a 95% interest in PASB.

Mineral resource estimates are prepared annually and updated with the additional drillhole and channel samples collected during the year, using industry standard mining software. The samples are composited to equal lengths and treated for extreme grade values if necessary. A block model for each vein is constructed based on the interpretations from mapping, channel and drillhole logs, and assay values. Silver, lead, and zinc grades are estimated into the blocks using ordinary kriging, and bulk density assigned to each block based on the average of density measurements. The estimate is validated and classified for confidence categories depending on the number of samples available to the estimate. Any vein with a width of less than the minimum mining width is diluted with waste to the minimum mining width, and mining dilution and recovery factors are applied to each block. The dilution and loss applied to each vein is assessed each year and adjusted according to the actual dilution experienced during mining. The estimate is depleted annually to account for production occurring during the previous year.

Following the estimation of diluted tonnes and grade in each block, a value per tonne is applied to each block based on metal content, metal prices, concentrate sales terms, concentrate quality, metallurgical recovery,

transportation, refining, and other selling costs such as storage fees, port fees, etc, as well as operating costs and mining costs dependent upon the mining method.

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 San Vicente.

Mining Operations

Ore is extracted at the San Vicente underground mine using conventional shrinkage stoping and long hole mining. Development waste is used as backfill in the long hole stopes. Access to the mine for workers and equipment is provided by ramps and the Pelayo shaft while waste and ore material is hoisted to the surface using both haul trucks on the ramp and hoisting at the Pelayo shaft. Locomotives are used to move broken ore and waste on the levels in the conventional areas of the mine.

Processing and Recovery Operations

San Vicente operates a 750 tonne per day nominal capacity plant using a standard flotation process to produce a silver-zinc concentrate and a silver-lead concentrate. Ore from the mine passes through a jaw crusher at the plant, and then is fed into a semi-autogenous mill/ ball mill grinding circuit. Following the concentration process in the flotation circuit, the concentrates are thickened and dewatered in filter presses prior to shipping. Tailings are stored in a tailings storage facility approximately 1.5 kilometres from the concentrator. In 2016, a total of 356,700 tonnes of ore were processed with metallurgical recoveries of 93.2% for silver, 73.0% for zinc, and 84.2% for lead. Total metal production for the year was approximately 4.7 million ounces of silver, 5,400 tonnes of zinc, 600 tonnes of lead, and 600 tonnes of copper.

The silver-zinc and silver-lead concentrates from San Vicente are sold under contracts with arm's length smelters and concentrate traders, which consider the presence of any deleterious elements. Both the silver-zinc and the silver-lead concentrates are taken by truck and rail to ports in Chile for shipment. We have not had any difficulty in securing contracts for the sale of the San Vicente concentrates, however, there can be no certainty 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 concentrate produced at San Vicente for the past three years were as follows:

2016	**Revenue[1, 2]**	**Quantity Sold (Tonnes)**
Zinc Concentrate[3]	$16.8 million	13,177
Lead Concentrate[3]	$39.1 million	5,731
Copper Concentrate[3]	$22.9 million	2,958
2015	**Revenue[1, 2]**	**Quantity**
Zinc Concentrate[3]	$14.0 million	14,152
Lead Concentrate[3]	$50.4 million	6,744
2014	**Revenue[1, 2]**	**Quantity**
Zinc Concentrate[3]	$12.9 million	12,099
Lead Concentrate[3]	$63.9 million	7,444

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 concentrates contain payable silver. Lead concentrates contain payable silver and gold. Copper concentrates contain payable silver, gold, and lead.

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 already 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 project have been obtained and are currently in good standing. We have agreements in place to obtain the water required for mining and processing from a combination of water wells and surface water. A power transmission line connects the mine to the Bolivian national power grid at Portugalete and supplies sufficient power for the plant and mining operations.

In compliance with the Environmental Regulation for Mining Activities, PASB commissioned MINCO SRL, a Bolivian consulting firm, to conduct a base line environmental audit ("ALBA") of the San Vicente mine, as well as other environmental studies in satisfaction of Bolivian laws and regulations. The ALBA sets out the present situation of the environment at the project and identifies environmental liabilities regarding pre-existing waste rock dumps and the environmental impact on soil, water, vegetation and solid residues caused by previous mining activities conducted on the property.

Construction of the new processing plant, tailings facility and ancillary facilities at San Vicente required another update to the environmental licence that was originally issued in 2002. To this end, PASB presented the application in 2007 and was advised by the Bolivian authorities that a comprehensive environmental impact assessment ("EIA") would be required for the proposed projects due to the scope and nature of the proposed changes to the operations. After a public consultation period, PASB submitted a comprehensive EIA in December 2007. A review of the EIA was initiated by the Bolivian authorities and the environmental license was granted for the San Vicente mine in May 2008.

The most significant environmental issues currently associated with the San Vicente mine are related to the waste dumps, acidic water from mine dewatering, acid drainage from the Pelayo waste rock dump that runs into the San Vicente River, and water discharge from the San Juan and San Francisco adits. PASB constructed and operates an active chemical treatment system to improve the water quality and comply with its environmental permits. Upgrades to the reagent dosing system and sludge handling at the plant were completed in 2016. Improvements to the historic Pelayo waste rock dump were implemented in 2013 and 2015 to reduce contact with the San Vicente River.

In order to remediate environmental hazards or concerns caused by previous owners of the San Vicente mine, PASB has focused on the recommendations outlined in the EIA, together with the complementary studies of Health and Industrial Safety, the Handling of Solid Residues procedures, the Closure and Rehabilitation Plan and the Contingency Plan. As per the joint venture agreement between COMIBOL and PASB, the equipment, facilities and infrastructure become the property and responsibility of COMIBOL upon the cessation of operations.

A closure cost estimate for San Vicente was prepared according to State of Nevada approved SRCE methodology in 2011 and is updated every year. We have estimated the present value of reclamation costs for the San Vicente property to be approximately $2.7 million at December 31, 2016. Pan American has not accrued any amounts for any prior existing environmental liabilities. See "Narrative Description of the Business – Environmental Protection" for further disclosure regarding forward-looking statements related to reclamation costs.

Safety audits are conducted by Pan American's Director of Health and Safety and safety managers from some of our other mines. During 2015, personnel employed at the mine attended 7,000 hours of safety training.

Capital and Operating Costs

In 2016, capital additions at San Vicente totalled $4.9 million and consisted primarily of mine infrastructure upgrades, equipment overhauls, and exploration drilling.

The expected sustaining capital budget for 2017 at San Vicente totals between $12.0 million and $13.0 million, the major components of which include an expansion of the tailings storage facility, extension of the mine access ramp, a new ventilation raise, mine equipment refurbishment and replacements, and near mine exploration.

In 2016, direct operating costs at San Vicente were $35.0 million.

Exploration, Development, and Production

In 2017, based on an ownership interest of approximately 95% of PASB, we anticipate producing between 4.4 million and 4.5 million ounces of silver, between 500 and 600 ounces of gold, between 6,300 and 6,500 tonnes of zinc, 300 tonnes of lead, and 700 tonnes of copper. We plan to undertake approximately 22,000 m of exploration drilling in 2017.

D. Argentina

(i) Manantial Espejo

Project Description, Location, and Access

The Manantial Espejo open pit and underground silver-gold mine is located in the Province of Santa Cruz, Argentina. Puerto San Julian is located 160 kilometres to the east on the Atlantic coast and Gobernador Gregores is located 60 kilometres to the west. The main access is via a gravel secondary road that connects the project with Puerto San Julian and Gobernador Gregores, the nearest major urban centers to the mine. Puerto San Julian has a population of approximately 5,500.

The mine is held 100% by our wholly owned Argentine subsidiary, MTA. The Manantial Espejo mine consists of 17 mineral concessions covering a total of 25,533 hectares and extending approximately 36 kilometres east-west and 19 kilometres north-south. The mineral concessions forming Manantial Espejo are, by law, subject to minimum expenditure requirements with respect to which we had entered into an agreement with the government of Argentina. We believe that MTA has continuously been in compliance with such agreement, and to our knowledge, we have met all of the necessary obligations to retain the project. The property includes ownership of three surface properties purchased by MTA to facilitate support and to improve the performance of its mining and exploration activities. These surface rights cover an area of 43,207 hectares and at this time all mining and processing related activities occur within these properties. To the best of our knowledge, all permits and licenses required to conduct our activities on the project have been obtained and are currently in good standing. All of the mineral resources and mineral reserves, mine workings, plant facilities, tailings ponds, and waste storage areas are contained within the leases controlled by MTA.

Production from the Manantial Espejo property is subject to royalties to be paid to Barrick Exploraciones Argentina S.A. (“Barrick”) according to the following: (i) $0.60 per metric tonne of ore mined from the property and fed to process at a mill or leaching facility to a maximum of 1 million tonnes; and (ii) one-half of one percent (0.5%) of net smelter returns derived from the production of minerals from the property. In addition, MTA has negotiated a royalty equal to 3.0% of operating cash flow payable to the Province of Santa Cruz.

To the best of our knowledge, the mine is not subject to any other royalties, overrides, back-in rights, payments or other agreements and encumbrances. The Company’s operations in Argentina are subject to taxes, fees and duties.

In December 2015, the legislature of the Province of Santa Cruz passed a bill into law which abrogated the mining property tax that had been introduced in September 2013. The decree in which the new law was published confirmed that the mining property tax was unconstitutional because: (i) it contravened the contents of Federal Mining Investments Law, and (ii) it attempted to regulate matters reserved to Federal legislation.

Since 2011, the Federal Government of Argentina had increasingly controlled foreign exchange, imports and exports and the inflow and outflow of capital in response to unfavourable domestic economic trends. Certain of these restrictions have more recently been eased with the election of a new Federal Government in late 2015, but it remains uncertain as to whether such changes will be lasting, whether additional changes will be made or how our business will be impacted. See “Risks Related to Our Business – Foreign Operations”.

While there are no known significant factors or risks that we currently anticipate will 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 74 for a general discussion of the risks relating to our operations.

History

Reconnaissance exploration on the Manantial Espejo property was first carried out in the 1970s by the Argentinean government and in 1989, ownership of the original interest in the mineral properties constituting the Manantial Espejo project was acquired by Mr. Roberto Schupbach. Pursuant to an agreement entered into in 1991 between Mr. Schupbach and Compañía Minera San Jose S.A. (a wholly owned subsidiary of St. Joe Minerals), Mr. Schupbach sold his mineral property rights to Minera San Jose. Later in the same year, St. Joe Minerals was acquired by Lac Minerals Ltd., and then in 1994, Barrick acquired Lac Minerals Ltd. and assumed ownership.

In 1996, Triton Mining Corporation ("Triton") entered into an option agreement with Barrick to earn the right to acquire an 80% interest in the project for a total cost of $2.5 million, which right Triton then assigned to its wholly owned subsidiary MTA. Exploration on the property was advanced in 1996 by Barrick, which completed 62 diamond drill holes on the Maria Vein. In 1997, an additional 42 core drill holes were completed and a pre-feasibility study commenced for the construction of an open pit mine and cyanidation mill processing facility to treat and recover silver and gold from the Maria Vein.

In 1998, MTA completed making the required payments under the option agreement. Barrick and MTA subsequently incorporated Compañía Minera Alto Valle ("Alto Valle") for the purpose of holding beneficial title to the properties, and pursuant to a shareholders' agreement, Barrick held 20% and MTA held 80% of the shares of Alto Valle, respectively, and MTA was designated operator of the project.

In 1998, Blackhawk Mining Inc. ("Blackhawk") purchased all of the issued shares of Triton, which was a public company with shares traded on the Toronto Stock Exchange. Also, in 1998, Silver Standard Resources ("SSR") entered into an option agreement with Triton to acquire a 50% interest in MTA. Then, in April of 2001, SSR acquired Barrick's 20% interest in Alto Valle (2,400 shares), half of which it agreed to sell to Blackhawk in consideration for an interest in an unrelated mining venture.

In 2002, SSR acquired Triton's remaining 50% interest in MTA, as well as Blackhawk's 1,200 shares in Alto Valle. Concurrently, SSR agreed to sell to us 50% of the shares of MTA and half of the shares (1,200) it held in Alto Valle directly. Pan American acquired this 50% interest in the project for a purchase price of $1,912,433, which consisted of a cash payment in the amount of $662,433 and a transfer of 231,511 of our Common Shares valued at $1,250,000. In addition, we agreed to pay 50% of $200,000 in order to eliminate a 1.2% net smelter return royalty payable by SSR to Blackhawk and agreed to fund the first $3 million of joint venture expenditures following the issuance of a production notice. In March 2006, we negotiated and entered into a purchase agreement with SSR to acquire SSR's 50% interest in MTA and Alto Valle, respectively, thus becoming a 100% owner of the Manantial Espejo project.

In March 2006, we received approval of the EIS from the Santa Cruz Province of Argentina and signed an agreement with the Federal Government of Argentina and the Province of Santa Cruz to bring grid electrical power to the town of Gobernador Gregores with a sub-connection to Manantial Espejo. In April 2006, mine development activities were initiated and by 2008, mining operations in two open pits and two underground mines and the mills, leach circuits, counter-current-decantation, Merrill Crowe, and refinery commenced operations. The primary crusher, recycle pebble crusher and concentrate circuits were completed by early 2009.

In 2010, we completed a merger of MTA with Alto Valle.

Geological Setting, Mineralization, and Deposit Types

Manantial Espejo lies near the southwestern end of the Deseado Massif, a large igneous province dominated by ignimbrites of the Chon Aike and La Matilde Formations and minor andesites and basaltic andesites of the Bajo

Pobre Formation. The project area consists of a volcanic complex related to a collapsed caldera. The lithologies of the area consist mostly of sub-aerial volcanic extrusive sequences.

Silver and base metal mineralization in the Manantial Espejo district is spatially and genetically related to the Deseado Massif, where mineralization is hosted by the Chon-Aike and La Matilde Formations.

The mineralized deposits at the Manantial Espejo mine are predominantly veins with short strike slip and larger down dip displacements. The styles of mineralization include massive quartz veins, vein breccias, sheeted and stockwork veining, and minor dissemination. Gold occurs mainly as electrum in pyrite while the silver occurs in a number of forms including argentiferous galena and silver sulphosalts. Sulphides account for up to 3% to 5% of the rock mass as veinlets and disseminations.

Mineralization at Manantial Espejo is hosted in four main veins known as María, Karina/Unión, Melissa, and Concepción. The majority of the mineralization outlined to date is in the María Vein. The vein is a thick silica vein exposed on surface for more than one kilometre and has been intersected at a depth of up to 275 metres. This vein averages 7.8 metres in true width and ranges from 0.63 metres to 20 metres and is open to the east and at depth. Economic grade mineralization of the vein is less continuous. Open pit economic grade zones measure tens to hundreds of metres in longitudinal dimension. Underground economic grade zones measure tens of metres in longitudinal dimension, with over 100 metres of vertical extent in the María West area.

The Karina/Unión Vein is exposed on surface for a distance of 850 metres and has been drilled to a depth of 150 metres. Several interconnected high grade silver-gold epithermal veins in excess of 20 metre true widths have been observed in drillhole intersections.

The Melissa vein is thought to be the extensional component to the María shear system. The Melissa Vein has been defined by drill holes along a 300 metre strike length and 200 metres down dip and averages from between 1.5 metres and 2.5 metres wide.

The Concepción Vein is a single quartz vein. Mineralization occurs over a strike length of 600 metres and is open at depth and at both ends. The host rocks, mineralogy and alteration are similar to the other veins on the property.

Exploration

Reconnaissance exploration on the Manantial Espejo mine was first carried out in the 1970s by the Argentinean government. Exploration on the property was advanced in 1996 and 1997 by Barrick, which drilled 104 diamond holes on the María vein. In 1998, Triton, with SSR as the operator, drilled 18 diamond drillholes on the María vein, and in 1999, Triton completed some additional prospecting, soil sampling, mapping, and a further 17 holes on other targets. In 2000, a reverse circulation and diamond drilling campaign was completed to sample the newly defined Karina, Unión, and Melissa deposits. In 2001, a reconnaissance campaign was conducted with the goal of expanding the mineral resources by drilling the María, Melissa, and Karina-Unión veins.

We began exploration efforts in 2002 by collecting surface trench samples and have completed diamond drilling programs on an annual basis to estimate mineral resources and mineral reserves. All of the project exploration has been carried out by company geologists or contractors under the supervision of company geologists.

There are no known sample recovery, contamination, or bias issues that could have a material impact on the reliability of the sample results.

Drilling

The mine undertakes drilling on an annual basis for mineral resource and reserve definition. Drilling on the Manantial Espejo mine has been by diamond core, reverse circulation and wagon-mounted percussion drilling methods. All MTA core has been HQ diameter with the exception of re-entry into Barrick holes for deepening, for which NQ diameter was used.

Sampling, Analysis, and Data Verification

Samples average approximately 1.0 metres in length. There are no known drilling, sampling, or recovery factors that could materially impact the accuracy of reliability of the results.

All drill core is delivered from the drill rigs to the core shed at the Manantial Espejo site by MTA personnel and transported by MTA personnel to Puerto San Julian, where they are then transported by bus or truck to Mendoza. Once the samples are received by ALS, they are maintained under the control of the laboratory. There is no reason to believe that the validity and integrity of the samples has been compromised.

ALS Chemex assays the sample for gold using fire assay with atomic absorption finish and for silver by four acid digest with atomic absorption finish. Any samples with assays greater than 100 grams per tonne silver and/or 10 grams per tonne gold are re-assayed by fire assay with gravimetric finish. MTA geologists submit certified standard samples and blanks to the primary laboratory and approximately 10% of the samples are sent to Acme Analytical Laboratories S. A. of Santiago for check assays.

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 Manantial Espejo, as at December 31, 2016, are as follows:

Manantial Espejo Mineral Reserves [1, 2]			
Reserve Category	**Tonnes (Mt)**	**Grams of Silver per tonne**	**Grams of Gold per tonne**
Proven	2.2	111	1.17
Probable	0.5	244	3.32
TOTAL	2.7	135	1.56

Notes:

1 Estimated using prices of $17.00 per ounce of silver and $1,200 per ounce of gold for planned 2017 production, then using $18.50 per ounce of silver and $1,300 per ounce of gold.

2 Mineral reserve estimates for Manantial Espejo 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 Manantial Espejo, as at December 31, 2016, are as follows:

Manantial Espejo Mineral Resources [1, 2]			
Resource Category	**Tonnes (Mt)**	**Grams of Silver per tonne**	**Grams of Gold per tonne**
Measured	0.1	125	1.65
Indicated	0.4	207	2.04
Inferred	0.5	211	2.60

Notes:

1 These mineral resources are in addition to mineral reserves. Estimated using prices of $25 per ounce of silver and $1,400 per ounce of gold.

2 Mineral resource estimates for Manantial Espejo 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 are prepared on an annual basis using industry standard mining software and based on the information collected during drilling campaigns in the previous year. Three dimensional lithological and grade estimation domains are prepared and interpretations of clay alteration, disseminated pyrite content, and bulk density are also applied to the model. The samples are treated for extreme grades and composited to a common length. Ordinary kriging is used to estimate gold and silver grades into the block mode. The mineral resource estimate is then classified for confidence categories based on the density of available drillholes. The mineral resource estimate is diluted with respect to the anticipated mining method in each mineral resource estimate, and depleted for the previous year's mining. Metal prices, cost, revenue, and metal extraction parameters are estimated on an annual basis to define a silver equivalent cut-off grade.

Mineral reserves are estimated by discounting the mineral resources for mining losses associated with pillars left behind for stability and safety reasons. Optimized pit designs are prepared for each open pit mining area and geometries are prepared for underground mining panels.

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 Manantial Espejo.

Mining Operations

Ore is mined at Manantial Espejo using a combination of conventional open pit and underground mining methods. The surface mining operations use 54 tonne and 30 tonne trucks and front end loaders and track shovel loading equipment. The underground mining operations consist primarily of long-hole mining methods utilizing development waste as backfill.

Open pit mining operations are projected to conclude in 2017. To offset the reduction in ore from the open pit, additional material from stockpiles will be processed.

Processing and Recovery Operations

Ore is treated by conventional crushing, semi-autogenous/ball mill grinding, bulk gravity concentration, intensive gravity concentrate agitation leaching, thickening, agitated cyanide leaching of the gravity tailings slurry, counter current decantation thickening, Merrill Crowe zinc precipitation, sulphur dioxide cyanide neutralization, conventional pulp tailings disposal, and conventional silver and gold doré bar production from melting of the Merrill Crowe precipitate. The nominal treatment rate at design capacity is 2,000 tpd of ore.

In 2016, we processed approximately 753,600 tonnes of ore with metallurgical recoveries of 90.4% silver and 93.8% gold, producing 3.1 million ounces of silver and 66,900 ounces of gold.

All production from the Manantial Espejo 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. We have entered into multi-year refining contracts with two refineries for the production from Manantial Espejo. We have not had any difficulty in securing contracts for the sale of Manantial Espejo 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".

During the past three years, the revenue produced by the Manantial Espejo mine was as follows:

2016	Revenue[1, 2]	Quantity Sold	
Silver and Gold in Doré	$144.0 million	3,032,604	ounces of silver
		67,558	ounces of gold
2015			
Silver and Gold in Doré	$145.0 million	3,654,556	ounces of silver
		82,735	ounces of gold
2014			
Silver and Gold in Doré	$156.1 million		

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 plant, tailings and waste disposal areas, effluent management and treatment facilities, roads, and power and water lines have already 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 project have been obtained and are currently in good standing. Power is sourced from a diesel generating plant at the site. Water is sourced from underground mine water and surface mine dewatering wells.

An EIA for the project as required under the laws of the Province of Santa Cruz and the Argentine Republic was prepared including mine design, tailing design, utility supply, water development studies, impact assessment, and records of extensive public consultation. In March 2006, we obtained approval of the EIA from the Province of Santa Cruz. The EIA is updated every two years.

No reclamation bond is currently required for mining operations in Argentina, however environmental reclamation insurance is required and we hold a policy for Manantial Espejo. A preliminary reclamation plan was developed for the project and included in the EIS submitted to the Argentine government during 2006. A recent update EIA approved in December 2015 included an update to the reclamation plan and fulfills all closure planning requirements under Argentine law. A further update to the closure plan was submitted in 2016 and has not yet been approved. The 2016 update includes a commitment to establish a $40 million Argentine peso fund over the remaining life of the mine to be controlled by Pan American and used for social closure activities in Gobernador Gregores.

A closure cost estimate for Manantial Espejo was prepared according to State of Nevada approved SRCE methodology in 2011 and is updated every year. Pan American has estimated the present value of reclamation costs for the Manantial Espejo mine to be approximately $8.3 million as at December 31, 2016. See "Narrative Description of the Business – Environmental Protection" for further disclosure regarding forward-looking statements related to reclamation costs.

Safety audits are conducted by Pan American's Director of Health and Safety and safety managers from some of our other mines. Manantial Espejo was the recipient of the Chairman's Safety Award for safety performance in both 2010 and 2011, years in which Manantial Espejo went without any LTIs, and also worked all of 2013 without an LTI. Personnel at Manantial Espejo attended more than 7,500 hours of training during 2016.

Capital and Operating Costs

Capital additions at Manantial Espejo during 2016 totalled $2.9 million and consisted mainly of exploration drilling and equipment refurbishments.

Capital investments in 2017 are expected to be between $3.5 million and $4.5 million, primarily for near mine exploration and underground mining equipment.

In 2016, direct operating costs at Manantial Espejo were $98.9 million.

Exploration, Development, and Production

In 2017, we anticipate producing between 3.3 and 3.4 million ounces of silver, and between 37,500 and 41,000 ounces of gold. We plan to undertake approximately 8,400 metres of exploration drilling in 2017.

II. Development Properties

(i) Navidad Property

Project Description, Location, and Access

The Navidad silver development property is located in Gastre Department in the Province of Chubut, southern Argentina, 1,580 kilometres southwest of Buenos Aires and 360 kilometres west of Puerto Madryn. The Navidad project is accessible year round by road from the small communities of Gastre and Gan Gan, which are located on a provincial highway. The nearest airport is located in Esquel, about four hours' drive to the southwest by gravel road.

We are the operators of the development project through our wholly owned subsidiary, MASA. The main Navidad property block containing all of the current mineral resources is comprised of four 2,500 ha blocks granted with Manifestación de Descubrimiento ("MD") permits. MASA also holds the rights to additional MDs in the Province of Chubut. All of these MDs are in good standing with the mining authorities of the Province of Chubut, and to our knowledge, we have met all of the necessary obligations to retain the project. Our tenements are subject to Argentinean law and policy, which may in the future result in surrender of certain of its tenements outright and/or the reduction in area of our holdings.

Access to land for drilling and other exploration activities is allowed through outright surface ownership as well as through a series of easement contracts with neighbouring surface owners. We hold large surface land rights covering all known mineral resources through MASA. The remaining surface rights belong to several other land holders and access is either in negotiation or has been granted through agreements with the owners.

All of the known mineralized zones and planned mine workings, processing plant, effluent management and treatment systems, and tailings disposal areas relating to project are located within the boundaries of the concessions and surface rights.

Silver Wheaton Corp., through its subsidiary, Silverstone Resources (Barbados) Corp., has the right to purchase 12.5% of the life of mine payable silver produced at the Loma de La Plata deposit pursuant to a convertible debenture that, upon conversion, committed the parties to a future "silver stream" agreement. This agreement remains to be negotiated with Silver Wheaton Corp.

There is a provincial royalty of 3% of the “Operating Income” in the Province of Chubut. Operating Income is defined as revenue minus production cost (not including mining costs), treatment and transportation charges.

To the best of our knowledge, the project is not subject to any other royalties, overrides, back-in rights, payments or other agreements and encumbrances. The Company’s operations in Argentina are subject to government taxes, fees and duties.

The Province of Chubut passed a law in 2003 (Law 5001) that prohibits open pit mining and the use of cyanide in mineral processing in the entire province, effectively preventing the development of Navidad. To date, this law remains in place. Please see the discussion below under “Risks Relating to Our Business – Restrictions on Mining”.

There are material governmental and legal factors that affect the mineral resources at Navidad and the conversion of the mineral resources to mineral reserves. Legislation in place in the Province of Chubut currently prohibits open pit mining and the use of cyanide in the entire province. No cyanide will be used to process the material anticipated to be mined at Navidad, but given the depth and orientation of the deposits, the economic mine plan involves open pit mining. Because of these governmental and legal factors, the otherwise economically viable portions of the deposit cannot be estimated as mineral reserves at this time.

Since 2011, the Federal Government of Argentina increasingly controlled foreign exchange, imports and exports and the inflow and outflow of capital in response to unfavourable domestic economic trends. With the election of a new Federal Government in Argentina in late 2015, certain of these restrictions have been eased, but it remains uncertain as to whether such changes will be lasting, whether additional changes will be made or how our business will be impacted. See “Risks Related to Our Business – Foreign Operations”.

While there are no other known significant factors or risks that we currently anticipate will 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 74 for a general discussion of the risks relating to our operations.

History

The first known exploration program that included the Navidad property area consisted of a preliminary regional geochemical sampling program conducted by Normandy Argentina (“Normandy”) in mid-2000 to locate additional deposits to supplement those known at its Calcatreu Property, a gold and silver deposit located approximately 80 kilometres from Navidad. The program consisted of 1,200 bulk leach extractable gold (BLEG) stream sediment samples taken from what was then considered open exploration ground, and resulted in the identification of Navidad.

In January and February 2002, Newmont Mining (“Newmont”) purchased Normandy’s worldwide mining interests. In September 2002, IMA Exploration Inc. (“IMA”) signed a confidentiality agreement in order to obtain a copy of the information brochure and technical data related to Newmont's Argentinean interests, which included the Calcatreu project. In December 2002, IMA applied for exploration concessions over the Navidad area, utilizing and relying upon the Normandy BLEG data, and began undertaking a regional exploration program including regional mapping and sampling. From December 2002 to July 2006, IMA conducted diamond drilling, geochemical sampling, geophysical exploration, and mineral resource estimates at Navidad.

In January 2003, Aquiline entered into an agreement with Newmont, which was completed in July 2003, to purchase all of the shares of Normandy and Newmont’s 100% interest in Calcatreu, and acquired all of Newmont’s assets including the BLEG data. In May 2003, Aquiline reviewed the BLEG data and found that the ground covered by the BLEG data had already been claimed by IMA. After failure to receive a credible response from IMA as to how they could otherwise have made a legitimate discovery at Navidad without having breached the terms of the confidentiality agreement, Aquiline went on to file suit in the Supreme Court of British Columbia in March 2004.

The Supreme Court of British Columbia awarded ownership of the Navidad property to Aquiline on July 14, 2006, following a court case with IMA where IMA was found to have breached the Confidentiality Agreement. IMA subsequently appealed to the Court of Appeal of British Columbia, but lost the appeal in June 2007. An Application

for Leave to Appeal to the Supreme Court of Canada was filed by IMA in September 2007. Sole ownership rights were granted to Aquiline by the Supreme Court of Canada on December 20, 2007, subject to Aquiline making payment to IMA which would reimburse the latter for its accrued exploration expenditures up to the July 2006 court decision. Aquiline's final payment to IMA was made on February 8, 2008, giving Aquiline full ownership of the Navidad property.

From October 2006, Aquiline undertook diamond drilling, geophysical and geochemical exploration, metallurgical test work, resource estimates, and a preliminary economic assessment for Loma de La Plata.

On October 14, 2009, we announced a friendly offer to acquire all of the issued and outstanding shares of Aquiline. On December 7, 2009, we acquired approximately 85% of the issued and outstanding shares of Aquiline and extended our bid to December 22, 2009, and on that later date, we took up approximately an additional 7% of the issued and outstanding shares in the capital of Aquiline. Since the offer to acquire the Aquiline shares was accepted by holders of more than 90% of the Aquiline shares, on December 23, 2009, we provided notice to the remaining shareholders of our intention to exercise our right to acquire the remaining issued and outstanding Aquiline shares pursuant to the compulsory acquisition provisions of the Business Corporation Act (Ontario). Pursuant to the compulsory acquisition, we acquired the balance of the Aquiline shares on or about January 22, 2010.

Early in 2010, we took possession of the Navidad property. We continued with a drilling campaign, metallurgical testing, hydrologic analysis, environmental studies, and several other works on the Navidad property site during 2011. A preliminary economic assessment of the Navidad property deposits was completed in January 2011.

Geological Setting, Mineralization, and Deposit Types

The Navidad project is located on the southwest edge of the Northern Patagonia Massif in southern Argentina. This boundary of the massif is coincident with the Gastre Fault System, one of a series of northwest to southeast trending half grabens and tectonic basins. Granitoid rocks of the basement in the northern part of the Province of Chubut belong to the Mamil Choique and Lipetren formations. At Navidad the sequence consists of ignimbrites, volcanic agglomerates, and lavas of the Lonco Trapial Formation and sandstones, mudstones, and limestones of the Cañadón Asfalto Formation. The latter of these formations hosts the Navidad mineralization.

The basin includes, and is defined by, three northwest-striking major fault zones, generally referred to as 'trends'. These comprise the Argenta, Esperanza, and Navidad trends. The Navidad Trend, which includes the bulk of the silver mineralization, occurs in the immediate hanging wall of a major northeast-striking fault known as the Sauzal Fault. Most of the economic mineralization is hosted by the upper of two trachytic andesite lava flows referred to as latite.

To date, the Navidad property comprises eight individual epithermal mineral deposits in the Navidad, Esperanza, and Argenta trends. The six deposits of the Navidad Trend occur along strike over a distance of about 5.8 kilometres and are essentially continuous. They comprise, from northwest to southeast: Calcite NW, Calcite Hill, Navidad Hill, Connector Zone, Galena Hill, and Barite Hill. The Valle Esperanza deposit occurs on the east flank of the Esperanza Trend and is found approximately 400 metres south-southwest of Galena Hill. The Loma de La Plata deposit occurs in the north part of the Argenta Trend, approximately 2.2 kilometres southwest from Calcite Hill.

Ore minerals include native silver, clots of black sulphide comprising argentite/acanthite, discrete grains of sphalerite, galena, chalcopyrite, cuprite, bornite, native copper, and copper carbonates (malachite, azurite). Similar styles of mineralization and a similar paragenesis occur in most of the deposits. However, the proportion of sulphides varies considerably. Loma de La Plata is silver-rich, but is sulphide-poor and contains very low levels of lead, zinc, and copper. Various pulses of mineralization are observed, principally at Galena Hill.

The principal metal association is Ag-Pb. Other associations include Ag-Pb-Cu and Cu-Ag and, more rarely, Ag-Zn. Occasionally there is Ag only, or Cu-Pb-Zn or simply isolated occurrences of these base metals. Gold appears to be totally absent from the system.

Exploration

The first exploration on the Navidad property area consisted of a preliminary regional geochemical sampling program conducted by Normandy in mid-2000. The program consisted of 1,200 BLEG stream sediment samples taken from drainage systems overlying volcanic rocks in the Province of Chubut in the general vicinity of Calcatreu, Mina Angela, Gastre, Lagunita Salada, Gan Gan, and other areas. This program resulted in the identification of various anomalies, including the Flamingo Prospect and the Navidad project.

IMA commenced initial detailed outcrop mapping of the Navidad project along the Navidad Trend in 2003 and expanded the mapping in 2004 to cover a wider portion of the mineral tenement at larger scales. Commencing in 2002 and continuing through 2006, IMA collected soil, rock chip and stream silt samples over the Navidad project. Collectively the anomalous rock chip samples clearly delineate the Navidad, Esperanza and Argenta trends, as does the soil geochemistry. Between 2003 and 2006, IMA completed 367 drillholes on the property.

Between October 2006 and June 2009, Aquiline focused exploration efforts on identifying new exploration targets with diamond drilling, with delineation and infill drilling at the Loma de La Plata deposit, and with minor infill drilling of the other previously identified mineralized zones. Exploration for additional deposits through the use of fence drilling across prospective covered areas was also undertaken. Geological mapping and geophysical and geochemical exploration also progressed to provide data for structural interpretation. Prior to our acquisition of the property, 950 drillholes had been drilled on the property.

We continued exploration drilling on several open or new targets along the mineralized trends as well as infill drilling at Loma de La Plata, Valle Esperanza, Barite Hill, Calcite Hill, Calcite NW, the Connector Zone, and Galena Hill during 2010 and 2011, completing approximately 129,500 metres of diamond drillholes. These infill drillholes also provided new samples for metallurgical analysis. In addition, condemnation and geotechnical drilling was conducted in the various planned facility areas during 2010.

All exploration work on the project has been undertaken by employees of IMA, Aquiline, or MASA, or by contractors under the supervision of these employees.

All of the samples collected during surface exploration have been used to guide the location of diamond drillholes.

Drilling

All diamond drilling has been completed by Boart Longyear Connors Argentina S.A. of Mendoza, Argentina, which was subsequently taken over by Boart Longyear in 2007. Nearly all holes have been drilled at HQ3 diameter with 3 metre long rods. Approximately 320,000 metres of drilling have been completed on the Navidad property, mostly on 25 metre centres across the eight deposits. The results of these drilling campaigns are used to estimate mineral resources at Navidad.

Sampling, Analysis, and Data Verification

Sample intervals vary from between 1 metre and 3 metres long. There are no known drilling, sampling, or drill core recovery factors that could materially impact the accuracy and reliability of the results and the data is considered suitable for use in mineral resource estimates. Drill core logging, cutting, sampling, and sample preparation and analytical techniques at the Navidad project follow industry practices. There are no known drilling, sampling, or recovery issues that could materially impact the reliability of the results.

Sample security is a low risk considering the remote nature of the project and the core storage facilities. There is no reason to believe that the validity and integrity of the samples have been compromised.

All diamond drill core samples at the Navidad property have been analysed by Alex Stewart Assayers Argentina S.A. of Mendoza, Argentina, and have been analysed by fire assay for silver with gravimetric finish and gold for AAS finish and ICP-ES for 19 elements using the ICP ORE technique. The QAQC protocol employed by Alex Stewart consisted in batches of 50 samples for fire assay and up to 100 samples for ICP. Fire assay batches included one preparation blank, one analytical blank, one coarse duplicate, four pulp duplicates, one international certified standard for base

metal and silver, one uncertified in-house standard, and two standards made from pure silver to calibrate losses in cupellation. ICP batches included two blanks, four standards, and 10% duplicates.

Certified standards, blanks, and field duplicates were routinely inserted by the project geologist with sample submissions as part of the project sample assay QAQC program. Analysis of the QAQC samples submitted with the geological samples used to estimate mineral resources at Navidad indicates that there is no significant source of bias, cross contamination, or inaccuracy.

Mineral Processing and Metallurgical Testing

Extensive metallurgical testing has taken place on the Navidad mineralization, including mineralogical studies, flotation and recovery testwork, grinding testwork, and variability testwork. The results indicate that the material responds well to flotation with acceptable recoveries and concentrate grades. The expected metallurgical performance for the Navidad ores was determined by laboratory bench-scale flotation test methods and a pilot plant test on one ore type. There are two distinct ore types found in the Navidad Mineral Resources that have been defined as copper-silver ores and lead-silver ores. The metal recoveries and the concentrate tonnage for both the silver-copper ore and the lead-silver ore vary by the degree of oxidation, lithology, and grade. Recovery algorithms have been constructed for each ore type using an analysis of the laboratory and pilot test results. The algorithms are recorded to each Mineral Resource block to project recoveries by ore type, oxidation state, lithology, and grade. Average recoveries of 77.8% for silver, 51.9% for copper, and 56.6% for lead were estimated for the silver-copper ores and average recoveries of 33.6% for silver, 32.6% for copper, and 76.6% for lead were estimated for silver-lead ores.

Mineral Resource Estimates

Management estimates that mineral resources at the Navidad property, as at April, 2009, are as follows:

Navidad Mineral Resource [1, 2]

Resource Category	Tonnes (Mt)	Grams of Silver per tonne	% Lead	% Copper
Measured	15.4	137	1.44	0.10
Indicated	139.8	126	0.79	0.04
Inferred	45.9	81	0.57	0.02

Notes:

1 Estimated and reported above a 50 g/t AgEQ using a silver equivalence formula of AgEQ = Ag + (Pb × 10,000/365) and a price of $12.52 per ounce of silver and $1,100 per tonne of lead. The most likely cut-off grade for these deposits is not known at this time and must be confirmed by the appropriate economic studies. The estimated metal content does not include any consideration of mining, mineral processing, or metallurgical recoveries.

2 Mineral resource estimates for Navidad were prepared by Pamela De Mark, P. Geo., as a Qualified Person as that term is defined in NI 43-101.

Mineral resource estimates were prepared as of April 2009 using industry standard mining software. Geological interpretations and modelling of lithological and mineralization domains were completed based on the information on the drillhole logs. A three dimensional block model was prepared and bulk density values were applied to the blocks according to the mean of bulk density measurements. Silver and lead grades were estimated into the blocks using multiple indicator kriging and copper grades were estimated using ordinary kriging. The mineral resources were classified for confidence categories with respect to the confidence in the data and the interpretation, and the drillhole density. Mineral resources were reported above a cut-off grade of 50 grams per tonne silver equivalent, using metal prices of $12.52 per ounce of silver and $1,100 per tonne of lead.

Mineral resource 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 other known factors that may have a material negative impact on the estimate of mineral resources at Navidad.

Mining Operations

A preliminary economic assessment completed in 2011 anticipated a daily production rate of 15,000 tpd from open pit mines at the eight deposits using shovels and 150 tonne trucks. The mine schedule, based on the current mineral resources, was anticipated to last nearly 15 years after a pre-production and construction period with an additional 18 months of re-handling ore from a low grade stockpile for plant feed after mining is completed.

Processing and Recovery Operations

The process plant was anticipated to consist of a gyratory crusher, stockpile, and a 15,000 tonne per day capacity semi-autogenous/ball mill with flotation and filtration, producing a copper silver concentrate and a lead silver concentrate. We had no contracts in place for the sale of the concentrates at the time of the assessment.

Infrastructure, Permitting, and Compliance Activities

The planned mine workings, processing plant, tailings and waste disposal areas, effluent management and treatment facilities, roads, and power and water lines are expected to be 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 project have been obtained and are currently in good standing. Electrical power is provided by several small generators. We are authorized to use water from several bore holes for camp use and diamond drilling.

Drilling at the Navidad property requires a separate permit for each affected tenement valid for one year, subject to the submission of an EIS update within a one year period from the date of granting each successive permit. An updated EIS is required to cover the exploration activities, environmental impacts, and mitigation/monitoring actions implemented in the period following the last permit. The level of the exploration activity dictates the level of study required.

Environmental and social baseline studies have been completed for the Navidad property. The most recent EIS update was submitted in 2011 and is currently under administrative review by the Chubut Ministry for the Environment and Control of Sustainable Development. This drilling permit in connection with the EIS would allow for the operation of up to eight drill rigs, however no drilling is planned in the immediate future. Rehabilitation of the drilling platforms and impacted areas is carried out continuously, and we maintain an environmental management and monitoring program on site.

Water rights are treated separately from environmental permits. Two extraction wells have been permitted for use in exploration or reclamation activities.

Currently, Chubut's Law 5001 prohibits open pit mining and the use of cyanide in mineral processing in the entire province. Law 5001 banning open pit mining methods would need to be changed before permits for the development of Navidad can be obtained.

A closure cost estimate for Navidad was prepared according to State of Nevada approved SRCE methodology in 2011 and is updated every year. We have estimated the present value of reclamation costs for the Navidad development property to be approximately $0.3 million at December 31, 2016. Minera Argenta holds environmental reclamation insurance for the Navidad property in accordance with Argentinean law. See "Narrative Description of the Business – Environmental Protection" for further disclosure regarding forward-looking information related to reclamation costs.

Capital and Operating Costs

In 2016, $3.4 million was spent on activities at Navidad, while in 2015, $6.8 million was spent. Over the past year, the Navidad project budget assumed that the law in the Province of Chubut would not be amended in a manner that would encourage further investment at this stage and hence, our activities at Navidad were guided by an

investment plan that focussed primarily on satisfying the legal requirements necessary to maintain our property interests under the current mining law. We plan to continue with such maintenance requirements. All expenditures will be expensed as incurred.

Exploration, Development, and Production

We plan to continue with our maintenance requirements, and have no plans to undertake any exploration drilling in 2017. All expenditures will be expensed as incurred.

III. Non-Material Properties and Interests

Other Operations, Exploration, Resource and Investment Properties

We gained ownership of several exploration projects in connection with the acquisition of Minefinders in 2012, including the La Virginia and La Bolsa projects in Mexico. Pan American is considering opportunities with respect to these projects, but they are not material properties for the purposes of NI 51-102 or NI 43-101.

We also own interests in other investment and resource properties in each of the jurisdictions in which we operate, including the Pico Machay project in Peru and the Calcatreu project in Argentina, as well as the Waterloo property and the Hog Heaven property in the United States, and certain other interests in Canada. Pan American does not consider these investment and resource 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:

			2016		2015		2014
Acquisition		$	Nil	$	Nil	$	Nil
Development	Huaron	$	8,854	$	13,610	$	17,327
	Morococha		8,034		7,713		10,199
	Alamo Dorado		-		-		293
	Dolores		113,227		53,117		44,886
	La Colorada		64,519		58,037		31,400
	Manantial Espejo		2,868		14,061		26,741
	Navidad		5		-		-
	San Vicente		4,864		3,286		3,415
	Other		290		401		730
	TOTAL[1]	$	202,661	$	150,225	$	134,991

Exploration	Huaron	$ 837	$ 765	$	1,312
	Morococha	1,053	1,202		1,453
	Alamo Dorado	-	-		336
	Dolores	1,685	544		1,602
	La Colorada	186	254		9
	Manantial Espejo	-	-		1,657
	Navidad	3,377	7,057		4,437
	San Vicente	-	-		-
	Other[2]	4,196	208		2,419
	TOTAL[1]	$ 11,334	$ 11,940	$	13,225

Notes:

1 Numbers may not add due to rounding.

2 Includes spending on the early stage exploration projects, including with respect to the La Negra option in 2016, as well as other indirect exploration spending.

Metals Trading

We take the view that our precious metals production should not be hedged, thereby allowing the maximum exposure to precious metal prices. However, in times of extreme price volatility or deteriorating market conditions, the Board of Directors may make exceptions to this approach and authorize management to enter short-duration hedging for a limited portion of our forecasted production of precious metals in order to protect our margins at our higher cost operations.

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 2014, 2015 and 2016 were as follows:

- During 2016, we had 930 tonnes of lead exercised at a strike price of $1,965 per tonne, resulting in a realized loss of $0.2 million, and 8,465 tonnes of zinc exercised at an average strike price of approximately $2,098 per tonne, resulting in a realized loss of $2.6 million.
- During 2015, we settled 4,080 tonnes of copper in forward sales at an average price of approximately $6,044 per tonne. We realized a gain of approximately $3.0 million from the settlement of the copper contracts during 2015.
- There were no forward sales or hedges in 2014.

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

RISKS RELATED TO OUR BUSINESS

We face a number of risks in our business. Several of them can have a material adverse effect on our operations and on the value of our securities, and we discuss them in this next section.

Metal Price Fluctuations

The majority of our revenue is derived from the sale of silver, gold, zinc, copper and lead, and therefore fluctuations in the price of these commodities represents one of the most significant factors affecting our operations and profitability. The Company’s sales are directly dependent on metal prices, and metal prices have historically shown significant volatility and are beyond the Company’s control. In addition, since base metal and gold sales are treated as a by-product credit for the purposes of calculating cash costs per ounce of silver, this non-IFRS measure is highly sensitive to base metal and gold prices. From time to time, we mitigate the 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. The Board of Directors continually assesses Pan American's strategy towards our base metal exposure, depending on market conditions.

The price 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.

A decrease in the market price of silver, gold and other metals could affect the commercial viability of our mines and our production assumptions. Lower prices could also adversely affect our ability to finance future exploration and development of our mineral properties and mines, including the development of capital intensive projects such as Navidad, all of which would have a material adverse effect on our financial condition, results of operations and future prospects. There can be no assurance that the market prices will remain at sustainable levels or that such prices will improve. Declining market prices for these metals could materially adversely affect our operations and profitability.

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. Pan American further discusses key assumptions used in measuring the recoverable amounts of its mining assets in Note 11 of Pan American's Audited Consolidated Financial Statements for the year ended December 31, 2016. 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 the key assumptions and inputs could result in impairment charges in future periods.

Foreign Operations

All of our current production and revenue are derived from our operations in Peru, Mexico, Argentina and Bolivia. As our business is carried on in a number of developing countries, it is exposed to a number of risks and uncertainties, including:

- expropriation or nationalization without adequate compensation, particularly in jurisdictions such as Argentina and Bolivia which have a history of expropriation;
- changing political and fiscal regimes, and economic and regulatory instability;
- unanticipated changes to royalty and tax regulations;
- unreliable or undeveloped infrastructure;
- labour unrest and labour scarcity;
- 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 the imposition of currency controls;
- the possible unilateral cancellation or forced re-negotiation of contracts, and uncertainty regarding enforceability of contractual rights;
- inability to obtain fair dispute resolution or judicial determinations because of bias, corruption or abuse of power;
- difficulties enforcing judgments generally, and in particular those obtained in Canadian or United States courts, against assets located outside of those jurisdictions;
- difficulty understanding and complying with the regulatory and legal framework respecting the ownership and maintenance of mineral properties, mines and mining operations, and with respect to permitting;
- local opposition to mine development projects, which include the potential for violence, property damage and frivolous or vexatious claims;
- violence and more prevalent or stronger organized crime groups;
- terrorism and hostage taking;
- military repression and increased likelihood of international conflicts or aggression; and
- increased public health concerns.

Certain of these risks and uncertainties are illustrated well by circumstances in Bolivia and Argentina.

In early 2009, a new constitution was enacted in Bolivia that further entrenched the government's ability to amend or enact laws, including those that may affect mining, and which enshrined the concept that all natural resources belong to the Bolivian people and that the state was entrusted with its administration. On May 28, 2014, the Bolivian government enacted the New Mining Law. Among other things, the New Mining Law established a new Bolivian mining authority to provide principal mining oversight (varying the role of COMIBOL) and 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 migration to a new form of agreement and may require renegotiation of some terms in order to conform to the New Mining Law requirements. We are assessing the potential impacts of the New Mining Law on our business and are awaiting further regulatory developments, but 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. In the meantime, we understand that pre-existing agreements will be respected during the period of migration and 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.

On June 25, 2015, the Bolivian government further enacted the New Conciliation and Arbitration Law, which endeavors to set out newly prescribed arbitral norms and procedures, including for foreign investors. However, whether the New Conciliation and Arbitration Law applies specifically to pre-existing agreements between foreign

investors and COMIBOL, and how this new legislation interacts with the New Mining Law, remains somewhat unclear. As a result, we await clarification by regulatory authorities and will continue to assess the potential impacts of the New Conciliation and Arbitration Law on our business.

Under the previous political regime in Argentina, the government intensified the use of price, foreign exchange, and import controls in response to unfavourable domestic economic trends. Among other things, the Argentine government imposed restrictions on the importation of goods and services and increased administrative procedures required to import equipment, materials and services, including those required for operations at Manantial Espejo. In support of this policy, in May 2012, the government mandated that mining companies establish an internal function to be responsible for substituting Argentinian-produced goods and materials for imported goods and materials and required advanced government review of plans to import goods and materials. In addition, the government of Argentina also tightened control over capital flows and foreign exchange in an attempt to curtail the outflow of hard currencies and protect its foreign currency reserves, including mandatory repatriation and conversion of foreign currency funds in certain circumstances, informal restrictions on dividend, interest, and service payments abroad and limitations on the ability of individuals and businesses to convert ARS into United States dollars or other hard currencies, exposing us to additional risks of ARS devaluation and high domestic inflation. While a new federal government was elected in Argentina in late 2015 and has since taken steps to ease some of the previously instituted controls and restrictions, particularly relaxing certain rules relating to the inflow and outflow of foreign currencies, some of the policies of the previous government continue to adversely affect the Company's Argentine operations. It is unknown whether these more recent changes will be lasting, what, if any, additional steps will be taken by the current administration or what financial and operational impacts these and any future changes might have on the Company. As such, the Company continues to monitor and assess the situation in Argentina.

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. 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.

Restrictions on Mining

Many of the jurisdictions in which we operate have certain laws or policies that impose restrictions on mining. 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. On December 5, 2014, a new law came into force in Chubut which suspended the start of all metalliferous mining activity in the Province for a period of 120 days and established that mining projects must obtain social license through a public consultation process and binding referendum prior to any mining exploitation activity beginning. However, this law was abrogated in January 2016 and is no longer in effect. As currently enacted, the laws in the Province of Chubut would likely render any future construction and development of the Navidad property uneconomic or not possible at all.

There is no guarantee that the present 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 the project. Such restrictions, particularly those affecting the development of the Navidad property, could have a material adverse effect on our future profitability, growth, and value.

Governmental Regulation

In addition to restrictions on mining, our operations, exploration, and development activities are subject to extensive Canadian, United States, Peruvian, Mexican, Argentinean, Bolivian, and other foreign federal, state, provincial, territorial, and local laws and regulations governing various matters, including:

- environmental protection;
- permitting;
- management and use of toxic substances and explosives;
- management of natural resources;
- 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
- historic and cultural preservation.

The costs associated with compliance with these laws and regulations can be substantial, and future laws and regulations, changes to existing laws and regulations (including the imposition of higher taxes and mining royalties which have been implemented or threatened in the countries where we do business) or more stringent enforcement of current laws and regulations by governmental authorities, could cause additional expense, capital expenditures, restrictions on or suspensions of our operations and delays in the development of our properties. Moreover, these laws and regulations may allow or encourage governmental authorities and private parties to bring lawsuits based upon damages to property and injury to persons resulting from the environmental, health, and safety impacts of our past and current operations, or possibly even those actions of parties from whom we acquired our mines or properties, and could lead to the imposition of substantial fines, penalties, or other civil or criminal sanctions. It is difficult understanding and complying with the regulatory and legal framework in some jurisdictions in which we operate due to their arcane, inconsistent, and sometimes unsophisticated nature. We may inadvertently fail to comply with such laws. This non-compliance can lead to financial restatements, fines, penalties, loss, reduction or expropriation of entitlements, the imposition of additional local or foreign parties as joint venture partners with carried or other interests, and other material negative impacts on us. We may also be required to compensate private parties suffering loss or damage by reason of a breach of any such laws, regulations or permitting requirements. We may also be subject to 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 and which could result in financial or other losses, reduction, removal or expropriation of rights or entitlements, or other negative impacts on us, some of which could be material.

In December 2012, the government of Mexico introduced changes to the federal labour law which, among other things, made certain amendments to the law relating to the use of service companies and subcontractors, and the obligations with respect to employee benefits. In some cases, these amendments may also have a carry-over effect on the distribution of profits to workers and this could result in additional, and potentially significant, financial obligations for a business. We believe that we continue to be in compliance with the federal labour law and that these amendments will not result in any new material obligations for us.

Taxation and royalties with respect to mining are often subject to change and in many resource rich countries, are vulnerable to increases in both poor and good economic climates.

In late December 2016, the Zacatecas state government in Mexico enacted a new set of ecological taxes which took effect on January 1, 2017. The Zacatecas Tax applies broadly across a number of industries that involve extraction, emissions to the air, soil or water, and deposits of residue or waste. It is unclear in the regulations on the exact calculation of these taxes and how it will be applied, but it will primarily affect the La Colorada mine in respect of the materials placed in its tailings storage facility. The validity of the Zacatecas Tax has been challenged on constitutional grounds by various parties, including Pan American, and by the federal government in Mexico. Similarly, in late 2013, the Mexican government enacted significant changes to its tax laws that took effect on January 1, 2014, which included the SMD and the EMD.

In September 2013, the provincial government of Santa Cruz, Argentina, passed amendments to its tax code that introduced a new mining property tax with a rate of 1% to be charged on published reserves. This tax had the potential to significantly affect the Manantial Espejo mine as well as other companies operating in the Province and we therefore took steps to challenge its legality and constitutionality. In December 2015, the legislature of the Province of Santa Cruz passed a bill abrogating this mining property tax and the bill became law and was published in the Official Gazette on December 30, 2015, as Law 3,462. Law 3,462 was promulgated through a decree that confirmed that the tax was unconstitutional because: (i) it contravened the contents of Federal Mining Investments Law, and (ii) it attempted to regulate matters reserved to Federal legislation. We currently do not expect subject taxes already paid to be refunded or credited.

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.

Obtaining and Renewing of Permits

In the ordinary course of business, 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 is a complex and time-consuming process involving numerous jurisdictions and often involving public hearings and costly undertakings on our part. The duration and success of our efforts to obtain and renew permits are contingent upon many variables not within our control including the interpretation of applicable requirements implemented by the permitting authority. 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 what we believe we can recover from a given property once in production. Any unexpected delays, failure to obtain such permits, a failure to comply with the terms of the permit or costs associated with the permitting process could delay the development or impede the operation of a mine, which could adversely impact our operations and profitability.

Ownership and Operating Hazards and Risks

The ownership, operation, and development of a mine or mineral property involves many risks which even a 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;
- earthquakes; and
- periodic interruptions due to inclement or hazardous weather conditions.

These risks could result in:

- environmental damage and liabilities;
- work stoppages, delayed production, and resultant losses;
- increased production costs;
- damage to, or destruction of, mineral properties or production facilities and resultant losses;
- personal injury or death and resultant losses;
- asset write downs;
- abandonment of assets;
- monetary losses;
- claims for compensation of loss of life and/or damages by third parties in connection with accidents (for loss of life and/or damages and related pain and suffering) that occur on our property, and punitive awards in connection with those claims; and
- other liabilities.

These risks could result in damage to, or destruction of, mineral properties, production facilities and other properties, personal injury, environmental damage, delays in mining, increased production costs, monetary losses, and possible legal liability. 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.

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 both suffered from 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.

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 involves a high degree of risk and 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 any discoveries of economic quantities of mineralization. There is also no assurance that even if economic quantities of mineralization are discovered that a mineral property will be brought into commercial production. Development of our mineral properties will follow only upon obtaining satisfactory exploration results. Discovery of mineral deposits is dependent upon a number of factors, not the least of which is the technical skill of the exploration personnel involved. The commercial viability of a mineral deposit once discovered is also dependent upon a number of factors, some of which are the particular attributes of the deposit (such as size, grade and proximity to infrastructure), metal prices and government regulations, including regulations relating to royalties, allowable development and production, importing and exporting of minerals and environmental protection. Most of the above factors are beyond our control. As a result, 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.

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. 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 and that such exploration

and mining titles or claims will not be challenged or impugned by third parties. We operate in countries with developing mining laws and changes in such laws could materially impact our rights to our various properties or interests therein.

Although we have received title opinions for those material properties in which we have a material interest (or if we have not been able to obtain such opinions, have made a determination, which we believe is reasonable in the circumstances, to accept the risks associated with the subject property), there is no guarantee that title to such properties will not be challenged or impugned. 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. Our properties may be subject to prior unregistered liens, agreements or transfers, native land claims, or undetected title defects. Although we may update our title opinions from time to time in connection with corporate activities such as financings or acquisitions, we do not update all of our title opinions regularly. As such, circumstances and facts may change such that some or all of our previously obtained title opinions may be inaccurate or outdated.

As noted under “Risks Related to our Business – Foreign Operations”, we are subject to expropriation risk in a number of countries in which we operate, most notably in Bolivia and Argentina. Both of these countries have recently seen expropriations or nationalizations in the resource industries and it is not an uncommon occurrence from a historical perspective. Expropriation, or the threat of expropriation, is often as a result of poor economic conditions within a country or has underlying political rationales. Foreign authorities have in some cases also taken the position that the lack of development or advancement of a project is a basis on which to expropriate or to extinguish property rights. Some of the jurisdictions in which we operate are subject to a number of these factors and therefore the risk is heightened. In particular, the economic and political environment in Argentina is such that the threat of expropriation in the mining industry is not unrealistic and, in connection with our Navidad project in particular, we may be at even greater risk of expropriation or extinguishment of rights given our current activity level at the project. Since there have been no amendments to the law that would permit open-pit mining in the Province of Chubut, our activities at Navidad have changed from rapidly advancing the project to instead developing and filing an investment plan focused primarily on satisfying the legal requirements necessary to maintain our property interests under the current mining law. There is a further risk that if the federal or provincial governments in Argentina are dissatisfied with our activities at Navidad, this could also impact our operations at the Manantial Espejo mine. Expropriation, extinguishment of rights and any other such 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 have not held ownership title to most of the surface lands in the areas that overlie our mining concessions comprising the Morococha property, nor in the areas where administration and operations are taking place therein, but were used by us pursuant to a usufruct agreement. In May 2008, MCP acquired certain surface rights from Centromin (currently, Activos Mineros S.A.) covering the main Morococha area that had been reserved for the Toromocho project by the Government of Peru. In addition, MCP acquired rights including surface lands in the Morococha area where the Morococha mine administration and operations are taking place, as well as certain underground areas. Certain of the underground areas acquired by MCP would also provide us with easier and less costly underground access to some areas of the Morococha concessions.

Beginning in 2005, with the opposition of Centromin, we engaged in a number of administrative and judicial proceedings to obtain legal title to surface lands and underground access that comprise part of the rights that were acquired by Peru Copper from Centromin.

In June 2010, we reached an agreement with MCP which clearly defines each party’s long term surface rights and therefore provides more certainty to the land situation for our Morococha mine. The primary focus of the agreement is on the lands and concessions around the Morococha mine and MCP’s Toromocho copper project. Under the terms of the agreement, Argentum is required to relocate the core Morococha facilities over a 5 year period and transfer certain mineral concessions and access rights to MCP that it needs in order to proceed with the development of the Toromocho project, including the surface lands within the planned open pit mining area of the Toromocho project. In exchange, Argentum is to receive a package of surface rights, easements, and other rights to relocate the facilities and to continue uninterrupted operations, and would also obtain rights to a number of mineral concessions

outside the planned Toromocho pit area where high-grade silver veins have been identified. Lastly, Argentum is to receive periodic cash payments from MCP totalling $40 million, which would off-set a portion of the capital required for the facility relocation. In addition to the foregoing, the parties agreed to dismiss the judicial and administrative claims between them. Pursuant to the agreement, the transfer of lands and rights and the cash payments will occur over a period of time and are 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. As of December 31, 2016, the Morococha facilities had not been relocated within the time period originally established in the agreement, and the parties had not yet agreed on a revised milestone. Although this agreement has diminished 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 relationship will continue in an amicable fashion, and that the future relocation and other costs associated with the commitments in the agreement will not render continued operations at the Morococha mine uneconomic.

Competition for New Properties

The mining industry is exceptionally 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 at all levels 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.

Replacement of Reserves

The Huaron, Morococha, La Colorada, Dolores**,** Alamo Dorado, Manantial Espejo, and San Vicente mines are our current sources of metals production. Current life-of-mine plans provide for a defined production life for mining at each of our mines. If our mineral reserves are not replaced either by the development or discovery of additional 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.

Imprecision in Mineral Reserve and Mineral Resource Estimates

There is a degree of uncertainty attributable to the estimation of mineral reserves and mineral resources. Until mineral reserves or mineral resources are actually mined and processed, the quantity and grade of mineral resources and mineral reserves must be considered as estimates only and no assurances can be given that the estimated levels of metals will be produced or that we will receive the price assumed in determining our mineral reserves. These estimates are expressions of judgment based on knowledge, mining experience, analysis of drilling results and industry practices. Valid estimates made at a given time may significantly change when new information becomes available. By their nature, mineral reserve and mineral resource estimates are imprecise and depend, to a certain extent, upon analysis of drilling results and interpretations that may ultimately prove unreliable.

Furthermore, fluctuations in the market price of metals, as well as increased capital or production costs or reduced recovery rates may render mineral reserves uneconomic and may ultimately result in a reduction of mineral reserves. The extent to which resources may ultimately be reclassified as proven or probable mineral reserves is dependent upon the demonstration of their profitable recovery. The evaluation of mineral reserves or mineral resources is always influenced by economic and technological factors, which may change over time. No assurances can be given that any resource estimate will ultimately be reclassified as proven or probable mineral reserves or that

mineralization can be mined or processed profitably. If our mineral reserve or mineral resource figures are inaccurate or 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.

Inaccuracies in 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, among other things, the following factors: the accuracy of mineral reserve estimates; the accuracy of assumptions regarding 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 described above under "Ownership and Operating Hazards and Risks". 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 sources, and water supply are important determinants for capital and operating costs. The lack of availability on acceptable terms or the delay in the availability of any one or more of these items could prevent or delay exploitation or development of our projects. If adequate infrastructure is not available in a timely manner, there can be no assurance that the exploitation or development of our projects will be commenced or completed on a timely basis, if at all; the resulting operations will achieve the anticipated production volume; or the construction costs and ongoing operating costs associated with the exploitation and/or development of our advanced projects will not be higher than anticipated. 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.

The equipment on site at the Morococha property, particularly the Amistad plant, is old and may require higher capital investment than we have estimated.

Environmental Legislation, Regulations, and Hazards

All phases of our operations are subject to environmental regulation in the various jurisdictions in which we operate. Environmental legislation in almost all jurisdictions are evolving in a manner which will require stricter standards and will be subject to 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. Compliance with environmental laws and regulations may require significant capital outlays on our behalf and may cause material changes or delays in our intended activities. Changes in environmental regulation, if any, may adversely impact our operations and profitability. In addition, 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.

Our operations at Dolores 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 in total at all our mines except Dolores. In 2013 and 2014 we conducted detailed internal safety reviews of all seven tailings storage facilities. Those reviews, completed in August and September 2014, found that the storage facilities design, construction, operation and monitoring at all of our tailings storage facilities are generally in line with the Canadian Dam Safety Guidelines and best practice. Additionally, an independent safety review for the Huaron tailings storage facilities was commissioned to Newfields consultants of Denver, Colorado. The review concurred with the previously completed internal review. Design of all of our tailings storage facilities includes detailed consideration of stability under static and dynamic (pseudostatic) seismic conditions to ensure exceedance of relevant safety factors. 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 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 Huascacocha Lake, 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.

Developments Regarding Aboriginal and Indigenous Peoples

Some of our operations are near areas inhabited by aboriginal and indigenous peoples or have local communities nearby. Developing laws and movements respecting the acquisition of lands and other rights from such people and communities 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 aboriginal and indigenous people and with local communities in accordance with the laws governing aboriginal and indigenous peoples and local communities 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 local communities and aboriginal and indigenous peoples to challenge agreements or arrangements previously entered into for various reasons. If we cannot maintain an agreement or positive relationship with aboriginal or indigenous peoples or with the communities where we operate, there may be significant disruptions in our operations and activities, or we may be unable to operate at all in such areas.

Community Action

In recent years, communities and non-governmental organizations (“NGOs”) have become more vocal and active with respect to mining activities at or near their communities. These communities and NGOs have taken such actions as road closures, work stoppages, and lawsuits for damages. These actions relate not only to current activities but often in respect of past activities by prior owners of mining properties. Such actions by communities and NGOs

may have a material adverse effect on our financial position, cash flow, and results of operations or may force the cessation of mining activities altogether. In addition, even if such matters are shown to have little or no basis or to have only involved prior owners, the Company could suffer significant reputational harm.

Trading Activities and Credit Risk

We generally take the view that our precious metals production should not be hedged, thereby allowing the maximum exposure to precious metal prices. However, in times of extreme price volatility or deteriorating market conditions, the Board of Directors may make exceptions to this approach and authorize management to enter short-duration hedging for a limited portion of our forecasted production of precious metals. Decisions relating to hedging may have material adverse effects upon our financial performance, financial position, and results of operations.

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. For example, the Doe Run Peru smelter, a significant buyer of our production in Peru, experienced financial difficulties in the first quarter of 2009 and closed. We continued to sell copper concentrates to other buyers but on inferior terms. The Doe Run Peru smelter remains closed and we are owed approximately $8.2 million under the terms of our contract with Doe Run Peru. We continue to pursue all legal and commercial avenues to collect the amount outstanding.

As at December 31, 2016, we had receivable balances associated with buyers of our concentrates of $45.0 million (2015 - $21.3 million). All of this receivable balance is owed by twelve well known concentrate buyers and the vast majority of our concentrate is sold to those same counterparts.

Silver doré production is refined under long term agreements with fixed refining terms at three 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. As at December 31, 2016, we had approximately $28.5 million contained in precious metal inventory at refineries (2015 - $21.4 million). We maintain insurance coverage against the loss of precious metals at our mine sites, in-transit to refineries, and while at the 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 the Company operates. These advances represent a credit risk to the Company to the extent that supplies do not deliver products or perform services as expected. As at December 31, 2016, the Company had made $28.8 million of supplier advances (December 31, 2015 - $12.5 million), which are reflected in "Trade and other receivables" on the Company'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, the Company makes 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 the Company's 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 the Company from realizing the tax benefits from the deferred tax assets. We reassess unrecognized income tax assets at each reporting period.

Economic Dependence

We have 20 customers that account for 100% of our concentrate and silver and gold sales revenue. We have seven customers that accounted for 18%, 16%, 14%, 10%, 10%, 9%, and 7% of total sales in 2016. 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.

Exchange Rate Risk

We report our financial statements in United States dollars ("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 Pan American's 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. The local currencies that we have the most exposure to are the MXN, the ARS, the BOB, and the PEN.

In order to mitigate this exposure, we maintain a portion of our cash balances in PEN, MXN and CAD and, from time to time, enter into forward currency positions to match anticipated spending. As at December 31, 2016, we had outstanding collars on a portion of the Company's MXN purchases with puts and call contracts, which have a nominal value of $81.0 million and have settlement dates between January 2017 and December 2017. The positions have a weighted average floor of $19.36 and average cap of $22.91. At December 31, 2016, we were holding cash and short term investments of $6.5 million in CAD, $9.4 million in MXN, $3.5 million in ARS, $4.3 million in BOB, and $0.8 million in PEN.

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

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 in the local economy 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.

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.

Competitive Conditions

The mining industry is intensely competitive, particularly in the acquisition of additional mineral reserves and mineral resources in all of its phases of operation, and we compete with many companies possessing similar or greater financial and technical resources. This is particularly true in jurisdictions where mining is a significant industry, and our operations fall within such jurisdictions.

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. 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.

Despite efforts to attract and retain qualified personnel, as well as the retention of qualified consultants, to manage our interests, even when those efforts 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

Some of our employees and contractors are unionized. In particular, unions have been established at our operations in Peru, Argentina, and Bolivia. 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.

Acquisitions

An element of our business strategy is to make selected acquisitions. For example, Pan American completed the acquisitions of: Corner Bay and with it, the Alamo Dorado mine, in February 2003; Argentum and with it, the Morococha mine, in August 2004; the remaining 50% interest in the Manantial Espejo project from Silver Standard Resources Inc. in 2006; an additional 40% interest of PASB in respect of the San Vicente mine in May 2007; Aquiline

and with it, the Navidad and Calcatreu properties, in January 2010; the acquisition of Minefinders and its Dolores mine in 2012; and in early 2017, the Joaquin project 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 our ability to effectively manage the integration and operations of entities we acquire and to realize other anticipated benefits. The process of managing acquired businesses may involve unforeseen difficulties and may require a disproportionate amount of management resources. 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, require an investment in time and capital. 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.

Limited Supplies and Supply Chain Disruptions

Our operations depend on an uninterrupted supply of reagents (including, but not limited to, 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. Any interruptions to the procurement and supply of reagents, production inputs and other supplies, or the availability of skilled personnel could have an adverse impact on our future cash flows, earnings, results of operations, and financial condition.

Reclamation Obligations

Reclamation requirements vary depending on the location of the property and the managing governmental agency, but they are similar in that they aim to minimize long-term effects of mining exploitation and exploration disturbance by requiring the operating company to control possible deleterious effluents and to re-establish to some degree pre-disturbance land forms and vegetation. We are actively providing for or carrying out any required reclamation activities on our properties. Any significant environmental issues that may arise, however, could lead to increased reclamation expenditures and have a material adverse effect on our financial resources.

Commodity Hedging Activities

During the year ended December 31, 2015 the Company entered into diesel swap contracts designated to fix or limit the Company's exposure to higher fuel prices (the "Diesel fuel swaps"). The Diesel fuel swaps had an initial notional value of $25.5 million of which $nil remained outstanding as at December 31, 2016 (December 31, 2015 - $14.7 million). The Company recorded gains of $1.0 million on the Diesel fuel swaps in the year ended December 31, 2016 (2015 - losses of $3.1 million).

Internal Control over Financial Reporting

We documented and tested during our most recent fiscal year our internal control procedures in order to satisfy the requirements of Section 404 of the Sarbanes-Oxley Act of 2002 ("SOX"). SOX requires an annual assessment by management and an independent assessment by our Independent Registered Public Accounting Firm of 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 in accordance with Section 404 of SOX. Our failure to satisfy the requirements of Section 404 of SOX on an ongoing, timely basis could result in the loss of investor confidence in the reliability of our financial statements, which in turn could harm our business and negatively impact the trading price of our Common Shares 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.

No evaluation can provide complete assurance that our internal control over financial reporting will 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. Although we intend to devote substantial time and incur costs, as necessary, to ensure ongoing compliance and to adopt new standards and practices as required, we cannot be certain that we will be successful in complying with Section 404 of SOX.

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. While we have established programs, policies and training to reduce and mitigate risks in certain areas, including anti-corruption compliance, there is no guarantee such programs, policies or training 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. Such fines penalties or other civil or criminal prosecutions and sanctions could have a material adverse effect on our business and severely damage our reputation.

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 relate to current or ex-employees, some of which involve claims of significant value, for matters ranging from workplace illnesses such as silicosis to claims for additional profit-sharing and bonuses in prior years. 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 and such claimants may seek sizeable monetary damages against us and/or the return of surface or mineral rights 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 to 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 the Company. 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.

Information and Cyber Security

With the increasing dependence and interdependence on electronic data communication and storage, including the use of cloud-based services and personal devices, the Company is exposed to evolving technological risks relating to its information and data. While the Company employs security measures in respect of its information and data, we cannot be certain that we will be successful in securing this information and data and there may be instances where the Company is exposed to malware, cyber-attacks or other unauthorized access or use of its 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.

DIVIDENDS

On February 15, 2010, Pan American announced that our Board of Directors had approved a semi-annual cash dividend to holders of our Common Shares. In conjunction with this approval, the Board declared its first cash dividend of $0.025 per Common Share to holders of record of our Common Shares as of the close of business on February 26, 2010. Pan American approved further dividends of $0.025 per Common Share on August 11 and November 8, 2010 and on February 15, May 18, August 10, and November 8, 2011. On February 22, 2012, Pan American announced our first dividend of the year and increased the amount of that dividend to $0.0375 per Common Share. Pan American approved another dividend of $0.0375 per Common Share on May 15, 2012, before increasing the amount to $0.050 per Common Share for dividends announced on August 14 and November 7, 2012. We increased our dividend once again when we approved a dividend of $0.125 per Common Share on February 20, 2013 and approved additional dividends of $0.125 per Common Share on each of May 13, August 14 and November 13, 2013, and on February 19, May 8, August 13 and November 13, 2014, and more recently on February 18, 2015. Our next dividend of $0.05 per Common Share was approved on May 11, 2015, followed by further dividend approvals of $0.05 per Common Share on each of August 13 and November 11, 2015. On February 17, 2016, the Board approved a dividend of $0.0125 per Common Share. We followed with additional dividends approvals of $0.0125 per Common Share on each of May 11, August 11, and November 14, 2016. Our first dividend of 2017 was approved on February 14, 2017, in an amount of $0.025 per Common Share.

Each of the foregoing dividends was designated to be an eligible dividend for the purposes of the *Income Tax Act* (Canada). Specific dates and amounts of future dividends will be determined by the Board of Directors on an ongoing basis.

MARKET FOR SECURITIES

Pan American's Common Shares are listed and posted for trading on the Toronto Stock Exchange (under the symbol PAAS) and The Nasdaq Stock Market (under the symbol PAAS). The majority of trading of our Common Shares takes place on The Nasdaq Stock Market. The following table outlines the closing share price trading range and volume of shares traded by month in 2016:

Toronto Stock Exchange (CAD$)				Nasdaq Stock Market (US$)			
Month	**High**	**Low**	**Volume**	**Month**	**High**	**Low**	**Volume**
January	$10.10	$7.85	5,521,796	January	$7.18	$5.38	41,879,888
February	$13.55	$9.34	9,852,863	February	$9.82	$6.66	68,053,600
March	$14.77	$12.16	13,747,814	March	$11.30	$9.07	62,840,960
April	$19.75	$13.60	16,211,558	April	$15.78	$10.38	59,788,507
May	$21.27	$17.26	21,691,531	May	$16.49	$13.40	66,235,368
June	$21.33	$18.10	16,112,717	June	$16.47	$13.83	95,593,865
July	$25.60	$22.26	9,896,949	July	$19.63	$16.80	57,003,116
August	$27.56	$22.57	9,163,536	August	$21.59	$17.22	63,171,988
September	$25.57	$22.08	11,659,930	September	$19.85	$16.71	61,603,043
October	$23.71	$19.86	9,018,103	October	$18.08	$15.03	46,085,589
November	$23.89	$18.70	13,065,221	November	$17.76	$13.80	66,176,160
December	$24.39	$18.80	8,132,246	December	$18.37	$14.05	48,517,704

EXCEPTIONS FROM NASDAQ CORPORATE GOVERNANCE REQUIREMENTS

Under Rule 4350(a) of the Nasdaq Stock Market Rules (the "Nasdaq Rules"), a foreign private issuer (as defined in Rule 12b-2 under the U.S. Securities Exchange Act of 1934, as amended) 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.

DIRECTORS AND EXECUTIVE OFFICERS

The names and municipalities of residences of our directors and executive officers as at December 31, 2016, the positions held by them with Pan American at that time and their principal occupations for the past five years are set out below:

Name and Municipality of Residence	Position with Pan American	Principal Occupation During the Past Five Years
ROSS J. BEATY[5] Vancouver, B.C. Canada	Director and Chairman (director of Pan American since September 30, 1988)	Business Executive and Chairman of Pan American.
MICHAEL CARROLL[1,5] Walnut Creek, California, U.S.A.	Director since January 1, 2011	Corporate Director
CHRISTOPHER N. DUNN [2,3,5] Vancouver, B.C. Canada	Director since January 1, 2012	Corporate Director, Executive Chairman of Ero Copper Corporation, a private company.
NEIL DE GELDER, Q.C.[1, 3] Vancouver, B.C. Canada	Director since July 3, 2012	Exec. VP of Stern Partners, a private diversified investment firm.
DAVID PRESS[2,4] West Vancouver, B.C. Canada	Director since May 13, 2008	Corporate Director
WALTER T. SEGSWORTH[2, 4,6] West Vancouver, B.C. Canada	Director since May 12, 2009	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; Exec. VP, Corporate Development & Geology since September 1, 2008.
GILLIAN WINCKLER[1,4] Vancouver, B.C. Canada	Director since May 11, 2016	Corporate Director
STEVEN BUSBY Vancouver, B.C. Canada	COO	COO of Pan American since May 13, 2008.
A. ROBERT DOYLE North Vancouver, B.C. Canada	CFO	CFO of Pan American since January 2004.
CHRISTOPHER EMERSON Lima Peru	VP, Business Development and Geology	VP, Business Development & Geology of Pan American since August 10, 2015; previously Geology Manager for Glencore South America.
GEORGE GREER Surrey, B.C. Canada	Sr. VP, Project Development	Sr. VP, Project Development of Pan American since January 1, 2012.
SEAN MCALEER Vancouver, B.C. Canada	VP, Human Resources and Security	VP, Human Resources and Security of 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, Environment and Communities Committee.

5 Member of the Finance Committee.

6 Mr. Segsworth is our Lead Independent Director.

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, 2016, the Board of Directors consisted of eight directors seven of whom, Ross Beaty, Michael Carroll, Christopher N. Dunn, Neil de Gelder, David Press, Walter Segsworth and Gillian Winckler, qualify as unrelated directors who are independent of management. The Board of Directors has established five committees: the Audit Committee, the Human Resources and Compensation Committee, the Health, Safety, Environment and Communities Committee, the Nominating and Governance Committee, and the Finance 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, 2016, is set forth in the preceding table.

As at March 21, 2016, the directors and executive officers of Pan American named above as a group exercised control or direction or beneficially owned, directly or indirectly, 3,095,690 Common Shares approximately 2.02% of the issued and outstanding Common Shares of Pan American.

Except as noted below, 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 an order that was issued while the proposed director 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 proposed director 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:

(a) 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

(b) 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.

Audit Committee

As at December 31, 2016, the members of the Audit Committee were Michael Carroll (Chair), Neil de Gelder, and Gillian Winckler. 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.

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 has been the Executive Director of the British Columbia Securities Commission, and is currently Executive Vice-President of a private diversified investment firm based in Vancouver. In this capacity, he is routinely involved in reviewing internal management financial reporting and external audited and unaudited financial statements from the perspective of an owner or director. 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.

Gillian Winckler is a former mining and business executive with over 25 years of diversified experience in the metals and mining industry and the financial sector. Among other senior positions, Ms. Winckler has been both a Chief Executive Officer and Chief Financial Officer of a Canadian and Australian publicly listed coal development company. Ms. Winckler has been extensively involved with corporate and divisional strategy, mergers and acquisitions, divestments, exploration, as well as project evaluation and development. Ms. Winckler is a Chartered Accountant (South Africa), with a BSc and BComm (Hons) obtained in South Africa. Her professional expertise includes strategic planning, mergers, acquisitions and divestments in the mining sector, as well as IFRS, GAAP, risk management and regulatory reporting.

External Auditor Service Fees

Audit Fees

The aggregate fees billed by Deloitte LLP, Pan American's Independent Registered Public Accounting Firm, for the fiscal years ended December 31, 2016 and 2015 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 $1,788,000 and $1,899,000, respectively.

Audit-Related Fees

The aggregate fees billed by Deloitte LLP for the fiscal years ended December 31, 2016 and 2015 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 and are not reported above as audit fees were approximately $101,000 and $66,000, respectively. In 2016, such fees related primarily to the review of certain of our securities law filings.

Tax Fees

The aggregate fees billed by Deloitte LLP for the fiscal years ended December 31, 2016 and 2015 for professional services rendered by it for tax compliance, tax advice, tax planning, and other services were approximately $58,000 and $73,000, respectively. In 2016, such fees related primarily to the provision of services related to transfer pricing and tax compliance reporting (foreign income tax and VAT returns).

Other Fees

The aggregate fees billed by Deloitte LLP for the fiscal years ended December 31, 2016 and 2015 for products and services provided by Deloitte LLP, other than the services reported in the preceding three paragraphs, were approximately $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

Certain officers and directors of Pan American are officers and/or directors of, or are associated with, other natural resource companies that acquire interests in mineral properties. Such associations may give rise to conflicts of interest from time to time. However, the directors are required by law 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 personal interest which they may have in any material transaction which is proposed to be entered into by us and to abstain from voting as a director for the approval of any such transaction.

LEGAL PROCEEDINGS AND REGULATORY ACTIONS

A description of certain legal proceedings to which we are a party appear under the heading "Commitments and Contingencies" in Note 29 to our Audited Consolidated Financial Statements for the year ended December 31, 2016. 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

To the best of our knowledge, no director or executive officer of the Company, 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 the Company.

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 material contracts have been entered into by the Company during the financial year ended December 31, 2016, and no material contracts were entered into by the Company before the financial year ended December 31, 2016, which are still in effect.

INTERESTS OF EXPERTS

Deloitte LLP, Independent Registered Public Accounting Firm, is the auditor of Pan American and is independent within the meaning of the Rules of Professional Conduct of the Chartered Professional Accountants of British Columbia.

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 as at December 31, 2016, 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 6, are Michael Steinmann, President and Chief Executive Officer, Martin Wafforn, Senior Vice President, Technical Services and Process Optimization, Chris Emerson, FAusIMM, Vice President, Business Development and Geology, Pamela De Mark, Director of Resources, and Americo Delgado, Director of Metallurgy, all of whom are employees of Pan American.

Michael Steinmann, P. Geo., Martin Wafforn, P. Eng., Chris Emerson, FAusIMM, Pamela De Mark, P. Geo., and Americo Delgado, P.Eng. are the persons who have prepared or certified a statement, report, or valuation described in this AIF.

None of Michael Steinmann, P. Geo., Martin Wafforn, P. Eng., Chris Emerson, FAusIMM, Pamela De Mark, P. Geo., or Americo Delgado, P. Eng. beneficially owns, directly or indirectly, 1% or more of any class of Pan American's outstanding securities.

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 Pan American's Information Circular for the most recent annual meeting of shareholders. Additional financial information is also provided in Pan American's Audited Consolidated Financial Statements for the years ended December 31, 2016 and 2015, and Management's Discussion and Analysis for the year ended December 31, 2016. Additional information relating to Pan American may be found on SEDAR at www.sedar.com.

GLOSSARY OF TERMS

"mineral resource" - A mineral resource is a concentration or occurrence of diamonds, natural solid inorganic material, or natural solid fossilized organic material including base and precious metals, coal, and industrial minerals in or on the Earth's crust in such form and quantity and of such a grade or quality that it has reasonable prospects for economic extraction. The location, quantity, grade, geological characteristics and continuity of a mineral resource are known, estimated or interpreted from specific geological evidence and knowledge.

"*inferred mineral resource*" – That part of a mineral resource for which quantity and grade or quality can be estimated on the basis of geological evidence and limited sampling and reasonably assumed, but not verified, geological grade and continuity. The estimate is based on limited information and sampling gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes.

"*indicated mineral resource*" – That part of a mineral resource for which quantity, grade or quality, densities, shape, physical characteristics are so well established that they can be estimated with a level of confidence sufficient to allow the appropriate application of technical and economic parameters, to support mine planning and evaluation of the economic viability of the deposit. The estimate is based on detailed and reliable exploration and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes that are spaced closely enough for geological and grade continuity to be reasonably assumed.

"measured mineral resource" – That part of a mineral resource for which quantity, grade or quality, densities, shape, and physical characteristics are so well established that they can be estimated with confidence sufficient to allow the appropriate application of technical and economic parameters, to support production planning and evaluation of the economic viability of the deposit. The estimate is based on detailed and reliable exploration, sampling and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes that are spaced closely enough to confirm both geological and grade continuity.

"*mineral reserve*" – A mineral reserve is the economically mineable part of a measured or indicated mineral resource demonstrated by at least a preliminary feasibility study. This study must include adequate information on mining, processing, metallurgical, economic, and other relevant factors that demonstrate, at the time of reporting, that economic extraction can be justified. A mineral reserve includes diluting materials and allowances for losses that may occur when the material is mined.

"probable mineral reserve" - The economically mineable part of an indicated, and in some circumstances, a measured mineral resource demonstrated by at least a preliminary feasibility study. This study must include adequate information on mining, processing, metallurgical, economic, and other relevant factors that demonstrate, at the time of reporting, that economic extraction can be justified.

"proven mineral reserve" - The economically mineable part of a measured mineral resource demonstrated by at least a preliminary feasibility study. This study must include adequate information on mining, processing, metallurgical, economic, and other relevant factors that demonstrate, at the time of reporting, that economic extraction is justified.

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

a. The Committee shall be composed of at least three independent directors and 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).

b. The members of the Committee shall be appointed by the Board, based on the recommendation of the Nominating and Governance Committee, to serve a one-year term and are permitted to serve an unlimited number of consecutive terms.

c. The Committee shall appoint a chair (the "**Chair**") from among its members who shall be an independent director. 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 at the meeting.

d. The Committee will make every effort to meet at least five times per year and each member is entitled to request that an additional meeting be called, which will be held within two weeks of the request for such meeting if practicable. A quorum at meetings of the Committee shall be two members present in person or by telephone. The Committee may also act by unanimous written consent of its members as described under the heading "**Authority**" in this Charter.

e. The external auditor may request the Chair to 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. In addition to the external auditor, each committee chair, members of board, as well as the Chief Executive Officer or Chief Financial Officer shall be entitled to request the Chair to call a meeting, which meeting shall be held as soon as practicable after receiving the request.

f. Notice of the time and place of every meeting shall be given in writing or by email communication to each member of the Committee at least 24 hours prior to the time fixed for such meeting.

g. The Committee shall fix its own procedure at meetings, keep records of its proceedings and provide a verbal report to the Board routinely at the next regularly scheduled Board meeting and shall provide

copies of finalized minutes of meetings to the Corporate Secretary to be kept with the official minute books of the Company.

h. The Committee will review and approve its minutes of meetings and copies will be made available to the external auditor or its members as requested.

i. In camera sessions will be scheduled for each regularly scheduled quarterly Committee meeting, and as needed from time to time.

j. On an ad hoc basis, the Committee may also 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.

RESPONSIBILITIES AND DUTIES

Overall Committee:

To fulfill its responsibilities and duties the Committee will:

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

b. review and, where necessary, recommend revisions to the Company's disclosure in the Management Information Circular regarding Committee's composition and responsibilities and how they are discharged;

c. 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;

d. review and recommend approval by the Board of all significant and material financial disclosure documents to be released by the Company, including but not limited to, quarterly and annual financial statements and management discussion and analysis, annual reports, Form 40-F, annual information forms, and prospectuses containing material information of a financial nature; and

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

Public Filings, Policies and Procedures:

The Committee is responsible for:

a. ensuring 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 and periodically assess the Company's 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. reviewing 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. reviewing 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. regularly reviewing 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 by shareholders at each annual general meeting of the Company and the compensation of the external auditor;

b. review the performance of the external auditor and, where appropriate, recommend to the Board the removal of the external auditor;

c. 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;

d. oversee the work of the external auditor generally, including review and, as applicable, approval of the following :

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

   ii. the reasonableness of the estimated fees and other compensation to be paid to the external auditor;

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

      - a summary of the Company's internal controls and 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.

   iv. form and content of other reports of the auditors.

   The Committee shall report to the Board, as necessary, in respect of the above noted matters.

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. 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;

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

h. 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 prescribed 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 direct the auditors' examinations to particular areas of question or concern, as required;

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. review the appointments of the chief financial officer and key financial executives;

g. ensure CEO and CFO certifications pursuant to Sarbanes-Oxley Act sections 302 and 906 and pursuant to Canadian securities laws are prepared and filed and will make inquiry 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 determine that they are being properly followed up;

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 integrity, financial and otherwise, of the Company, including those relating to hedging, insurance, accounting, information services and systems, 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 (the "Code") and Global Anti-Corruption Policy;

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. receiving reports from management and other Board committees, including without limitation the Health Safety, Environment and Community Committee, on the identification, assessment and management of risks;

g. in conjunction with any other committee designated by the Board from time to time, reviewing major financial, audit and accounting related 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. establish 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 complaints and concerns received regarding accounting, internal controls, or auditing matters or with respect to the Code, and the investigation and resolution thereof, and provide all relevant information relating to such complaints and concerns to the Nominating and Governance Committee, taking into account complainant confidentiality concerns and the roles and responsibilities of each Committee;

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

k. review all related-party transactions; and

l. carry the responsibility for reviewing 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, including: tax and financial reporting laws and regulations; legal withholding requirements; environmental protection laws and regulations; and any other laws and regulations which expose directors to liability.

AUTHORITY

a. The Committee shall have the authority to:

   i. engage independent counsel and other advisors as it determines necessary to carry out its duties;

   ii. set and pay the compensation for any advisors employed by the Committee; and

   iii. communicate directly with the internal and external auditors.

b. The Committee shall have the power, authority and discretion delegated to it by the Board which shall not include the power to change the membership of or fill vacancies in the Committee.

c. A resolution approved in writing by the members of the Committee shall be valid and effective as if it had been passed at a duly called meeting. Such resolution shall be filed with the minutes of the proceedings of the Committee and shall be effective on the date stated thereon or on the latest date stated in any counterpart.

d. The Board shall have the power at any time to revoke or override the authority given to or acts done by the Committee except as to acts done before such revocation or act of overriding and to terminate the appointment or change the membership of the Committee or fill vacancies in it as it shall see fit.

e. The Committee shall have unrestricted and unfettered access to all Company personnel and documents and shall be provided with the resources necessary to carry out its responsibilities.

f. 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.

g. The Committee, upon approval by a majority of the members of the Committee, may 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**" means 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 in the Company's financial statements.

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

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

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

c. 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;

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

e. 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.

Exhibit 1.2



Management's Discussion and Analysis
for the year ended December 31, 2016

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MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

March 22, 2017

Introduction

This Management's Discussion and Analysis ("MD&A") is intended to help the reader understand the significant factors that have affected the performance of Pan American Silver Corp. and its subsidiaries (collectively "Pan American", "we", "us", "our" or the "Company") and such factors that may affect its future performance. This MD&A should be read in conjunction with the Company's audited consolidated financial statements for the year ended December 31, 2016 (the "2016 Financial Statements") and the related notes contained therein. All amounts in this MD&A and in the 2016 Financial Statements are expressed in United States dollars ("USD"), unless identified otherwise. The Company reports its financial position, results of operations and cashflows in accordance with International Financial Reporting Standards ("IFRS") as issued by the International Accounting Standards Board . Pan American's significant accounting policies are set out in Note 2 of the 2016 Financial Statements.

This MD&A refers to various non-Generally Accepted Accounting Principles ("non-GAAP") measures, such as "all-in sustaining cost per silver ounce sold", "cash costs per ounce of silver", "total debt", "working capital', "general and administrative cost per silver ounce produced", "adjusted earnings" and "basic adjusted earnings per share", which are used by the Company to manage and evaluate operating performance at each of the Company's mines and are widely reported in the mining industry as benchmarks for performance, but do not have standardized meaning. To facilitate a better understanding of these non-GAAP measures as calculated by the Company, additional information has been provided in this MD&A. Please refer to the section of this MD&A entitled "Alternative Performance (Non-GAAP) Measures" for a detailed description of "all-in sustaining cost per silver ounce sold", "cash costs per ounce of silver", "working capital", "general and administrative cost per silver ounce produced", "adjusted earnings" and "basic adjusted earnings per share", as well as details of the Company's by-product credits and a reconciliation of these measures to the 2016 Financial Statements.

Any reference to "cash costs" or "cash costs per ounce of silver" in this MD&A should be understood to mean cash costs per ounce of silver, net of by-product credits. Any reference to "AISCSOS" in this MD&A should be understood to mean all-in sustaining costs per silver ounce sold, net of by-product credits.

Except for historical information contained in this MD&A, the following disclosures are forward-looking statements within the meaning of the U.S. Private Securities Litigation Reform Act of 1995 and forward-looking information within the meaning of applicable Canadian provincial securities laws or are future oriented financial information and as such are based on an assumed set of economic conditions and courses of action. Please refer to the cautionary note regarding forward-looking statements and information at the back of this MD&A and the "Risks Related to Pan American's Business" contained in the Company's most recent Annual Information Form on file with the Canadian provincial securities regulatory authorities and Form 40-F on file with the U.S. Securities and Exchange Commission (the "SEC"). Additional information about Pan American and its business activities, including its Annual Information Form, is available on SEDAR at www.sedar.com

CORE BUSINESS AND STRATEGY

Pan American engages in silver mining and related activities, including exploration, mine development, extraction, processing, refining and reclamation. The Company owns and operates silver mines located in Peru, Mexico, Argentina, and Bolivia. In addition, the Company is exploring for new silver deposits and opportunities throughout North and South America. The Company is listed on the Toronto Stock Exchange ("TSX") (Symbol: PAAS) and on the Nasdaq Global Select Market ("NASDAQ") in New York (Symbol: PAAS).

Pan American's vision is ***to be the world's pre-eminent silver producer, with a reputation for excellence in discovery, engineering, innovation and sustainable development***. To achieve this vision, we base our business on the following strategy:

- *Generate sustainable profits and superior returns on investments through the safe, efficient and environmentally sound development and operation of silver assets*
- *Constantly replace and grow our mineable silver reserves and resources through targeted near-mine exploration and global business development*
- *Foster positive long-term relationships with our employees, our shareholders, our communities and our local governments through open and honest communication and ethical and sustainable business practices*
- *Continually search for opportunities to upgrade and improve the quality of our silver assets both internally and through acquisition*
- *Encourage our employees to be innovative, responsive and entrepreneurial throughout our entire organization*

To execute this strategy, Pan American has assembled a sector-leading team of mining professionals with a depth of knowledge and experience in all aspects of our business, which enables the Company to confidently advance early stage projects through construction and into operation.

Pan American is determined to conduct its business in a responsible and sustainable manner. Caring for the environment in which we operate, contributing to the long-term development of our host communities and ensuring that our employees can work in a safe and secure manner are core values at Pan American. We are committed to maintaining positive relations with our employees, the local communities and the government agencies, all of whom we view as partners in our enterprise.

2016 HIGHLIGHTS

OPERATIONS & PROJECT DEVELOPMENT

- ***Silver Production of 25.42 Million Ounces***

Pan American produced 25.42 million ounces in 2016 compared with 26.12 million ounces in 2015. The anticipated decrease in production reflected declining stockpile grades at Alamo Dorado, open-pit mining nearing completion at Manantial Espejo, and mine sequencing into lower silver grade ore at Dolores.

- ***Record Gold Production of 183.9 Thousand Ounces***

The Company set a new annual gold production record in 2016, producing 183.9 thousand ounces of gold, compared with 183.7 thousand ounces in 2015. Gold production increases at Dolores were partially offset by decreases at Manantial Espejo and Alamo Dorado.

- ***Reduced Annual Cash Costs Lower than Forecast***

The Company recorded consolidated cash costs of $6.29 per payable ounce of silver, a 35% reduction from 2015 cash costs of $9.70 per payable ounce of silver. Cash costs were significantly lower than our initial 2016 forecast of $9.45 to $10.45 per ounce, and within the November 14, 2016 revised 2016 forecast of $6.25 to $7.00 per ounce. The 2016 decrease reflected increased by-product credits, the benefit of export incentives at Manantial Espejo and lower direct operating costs.

- ***Progress on the La Colorada & Dolores Expansion Projects***

Pan American achieved significant progress in the expansion of its La Colorada and Dolores mines in Mexico during 2016. At the La Colorada mine, the new mine shaft and sulphide ore processing plant both began operating in the third quarter of 2016. The new 115kV power line to La Colorada is targeted for completion in the second quarter of 2017, and additional development headings in the underground mine are advancing to enable increased ore mining rates up to the designed 1,800 tonnes per day ("tpd") by the end of 2017. The La Colorada expansion project is expected to increase annual silver production at La Colorada to approximately 7.7 million ounces in 2018, while also significantly increasing zinc and lead production.

At Dolores, construction of the pulp agglomeration plant is approximately 65% complete and development of the new underground mine is advancing towards delivering first ore by the end of 2017. The Dolores expansion is expected to increase silver and gold production at Dolores through a combination of greater throughput and higher recoveries, with associated operational efficiencies helping to reduce cash costs.

- ***Mineral Reserve Replacement***

As at December 31, 2016 Pan American's mineral reserves were estimated to contain approximately 286 million ounces of silver and 2.0 million ounces of gold compared with 280 million ounces of silver and 2.1 million ounces of gold at December 31, 2015. For complete reserves and resources information see the Reserves and Resources section of this MD&A.

FINANCIAL

- ***Increased Revenues, Net Earnings, and Cash Generated from Operating Activities***

2016 revenue of $774.8 million was $100.1 million or 15% higher than in 2015, largely a result of higher metal prices. Realized silver prices per ounce averaged $17.35 for 2016 compared with $15.53 during 2015. Net earnings were $101.8 million ($0.66 basic earnings per share) in 2016 compared with a net loss of $231.6 million ($1.49 basic loss per share) in 2015. The increase in net earnings reflects higher revenue, lower production costs, no 2016 impairment charges and gains from the sale of the Company's interest in Shalipayco to Votorantim Metais - Cajamarquilla S.A. ("Votorantim") and the sale of certain assets to Maverix Metals Inc. ("Maverix"), partially offset by higher income taxes. Net cash generated from operating activities in 2016 of $214.8 million was more than double the $88.7 million

generated in 2015. Strong operating cash flow facilitated the continued return of value to shareholders in 2016 by way of $7.6 million in dividend payments.

- ***Strong Liquidity and Working Capital Position***

The Company had cash and short-term investment balances of $217.6 million and working capital of $428.6 million as at December 31, 2016. The Company's total debt outstanding was $43.3 million at the end of 2016. The Company also had $263.8 million undrawn and available under its revolving credit facility as of December 31, 2016.

- ***Reduced All-in Sustaining Costs per Silver Ounce Sold Lower than Forecast***

Consolidated AISCSOS of $10.17 was down 32% compared with $14.92 in 2015 and was lower than the initial 2016 forecast of $13.60 to $14.90, and also lower than the revised full year 2016 guidance of $10.75 to $11.50 issued on November 14, 2016. The decrease in AISCSOS mainly reflects increased by-product credits, lower production costs, positive inventory net realizable valuation ("NRV") adjustments at Manantial Espejo and Dolores, and export incentives at Manantial Espejo.

2017 OPERATING OUTLOOK

These estimates are forward-looking statements and information that are subject to the cautionary note associated with forward-looking statements and information at the end of this MD&A.

2017 Silver Production, Cash Costs and AISCSOS Forecasts:

	Silver Production (million ounces)	Cash Costs per ounce (1)	AISCSOS (1)
La Colorada	6.40 - 6.90	3.35 - 3.95	5.00 - 5.90
Dolores	4.00 - 4.50	1.25 -2.25	11.00 - 12.50
Alamo Dorado	0.25 - 0.30	18.00 -20.00	18.40 - 19.40
Huaron	3.65 -3.80	5.95 -6.95	9.25 - 10.50
Morococha (92.3%)(2)	2.50 -2.60	3.15 -4.15	8.25 - 9.75
San Vicente (95.0%)(2)	4.40 -4.50	10.90 -11.90	13.80 - 14.80
Manantial Espejo	3.30 - 3.40	15.35 -16.25	16.90 - 18.10
Consolidated Total	**24.50 -26.00**	**6.45 -7.45**	**11.50 - 12.90**

(1) Cash costs per ounce and AISCSOS are non-GAAP measurements. Please refer to section "Alternative Performance (Non-GAAP) Measures" for a detailed reconciliation of how these measures are calculated. The cash cost forecasts assume by-product credit prices of $2,500/tonne ($1.13/lb) for zinc, $2,100/tonne ($0.95/lb.) for lead, $5,400/tonne ($2.45/lb.) for copper, and $1,200/oz. for gold.
(2) Reflects Pan American's ownership in the operation.

The Company expects to produce between 24.50 million and 26.00 million ounces of silver in 2017, roughly similar to 2016 consolidated production of 25.42 million ounces, with expected production increases at La Colorada and Dolores offset by cessation of operations at Alamo Dorado.

Dolores' 2017 silver production is expected to increase from 2016 levels driven by higher stacking rates and recoveries following the commissioning of the agglomeration circuit during the second half of 2017. At La Colorada, the new mineshaft commissioned in the third quarter of 2016 is expected to lead to an increase in the annual silver production, as mining and milling rates gradually ramp up towards 1,800 tpd by year-end for an approximately 13% to 20% increase in annual throughput rate compared to 2016. Silver production at the Company's other operations in 2017 is expected to be broadly consistent with that achieved in 2016.

Consolidated cash costs for 2017 are forecast to be between $6.45 and $7.45 per payable ounce of silver, net of by-product credits, slightly higher than 2016 cash costs of $6.29 per ounce. The Company expects cash costs to decrease at the La Colorada mine, offset by increases at Manantial Espejo as by-product gold credits are expected to decline, and at Dolores where higher operating costs associated with the commissioning and start-up of the new pulp agglomeration circuit are expected in the second half of 2017. It is expected that the improved recoveries realized

from the pulp agglomeration circuit and higher throughputs will ultimately reduce both Dolores and consolidated cash costs. 2017 Cash costs at the remaining operations are anticipated to be relatively steady.

Consolidated AISCSOS in 2017 is forecast to be between $11.50 and $12.90 , compared to the 2016 annual consolidated AISCSOS of $10.17 (which included NRV inventory adjustments that reduced AISCSOS by $1.77 per ounce). Consolidated AISCSOS is expected to remain at similar levels in 2017, as slightly lower forecast sustaining capital is expected to be offset by slightly higher exploration expenses.

2017 By-product Production Forecasts:

	Gold (koz)	Zinc (kt)	Lead (kt)	Copper (kt)
La Colorada	3.3 - 3.5	14.0 - 14.5	7.5 -7.8	—
Dolores	109.1 - 115.0	—	—	—
Alamo Dorado	1.4 - 1.5	—	—	0.01
Huaron	0.3 - 0.4	16.0 -16.5	7.2 - 7.4	6.0 - 6.2
Morococha (1)	2.9 - 3.1	20.2 -21.0	4.0 - 4.5	2.1 - 2.4
San Vicente (1)	0.5 - 0.55	6.3 -6.5	0.3 - 0.3	0.7
Manantial Espejo	37.5 - 41.0	—	—	—
Consolidated Total	**155.0 -165.0**	**56.5 -58.5**	**19.0 - 20.0**	**8.8 - 9.3**

(1) Reflects Pan American's ownership in the operation.

2017 gold production is expected to be between 155.0 and 165.0 thousand ounces, down from the 183.9 thousand ounces produced in 2016. The anticipated decrease is due to lower gold grades at Manantial Espejo and cessation of operations at Alamo Dorado, only partially offset by higher gold production from Dolores. Zinc production is expected to increase in 2017, specifically at La Colorada and Morococha, which should more than offset a decrease in zinc production at Huaron. Lead production is expected to remain stable in 2017, with increases at La Colorada and Morococha offset by an expected decrease at Huaron. The expected increase in base metal production at La Colorada reflects the increased throughput from the new sulphide plant, while the expected increases at Morococha are driven by higher than expected zinc and lead grades. Copper production in 2017 is expected to decrease from 2016 levels, as Morococha mine sequencing shifts out of the Esperanza high-grade copper ore body into other zones with higher zinc and lead content.

2017 Capital Expenditure Forecasts

In 2017, Pan American expects sustaining capital investments of between $82.0 million and $88.0 million, comparable to the $89.4 million of sustaining capital invested in 2016. In addition, Pan American expects to invest between $58.0 million and $62.0 million to complete the expansion projects at La Colorada and Dolores. The following table details the forecast capital investments at the Company's operations and projects in 2017:

	2017 Forecast Capital Investment ($ millions)
La Colorada	10.5 - 11.5
Dolores	39.0 - 40.0
Huaron	8.0 - 9.0
Morococha	9.0 - 10.0
San Vicente	12.0 - 13.0
Manantial Espejo	3.5 - 4.5
Sustaining Capital Total	**82.0 - 88.0**
La Colorada projects	6.5 - 7.5
Dolores projects	51.5 - 54.5
Project Capital Total	**58.0 - 62.0**
Consolidated Total	**140.0 - 150.0**

Major components of the 2017 sustaining capital include:

- Dolores - approximately $20.0 million for pre-stripping activities and $15.4 million in equipment replacements, rehabilitations, and leach pad and solution-pumping expansion works.
- Morococha - approximately $4.1 million in underground mine equipment additions, replacements and overhauls.
- La Colorada - approximately $3.7 million in ventilation raises, ore passes, equipment replacements and overhauls, and approximately $3.5 million in tailings facility expansion work.
- San Vicente - approximately $4.0 million for tailings facility expansion.
- Approximately $11.5 million combined total to be spent on near mine exploration.

See the "2017 Mine Operations Forecasts" section of this MD&A for further details.

Project capital expenditures in 2017 consist of:

Between $51.5 million and $54.5 million to complete the expansion of the Dolores mine, allocated as follows:

- Approximately $30.0 million to complete and commission the new pulp agglomeration plant. Major equipment installation has commenced and the start-up of the new plant is scheduled for mid-2017.
- Approximately $21.0 million to develop the underground mine. The current mine plan reflects production commencing from the underground stoping areas towards the end of 2017.
- Approximately $1.0 million to complete the installation of a new overland conveyor on leach pad 3, which was 75% complete at the end of 2016.

The remaining $6.5 million to $7.5 million will be directed to complete the La Colorada mine expansion:

- completing the installation of a new powerline to the site;
- continued development of the underground mine; and
- installing a cyanide neutralization plant to help reduce capital and operating expenditures for future tailings facility expansions, as well as to provide environmental benefits.

2017 General and Administrative Cost Forecast

Our 2017 general and administrative costs ("G&A") are expected to be approximately $22.5 million, 5% lower than our 2016 G&A. This figure is subject to fluctuations in the Canadian dollar ("CAD") to USD exchange rate, the Company's share price performance, which impacts share based compensation expense, and the Company's ability to allocate certain costs incurred at head office that are directly attributable to operating subsidiaries.

The following table compares our 2017 forecast G&A against those incurred over the previous two years, as well as G&A on a per ounce of silver produced basis, which is a non-GAAP measure.

	Forecast	Actual	
	2017	2016	2015
General and administrative costs (in '000s of USD)	$ 22,500	$ 23,663	$ 18,027
Silver production (in '000s of ounces) (1)	25,250	25,419	26,119
General and administrative costs per silver ounce produced (2)	$ 0.89	$ 0.93	$ 0.69

(1) Forecast silver production at the mid-point of the guidance given in this MD&A for the Company's existing operations.
(2) G&A cost per silver ounce produced is a non-GAAP measure used by the Company to assess G&A costs relative to production. It is calculated as G&A costs divided by total ounces of silver production in the period.

2017 Exploration and Project Development Expense Forecast

Exploration expenses for Pan American in 2017 are expected to total approximately $15.7 million, which is a $4.4 million increase from 2016 exploration expenses of $11.3 million. The increase is driven by additional spending at La Negra as part of the option agreement with Kootenay Silver Inc. and increased surface drilling at Morococha and Huaron. Exploration will continue to include advancing surface exploration on targets defined for certain Mexican and Peruvian properties, as well as holding costs for various exploration properties, including Navidad.

2017 Mine Operation Forecasts

Management's expectations of each mine's operating performance in 2017 are set out below, including discussion on expected production, cash costs, capital expenditures and AISCSOS.

- ***La Colorada mine***

Forecast 2017 silver production of between 6.4 million to 6.9 million ounces is 10% to 19% higher than the 5.8 million ounces produced in 2016. The 2017 mine plan contemplates a mining and milling rate that increases towards 1,800 tpd by the end of the year as the new sulphide plant, underground developments and shaft are phased into production. Included in the overall processing rates, oxide ores will continue to be mined and processed in the oxide leach plant at the current rate of 400 tpd. Concentrate production from sulphide ores mined and processed through the new sulphide processing plant makes up the balance of production. With increased sulphide ore tonnages processed in 2017, it is expected that base metal by-product production will increase substantially relative to 2016 levels with zinc increasing by 23% to 27% and lead increasing by 25% to 30%.

Forecast 2017 cash costs per ounce of between $3.35 and $3.95 are expected to be 36% to 46% lower than the $6.15 recorded in 2016. The drop in expected cash costs reflects the benefits from the expansion combined with higher by-product credits per ounce due to higher zinc and lead production and higher base metal price expectations.

Planned sustaining capital expenditures of $10.5 million to $11.5 million are expected to be relatively similar to the 2016 level of $10.5 million. The major elements making up the 2017 sustaining capital plan are: $3.7 million in mine related capital, the largest components being a ventilation raise, additional ore passes, and equipment replacements and overhauls; $3.5 million in tailings facility expansion work; $1.4 million in near mine exploration; and $1.0 million in camp improvements.

AISCSOS for 2017 is expected to be between $5.00 and $5.90, significantly lower than the $7.49 AISCSOS reported in 2016. The expected benefits of the mine expansion described above, with higher by-product credits, and better cost productivity, are primarily responsible for the decrease.

Capital expenditures relating to the expansion project for the La Colorada mine are expected to be $6.5 million to $7.5 million in 2017. Please see the "2017 Capital Expenditure Forecast" section for a detailed description of these expenditures.

- ***Dolores mine***

Stacking rates at Dolores are expected to average 17,600 to 18,000 tpd onto leach pads in 2017, a 2% to 4% increase from the 17,230 tpd achieved in 2016 due to the commissioning of the agglomeration circuit during the second half of 2017. The ore processed in 2017 is expected to have similar silver and gold grades; however, recoveries are expected to increase due to the enhanced ratio of ounces produced to ounces placed from pulp agglomeration during the later half of the year. The silver production for 2017 is thus expected to increase to between 4.0 million and 4.5 million ounces (between 4% and 17% increase) from 3.8 million ounces produced in 2016. Similarly, gold production is expected to increase by 6% to 12% to between 109.1 koz and 115.0 koz.

Cash costs are expected to increase to between $1.25 to $2.25 per ounce from the 2016 level of negative $1.08 per ounce, largely due to the cost associated with the pulp agglomeration plant commissioning.

Sustaining capital expenditures are forecast between $39.0 million to $40.0 million, consistent with the $40.4 million invested during 2016 (the 2016 sustaining capital cash outflows of $48.1 million were higher than the $40.4 million

invested due to the timing of cash payments for the capital investments). The majority of the 2017 sustaining capital is in mine related capital, which is primarily comprised of: $20.0 million for pre-stripping activities; $7.0 million in equipment replacements and rehabilitations; $8.4 million in leach pad and solution pumping expansion works; $2.3 million in various projects including electrical system upgrades, crusher dust suppression system upgrades, and other equipment replacements and refurbishments; and $1.2 million on camp and ancillary upgrades.

AISCSOS for 2017 is expected to be between $11.00 and $12.50, compared to the 2016 AISCSOS of $8.29 (which included NRV inventory adjustments that reduced AISCSOS by $5.85 per ounce). Excluding the effect of 2016 NRV adjustments, AISCSOS is expected to decrease from those in 2016 due primarily to the lower sustaining capital investments described above and increased silver and gold production.

Expansion project capital is expected to total $51.5 million to $54.5 million in 2017. Please see the "2017 Capital Expenditure Forecast" section for a detailed description.

- ***Alamo Dorado mine***

The Company expects to process stockpiles at the Alamo Dorado mine for the first few months of 2017 while intensive mine reclamation efforts proceed. A total cost of $4.3 million for reclamation activities is expected in 2017, spread relatively evenly throughout the year, compared with $4.7 million spent during 2016.

- ***Huaron mine***

Throughput rates in 2017 are expected to remain consistent with the record-breaking mining and processing rates achieved in 2016. Silver grades and recoveries in 2017 are expected to be roughly in-line with 2016 operating metrics, resulting in stable silver production levels, with 2017 forecast production of between 3.65 million and 3.80 million ounces compared to the 3.81 million ounces produced in 2016. Lead and zinc production are expected to decline year-over-year due to lower grades and recoveries anticipated in 2017.

Cash costs per ounce of between $5.95 and $6.95 are forecast, which is a slight increase from the 2016 level of $5.79 per ounce, primarily driven by higher operating costs as a result of an increase in underground mine advances, greater power consumption and modest wage and cost escalations. These increases are expected to be partially offset by improved base metal prices resulting in larger by-product credits, and improved concentrate treatment terms.

2017 sustaining capital expenditures of between $8.0 million and $9.0 million are expected to be lower than the $12.0 million in 2016. In 2017, sustaining capital is primarily comprised of: $1.9 million in near mine diamond drilling; $1.6 million for camp upgrades; $1.8 million in equipment additions, replacements and overhauls; and $0.8 million in raise bore developments.

AISCSOS for 2017 is expected to be between $9.25 and $10.50, representing a 6% to 17% decrease from the $11.11 reported in 2016, due primarily to lower sustaining capital expenditures.

- ***Morococha mine***

Throughput rates in 2017 are expected to be consistent with the record-breaking mining and processing rates achieved in 2016, while silver grades and recoveries remain similar year-over-year, resulting in consistent silver production. The 2017 forecast silver production is between 2.50 million and 2.60 million ounces, compared to the 2.54 million ounces produced in 2016. However, zinc and lead production are expected to significantly increase while copper production declines in 2017 compared with 2016, as a result of mine sequencing shifting towards zinc and lead-rich zones from copper-rich zones. Zinc and lead grades are expected to increase by approximately 20% and 36% year-over-year, respectively, while copper grades decrease by 65%, with recoveries following the same trends.

Cash costs are anticipated to decrease by up to 25% to between $3.15 and $4.15 per ounce in 2017, primarily as a result of higher base metal by-product credits, and better treatment and refining charges ("TCRC"), partially offset by higher operating costs. Operating costs are expected to increase by approximately 8% primarily due to an increase in underground mine advances, greater maintenance costs and modest wage and supply cost escalations.

Morococha's expected sustaining capital of $9.0 million to $10.0 million for 2017 is 8% to 17% lower than the $10.9 million for 2016. The planned 2017 sustaining capital expenditures include: $4.1 million in underground mine

equipment additions, replacements and overhauls; $2.2 million for near mine exploration; and $1.7 million for raise bore developments.

AISCSOS for 2017 is expected to be between $8.25 and $9.75, roughly consistent with the $9.32 reported in 2016, primarily due to the expected decrease in sustaining capital and increase in by-product production levels being offset by higher operating costs.

- ***San Vicente mine***

Throughput rates, silver grades and recoveries are expected to be reasonably consistent with those achieved for 2016, leading to flat silver production. The 2017 forecast silver production is between 4.40 million and 4.50 million ounces, compared to the 4.43 million ounces produced in 2016. Anticipated enhanced zinc recoveries, combined with slightly increased throughput levels, should result in a 24% to 28% increase in zinc production. Copper and lead production is expected to remain relatively flat with 2016 levels.

Cash costs in 2017 are expected to decline by up to $1.05 per ounce to between $10.90 and $11.90 per ounce compared with 2016 due to larger by-product credits from higher base metal price assumptions and increased zinc production, offsetting operating cost increases. The escalating operating costs reflects the currency fixed at 6.91 Bolivian bolivianos ("BOB") per USD, coupled with an expected modest rate of inflation.

Planned sustaining capital is between $12.0 million and $13.0 million in 2017, which reflects an increase from the $5.0 million spent in 2016. Major components of 2017 sustaining capital spending include: $4.0 million for a tailings facility expansion; $2.6 million for near mine exploration; $1.5 million on mine equipment refurbishment and replacements; $1.7 million on a new ramp and substation development; and $0.5 million on environmental related expenditures including further upgrades to the water treatment plant.

AISCSOS for 2017 is expected to be between $13.80 and $14.80, comparable to the $14.30 reported in 2016. Higher than expected sustaining capital investments in 2017 are anticipated to be offset by higher by-product credits.

- ***Manantial Espejo mine***

Open-pit operations at Manantial Espejo are expected to conclude in the first half of 2017, which is expected to result in slightly higher throughput rates as the amount of harder open pit ore feed to the plant declines, and the processing of material from stockpiles grows. Thus, the 2017 processing plan includes approximately 50%, 30% and 20% of the ore feed coming from stockpiles, the open pit and underground sources, respectively. The combination is expected to lead to processing similar silver grades but lower gold grades, resulting in a modest increase in silver production to between 3.30 million and 3.40 million ounces compared to 3.14 million ounces produced in 2016, and a 39% to 44% decrease in gold production.

A sharp increase in cash costs is expected in 2017 from the $4.28 per ounce reported in 2016. Cash costs are expected to be between $15.35 to $16.25 per ounce in 2017, with the increase primarily attributable to the anticipated decrease in gold by-product credits from lower gold production and the cancellation of the Patagonia port credit in December 2016, which provided a credit of approximately $3.65 per ounce in 2016. These factors are expected to be partially offset by lower operating costs, royalties and higher silver payable production. Operating costs are expected to be lower than in 2016, driven primarily by the shutdown of open pit mining in 2017. Continued high inflation is expected to be largely offset by anticipated currency devaluation.

Sustaining capital expenditure in 2017 of between $3.5 million and $4.5 million are expected to be slightly higher than 2016 capital expenditures of $2.9 million. Approximately $2.5 million of the 2017 capital budget is for near mine exploration with an additional $1.0 million for underground mining equipment.

AISCSOS for 2017 is expected to be between $16.90 and $18.10, a significant increase from the negative $2.08 reported in 2016 (which included NRV inventory adjustments that reduced AISCSOS by $7.11 per ounce) due mainly to the lower by-product credits and higher sustaining capital.

MID-TERM OUTLOOK

The following table provides the Company's estimates for silver production, gold production, cash costs, sustaining capital expenditures, and AISCSOS for fiscal 2018 and 2019. The increase in production and decrease in mid-point cash costs and AISCSOS reflect the impact of the Company's mine expansion projects at La Colorada and Dolores.

These estimates are forward-looking statements and information that are subject to the cautionary note associated with forward-looking statements and information at the end of this MD&A.

	2018	2019
Silver production – million ounces	26.0 - 28.0	26.5 - 29.5
Gold production – thousand ounces	170.0 - 185.0	175.0 - 200.0
Cash costs – $/oz [(1)]	5.60 - 7.10	5.20 - 6.80
Sustaining capital – $ millions	75.0 - 85.0	75.0 - 90.0
AISCSOS – $/oz [(1)]	10.00 - 12.20	9.30 - 11.60

(1) 2018 and 2019 forecasted cash costs per silver ounce, net of by-product credits, and AISCSOS were calculated using the following by-product metal prices assumptions: Au $1,200/oz, Zn $2,500/tonne, Pb $2,100/tonne, Cu $5,400/tonne. Exchange rates used relative to US$: Mexican Peso 20:1, Peruvian Sol 3.3:1, Argentinean Peso 17:1, Bolivian Boliviano 7:1. Cash costs and AISCSOS are non-GAAP measures, please refer to the Alternative Performance (Non-GAAP) Measures section of the MD&A for detailed descriptions of how these measures are calculated.

2016 OPERATING PERFORMANCE

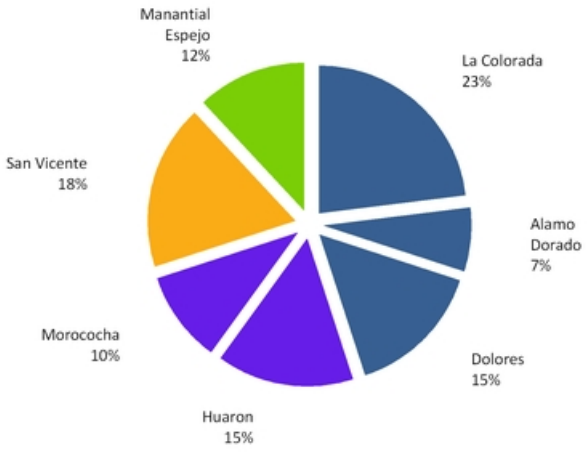
The following table provides silver production and cash costs, net of by-product credits, at each of Pan American's operations for the respective three and twelve month periods ended December 31, 2016 and 2015:

	Silver Production (ounces '000s)				Cash Costs(1) ($ per ounce)			
	Three months ended December 31,		Twelve months ended December 31,		Three months ended December 31,		Twelve months ended December 31,	
	2016	2015	**2016**	2015	**2016**	2015	**2016**	2015
La Colorada	**1,665**	1,423	**5,795**	5,327	**4.38**	7.28	**6.15**	7.41
Dolores	**897**	947	**3,838**	4,250	**(5.93)**	11.64	**(1.08)**	9.28
Alamo Dorado	**401**	818	**1,864**	2,970	**22.80**	5.49	**16.02**	11.41
Huaron	**935**	987	**3,812**	3,705	**4.54**	11.35	**5.79**	10.91
Morococha(2)	**578**	524	**2,541**	2,165	**5.52**	12.99	**4.21**	13.03
San Vicente(3)	**1,050**	1,081	**4,433**	4,118	**11.22**	11.12	**11.95**	11.57
Manantial Espejo	**779**	1,005	**3,136**	3,583	**14.61**	6.48	**4.28**	7.33
Consolidated Total (4)	**6,306**	6,785	**25,419**	26,119	**6.66**	9.09	**6.29**	9.70

(1) Cash costs is a non-GAAP measure. Please refer to the section "Alternative Performance (Non-GAAP) Measures" of this MD&A for a detailed description of the cash cost calculation, details of the Company's by-product credits and a reconciliation of this measure to the 2016 Financial Statements.
(2) Morococha data represents Pan American's 92.3% interest in the mine's production.
(3) San Vicente data represents Pan American's 95.0% interest in the mine's production.
(4) Totals may not add due to rounding.

- ***2016 Silver Production***

The chart below presents silver production by mine in 2016:



Consolidated silver production of 6.31 million ounces in Q4 2016 was 0.48 million ounces lower than that produced in the three months ended December 31, 2015 ("Q4 2015"). The decrease primarily reflected anticipated production declines at Alamo Dorado and Manantial Espejo, which were 0.42 million ounces and 0.23 million less than that produced in Q4 2015, respectively. These declines were partially offset from higher silver production at La Colorada, which produced 0.24 million ounces more than in Q4 2015.

For the twelve-month period, silver production totaled 25.42 million ounces in 2016, 0.70 million ounces lower than the26.12 million ounces produced in 2015. The anticipated decrease in production reflected declining stockpile

grades at Alamo Dorado, open-pit mining nearing completion at Manantial Espejo, and mine sequencing into lower silver grades ore at Dolores.

- ***2016 Cash Costs***

Consolidated cash costs per ounce of silver for the three and twelve months ended December 31, 2016, were $6.66 and $6.29, respectively, which compared to $9.09 and $9.70 for the three and twelve months ended December 31, 2015, representing reductions of 27% and 35%, respectively.

The quarter-over-quarter reduction in cash costs was the result of increased by-product credits, primarily from higher zinc and lead production and improved prices for all by-product metals, as well as the benefit of export incentives offered at Manantial Espejo.

The decline in annual cash costs was achieved through increased zinc and lead production and prices combined with higher gold prices, the benefit of export incentives at Manantial Espejo, and lower direct operating costs, most notably at Alamo Dorado, Dolores and Morococha.

Each operation's cash costs and period-over-period variances are separately discussed in the "Individual Mine Performance" section of this MD&A.

- ***2016 By-Product Production***

The following table provides the Company's by-product production for the three and twelve months ended December 31, 2016, and the comparable periods in 2015:

	By-Product Production			
	Three months ended December 31,		Twelve months ended December 31,	
	2016	2015	2016	2015
Gold – koz	**43.9**	48.2	**183.9**	183.7
Zinc – kt	**13.2**	11.5	**51.9**	40.6
Lead – kt	**5.5**	4.1	**20.2**	14.6
Copper – kt	**3.1**	4.0	**14.4**	15.0

Gold production during Q4 2016 was 9% lower than Q4 2015, as anticipated, with production decreases of 8.3 thousand ounces and 6.5 thousand ounces at Manantial Espejo and Alamo Dorado, respectively, more than offsetting the 10.6 thousand ounce increase at Dolores.

2016 annual gold production of 183.9 thousand ounces was comparable to the 183.7 thousand ounces produced in 2015. An increase of 23.6 thousand ounces at Dolores from improved gold grades offset declines of 12.0 thousand ounces and 10.4 thousand ounces at Alamo Dorado and Manantial Espejo, respectively.

During Q4 2016, Pan American produced 13.2 thousand tonnes of zinc and 5.5 thousand tonnes of lead, 15% and 34% more than in Q4 2015, respectively. Q4 2016 copper production of 3.1 thousand tonnes was 0.90 thousand tonnes less than in Q4 2015. Annual base metal production in 2016 of 51.9 thousand tonnes of zinc, 20.2 thousand tonnes of lead, and 14.4 thousand tonnes of copper were 28% higher, 39% higher, and 4% lower, respectively, compared with 2015 base metal production. Both the year-over-year and quarter-over-quarter variances in base metal production were driven mainly by higher zinc and lead grades at La Colorada and the Peruvian mines, as well as lower copper grades at the Peruvian mines.

- ***2016 Average Market Metal Prices***

The following tables set out the average market price for each metal produced for the three and twelve months ended December 31, 2016, together with prices for the comparable periods in 2015:

	Average Market Metal Prices			
	Three months ended December 31,		Twelve months ended December 31,	
	2016	2015	2016	2015
Silver/ounce	**$ 17.19**	$ 14.77	**$ 17.14**	$ 15.68
Gold/ounce	**$ 1,222**	$ 1,106	**$ 1,251**	$ 1,160
Zinc/tonne	**$ 2,517**	$ 1,613	**$ 2,095**	$ 1,928
Lead/tonne	**$ 2,149**	$ 1,681	**$ 1,872**	$ 1,784
Copper/tonne	**$ 5,277**	$ 4,892	**$ 4,860**	$ 5,495

- ***2016 AISCSOS***

The following table reflects the quantities of payable silver sold and AISCSOS at each of Pan American's operations for the three and twelve months ended December 31, 2016, as compared to the same periods in 2015:

	Payable Silver Sold (ounces '000s)				AISCSOS(1) ($ per ounce)			
	Three months ended December 31,		Twelve months ended December 31,		Three months ended December 31,		Twelve months ended December 31,	
	2016	2015	2016	2015	2016	2015	2016	2015
La Colorada	**1,561**	1,263	**5,486**	5,109	**5.52**	9.75	**7.49**	9.57
Dolores	**895**	1,048	**3,839**	4,448	**2.96**	21.55	**8.29**	12.67
Alamo Dorado	**286**	726	**1,967**	2,944	**28.44**	7.93	**14.85**	12.72
Huaron	**759**	774	**3,233**	3,009	**12.62**	18.74	**11.11**	16.89
Morococha	**526**	483	**2,377**	1,995	**15.02**	21.02	**9.32**	19.21
San Vicente	**1,332**	1,448	**4,264**	4,019	**12.43**	11.00	**14.30**	11.91
Manantial Espejo	**779**	978	**3,033**	3,655	**3.77**	10.96	**(2.08)**	18.81
Consolidated Total (2)	**6,138**	6,719	**24,200**	25,180	**10.38**	14.76	**10.17**	14.92

(1) AISCSOS is a non-GAAP measure. Please refer to the section "Alternative Performance (Non-GAAP) Measures" of this MD&A for a detailed description of the AISCSOS calculation and a reconciliation of this measure to the 2016 Financial Statements. G&A costs are included in the consolidated AISCSOS, but not allocated in calculating AISCSOS for each operation.
(2) Totals may not add due to rounding.

Consolidated AISCSOS for the three and twelve months ended December 31, 2016, were $10.38 and $10.17, respectively, which compared to $14.76 and $14.92 for the comparable periods of 2015, representing reductions of 30% and 32%, respectively.

The decrease in quarter-over-quarter AISCSOS mainly reflects: positive NRV inventory adjustments at Manantial Espejo and Dolores; increased by-product credits from stronger by-product metal prices and higher quantities of zinc and lead sold; lower production costs; and export incentives at Manantial Espejo. Partially offsetting these positive impacts were increased sustaining capital (largely at Dolores), and a decrease in the volume of silver sold. The decrease in annual AISCSOS was driven primarily by the same factors that were responsible for the reduction in quarter-over-quarter AISCSOS described above.

- ***Individual Mine Performance***

The following tables summarize the 2016 metal production, cash costs and AISCSOS achieved for each individual operation compared to the amounts initially forecast in the annual MD&A for the fiscal year ended December 31, 2015. Reported metal figures included in tables in this section are volumes of metal produced.

For the purposes of these comparisons, the symbols have the following meanings:

üü Actual results were better than 2016 initial annual guidance range
ü Actual results met 2016 initial annual guidance range
û Actual results fell short of initial 2016 annual guidance range

	2016 Silver Production (million ounces)			2016 Cash Costs(1) ($ per ounce)			2016 AISCSOS(1) ($ per ounce)		
	Forecast (2)	Actual		Forecast (2)	Actual		Forecast (2)	Actual	
La Colorada	5.60 – 5.70	5.80	üü	$7.75 – $8.25	$6.15	üü	$9.25 – $10.30	$7.49	üü
Dolores	3.40 – 3.60	3.84	üü	$5.00 – $6.50	(1.08)	üü	$17.00 – $18.90	$8.29	üü
Alamo Dorado	1.00 – 1.20	1.86	üü	$13.50 – $14.50	16.02	û	$13.80 – $15.30	$14.85	ü
Huaron	3.65 – 3.80	3.81	üü	$12.25 – $13.25	5.79	üü	$14.40 – $16.00	$11.11	üü
Morococha(3)	2.45 – 2.60	2.54	ü üü	$12.00 – $13.75	4.21	üü	$15.40 – $17.10	$9.32	üü
San Vicente(3)	4.30 – 4.35	4.43		$11.25 – $11.75	11.95	û	$12.00 – $13.30	$14.30	û üü
Manantial Espejo	3.60 – 3.75	3.14	û	$9.25 – $10.75	4.28	üü	$10.0 – $11.10	$(2.08)	
Consolidated Total(4)	24.00 – 25.00	25.42	üü	$9.45 – $10.45	$6.29	üü	$13.60 – $ 14.90	$10.17	üü

(1) Cash Costs and AISCSOS are non-GAAP measures. Please refer to the "Alternative Performance (non-GAAP) Measures" section of this MD&A for a detailed description of the AISCSOS calculation and a reconciliation of this measure to the 2016 Financial Statements.
(2) Forecast amount per guidance included in the annual MD&A for fiscal 2015 dated March 24, 2016.
(3) Production figures are only for Pan American's ownership share of Morococha (92.3%), and San Vicente (95.0%).
(4) Totals may not add due to rounding.

	2016 Gold Production (koz)			2016 Zinc Production (kt)		
	Forecast (1)	Actual		Forecast (1)	Actual	
La Colorada	2.7 – 2.9	2.9	ü	9.5 – 10.0	11.40	üü
Dolores	97.0 – 102.0	102.8	üü	—	—	—
Alamo Dorado	7.0 – 8.0	8.4	üü	—	—	—
Huaron	0.7 – 0.8	0.8	ü	13.0 – 13.5	19.94	üü
Morococha(2)	3.0 – 3.2	2.1	û	16.10 – 17.0	15.46	û
San Vicente(2)	—	—	—	7.4 – 7.5	5.08	û
Manantial Espejo	64.6 – 68.1	66.9	ü	—	—	—
Consolidated Total(3)	175.0 – 185.0	183.9	ü	46.0 - 48.0	51.90	üü

(1) Forecast amount per guidance included in the annual MD&A for fiscal 2015 dated March 24, 2016.
(2) Production figures are only for Pan American's ownership share of Morococha (92.3%), and San Vicente (95.0%).
(3) Totals may not add due to rounding.

	2016 Lead Production (kt)			2016 Copper Production (kt)		
	Forecast (1)	Actual		Forecast (1)	Actual	
La Colorada	4.8 – 4.9	6.00	üü	—	—	—
Dolores	—	—	—	—	—	—
Alamo Dorado	—	—	—	0.0 – 0.01	0.03	üü
Huaron	6.7 – 6.9	10.72	üü	5.50 – 5.70	6.07	üü
Morococha(2)	2.7 – 2.8	2.94	üü û	7.49 – 7.79	7.74	ü
San Vicente(2)	0.8 – 0.9	0.59		—	0.55	üü
Manantial Espejo	—	—	—	—	—	—
Consolidated Total(3)	15.0 – 15.5	20.24	üü	13.0 – 13.5	14.40	üü

(1) Forecast amount per guidance included in the annual MD&A for fiscal 2015 dated March 24, 2016.
(2) Production figures are only for Pan American's ownership share of Morococha (92.3%), and San Vicente (95.0%).
(3) Totals may not add due to rounding.

	2016 Capital Investment ($ millions)	
	Forecast (1)	Actual (2)
La Colorada	$8.0 – $10.5	$ 9.9
Dolores	$39.0 – $42.0	$ 40.4
Huaron	$6.0 – $7.5	$ 11.1
Morococha	$7.0 – $8.5	$ 10.3
San Vicente	$3.0 – $4.0	$ 4.9
Manantial Espejo	$2.0 – $2.5	$ 2.9
Sustaining Capital Sub-total(2)	**$65.0 – $75.0**	**$ 79.5**
La Colorada Expansion Project	$64.0 – $66.5	$ 52.9
Dolores Expansion Project	$71.0 – $73.5	$ 66.1
Project Capital Sub-total(3)	**$135.0 – $140.0**	**$ 119.0**
2016 Total Capital(3)	**$200.0 – $215.0**	**$ 198.5**

(1) Forecast amount per guidance included in the annual MD&A for fiscal 2015 dated March 24, 2016.
(2) The sustaining capital amounts capitalized in 2016 were $9.9 million less than the $89.4 million of 2016 sustaining capital cash outflows, as shown in the tables included in the following individual mine discussions as well as in the 2016 AISCSOS calculation, shown in the "Alternative Performance (non-GAAP) Measures" section of this MD&A. The difference is due to the timing between the cash payment of capital investments compared to the period in which capital investments are made.
(3) Totals may not add due to rounding.

An analysis of each operation for the year ended December 31, 2016, as compared to the operating performance for the year ended December 31, 2015, as well as an analysis of the 2016 operating performance compared to management's initial 2016 forecast follows. The Project Capital amounts invested in 2016 are further discussed in the 2016 Project Development Update section of this MD&A.

La Colorada mine

	Twelve months ended December 31	
	2016	2015
Tonnes milled - kt	**528.8**	485.4
Average silver grade – grams per tonne	**377**	379
Average zinc grade - %	**2.63**	2.20
Average lead grade - %	**1.31**	1.01
Average silver recovery - %	**90.3**	90.1
Average zinc recovery - %	**82.2**	83.6
Average lead recovery - %	**86.5**	86.8
Production:		
Silver – koz	**5,795**	5,327
Gold – koz	**2.93**	2.63
Zinc – kt	**11.40**	8.91
Lead – kt	**6.00**	4.26
Cash cost per ounce net of by-products(1)	**$ 6.15**	$ 7.41
AISCSOS(2)	**$ 7.49**	$ 9.57
Payable silver sold - koz	**5,486**	5,109
Sustaining capital - ('000s)(3)	**$ 10,545**	$ 9,869

(1) Cash costs is a non-GAAP measure. Please refer to the "Alternative Performance (non-GAAP) Measures" section of this MD&A for a detailed reconciliation of this measure to our cost of sales.
(2) AISCSOS is a non-GAAP measure. Please refer to the "Alternative Performance (non-GAAP) Measures" section of this MD&A for a detailed description of the AISCSOS calculation and a reconciliation of this measure to the 2016 Financial Statements.
(3) Sustaining capital expenditures excludes $54.0 million of investing activity cash outflow for the year ended December 31, 2016 (2015: $48.2 million) related to investment capital incurred on the La Colorada expansion project as disclosed in the "2016 Project Development Update" section of this MD&A.

2016 versus 2015

The La Colorada mine produced 9% more silver in 2016 compared with 2015 due to a 9% increase in throughput rates and stable silver grades. The improved throughput was achieved as a result of the expansion project that was largely completed in Q4 2016. During 2016, the mine also increased the production of zinc and lead by 28% and 41%, respectively. The increase in base metals production was a function of a 9% higher throughput rate and improved zinc and lead grades of 20% and 30%, respectively, as the expansion project predominately increases sulphide ore production.

The 2016 cash costs of $6.15 per ounce of silver were $1.26 lower than the $7.41 per ounce cash costs in 2015. The 17% decrease reflects the combined effect of a 9% increase in payable silver ounces produced, and a 30% increase in by-product credits per ounce. The increased by-product credits were driven by higher lead and zinc production and prices.

2016 AISCSOS of $7.49 decreased 22% from $9.57 in 2015, due primarily to the increased by-product credits discussed and a 7% increase in the number of silver ounces sold, partially offset by higher TCRCs and increased sustaining capital.

Sustaining capital cash outflows at La Colorada during 2016 totaled $10.5 million, slightly more than the $9.9 million in 2015. Sustaining capital in 2016 related primarily to ventilation raise bores, equipment replacements and rehabilitations, exploration drilling, tailings facility expansion and access road works. Sustaining capital excludes $54.0 million spent on the La Colorada expansion project during the year (2015 - $48.2 million), which is further described in the 2016 Project Development Update section of this MD&A.

2016 versus Guidance

2016 silver production at La Colorada of 5.80 million ounces was 2% more than the high end of management's original forecast range of 5.60 million to 5.70 million ounces, primarily as a result of realizing higher than expected throughput rates. Similarly, base metal production benefited from better than expected grades as well as throughput rates, resulting in zinc and lead production exceeding the original guidance by 14% and 22%, respectively. The higher throughput also resulted in 2016 gold production being on the high end of the amount forecast for 2016.

Actual 2016 cash costs of $6.15 per ounce were lower than the low end of management's original forecast range of between $7.75 and $8.25 per ounce. Cash costs at La Colorada in 2016 were positively influenced by larger than expected by-product credits driven by higher zinc and lead prices and production, as well as greater payable silver production than originally expected.

2016 AISCSOS of $7.49 was lower than the low end of management's forecast range of between $9.25 and $10.30. The main drivers were higher than expected zinc and lead by-product credits and the greater quantities of silver sold, partially offset by higher than expected TCRCs.

Sustaining capital additions in 2016 totaled $9.9 million, which was consistent with the original forecast range of $8.00 to $10.50 million. Sustaining capital cash outflows in 2016 of $10.5 million were higher than additions due to the timing of cash payments for capital investments.

Dolores mine

	Twelve months ended December 31,	
	2016	2015
Tonnes placed - kt	**6,306.5**	6,108.9
Average silver grade – grams per tonne	**37**	44
Average gold grade – grams per tonne	**0.75**	0.57
Average silver produced to placed ratio - %	**50.8**	49.7
Average gold produced to placed ratio - %	**67.7**	70.9
Production:		
Silver – koz	**3,838**	4,250
Gold – koz	**102.76**	79.14
Cash cost per ounce net of by-products(1)	**$ (1.08)**	$ 9.28
AISCSOS(2)	**$ 8.29**	$ 12.67
Payable silver sold - koz	**3,839**	4,448
Sustaining capital - ('000s)(3)	**$ 48,079**	$ 25,162

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(2) AISCSOS is a non-GAAP measure. Please refer to the "Alternative Performance (non-GAAP) Measures" section of this MD&A for a detailed description of the AISCSOS calculation and a reconciliation of this measure to the 2016 Financial Statements.
(3) Sustaining capital expenditures exclude $65.1 million of investing activity cash outflow for the year ended December 31, 2016 (2015: $28.0 million) related to investment capital incurred on Dolores expansion projects, as disclosed in the "2016 Project Development Update" section of this MD&A.

2016 versus 2015

Dolores produced 3.84 million ounces of silver in 2016, which is 10% lower than the 4.25 million ounces produced in 2015. The decline is a result of expected lower silver grades partially offset by increased throughput. Gold production of 102.8 thousand ounces in 2016 was 30% higher than the 79.1 thousand ounces produced in 2015, and was primarily due to an expected 32% improvement to grades.

Negative cash costs of $1.08 per ounce of silver in 2016 were $10.36 per ounce lower than in 2015. The significant decrease in cash costs was mainly due to higher gold production and prices, and lower direct operating costs largely driven by favorable diesel fuel prices, partially offset by lower payable silver production.

2016 AISCSOS of $8.29 decreased $4.38 from $12.67 in 2015. The decrease was largely due to increased by-product credits from higher gold production and gold prices, decreased direct operating costs, and $11.0 million higher positive NRV inventory adjustments, partially offset by a $22.9 million increase in sustaining capital expenditures.

2016 sustaining capital expenditures at Dolores totaled $48.1 million, comprised primarily of open pit pre-stripping, leach pad expansion, and investments in mine equipment rehabilitations. The $22.9 million increase in sustaining capital in 2016 over 2015 was primarily due to the timing of 2015 capital payments, which carried over to 2016, as well as additional leach pad capital.

2016 versus Guidance

2016 silver production of 3.84 million ounces exceeded the top-end of management's original guidance range of 3.40 million to 3.60 million ounces, primarily because of better than anticipated stacking rates. Gold production of 102.8 thousand ounces was slightly ahead of the high end of management's guidance range of 97.0 thousand to 102.0 thousand ounces.

Negative cash costs of $1.08 per ounce of silver were significantly lower than the the low end of the original guidance range of $5.00 to $6.50 per ounce. The better than expected cash costs were mainly the result of better than forecast by-product credits from higher gold prices and lower than expected direct operating costs, largely driven by favorable diesel credit government incentives, lower international fuel prices and the devalued Mexican peso ("MXN").

2016 AISCSOS of $8.29 was lower than the low end of management's forecast range of between $17.00 and $18.90, primarily because of positive $22.4 million NRV adjustments in the year and the previously described higher than expected gold by-product credits, partially offset by lower than expected quantities of silver sold.

Sustaining capital additions in 2016 totaled $40.4 million, which was within the original forecast range of $39.0 million to $42.0 million. 2016 capital investments benefited from the devalued MXN. Sustaining capital cash outflows of $48.1 million were higher than additions due to the timing of cash payments for capital investments.

Alamo Dorado mine

	Twelve months ended December 31,	
	2016	2015
Tonnes milled - kt	**1,833.1**	1,798.6
Average silver grade – grams per tonne	**45**	62
Average gold grade – grams per tonne	**0.18**	0.39
Average silver recovery - %	**68.8**	82.9
Production:		
Silver – koz	**1,864**	2,970
Gold – koz	**8.38**	20.34
Copper – tonnes	**30**	100
Cash cost per ounce net of by-products(1)	**$ 16.02**	$ 11.41
AISCSOS(2)	**$ 14.85**	$ 12.72
Payable silver sold - koz	**1,967**	2,944
Sustaining capital - ('000s)	**$ —**	$ —

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(2) AISCSOS is a non-GAAP measure. Please refer to the "Alternative Performance (non-GAAP) Measures" section of this MD&A for a detailed description of the AISCSOS calculation and a reconciliation of this measure to the 2016 Financial Statements.

2016 versus 2015

Alamo Dorado silver production of 1.86 million ounces in 2016 was 37% lower than in 2015, primarily the result of lower silver grades from processing of only surface stockpiles. Similarly, gold production decreased by 59%, primarily due to lower grades contained in the processed surface stockpiles.

Cash costs for 2016 were $16.02 per ounce of silver, a $4.61 per ounce increase from $11.41 per ounce cash costs in 2015. The majority of the increase reflects a decline in payable silver and gold production due to reduced grades. Partially offsetting these increases to cash costs were decreases in direct operating costs attributable to the termination of open pit mining activities and favorable currency exchange rate movements.

2016 AISCSOS of $14.85 increased $2.13 from $12.72 in 2015. The increase was largely attributable to processing lower grade stockpiled material, which resulted in a 33% decrease in the volume of silver ounces sold, and lower by-product credits, driven by a 59% decrease in the quantity of gold sold, partially offset by higher gold prices.

No sustaining capital expenditures were incurred at Alamo Dorado during 2016 or 2015.

2016 versus Guidance

Alamo Dorado's silver production in 2016 of 1.86 million ounces was 55% more than the high end of management's original forecast range of 1.00 million to 1.20 million ounces. The better than forecast production was due to higher metal prices supporting continued processing of lower-grade surface stockpiles, whereas the mine was originally expected to stop producing in mid 2016.

Actual cash costs of $16.02 per ounce were higher than the high end of management's original forecast range of $13.50 to $14.50, due largely to the unexpected processing of lower margin, yet economic, stockpiles throughout 2016.

2016 AISCSOS of $14.85 was within management's original forecast range of $13.80 to $15.30 per ounce, benefiting from higher quantities of payable silver sold than produced.

As forecasted, there were no sustaining capital expenditures at Alamo Dorado during 2016.

Huaron mine

	Twelve months ended December 31,	
	2016	2015
Tonnes milled - kt	**904.4**	894.5
Average silver grade – grams per tonne	**157**	157
Average zinc grade - %	**3.01**	2.41
Average lead grade - %	**1.51**	1.08
Average copper grade - %	**0.90**	0.97
Average silver recovery - %	**84.1**	83.2
Average zinc recovery - %	**74.3**	63.8
Average lead recovery - %	**79.4**	73.1
Average copper recovery - %	**75.5**	78.5
Production:		
Silver – koz	**3,812**	3,705
Gold – koz	**0.81**	1.05
Zinc – kt	**19.94**	13.55
Lead – kt	**10.72**	6.92
Copper – kt	**6.07**	6.70
Cash cost per ounce net of by-products(1)	**$ 5.79**	$ 10.91
AISCSOS(2)	**$ 11.11**	$ 16.89
Payable silver sold – koz	**3,233**	3,009
Sustaining capital - ('000s)	**$ 11,994**	$ 13,610

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(2) AISCSOS is a non-GAAP measure. Please refer to the "Alternative Performance (non-GAAP) Measures" section of this MD&A for a detailed description of the AISCSOS calculation and a reconciliation of this measure to the 2016 Financial Statements.

2016 versus 2015

Slightly higher year-over-year throughput rates and recoveries resulted in 3% higher silver production in 2016 compared with 2015. During 2016, Huaron produced 19.9 thousand tonnes of zinc and 10.7 thousand tonnes of lead, which were 47% and 55% more than in 2015, respectively, while copper production of 6.1 thousand tonnes was 9% less than 2015. The year-over-year differences in base metal production were a function of variations in grades and recoveries due to mine sequencing.

Huaron cash costs of $5.79 per ounce declined 47% because of significantly higher by-product zinc and lead production and prices, which more than offset lower copper production and prices.

2016 AISCSOS of $11.11 was 34% lower than the $16.89 in the previous year. The decrease was attributable to the significantly higher by-product credits, which more than offset the higher TCRCs and higher direct operating costs due to increased throughput and increases in certain consumables.

Sustaining capital expenditures at the Huaron mine during 2016 totaled $12.0 million compared to $13.6 million in 2015. Capital investments in 2016 related primarily to equipment replacements, exploration drilling, and a tailings storage facility expansion.

2016 versus Guidance

2016 throughput rates and silver grades were consistent with expectations, while recoveries were slightly better than expected, which resulted in production of 3.81 million ounces being slightly higher than the high end of management's original 2016 guidance of 3.65 million ounces to 3.80 million ounces.

Zinc, lead, and copper production were 48%, 55%, and 6% higher than the high end of management's forecast ranges of between 13.00 and 13.50 thousand tonnes, 6.70 and 6.90 thousand tonnes, and 5.50 and 5.70 thousand tonnes, respectively. By-product metal production exceeded management's forecast amounts due to better than expected grades and recoveries for all metals, except for copper where recoveries were lower than expected.

Actual 2016 cash costs of $5.79 per ounce were 53% lower than the low end of management's original forecast range of $12.25 to $13.25 per ounce, primarily because of higher than anticipated by-product credits due to both price and quantity.

2016 AISCSOS of $11.11 was 23% lower than the low end of management's original forecast range of $14.40 to $16.00, as a result of higher than anticipated by-product credits described above.

Sustaining capital additions in 2016 totaled $11.1 million, which was higher than the high end of management's original forecast range of $6.0 million to $7.5 million due to capturing opportunities to secure additional narrow-vein underground mining equipment and more significant exploration activities. Sustaining capital payments of $12.0 million were higher than additions due to the timing of payments versus accruals.

Morococha mine(1)

	Twelve months ended December 31,	
	2016	2015
Tonnes milled – kt	**672.8**	637.2
Average silver grade – grams per tonne	**135**	124
Average zinc grade - %	**3.15**	2.83
Average lead grade - %	**0.75**	0.71
Average copper grade - %	**1.44**	1.52
Average silver recovery - %	**88.4**	85.2
Average zinc recovery - %	**73.2**	64.1
Average lead recovery - %	**60.0**	59.0
Average copper recovery - %	**82.6**	85.8
Production:		
Silver – koz	**2,541**	2,165
Gold – koz	**2.14**	3.22
Zinc – kt	**15.46**	11.37
Lead – kt	**2.94**	2.56
Copper – kt	**7.74**	8.16
Cash cost per ounce net of by-products(2)	**$ 4.21**	$ 13.03
AISCSOS(3)	**$ 9.32**	$ 19.21
Payable silver sold (100%) - koz	**2,377**	1,995
Sustaining capital (100%) - ('000s)	**$ 10,945**	$ 7,713

(1) Production figures are for Pan American's 92.3% share only, unless otherwise noted.
(2) Cash costs is a non-GAAP measure. Please refer to the "Alternative Performance (non-GAAP) Measures" section of this MD&A for a detailed reconciliation of this measure to our cost of sales.
(3) AISCSOS is a non-GAAP measure. Please refer to the "Alternative Performance (non-GAAP) Measures" section of this MD&A for a detailed description of the AISCSOS calculation and a reconciliation of this measure to the 2016 Financial Statements.

2016 versus 2015

In 2016, higher silver grades, throughput, and recoveries led to a silver production increase of 17% as compared to 2015, a result of higher production rates from silver-rich ore bodies.

During 2016, Morococha produced 15.5 thousand tonnes of zinc and 2.9 thousand tonnes of lead, which were 36% and 15% more than in 2015, respectively, while copper production of 7.7 thousand tonnes was 5% less than 2015. The year-over-year difference in base metal production was a function of grades and recoveries on account of mine sequencing.

Cash costs of $4.21 per ounce in 2016 declined 68% over 2015 because of substantially lower unit operating costs per tonne, driven by benefits from mechanization of mining in larger ore bodies, a 15% increase in payable silver production, and increased by-product credits per ounce from zinc and lead production and prices.

2016 AISCSOS of $9.32 was 51% lower than $19.21 in 2015. The year-over-year reduction was attributable to an 11% reduction in production costs due to mechanization efforts in the larger ore bodies, a 9% increase in by-product credits due to increased quantities and prices of both zinc and lead, and an 18% reduction in TCRCs on concentrate, all of which more than offset a 42% increase in sustaining capital.

Sustaining capital expenditures during 2016 totaled $10.9 million, up $3.2 million from 2015. The increase is primarily related to the Manuelita mine area deepening activities, additional mine equipment purchases and expanded exploration drilling.

2016 versus Guidance

2016 silver production was in the mid-point of management’s guidance range of 2.45 million to 2.60 million ounces as a result of better than expected recoveries being offset by lower realized silver grades.

Results for by-product metal production were mixed relative to guidance, all associated with mine sequencing decisions. Gold and zinc underperformed guidance of 3.0 to 3.2 thousand ounces and 16.1 to 17.0 thousand tonnes by 29% and 4%, respectively. Copper production was in the mid-point of management’s guidance range of 7.5 to 7.8 thousand tonnes, while lead production exceeded the higher end of management’s guidance of 2.7 to 2.8 thousand tonnes, by 5%.

Actual 2016 cash costs of $4.21 per ounce were 65% below the low end of our forecast range of $12.00 to $13.75 per ounce. This was attributable to the lower than expected operating costs realized from efficiency gains related to mechanized mining of the larger ore bodies, and lower than expected concentrate TCRC rates.

2016 AISCSOS of $9.32 was 39% lower than the lower end of management’s guidance range of $15.40 to $17.10. This was a result of lower than anticipated production costs and TCRCs, partially offset by higher than expected sustaining capital.

Sustaining capital additions in 2016 totaled $10.3 million, which were higher than the high end of management's original forecast range of $7.0 to $8.5 million due to increased near mine exploration development, additional mine equipment acquisitions, and better than expected advancements in the Manuelita mine deepening. Sustaining capital cash payments of $10.9 million in 2016 exceeded additions due to the timing of payments versus accruals.

San Vicente mine (1)

	Twelve months ended December 31,	
	2016	2015
Tonnes milled – kt	**338.9**	330.8
Average silver grade – grams per tonne	**443**	422
Average zinc grade - %	**2.05**	2.65
Average lead grade - %	**0.32**	0.32
Average silver recovery - %	**93.2**	92.6
Average zinc recovery - %	**73.0**	77.6
Average lead recovery - %	**84.2**	80.4
Production:		
Silver – koz	**4,433**	4,118
Zinc – kt	**5.08**	6.82
Lead – kt	**0.59**	0.84
Copper – kt	**0.55**	—
Cash cost per ounce net of by-products(2)	**$ 11.95**	$ 11.57
AISCSOS(3)	**$ 14.30**	$ 11.91
Payable silver sold (100%) - koz	**4,264**	4,019
Sustaining capital (100%) - ('000s)	**$ 4,963**	$ 3,286

(1) Production figures are for Pan American's 95.0% share only, unless otherwise noted.
(2) Cash costs is a non-GAAP measure. Please refer to the "Alternative Performance (non-GAAP) Measures" section of this MD&A for a detailed reconciliation of this measure to our cost of sales.
(3) AISCSOS is a non-GAAP measure. Please refer to the "Alternative Performance (non-GAAP) Measures" section of this MD&A for a detailed description of the AISCSOS calculation and a reconciliation of this measure to the 2016 Financial Statements.

2016 versus 2015

San Vicente achieved record silver production in 2016, which rose 8% over 2015, primarily due to higher grades and throughput. Production of lead declined 30% in 2016, due to marketing some of the concentrates as higher value copper-silver concentrate as opposed to lead-silver concentrate. As a result, copper production of 0.6 thousand tonnes was commercialized in 2016, more than offsetting the foregone revenue from the lower lead production. Zinc production was 26% lower than in 2015 because of lower zinc grades.

2016 cash costs of $11.95 per ounce increased 3% due to higher royalties resulting from increased metal prices, partially offset by higher silver payable production, and higher by-product credits. By-product credits in 2016 reflect higher zinc and lead prices and the addition of copper production, offset by lower payable zinc and lead production.

2016 AISCSOS increased by 20% to $14.30 from $11.91 in 2015, primarily due to the higher royalty costs from higher metal prices, and higher TCRCs, partially offset by 6% higher silver sales.

Sustaining capital expenditures during 2016 and 2015 totaled $5.0 million and $3.3 million, respectively, and were comprised mainly of mine infrastructure, and equipment rebuilds and replacements.

2016 versus Guidance

Attributable silver production in 2016 of 4.43 million ounces was 2% above the high end of management's forecast range of 4.30 million to 4.35 million ounces, primarily because of higher than expected silver grades. Base metal production of zinc and lead were 31% and 26% below the low end of management's forecast ranges of between 7.4 to 7.5 thousand tonnes and 0.8 to 0.9 thousand tonnes, respectively. Zinc grades were lower than expected, and production shifted from lead to copper to take advantage of commercial opportunities, resulting in unanticipated copper production of 0.6 thousand tonnes.

Actual cash costs of $11.95 per ounce of silver were 2% above the high end of management's forecasted range of $11.25 to $11.75 per ounce, primarily as a result of higher royalty costs.

Similarly, 2016 AISCSOS of $14.30 was 7% above the high end of management's forecast range of between $12.00 and $13.30, mainly due to higher than expected royalties and TCRCs.

Sustaining capital additions in 2016 totaled $4.9 million, higher than the high end of management's original forecast range of $3.0 to $4.0 million due primarily to increased near mine exploration activities. Sustaining capital cash payments of $5.0 million exceeded additions due to timing of payments versus accruals.

Manantial Espejo mine

	Twelve months ended December 31,	
	2016	2015
Tonnes milled - kt	**753.6**	774.9
Average silver grade – grams per tonne	**143**	158
Average gold grade – grams per tonne	**2.94**	3.28
Average silver recovery - %	**90.2**	91.6
Average gold recovery - %	**93.8**	95.1
Production:		
Silver – koz	**3,136**	3,583
Gold – koz	**66.89**	77.32
Cash cost per ounce net of by-products(1)	**$ 4.28**	$ 7.33
AISCSOS(2)	**$ (2.08)**	$ 18.81
Payable silver sold - koz	**3,033**	3,655
Sustaining capital - ('000s)	**$ 2,868**	$ 14,061

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(2) AISCSOS is a non-GAAP measure. Please refer to the "Alternative Performance (non-GAAP) Measures" section of this MD&A for a detailed description of the AISCSOS calculation and a reconciliation of this measure to the 2016 Financial Statements.

2016 versus 2015

2016 silver production at Manantial Espejo was 12% lower than in 2015 mainly due to a 9% decrease in silver grades and a 3% decrease in throughput that resulted primarily from harder ores encountered at the Concepcion pit, as well as a two-week labour related work stoppage in the second quarter. 2016 gold production of 66.89 thousand ounces was 13% less than 2015 as a result of lower grades due to mine sequencing and decreased throughput.

2016 cash costs of $4.28 per silver ounce were $3.05 per ounce lower than the $7.33 per ounce in 2015. The main factors driving the significant decline were: the devaluation of the local currency; lower diesel prices; reduced direct selling costs from the elimination of the export tariff and a new export incentive credit; and higher by-product credits from improved gold prices offset by lower gold production. These factors were partially offset by a decline in payable silver ounces produced.

AISCSOS in 2016 decreased $20.89 from 2015 to negative $2.08. The majority of this decrease was attributable to the year-over-year variance in NRV inventory adjustments, where 2016 positive NRV inventory adjustments decreased AISCSOS by $7.11 per ounce compared to negative NRV adjustments that increased 2015 AISCSOS by $6.24 per ounce. The remainder of the decrease was due to lower direct operating costs, lower direct selling costs, and lower sustaining capital. These factors were partially offset by the decrease in number of silver ounces sold.

Sustaining capital expenditures in 2016 totaled $2.9 million, an $11.2 million decrease from $14.1 million in 2015. The significant decrease reflects the cessation of pre-stripping activities in the open-pit mine, which occurred in 2015. The 2016 sustaining capital consisted primarily of exploration drilling and equipment refurbishments.

2016 versus Guidance

2016 silver production was 13% lower than the bottom end of management’s original forecast range of3.60 million to 3.75 million ounces due to harder ores encountered at the Concepcion pit hampering throughput, and an unanticipated two-week labour related work stoppage in the second quarter. Gold production of 66.89 thousand ounces in 2016 was within Management's original forecast of 64.60 thousand to 68.10 thousand ounces, as a result of higher than anticipated gold grades.

2016 cash costs of $4.28 per silver ounce were significantly lower than the low end of the forecast range of$9.25 to $10.75 per ounce. The main drivers for the lower than expected cash costs were higher than expected by-product credits from higher gold prices, lower than expected direct operating and selling costs from improved productivity, the elimination of the export tariff and the addition of an export incentive credit.

2016 AISCSOS of negative $2.08 was significantly lower than the low end of management’s original forecast range of between $10.00 and $11.10; this was mainly due to the unanticipated $21.5 million in positive NRV adjustments that reduced 2016 AISCSOS by $7.11 per ounce. In addition, 2016 AISCSOS reflects higher than expected by-product credits and lower than expected direct selling costs, partially offset by lower than expected silver sales.

Sustaining capital additions in 2016 totaled $2.9 million and were relatively consistent with management's original forecast range of $2.0 to $2.5 million.

2016 PROJECT DEVELOPMENT UPDATE

The following table reflects the amounts spent at each of Pan American's major projects in2016 as compared to 2015.

Project Development Investment (thousands of USD)		2016		2015
La Colorada Expansion (1)	**$**	**52,854**	$	48,601
Dolores Projects (2)	**$**	**66,116**	$	25,093
Total	**$**	**118,970**	$	73,694

(1) Amounts capitalized for the projects during the year were $1.1 million less than the project cash outflows as a result of changes in accounts payable balances (2015: $0.4 million more)
(2) Amounts capitalized for the project during the year were $1.0 million more than the project cash outflows as a result of changes in accounts payable balances (2015: $2.9 million less)

- ***La Colorada Expansion Project***

During 2016, the Company invested $52.9 million in the La Colorada expansion project and achieved the following milestones:

- Commissioning the new 618-metre deep mine shaft in fully automatic mode took place in early September, ahead of schedule. The shaft was constructed with a safety performance of zero lost-time accidents experienced, and operated as expected throughout Q4 2016.
- Commissioned the new sulphide ore processing plant in early August 2016. The design production throughput of 1,600 tonnes of ore per day was routinely achieved throughout Q3-2016 and Q4-2016.
- Advanced the underground mine development. Ore production is expected to ramp up through 2017 to reach the designed 1,800 tpd by the end of the year, which will provide sufficient ore to enable the new sulphide ore plant and mine shaft to operate at full rates.
- Advanced the construction of the new 115kV power line, including the receipt of environmental approvals and construction permits. One additional permit is required to complete the installation of the first section of the power line. Energization of the new line is expected in Q2 2017.

The $52.9 million invested in 2016 was less than the low end of management's original forecast range of $64.0 million to $66.5 million due largely to project management efficiencies, along with favorable foreign exchange rates and supplier terms resulting in the project advancing on schedule and under budget. The work remaining includes completing and energizing the new power line, and the project related underground development in the Estrella vein. The project is expected to be completed approximately 5% under budget.

- ***Dolores Projects***

During 2016, the Company invested $66.1 million in the Dolores expansion projects, with efforts directed at:

- Advancing construction of the new pulp agglomeration plant, which involved: obtaining the necessary construction permits; the completion of civil earthworks; the completion of all detailed engineering; the receipt of all major equipment; the installation of two of three pressure filters, setting the rod mill and the secondary crusher; and progressing the installation of structural steel, piping and electrical systems for the plant.
- Advancing the underground mine development, including: completing the main ramp decline; advancing a total of 2,800 metres of underground drift development; completing the first of two raise bore holes to surface to allow for mine ventilation; and diamond drilling of the mineral zone from the new underground openings.

- Completed and energized the new 98 kilometre, 115 kV power line in early September on budget. The new power line connects the mine to the national power grid and is expected to result in annual savings of approximately $9.0 million.

The 2016 investment of $66.1 million was slightly lower than the low end of the $71.0 million to $73.5 million range originally forecast due to activities being behind the schedule originally anticipated. Overall, the Dolores expansion project is on schedule for an anticipated commissioning of the pulp agglomeration plant by mid-2017 and underground operations entering production by the end of 2017. The Dolores pulp agglomeration plant and underground expansion project has an estimated capital investment of approximately $112.4 million. By the end of 2017, this project is expected to increase silver and gold production through a combination of greater throughput and higher recoveries, with associated operational efficiencies helping to reduce cash costs.

OVERVIEW OF 2016 FINANCIAL RESULTS

• *Selected Annual and Quarterly Information*

The following tables set out selected quarterly results for the past twelve quarters as well as selected annual results for the past three years, which are stated in thousands of USD, except for the per share amounts. The dominant factors affecting results in the quarters and years presented below are volatility of metal prices realized, industry wide cost pressures, and the timing of the sales of production which varies with the timing of shipments. The fourth quarter of 2015 included impairment charges to Morococha, Dolores, and Alamo Dorado, while the third quarter of 2015 included impairment charges to Manantial Espejo. The fourth quarter of 2014 included impairment charges related to Dolores, Manantial Espejo, Alamo Dorado and certain exploration and development properties, including Navidad.

2016	Quarter Ended				Year Ended
(In thousands of USD, other than per share amounts)	March 31	June 30	Sept 30	Dec 31	Dec 31
Revenue	$ 158,275	$ 192,258	$ 233,646	$ 190,596	$ 774,775
Mine operating earnings	$ 16,698	$ 44,730	$ 88,495	$ 48,956	$ 198,879
Attributable earnings for the period	$ 1,738	$ 33,804	$ 42,766	$ 21,777	$ 100,085
Basic earnings per share	$ 0.01	$ 0.22	$ 0.28	$ 0.14	$ 0.66
Diluted earnings per share	$ 0.01	$ 0.22	$ 0.28	$ 0.14	$ 0.66
Cash flow from operating activities	$ 771	$ 66,019	$ 102,346	$ 45,668	$ 214,804
Cash dividends paid per share	$ 0.0125	$ 0.0125	$ 0.0125	$ 0.0125	$ 0.0500
Other financial information					
Total assets					$ 1,898,141
Total long-term financial liabilities(1)					$ 118,594
Total attributable shareholders' equity					$ 1,396,298

(1) Total long-term financial liabilities are comprised of non-current liabilities excluding deferred tax liabilities, deferred revenue, and share purchase warrant liabilities. .

2015	Quarter Ended				Year Ended
(In thousands of USD, other than per share amounts)	March 31	June 30	Sept 30	Dec 31	Dec 31
Revenue	$ 178,125	$ 174,189	$ 159,414	$ 162,960	$ 674,688
Mine operating earnings (loss)	$ 2,630	$ (952)	$ (25,996)	$ (7,771)	$ (32,089)
Attributable loss for the period	$ (19,371)	$ (7,322)	$ (67,048)	$ (132,909)	$ (226,650)
Basic loss per share	$ (0.13)	$ (0.05)	$ (0.44)	$ (0.88)	$ (1.49)
Diluted loss per share	$ (0.13)	$ (0.05)	$ (0.44)	$ (0.88)	$ (1.49)
Cash flow from operating activities (1)	$ 11,848	$ 20,577	$ 32,866	$ 23,401	$ 88,692
Cash dividends paid per share	$ 0.125	$ 0.05	$ 0.05	$ 0.05	$ 0.275
Other financial information					
Total assets					$ 1,715,037
Total long-term financial liabilities					$ 114,354
Total attributable shareholders' equity					$ 1,297,222

2014	Quarter Ended				Year Ended
(In thousands of USD, other than per share amounts)	March 31	June 30	Sept 30	Dec 31	Dec 31
Revenue	$ 209,734	$ 200,847	$ 178,265	$ 163,096	$ 751,942
Mine operating earnings (loss)	$ 31,576	$ 10,245	$ (12,378)	$ (21,369)	$ 8,073
Attributable earnings (loss) for the period	$ 6,844	$ (5,472)	$ (20,254)	$ (526,706)	$ (545,588)
Basic earnings (loss) per share	$ 0.05	$ (0.04)	$ (0.13)	$ (3.48)	$ (3.60)
Diluted earnings (loss) per share	$ 0.05	$ (0.04)	$ (0.15)	$ (3.48)	$ (3.60)
Cash flow from operating activities	$ 36,125	$ 48,895	$ 38,345	$ 823	$ 124,188
Cash dividends paid per share	$ 0.125	$ 0.125	$ 0.125	$ 0.125	$ 0.50
Other financial information					
Total assets					$ 2,017,873
Total long-term financial liabilities					$ 79,823
Total attributable shareholders' equity					$ 1,563,092

- ***Income Statement, 2016 vs. 2015 :***

Net earnings of $101.8 million was recorded in 2016 compared to a net loss of $231.6 million in 2015, which corresponds to a basic earnings and loss per share of $0.66 and ($1.49), respectively.

The following table highlights the key items that resulted in the net earnings for the year ended December 31, 2016, versus the net loss for the year ended December 31, 2015:

Net loss, year ended December 31, 2015 (in thousands of USD)			**$**	**(231,556)**
Increased revenue:				
Higher realized metal prices	$	67,292		
Higher quantities of metal sold		7,102		
Beneficial settlement adjustments		15,154		
Decreased direct selling costs		10,539		
Total increase in revenue			**$**	**100,087**
Decreased cost of sales:				
Lower production costs net of increased royalty charges	$	95,991		
Lower depreciation and amortization		34,890		
Total decrease in cost of sales			**$**	**130,881**
Decreased impairment charges				150,268
Increased net gain on asset sales, commodity contracts, and derivatives				19,830
Increased dilution gain, net of share of loss from associate				7,946
Increased investment income and other expense, net				5,193
Decreased foreign exchange loss				3,950
Decreased exploration and project development expense				606
Increased income tax expense				(78,645)
Increased general and administrative expense				(5,636)
Increased interest and finance expense				(1,099)
Net earnings, year ended December 31, 2016			**$**	**101,825**

The $333.4 million year-over-year increase to net earnings was primarily attributable to the $150.3 million decrease in pre-tax impairment charges, the $130.9 million decrease in cost of sales expense, the $100.1 million increase in revenue, and a $24.7 million increased gain on sale of mineral properties, plant and equipment, partially offset by the $78.6 million increase in income tax expense. The following describes these factors in more detail.

Revenue for the year ended December 31, 2016 was $774.8 million, a 15% increase from the $674.7 million of revenue in 2015. The major factors behind the revenue increase were: a $67.3 million price variance from higher metal prices realized for all metals, except copper; a $15.2 million increase from positive settlement adjustments in 2016 compared to negative adjustments in 2015; a $10.5 million decrease in direct selling costs, primarily relating to the 2016 benefit of Argentine export incentives; and a positive $7.1 million variance from higher quantities of base metals sold, net of lower quantities of silver and gold sold.

The following table reflects the metal prices that the Company realized, and the quantities of metal sold during each year. The Company's 2016 average realized prices increased for all metals sold except copper. Year-over-year realized silver and gold prices increased by 12% and 8%, respectively. For base metals, the average realized prices for zinc and lead increased by 13% and 8%, respectively, while realized copper prices declined 9% from 2015. During 2016, the Company sold 4% less silver and 5% less gold than in 2015, resulting from the timing of sales and lower silver production. Base metals sales volumes increased 32%, 39%, and 6% from 2015 for zinc, lead and copper, respectively. Zinc and lead sales volume increases were largely attributable to increased production, while the increase in copper sales volumes was driven by the timing of sales.

	Realized Metal Prices		Quantities of Metal Sold	
	Year ended December 31,		Year ended December 31,	
	2016	2015	2016	2015
Silver(1) – koz	**$ 17.35**	$ 15.53	**24,200**	25,180
Gold(1) – koz	**$ 1,251**	$ 1,162	**180.0**	190.2
Zinc(1) – kt	**$ 2,133**	$ 1,889	**45.8**	34.7
Lead(1) – kt	**$ 1,892**	$ 1,745	**18.8**	13.5
Copper(1) – kt	**$ 4,816**	$ 5,314	**13.5**	12.8

(1) Metal price stated as dollars per ounce for silver and gold, and dollars per tonne for zinc, lead and copper.

Mine operating earnings for the year ended December 31, 2016 were $198.9 million, a $231.0 million increase from mine operating losses of $32.1 million recorded in the year ended December 31, 2015. The year-over-year increase was the result of the previously discussed $100.1 million revenue increase combined with a net $130.9 million decrease in cost of sales. The year-over-year costs of sales decrease was the result of decreased production costs and depreciation and amortization expense, partially offset by increased royalty costs.

2016 production costs of $428.3 million were $103.7 million, 19% lower than in 2015. The decline was largely attributable to a cost reducing variance in NRV inventory adjustments, along with lower direct operating costs. There were positive, production cost reducing inventory NRV adjustments of $42.8 million in 2016, compared to negative, production cost increasing, inventory NRV adjustments of $10.9 million in 2015. The positive year-over-year variance was primarily driven by metal price increases, and related to Manantial Espejo and Dolores, where positive adjustments of $21.5 million and $22.4 million were recognized in 2016, respectively. Lower direct operating costs were primarily from Alamo Dorado, Manantial Espejo, Dolores and Morococha mines. Production costs generally continue to benefit from productivity gains and lower consumable costs, aided by favorable exchange rate changes. Decreased mining activities at Alamo Dorado, and to a lesser degree Manantial Espejo, also contributed to the cost reduction.

Depreciation and amortization expense of $116.0 million in 2016 was $34.9 million lower than in 2015. The reduction was attributable to the decrease in depreciable assets, resulting largely from asset impairment charges taken in 2015, partially offset by the increase in certain depreciable assets, mainly at the Dolores mine. The decline in depreciation and amortization was most significant at the Manantial Espejo and Alamo Dorado mines, partially offset by a depreciation and amortization increase at Dolores.

Royalty costs in 2016 were $31.6 million, $7.7 million higher than those in 2015, because of the year-over-year increases in metal prices discussed above.

G&A expenses for the years ended December 31, 2016 and 2015 were $23.7 million and $18.0 million, respectively. The increase in G&A from 2015 was driven by severance costs and increased accruals for certain annual bonuses recorded in 2016 compared with 2015. Share-based compensation expense for 2016 and 2015 was $3.8 million and $2.6 million, respectively.

Exploration and project development expenses for the year ended December 31, 2016 were $11.3 million, comparable to the $11.9 million expense in 2015. Both 2016 and 2015 exploration and project development expenditures were primarily related to activities near the Company's existing mines, at select greenfield projects, and on the holding and maintenance costs associated with the Navidad project, where approximately $3.4 million was spent in 2016 compared to approximately $6.8 million in 2015.

Foreign exchange ("FX") losses for the year ended December 31, 2016 were $9.1 million compared with $13.0 million of losses incurred in 2015. The losses in 2016 are largely on MXN denominated treasury balances, and MXN and Argentinian peso ("ARS") denominated Value Added Tax ("VAT") receivables. Losses in 2015 resulted largely from MXN and CAD denominated treasury balances, and MXN and ARS denominated VAT receivables. The MXN devalued approximately 17% during 2016 compared to approximately 14% during 2015. The ARS devalued approximately 18% in 2016 compared to approximately 35% in 2015. The CAD appreciated 3% during 2016 compared to the approximate 16% devaluation in 2015.

Impairments of mineral properties, plant and equipment assets of $150.3 million pre-tax ($106.0 million net of tax) were recorded in 2015, with no impairment charges recorded in 2016. The total 2015 pre-tax impairment of $150.3 million was comprised of total impairments of: $90.4 million to depletable mineral properties; $14.6 million to non-depletable mineral properties; and $45.3 million to plant and equipment assets.

When events or changes in circumstances indicate that the carrying value of mineral properties plant and equipment assets may not be recoverable, or previous impairments on assets are recoverable, the Company assesses impairment, or if previous impairment charges should be reversed. This assessment is done at the cash-generating unit (“CGU”) level, which is considered to be individual mine sites or development properties. The discount rates used to present value the Company’s life of mine cash flows are derived from the Company’s weighted average cost of capital, which was calculated as 6.4% for 2016 (2015 – 6.4%), with rates applied to the various mines and projects ranging from 5% to 9% depending on the Company’s assessment of country risk, project risk, and other potential risks specific to each CGU.

The key assumptions in determining the recoverable value of the Company’s mineral properties are metal prices, operating and capital costs, foreign exchange rates and discount rates. The Company’s key assumptions for each impairment and impairment reversal test included the most current operating and capital costs information and risk-adjusted project specific discount rates.

The Company used an average of analysts’ consensus pricing for the first four years of its economic modeling for the purposes of the impairment and impairment reversal analysis ("Consensus prices"), and the Company's reserve prices for the long-term price assumptions for the remainder of each asset’s life. The net increase in metal prices over 2016 led to the Company increasing the price assumptions used to estimate mineral reserves at year-end. The prices used can be found in the key assumptions section below.

Management determined that fourth quarter changes in operating assumptions for the Dolores and Manatial Espejo mines, including but not limited to changes in year-end reserves and resources and mine-life estimates, when considered together with increases to the Company's reserve prices and to Consensus prices, could be indicative of changes in the assets' recoverable amounts significant enough to warrant either reversals of previous impairment charges, or additional impairment charges. As a result, management estimated the recoverable amounts of these mines as at December 31, 2016, determined on a fair value less costs to sell basis, and concluded that the carrying values were supportable and that no impairment charges or reversals were required.

The decrease in metal prices in the later half of 2015 led to the Company lowering its price assumptions used to estimate mineral reserves at year-end. As a result of the year-end reserve price reduction, and observed declines in near-term and mid-term consensus metal prices referenced in the Company’s life of mine cash flow models, management concluded that there was an indication of impairment to certain assets in the third and fourth quarter of 2015. Based on the Company’s estimation of the recoverable amounts of its mineral properties as at September 30, 2015, and December 31, 2015, determined on a fair value less costs to sell basis, the Company concluded that impairment charges were required during the year in respect of the Dolores, Alamo Dorado, Morococha, and Manantial Espejo mines.

As at December 31, 2015, the Company determined that the $434.3 million Net Carrying Amount of the Dolores mine including mineral properties, plant and equipment, and stockpile inventories, net of associated deferred tax assets and closure and decommissioning liabilities (the “Net Carrying Amount”), was greater than its then estimated recoverable amount of $413.6 million when using a 5.25% risk-adjusted discount rate. Based on the assessment at December 31, 2015, the Company recorded a further impairment charge related to the Dolores mine of $31.7 million before tax ($20.7 million net of tax).

As at December 31, 2015, the Company determined that the $12.9 million Net Carrying Amount of the Alamo Dorado mine was greater than its then estimated recoverable amount of $nil when using a 4.00% risk-adjusted discount rate. Based on this assessment, the Company wrote off the carrying value of the Alamo Dorado mine’s mineral property, plant and equipment assets included in the impairment charge of $9.1 million before tax ($6.0 million net of tax).

As at December 31, 2015, the Company determined that the $112.4 million Net Carrying Amount of the Morococha mine was greater than its then-estimated recoverable amount of $36.3 million when using a 6.50% risk-adjusted

discount rate. Based on the assessment at December 31, 2015, the Company recorded an impairment charge related to the Morococha mine of $80.7 million before tax ($59.1 million net of tax).

As at September 30, 2015, the Company determined that the Net Carrying Amount of the Manantial Espejo mine of approximately $83.4 million was greater than its then-estimated recoverable amount of $29.9 million, when using an 8.25% risk-adjusted discount rate. Based on this assessment, the Company recorded an impairment charge related to the Manantial Espejo mineral property, plant and equipment assets of $28.8 million before tax ($20.2 million net of tax).

Key assumptions

The metal prices used to calculate the recoverable amounts at December 31, 2016, December 31, 2015 and September 30, 2015 for those assets where impairment or reversal of impairment indicators were determined to be present, are based on analyst consensus prices and the Company's long-term reserve prices, and are summarized in the following tables:

Metal prices used at December 31, 2016

	Consensus prices				Long term prices
Commodity	2017	2018	2019	2020	
Silver - $/oz	$ 19.34	$ 19.65	$ 19.73	$ 20.99	$ 18.50
Gold - $/oz	$ 1,312	$ 1,333	$ 1,324	$ 1,337	$ 1,300
Zinc - $/tonne	$ 2,572	$ 2,637	$ 2,575	$ 2,485	$ 2,200
Lead - $/tonne	$ 2,111	$ 2,143	$ 2,162	$ 2,154	$ 2,000
Copper - $/tonne	$ 5,239	$ 5,555	$ 5,891	$ 6,215	$ 5,000

Metal prices used at December 31, 2015

	Consensus prices				Long term prices
Commodity	2016	2017	2018	2019	
Silver - $/oz	$ 16.01	$ 16.78	$ 17.11	$ 17.56	$ 17.00
Gold - $/oz	$ 1,156	$ 1,174	$ 1,192	$ 1,214	$ 1,180
Zinc - $/tonne	$ 2,026	$ 2,224	$ 2,341	$ 2,465	$ 1,800
Lead - $/tonne	$ 1,836	$ 1,949	$ 1,943	$ 2,011	$ 1,800
Copper - $/tonne	$ 5,219	$ 5,528	$ 5,926	$ 6,087	$ 5,000

Metal prices used at September 30, 2015

	Consensus prices				Long term prices
Commodity	2015	2016	2017	2018	
Silver - $/oz	$ 16.17	$ 16.35	$ 17.35	$ 18.06	$ 18.50
Gold - $/oz	$ 1,183	$ 1,183	$ 1,201	$ 1,227	$ 1,250

The key assumptions in determining the recoverable value of the Company's mineral properties are individual metal prices, operating and capital costs, foreign exchange rates and discount rates. At December 31, 2016, the Company performed a sensitivity analysis on all key assumptions that assumed a modest (10%) adverse change to each individual assumption while holding the other assumptions constant.

At December 31, 2016, an adverse 10% movement in any of the major assumptions in isolation did not cause the recoverable amount to be below the CGU carrying value for any of La Colorada, Alamo Dorado, San Vicente, Huaron, Morococha, or the Navidad project. For the Manantial Espejo mine, which in 2015 had its carrying values adjusted to fair value less cost to sell through impairment charges, a modest increase in operating costs would reduce the recoverable amount below the carrying amount. In the case of the Dolores mine, which in 2015 had its carrying

values adjusted to fair value less cost to sell through impairment charges, a modest adverse change in any one key assumption would reduce the recoverable amount below the carrying amount.

At December 31, 2015, an adverse 10% movement in any of the major assumptions in isolation did not cause the recoverable amount to be below the CGU carrying value for any of La Colorada, San Vicente and Huaron. In the case of the Dolores mine, the Alamo Dorado mine, the Manantial Espejo mine, the Morococha mine, and the Navidad project and certain non-core exploration properties, which all have had their carrying values adjusted to fair value less cost to sell through impairment charges, a modest adverse change in any one key assumption would reduce the recoverable amount below the carrying amount.

Gain on sale of mineral properties, plant and equipment for the year ended December 31, 2016 totaled $25.1 million compared to $0.4 million in 2015. The 2016 gains were primarily comprised of an $18.3 million gain recognized on the sale of a portion of the Company's interest in Compania Minera Shalipayco S.A.C. ("Shalipayco") to Votorantim Metais - Cajamarquilla S.A. ("Votorantim"), and a $6.6 million gain recognized in relation to the Maverix Metals Inc. ("Maverix") transaction.

In Q2 2016, the Company sold 75% of the shares in Shalipayco for $15.0 million in cash and a one percent (1%) net smelter returns royalty with a fair value of $3.3 million. Shalipayco is the owner of the Shalipayco zinc development project located in the departments of Pasco and Junin, Peru.

In July 2016, the Company closed its plan of arrangement with Maverix, whereby the Company transferred certain royalties and precious metals streams and payment agreements (the "Portfolio Assets") to Maverix in exchange for an approximately sixty three percent (63%) interest in Maverix on a fully diluted basis (the "Maverix Transaction"). A $6.6 million gain was recorded on the proportion of the Portfolio Assets transferred to owners of Maverix, other than the Company.

Share of loss from associate and dilution gain for the year ended December 31, 2016 was a net gain of $7.9 million, compared to $nil in 2015. With regard to the Maverix Transaction, it was determined that the Company has significant influence over, but does not control Maverix. As such, the investment in Maverix is considered an investment in associate, accounted for using the equity method, whereby the Company records its portion of Maverix's income or loss based on Pan American's fully diluted ownership interest in Maverix. During 2016, a $3.0 million loss was recognized for the Company's portion of Maverix's 2016 estimated losses. Further, in Q4 2016, Pan American exercised share purchase warrants in Maverix, and received replacement warrants in connection with Maverix acquiring additional royalties from Gold Fields Netherlands Services BV, a wholly owned subsidiary of Gold Fields Limited ("Gold Fields"). As a result, Pan American's ownership was diluted to approximately 40% of the total number of the issued and outstanding common shares of Maverix (approximately 43% on a fully-diluted basis). The net result of the transaction was the recognition of an $11.0 million dilution gain in Q4 2016, representing the difference between the fair value of the portion of the Gold Fields assets acquired by the Company and the interest in Maverix lost from dilution.

Investment income for the year ended December 31, 2016 totaled $1.4 million, comparable to $2.5 million in 2015, and continued to consist mainly of interest income and net gains from the sale of securities within the Company’s short-term investment portfolio.

Interest and finance expense for the year ended December 31, 2016 was $9.6 million compared to $8.5 million recorded for the year ended December 31, 2015. The expenses were comprised of accretion of the Company’s closure liabilities and interest and fees associated with the revolving credit facility, short-term loans and leases. The comparable year-over-year amounts were the net result of increased accretion expense related to certain closure liabilities, offset by decreased interest paid as debt balances were reduced during 2016.

Income tax expense for the year ended December 31, 2016 was $74.4 million, which was a $78.6 million increase from the $4.2 million recovery recorded in 2015. The 2016 and 2015 income tax expense and recovery were comprised of current and deferred income taxes as follows:

(In thousands of USD, except as noted)	2016	2015
Current tax expense (recovery)		
Recognized in profit or loss in current year	**$ 44,751**	$ 18,079
Adjustments recognized in the current year with respect to prior years	**(720)**	(2,225)
	44,031	15,854
Deferred tax expense (recovery)		
Deferred tax expense (recovery) recognized in the current year	**27,942**	(14,241)
Adjustments recognized in the current year with respect to prior years	**1,124**	(1,747)
Adjustments to deferred tax attributable to changes in tax rates and laws	**1,302**	—
Reduction in deferred tax liabilities due to tax impact of impairment of mineral properties, plant, and equipment	**—**	(44,512)
De-recognition of previously recognized deferred tax assets	**—**	44,218
Benefit from previously unrecognized losses	**(7,861)**	—
Increase in deferred tax liabilities due to tax impact of net realizable value reversal (charge) to inventory	**7,908**	(3,771)
	30,415	(20,053)
Income tax expense (recovery)	**$ 74,446**	$ (4,199)

The increase in income tax expense from 2015 was primarily a consequence of the increase in net earnings in 2016 compared to 2015, and the effects of various temporary and permanent differences. These factors resulted in an effective tax rate that varies considerably from the comparable period, and from the amount that would result from applying the Canadian federal and provincial statutory income tax rates to earnings before income taxes, as shown in the following table:

(In thousands of USD, except as noted)	2016	2015
Earnings (loss) before taxes and non-controlling interest	**$ 176,271**	$ (235,755)
Statutory Canadian income tax rate	**26.00%**	26.00%
Income tax expense (recovery) based on above rates	**$ 45,830**	$ (61,296)
Increase (decrease) due to:		
Non-deductible expenditures	**5,082**	5,683
Foreign tax rate differences	**9,729**	(17,626)
Change in net deferred tax assets not recognized:		
- Argentina exploration expenditures	**1,794**	2,717
- Other deferred tax assets	**(14,406)**	8,800
De-recognition of deferred tax assets previously recognized	**—**	44,218
Non-taxable portion of net earnings of affiliates	**(4,852)**	(4,915)
Changes to temporary differences	**1,429**	(1,767)
Non-taxable unrealized gains on derivative financial instruments	**—**	(72)
Effect of other taxes paid (mining and withholding)	**13,678**	6,628
Effect of foreign exchange on tax expense	**14,323**	12,941
Impairment charges and net realizable value adjustments	**—**	2,219
Other	**1,839**	(1,729)
Income tax expense (recovery)	**$ 74,446**	$ (4,199)
Effective income tax rate	**42.23%**	1.78%

The main factors that affected the effective tax rates for the year ended December 31, 2016 and the comparable period of 2015 were foreign exchange fluctuations, changes in the non-recognition of certain deferred tax assets, mining taxes paid and withholding taxes on payments from foreign subsidiaries and foreign tax rate differences. The Company expects that these and other factors will continue to cause volatility in effective tax rates in the future.

- ***Statement of Cash Flows, 2016 vs. 2015:***

Cash flow from operations for the year ended December 31, 2016 was $214.8 million, $126.1 million more than the $88.7 million generated in 2015. The increase was driven primarily by increased cash revenues, decreased cash production costs, decreased realized FX losses, offset by working capital changes, higher royalties and increased cash G&A expenses. Changes in non-cash operating working capital in 2016 resulted in a use of cash of $5.5 million compared to a source of cash of $19.8 million in 2015.

The net decrease in cash from non-cash working capital movements arose largely on changes in trade and other receivables balances ("Receivables") and accounts payable and accrued liability balances ("Payables"). Receivables increases in 2016 resulted in a $29.1 million use of cash, a $56.6 million variance to the $27.5 million source of cash in 2015. This was partially offset by increases in Payables in 2016, which increased 2016 cash flows by $13.7 million compared to the $26.8 million decrease to 2015 operating cash flows.

Investing activities utilized $139.9 million for the year ended December 31, 2016, inclusive of $56.9 million generated on net sales of short-term investments. Other investing activities for the year consisted primarily of $202.7 million on mineral properties, plant and equipment investments, and $16.3 million generated on the sale of mineral properties, plant and equipment, which was mainly attributable to the Shalipayco transaction. 2015 investing activities used $52.4 million, inclusive of $91.3 million generated on net sales of short-term investments, $146.7 million of which was spent on mineral properties, plant and equipment at the Company's various operations and projects.

Financing activities in 2016 used $28.2 million compared to $47.8 million used for the year ended December 31, 2015. Cash used in financing activities during 2016 consisted mainly of $19.5 million of short-term loan repayments and $7.6 million paid as dividends. In 2016 there were also $3.0 million of lease repayments. In 2015, $41.7 million was paid as dividends, $36.2 million was used for the repayment of the convertible debenture offset by a corresponding $36.2 million draw on the revolving credit facility. In 2015 there were also $7.5 million of lease repayments and $2.0 million generated from additional short-term debt proceeds.

- ***Income Statement: Q4 2016 vs. Q4 2015***

Net earnings of $22.3 million were recorded in Q4 2016 compared to a net loss of $137.0 million in Q4 2015, which corresponds to basic income and losses per share of $0.14 and $0.88 in Q4 2016 and Q4 2015, respectively.

The following table highlights the key items driving the difference between the net earnings in Q4 2016 as compared to the net loss recorded in Q4 2015:

Net loss, three months ended December 31, 2015 (in thousands of USD)			**$**	**(136,958)**
Increased revenue:				
Increased realized metal prices	$	37,112		
Lower quantities of metal sold		(9,991)		
Decreased direct selling costs		4,339		
Increased negative settlement adjustments		(3,824)		
Total increase in revenue			**$**	**27,636**
Decreased cost of sales:				
Lower production costs net of increased royalty charges	$	15,206		
Lower depreciation and amortization		13,885		
Total decrease in cost of sales			**$**	**29,091**
Decreased impairment charges				121,512
Increased dilution gain, net of share of loss from associate				8,484
Increased investment income and other expense, net				2,135
Increased net gain on asset sales, commodity contracts and derivatives				404
Decreased general and administrative expense				298
Increased income tax expense				(28,899)
Increased exploration and project development expense				(748)
Increased foreign exchange loss				(470)
Decreased interest and finance expense				(201)
Net earnings, three months ended December 31, 2016			**$**	**22,284**

The $159.2 million quarter-over-quarter increase to net earnings was primarily attributable to the $121.5 million decrease in pre-tax impairment charges, the $29.1 million decrease in cost of sales expense and the $27.6 million increase in revenue, partially offset by the $28.9 million increase in income tax expense.

Revenue for Q4 2016 was $190.6 million, a $27.6 million increase from the $163.0 million of revenue recognized in Q4 2015. The major factors behind the revenue increase were: a $37.1 million price variance from higher metal prices realized for all metals sold; and a $4.3 million decrease in direct selling costs, primarily relating to the 2016 benefit of Argentine export incentives. These factors were partially offset by: a negative $10.0 million variance from lower quantities silver, gold and copper sold, net of higher quantities of zinc and lead sold; and a $3.8 million increase in negative settlement adjustments.

The following table reflects the metal prices realized by the Company and the quantities of metal sold during each quarter:

	Realized Metal Prices		**Quantities of Metal Sold**	
	Three months ended December 31,		**Three months ended December 31,**	
	2016	**2015**	**2016**	**2015**
Silver(1) – koz	**$ 17.65**	$ 14.66	**6,138**	6,719
Gold(1) – koz	**$ 1,212**	$ 1,109	**43.8**	47.3
Zinc(1) – kt	**$ 2,587**	$ 1,672	**11.5**	10.2
Lead(1) – kt	**$ 2,178**	$ 1,684	**5.0**	3.7
Copper(1) – kt	**$ 5,282**	$ 4,871	**3.0**	3.4

(1) Metal price stated as dollars per ounce for silver and gold, and dollars per tonne for zinc, lead and copper, inclusive of final settlement adjustments on concentrate sales.

Realized prices for all metals sold increased from those realized in Q4 2015. Increased quarter-over-quarter realized silver and zinc prices of 20% and 55%, respectively, had the most significant impact on increased revenues. Gold, lead, and copper realized prices increased 9%, 29%, and 8%, respectively.

Mine operating earnings of $49.0 million in Q4 2016 were $56.7 million higher than the $7.8 million of mine operating losses recorded in Q4 2015.

The quarter-over-quarter increase was the result of a net $29.1 million decrease in cost of sales combined with the previously discussed $27.6 million increase in revenue. The costs of sales decrease was the result of decreased production costs and depreciation and amortization expense, partially offset by increased royalty costs.

Q4 2016 production costs of $110.5 million were $17.4 million lower than in Q4 2015, primarily attributable to cost reducing NRV inventory adjustments of $10.7 million in Q4 2016, compared to negative, production cost increasing NRV inventory adjustments of $5.0 million in Q4 2015.

Depreciation and amortization expense of $23.0 million in Q4 2016 was $13.9 million lower than in Q4 2015. The reduced depreciation was attributable to the decrease in depreciable assets resulting largely from asset impairment charges taken in 2015, partially offset by the increase in certain depreciable assets, mainly at the Dolores mine.

Royalty costs in Q4 2016 were $8.1 million, $2.2 million higher than in Q4 2015, because of the quarter-over-quarter increases in metal prices discussed above.

Exploration and project development expenses were $3.1 million in Q4 2016 compared to the $2.3 million incurred in Q4 2015. The expenses recorded in each quarter primarily related to exploration and project development activities near the Company's existing mines, at select greenfield projects, and on the holding and maintenance costs associated with the Navidad project, where approximately $0.4 million was spent in Q4 2016 compared to approximately $0.9 million in Q4 2015.

G&A expense was $5.6 million in Q4 2016 compared to $5.9 million recorded in Q4 2015. Share-based compensation was $0.6 million in Q4 2016 compared to $0.2 million in Q4 2015.

FX losses in Q4 2016 were $4.4 million, similar to $4.0 million of losses incurred in Q4 2015. Losses in Q4 2016 were driven primarily by the effect of a 6% devaluation of the MXN and 2% devaluation of ARS on local currency denominated treasury and MXN and VAT receivables balances. The Q4 2015 loss was primarily the result of losses on CAD and ARS denominated treasury balances and MXN and ARS denominated VAT receivables.

Impairments of mining assets were $nil in Q4 2016 compared to $121.5 million before tax ($85.4 million net of tax), in Q4 2015. The Q4 2015 impairments related to the previously discussed 2015 impairments, with the exception of the Manantial Espejo impairment which occurred in Q3 2015.

Share of loss from associate and dilution gain for Q4 2016 was $8.5 million and related to the previously discussed $11.0 million dilution gain, which represents the difference between the Company's portion of the fair value of the Gold Fields assets acquired by Maverix and the reduced interest in Maverix from dilution, partially offset by the Company's portion of Maverix's estimated Q4 2016 based on Pan American's fully diluted ownership interest in Maverix. There is no comparable Q4 2015 amount as the Maverix investment was acquired in 2016.

Interest and finance expense for Q4 2016 was $2.7 million as compared to $2.5 million in Q4 2015, and consisted of accretion of the Company's closure liabilities and interest expense associated with the revolving credit facility, short-term loans and leases.

Income tax expense during Q4 2016 was $20.9 million compared to an income tax recovery of $8.0 million in Q4 2015. The primary reasons for the change in the quarter-over-quarter tax expense (recovery) were the increased taxable income in Q4 2016, the tax impact of impairment charges and the de-recognition of previously recognized deferred tax assets in Q4 2015.The main factors that affected the effective tax rates for Q4 2016 versus the expected statutory rate were similar to those described above for the full year 2016.

- ***Statement of Cash Flows: Q4 2016 vs. Q4 2015***

Cash flow from operations in Q4 2016 totaled $45.7 million, $22.3 million more than the $23.4 million generated in Q4 2015. The increase was primarily the result of higher cash mine operating earnings driven entirely by the increase in cash revenues. Also benefiting operating cash flows was a reduction in realized FX losses, partially offset by a $7.2 million increase in income tax payments and a $3.8 million decrease in cash from changes in non-cash operating working capital accounts.

Investing activities utilized $66.5 million in Q4 2016, inclusive of $3.2 million used on the purchase of short-term investments. The balance of Q4 2016 investing activities consisted primarily of spending $56.5 million on mineral property, plant and equipment at the Company's mines and projects, as previously described in the "Operating Performance" section of this MD&A. In Q4 2015, investing activities utilized $35.0 million inclusive of $18.2 million generated on the net sale of short-term investments, and $53.7 million spent on mineral property, plant and equipment additions at the Company's various operations and projects.

Financing activities in Q4 2016 used $7.8 million compared to $8.6 million in Q4 2015. Cash used in financing activities in Q4 2016 consisted of $1.9 million paid as dividends to shareholders, $5.2 million used for short-term debt repayments, and $0.7 million of lease repayments. In Q4 2015, $7.6 million of dividends were paid, $0.4 million was used for short-term debt repayment (net of proceeds), and $0.6 million of lease payments were made. The $36.2 million repayment of convertible debentures in Q4 2015 was offset by a corresponding $36.2 million draw on the revolving credit facility in Q4 2015.

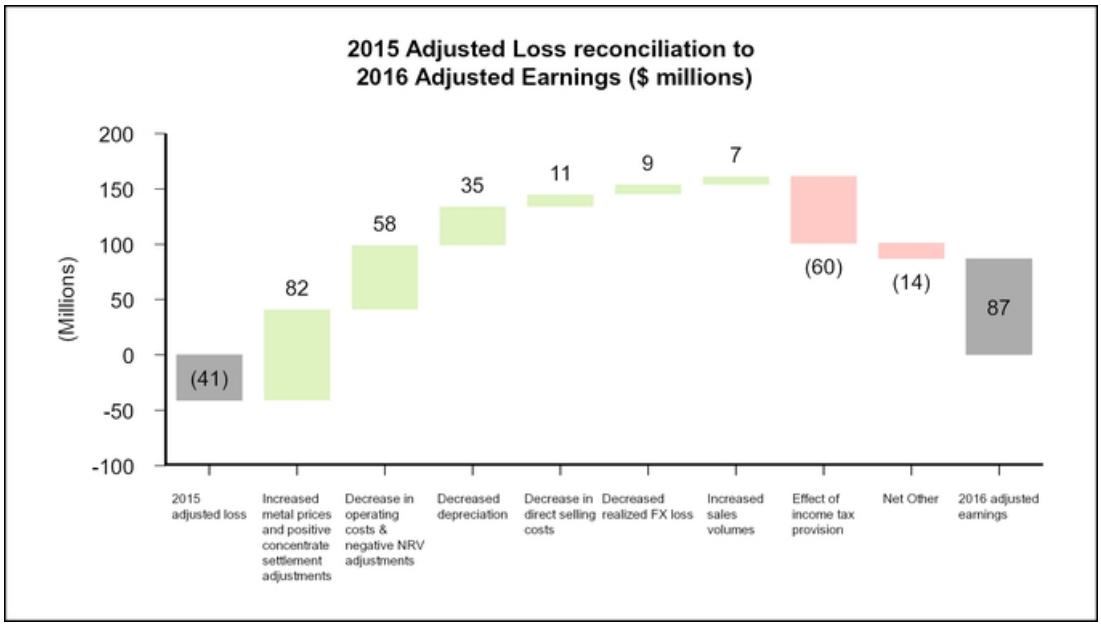
- ***2016 and Q4 2016 Adjusted Earnings***

Adjusted earnings and basic adjusted earnings per share are non-GAAP measures that the Company considers to better reflect normalized earnings as it eliminates items that may be volatile from period to period, relate to positions that will settle in future periods. Neither adjusted earnings nor basic adjusted earnings per share have any standardized meaning prescribed by GAAP and are therefore unlikely to be comparable to similar measures presented by other companies.

Please refer to the section of this MD&A entitled "Alternative Performance (Non-GAAP) Measures" for a detailed description of "adjusted earnings" and "basic adjusted earnings per share", and a reconciliation of these annual and fourth quarter measures to the 2016 Financial Statements.

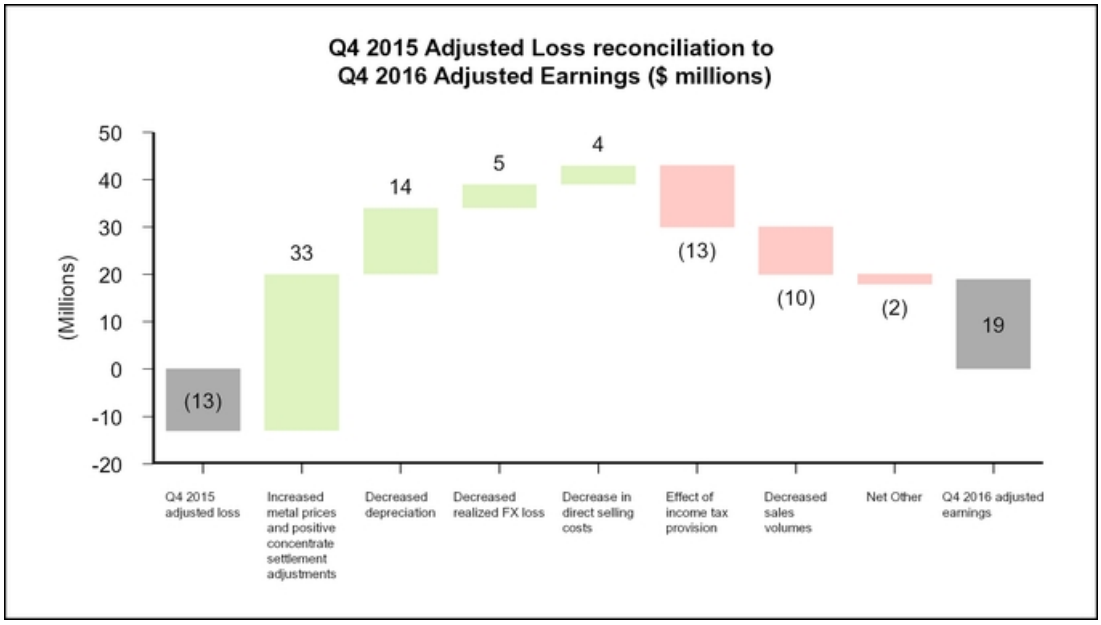
Annual Adjusted Earnings in 2016 were $86.6 million, representing a basic adjusted earnings per share of $0.57, which was $127.9 million, or $0.84 per share, higher than 2015 adjusted net loss of $41.3 million, and basic loss per share of $0.27, respectively.

The following chart illustrates the key factors leading to the change from adjusted net loss for the year ended December 31, 2015 to the adjusted earnings achieved in 2016:



Adjusted Earnings in Q4 2016 was $19.0 million, representing a basic adjusted earnings per share of $0.12, which was $31.7 million, or $0.20 per share, higher than Q4 2015 adjusted loss of $12.7 million, and basic loss per share of $0.08, respectively.

The following chart illustrates the key factors leading to the change from the Q4 2015 adjusted net losses to the adjusted earnings for Q4 2016:



LIQUIDITY POSITION

The Company's cash and cash equivalents balance at December 31, 2016 was $180.9 million, which was an increase of $46.9 million from the balance at December 31, 2015. The Company's short-term investments balance at December 31, 2016, was $36.7 million, which was a decrease of $55.9 million from the $92.7 million balance at December 31, 2015. The modest decrease in liquidity in 2016 of $9.0 million was necessary to supplement operating cash flows of $214.8 million and $16.3 million in asset sale proceeds in order to fund $202.7 million of mineral properties, plant and equipment investments, $22.6 million of short-term debt and lease repayments, $7.6 million in dividend payments and $5.5 million used to settle Maverix warrants.

Pan American's investment objectives for its cash balances are to preserve capital, to provide liquidity and to maximize returns. The Company's strategy to achieve these objectives is to invest excess cash balances in a portfolio of primarily fixed income instruments with specified credit rating targets established by the Board of Directors, and by diversifying the currencies in which it maintains its cash balances. The Company does not own any asset-backed commercial paper or other similar, known, at-risk investments in its investment portfolio.

Working capital at December 31, 2016, was $428.6 million, which was an increase of $36.4 million from December 31, 2015 working capital of $392.2 million. The increase in working capital was mainly attributable to increased trade and other receivables and inventories of $43.1 million and $33.0 million, respectively, and a $19.6 million decrease in short term debt, partially offset by a $30.7 million increase in accounts payable and accrued liabilities, a $22.3 million increase in net current tax liabilities, and the previously discussed $9.0 million decrease in cash and short-term investments.

On April 15, 2015 the Company entered into a $300.0 million secured revolving credit facility with a 4-year term (the "Credit Facility") and upfront costs of $3.0 million. On May 31, 2016, the Company amended its Credit Facility by extending the term by one year, with additional upfront costs of $0.4 million. As part of the amendment, the financial covenants were amended to require the Company to maintain a tangible net worth (exclusive of any prospective write-downs of certain assets) of greater than $1,036.4 million plus 50% of the positive net earnings for each subsequent fiscal quarter. In addition, the financial covenants continue to include the requirement for the Company to maintain a leverage ratio less than or equal to 3.5:1 and an interest coverage ratio more than or equal to 3.0:1. As of December 31, 2016 the Company was in compliance with all covenants required by the Credit Facility.

The terms of the Credit Facility provide the Company with the flexibility of various borrowing and letter of credit options. With respect to loans drawn based on the average annual rate of interest at which major banks in the London interbank market are offering deposits in US dollars ("LIBOR"), the interest margin on such loan is between 2.125% and 3.125% over LIBOR, depending on the Company's leverage ratio at the time of a specified reporting period. On December 29, 2015, the Company made a $36.2 million drawdown on the Credit Facility by way of LIBOR loan at an annual rate of 2.55%. As of December 31, 2016, and at the date of this MD&A, $36.2 million remained drawn on the Credit Facility through LIBOR loans with an average annual rate of 2.55%.

The Company's financial position at December 31, 2016, and the operating cash flows that are expected over the next twelve months lead management to believe that the Company's liquid assets are sufficient to satisfy our 2016 working capital requirements, fund currently planned capital expenditures, and to discharge liabilities as they come due. The Company remains well positioned to take advantage of further strategic opportunities as they become available. Liquidity risks are discussed further in the "Risks and Uncertainties" section of this MD&A.

The impact of inflation on the Company's financial position, operational performance, or cash flows over the next twelve months cannot be determined with any degree of certainty.

CAPITAL RESOURCES

Total attributable shareholders' equity at December 31, 2016, was $1,396.3 million, an increase of $99.1 million from December 31, 2015, primarily because of the $100.1 million net earnings attributable to shareholders for the year ended December 31, 2016, $7.6 million in dividends paid, and a $5.7 million impact of share-based compensation in 2016. As of December 31, 2016, the Company had approximately 152.3 million common shares outstanding for a share capital balance of $2,304.0 million (December 31, 2015, 151.9 million and $2,298.4 million). The basic weighted

average number of common shares outstanding was 152.1 million and 151.7 million for the years endedDecember 31, 2016, and 2015, respectively.

As at December 31, 2016, the Company had approximately 1.3 million stock options outstanding (each exercisable for one common share of the Company), with exercise prices in the range of CAD $9.76 to CAD $40.22 and a weighted average life of 50 months. Approximately 1.0 million of the stock options were vested and exercisable at December 31, 2016, with an average weighted exercise price of CAD $18.02 per share.

The following table sets out the common shares and options outstanding as at the date of this MD&A:

	Outstanding as at March 22, 2017
Common shares	153,106,664
Options	1,043,294
Total	**154,149,958**

FINANCIAL INSTRUMENTS

A part of the Company's operating and capital expenditures is denominated in local currencies other than USD. These expenditures are exposed to fluctuations in USD exchange rates relative to the local currencies. From time to time, the Company mitigates part of this currency exposure by accumulating local currencies, entering into contracts designed to fix or limit the Company's 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. The Company held cash and short-term investments of $6.5 million in CAD, $9.4 million in MXN, $0.8 million in PEN, $3.5 million in ARS, and $4.3 million in BOB at December 31, 2016. Risks relating to FX rates are discussed in the "Risks and Uncertainties" section of this MD&A.

At December 31, 2016, the Company had outstanding collars made up of put and call contracts on its foreign currency exposure of MXN purchases with a nominal value of $81.0 million and settlement dates between January 2017 and December 2017. The positions have a weighted average floor of $19.36 and an average cap of $22.91. The Company recorded losses of $0.8 million and $0.2 million on the MXN forward contracts for the three months ended December 31, 2016 and 2015, respectively, and losses of $1.5 million and $0.2 million during the year ended December 31, 2016 and 2015, respectively.

From time to time, Pan American mitigates the price risk associated with its base metal production by committing some of its future production under forward sales or option contracts. Risks relating to metal prices and hedging activities undertaken in relation to metal prices are discussed in the "Risks and Uncertainties" section of this MD&A.

During 2016, in order to limit its exposure to lower zinc prices on a portion of its zinc production, the Company used put and call contracts to collar the prices on 22,115 tonnes of zinc, of which contracts for 10,265 tonnes remained outstanding at December 31, 2016. The outstanding contracts have a weighted average floor and cap of $2,043 and $2,887, respectively. The outstanding contracts have settlement dates between January 2017 and December 2017. The Company recorded losses of $1.1 million and $nil on zinc positions during the three months ended December 31, 2016 and 2015, respectively, and losses of $4.3 million and $nil on zinc positions during the year ended December 31, 2016 and 2015, respectively.

Further, in 2016, in order to limit its exposure to lower lead prices on a portion of its lead production, the Company used put and call contracts to collar the prices on 3,720 tonnes of lead, of which contracts for 620 tonnes remained outstanding at December 31, 2016. The outstanding contracts have a fixed minimum price of $1,650 and a maximum price of $1,965 per tonne. The outstanding contracts have settlement dates between January 2017 and February 2017. The Company recorded gains of $0.1 million and $nil on lead positions during the three months ended December 31, 2016 and 2015, respectively, and losses of $0.2 million and $nil on lead positions during the years ended December 31, 2016 and 2015, respectively.

During Q1 2015, the Company entered into diesel swap contracts designed to fix or limit the Company's exposure to higher fuel prices (the "Diesel Swaps"). The Diesel Swaps had an initial notional value of $13.0 million. During the

fourth quarter of 2015, the Company entered into additional Diesel Swaps with an initial notional value of $12.5 million. A total of $nil of the notional amounts of the Diesel Swaps remained outstanding as of December 31, 2016. The Company recorded losses of $nil and $2.4 million on the Diesel Swaps during the three months ended December 31, 2016, and 2015; and recorded gains of $1.0 million and losses of $3.1 million during the years ended December 31, 2016 and 2015, respectively.

Other than the contracts described above, there were no other gains or losses on any commodity or foreign currency contracts in either the three or twelve months ended December 31, 2016 and 2015.

The Company maintains short-term bank loans in Argentina, which at December 31, 2016, had a balance outstanding of $nil million (December 31, 2015 - $19.6 million). These loans were denominated in ARS as at December 31, 2016, and were drawn for the purposes of short-term cash management and to partially offset the FX exposure of holding local currency denominated financial assets.

Derivative financial assets and liabilities are measured at fair value. Cash and cash equivalents, short-term investments, accounts receivable, accounts payable and accrued liabilities approximate their fair value due to the relatively short periods to maturity of these financial instruments.

The Company had the right to pay all or part of the liability associated with the Company's previously outstanding convertible notes in cash on the conversion date. Accordingly, the Company classified the convertible notes as a financial liability with an embedded derivative. The financial liability and embedded derivative were recognized initially at their respective fair values. The embedded derivative was recognized at fair value with changes in fair value reflected in profit or loss and the debt liability component recognized at amortized cost using the effective interest method. Interest gains and losses related to the debt liability component or embedded derivatives were recognized in profit or loss.

During the fourth quarter of 2015, the Company recorded a gain (loss) on the revaluation of the conversion feature of the convertible notes of $nil. For the year ended December 31, 2015, the Company recorded a gain on the revaluation of the conversion feature of the convertible notes of $0.3 million.

Fair value estimates are made at a specific point in time, based on relevant market information and information about the financial instrument. These estimates are subjective in nature and involve uncertainties and matters of significant judgment and, therefore, cannot be determined with precision. Changes in assumptions could significantly affect the estimates. The classification of financial instruments and the significant assumptions made in determining the fair value of financial instruments are described in Note 7 of the 2016 Financial Statements.

CLOSURE AND DECOMMISSIONING COST PROVISION

The estimated future closure and decommissioning costs are based principally on the requirements of relevant authorities and the Company's environmental policies. The provision is measured using management's assumptions and estimates for future cash outflows. The Company accrues these costs, which are determined by discounting costs using rates specific to the underlying obligation. Upon recognition of a liability for the closure and decommissioning costs, the Company capitalizes these costs to the related mine and amortizes such amounts over the life of each mine on a unit-of-production basis except in the case of exploration projects for which the offset to the liability is expensed. The accretion of the discount due to the passage of time is recognized as an increase in the liability and a finance expense.

The total inflated and undiscounted amount of estimated cash flows required to settle the Company's estimated future closure and decommissioning costs is $122.1 million (2015 - $107.2 million) which has been inflated using inflation rates of between 1% and 23% (2015 - between 1% and 17%). The inflated and discounted provision on the statement of financial position as at December 31, 2016, using discount rates between 1% and 30% (2015 - between 1% and 20%), is $55.6 million (2015 - $50.5 million). Spending with respect to decommissioning obligations at the Alamo Dorado and Manantial Espejo mines began in 2016, while the remainder of the obligations are expected to be paid through 2040 or later if mine life is extended. Revisions made to the reclamation obligations in 2016 were primarily a result of increased site disturbance from the ordinary course of operations at the mines as well as revisions to the estimates based on periodic reviews of closure plans and related costs, actual expenditures incurred, and

concurrent closure activities completed. These obligations will be funded from operating cash flows, reclamation deposits, and cash on hand.

The accretion of the discount charged to 2016 earnings as finance expense was $4.4 million (2015 - $3.2 million). Reclamation expenditures incurred during the current year were $6.1 million (2015 - $2.8 million).

CONTRACTUAL COMMITMENTS AND CONTINGENCIES

The Company does not have any off-balance sheet arrangements or commitments that have a current or future effect on its financial condition, changes in financial condition, revenues or expenses, results of operations, liquidity, capital expenditures or capital resources, that are material. The Company had the following contractual obligations at December 31, 2016:

	Payments due by period				
(In thousands of USD, except as noted)	Total	Within 1 year(1)	2 - 3 years	4- 5 years	After 5 years
Current liabilities	$ 141,002	$ 141,002	$ —	$ —	$ —
Credit facility	38,440	960	1,280	36,200	—
Finance lease obligations(2)	7,321	3,720	3,601	—	—
Severance accrual	3,986	689	658	365	2,274
Employee compensation(3)	6,918	3,996	2,922	—	—
Loss on commodity contracts	2,815	2,815	—	—	—
Provisions(4)	4,719	3,262	562	629	266
Income taxes payable	25,911	25,911	—	—	—
Total contractual obligations(4)	**$ 231,112**	**$ 182,355**	**$ 9,023**	**$ 37,194**	**$ 2,540**

(1) Includes all current liabilities as per the statement of financial position plus items presented separately in this table that are expected to be paid but not accrued in December 31, 2016 statement of financial position of the Company. A reconciliation of the current liabilities balance per the statement of financial position to the total contractual obligations within one year per the contractual maturities schedule, is shown in the table below.

December 31, 2016		Future interest component		Within 1 year
Current portion of:				
Accounts payable and other liabilities	$ 141,002	$ —	$	**141,002**
Credit facility	—	960		**960**
Current portion of finance lease	3,559	161		**3,720**
Current severance liability	689	—		**689**
Employee Compensation & RSU's	1,812	2,184		**3,996**
Unrealized loss on commodity contracts	2,815	—		**2,815**
Provisions(4)	3,262	—		**3,262**
Income tax payable	25,911	—		**25,911**
Total contractual obligations within one year (4)	$ 179,050	$ 3,305	$	**182,355**

(2) Includes lease obligations in the amount of $7.3 million (December 31, 2015 - $4.1 million) with a net present value of $7.1 million (December 31, 2015 - $4.0 million) discussed further in Note 17 of the 2016 Financial Statements.
(3) Includes RSU obligation in the amount of $4.8 million (December 31, 2015 – $2.5 million) that will be settled in cash or shares. The restricted share units vest in two installments, 50% in December 2016, and 50% in December 2017.
(4) Amounts above do not include payments related to the Company's anticipated closure and decommissioning obligation or the deferred credit arising from the Aquiline acquisition discussed in Notes 16 and 19 of the 2016 Financial Statements.

RELATED PARTY TRANSACTIONS

The Company's related parties include its subsidiaries, associates over which it exercises significant influence, and key management personnel. During its normal course of operation, the Company enters into transactions with its related parties for goods and services. All related party transactions for the years ended December 31, 2016 and 2015 have been disclosed in the 2016 Financial Statements. Related party transactions with Maverix have been disclosed in Note 12 of the 2016 Financial Statements.

During 2016, a former director of the Company was paid approximately $0.1 million for consulting services. During 2015, a company indirectly owned by a trust of which another former director of the Company is a beneficiary, was paid approximately $1.4 million for consulting services. These transactions were in the normal course of operations and are measured at the exchange amount, which is the amount of consideration established and agreed to by the parties. There are no ongoing contractual or other commitments associated with this arrangement or with another related party.

ALTERNATIVE PERFORMANCE (NON-GAAP) MEASURES

- ***AISCSOS***

AISCSOS is a non-GAAP financial measure. AISCSOS does not have any standardized meaning prescribed by IFRS and is therefore unlikely to be comparable to similar measures presented by other companies. We believe that AISCSOS reflects a comprehensive measure of the full cost of operating our consolidated business given it includes the cost of replacing silver ounces through exploration, the cost of ongoing capital investments (sustaining capital), general and administrative expenses, as well as other items that affect the Company's consolidated cash flow. To facilitate a better understanding of this measure as calculated by the Company, the following table provides the detailed reconciliation of this measure to the applicable cost items, as reported in the consolidated income statements for the respective periods:

		Three months ended December 31,		Twelve months ended December 31,	
(In thousands of USD, except as noted)		**2016**	2015	**2016**	2015
Direct operating costs		**$ 120,496**	$ 122,845	**$ 472,806**	$ 521,169
Net realizable value ("NRV") inventory adjustments	**A**	**(10,715)**	5,028	**(42,815)**	10,861
Production costs (1)		**$ 109,781**	$ 127,873	**$ 429,991**	$ 532,031
Royalties		**8,142**	5,941	**31,608**	23,901
Direct selling costs (2)		**20,656**	24,995	**80,319**	90,858
Less by-product credits(2)		**(109,571)**	(92,138)	**(424,442)**	(377,954)
Cash cost of sales net of by-products(3)		**$ 29,009**	$ 66,671	**$ 117,476**	$ 268,835
Sustaining capital**(4)**		**$ 24,976**	$ 23,476	**$ 89,394**	$ 73,701
Exploration and project development		**3,068**	2,320	**11,334**	11,940
Reclamation cost accretion		**1,090**	810	**4,363**	3,239
General and administrative expense		**5,592**	5,890	**23,663**	18,027
All-in sustaining costs(3)	**B**	**$ 63,735**	$ 99,167	**$ 246,230**	$ 375,744
Payable ounces sold (in thousands)	**C**	**6,138.2**	6,719.5	**24,199.5**	25,179.8
All-in sustaining cost per silver ounce sold, net of by-products	**B/C**	**$ 10.38**	$ 14.76	**$ 10.17**	$ 14.92
All-in sustaining cost per silver ounce sold, net of by-products (excludes NRV adjustments)	**(B-A)/C**	**$ 12.13**	$ 14.01	**$ 11.94**	$ 14.49

(1) For the purposes of AISCSOS, Alamo Dorado production costs for the three and twelve month periods ended December 31, 2016 have been decreased by $0.6 million and increased by $1.7 million, respectively, to exclude non-cash adjustments to the closure and decommissioning liabilities that are included in production costs as presented in the consolidated statements of income.
(2) Included in the revenue line of the annual and interim consolidated income statements and are reflective of realized metal prices for the applicable periods.
(3) Totals may not add due to rounding.
(4) Please refer to the table below.

As part of the AISCSOS measure, sustaining capital is included while expansionary or acquisition capital (referred to by the Company as non-sustaining capital) is not. Inclusion of sustaining capital only is a measure of capital costs associated with current ounces sold as opposed to investment capital, which is expected to increase future production. For the periods under review, the items noted below are associated with the La Colorada expansion project, the Dolores' leach pad and other expansionary expenditures considered to be investment capital projects.

Reconciliation of payments for mineral properties, plant and equipment and sustaining capital	Three months ended December 31,		Twelve months ended December 31,	
(in thousands of USD)	2016	2015	2016	2015
Payments for mineral properties, plant and equipment(1)	$ 56,477	$ 53,705	$ 202,661	$ 146,735
Add/(Subtract)				
Advances received for leases	2,213	2,571	6,151	3,491
Non-Sustaining capital (Dolores, La Colorada projects, and other)	(33,714)	(32,800)	(119,418)	(76,524)
Sustaining Capital(2)	$ 24,976	$ 23,476	$ 89,394	$ 73,702

(1) As presented on the annual and interim consolidated statements of cash flows.
(2) Totals may not add due to rounding

Three months ended December 31, 2016									
(In thousands of USD, except as noted)	La Colorada	Dolores	Alamo Dorado	Huaron	Morococha	San Vicente	Manantial Espejo	PASCORP	Consolidated
Direct operating costs	14,674	28,664	7,266	17,991	15,547	10,016	26,336		120,496
NRV inventory adjustments	—	(6,350)	2,224	—	—	—	(6,589)		(10,715)
Production costs	14,674	22,314	9,490	17,991	15,547	10,016	19,747		109,781
Royalties	135	1,604	33	—	—	5,598	772		8,142
Direct selling costs	3,712	23	125	7,735	5,643	4,634	(1,215)		20,656
Less by-product credits	(12,238)	(32,868)	(1,609)	(21,206)	(18,379)	(5,372)	(17,898)		(109,571)
Cash cost of sales net of by-products (1)	**6,283**	**(8,927)**	**8,039**	**4,520**	**2,812**	**14,876**	**1,406**		**29,009**
Sustaining capital	2,229	10,772	—	4,355	4,892	1,631	1,097		24,976
Exploration and project development	31	628	—	576	109	—	—	1,723	3,068
Reclamation cost accretion	72	179	104	126	86	54	433	37	1,090
General & administrative expense	—	—	—	—	—	—	—	5,592	5,592
All-in sustaining costs(1)	8,615	2,652	8,144	9,576	7,899	16,561	2,935	7,352	63,735
Payable ounces sold (thousand)	**1,561**	**895**	**286**	**759**	**526**	**1,332**	**779**		**6,138**
All-in sustaining cost per silver ounce sold, net of by-products	**$ 5.52**	**$ 2.96**	**$ 28.44**	**$ 12.62**	**$ 15.02**	**$ 12.43**	**$ 3.77**		**$ 10.38**
All-in sustaining cost per silver ounce sold, net of by-products (excludes NRV adjustments)	**$ 5.52**	**$ 10.06**	**$ 20.68**	**$ 12.62**	**$ 15.02**	**$ 12.43**	**$ 12.22**		**$ 12.13**

(1) Totals may not add due to rounding.

Twelve months ended December 31, 2016									
(In thousands of USD, except as noted)	La Colorada	Dolores	Alamo Dorado	Huaron	Morococha	San Vicente	Manantial Espejo	PASCORP	Consolidated
Direct operating costs	50,879	121,162	40,172	67,911	58,868	34,959	98,856		472,806
NRV inventory adjustments	—	(22,434)	1,173	—	—	—	(21,554)		(42,815)
Production costs	50,879	98,728	41,345	67,911	58,868	34,959	77,302		429,991
Royalties	401	6,224	235	—	—	20,929	3,818		31,608
Direct selling costs	13,554	107	376	32,443	25,702	15,697	(7,562)		80,319
Less by-product credits	(34,737)	(123,811)	(13,156)	(77,754)	(74,754)	(15,774)	(84,456)		(424,442)
Cash cost of sales net of by-products (1)	**30,098**	**(18,751)**	**28,800**	**22,600**	**9,817**	**55,811**	**(10,898)**		**117,476**
Sustaining capital	10,545	48,079	—	11,994	10,945	4,963	2,868		89,394
Exploration and project development	186	1,792	—	837	1,053	—	—	7,465	11,334
Reclamation cost accretion	287	714	416	505	345	218	1,731	148	4,363
General & administrative expense	—	—	—	—	—	—	—	23,663	23,663
All-in sustaining costs(1)	41,116	31,834	29,216	35,935	22,159	60,991	(6,299)	31,276	246,230
Payable ounces sold (thousand)	**5,486**	**3,839**	**1,967**	**3,233**	**2,377**	**4,264**	**3,033**		**24,200**
All-in sustaining cost per silver ounce sold, net of by-products	**$ 7.49**	**$ 8.29**	**$ 14.85**	**$ 11.11**	**$ 9.32**	**$ 14.30**	**$ (2.08)**		**$ 10.17**
All-in sustaining cost per silver ounce sold, net of by-products (excludes NRV adjustments)	**$ 7.49**	**$ 14.14**	**$ 14.26**	**$ 11.11**	**$ 9.32**	**$ 14.30**	**$ 5.03**		**$ 11.94**

(1) Totals may not add due to rounding.

Three months ended December 31, 2015									
(In thousands of USD, except as noted)	La Colorada	Dolores	Alamo Dorado	Huaron	Morococha	San Vicente	Manantial Espejo	PASCORP	Consolidated
Direct operating costs	11,454	29,065	14,034	16,999	14,707	11,747	24,837		122,845
NRV inventory adjustments	—	3,132	684	—	—	—	1,212		5,028
Production costs	11,454	32,198	14,718	16,999	14,707	11,747	26,049		127,873
Royalties	73	1,225	97	—	—	3,542	1,004		5,941
Direct selling costs	3,009	31	252	7,451	7,711	4,615	1,926		24,995
Less by-product credits	(5,415)	(21,110)	(9,369)	(14,752)	(15,587)	(5,031)	(20,874)		(92,138)
Cash cost of sales net of by-products (1)	**9,121**	**12,344**	**5,698**	**9,698**	**6,831**	**14,873**	**8,105**		**66,671**
Sustaining capital	2,965	10,064	—	4,599	2,516	996	2,337		23,476
Exploration and project development	172	86	—	53	722	—	—	1,287	2,320
Reclamation cost accretion	59	90	58	150	96	56	274	26	810
General & administrative expense	—	—	—	—	—	—	—	5,890	5,890
All-in sustaining costs(1)	12,317	22,585	5,756	14,500	10,165	15,925	10,716	7,202	99,167
Payable ounces sold (thousand)	**1,263**	**1,048**	**726**	**774**	**483**	**1,448**	**978**		**6,719**
All-in sustaining cost per silver ounce sold, net of by-products	**$ 9.75**	**$ 21.55**	**$ 7.93**	**$ 18.74**	**$ 21.02**	**$ 11.00**	**$ 10.96**		**$ 14.76**
All-in sustaining cost per silver ounce sold, net of by-products (excludes NRV adjustments)	**$ 9.75**	**$ 18.56**	**$ 6.98**	**$ 18.74**	**$ 21.02**	**$ 11.00**	**$ 9.72**		**$ 14.01**

(1) Totals may not add due to rounding.

Twelve months ended December 31, 2015									
(In thousands of USD, except as noted)	La Colorada	Dolores	Alamo Dorado	Huaron	Morococha	San Vicente	Manantial Espejo	PASCORP	Consolidated
Direct operating costs	48,842	132,343	60,159	66,878	66,096	32,211	114,640		521,169
NRV inventory adjustments		(11,417)	(522)				22,800		10,861
Production costs	48,842	120,926	59,637	66,878	66,096	32,211	137,440		532,031
Royalties	385	5,289	344	—	—	14,051	3,832		23,901
Direct selling costs	11,877	132	682	26,986	31,424	11,147	8,609		90,858
Less by-product credits	(22,585)	(96,066)	(23,446)	(58,027)	(68,480)	(13,047)	(96,302)		(377,954)
Cash cost of sales net of by-products (1)	**38,519**	**30,281**	**37,217**	**35,837**	**29,041**	**44,362**	**53,579**		**268,836**
Sustaining capital	9,869	25,162	—	13,610	7,713	3,286	14,061		73,701
Exploration and project development	254	544	—	765	1,202	—	—	9,175	11,940
Reclamation cost accretion	237	362	232	600	384	226	1,096	103	3,239
General & administrative expense	—	—	—	—	—	—	—	18,027	18,027
All-in sustaining costs(1)	48,879	56,348	37,450	50,813	38,339	47,873	68,736	27,305	375,744
Payable ounces sold (thousand)	**5,109**	**4,448**	**2,944**	**3,009**	**1,995**	**4,019**	**3,655**		**25,180**
All-in sustaining cost per silver ounce sold, net of by-products	**$ 9.57**	**$ 12.67**	**$ 12.72**	**$ 16.89**	**$ 19.21**	**$ 11.91**	**$ 18.81**		**$ 14.92**
All-in sustaining cost per silver ounce sold, net of by-products (excludes NRV adjustments)	**$ 9.57**	**$ 15.24**	**$ 12.90**	**$ 16.89**	**$ 19.21**	**$ 11.91**	**$ 12.57**		**$ 14.49**

(1) Totals may not add due to rounding.

- ***Cash Costs per Ounce of Silver, net of by-product credits***

Pan American produces by-product metals incidentally to our silver mining activities. We have adopted the practice of calculating the net cost of producing an ounce of silver, our primary payable metal, after deducting revenues gained from incidental by-product production, as a performance measure. 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 industry on a consistent basis. Cash costs per ounce is conceptually understood and widely reported in the silver mining industry. However, cash cost per ounce of silver is a non-GAAP measure and does not have a standardized meaning prescribed by GAAP and the Company's method of calculating cash costs may differ from the methods used by other entities.

To facilitate a better understanding of these measures as calculated by the Company, the following table provides the detailed reconciliation of these measures to the production costs, as reported in the consolidated income statements for the respective periods:

Total Cash Costs per ounce of Payable Silver, net of by-product credits (in thousands of U.S. dollars except as noted)		Three months ended December 31, 2016	Three months ended December 31, 2015	Twelve months ended December 31, 2016	Twelve months ended December 31, 2015
Production costs		**$ 110,466**	$ 127,873	**$ 428,333**	$ 532,031
Add/(Subtract)					
Royalties		**8,142**	5,941	**31,608**	23,901
Smelting, refining, and transportation charges		**22,204**	24,319	**91,371**	94,804
Worker's participation and voluntary payments		**(876)**	62	**(3,397)**	(147)
Change in inventories		**(3,473)**	(3,115)	**(11,937)**	(19,114)
Other		**358**	882	**(5,660)**	(6,537)
Non-controlling interests (1)		**(811)**	(1,072)	**(3,358)**	(4,331)
Metal inventories recovery (write-down)		**10,715**	(5,028)	**42,815**	(10,861)
Cash Operating Costs before by-product credits (2)		**146,725**	149,860	**569,775**	609,746
Less gold credit		**(52,888)**	(52,562)	**(227,196)**	(208,800)
Less zinc credit		**(28,486)**	(15,855)	**(93,428)**	(66,831)
Less lead credit		**(11,226)**	(6,477)	**(35,890)**	(24,488)
Less copper credit		**(14,667)**	(17,030)	**(63,404)**	(71,635)
Cash Operating Costs net of by-product credits (2)	**A**	**39,457**	57,936	**149,857**	237,992
Payable Silver Production (koz)	**B**	**5,924.8**	6,370.8	**23,817.9**	24,530.8
Cash Costs per ounce net of by-product credits	**A/B**	**$ 6.66**	$ 9.09	**$ 6.29**	$ 9.70

(1) Figures presented in the reconciliation table above are on a 100% basis as presented in the consolidated financial statements with an adjustment line item to account for the portion of the Morococha and San Vicente mines owned by non-controlling interests, an expense item not included in operating cash costs. The associated tables below are for the Company's share of ownership only.
(2) Figures in this table and in the associated tables below may not add due to rounding.

Three months ended December 31, 2016 (1) (in thousands of USD except as noted)		La Colorada	Dolores	Alamo Dorado	Huaron	Morococha	San Vicente	Manantial Espejo	Consolidated Total
Cash Costs before by-product credits	**A**	**$ 19,118**	**29,875**	**$ 10,704**	**$ 25,766**	**$ 19,496**	**$ 14,034**	**$ 26,259**	**$ 145,251**
Less gold credit	b1	(841)	(35,183)	(1,690)	—	(165)	(86)	(14,905)	**(52,870)**
Less zinc credit	b2	(7,801)	—	—	(11,056)	(7,361)	(1,568)	—	**(27,787)**
Less lead credit	b3	(3,513)	—	—	(6,005)	(1,444)	(136)	—	**(11,098)**
Less copper credit	b4	—	—	31	(5,122)	(7,849)	(1,095)	—	**(14,035)**
Sub-total by-product credits	**B=(b1+ b2+ b3+ b4)**	**$ (12,155)**	**$ (35,183)**	**$ (1,659)**	**$ (22,183)**	**$ (16,819)**	**$ (2,885)**	**$ (14,905)**	**$ (105,790)**
Cash Costs net of by-product credits	C=(A+B)	$ 6,962	$ (5,308)	$ 9,046	$ 3,583	$ 2,676	$ 11,149	$ 11,354	**$ 39,462**
Payable ounces of silver (thousand)	D	1,588	895	397	789	485	994	777	**5,925**
Cash cost per ounce net of by-products	**C/D**	**$ 4.38**	**$ (5.93)**	**$ 22.80**	**$ 4.54**	**$ 5.52**	**$ 11.22**	**$ 14.61**	**$ 6.66**

(1) Totals may not add due to rounding

Twelve months ended December 31, 2016[1] (in thousands of USD except as noted)									
		La Colorada	Dolores	Alamo Dorado	Huaron	Morococha	San Vicente	Manantial Espejo	Consolidated Total
Cash Costs before by-product credits	**A**	**$ 68,057**	**$ 124,570**	**$ 39,891**	**$ 96,284**	**$ 75,586**	**$ 61,779**	**$ 97,388**	**$ 563,555**
Less gold credit	b1	(2,929)	(128,696)	(10,251)	(2)	(897)	(335)	(83,992)	**$ (227,103)**
Less zinc credit	b2	(20,636)	—	—	(34,638)	(26,841)	(8,611)	—	**(90,726)**
Less lead credit	b3	(10,487)	—	—	(18,967)	(5,166)	(795)	—	**(35,415)**
Less copper credit	b4	—	—	(100)	(24,113)	(33,701)	(2,534)	—	**(60,448)**
Sub-total by-product credits	**B=(b1+ b2+ b3+ b4)**	**$ (34,052)**	**$(128,696)**	**$ (10,351)**	**$ (77,720)**	**$ (66,605)**	**$ (12,275)**	**$ (83,992)**	**$ (413,692)**
Cash Costs net of by-product credits	C=(A+B)	$ 34,004	$ (4,126)	$ 29,539	$ 18,565	$ 8,981	$ 49,504	$ 13,396	**$ 149,862**
Payable ounces of silver (thousand)	D	5,531	3,831	1,844	3,208	2,132	4,143	3,130	**23,818**
Cash cost per ounce net of by-products	**C/D**	**$ 6.15**	**$ (1.08)**	**$ 16.02**	**$ 5.79**	**$ 4.21**	**$11.95**	**$ 4.28**	**$ 6.29**

(1) Totals may not add due to rounding

Three months ended December 31, 2015 [1] (in thousands of USD except as noted)									
		La Colorada	Dolores	Alamo Dorado	Huaron	Morococha	San Vicente	Manantial Espejo	Consolidated Total
Cash Costs before by-product credits	**A**	**$ 15,861**	**$ 31,089**	**$ 13,353**	**$ 23,380**	**$ 21,143**	**$ 14,376**	**$ 29,203**	**$ 148,405**
Less gold credit	b1	(595)	(20,095)	(8,726)	(24)	(330)	(63)	(22,699)	**(52,531)**
Less zinc credit	b2	(3,420)			(5,299)	(3,664)	(3,006)		**(15,390)**
Less lead credit	b3	(1,956)			(3,107)	(1,040)	(274)		**(6,376)**
Less copper credit	b4	—		(181)	(5,750)	(10,241)	—		**(16,172)**
Sub-total by-product credits	**B=(b1+ b2+ b3+ b4)**	**$ (5,971)**	**$ (20,095)**	**$ (8,907)**	**$ (14,179)**	**$ (15,275)**	**$ (3,343)**	**$ (22,699)**	**$ (90,469)**
Cash Costs net of by-product credits	C=(A+B)	$ 9,890	$ 10,995	$ 4,446	$ 9,200	$ 5,868	$ 11,033	$ 6,505	**$ 57,936**
Payable ounces of silver (thousand)	D	1,359	945	810	810	452	992	1,003	**6,371**
Cash cost per ounce net of by-products	**C/D**	**$ 7.28**	**$ 11.64**	**$ 5.49**	**$ 11.35**	**$ 12.99**	**$ 11.12**	**$ 6.48**	**$ 9.09**

(1) Totals may not add due to rounding.

Twelve months ended December 31, 2015[1] (in thousands of USD except as noted)									
		La Colorada	Dolores	Alamo Dorado	Huaron	Morococha	San Vicente	Manantial Espejo	Consolidated Total
Cash Costs before by-product credits	**A**	**$ 61,748**	**$130,918**	**$ 57,178**	**$ 93,503**	**$ 88,542**	**$ 56,262**	**$ 115,548**	**$ 603,698**
Less gold credit	b1	(2,586)	(91,551)	(23,187)	(174)	(1,594)	(241)	(89,320)	**$ (208,654)**
Less zinc credit	b2	(14,429)	—	—	(21,416)	(17,973)	(10,932)	—	**(64,750)**
Less lead credit	b3	(7,049)	—	—	(11,586)	(4,261)	(1,173)	—	**(24,069)**
Less copper credit	b4	—	—	(439)	(27,189)	(40,606)	—	—	**(68,233)**
Sub-total by-product credits	**B=(b1+ b2+ b3+ b4)**	**$ (24,064)**	**$ (91,551)**	**$ (23,626)**	**$ (60,365)**	**$ (64,434)**	**$ (12,346)**	**$ (89,320)**	**$ (365,706)**
Cash Costs net of by-product credits	C=(A+B)	$ 37,683	$ 39,367	$ 33,553	$ 33,137	$ 24,107	$ 43,916	$ 26,228	**$ 237,992**
Payable ounces of silver (thousand)	D	5,089	4,242	2,941	3,037	1,851	3,796	3,576	**24,531**
Cash cost per ounce net of by-products	**C/D**	**$ 7.41**	**$ 9.28**	**$ 11.41**	**$ 10.91**	**$ 13.03**	**$11.57**	**$ 7.33**	**$ 9.70**

(1) Totals may not add due to rounding.

- ***Adjusted Earnings and Basic Adjusted Earnings Per Share***

Adjusted earnings and basic adjusted earnings per share are non-GAAP measures that the Company considers to better reflect normalized earnings as it eliminates items that may be volatile from period to period, relate to positions that will settle in future periods. Certain items that become applicable in a period may be adjusted for, with the Company retroactively presenting comparable periods with an adjustment for such items and conversely, items no longer applicable may be removed from the calculation. The Company adjusts certain items in the periods that they occurred but does not reverse or otherwise unwind the effect of such items in future periods. Neither adjusted earnings nor basic adjusted earnings per share have any standardized meaning prescribed by GAAP and are therefore unlikely to be comparable to similar measures presented by other companies.

The following table shows a reconciliation of adjusted loss and earnings for the three and twelve months ended December, 2016 and 2015, to the net (loss) earnings for each period.

	Three months ended December 31,		Year ended December 31,	
(In thousands of USD, except as noted)	**2016**	2015	**2016**	2015
Net earnings (loss) for the period	**$ 22,284**	$ (136,958)	**$ 101,825**	$ (231,556)
Adjust derivative gain	**—**	(4)	**—**	(278)
Adjust impairment of mineral properties	**—**	121,512	**—**	150,268
Adjust write-down of other assets	**—**	2,678	**—**	22,812
Adjust unrealized foreign exchange losses (gains)	**4,139**	(1,319)	**5,759**	860
Adjust net realizable value of heap inventory	**(6,619)**	6,366	**(14,110)**	6,401
Adjust unrealized (gain) loss on commodity contracts	**(435)**	2,989	**(21)**	2,835
Adjust share of loss from associate and dilution gain	**(8,484)**	—	**(7,946)**	—
Adjust gain on sale of assets	**(157)**	(38)	**(25,100)**	(372)
Adjust for effect of taxes relating to the above[1]	**$ 2,180**	$ (10,131)	**$ 11,870**	$ (5,172)
Adjust for effect of foreign exchange on taxes[1]	**$ 6,057**	$ 2,220	**$ 14,323**	$ 12,941
Adjusted earnings (loss) for the period	**$ 18,965**	$ (12,685)	**$ 86,600**	$ (41,261)
Weighted average shares for the period	**152,263**	151,715	**152,118**	151,664
Adjusted earnings (loss) loss per share for the period	**$ 0.12**	$ (0.08)	**$ 0.57**	$ (0.27)

(1) The impact of unrealized foreign exchange rate changes on deferred income tax balances has been added as a new adjusting item, along with a modification in the quantification of the estimated effect of taxes. For comparative purposes, 2015 adjusted earnings have been recalculated and are thus different from those originally reported. The effect of these new adjusting items on 2015 annual and fourth quarter adjusted earnings was an increase of $0.11 per share and $0.04 per share, respectively, from those originally reported.

- ***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. The Company and certain investors use this information to evaluate the financial debt leverage of the Company.

- ***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 GAAP and is therefore unlikely to be comparable to similar measures presented by other companies. The Company and certain investors use this information to evaluate whether the Company is able to meet its current obligations using its current assets.

- ***General and Administrative Costs per Silver Ounce Produced***

General and administrative costs per silver ounce produced ("G&A per ounce") is a non-GAAP measure that is calculated by dividing G&A expense recorded in a period by the number of silver ounces produced in the same period. G&A per ounce does not have any standardized meaning prescribed by GAAP and is therefore unlikely to be

comparable to similar measures presented by other companies. The Company and certain investors use this information to evaluate corporate expenses incurred in a period relative to the amount of consolidated silver produced during the same period.

RISKS AND UNCERTAINTIES

The Company is exposed to many risks in conducting its business, including but not limited to: metal price risk as the Company derives its revenue from the sale of silver, zinc, lead, copper, and gold; credit risk in the normal course of dealing with other companies; foreign exchange risk as the Company reports its financial statements in USD whereas the Company operates in jurisdictions that utilize other currencies; the inherent risk of uncertainties in estimating mineral reserves and mineral resources; political risks; and environmental risks and risks related to its relations with employees. These and other risks are described below and in Pan American's Annual Information Form (available on SEDAR at www.sedar.com), Form 40-F filed with the SEC, and the 2016 Financial Statements. Readers are encouraged to refer to these documents for a more detailed description of some of the risks and uncertainties inherent to Pan American's business.

• *Foreign Jurisdiction Risk*

Pan American currently conducts operations in Peru, Mexico, Argentina and Bolivia. All of these jurisdictions are potentially subject to a number of political and economic risks, including those described in the following section. The Company is unable to determine the impact of these risks on its future financial position or results of operations and the Company's exploration, development and production activities may be substantially affected by factors outside of Pan American's control. These potential factors include, but are not limited to: royalty and tax increases or claims by governmental bodies, expropriation or nationalization, lack of an independent judiciary, foreign exchange controls, import and export regulations, cancellation or renegotiation of contracts and environmental and permitting regulations. The Company currently has no political risk insurance coverage against these risks.

All of Pan American's current production and revenue is derived from its operations in Peru, Mexico, Argentina and Bolivia. As Pan American's business is carried on in a number of developing countries, it is exposed to a number of risks and uncertainties, including the following: expropriation or nationalization without adequate compensation, particularly in jurisdictions such as Argentina and Bolivia who have a history of expropriation; changing political and fiscal regimes, and economic and regulatory instability; unanticipated changes to royalty and tax regulations; unreliable or undeveloped infrastructure; labour unrest and labour scarcity; 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 the imposition of currency controls; the possible unilateral cancellation or forced renegotiation of contracts, and uncertainty regarding enforceability of contractual rights; inability to obtain fair dispute resolution or judicial determinations because of bias, corruption or abuse of power; difficulties enforcing judgments generally, including judgments obtained in Canadian or United States courts against assets and entities located outside of those jurisdictions; difficulty understanding and complying with the regulatory and legal framework respecting the ownership and maintenance of mineral properties, mines and mining operations, and with respect to permitting; local opposition to mine development projects, which include the potential for violence, property damage and frivolous or vexatious claims; violence and more prevalent or stronger organized crime groups; terrorism and hostage taking; military repression and increased likelihood of international conflicts or aggression; increased public health concerns; and potential practical restrictions on the ability of Pan American's subsidiaries to transfer funds to Pan American. Certain of these risks and uncertainties are illustrated well by circumstances in Bolivia and Argentina.

The Company's Mexican operations, Alamo Dorado and La Colorada, have suffered from armed robberies of doré in the past. The Company has instituted a number of additional security measures and a more frequent shipping schedule in response to these incidents. The Company has subsequently renewed its 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.

Local opposition to mine development projects has arisen periodically in some of the jurisdictions in which we operate, and such opposition has at times been violent. There can be no assurance that similar local opposition will not arise

in the future with respect to Pan American's foreign operations. If Pan American were to experience resistance or unrest in connection with its foreign operations, it could have a material adverse effect on Pan American's operations or profitability.

In early 2009, a new constitution was enacted in Bolivia that further entrenched the government's ability to amend or enact laws, including those that may affect mining, and which enshrined the concept that all natural resources belong to the Bolivian people and that the state was entrusted with its administration.

On May 28, 2014, the Bolivian government enacted Mining Law No. 535 (the "New Mining Law"). Among other things, the New Mining Law established a new Bolivian mining authority to provide principal mining oversight (varying the role of COMIBOL) and 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 migration to a new form of agreement and may require renegotiation of some terms in order to conform to the New Mining Law requirements. We are assessing the potential impacts of the New Mining Law on our business and are awaiting further regulatory developments, but 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. In the meantime, we understand that pre-existing agreements will be respected during the period of migration and 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.

On June 25, 2015, the Bolivian government enacted the new Conciliation and Arbitration Law No. 708 (the "New Conciliation and Arbitration Law"), which endeavors to set out newly prescribed arbitral norms and procedures, including for foreign investors. However, whether the New Conciliation and Arbitration Law applies specifically to pre-existing agreements between foreign investors and COMIBOL, and how this new legislation interacts with the New Mining Law, remains somewhat unclear. As a result, we await clarification by regulatory authorities and will continue to assess the potential impacts of the New Conciliation and Arbitration Law on our business.

Under the previous political regime in Argentina, the government intensified the use of price, foreign exchange, and import controls in response to unfavourable domestic economic trends. Among other the things, the Argentine government has imposed restrictions on the importation of goods and services and increased administrative procedures required to import equipment, materials and services required for operations at Manantial Espejo. In support of this policy, in May 2012, the government mandated that mining companies establish an internal function to be responsible for substituting Argentinian-produced goods and materials for imported goods and materials and required advance government review of plans to import goods and materials. In addition, the government of Argentina also tightened control over capital flows and foreign exchange in an attempt to curtail the outflow of hard currencies and protect its foreign currency reserves, including mandatory repatriation and conversion of foreign currency funds in certain circumstances, informal restrictions on dividend, interest, and service payments abroad and limitations on the ability of individuals and businesses to convert Argentine pesos into USD or other hard currencies, exposing us to additional risks of Peso devaluation and high domestic inflation. While a new federal government was elected in Argentina in late 2015 and has since taken steps to ease some of the previously instituted controls and restrictions, particularly relaxing certain rules relating to the inflow and outflow of foreign currencies, some of the policies of the previous government continue to adversely affect the Company's Argentine operations. It is unknown whether these more recent changes will be lasting, what, if any, additional steps will be taken by the current administration or what financial and operational impacts these and any future changes might have on the Company. As such, the Company continues to monitor and assess the situation in Argentina.

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. 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. Management and the Board of Directors continuously assess risks that the Company is exposed to, and attempt to mitigate these risks where practical through a range of risk management strategies, including employing qualified and experienced personnel.

- ***Metal Price Risk***

Pan American derives its revenue from the sale of silver, zinc, lead, copper, and gold. The Company's sales are directly dependent on metal prices, and metal prices have historically shown significant volatility and are beyond the Company's control. The table below illustrates the effect of changes in silver and gold prices on anticipated revenues for 2017, expressed in percentage terms. This analysis assumes that quantities of silver and gold produced and sold remain constant under all price scenarios presented.

2017 Revenue Metal Price Sensitivity

		Gold Price						
		$900	$1,000	$1,100	$1,200	$1,300	$1,400	$1,500
Silver Price	$14.00	84%	86%	88%	90%	92%	94%	97%
	$15.00	87%	89%	91%	93%	96%	98%	100%
	$16.00	90%	92%	95%	97%	99%	101%	103%
	$17.00	94%	96%	98%	**100%**	102%	104%	106%
	$18.00	97%	99%	101%	103%	105%	108%	110%
	$19.00	100%	102%	104%	107%	109%	111%	113%
	$20.00	103%	106%	108%	110%	112%	114%	116%
	$21.00	107%	109%	111%	113%	115%	118%	120%

The Company takes the view that its precious metals production should not be hedged, thereby, allowing the Company to maintain maximum exposure to precious metal prices. From time to time, Pan American mitigates the price risk associated with its base metal production by committing some of its forecasted base metal production under forward sales and option contracts, as described under the "Financial Instruments" section of this MD&A. Decisions relating to hedging may have material adverse effects upon our financial performance, financial position, and results of operations. Since base metal and gold revenue are treated as a by-product credit for purposes of calculating cash costs per ounce of silver and AISCSOS, these non-GAAP measures are highly sensitive to base metal and gold prices. The table below illustrates this point by plotting the expected cash cost per ounce according to our 2017 forecast against various price assumptions for the Company's two main by-product credits, zinc and gold expressed in percentage terms:

2017 Cash Cost Metal Price Sensitivity

		Gold Price						
		$900	$1,000	$1,100	$1,200	$1,300	$1,400	$1,500
Zinc Price	$2,200.00	137%	127%	117%	107%	97%	88%	78%
	$2,300.00	134%	124%	114%	104%	94%	85%	75%
	$2,400.00	132%	122%	112%	102%	92%	82%	72%
	$2,500.00	130%	120%	110%	**100%**	90%	80%	70%
	$2,600.00	128%	118%	108%	98%	88%	78%	68%
	$2,700.00	125%	115%	106%	96%	86%	76%	66%
	$2,800.00	123%	113%	103%	93%	84%	74%	64%
	$2,900.00	121%	111%	101%	91%	81%	71%	62%

The Board of Directors continually assesses the Company's strategy towards its base metal exposure, depending on market conditions. If metal prices decline significantly below levels used in the Company's most recent impairment tests, for an extended period of time, the Company may need to reassess its price assumptions, and a significant decrease in the price assumptions could be an indicator of potential impairment. A description of the impact of metal price changes on certain Company assets is included in the Key Assumption and Sensitivity sections included in both the 2016 Financial Statements (included in Note 11), and in this MD&A (included in the Income Statement analysis section).

• *Trading and Credit Risk*

The zinc, lead, and copper concentrates produced by Pan American 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. For example, the Doe Run Peru smelter, a significant buyer of our production in Peru, experienced financial difficulties in the first quarter of 2009 and closed. The Doe Run Peru smelter remains closed and we are owed approximately $8.2 million under the terms of our contract with Doe Run Peru. We continue to pursue all legal and commercial avenues to collect the amount outstanding.

As at December 31, 2016, we had receivable balances associated with buyers of our concentrates of $45.0 million (2015 - $21.3 million). All of this receivable balance is owed by twelve well known concentrate buyers and the vast majority of our concentrate is sold to those same counterparts.

Silver doré production is refined under long term agreements with fixed refining terms at three 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. As at December 31, 2016, we had approximately $28.5 million contained in precious metal inventory at refineries (2015 - $21.4 million). We maintain insurance coverage against the loss of precious metals at our mine sites, in-transit to refineries, and while at the 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 the credit risk of our counterparties 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 the Company operates. These advances represent a credit risk to the Company to the extent that supplies do not deliver products or perform services as expected. As at December 31, 2016, the Company had made $28.8 million of supplier advances (December 31, 2015 - $12.5 million), which are reflected in “Trade and other receivables” on the Company’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 MD&A, 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.

• *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.

- ***Exchange Rate Risk***

Pan American reports its financial statements in USD; however, the Company operates in jurisdictions that utilize other currencies. As a consequence, the financial results of the Company's operations, as reported in USD, are subject to changes in the value of the USD relative to local currencies. Since the Company's revenues are denominated in USD and a portion of the Company's operating costs and capital spending are in local currencies, the Company is negatively impacted by strengthening local currencies relative to the USD and positively impacted by the inverse. The local currencies that the Company has the most exposure to are the PEN, MXN and ARS. In order to mitigate this exposure, the Company maintains a portion of its cash balances in PEN, MXN, ARS and CAD and, from time to time, enters into forward currency positions to match anticipated spending as discussed in this in MD&A in the "Financial Instruments" section. The following table illustrates the effect of changes in the exchange rate of PEN and MXN against the USD on anticipated cost of sales for 2017, expressed in percentage terms:

2017 Cost of Sales Exchange Rate Sensitivity

		MXN/USD						
		$18.50	$19.00	$19.50	$20.00	$20.50	$21.00	$21.50
PEN/USD	$3.15	103%	103%	102%	102%	102%	101%	101%
	$3.20	103%	102%	102%	101%	101%	101%	100%
	$3.25	102%	102%	101%	101%	100%	100%	99%
	$3.30	101%	101%	100%	**100%**	100%	99%	99%
	$3.35	101%	100%	100%	99%	99%	99%	98%
	$3.40	100%	100%	99%	99%	98%	98%	98%
	$3.45	99%	99%	99%	98%	98%	97%	97%
	$3.50	99%	98%	98%	97%	97%	97%	96%

In order to mitigate this exposure, the Company maintains a portion of its cash balances in PEN, MXN and CAD and, from time to time, enters into forward currency positions to match anticipated spending as discussed in the "Financial Instruments" section of this MD&A.

The Company's 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 the Company's 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 in the local economy to determine prices and value. Maintaining monetary assets in ARS also exposes us to the risks of ARS devaluation and high domestic inflation.

- ***Taxation Risks***

Pan American is exposed to tax related risks. In assessing the probability of realizing income tax assets recognized, the Company makes 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 the Company's 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 the Company from realizing the tax benefits from the deferred tax assets. We reassess unrecognized income tax assets at each reporting period.

- ***Claims and Legal Proceedings***

Pan American is 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 relate to current or ex-employees, some of which involve claims of significant value, for matters ranging from workplace illnesses such as silicosis to claims for additional profit-sharing and bonuses in prior years. 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 and such claimants may seek sizable monetary damages against us and/or the return of surface or mineral rights that are valuable to us and which may significantly 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 to 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 the Company. 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.

SIGNIFICANT JUDGMENTS AND KEY SOURCES OF ESTIMATION UNCERTAINTY IN THE APPLICATION OF ACCOUNTING POLICIES

In preparing financial statements in accordance with IFRS, management is required to make estimates and assumptions that affect the amounts reported in the consolidated financial statements. These critical accounting estimates represent management estimates and judgments that are uncertain and any changes in these could materially impact the Company's financial statements. Management continuously reviews its estimates, judgments, and assumptions using the most current information available.

Readers should also refer to Note 2 of the 2016 Financial Statements, for the Company's summary of significant accounting policies.

Significant Judgments in the Application of Accounting Policies

Judgments that have the most significant effect on the amounts recognized in the Company's consolidated financial statements are as follows:

Capitalization of evaluation costs: The Company has determined that evaluation costs capitalized during the year relating to the operating mines and certain other exploration interests have potential future economic benefits and are potentially economically recoverable, subject to impairment analysis. In making this judgement, the Company has assessed various sources of information including but not limited to the geologic and metallurgic information, history of conversion of mineral deposits to proven and probable mineral reserves, scoping and feasibility studies, proximity to existing ore bodies, operating management expertise and required environmental, operating and other permits.

Commencement of commercial production: During the determination of whether a mine has reached an operating level that is consistent with the use intended by management, costs incurred are capitalized as mineral property, plant and equipment and any consideration from commissioning sales are offset against costs capitalized. The Company defines commencement of commercial production as the date that a mine has achieved a sustainable level of production based on a percentage of design capacity along with various qualitative factors including but not limited to the achievement of mechanical completion, continuous nominated level of production, the working effectiveness of the plant and equipment at or near expected levels and whether there is a sustainable level of production input available including power, water and diesel.

Assets' carrying values and impairment charges: In determining carrying values and impairment charges, the Company looks at recoverable amounts, defined as the higher of value in use or fair value less cost to sell in the case of assets, and at objective evidence that identifies significant or prolonged decline of fair value on financial assets

indicating impairment. These determinations and their individual assumptions require that management make a decision based on the best available information at each reporting period.

Functional currency: The functional currency for the Company and its subsidiaries is the currency of the primary economic environment in which each operates. The Company has determined that its functional currency and that of its subsidiaries is the USD. The determination of functional currency may require certain judgments to determine the primary economic environment. The Company reconsiders the functional currency used when there is a change in events and conditions which determined the primary economic environment.

Business combinations: Determination of whether a set of assets acquired and liabilities assumed constitute a business may require the Company to make certain judgments, taking into account all facts and circumstances. A business consists of inputs, including non-current assets and processes, including operational processes, that when applied to those inputs have the ability to create outputs that provide a return to the Company and its shareholders.

Deferral of stripping costs: In determining whether stripping costs incurred during the production phase of a mining property relate to mineral reserves and mineral resources that will be mined in a future period and therefore should be capitalized, the Company treats the costs of removal of the waste material during a mine's production phase as deferred, where it gives rise to future benefits. These capitalized costs are subsequently amortized on a unit of production basis over the reserves that directly benefit from the specific stripping activity. As at December 31, 2016, the carrying amount of stripping costs capitalized was $40.3 million at Dolores (2015 - $39.5 million was capitalized comprised of Manantial Espejo $3.2 million and Dolores $36.3 million).

Determination of control of subsidiaries and joint arrangements: Determination of whether the Company has control of subsidiaries or joint control of joint arrangements requires an assessment of the activities of the investee that significantly affect the investee's returns, including strategic, operational and financing decision-making, appointment, remuneration and termination of the key management personnel and when decisions related to those activities are under the control of the Company or require unanimous consent from the investors. Based on assessment of the relevant facts and circumstances, primarily, the Company's limited board representation and restricted influence over operating, strategic and financing decisions, the Company concluded that it does not control Maverix and as a result classified it as an investment in associate subject to significant influence.

Key Sources of Estimation Uncertainty in the Application of Accounting Policies

Key sources of estimation uncertainty that have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities are:

Revenue recognition: Revenue from the sale of concentrate to independent smelters is recorded at the time the risks and rewards of ownership pass to the buyer using forward market prices on the expected date that final sales prices will be fixed. Variations between the prices set under the smelting contracts may be caused by changes in market prices and result in an embedded derivative in the accounts receivable. The embedded derivative is recorded at fair value each period until final settlement occurs, with changes in the fair value classified in revenue. In a period of high price volatility, as experienced under current economic conditions, the effect of mark-to-market price adjustments related to the quantity of metal which remains to be settled with independent smelters could be significant. For changes in metal quantities upon receipt of new information and assay, the provisional sales quantities are adjusted.

Estimated recoverable ounces*:* The carrying amounts of the Company's mining properties are depleted based on recoverable ounces. Changes to estimates of recoverable ounces and depletable costs including changes resulting from revisions to the Company's mine plans and changes in metal price forecasts can result in a change to future depletion rates.

Mineral reserve estimates: The figures for mineral reserves and mineral resources are disclosed in accordance with NI 43-101 issued by the Canadian Securities Administrators, and in accordance with "Estimation of Mineral Resources and Mineral Reserves Best Practice Guidelines – adopted November 23, 2003" prepared by the Canadian Institute of Mining, Metallurgy and Petroleum ("CIM") Standing Committee on Reserve Definitions. There are numerous uncertainties inherent in estimating mineral reserves and mineral resources, including many factors beyond the Company's control. Such estimation is a subjective process, and the accuracy of any mineral reserve or mineral

resource estimate is a function of the quantity and quality of available data and of the assumptions made and judgments used in engineering and geological interpretation. Differences between management's assumptions including economic assumptions such as metal prices and market conditions could have a material effect in the future on the Company's financial position and results of operation.

Valuation of Inventory: In determining mine production costs recognized in the consolidated income statement, the Company makes estimates of quantities of ore stacked in stockpiles, placed on the heap leach pad and in process and the recoverable silver in this material to determine the average costs of finished goods sold during the year. Changes in these estimates can result in a change in mine operating costs of future periods and carrying amounts of inventories.

Depreciation and amortization rates for mineral property, plant and equipment and mineral interests: Depreciation and amortization expenses are allocated based on assumed asset lives and depreciation and amortization rates. Should the asset life or depreciation rate differ from the initial estimate, an adjustment would be made in the consolidated income statement prospectively. A change in the mineral reserve estimate for assets depreciated using the units of production method would impact depreciation expense prospectively.

Impairment and impairment reversal of mining interests: While assessing whether any indications of impairment, or reversal of previous impairments, exist for mining interests, consideration is given to both external and internal sources of information. Information the Company considers include changes in the market, economic and legal environment in which the Company operates that are not within its control and affect the recoverable amount of mining interests. Internal sources of information include the manner in which mineral property, plant and equipment are being used or are expected to be used and indications of the economic performance of the assets. Estimates include but are not limited to estimates of the discounted future after-tax cash flows expected to be derived from the Company's mining properties, costs to sell the mining properties and the appropriate discount rate. Material and prolonged changes in metal price forecasts, material changes in estimated future costs of production or estimated future capital costs, material changes in the amount of recoverable mineral reserves and mineral resources and/or material changes in the current economics can result in a write-down, or reversal of previous impairment charges, taken on the carrying amounts of the Company's mining interests. Impairments and impairment reversals of mining interests are discussed in Note 11 of the 2016 Financial Statements.

Estimation of decommissioning and restoration costs and the timing of expenditures: The cost estimates are updated annually during the life of a mine to reflect known developments, (e.g. revisions to cost estimates and to the estimated lives of operations), and are subject to review at regular intervals. Decommissioning, restoration and similar liabilities are estimated based on the Company's interpretation of current regulatory requirements, constructive obligations and are measured at the best estimate of expenditure required to settle the present obligation of decommissioning, restoration or similar liabilities that may occur upon decommissioning of the mine at the end of the reporting period. The carrying amount is determined based on the net present value of estimated future cash expenditures for the settlement of decommissioning, restoration or similar liabilities that may occur upon decommissioning of the mine. Such estimates are subject to change based on changes in laws and regulations and negotiations with regulatory authorities. Refer to Note 16 of the 2016 Financial Statements for details on decommissioning and restoration costs.

Income taxes and recoverability of deferred tax assets: In assessing the probability of realizing income tax assets recognized, the Company makes 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, the Company gives 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. The Company considers relevant tax planning opportunities that are within the Company's 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 the Company from realizing the tax benefits from the deferred tax assets. The Company reassesses unrecognized income tax assets at each reporting period.

Accounting for acquisitions: The provisional fair value of assets acquired and liabilities assumed and the resulting goodwill, if any, requires that management make certain judgments and estimates taking into account information available at the time of acquisition about future events, including, but not restricted to, estimates of mineral reserves and mineral resources required, exploration potential, future operating costs and capital expenditures, future metal prices, long-term foreign exchange rates and discount rates. Changes to the provisional values of assets acquired and liabilities assumed, deferred income taxes and resulting goodwill, if any, are retrospectively adjusted when the final measurements are determined (within one year of the acquisition date).

Contingencies: Due to the size, complexity and nature of the Company's operations, various legal and tax matters are outstanding from time to time. In the event the Company's estimates of the future resolution of these matters changes, the Company will recognize the effects of the changes in its consolidated financial statements on the date such changes occur. Refer to Note 29 of the 2016 Financial Statements for further discussion on contingencies.

Changes in Accounting Standards

Application of new and revised accounting standards

The Company has applied the amendments to IFRSs included in the Annual Improvements to IFRSs 2012-2014 Cycle which were effective for annual periods beginning on or after January 1, 2016. The amendments did not have an impact on the Company's consolidated financial statements.

Changes in accounting standards not yet effective

The Company has not early adopted any amendment, standard or interpretation that has been issued by the IASB but is not yet effective.

IFRS 9 *Financial Instruments* ("IFRS 9") was issued by the IASB on July 24, 2014 and will replace IAS 39 Financial Instruments: Recognition and Measurement. IFRS 9 utilizes a single approach to determine whether a financial asset is measured at amortized cost or fair value and a new mixed measurement model for debt instruments having only two categories: amortized cost and fair value. The approach in IFRS 9 is based on how an entity manages its financial instruments in the context of its business model and the contractual cash flow characteristics of the financial assets. Final amendments released on July 24, 2014 also introduce a new expected loss impairment model and limited changes to the classification and measurement requirements for financial assets. IFRS 9 is effective for annual periods beginning on or after January 1, 2018. The Company is currently evaluating the impact the final standard and amendments on its consolidated financial statements.

IFRS 15, *Revenue from Contracts with Customers* ("IFRS 15") In May 2014, the IASB and the Financial Accounting Standards Board ("FASB") completed its joint project to clarify the principles for recognizing revenue and to develop a common revenue standard for IFRS and US GAAP. As a result of the joint project, the IASB issued IFRS 15, Revenue from Contracts with Customers, and will replace IAS 18, Revenue, IAS 11, Construction Contracts, and related interpretations on revenue. IFRS 15 establishes principles to address the nature, amount, timing and uncertainty of revenue and cash flows arising from an entity's contracts with customers. The standard is effective for annual periods beginning on or after January 1, 2018. The Company plans to apply IFRS 15 at the date it becomes effective. The Company is in the process of analyzing IFRS 15 and determining the effect on its consolidated financial statements as a result of adopting this standard.

IFRS 16, *Leases* ("IFRS 16") In January 2016, the IASB issued IFRS 16 - *Leases* which replaces IAS 17 - *Leases* and its associated interpretative guidance. IFRS 16 applies a control model to the identification of leases, distinguishing between a lease and a service contract on the basis of whether the customer controls the asset being leased. For those assets determined to meet the definition of a lease, IFRS 16 introduces significant changes to the accounting by lessees, introducing a single, on-balance sheet accounting model that is similar to current finance lease accounting, with limited exceptions for short-term leases or leases of low value assets. Lessor accounting remains similar to current accounting practice. The standard is effective for annual periods beginning on or after January 1, 2019, with early application permitted for entities that apply IFRS 15. The Company is currently evaluating the impact the final standard is expected to have on its consolidated financial statements.

IFRIC Interpretation 22 Foreign Currency Transactions and Advance Consideration ("IFRIC 22") On December 8, 2016, the IASB issued IFRIC 22, which addresses the exchange rate to use in transactions that involve advance consideration paid or received in a foreign currency. The Standard provides guidance on how to determine the date of the transaction for the purpose of determining the spot exchange rate used to translate the asset, expense or income on initial recognition that relates to, and is recognized on the de-recognition of, a non-monetary prepayment asset or a non-monetary deferred income liability. It is effective January 1, 2018. The Company is currently assessing the impact on the adoption of this interpretation.

CORPORATE GOVERNANCE, SOCIAL RESPONSIBILITY, AND ENVIRONMENTAL STEWARDSHIP

Governance

Pan American adheres to high standards of corporate governance and closely follows the requirements established by both the Canadian Securities Administrators and the SEC in the United States. We believe that our current corporate governance systems meet or exceed these requirements.

Our Board of Directors oversees the direction and strategy of the business and the affairs of the Company. The Board is comprised of eight directors, seven of whom are independent. The Board's wealth of experience allows it to effectively oversee the development of corporate strategies, provide management with long-term direction, consider and approve major decisions, oversee the business generally and evaluate corporate performance. The Nominating and Governance Committee, appointed by the Board of Directors, oversees the effective functioning of the Board and the implementation of governance best practices.

We believe that good corporate governance is important to the effective performance of the Company and plays a significant role in protecting the interests of all stakeholders while helping to maximize value.

Corporate Social Responsibility

The Health, Safety, Environment, and Communities Committee, appointed by the Board of Directors, provides oversight for the corporate social initiatives of the Company and reports directly to the Board. We are committed to creating sustainable value in the communities where our people work and live. Guided by research conducted by our local offices, we participate in, and contribute to numerous community programs. They typically center on education and health, nutrition, environmental awareness, local infrastructure and alternative economic activities. Some of our key initiatives are:

- *Strengthening the production chain of livestock breeding.*
- *Value adding through the development of alpaca textiles weaving workshops with product commercialization in North America.*
- *Improving nutrition, focusing on children and women.*
- *Promoting community health with emphasis on immunizations, optometry, and focusing on oral health.*
- *Promoting tourism and local areas of interest such as the Stone Forest in Huayllay in Peru.*
- *Encouraging education for children and adults by contributing to teacher's salaries, and providing continuous support through different scholarships at a local and national level.*

Environmental Stewardship

We are committed to operating our mines and developing our new projects in an environmentally responsible manner. Guided by our Corporate Environmental Policy, we take every practical measure to minimize the environmental impacts of our operations in each phase of the mining cycle, from early exploration through development, construction and operation, up to and after the mine's closure.

We build and operate mines in varied environments across the Americas. From the Patagonian plateau to the Sierra Madre in Mexico, our mines are generally located in isolated places where information about environmental and cultural values is often limited. Our mines in Peru and Bolivia are situated in historic mining districts where previous operations have left significant environmental liabilities that have potential to impact on surrounding habitats and communities.

We manage these challenges using best practice methods in environmental impact assessment and teams of leading local and international professionals who clearly determine pre-existing environmental values at each location. These extensive baseline studies often take years of work and cover issues such as biodiversity and ecosystems, surface and groundwater resources, air quality, soils, landscape, archeology and paleontology, and the potential for acid rock drainage in the natural rocks of each new mineral deposit or historic waste facilities. The data collected often significantly advances scientific knowledge about the environments and regions where we work.

The baseline information is then used interactively in the design of each new mine or to develop management and closure plans for historic environmental liabilities, in open consultation with local communities and government authorities. We conduct detailed modeling and simulation of the environmental effects of each alternative design in order to determine the optimum solution, always aiming for a net benefit.

Once construction and operations begin, we conduct regular monitoring of all relevant environmental variables in order to measure real impacts against baseline data and report to the government and communities on our progress. Community participation in environmental monitoring is encouraged across all our mines. We implement management systems, work procedures and regular staff training to ensure optimum day-to-day management of issues like waste separation and disposal, water conservation, spill prevention, and incident investigation and analysis.

We conduct corporate environmental audits of our operations to ensure optimum environmental performance. Environmental staff from all mines participate in the audits which improves integration and consolidation of company-wide standards across our operations. In 2016, audits were conducted on the Huaron, Morococha, and San Vicente mines. In 2015, audits were conducted on the La Colorada, Dolores, Alamo Dorado, and Manantial Espejo mines. No material issues were identified in either the 2016 or 2015 environmental audits.

DISCLOSURE CONTROLS AND PROCEDURES

Pan American's management considers the meaning of internal control to be the processes established by management to provide reasonable assurance about the achievement of the Company's objectives regarding operations, reporting and compliance. Internal control is designed to address identified risks that threaten any of these objectives.

As of December 31, 2016, the Company carried out an evaluation, under the supervision and with the participation of the Company's management, including the Company's Chief Executive Officer and Chief Financial Officer, of the effectiveness of the design and operation of the Company's disclosure controls and procedures. Based on that evaluation, the Chief Executive Officer and Chief Financial Officer have concluded that, as of December 31, 2016, the Company's disclosure controls and procedures were effective.

Changes in Internal Controls over Financial Reporting

There has been no change in the Company's internal control over financial reporting during the year ended December 31, 2016 that has materially affected or is reasonably likely to materially affect, its internal control over financial reporting.

Management's Report on 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 International Financial Reporting Standards. It includes those policies and procedures that:

a) pertain to the maintenance of records that in reasonable detail accurately and fairly reflect the transactions and dispositions of the assets of Pan American,

b) are designed to provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with International Financial Reporting Standards as issued by the International Accounting Standards Board, and that receipts and expenditures of Pan American are being made only in accordance with authorizations of management and Pan American's directors, and

c) are designed to provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of Pan American's assets that could have a material effect on the annual financial statements or interim financial reports.

The Company's management, including its President and Chief Executive Officer and Chief Financial Officer, believe that due to its inherent limitations, internal control over financial reporting may not prevent or detect misstatements on a timely basis. 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.

Management assessed the effectiveness of Pan American's internal control over financial reporting as atDecember 31, 2016, based on the criteria set forth in Internal Control – Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). Based on this assessment, management concludes that, as of December 31, 2016, Pan American's internal control over financial reporting is effective.

Management reviewed the results of management's assessment with the Audit Committee of the Company's Board of Directors. Deloitte LLP, an independent registered public accounting firm, was engaged, as approved by a vote of the Company's shareholders, to audit and provide independent opinions on the Company's consolidated financial statements and the effectiveness of the Company's internal control over financial reporting as of December 31, 2016. Deloitte LLP has provided such opinions.

MINERAL RESERVES AND RESOURCES

Pan American Silver Corporation Mineral Reserves as of December 31, 2016 (1,2)

Property	Location	Classification	Tonnes (Mt)	Ag (g/t)	Contained Ag (Moz)	Au (g/t)	Contained Au (koz)	Cu (%)	Contained Cu (kt)	Pb (%)	Contained Pb (kt)	Zn (%)	Contained Zn (kt)
Huaron	Peru	Proven	5.7	169	30.8	N/A	N/A	0.37	20.70	1.46	82.40	3.02	171.00
		Probable	3.8	167	20.6	N/A	N/A	0.38	14.60	1.62	62.00	3.10	118.90
Morococha (92.3%) (3)	Peru	Proven	2.6	173	14.6	N/A	N/A	0.58	15.30	1.18	31.10	3.78	99.60
		Probable	2.2	181	12.8	N/A	N/A	0.44	9.80	1.64	36.20	4.21	93.20
La Colorada	Mexico	Proven	3.7	432	51.3	0.33	39.1	N/A		1.72	63.40	3.08	113.80
		Probable	4.0	362	46.8	0.32	41.2	N/A		1.24	49.80	2.06	82.90
Dolores	Mexico	Proven	41.6	27	36.1	0.77	1,034.9	N/A		N/A		N/A	
		Probable	22.5	25	17.9	0.65	472.4	N/A		N/A		N/A	
La Bolsa	Mexico	Proven	9.5	10	3.1	0.67	203.0	N/A		N/A		N/A	
		Probable	6.2	7	1.4	0.57	113.1	N/A		N/A		N/A	
Manantial Espejo	Argentina	Proven	2.2	111	8.0	1.17	84.4	N/A		N/A		N/A	
		Probable	0.5	244	3.8	3.32	52.2	N/A		N/A		N/A	
San Vicente (95%) (3)	Bolivia	Proven	2.0	464	29.4	N/A	N/A	0.46	9.10	0.39	7.70	3.00	59.00
		Probable	0.5	531	9.2	N/A	N/A	0.56	3.00	0.45	2.40	2.52	13.50
Totals (4)		Proven + Probable	107.0	83	285.8	0.70	2,040.3	0.43	72.40	1.36	334.9	3.06	752.0

(1) Prices used to estimate mineral reserves for 2016 were $18.50 per ounce of silver, $1,300 per ounce of gold, $2,200 per tonne of zinc, $2,000 per tonne of lead, and $5,000 per tonne of copper, except at Manantial Espejo where $17.00 per ounce of silver and $1,200 per ounce of gold were used for planned 2017 production, reverting to $18.50 per ounce of silver and $1,300 per ounce of gold thereafter. Metal prices used for La Bolsa were $14.00 per ounce of silver and $825 per ounce of gold.

(2) Mineral reserve estimates were prepared under the supervision of, or were reviewed by, Christopher Emerson, FAusIMM, Vice President Business Development and Geology and Martin G. Wafforn, P.Eng., Senior Vice President Technical Services and Process Optimization, each of whom are Qualified Persons as that term is defined in National Instrument 43-101 ("NI 43-101).

(3) This information represents the portion of mineral reserves attributable to Pan American based on its ownership interest in the operating entity as indicated.

(4) Totals may not add up due to rounding.

Pan American Silver Corporation Mineral Resources as of December 31, 2016 (1,2)

Property	Location	Classification	Tonnes (Mt)	Ag (g/t)	Contained Ag (Moz)	Au (g/t)	Contained Au (koz)	Cu (%)	Pb (%)	Zn (%)
Huaron	Peru	Measured	2.2	165	11.8	N/A	N/A	0.27	1.57	2.93
		Indicated	1.7	164	9.1	N/A	N/A	0.33	1.56	2.99
Morococha (92.3%) (3)	Peru	Measured	0.4	161	2.0	N/A	N/A	0.25	1.09	3.31
		Indicated	1.1	127	4.6	N/A	N/A	0.56	0.93	3.26
La Colorada	Mexico	Measured	0.5	206	3.1	0.31	4.7	N/A	0.45	0.85
		Indicated	2.0	200	12.7	0.18	11.5	N/A	0.39	0.63
Dolores	Mexico	Measured	1.9	13	0.8	0.22	13.8	N/A	N/A	N/A
		Indicated	3.2	24	2.5	0.43	44.0	N/A	N/A	N/A
La Bolsa	Mexico	Measured	1.4	11	0.3	0.90	31.4	N/A	N/A	N/A
		Indicated	4.5	9	1.1	0.50	59.8	N/A	N/A	N/A
Manantial Espejo	Argentina	Measured	0.1	125	0.5	1.65	6.7	N/A	N/A	N/A
		Indicated	0.4	207	2.6	2.04	25.4	N/A	N/A	N/A
San Vicente (95%) (3)	Bolivia	Measured	0.8	202	5.0	N/A	N/A	0.30	0.14	2.45
		Indicated	0.1	194	0.5	N/A	N/A	0.33	0.17	2.30
Navidad	Argentina	Measured	15.4	137	67.8	N/A	N/A	0.10	1.44	N/A
		Indicated	139.8	126	564.5	N/A	N/A	0.04	0.79	N/A
Pico Machay	Peru	Measured	4.7	N/A	N/A	0.91	137.5	N/A	N/A	N/A
		Indicated	5.9	N/A	N/A	0.67	127.1	N/A	N/A	N/A
Calcatreu	Argentina	Indicated	8.0	26	6.6	2.63	676.0	N/A	N/A	N/A
Totals (4)		Measured+Indicated	194.0	118	695.5	1.11	1,137.9	0.06	0.86	2.32

(1) Prices used to estimate mineral resources for 2016 were $18.50 per ounce of silver, $1,300 per ounce of gold, $2,200 per tonne of zinc, $2,000 per tonne of lead, and $5,000 per tonne of copper, except at Dolores and Manantial Espejo, where $25.00 per ounce of silver and $1,400 per ounce of gold were used. Metal prices used for La Bolsa were $14.00 per ounce of silver and $825 per ounce of gold. Metal prices for Navidad were $12.52 per ounce of silver and $1,100 per tonne of lead. Metal prices used for Calcatreu were $12.50 per ounce of silver and $650 per ounce of gold.

(2) Mineral resource estimates were prepared under the supervision of, or were reviewed by, Christopher Emerson, FAusIMM, Vice President Business Development and Geology and Martin G. Wafforn, P.Eng., Senior Vice President Technical Services and Process Optimization, each of whom are Qualified Persons as that term is defined in NI 43-101.

(3) This information represents the portion of mineral resources attributable to Pan American based on its ownership interest in the operating entity as indicated.

(4) Totals may not add up due to rounding.

Pan American Silver Corporation Mineral Resources as of December 31, 2016 (1,2)										
Property	**Location**	**Classification**	**Tonnes (Mt)**	**Ag (g/t)**	**Contained Ag (Moz)**	**Au (g/t)**	**Contained Au (koz)**	**Cu (%)**	**Pb (%)**	**Zn (%)**
Huaron	Peru	Inferred	6.2	164	32.7	N/A	N/A	0.34	1.56	2.81
Morococha (92.3%) (3)	Peru	Inferred	3.9	214	26.6	N/A	N/A	0.29	1.30	3.58
La Colorada	Mexico	Inferred	1.8	313	17.8	0.35	19.7	N/A	2.65	4.58
Dolores	Mexico	Inferred	1.7	37	2.0	1.01	54.6	N/A	N/A	N/A
La Bolsa	Mexico	Inferred	13.7	8	3.3	0.51	222.4	N/A	N/A	N/A
Manantial Espejo	Argentina	Inferred	0.5	211	3.5	2.60	42.6	N/A	N/A	N/A
San Vicente (95%) (3)	Bolivia	Inferred	2.8	330	29.7	N/A	N/A	0.28	0.33	2.42
Navidad	Argentina	Inferred	45.9	81	119.4	N/A	N/A	0.02	0.57	N/A
Pico Machay	Peru	Inferred	23.9	N/A	N/A	0.58	445.7	N/A	N/A	N/A
Calcatreu	Argentina	Inferred	3.4	17	1.8	2.06	226.0	N/A	N/A	N/A
Totals (4)		Inferred	103.7	92	236.9	0.70	1,011.1	0.08	0.77	2.83

(1) Prices used to estimate mineral resources for 2016 were $18.50 per ounce of silver, $1,300 per ounce of gold, $2,200 per tonne of zinc, $2,000 per tonne of lead, and $5,000 per tonne of copper, except at Dolores and Manantial Espejo, where $25.00 per ounce of silver and $1,400 per ounce of gold were used. Metal prices used for La Bolsa were $14.00 per ounce of silver and $825 per ounce of gold. Metal prices for Navidad were $12.52 per ounce of silver and $1,100 per tonne of lead. Metal prices used for Calcatreu were $12.50 per ounce of silver and $650 per ounce of gold.

(2) Mineral resource estimates were prepared under the supervision of, or were reviewed by, Christopher Emerson, FAusIMM, Vice President Business Development and Geology and Martin G. Wafforn, P.Eng., Senior Vice President Technical Services and Process Optimization, each of whom are Qualified Persons as that term is defined in NI 43-101.

(3) This information represents the portion of mineral resources attributable to Pan American based on its ownership interest in the operating entity as indicated.

(4) Totals may not add up due to rounding.

General Notes Applicable to the Foregoing Tables:

Mineral reserves and resources are as defined by the Canadian Institute of Mining, Metallurgy and Petroleum.

Pan American reports mineral resources and mineral reserves separately. Reported mineral resources do not include amounts identified as mineral reserves. Mineral resources that are not mineral reserves have no demonstrated economic viability.

Pan American does not expect these mineral reserve and resource estimates to be materially affected by metallurgical, environmental, permitting, legal, taxation, socio-economic, political, and marketing or other relevant issues.

See the Company's Annual Information Form dated March 22, 2017, available at www.sedar.com for further information on the Company's material mineral properties, including information concerning associated QA/QC and data verification matters, the key assumptions, parameters and methods used by the Company to estimate mineral reserves and mineral resources, and for a detailed description of known legal, political, environmental, and other risks that could materially affect the Company's business and the potential development of the Company's mineral reserves and resources.

Grades are shown as contained metal before mill recoveries are applied.

TECHNICAL INFORMATION

Scientific and technical information contained in this MD&A has been reviewed and approved byMartin Wafforn, P.Eng., Senior Vice President Technical Services and Processing Optimization, and Christopher Emerson, FAusIMM, Vice President Business Development and Geology, each of whom are Qualified Persons, as the term is defined in NI 43-101.

For more detailed information regarding the Company’s material mineral properties and technical information related thereto, including a complete list of current technical reports applicable to such properties, please refer to the Company’s Annual Information Form dated March 22, 2017, filed at www.sedar.com or the Company’s most recent Form 40-F filed with the SEC.

Cautionary Note Regarding Forward-Looking Statements and Information

Certain of the statements and information in this MD&A constitute “forward-looking statements” within the meaning of the United States Private Securities Litigation Reform Act of 1995 and “forward-looking information” within the meaning of applicable Canadian provincial securities laws relating to the Company and its operations. All statements, other than statements of historical fact, are forward-looking statements. When used in this MD&A, the words, “will”, “believes”, “expects”, “intents”, “plans”, “forecast”, “objective”, “guidance”, “outlook”, “potential”, “anticipated”, “budget”, and other similar words and expressions, identify forward-looking statements or information. These forward-looking statements or information relate to, among other things: future economic and operational performance; future production of silver, gold and other metals produced by the Company; future cash costs per ounce of silver and all-in sustaining costs per silver ounce sold; the anticipated price of silver and other metals; the sufficiency of the Company’s current working capital, anticipated operating cash flow or its ability to raise necessary funds; timing of production and the cash costs of production at each of the Company’s properties; the estimated cost of and availability of funding necessary for sustaining capital; the successful implementation and effects of ongoing or future development and expansion plans, including the expansion projects at the Company’s Dolores and La Colorada mines, and the anticipated financial and operational results of such projects; the effects of transactions on the future performance of the Company; forecast capital and non-operating spending; the timing and method of payment of compensation; anticipated volatility in effective tax rates and contributing factors; and the Company’s plans and expectations for its properties and operations.

These statements and information reflect the Company’s current views with respect to future events and are necessarily based upon a number of assumptions and estimates that, while considered reasonable by the Company, are inherently subject to significant business, economic, competitive, political 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 such forward-looking statements or information contained in this MD&A and the Company has made assumptions and estimates 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); fluctuations in currency markets (such as the Peruvian sol, Mexican peso, Argentine peso, Bolivian boliviano and Canadian dollar versus the U.S. dollar); risks related to the technological and operational nature of the Company’s business; changes in national and local government, legislation, taxation, controls or regulations and political, legal or economic developments in Canada, the United States, Mexico, Peru, Argentina, Bolivia or other countries where the Company may carry on business, including the risk of expropriation relative to certain of our operations, particularly in Argentina and Bolivia; risks and hazards associated with the business of mineral exploration, development and mining (including environmental hazards, industrial accidents, unusual or unexpected geological or structural formations, pressures, cave-ins and flooding); risks relating to the credit worthiness or financial condition of suppliers, refiners and other parties with whom the Company does business; inadequate insurance, or inability to obtain insurance, to cover these risks and hazards; employee relations; relationships with and claims by the local communities and indigenous populations; availability and increasing costs associated with mining inputs and labour; the speculative nature of mineral exploration and development, including the risk of obtaining necessary licenses and permits and the presence of laws and regulations that may impose restrictions on mining, including those currently in the province of Chubut, Argentina; diminishing quantities or grades of mineral reserves as properties are mined; global financial conditions; the Company’s ability to complete and successfully integrate acquisitions and to mitigate other business combination risks; challenges to, or difficulty in maintaining, the Company’s title to properties and continued ownership thereof; the actual results of current exploration activities, conclusions of economic evaluations, and changes in project parameters to deal with unanticipated economic or other factors; increased competition in the mining industry for properties, equipment, qualified personnel, and their costs; having sufficient cash to pay obligations as they come due; and those factors identified under the caption “Risks Related to Pan American’s Business” in the Company’s most recent Form 40-F and Annual Information Form filed with the United States Securities and Exchange Commission and Canadian provincial securities regulatory authorities. Investors are cautioned against attributing undue certainty or reliance on forward-looking statements or information. Although the Company has 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 anticipated, estimated, described, or intended. The Company does not intend, and does not assume any obligation, to update these forward-looking statements or information to reflect changes in

assumptions or in circumstances or any other events affecting such statements or information, other than as required by applicable law.

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

This MD&A has been prepared in accordance with the requirements of Canadian securities laws, which differ from the requirements of U.S. securities laws. Unless otherwise indicated, all mineral reserve and resource estimates included in this MD&A have been prepared in accordance with Canadian National Instrument 43-101 - *Standards of Disclosure for Mineral Projects* ("NI 43-101") and the Canadian Institute of Mining, Metallurgy, and Petroleum classification system. NI 43-101 is a rule developed by the Canadian Securities Administrators that establishes standards for all public disclosure an issuer makes of scientific and technical information concerning mineral projects. Canadian standards, including NI 43-101, differ significantly from the requirements of the United Sates Securities and Exchange Commission (the "SEC"), and information concerning mineralization, deposits, mineral reserve and resource information contained or referred to herein may not be comparable to similar information disclosed by U.S. companies. In particular, and without limiting the generality of the foregoing, this MD&A uses the terms "measured resource", "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 Silver Corp., 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 for 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 in to a "reserve". U.S. investors should also understand that "inferred resources" have a great amount of uncertainty as to their existence and great uncertainty as to their economic and legal feasibility. It cannot be assumed that all or any part of the "inferred resources" exist, are economically or legally mineable or will ever be upgraded to a higher category.** Under Canadian Securities laws, estimated "inferred resources" may not form the basis of feasibility or pre-feasibility studies, except in rare cases. Disclosure of "contained ounces" in a mineral resource is 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 may not be comparable with information made in public companies that report in accordance with U.S. standards.



PAN AMERICAN SILVER

CONSOLIDATED FINANCIAL STATEMENTS AND NOTES

FOR THE YEARS ENDED DECEMBER 31, 2016 AND DECEMBER 31, 2015

Management's Responsibility For Financial Reporting

The accompanying Consolidated Financial Statements of Pan American Silver Corp. were prepared by management, which is responsible for the integrity and fairness of the information presented, including the many amounts that must of necessity be based on estimates and judgments. These Consolidated Financial Statements were prepared in accordance with International Financial Reporting Standards ("IFRS") as issued by the International Accounting Standards Board ("IASB"). Financial information appearing throughout our management's discussion and analysis is consistent with these Consolidated Financial Statements.

In discharging our responsibility for the integrity and fairness of the consolidated financial statements and for the accounting systems from which they are derived, we maintain the necessary system of internal controls designed to ensure that transactions are authorized, assets are safeguarded and proper records are maintained. These controls include quality standards in hiring employees, policies and procedure manuals, a corporate code of conduct and accountability for performance within appropriate and well-defined areas of responsibility.

The Board of Directors oversees management's responsibilities for financial reporting through an Audit Committee, which is composed entirely of directors who are neither officers nor employees of Pan American Silver Corp. This Committee reviews our consolidated financial statements and recommends them to the Board for approval. Other key responsibilities of the Audit Committee include reviewing our existing internal control procedures and planned revisions to those procedures, and advising the directors on auditing matters and financial reporting issues.

Deloitte LLP, Independent Registered Public Accounting Firm appointed by the shareholders of Pan American Silver Corp. upon the recommendation of the Audit Committee and Board, have performed an independent audit of the Consolidated Financial Statements and their report follows. The auditors have full and unrestricted access to the Audit Committee to discuss their audit and related findings.

"signed"	*"signed"*
Michael Steinmann	A. Robert Doyle
Chief Executive Officer	Chief Financial Officer

March 22, 2017

Deloitte.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Shareholders of Pan American Silver Corp.

We have audited the accompanying consolidated financial statements of Pan American Silver Corp. and subsidiaries (the "Company"), which comprise the consolidated statements of financial position as at December 31, 2016 and December 31, 2015, and the consolidated income statements, consolidated statements of comprehensive income (loss), consolidated statements of cash flows and consolidated statements of changes in equity for the years then ended, and a summary of significant accounting policies and other explanatory information.

Management's Responsibility for the Consolidated Financial Statements

Management is responsible for the preparation and fair presentation of these consolidated financial statements in accordance with International Financial Reporting Standards as issued by the International Accounting Standards Board, and for such internal control as management determines is necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

Our responsibility is to express an opinion on these consolidated financial statements based on our audits. We conducted our audits in accordance with Canadian generally accepted auditing standards and the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the consolidated financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the consolidated financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the consolidated financial statements in order to design audit procedures that are appropriate in the circumstances. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements.

We believe that the audit evidence we have obtained in our audits is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of Pan American Silver Corp. and subsidiaries as at December 31, 2016 and December 31, 2015, and their financial performance and their cash flows for the years then ended in accordance with International Financial Reporting Standards as issued by the International Accounting Standards Board.

Other Matter

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the Company's internal control over financial reporting as of December 31, 2016, based on the criteria established in *Internal*

Control – Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission and our report dated March 22, 2017 expressed an unqualified opinion on the Company's internal control over financial reporting.

/s/ Deloitte LLP

Chartered Professional Accountants

Vancouver, Canada

March 22, 2017

Deloitte.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Shareholders of Pan American Silver Corp.

We have audited the internal control over financial reporting of Pan American Silver Corp. and subsidiaries (the "Company") as of December 31, 2016, based on the criteria established in *Internal Control-Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission. The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Report on Internal Control over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit.

We conducted our audit in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

A company's internal control over financial reporting is a process designed by, or under the supervision of, the company's principal executive and principal financial officers, or persons performing similar functions, and effected by the company's 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 International Financial Reporting Standards as issued by the International Accounting Standards Board. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with International Financial Reporting Standards as issued by the International Accounting Standards Board, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of the inherent limitations of internal control over financial reporting, including the possibility of collusion or improper management override of controls, material misstatements due to error or fraud may not be prevented or detected on a timely basis. Also, projections of any evaluation of the effectiveness of the 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.

In our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2016, based on the criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission.

We have also audited, in accordance with Canadian generally accepted auditing standards and the standards of the Public Company Accounting Oversight Board (United States), the consolidated financial statements as at and for the year ended December 31, 2016 of the Company and our report dated March 22, 2017 expressed an unmodified/unqualified opinion on those financial statements.

/s/ Deloitte LLP

Chartered Professional Accountants
Vancouver, Canada

March 22, 2017

Pan American Silver Corp.

Consolidated Statements of Financial Position
As at December 31, 2016 and 2015
(in thousands of U.S. dollars)

		December 31, 2016		December 31, 2015
Assets				
Current assets				
Cash and cash equivalents (Note 25)	**$**	**180,881**	$	133,963
Short-term investments (Note 8)		**36,729**		92,678
Trade and other receivables (Note 7)		**130,117**		87,041
Income taxes receivable		**17,460**		27,373
Inventories (Note 9)		**237,329**		204,361
Prepaid expenses and other current assets		**10,337**		6,748
		612,853		552,164
Non-current assets				
Mineral properties, plant and equipment (Note 10)		**1,222,727**		1,145,221
Long-term refundable tax		**7,664**		8,994
Deferred tax assets (Note 28)		**1,727**		3,730
Investment in associates (Note 12)		**49,734**		1,450
Other assets (Note 13)		**379**		421
Goodwill (Note 11)		**3,057**		3,057
Total Assets	**$**	**1,898,141**	$	1,715,037
Liabilities				
Current liabilities				
Accounts payable and accrued liabilities (Note 14)	**$**	**143,502**	$	112,829
Loans payable (Note 15)		**—**		19,578
Derivative financial instruments (Note 7)		**2,815**		2,835
Current portion of provisions (Note 16)		**8,499**		8,979
Current portion of finance lease (Note 17)		**3,559**		2,238
Income tax payable		**25,911**		13,481
		184,286		159,940
Non-current liabilities				
Long-term portion of provisions (Note 16)		**51,444**		45,892
Deferred tax liabilities (Note 28)		**170,863**		142,127
Long-term portion of finance lease (Note 17)		**3,542**		1,759
Long-term debt (Note 18)		**36,200**		36,200
Deferred revenue (Note 12)		**11,561**		—
Other long-term liabilities (Note 19)		**27,408**		30,503
Share purchase warrants (Note 12)		**13,833**		—
Total Liabilities		**499,137**		416,421
Equity				
Capital and reserves (Note 20)				
Issued capital		**2,303,978**		2,298,390
Share option reserve		**22,946**		22,829
Investment revaluation reserve		**434**		(458)
Deficit		**(931,060)**		(1,023,539)
Total Equity attributable to equity holders of the Company		**1,396,298**		1,297,222
Non-controlling interests		**2,706**		1,394
Total Equity		**1,399,004**		1,298,616
Total Liabilities and Equity	**$**	**1,898,141**	$	1,715,037

Commitments and Contingencies (Notes 7, 29); subsequent events (Note 31)
See accompanying notes to the consolidated financial statements
APPROVED BY THE BOARD ON MARCH 22, 2017

"signed" Ross Beaty, Director *"signed" Michael Steinmann, Director*

Pan American Silver Corp.

Consolidated Income Statements

For the years ended December 31, 2016 and 2015

(in thousands of U.S. dollars except per share amounts)

		2016		2015
Revenue (Note 26)	**$**	**774,775**	$	674,688
Cost of sales				
Production costs (Note 21)		**(428,333)**		(532,031)
Depreciation and amortization (Note 10)		**(115,955)**		(150,845)
Royalties		**(31,608)**		(23,901)
		(575,896)		(706,777)
Mine operating earnings (loss)		**198,879**		(32,089)
General and administrative		**(23,663)**		(18,027)
Exploration and project development		**(11,334)**		(11,940)
Foreign exchange losses		**(9,054)**		(13,004)
Impairment charges (Note 11)		**—**		(150,268)
Losses on commodity, diesel fuel swaps, and foreign currency contracts (Note 7)		**(4,944)**		(324)
Gain on sale of mineral properties, plant and equipment (Note 10)		**25,100**		372
Share of loss from associate and dilution gain (Note 12)		**7,946**		—
Other income (expense) (Note 27)		**1,542**		(4,762)
Earnings (loss) from operations		**184,472**		(230,042)
Gain on derivatives (Note 7)		**—**		278
Investment income		**1,350**		2,461
Interest and finance expense (Note 23)		**(9,551)**		(8,452)
Earnings (loss) before income taxes		**176,271**		(235,755)
Income tax (expense) recovery (Note 28)		**(74,446)**		4,199
Net earnings (loss) for the year	**$**	**101,825**	$	(231,556)

See accompanying notes to the consolidated financial statements.

Attributable to:				
Equity holders of the Company	**$**	**100,085**	$	(226,650)
Non-controlling interests		**1,740**		(4,906)
	$	**101,825**	$	(231,556)
Earnings (loss) per share attributable to common shareholders (Note 24)				
Basic earnings (loss) per share	**$**	**0.66**	$	(1.49)
Diluted earnings (loss) per share	**$**	**0.66**	$	(1.49)
Weighted average shares outstanding (in 000's) Basic		**152,118**		151,664
Weighted average shares outstanding (in 000's) Diluted		**152,504**		151,664

Pan American Silver Corp.

Consolidated Statements of Comprehensive Income (Loss)

For the years ended December 31, 2016 and 2015

(in thousands of U.S. dollars)

		2016		2015
Net earnings (loss) for the year	**$**	**101,825**	$	(231,556)
Items that may be reclassified subsequently to net earnings:				
Unrealized net gains (losses) on available for sale securities (net of $nil tax in 2016 and 2015)		**912**		(1,459)
Reclassification adjustment for realized (gains) losses on equity securities included in earnings (net of $nil tax in 2016 and 2015)		**(20)**		1,486
Total comprehensive earnings (loss) for the year	**$**	**102,717**	$	(231,529)
Total comprehensive earnings (loss) attributable to:				
Equity holders of the Company	**$**	**100,977**	$	(226,623)
Non-controlling interests		**1,740**		(4,906)
	$	**102,717**	$	(231,529)

See accompanying notes to the consolidated financial statements.

Pan American Silver Corp.

Consolidated Statements of Cash Flows
For the years ended December 31, 2016 and 2015
(in thousands of U.S. dollars)

		2016		2015
Cash flow from operating activities				
Net earnings (loss) for the year	**$**	**101,825**	$	(231,556)
Current income tax expense (Note 28)		**44,031**		15,854
Deferred income tax expense (recovery) (Note 28)		**30,415**		(20,053)
Interest expense (Note 23)		**2,115**		3,640
Depreciation and amortization (Note 10)		**115,955**		150,845
Impairment charges (Note 11)		**—**		150,268
Accretion on closure and decommissioning provision (Note 16)		**4,363**		3,239
Unrealized losses on foreign exchange		**5,759**		860
Share-based compensation expense		**3,826**		2,569
Losses on commodity, diesel fuel swaps, and foreign currency contracts (Note 7)		**4,944**		324
Gain on derivatives (Note 7)		**—**		(278)
Share of loss from associate and dilution gain (Note 12)		**(7,946)**		—
Gain on sale of mineral properties, plant and equipment		**(25,100)**		(372)
Net realizable value adjustment for inventories (Note 21)		**(42,815)**		10,861
Changes in non-cash operating working capital (Note 25)		**(5,545)**		19,840
Operating cash flows before interest and income taxes		**231,827**		106,041
Interest paid		**(2,553)**		(4,472)
Interest received		**1,382**		1,012
Income taxes paid		**(15,852)**		(13,889)
Net cash generated from operating activities	**$**	**214,804**	$	88,692
Cash flow from investing activities				
Payments for mineral properties, plant and equipment	**$**	**(202,661)**	$	(146,735)
Net proceeds from sales of short-term investments		**56,870**		91,296
Proceeds from sale of mineral properties, plant and equipment		**16,319**		647
Net (payments) proceeds from commodity, diesel fuel swaps, and foreign currency contracts		**(4,965)**		2,511
Exercise of warrants and other payments		**(5,460)**		(111)
Net cash used in investing activities	**$**	**(139,897)**	$	(52,392)
Cash flow from financing activities				
Proceeds from issue of equity shares	**$**	**2,399**	$	—
Distributions to non-controlling interests		**(428)**		(545)
Dividends paid		**(7,606)**		(41,703)
Payment of convertible debenture		**—**		(36,235)
Proceeds from credit facility		**—**		36,200
(Payment of) proceeds from short-term loans (Note 15)		**(19,536)**		1,978
Payment of equipment leases		**(3,047)**		(7,531)
Net cash used in financing activities	**$**	**(28,218)**	$	(47,836)
Effects of exchange rate changes on cash and cash equivalents		**229**		(694)
Net increase (decrease) in cash and cash equivalents		**46,918**		(12,230)
Cash and cash equivalents at the beginning of the year		**133,963**		146,193
Cash and cash equivalents at the end of the year	**$**	**180,881**	$	133,963

Supplemental cash flow information (Note 25).
See accompanying notes to the consolidated financial statements.

Pan American Silver Corp.
Consolidated Statements of Changes in Equity
For the years ended December 31, 2016 and 2015
(in thousands of U.S. dollars, except for number of shares)

	Attributable to equity holders of the Company							
	Issued shares	**Issued capital**	**Share option reserve**	**Investment revaluation reserve**	**Retained deficit**	**Total**	**Non-controlling interests**	**Total equity**
Balance, December 31, 2014	**151,643,372**	**$ 2,296,672**	**$ 22,091**	**$ (485)**	**$ (755,186)**	**$ 1,563,092**	**$ 6,845**	**$ 1,569,937**
Total comprehensive loss								
Net loss for the year	—	—	—	—	(226,650)	(226,650)	(4,906)	(231,556)
Other comprehensive income	—	—	—	27	—	27	—	27
	—	—	—	27	(226,650)	(226,623)	(4,906)	(231,529)
Shares issued as compensation (Note 25)	240,362	1,718	—	—	—	1,718	—	1,718
Distributions by subsidiaries to non-controlling interests	—	—	—	—	—	—	(545)	(545)
Share-based compensation on option grants	—	—	738	—	—	738	—	738
Dividends paid	—	—	—	—	(41,703)	(41,703)	—	(41,703)
Balance, December 31, 2015	**151,883,734**	**$ 2,298,390**	**$ 22,829**	**$ (458)**	**$ (1,023,539)**	**$ 1,297,222**	**$ 1,394**	**$ 1,298,616**
Total comprehensive loss								
Net earnings for the year	—	—	—	—	100,085	100,085	1,740	101,825
Other comprehensive income	—	—	—	892	—	892	—	892
	—	—	—	892	100,085	100,977	1,740	102,717
Shares issued on the exercise of stock options	254,146	3,223	(824)	—	—	2,399	—	2,399
Shares issued as compensation (Note 25)	196,772	2,365	—	—	—	2,365	—	2,365
Share-based compensation on option grants	—	—	941	—	—	941	—	941
Distributions by subsidiaries to non-controlling interests	—	—	—	—	—	—	(428)	(428)
Dividends paid	—	—	—	—	(7,606)	(7,606)	—	(7,606)
Balance, December 31, 2016	**152,334,652**	**$ 2,303,978**	**$ 22,946**	**$ 434**	**$ (931,060)**	**$ 1,396,298**	**$ 2,706**	**$ 1,399,004**

See accompanying notes to the consolidated financial statements.

1. Nature of Operations

Pan American Silver Corp. is the ultimate parent company of its subsidiary group (collectively, the "Company", or "Pan American"). Pan American Silver Corp. is incorporated and domiciled in Canada, and its office is at Suite 1500 – 625 Howe Street, Vancouver, British Columbia, V6C 2T6.

The Company is engaged in the production and sale of silver, gold and base metals including copper, lead and zinc as well as other related activities, including exploration, extraction, processing, refining and reclamation. The Company's primary product (silver) is produced in Peru, Mexico, Argentina and Bolivia. Additionally, the Company has project development activities in Peru, Mexico and Argentina, and exploration activities throughout South America, Mexico, and the United States.

At December 31, 2016 the Company's principal producing properties were comprised of the Huaron and Morococha mines located in Peru, the Alamo Dorado, La Colorada and Dolores mines located in Mexico, the San Vicente mine located in Bolivia and the Manantial Espejo mine located in Argentina.

The Company's significant development project at December 31, 2016 was the Navidad project in Argentina.

2. Summary of Significant Accounting Policies

a. Statement of Compliance

These consolidated financial statements have been prepared in accordance with International Financial Reporting Standards ("IFRS") as issued by the International Accounting Standards Board ("IASB"). IFRS comprises IFRSs, International Accounting Standards ("IAS"), and interpretations issued by the IFRS Interpretations Committee ("IFRICs") and the former Standing Interpretations Committee ("SIC").

These consolidated financial statements were approved for issuance by the Board of Directors on March 22, 2017.

b. Basis of Preparation

The Company's accounting policies have been applied consistently in preparing these consolidated annual financial statements for the year ended December 31, 2016, and the comparative information as at December 31, 2015.

c. Significant Accounting Policies

Principles of Consolidation: The financial statements consolidate the financial statements of Pan American and its subsidiaries. All intercompany balances, transactions, unrealized profits and losses arising from intra-company transactions have been eliminated in full. The results of subsidiaries acquired or sold are consolidated for the periods from or to the date on which control passes. Control is achieved where the Company is exposed, or has rights, to variable returns from its involvement with an investee and has the ability to affect those returns through its power over the investee. This occurs when the Company has existing rights that give it the current ability to direct the relevant activities, is exposed, or has rights, to variable returns from its involvement with the investee, when the investor's returns from its involvement have the potential to vary as a result of the investee's performance and the ability to use its power over the investee to affect the amount of the investor's returns. Where there is a loss of control of a subsidiary, the consolidated financial statements include the results for the part of the reporting period during which the Company has control. Subsidiaries use the same reporting period and same accounting policies as the Company.

For partly owned subsidiaries, the net assets and net earnings attributable to non-controlling shareholders are presented as "net earnings attributable to non-controlling interests" in the consolidated statements of financial position, and in the consolidated income statements. Total comprehensive income is attributable to the owners of the Company and to the non-controlling interests even if this results in the non-controlling interest having a deficit balance.

The consolidated financial statements include the wholly-owned and partially-owned subsidiaries of the Company; the most significant at December 31, 2016 and 2015 are presented in the following table:

Subsidiary	Location	Ownership Interest	Accounting	Operations and Development Projects Owned
Pan American Silver Huaron S.A.	Peru	100%	Consolidated	Huaron mine
Compañía Minera Argentum S.A.	Peru	92%	Consolidated	Morococha mine
Minera Corner Bay S.A. de C.V.	Mexico	100%	Consolidated	Alamo Dorado mine
Plata Panamericana S.A. de C.V.	Mexico	100%	Consolidated	La Colorada mine
Compañía Minera Dolores S.A. de C.V.	Mexico	100%	Consolidated	Dolores mine
Minera Tritón Argentina S.A.	Argentina	100%	Consolidated	Manantial Espejo mine
Pan American Silver (Bolivia) S.A.	Bolivia	95%	Consolidated	San Vicente mine
Minera Argenta S.A.	Argentina	100%	Consolidated	Navidad Project

Investments in associates: An associate is an entity over which the investor has significant influence but not control and that is neither a subsidiary nor an interest in a joint venture. Significant influence is presumed to exist where the Company has between 20% and 50% of the voting rights, but can also arise where the Company has less than 20%, if the Company has the power to participate in the financial and operating policy decisions affecting the entity. The Company's share of the net assets and net earnings or loss is accounted for in the consolidated financial statements using the equity method of accounting.

Basis of measurement: These consolidated financial statements have been prepared on a historical cost basis except for derivative financial instruments, share purchase warrants and assets classified as at fair value through profit or loss or available-for-sale which are measured at fair value. Additionally, these consolidated financial statements have been prepared using the accrual basis of accounting, except for cash flow information.

Currency of presentation: The consolidated financial statements are presented in United States dollars ("USD"), which is the Company's and each of the subsidiaries' functional and presentation currency, and all values are rounded to the nearest thousand except where otherwise indicated.

Business combinations: Upon the acquisition of a business, the acquisition method of accounting is used, whereby the purchase consideration is allocated to the identifiable assets, liabilities and contingent liabilities (identifiable net assets) acquired on the basis of fair value at the date of acquisition. When the cost of the acquisition exceeds the fair value attributable to the Company's share of the identifiable net assets, the difference is treated as goodwill, which is not amortized and is reviewed for impairment annually or more frequently when there is an indication of impairment. If the fair value attributable to the Company's share of the identifiable net assets exceeds the cost of acquisition, the difference is immediately recognized in the consolidated income statement. Acquisition related costs, other than costs to issue debt or equity securities of the acquirer, including investment banking fees, legal fees, accounting fees, valuation fees, and other professional or consulting fees are expensed as incurred. The costs to issue equity securities of the Company as consideration for the acquisition are reduced from share capital as share issuance costs. The costs to issue debt securities are capitalized and amortized using the effective interest method.

Non-controlling interests are measured either at fair value or at the non-controlling interests' proportionate share of the recognized amounts of the acquirers' identifiable net assets as at the date of acquisition. The choice of measurement basis is made on a transaction by transaction basis.

Control of a business may be achieved in stages. Upon the acquisition of control, any previously held interest is re-measured to fair value at the date control is obtained resulting in a gain or loss upon the acquisition of control.

If the initial accounting for a business combination is incomplete by the end of the reporting period in which the combination occurs, the Company reports provisional amounts for the items for which the accounting is incomplete. These provisional amounts are adjusted during the measurement period, or additional assets or liabilities are recognized, to reflect new information obtained about facts and circumstances that existed at the acquisition date that, if known, would have affected the amounts recognized at that date.

Revenue recognition: Revenue associated with the sale of commodities is recognized when all significant risks and rewards of ownership of the asset sold are transferred to the customer, usually when insurance risk and title has passed to the customer and the commodity has been delivered to the shipping agent. At this point the Company retains neither continuing managerial involvement to the degree usually associated with ownership nor effective control over the commodities and the costs incurred, or to be incurred, in respect of the sale, can be reliably measured. Revenue is recognized at the fair value of the consideration

receivable, to the extent that it is probable that economic benefits will flow to the Company and the revenue can be reliably measured. Sales revenue is recognized at the fair value of consideration received, which in most cases is based on invoiced amounts.

The Company's concentrate sales contracts with third-party smelters, in general, provide for a provisional payment based upon provisional assays and quoted metal prices. Final settlement is based on applicable commodity prices set on specified quotational periods, typically ranging from one month prior to shipment, and can extend to three months after the shipment arrives at the smelter and is based on average market metal prices. For this purpose, the selling price can be measured reliably for those products, such as silver, gold, zinc, lead and copper, for which there exists an active and freely traded commodity market such as the London Metals Exchange and the value of product sold by the Company is directly linked to the form in which it is traded on that market.

Sales revenue is commonly subject to adjustments based on an inspection of the product by the customer. In such cases, sales revenue is initially recognized on a provisional basis using the Company's best estimate of contained metal, and adjusted subsequently. Revenues are recorded under these contracts at the time title passes to the buyer based on the expected settlement period. Revenue on provisionally priced sales is recognized based on estimates of the fair value of the consideration receivable based on forward market prices. At each reporting date provisionally priced metal is marked to market based on the forward selling price for the quotational period stipulated in the contract. Variations between the price recorded at the shipment date and the actual final price set under the smelting contracts are caused by changes in metal prices and result in an embedded derivative in the accounts receivable. The embedded derivative is recorded at fair value each period until final settlement occurs, with the fair value adjustments recognized in revenue.

Refining and treatment charges under the sales contract with third-party smelters are netted against revenue for sales of metal concentrate.

The Company recognizes deferred revenue in the event it receives payments from customers in consideration for future commitments to deliver metals and before such sale meets the criteria for revenue recognition. The Company recognizes amounts in revenue as the metals are delivered to the customer. Specifically, for the metal agreements entered into with Maverix Metals Inc. ("Maverix"), the Company determines the amortization of deferred revenue to the Consolidated Income Statement on a per unit basis using the estimated total quantity of metal expected to be delivered to Maverix over the terms of the contract. The Company estimates the current portion of deferred revenue based on quantities anticipated to be delivered over the next twelve months

Financial instruments: A financial instrument is any contract that gives rise to a financial asset of one entity and a financial liability or equity instrument of another entity.

(i) Financial assets

The Company classifies its financial assets in the following categories: at fair value through profit or loss, loans and receivables, available-for-sale and held-to-maturity investments. The classification depends on the purpose for which the financial assets were acquired. Management determines the classification of financial assets at initial recognition.

(a) Financial assets at fair value through profit or loss

Financial assets are classified as at fair value through profit or loss when the financial asset is either held for trading or it is designated as at fair value through profit and loss. Derivatives are included in this category and are classified as current assets or non-current assets based on their maturity date. The Company does not acquire financial assets for the purpose of selling in the short term. Financial assets carried at fair value through profit or loss are initially recognized at fair value. The directly attributable transaction costs are expensed in the income statement in the period in which they are incurred. Subsequent changes in fair value are recognized in net earnings.

(b) Loans and receivables

Loans and receivables are non-derivative financial assets with fixed or determinable payments that are not quoted in an active market. Loans and receivables comprise 'trade and other receivables', 'other assets' and 'cash and cash equivalents' in the statement of financial position. Loans and receivables are carried at amortized cost less any impairment.

(c) Available-for-sale financial assets

Available-for-sale financial assets are non-derivatives that are either specifically designated as available-for- sale or not classified in any of the other categories. They are included in non-current assets unless the Company intends to dispose of the investment within 12 months of the statement of financial position date. Changes in the fair value of available-for-sale financial assets

denominated in a currency other than the functional currency of the holder, other than equity investments, are analyzed between translation differences and other changes in the carrying amount of the security. The translation differences are recognized in the consolidated income statement. Any impairment charges are also recognized in the consolidated income statement, while other changes in fair value are recognized in the investment revaluation reserve. When financial assets classified as available-for-sale are sold, the accumulated fair value adjustments previously recognized in the investment revaluation reserve are reclassified to the consolidated income statement. Dividends on available-for-sale equity instruments are also recognized in the consolidated income statement within investment income when the Company's right to receive payments is established.

(d) Held-to-maturity investments

Non-derivative financial assets with fixed or determinable payments and fixed maturity are classified as held-to-maturity when the Company has the positive intention and ability to hold to maturity. Other long-term investments that are intended to be held-to-maturity, such as bonds, are measured at amortized cost. This cost is computed as the amount initially recognized minus principal repayments, plus or minus the cumulative amortization using the effective interest method of any difference between the initially recognized amount and the maturity amount. This calculation includes all fees paid or received between parties to the contract that are an integral part of the effective interest rate, transaction costs and all other premiums and discounts. For investments carried at amortized cost, gains and losses are recognized in income when the investments are derecognized or impaired, as well as through the amortization process.

(ii) Financial liabilities

Borrowings and other financial liabilities are classified as other financial liabilities and are recognized initially at fair value, net of transaction costs incurred and are subsequently stated at amortized cost. Any difference between the amounts originally received (net of transaction costs) and the redemption value is recognized in the income statement over the period to maturity using the effective interest method.

Borrowings and other financial liabilities are classified as current liabilities unless the Company has an unconditional right to defer settlement of the liability for at least 12 months after the statement of financial position date.

(iii) Derivative financial instruments

When the Company enters into derivative contracts, these transactions are designed to reduce exposures related to assets and liabilities, firm commitments or anticipated transactions. All derivatives are initially recognized at their fair value on the date the derivative contract is entered into and are subsequently re-measured at their fair value at each statement of financial position date.

Embedded derivatives: Derivatives embedded in other financial instruments or other host contracts are treated as separate derivatives when their risks and characteristics are not closely related to their host contracts.

(iv) Fair value

Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. Where relevant market prices are available, these are used to determine fair values. In other cases, fair values are calculated using quotations from independent financial institutions, or by using valuation techniques consistent with general market practice applicable to the instrument.

- The fair values of cash and short term borrowings approximate their carrying values as a result of their short maturity or because they carry floating rates of interest.
- Derivative financial assets and liabilities are measured at fair value.

(v) Impairment of financial assets

Available-for-sale financial assets

The Company assesses at each statement of financial position date whether there is objective evidence that a financial asset or a group of financial assets is impaired. In the case of equity securities classified as available for sale, an evaluation is made as to whether a decline in fair value is 'significant' or 'prolonged' based on an analysis of indicators such as significant adverse changes in the technological, market, economic or legal environment in which the investee operates.

If an available-for-sale financial asset is impaired, an amount comprising the difference between its cost (net of any principal payment and amortization) and its current fair value, less any impairment loss previously recognized in the consolidated income statement is transferred from the investment revaluation reserve to the consolidated income statement. Reversals in respect of equity instruments classified as available-for-sale are not recognized in the consolidated income statement. Reversals of

impairment losses on debt instruments are reversed through the consolidated income statement if the increase in fair value of the instrument can be objectively related to an event occurring after the impairment loss was recognized.

(vi) Derecognition of financial assets and liabilities

Financial assets

A financial asset is derecognized when its contractual rights to the cash flows that comprise the financial asset expire or substantially all the risks and rewards of the asset are transferred.

Financial liabilities

Gains and losses on discharge, cancellation or expiry of a financial liability are recognized within finance income and finance costs, respectively.

Where an existing financial liability is replaced by another from the same lender on substantially different terms, or the terms of an existing liability are substantially modified, such an exchange or modification is treated as a settlement of the original liability and the recognition of a new liability, and any difference in the respective carrying amounts is recognized in the income statement.

(vii) Trade receivables

Trade receivables are recognized initially at fair value and are subsequently measured at amortized cost reduced by any provision for impairment. A provision for impairment of trade receivables is established when there is objective evidence that the Company will not be able to collect all amounts due. Indicators of impairment would include financial difficulties of the debtor, likelihood of the debtor's insolvency, default in payment or a significant deterioration in credit worthiness. Any impairment is recognized in the income statement within 'doubtful accounts provision'. When a trade receivable is uncollectable, it is written off against the provision for impairment. Subsequent recoveries of amounts previously written off are credited against 'doubtful accounts provision' in the income statement.

(viii)Accounts payable and accrued liabilities

Accounts payable and accrued liabilities are recognized initially at fair value and subsequently measured at amortized cost using the effective interest method.

(ix) Share purchase warrant liabilities

Share purchase warrant liabilities are recognized initially at fair value and subsequently measured at amortized cost using the effective interest rate method.

Derivative Financial Instruments: The Company utilizes metals and currency contracts, including forward contracts to manage exposure to fluctuations in metal prices and foreign currency exchange rates. For metals production, these contracts are intended to reduce the risk of falling prices on the Company's future sales. Foreign currency derivative financial instruments, such as forward contracts are used to manage the effects of exchange rate changes on foreign currency cost exposures. Such derivative financial instruments are initially recognized at fair value on the date on which a derivative contract is entered into and are subsequently re-measured at fair value. Derivatives are carried as assets when the fair value is positive and as liabilities when the fair value is negative and any gains or losses arising from changes in fair value on derivatives are taken directly to earnings for the year. The fair value of forward currency and commodity contracts is calculated by reference to current forward exchange rates and prices for contracts with similar maturity profiles.

Derivatives, including certain conversion options and warrants with exercise prices in a currency other than the functional currency, are recognized at fair value with changes in fair value recognized in profit or loss.

Normal purchase or sale exemption: Contracts that were entered into and continue to be held for the purpose of the receipt or delivery of a nonfinancial item in accordance with the Company's expected purchase, sale or usage requirements fall under the exemption from IAS 32 and IAS 39, which is known as the "normal purchase or sale exemption" (with the exception of those with quotational period clauses, which result in the recognition of an embedded derivative. Refer to note 7b for more information). For these contracts and the host part of the contracts containing embedded derivatives, they are accounted for as executory contracts. The Company recognizes such contracts in its statement of financial position only when one of the parties meets its obligation under the contract to deliver either cash or a non-financial asset.

Convertible Notes: The Company settled all of its outstanding convertible notes during the year ended December 31, 2015. Previously, the Company had the right to pay all or part of the liability associated with the Company's convertible notes in cash on the conversion date. Accordingly, the Company previously classified the convertible notes as a financial liability with an embedded derivative. The financial liability and embedded derivative was recognized initially at their respective fair values. The

embedded derivative was subsequently recognized at fair value with changes in fair value reflected in profit or loss and the debt liability component was recognized at amortized cost using the effective interest method. Interest gains and losses related to the debt liability component or embedded derivatives was recognized in profit or loss. On conversion, the equity instrument would have been measured at the carrying value of the liability component and the fair value of the derivative component on the conversion date.

Cash and cash equivalents: Cash and cash equivalents include cash on hand and cash in banks. It also includes short-term money market investments that are readily convertible to cash with original terms of three months or less. Cash and cash equivalents are classified as loans and receivables and therefore are stated at amortized cost, less any impairment.

Short-term investments: Short-term investments are classified as “available-for-sale”, and consist of highly-liquid debt securities with original maturities in excess of three months and equity securities. These debt and equity securities are initially recorded at fair value, which upon their initial measurement is equal to their cost. Subsequent measurements and changes in the market value of these debt and equity securities are recorded as changes to other comprehensive income. Investments are assessed quarterly for potential impairment.

Inventories: Inventories include work in progress, concentrate ore, doré, processed silver and gold, heap leach inventory, and operating materials and supplies. Work in progress inventory includes ore stockpiles and other partly processed material. Stockpiles represent ore that has been extracted and is available for further processing. The classification of inventory is determined by the stage at which the ore is in the production process. Inventories of ore are sampled for metal content and are valued based on the lower of cost or estimated net realizable value based upon the period ending prices of contained metal. Cost is determined on a weighted average basis or using a first-in-first-out basis and includes all costs incurred in the normal course of business including direct material and direct labour costs and an allocation of production overheads, depreciation and amortization, and other costs, based on normal production capacity, incurred in bringing each product to its present location and condition. Material that does not contain a minimum quantity of metal to cover estimated processing expenses to recover the contained metal is not classified as inventory and is assigned no value. The work in progress inventory is considered part of the operating cycle which the Company classifies as current inventory and hence heap leach and stockpiles are included in current inventory. Quantities are assessed primarily through surveys and assays.

The costs incurred in the construction of the heap leach pad are capitalized. Heap leach inventory represents silver and gold contained in ore that has been placed on the leach pad for cyanide irrigation. The heap leach process is a process of extracting silver and gold by placing ore on an impermeable pad and applying a diluted cyanide solution that dissolves a portion of the contained silver and gold, which is then recovered during the metallurgical process. When the ore is placed on the pad, an estimate of the recoverable ounces is made based on tonnage, ore grade and estimated recoveries of the ore type placed on the pad. The estimated recoverable ounces on the pad are used to compile the inventory cost.

The Company uses several integrated steps to scientifically measure the metal content of the ore placed on the leach pads. The tonnage, grade, and ore type to be mined in a period was first estimated using the Mineral Reserve model. As the ore body is drilled in preparation for the blasting process, samples are taken of the drill residue which is assayed to determine their metal content and quantities of contained metal. The estimated recoverable ounces carried in the leach pad inventory are adjusted based on actual recoveries being experienced. Actual and estimated recoveries achieved are measured to the extent possible using various indicators including, but not limited to, individual cell recoveries, the use of leach curve recovery and trends in the levels of carried ounces depending on the circumstances or cumulative pad recoveries.

The Company then processes the ore through the crushing facility where the output is again weighed and sampled for assaying. A metallurgical reconciliation with the data collected from the mining operation is completed with appropriate adjustments made to previous estimates. The crushed ore is then transported to the leach pad for application of the leaching solution. The samples from the automated sampler are assayed each shift and used for process control. The quantity of leach solution is measured by flow meters throughout the leaching and precipitation process. The pregnant solution from the heap leach is collected and passed through the processing circuit to produce precipitate which is retorted and then smelted to produce doré bars.

The Company allocates direct and indirect production costs to by-products on a systematic and rational basis. With respect to concentrate and doré inventory, production costs are allocated based on the silver equivalent ounces contained within the respective concentrate and doré.

The inventory is stated at lower of cost or net realizable value, with cost being determined using a weighted average cost method. The ending inventory value of ounces associated with the leach pad is equal to opening recoverable ounces plus recoverable ounces placed less ounces produced plus or minus ounce adjustments.

The estimate of both the ultimate recovery expected over time and the quantity of metal that may be extracted relative to the time the leach process occurs requires the use of estimates which rely upon laboratory test work and estimated models of the leaching kinetics in the heap leach pads. Test work consists of leach columns of up to 400 days duration with 150 days being the average, from which the Company projects metal recoveries up to three years in the future. The quantities of metal contained in the ore are based upon actual weights and assay analysis. The rate at which the leach process extracts gold and silver from the crushed ore is based upon laboratory column tests and actual experience. The assumptions used by the Company to measure metal content during each stage of the inventory conversion process include estimated recovery rates based on laboratory testing and assaying. The Company periodically reviews its estimates compared to actual experience and revises its estimates when appropriate. The ultimate recovery will not be known until the leaching operations cease.

Supplies inventories are valued at the lower of average cost and net realizable value using replacement cost plus cost to dispose, net of obsolescence. Concentrate and doré inventory includes product at the mine site, the port warehouse and product held by refineries. At times, the Company has a limited amount of finished silver at a minting operation where coins depicting Pan American's emblem are stamped.

Mineral Properties, Plant, and Equipment : On initial acquisition, mineral properties, plant and equipment are valued at cost, being the purchase price and the directly attributable costs of acquisition or construction required to bring the asset to the location and condition necessary for the asset to be capable of operating in the manner intended by management. When provisions for closure and decommissioning are recognized, the corresponding cost is capitalized as part of the cost of the related assets, representing part of the cost of acquiring the future economic benefits of the operation. The capitalized cost of closure and decommissioning activities is recognized in mineral property, plant and equipment and depreciated accordingly.

In subsequent periods, buildings, plant and equipment are stated at cost less accumulated depreciation and any impairment in value, whilst land is stated at cost less any impairment in value and is not depreciated.

Each asset's or part's estimated useful life has due regard to both its own physical life limitations and the present assessment of economically recoverable reserves of the mine property at which the item is located, and to possible future variations in those assessments. Estimates of remaining useful lives and residual values are reviewed annually. Changes in estimates are accounted for prospectively.

The expected useful lives are included below in the accounting policy for depreciation of property, plant, and equipment. The net carrying amounts of mineral property, land, buildings, plant and equipment are reviewed for impairment either individually or at the cash-generating unit level when events and changes in circumstances indicate that the carrying amounts may not be recoverable. To the extent that these values exceed their recoverable amounts, that excess is recorded as an impairment provision in the financial year in which this is determined.

In countries where the Company paid Value Added Tax ("VAT") and where there is uncertainty of its recoverability, the VAT payments have either been deferred with mineral property costs relating to the property or expensed if it relates to mineral exploration. If the Company ultimately recovers previously deferred amounts, the amount received will be applied to reduce mineral property costs or taken as a credit against current expenses depending on the prior treatment.

Expenditure on major maintenance or repairs includes the cost of the replacement of parts of assets and overhaul costs. Where an asset or part of an asset is replaced and it is probable that future economic benefits associated with the item will be available to the Company, the expenditure is capitalized and the carrying amount of the item replaced derecognized. Similarly, overhaul costs associated with major maintenance are capitalized and depreciated over their useful lives where it is probable that future economic benefits will be available and any remaining carrying amounts of the cost of previous overhauls are derecognized. All other costs are expensed as incurred.

Where an item of mineral property, plant and equipment is disposed of, it is derecognized and the difference between its carrying value and net sales proceeds is disclosed as earnings or loss on disposal in the income statement. Any items of mineral property, plant or equipment that cease to have future economic benefits are derecognized with any gain or loss included in the financial year in which the item is derecognized.

Operational Mining Properties and Mine Development: When it has been determined that a mineral property can be economically developed as a result of establishing proven and probable reserves (which occurs upon completion of a positive economic analysis of the mineral deposit), the costs incurred to develop such property including costs to further delineate the ore body and remove overburden to initially expose the ore body prior to the start of mining operations, are also capitalized. Such costs are amortized using the units-of-production method over the estimated life of the ore body based on proven and probable reserves.

Costs associated with commissioning activities on constructed plants are deferred from the date of mechanical completion of the facilities until the date the Company is ready to commence commercial production. Any revenues earned during this period

are recorded as a reduction in deferred commissioning costs. These costs are amortized using the units-of-production method (described below) over the life of the mine, commencing on the date of commercial production.

Acquisition costs related to the acquisition of land and mineral rights are capitalized as incurred. Prior to acquiring such land or mineral rights, the Company makes a preliminary evaluation to determine that the property has significant potential to economically develop the deposit. The time between initial acquisition and full evaluation of a property's potential is dependent on many factors including: location relative to existing infrastructure, the property's stage of development, geological controls and metal prices. If a mineable deposit is discovered, such costs are amortized when production begins. If no mineable deposit is discovered, such costs are expensed in the period in which it is determined the property has no future economic value. In countries where the Company has paid VAT and where there is uncertainty of its recoverability, the VAT payments have either been deferred with mineral property costs relating to the property or expensed if it relates to mineral exploration. If the Company ultimately makes recoveries of the VAT, the amount received will be applied to reduce mineral property costs or taken as a credit against current expenses depending on the prior treatment.

Major development expenditures on producing properties incurred to increase production or extend the life of the mine are capitalized while ongoing mining expenditures on producing properties are charged against earnings as incurred. Gains or losses from sales or retirements of assets are included in gain or loss on sale of assets.

Depreciation of Mineral Property, Plant and Equipment: The carrying amounts of mineral property, plant and equipment (including initial and any subsequent capital expenditure) are depreciated to their estimated residual value over the estimated useful lives of the specific assets concerned, or the estimated life of the associated mine or mineral lease, if shorter. Estimates of residual values and useful lives are reviewed annually and any change in estimate is taken into account in the determination of remaining depreciation charges, and adjusted if appropriate, at each statement of financial position date. Changes to the estimated residual values or useful lives are accounted for prospectively. Depreciation commences on the date when the asset is available for use as intended by management.

Units of production basis

For mining properties and leases and certain mining equipment, the economic benefits from the asset are consumed in a pattern which is linked to the production level. Except as noted below, such assets are depreciated on a units of production basis.

In applying the units of production method, depreciation is normally calculated using the quantity of material extracted from the mine in the period as a percentage of the total quantity of material to be extracted in current and future periods based on proven and probable reserves.

Straight line basis

Assets within operations for which production is not expected to fluctuate significantly from one year to another or which have a physical life shorter than the related mine are depreciated on a straight line basis.

Mineral properties, plant and equipment are depreciated over their useful life, or over the remaining life of the mine if shorter. The major categories of property, plant and equipment are depreciated on a unit of production and/or straight-line basis as follows:

- Land – not depreciated
- Mobile equipment – 3 to 7 years
- Buildings and plant facilities – 25 to 50 years
- Mining properties and leases – based on reserves on a unit of production basis. Capitalized evaluation and development expenditure – based on applicable reserves on a unit of production basis
- Exploration and evaluation – not depreciated until mine goes into production
- Assets under construction – not depreciated until assets are ready for their intended use

Exploration and Evaluation Expenditure: relates to costs incurred on the exploration and evaluation of potential mineral reserves and resources and includes costs such as exploratory drilling and sample testing and the costs of pre-feasibility studies. Exploration expenditures relates to the initial search for deposits with economic potential. Evaluation expenditures arise from a detailed assessment of deposits or other projects that have been identified as having economic potential.

Expenditures on exploration activity are not capitalized.

Capitalization of evaluation expenditures commences when there is a high degree of confidence in the project's viability and hence it is probable that future economic benefits will flow to the Company.

Evaluation expenditures, other than that acquired from the purchase of another mining company, is carried forward as an asset provided that such costs are expected to be recovered in full through successful development and exploration of the area of interest or alternatively, by its sale.

Purchased exploration and evaluation assets are recognized as assets at their cost of acquisition or at fair value if purchased as part of a business combination.

In the case of undeveloped projects there may be only inferred resources to form a basis for the impairment review. The review is based on a status report regarding the Company's intentions for the development of the undeveloped project. In some cases, the undeveloped projects are regarded as successors to ore bodies, smelters or refineries currently in production. Where this is the case, it is intended that these will be developed and go into production when the current source of ore is exhausted or to replace the reduced output, which results where existing smelters and/or refineries are closed. It is often the case that technological and other improvements will allow successor smelters and/or refineries to more than replace the capacity of their predecessors. Subsequent recovery of the resulting carrying value depends on successful development or sale of the undeveloped project. If a project does not prove viable, all unrecoverable costs associated with the project, net of any related impairment provisions, are written off.

An impairment review is performed, either individually or at the cash generating unit level, when there are indicators that the carrying amount of the assets may exceed their recoverable amounts. To the extent that this occurs, the excess is expensed in the financial year in which this is determined. Capitalized exploration and evaluation assets are reassessed on a regular basis and these costs are carried forward provided that the conditions discussed above for expenditure on exploration activity and evaluation expenditures are met.

Expenditures are transferred to mining properties and leases or assets under construction once the technical feasibility and commercial viability of extracting a mineral resource are demonstrable and the work completed to date supports the future development of the property. In order to demonstrate technical feasibility and commercial viability, the Company evaluates the individual project and its established mineral reserves, assesses the relevant findings and conclusions from the Company's activities and in applicable technical or other studies relating to the project, and considers whether and how any additional factors and circumstances might impact the project, particularly in light of the Company's capabilities, risk tolerance and desired economic returns. The Company conducts its managerial evaluation for commercial viability by assessing the factors it considers relevant to the commercial development of the project, taking into consideration the exploration and technical evaluation activities and work undertaken in relation to the project. If the asset demonstrates technical feasibility and commercial viability, the asset is reclassified to mineral properties, plant and equipment. Assessment for impairment is conducted before reclassification.

Deferred Stripping Costs: In open pit mining operations, it is necessary to remove overburden and other waste in order to access the ore body. During the preproduction phase, these costs are capitalized as part of the cost of the mine property and subsequently amortized over the life of the mine (or pit) on a units of production basis.

The costs of removal of the waste material during a mine's production phase are deferred where they give rise to future benefits. These capitalized costs are subsequently amortized on a unit of production basis over the reserves that directly benefit from the specific stripping activity.

Asset Impairment: Management reviews and evaluates its assets for impairment when events or changes in circumstances indicate that the related carrying amounts may not be recoverable. Impairment is normally assessed at the level of cash-generating units which are identified as the smallest identifiable group of assets that generate cash inflows that are largely independent of the cash inflows from other assets. In addition, an impairment loss is recognized for any excess of carrying amount over the fair value less costs to sell of a non-current asset or disposal group held for sale. When an impairment review is undertaken, recoverable amount is assessed by reference to the higher of value in use (being the net present value of expected future cash flows of the relevant cash generating unit) and fair value less costs to sell ("FVLCTS"). The best evidence of FVLCTS is the value obtained from an active market or binding sale agreement. Where neither exists, FVLCTS is based on the best information available to reflect the amount the Company could receive for the cash generating unit in an arm's length transaction. This is often estimated using discounted cash flow techniques.

Where the recoverable amount is assessed using discounted cash flow techniques, the resulting estimates are based on detailed mine and/or production plans. For value in use, recent cost levels are considered, together with expected changes in costs that are compatible with the current condition of the business and which meet the requirements of IAS 36 "Impairment of Assets." The cash flow forecasts are based on best estimates of expected future revenues and costs, including the future cash costs of

production, capital expenditure, close down, restoration and environmental clean-up. These may include net cash flows expected to be realized from extraction, processing and sale of mineral resources that do not currently qualify for inclusion in proven or probable ore reserves. Such non reserve material is included where there is a high degree of confidence in its economic extraction. This expectation is usually based on preliminary drilling and sampling of areas of mineralization that are contiguous with existing reserves. Typically, the additional evaluation to achieve reserve status for such material has not yet been done because this would involve incurring costs earlier than is required for the efficient planning and operation of the mine.

Where the recoverable amount of a cash generating unit is dependent on the life of its associated ore, expected future cash flows reflect long term mine plans, which are based on detailed research, analysis and iterative modeling to optimize the level of return from investment, output and sequence of extraction. The mine plan takes account of all relevant characteristics of the ore, including waste to ore ratios, ore grades, haul distances, chemical and metallurgical properties of the ore impacting on process recoveries and capacities of processing equipment that can be used. The mine plan is therefore the basis for forecasting production output in each future year and for forecasting production costs.

The Company's cash flow forecasts are based on estimates of future commodity prices, which assume market prices will revert to the Company's assessment of the long term average price, generally over a period of three to five years. These assessments often differ from current price levels and are updated periodically.

The discount rates applied to the future cash flow forecasts represent an estimate of the rate the market would apply having regard to the time value of money and the risks specific to the asset for which the future cash flow estimates have not been adjusted, including appropriate adjustments for the risk profile of the countries in which the individual cash generating units operate. The great majority of the Company's sales are based on prices denominated in USD. To the extent that the currencies of countries in which the Company produces commodities strengthen against the USD without commodity price offset, cash flows and, therefore, net present values are reduced. Non-financial assets other than goodwill that have suffered impairment are tested for possible reversal of the impairment whenever events or changes in circumstances indicate that the impairment may have reversed.

Closure and Decommissioning Costs: The mining, extraction and processing activities of the Company normally give rise to obligations for site closure or rehabilitation. Closure and decommissioning works can include facility decommissioning and dismantling; removal or treatment of waste materials; site and land rehabilitation. The extent of work required and the associated costs are dependent on the requirements of relevant authorities and the Company's environmental policies. Provisions for the cost of each closure and rehabilitation program are recognized at the time that environmental disturbance occurs. When the extent of disturbance increases over the life of an operation, the provision is increased accordingly. Costs included in the provision encompass all closure and decommissioning activity expected to occur progressively over the life of the operation and at the time of closure in connection with disturbances at the reporting date. Routine operating costs that may impact the ultimate closure and decommissioning activities, such as waste material handling conducted as an integral part of a mining or production process, are not included in the provision. Costs arising from unforeseen circumstances, such as the contamination caused by unplanned discharges, are recognized as an expense and liability when the event gives rise to an obligation which is probable and capable of reliable estimation. The timing of the actual closure and decommissioning expenditure is dependent upon a number of factors such as the life and nature of the asset, the operating license conditions, and the environment in which the mine operates. Expenditures may occur before and after closure and can continue for an extended period of time dependent on closure and decommissioning requirements. Closure and decommissioning provisions are measured at the expected value of future cash flows, discounted to their present value and determined according to the probability of alternative estimates of cash flows occurring for each operation. Discount rates used are specific to the underlying obligation. Significant judgements and estimates are involved in forming expectations of future activities and the amount and timing of the associated cash flows. Those expectations are formed based on existing environmental and regulatory requirements which give rise to a constructive or legal obligation.

When provisions for closure and decommissioning are initially recognized, the corresponding cost is capitalized as a component of the cost of the related asset, representing part of the cost of acquiring the future economic benefits of the operation. The capitalized cost of closure and decommissioning activities is recognized in Property, plant and equipment and depreciated accordingly. The value of the provision is progressively increased over time as the effect of discounting unwinds, creating an expense recognized in finance expenses. Closure and decommissioning provisions are also adjusted for changes in estimates. Those adjustments are accounted for as a change in the corresponding capitalized cost, except where a reduction in the provision is greater than the un-depreciated capitalized cost of the related assets, in which case the capitalized cost is reduced to nil and the remaining adjustment is recognized in the income statement. In the case of closed sites, changes to estimated costs are recognized immediately in the income statement. Changes to the capitalized cost result in an adjustment to future depreciation

and finance charges. Adjustments to the estimated amount and timing of future closure and decommissioning cash flows are a normal occurrence in light of the significant judgements and estimates involved.

The provision is reviewed at the end of each reporting period for changes to obligations, legislation or discount rates that impact estimated costs or lives of operations and adjusted to reflect current best estimate. The cost of the related asset is adjusted for changes in the provision resulting from changes in the estimated cash flows or discount rate and the adjusted cost of the asset is depreciated prospectively.

Foreign Currency Translation: The Company's functional currency and that of its subsidiaries is the USD as this is the principal currency of the economic environments in which they operate. Transaction amounts denominated in foreign currencies (currencies other than USD) are translated into USD at exchange rates prevailing at the transaction dates. Carrying values of foreign currency monetary assets and liabilities are re-translated at each statement of financial position date to reflect the U.S. exchange rate prevailing at that date.

Gains and losses arising from translation of foreign currency monetary assets and liabilities at each period end are included in earnings except for differences arising on decommissioning provisions which are capitalized for operating mines.

Share-based Payments: The Company makes share-based awards, including restricted share units ("RSUs), performance share units ("PSUs"), shares and options, to certain employees.

For equity-settled awards, the fair value is charged to the income statement and credited to equity, on a straight-line basis over the vesting period, after adjusting for the estimated number of awards that are expected to vest. The fair value of the equity-settled awards is determined at the date of grant. Non-vesting conditions and market conditions, such as target share price upon which vesting is conditioned, are factored into the determination of fair value at the date of grant. All other vesting conditions are excluded from the determination of fair value and included in management's estimate of the number of awards ultimately expected to vest.

The fair value is determined by using option pricing models. At each statement of financial position date prior to vesting, the cumulative expense representing the extent to which the vesting period has expired and management's best estimate of the awards that are ultimately expected to vest is computed (after adjusting for non-market performance conditions). The movement in cumulative expense is recognized in the income statement with a corresponding entry within equity. No expense is recognized for awards that do not ultimately vest, except for awards where vesting is conditional upon a market condition, which are treated as vested irrespective of whether or not the market condition is satisfied, provided that all other performance conditions are satisfied.

Where the terms of an equity-settled award are modified, as a minimum an expense is recognized as if the terms had not been modified over the original vesting period. In addition, an expense is recognized for any modification, which increases the total fair value of the share-based payment arrangement, or is otherwise beneficial to the employee as measured at the date of modification, over the remainder of the new vesting period.

Where an equity-settled award is cancelled, it is treated as if it had vested on the date of cancellation, and any expense not yet recognized for the award is recognized immediately. Any compensation paid up to the fair value of the awards at the cancellation or settlement date is deducted from equity, with any excess over fair value being treated as an expense in the income statement. However, if a new award is substituted for the cancelled award, and designated as a replacement award on the date that it is granted, the new awards are treated as if they are a modification of the original award, as described in the previous paragraph.

Leases: The determination of whether an arrangement is, or contains a lease is based in the substance of the arrangement at the inception date, including whether the fulfillment of the arrangement is dependent on the use of a specific asset or assets or whether the arrangement conveys a right to use the asset. A reassessment after inception is only made in specific circumstances.

Assets held under finance leases, where substantially all the risks and rewards of ownership of the asset have passed to the Company, are capitalized in the statement of financial position at the lower of the fair value of the leased property or the present value of the minimum lease payments during the lease term calculated using the interest rate implicit in the lease agreement. These amounts are determined at the inception of the lease and are depreciated over the shorter of their estimated useful lives or the lease term. The capital elements of future obligations under leases and hire purchase contracts are included as liabilities in the statement of financial position. The interest elements of the lease or hire purchase obligations are charged to the income statement over the periods of the leases and hire purchase contracts and represent a constant proportion of the balance of capital repayments outstanding.

Leases where substantially all the risks and rewards of ownership have not passed to the Company are classified as operating leases. Rentals payable under operating leases are charged to the income statement on a straight-line basis over the lease term.

Income Taxes: Taxation on the earnings or loss for the year comprises current and deferred tax. Taxation is recognized in the income statement except to the extent that it relates to items recognized in other comprehensive income or directly in equity, in which case the tax is recognized in other comprehensive income or equity.

Current tax is the expected tax payable on the taxable income for the year using rates enacted or substantively enacted at the year end, and includes any adjustment to tax payable in respect of previous years.

Deferred tax is provided using the statement of financial position liability method, providing for the tax effect of temporary differences between the carrying amount of assets and liabilities for financial reporting purposes and the amounts used for tax assessment or deduction purposes. Where an asset has no deductible or depreciable amount for income tax purposes, but has a deductible amount on sale or abandonment for capital gains tax purposes, that amount is included in the determination of temporary differences.

The tax effect of certain temporary differences is not recognized, principally with respect to goodwill; temporary differences arising on the initial recognition of assets or liabilities (other than those arising in a business combination or in a manner that initially impacted accounting or taxable earnings); and temporary differences relating to investments in subsidiaries, jointly controlled entities and associates to the extent that the Company is able to control the reversal of the temporary difference and the temporary difference is not expected to reverse in the foreseeable future. The amount of deferred tax recognized is based on the expected manner and timing of realization or settlement of the carrying amount of assets and liabilities, with the exception of items that have a tax base solely derived under capital gains tax legislation, using tax rates enacted or substantively enacted at period end. To the extent that an item's tax base is solely derived from the amount deductible under capital gains tax legislation, deferred tax is determined as if such amounts are deductible in determining future assessable income.

The carrying amount of deferred income tax assets is reviewed at each statement of financial position date and reduced to the extent that it is no longer probable that sufficient taxable earnings will be available to allow all or part of the deferred income tax asset to be utilized. To the extent that an asset not previously recognized fulfils the criteria for recognition, a deferred income tax asset is recorded.

Deferred tax is measured on an undiscounted basis at the tax rates that are expected to apply in the periods in which the asset is realized or the liability is settled, based on tax rates and tax laws enacted or substantively enacted at the statement of financial position date.

Current and deferred taxes relating to items recognized in other comprehensive income or directly in equity are recognized in other comprehensive income or equity and not in the income statement. Mining taxes and royalties are treated and disclosed as current and deferred taxes if they have the characteristics of an income tax. Judgements are required about the application of income tax legislation. These judgements and assumptions are subject to risk and uncertainty, hence there is a possibility that changes in circumstances will alter expectations, which may impact the amount of deferred tax assets and deferred tax liabilities recognized on the statement of financial position and the amount of other tax losses and temporary differences not yet recognized. In such circumstances, some or the entire carrying amount of recognized deferred tax assets and liabilities may require adjustment, resulting in a corresponding credit or charge to the income statement.

Deferred tax assets, including those arising from tax losses, capital losses and temporary differences, are recognized only where it is probable that taxable earnings will be available against which the losses or deductible temporary differences can be utilized. Assumptions about the generation of future taxable earnings and repatriation of retained earnings depend on management's estimates of future cash flows. These depend on estimates of future production and sales volumes, commodity prices, reserves, operating costs, closure and decommissioning costs, capital expenditures, dividends and other capital management transactions.

Earnings (loss) Per Share: Basic earnings (loss) per share is calculated by dividing earnings attributable to ordinary equity holders of the parent entity by the weighted average number of ordinary shares outstanding during the period.

The diluted earnings per share calculation is based on the earnings attributable to ordinary equity holders and the weighted average number of shares outstanding after adjusting for the effects of all potential ordinary shares. This method requires that the number of shares used in the calculation be the weighted average number of shares that would be issued on the conversion of all the dilutive potential ordinary shares into ordinary shares. This method assumes that the potential ordinary shares converted into ordinary shares at the beginning of the period (or at the time of issuance, if not in existence at beginning of the period). The number of dilutive potential ordinary shares is determined independently for each period presented.

For convertible securities that may be settled in cash or shares at the holder's option, returns to preference shareholders and income charges are added back to net earnings used for basic EPS and the maximum number of ordinary shares that could be issued on conversion is used in computing diluted earnings per share.

Borrowing Costs and Upfront Costs: Borrowing costs that are directly attributable to the acquisition, construction or production of qualifying assets are capitalized. Qualifying assets are assets that require a substantial amount of time to prepare for their intended use, including mineral properties in the evaluation stage where there is a high likelihood of commercial exploitation. Qualifying assets also include significant expansion projects at the operating mines. Borrowing costs are considered an element of the historical cost of the qualifying asset. Capitalization ceases when the asset is substantially complete or if construction is interrupted for an extended period. Where the funds used to finance a qualifying asset form part of general borrowings, the amount capitalized is calculated using a weighted average of rates applicable to the relevant borrowings during the period. Where funds borrowed are directly attributable to a qualifying asset, the amount capitalized represents the borrowing costs specific to those borrowings. Where surplus funds available out of money borrowed specifically to finance a project are temporarily invested, the total borrowing cost is reduced by income generated from short-term investments of such funds.

Upfront costs incurred in connection with entering new credit facilities are recorded as Other assets and are amortized over the life of the respective credit facilities.

3. Changes in Accounting Standards

Application of new and revised accounting standards

The Company has applied the amendments to IFRSs included in the Annual Improvements to IFRSs 2012-2014 Cycle which were effective for annual periods beginning on or after January 1, 2016. The amendments did not have an impact on the Company's consolidated financial statements.

Changes in accounting standards not yet effective

The Company has not early adopted any amendment, standard or interpretation that has been issued by the IASB but is not yet effective.

IFRS 9 *Financial Instruments* ("IFRS 9") was issued by the IASB on July 24, 2014 and will replace IAS 39 Financial Instruments: Recognition and Measurement. IFRS 9 utilizes a single approach to determine whether a financial asset is measured at amortized cost or fair value and a new mixed measurement model for debt instruments having only two categories: amortized cost and fair value. The approach in IFRS 9 is based on how an entity manages its financial instruments in the context of its business model and the contractual cash flow characteristics of the financial assets. Final amendments released on July 24, 2014 also introduce a new expected loss impairment model and limited changes to the classification and measurement requirements for financial assets. IFRS 9 is effective for annual periods beginning on or after January 1, 2018. The Company is currently evaluating the impact the final standard and amendments on its consolidated financial statements.

IFRS 15, *Revenue from Contracts with Customers* ("IFRS 15") In May 2014, the IASB and the Financial Accounting Standards Board ("FASB") completed its joint project to clarify the principles for recognizing revenue and to develop a common revenue standard for IFRS and US GAAP. As a result of the joint project, the IASB issued IFRS 15, Revenue from Contracts with Customers, and will replace IAS 18, Revenue, IAS 11, Construction Contracts, and related interpretations on revenue. IFRS 15 establishes principles to address the nature, amount, timing and uncertainty of revenue and cash flows arising from an entity's contracts with customers. The standard is effective for annual periods beginning on or after January 1, 2018. The Company plans to apply IFRS 15 at the date it becomes effective. The Company is in the process of analyzing IFRS 15 and determining the effect on its consolidated financial statements as a result of adopting this standard.

IFRS 16, *Leases* ("IFRS 16") In January 2016, the IASB issued IFRS 16 - *Leases* which replaces IAS 17 - *Leases* and its associated interpretative guidance. IFRS 16 applies a control model to the identification of leases, distinguishing between a lease and a service contract on the basis of whether the customer controls the asset being leased. For those assets determined to meet the definition of a lease, IFRS 16 introduces significant changes to the accounting by lessees, introducing a single, on-balance sheet accounting model that is similar to current finance lease accounting, with limited exceptions for short-term leases or leases of low value assets. Lessor accounting remains similar to current accounting practice. The standard is effective for annual periods beginning on or after January 1, 2019, with early application permitted for entities that apply IFRS 15. The Company is currently evaluating the impact the final standard is expected to have on its consolidated financial statements.

IFRIC Interpretation 22 Foreign Currency Transactions and Advance Consideration ("IFRIC 22") On December 8, 2016, the IASB issued IFRIC 22, which addresses the exchange rate to use in transactions that involve advance consideration paid or received in a foreign currency. The Standard provides guidance on how to determine the date of the transaction for the purpose of determining the spot exchange rate used to translate the asset, expense or income on initial recognition that relates to, and is

recognized on the de-recognition of, a non-monetary prepayment asset or a non-monetary deferred income liability. It is effective January 1, 2018. The Company is currently assessing the impact on the adoption of this interpretation.

4. Significant Judgements in Applying Accounting Policies

Judgements that have the most significant effect on the amounts recognized in the Company's consolidated financial statements are as follows:

- *Capitalization of evaluation costs:* The Company has determined that evaluation costs capitalized during the year relating to the operating mines and certain other exploration interests have potential future economic benefits and are potentially economically recoverable, subject to the impairment analysis as discussed in Note 11. In making this judgement, the Company has assessed various sources of information including but not limited to the geologic and metallurgic information, history of conversion of mineral deposits to proven and probable mineral reserves, scoping and feasibility studies, proximity to existing ore bodies, operating management expertise and required environmental, operating and other permits.

- *Commencement of commercial production:* During the determination of whether a mine has reached an operating level that is consistent with the use intended by management, costs incurred are capitalized as mineral property, plant and equipment and any consideration from commissioning sales are offset against costs capitalized. The Company defines commencement of commercial production as the date that a mine has achieved a sustainable level of production based on a percentage of design capacity along with various qualitative factors including but not limited to the achievement of mechanical completion, continuous nominated level of production, the working effectiveness of the plant and equipment at or near expected levels and whether there is a sustainable level of production input available including power, water and diesel.

- *Assets' carrying values and impairment charges:* In determining carrying values and impairment charges the Company looks at recoverable amounts, defined as the higher of value in use or fair value less cost to sell in the case of non-financial assets, and at objective evidence that identifies significant or prolonged decline of fair value on financial assets classified as available-for-sale indicating impairment. These determinations and their individual assumptions require that management make a decision based on the best available information at each reporting period.

- *Functional currency:* The functional currency for the Company and its subsidiaries is the currency of the primary economic environment in which each operates. The Company has determined that its functional currency and that of its subsidiaries is the USD. The determination of functional currency may require certain judgements to determine the primary economic environment. The Company reconsiders the functional currency used when there is a change in events and conditions which determined the primary economic environment.

- *Business combinations:* Determination of whether a set of assets acquired and liabilities assumed constitute a business may require the Company to make certain judgments, taking into account all facts and circumstances. A business consists of inputs, including non-current assets and processes, including operational processes, that when applied to those inputs have the ability to create outputs that provide a return to the Company and its shareholders.

- *Determination of control of subsidiaries and joint arrangements:* Determination of whether the Company has control of subsidiaries or joint control of joint arrangements requires an assessment of the activities of the investee that significantly affect the investee's returns, including strategic, operational and financing decision-making, appointment, remuneration and termination of the key management personnel and when decisions related to those activities are under the control of the Company or require unanimous consent from the investors. Based on assessment of the relevant facts and circumstances, primarily, the Company's limited board representation and restricted influence over operating, strategic and financing decisions, the Company concluded that it does not control Maverix and as a result classified it as an investment in associate subject to significant influence (Note 12).

- *Deferral of stripping costs:* In determining whether stripping costs incurred during the production phase of a mining property relate to mineral reserves that will be mined in a future period and therefore should be capitalized, the Company treats the costs of removal of the waste material during a mine's production phase as deferred, where it gives rise to future benefits. These capitalized costs are subsequently amortized on a unit of production basis over the reserves that directly benefit from the specific stripping activity. As at December 31, 2016, the carrying amount of stripping costs capitalized was $40.3 million comprised entirely of Dolores (2015 - $39.5 million was capitalized comprised of Manantial Espejo $3.2 million and Dolores $36.3 million).

- *Replacement convertible debenture:* As part of the 2009 Aquiline transaction, the Company issued a replacement convertible debenture that allowed the holder to convert the debenture into either 363,854 Pan American shares or a Silver Stream contract. The holder subsequently selected the Silver Stream contract. The Silver Stream contract is classified and accounted for as a deferred credit. In determining the appropriate classification of the convertible debenture as a deferred credit, the Company evaluated the economics underlying the contract as of the date the Company assumed the obligation. As at December 31, 2016, the carrying amount of the deferred credit arising from the Aquiline acquisition was $20.8 million (2015 - $20.8 million).

5. Key Sources of Estimation Uncertainty in the Application of Accounting Policies

Key sources of estimation uncertainty that have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities are:

- *Revenue recognition:* Revenue from the sale of concentrate to independent smelters is recorded at the time the risks and rewards of ownership pass to the buyer using forward market prices on the expected date that final sales prices will be fixed. Variations between the prices set under the smelting contracts may be caused by changes in market prices and result in an embedded derivative in the accounts receivable. The embedded derivative is recorded at fair value each period until final settlement occurs, with changes in the fair value classified in revenue. In a period of high price volatility, as experienced under current economic conditions, the effect of mark-to-market price adjustments related to the quantity of metal which remains to be settled with independent smelters could be significant. For changes in metal quantities upon receipt of new information and assay, the provisional sales quantities are adjusted.

- *Estimated recoverable ounces:* The carrying amounts of the Company's mining properties are depleted based on recoverable ounces. Changes to estimates of recoverable ounces and depletable costs including changes resulting from revisions to the Company's mine plans and changes in metal price forecasts can result in a change to future depletion rates.

- *Mineral reserve estimates:* The figures for mineral reserves and mineral resources are disclosed in accordance with National Instrument 43 - 101, "Standards of Disclosure for Mineral Projects", issued by the Canadian Securities Administrators and in accordance with "Estimation of Mineral Resources and Mineral Reserves Best Practice Guidelines – adopted November 23, 2003", prepared by the Canadian Institute of Mining, Metallurgy and Petroleum ("CIM") Standing Committee on Reserve Definitions. There are numerous uncertainties inherent in estimating mineral reserves and mineral resources, including many factors beyond the Company's control. Such estimation is a subjective process, and the accuracy of any mineral reserve or mineral resource estimate is a function of the quantity and quality of available data and of the assumptions made and judgments used in engineering and geological interpretation. Differences between management's assumptions including economic assumptions such as metal prices and market conditions could have a material effect in the future on the Company's financial position and results of operation.

- *Valuation of Inventory:* In determining mine production costs recognized in the consolidated income statement, the Company makes estimates of quantities of ore stacked in stockpiles, placed on the heap leach pad and in process and the recoverable silver in this material to determine the average costs of finished goods sold during the period. Changes in these estimates can result in a change in mine operating costs of future periods and carrying amounts of inventories. Refer to Note 9 for details.

- *Depreciation and amortization rates for mineral properties, plant and equipment and mineral interests:* Depreciation and amortization expenses are allocated based on assumed asset lives and depreciation and amortization rates. Should the asset life or depreciation rate differ from the initial estimate, an adjustment would be made in the consolidated income statement prospectively. A change in the mineral reserve estimate for assets depreciated using the units of production method would impact depreciation expense prospectively.

- *Impairment, or impairment reversal, of mining interests:* While assessing whether any indications of impairment, or impairment reversal, exist for mining interests, consideration is given to both external and internal sources of information. Information the Company considers include changes in the market, economic and legal environment in which the Company operates that are not within its control that affect the recoverable amount of mining interests. Internal sources of information include the manner in which mineral property, plant and equipment are being used or are expected to be used and indications of the economic performance of the assets. Estimates include but are not limited to estimates of the discounted future after-

tax cash flows expected to be derived from the Company's mining properties, costs to sell the mining properties and the appropriate discount rate. Changes in metal price forecasts, increases or decreases in estimated future costs of production, increases or decreases in estimated future capital costs, reductions or increases in the amount of recoverable mineral reserves and mineral resources and/or adverse or favorable current economics can result in a write-down or write-up of the carrying amounts of the Company's mining interests. Impairments and impairment reversals of mining interests are discussed in Note 11.

- *Estimation of decommissioning and reclamation costs and the timing of expenditures:* The cost estimates are updated annually during the life of a mine to reflect known developments, (e.g. revisions to cost estimates and to the estimated lives of operations), and are subject to review at regular intervals. Decommissioning, restoration and similar liabilities are estimated based on the Company's interpretation of current regulatory requirements, constructive obligations and are measured at the best estimate of expenditures required to settle the present obligation of decommissioning, restoration or similar liabilities that may occur upon decommissioning of the mine at the end of its productive life. The carrying amount is determined based on the net present value of estimated future cash expenditures for the settlement of decommissioning, restoration or similar liabilities that may occur upon decommissioning of the mine. Such estimates are subject to change based on changes in laws and regulations and negotiations with regulatory authorities. Refer to Note 16 for details on decommissioning and restoration costs.

- *Income taxes and recoverability of deferred tax assets:* In assessing the probability of realizing income tax assets recognized, the Company makes 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, the Company gives 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. The Company considers relevant tax planning opportunities that are within the Company's 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 the Company from realizing the tax benefits from the deferred tax assets. The Company reassesses unrecognized income tax assets at each reporting period.

- *Accounting for acquisitions:* The provisional fair value of assets acquired and liabilities assumed and the resulting goodwill, if any, requires that management make certain judgments and estimates taking into account information available at the time of acquisition about future events, including, but not restricted to, estimates of mineral reserves and resources acquired, exploration potential, future operating costs and capital expenditures, future metal prices, long-term foreign exchange rates and discount rates. Changes to the provisional values of assets acquired and liabilities assumed, deferred income taxes and resulting goodwill, if any, are retrospectively adjusted when the final measurements are determined if related to conditions existing at the date of acquisition (within one year of the acquisition date).

- *Contingencies:* Due to the size, complexity and nature of the Company's operations, various legal and tax matters are outstanding from time to time. In the event the Company's estimates of the future resolution of these matters change, the Company will recognize the effects of the changes in its consolidated financial statements on the date such changes occur. Refer to Note 29 for further discussion on contingencies.

6. Management of Capital

The Company's objective when managing its capital is to maintain its ability to continue as a going concern while at the same time maximizing the growth of its business and providing returns to its shareholders. The Company's capital structure consists of shareholders' equity (comprising issued capital plus share option reserve plus deficit, plus investment revaluation reserve) with a balance of $1.4 billion as at December 31, 2016 (2015 - $1.3 billion). The Company manages its capital structure and makes adjustments based on changes to its economic environment and the risk characteristics of the Company's assets. The Company's capital requirements are effectively managed based on the Company having a thorough reporting, planning and forecasting process to help identify the funds required to ensure the Company is able to meet its operating and growth objectives.

The Company is not subject to externally imposed capital requirements and the Company's overall strategy with respect to capital risk management remains unchanged from the year ended December 31, 2015. Refer to Note 18 for details of the Company's revolving credit facility and related covenants.

7. Financial Instruments

a) Financial assets and liabilities classified as at fair value through profit or loss ("FVTPL")

The Company's financial assets and liabilities classified as at FVTPL are as follows:

		December 31, 2016		December 31, 2015
Current derivative liabilities				
Zinc contracts	**$**	**1,769**	$	—
Lead Contracts		**54**		—
Foreign currency contracts		**992**		168
Diesel fuel swaps		**—**		2,667
	$	**2,815**	$	2,835

In addition, trade and other receivables include accounts receivable arising from sales of metal concentrates and have been designated and classified as at FVTPL. The total trade and other receivables are as follows:

		December 31, 2016		December 31, 2015
Trade receivables from provisional concentrates sales	**$**	**44,960**	$	21,272
Not arising from sale of metal concentrates(1)		**85,157**		65,769
Trade and other receivables	**$**	**130,117**	$	87,041

(1) Accounted for at amortized cost.

The net (losses) gains on derivatives for the years ended December 31, 2016 and 2015 were comprised of the following:

		2016		2015
(Losses) gains on commodity and diesel fuel swap and foreign currency contracts:				
Realized (losses) gains on foreign currency, diesel fuel swap and commodity contracts	**$**	**(4,965)**	$	2,511
Unrealized gains (losses) on foreign currency, diesel fuel swap and commodity contracts		**21**		(2,835)
	$	**(4,944)**	$	(324)
Gain on derivatives:				
Gain on conversion feature of convertible notes		**—**		278
	$	**—**	$	278

b) Normal purchase or sale exemption

Contracts that were entered into and continue to be held for the purpose of the receipt or delivery of a nonfinancial item in accordance with the Company's expected purchase, sale or usage requirements fall in the exemption from IAS 32 and IAS 39, which is known as the "normal purchase or sale exemption". These contracts and the host part of the contracts containing embedded derivatives are accounted for as executory contracts. The Company recognizes such contracts in its statement of financial position only when one of the parties meets its obligation under the contract to deliver either cash or a non-financial asset.

c) Financial assets designated as available-for-sale

The Company's short-term investments are designated as available-for-sale. The unrealized gains (losses) on available-for-sale investments recognized in other comprehensive income (loss) for the years ended December 31, were as follows:

	Twelve months ended December 31,	
	2016	2015
Unrealized net gains (losses) on available for sale securities	**$ 912**	$ (1,459)
Reclassification adjustment for realized (gains) losses on equity securities included in earnings	**(20)**	1,486
	$ 892	$ 27

d) Risk

Overview

The Company has exposure to risks of varying degrees of significance which could affect its ability to achieve its strategic objectives for growth and shareholder returns. The principle financial risks to which the Company is exposed are metal price risk, credit risk, interest rate risk, foreign exchange rate risk, and liquidity risk. The Company's Board of Directors has overall responsibility for the establishment and oversight of the Company's risk management framework and reviews the Company's policies on an ongoing basis.

Metal Price Risk

Metal price risk is the risk that changes in metal prices will affect the Company's income or the value of its related financial instruments. The Company derives its revenue from the sale of silver, gold, lead, copper, and zinc. The Company's sales are directly dependent on metal prices that have shown significant volatility and are beyond the Company's control. Consistent with the Company's mission to provide equity investors with exposure to changes in silver prices, the Company's current policy is to not hedge the price of silver. A 10% increase in all metal prices for the year ended December 31, 2016, would result in an increase of approximately $82.7 million (2015 – $72.8 million) in the Company's revenues. A 10% decrease in all metal prices for the same period would result in a decrease of approximately $85.0 million (2015 - $76.5 million) in the Company's revenues. The Company also enters into provisional concentrate contracts to sell the zinc, lead and copper concentrates produced by the Huaron, Morococha, San Vicente and La Colorada mines. A 10% increase in metal prices (zinc, lead, copper and silver) on open positions for provisional concentrate contracts for the year ended December 31, 2016 would result in an increase of approximately $4.7 million (2015 - $6.2 million) in the Company's before tax earnings which would be reflected in 2016 results. A 10% decrease in metal prices for the same period would result in a decrease of approximately $4.7 million (2015 - $6.2 million) in the Company's before tax earnings.

The Company mitigates the price risk associated with its base metal production by committing some of its forecasted base metal production from time to time under forward sales and option contracts. The Board of Directors continually assesses the Company's strategy towards its base metal exposure, depending on market conditions. At December 31, 2016, the Company had outstanding contracts to sell some of its base metals production.

Credit Risk

Credit risk is the risk of financial loss to the Company if a customer or counterparty to a financial instrument fails to meet its contractual obligations and arises principally from the Company's trade receivables. The carrying value of financial assets represents the maximum credit exposure.

The Company has long-term concentrate contracts to sell the zinc, lead and copper concentrates produced by the Huaron, Morococha, San Vicente and La Colorada mines. Concentrate contracts are common business practice in the mining industry. The terms of the concentrate contracts may require the Company to deliver concentrate that has a value greater than the payment received at the time of delivery, thereby introducing the Company to credit risk of the buyers of concentrates. Should any of these counterparties not honor supply arrangements, or should any of them become insolvent, the Company may incur losses for products already shipped and be forced to sell its concentrates on the spot market or it may not have a market for its concentrates and therefore its future operating results may be materially adversely impacted. At December 31, 2016 the Company had receivable balances associated with buyers of its concentrates of $45.0 million (2015 - $21.3 million). The vast majority of the Company's concentrate is sold to seven well-known concentrate buyers.

Silver doré production from La Colorada, Alamo Dorado, Dolores and Manantial Espejo is refined under long term agreements with fixed refining terms at three separate refineries worldwide. The Company generally retains the risk and title to the precious metals throughout the process of refining and therefore is exposed to the risk that the refineries will not be able to perform in accordance with the refining contract and that the Company may not be able to fully recover precious metals in such circumstances. At December 31, 2016 the Company had approximately $28.5 million (2015 - $21.4 million) of value contained in precious metal inventory at refineries. The Company maintains insurance coverage against the loss of precious metals at the Company's mine sites, in-transit to refineries and whilst at the refineries.

The Company maintains trading facilities with several banks and bullion dealers for the purposes of transacting the Company's trading activities. None of these facilities are subject to margin arrangements. The Company's trading activities can expose the Company to the credit risk of its counterparties to the extent that our trading positions have a positive mark-to-market value. However, the Company minimizes this risk by ensuring there is no excessive concentration of credit risk with any single counterparty, by active credit management and monitoring.

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

Supplier advances for products and services yet to be provided are a common practice in some jurisdictions in which the Company operates. These advances represent a credit risk to the Company to the extent that suppliers do not deliver products or perform services as expected. As at December 31, 2016, the Company had made $28.8 million (2015 - $12.5 million) of supplier advances, which are reflected in "Trade and other receivables" on the Company's balance sheet.

Management constantly monitors and assesses the credit risk resulting from its refining arrangements, concentrate sales and commodity contracts with its refiners, trading counterparties and customers. 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.

At December 31, 2016, the Company has recorded an allowance for doubtful accounts provision in the amount of $7.6 million (2015 – $7.6 million). $7.6 million relates to amounts owing from Doe Run Peru ("DRP") (2015 – $7.6 million), one of the buyers of concentrates from the Company's Peruvian operations, for deliveries of concentrates that occurred in early 2009. The Company will continue to pursue every possible avenue to recover the amounts owed by DRP. At December 31, 2016, no additional provisions for doubtful accounts were recorded.

Cash and cash equivalents, trade accounts receivable and other receivables that represent the maximum credit risk to the Company consist of the following:

	December 31,	
	2016	2015
Cash and cash equivalents	**$ 180,881**	$ 133,963
Short-term investments	**36,729**	92,678
Trade accounts receivable(1)	**44,960**	21,272
Insurance receivable(1)	**—**	3,713
Royalty receivable(1)	**20**	61
Employee loans(1)	**1,048**	1,140

(1) Included in Trade and other receivables.

The Company invests its cash and cash equivalents which also has credit risk with the objective of maintaining safety of principal and providing adequate liquidity to meet all current payment obligations.

Interest Rate Risk

Interest rate risk is the risk that the fair values and future cash flows of the Company will fluctuate because of changes in market interest rates. At December 31, 2016, the Company has $7.1 million in lease obligations (2015 - $4.0 million), that are subject to an annualized interest rate of 2.2% and an amount drawn on the credit facility of $36.2 million (2015 - $36.2 million) at an annual interest rate of 2.125% to 3.125% over LIBOR. The interest paid by the Company for the year ended December 31, 2016 on its lease obligations was $0.1 million (2015 – $0.4 million). The Company has repaid all short term loans in Argentina during the year ended December 31, 2016 (2015 - the Company had received short term loans in Argentina totaling $5.3 million Argentinean Pesos (USD $0.6 million) at an annual interest rate of 40%, USD $12.3 million at an annual interest rate of 4% and the Company had drawn on an available line of credit in Argentina for $89.1 million Argentinean Pesos (USD $6.7 million) at an interest rate of

30.0%). The interest paid by the Company for the year ended December 31, 2016 on the credit facility was $1.0 million (2015 – $nil). The interest paid by the Company for the year ended December 31, 2016 on the convertible notes was $nil (2015 – $1.6 million).

The average interest rate earned by the Company during the year ended December 31, 2016 on its cash and short-term investments was 0.3% (2015 - 0.88%). A 10% increase or decrease in the interest earned from financial institutions on cash and short-term investments would result in a $0.1 million increase or decrease in the Company's before tax earnings (2015 – $0.2 million).

Foreign Exchange Rate Risk

The Company reports its financial statements in USD; however, the Company operates in jurisdictions that utilize other currencies. As a consequence, the financial results of the Company's operations as reported in USD are subject to changes in the value of the USD relative to local currencies. Since the Company's sales are denominated in USD and a portion of the Company's operating costs and capital spending are in local currencies, the Company is negatively impacted by strengthening local currencies relative to the USD and positively impacted by the inverse.

In order to mitigate this exposure, from time to time the Company has purchased Peruvian Nuevo Sol ("PEN"), Mexican Peso ("MXN") and Canadian Dollar ("CAD") to match anticipated spending. At December 31, 2016 and December 31, 2015, the Company had no outstanding contracts to purchase CAD or PEN. During the year ended December 31, 2016 the Company entered into collared positions for its foreign currency exposure of MXN purchases with puts and call contracts which have a nominal value of $81.0 million and have settlement dates between January 2017 and December, 2017. The positions have a weighted average floor of $19.36 and average cap of $22.91. The Company recorded losses of $1.5 million on MXN forward contracts in the year ended December 31, 2016 (2015 - losses of $0.2 million).

The Company's net earnings are affected by the revaluation of its monetary assets and monetary liabilities at each balance sheet date. The Company has reviewed its monetary assets and monetary liabilities and is exposed to foreign exchange risk through financial assets and liabilities and deferred income tax liabilities denominated in currencies other than USD as shown in the table below. The Company estimates that a 10% change in the exchange rate of the foreign currencies in which its December 31, 2016 non-USD net monetary liabilities were denominated would result in an income before taxes change of about $19.2 million (2015 - $12.7 million).

The Company is exposed to currency risk through the following financial assets and liabilities, and deferred income tax assets and liabilities denominated in foreign currencies:

At December 31, 2016	Cash and short-term investments	Other current and non-current assets	Income taxes receivable (payable), current and non-current	Accounts payable and accrued liabilities and non-current liabilities	Deferred tax assets and liabilities
Canadian Dollar	$ 6,513	$ 338	$ (45)	$ (142)	$ (356)
Mexican Peso	9,416	29,079	5,884	(45,388)	(150,394)
Argentinian Peso	3,485	24,062	367	(27,245)	—
Bolivian Boliviano	4,329	184	(3,365)	(13,476)	(8,464)
European Euro	37	—	(262)	—	(53)
Peruvian Nuevo Sol	817	2,158	(11,031)	(8,913)	(9,867)
	$ 24,597	**$ 55,821**	**$ (8,452)**	**$ (95,164)**	**$ (169,134)**

At December 31, 2015	Cash and short-term investments	Other current and non-current assets	Income taxes receivable (payable), current and non-current	Accounts payable and accrued liabilities and non-current liabilities	Deferred tax assets and liabilities
Canadian Dollar	$ 12,999	$ 229	$ —	$ (549)	$ (238)
Mexican Peso	9,202	29,309	7,074	(34,000)	(124,375)
Argentinian Peso	46	25,961	2,294	(38,817)	—
Bolivian Boliviano	1,334	10,077	(556)	(13,171)	(4,144)
European Euro	8	—	(373)	(19)	(183)
Peruvian Nuevo Sol	1,692	2,158	5,454	(8,913)	(9,457)
	$ 25,281	**$ 67,734**	**$ 13,893**	**$ (95,469)**	**$ (138,397)**

Liquidity Risk

Liquidity risk is the risk that the Company will not be able to meet its financial obligations as they come due. The Company manages its liquidity risk by continuously monitoring forecasted and actual cash flows. The Company has in place a rigorous planning and budgeting process to help determine the funds required to support the Company's normal operating requirements on an ongoing basis and its expansion plans. The Company strives to maintain sufficient liquidity to meet its short-term business requirements, taking into account its anticipated cash flows from operations, its holdings of cash and short-term investments, and its committed loan facilities.

e) Contractual Maturities

In the normal course of business, the Company enters into contracts that give rise to commitments for future minimum payments. The following table summarizes the remaining contractual maturities of the Company's financial and non-financial liabilities, shown in contractual undiscounted cashflow:

	Payments due by period 2016				
	Total	Within 1 year(1)	2 - 3 years	4- 5 years	After 5 years
Current liabilities	$ 141,002	$ 141,002	$ —	$ —	$ —
Credit Facility	38,440	960	1,280	36,200	—
Finance lease obligations(2)	7,321	3,720	3,601	—	—
Severance accrual	3,986	689	658	365	2,274
Employee compensation(3)	6,918	3,996	2,922	—	—
Loss on commodity contracts	2,815	2,815	—	—	—
Provisions(4)	4,719	3,262	562	629	266
Income taxes payable	25,911	25,911	—	—	—
Total contractual obligations(4)	**$ 231,112**	**$ 182,355**	**$ 9,023**	**$ 37,194**	**$ 2,540**

	Payments due by period 2015				
	Total	**Within 1 year(1)**	**2 - 3 years**	**4- 5 years**	**After 5 years**
Current liabilities	$ 111,700	$ 111,700	$ —	$ —	$ —
Credit Facility	39,400	960	1,920	36,520	—
Loan obligation (Note 15)	19,680	19,680	—	—	—
Finance lease obligations(2)	4,124	2,319	1,805	—	—
Severance accrual	3,811	720	1,444	975	672
Employee compensation(3)	3,178	1,707	1,471	—	—
Loss on commodity contracts	2,835	2,835	—	—	—
Provisions(4)	4,419	2,962	405	733	319
Income taxes payable	13,481	13,481	—	—	—
Total contractual obligations(4)	**$ 202,628**	**$ 156,364**	**$ 7,045**	**$ 38,228**	**$ 991**

(1) Includes all current liabilities in the consolidated statement of financial position at December 31, 2016 and December 31, 2015 plus items presented separately in this table that are expected to be paid but not accrued in the books of the Company. A reconciliation of the current liabilities balance in the statement of financial position to the total contractual obligations within one year, per the contractual maturities schedule is shown in the table below.

December 31, 2016		**Future interest component**	**Within 1 year**
Current portion of:			
Accounts payable and other liabilities	$ 141,002	$ —	**$ 141,002**
Credit facility	—	960	**960**
Current portion of finance lease	3,559	161	**3,720**
Current severance liability	689	—	**689**
Employee Compensation & RSU's	1,812	2,184	**3,996**
Unrealized loss on commodity contracts	2,815	—	**2,815**
Provisions(4)	3,262	—	**3,262**
Income tax payable	25,911	—	**25,911**
Total contractual obligations within one year (4)	$ 179,050	$ 3,305	**$ 182,355**

December 31, 2015		**Future interest component**	**Within 1 year**
Current portion of:			
Accounts payable and other liabilities	$ 111,700	$ —	**$ 111,700**
Credit facility	—	960	**960**
Loan obligation	19,578	102	**19,680**
Current portion of finance lease	2,238	81	**2,319**
Current severance liability	720	—	**720**
Employee Compensation & RSU's	409	1,298	**1,707**
Unrealized loss on commodity contracts	2,835	—	**2,835**
Provisions(4)	2,962	—	**2,962**
Income tax payable	13,481	—	**13,481**
Total contractual obligations within one year (4)	$ 153,923	$ 2,441	**$ 156,364**

(2) Includes lease obligations in the amount of $7.3 million (December 31, 2015 - $4.1 million) with a net present value of $7.1 million (December 31, 2015 - $4.0 million) discussed further in Note 17.
(3) Includes RSU obligation in the amount of $4.8 million (2015 – $2.5 million) that will be settled in cash. The RSUs vest in two instalments, 50% in December 2016 and 50% in December 2017.
(4) Amounts above do not include payments related to the Company's anticipated closure and decommissioning obligation (current of $5.2 million, long-term $50.4 million) discussed in Note 16 (2015 - current $6.0 million , long-term $44.5 million), the deferred credit arising from the Aquiline acquisition ($20.8 million) (2015 - $20.8 million) discussed in Note 19, and deferred tax liabilities of $170.9 million discussed in Note 28 (2015 - $142.1 million).

Fair Value of Financial Instruments

The carrying value of the conversion feature on the Minefinders Notes was stated at fair value and the carrying value of cash and cash equivalents, short-term investments, trade and other receivables, accounts payable and accrued liabilities approximate their fair value due to the relatively short periods to maturity of these financial instruments.

Fair value estimates are made at a specific point in time, based on relevant market information and information about the financial instrument. These estimates are subjective in nature and involve uncertainties and matters of significant judgement and, therefore, cannot be determined with precision. Changes in assumptions could significantly affect the estimates.

The following table sets forth the Company's financial assets and liabilities measured at fair value, grouped into Levels 1 to 3 based on the degree to which the fair value is observable. The hierarchy gives the highest priority to unadjusted quoted prices in active markets for identical assets or liabilities (Level 1 measurement) and the lowest priority to unobservable inputs (Level 3 measurements). The three levels of the fair value hierarchy are described as follows:

Level 1: Unadjusted quoted prices in active markets that are accessible at the measurement date for identical, unrestricted assets or liabilities;

Level 2: Quoted prices in markets that are not active, or inputs that are observable, either directly or indirectly, for substantially the full term of the asset or liability; and

Level 3: Prices or valuation techniques that require inputs that are both significant to the fair value measurement and unobservable (supported by little or no observable market data).

At December 31, 2016 and 2015, the levels in the fair value hierarchy into which the Company's financial assets and liabilities are measured and recognized on the Consolidated Statements of Financial Position at fair value are categorized as follows:

	Fair Value at December 31, 2016			
	Total	Level 1	Level 2	Level 3
Assets and Liabilities:				
Short-term investments	$ 36,729	$ 36,729	$ —	$ —
Trade receivables from provisional concentrate sales	44,960	—	44,960	—
Zinc contracts	(1,769)	—	(1,769)	—
Lead contracts	(54)	—	(54)	—
Foreign currency contracts	(992)	—	(992)	—
	$ 78,874	**$ 36,729**	**$ 42,145**	**$ —**

	Fair Value at December 31, 2015			
	Total	Level 1	Level 2	Level 3
Assets and Liabilities:				
Short-term investments	$ 92,678	$ 92,678	$ —	$ —
Trade receivables from provisional concentrate sales	21,272	—	21,272	—
Foreign currency contracts	(168)	—	(168)	—
Diesel swap contracts	(2,667)	—	(2,667)	—
	$ 111,115	**$ 92,678**	**$ 18,437**	**$ —**

The methodology and assessment of inputs for determining the fair value of financial assets and liabilities as well as the levels of hierarchy for the Company's financial assets and liabilities measured at fair value remains unchanged from that at December 31, 2015.

Valuation Techniques

Short-term investments and other investments

The Company's short-term investments and other investments are valued using quoted market prices in active markets and as such are classified within Level 1 of the fair value hierarchy and are primarily money market securities and U.S. Treasury securities. The fair value of the investment securities is calculated as the quoted market price of the investment and in the case of equity securities, the quoted market price multiplied by the quantity of shares held by the Company.

Derivative Financial Instruments

The Company's commodity swaps, diesel fuel swaps and foreign currency contracts are valued using observable market prices and as such are classified as Level 2 of the fair value hierarchy. As of December 31, 2016, the unrealized losses on foreign currency, diesel fuel swap and commodity contracts was $2.8 million (2015 - losses of $2.8 million).

During the year ended December 31, 2016 the Company entered into collared positions for its foreign currency exposure of MXN purchases with puts and call contracts (Note 7d, Foreign Exchange Rate Risk).

During the year ended December 31, 2015, the Company entered into diesel swap contracts designated to fix or limit the Company's exposure to higher fuel prices (the "Diesel fuel swaps"). The Diesel fuel swaps had an initial notional value of $25.5 million of which $nil remained outstanding as at December 31, 2016 (December 31, 2015 - $14.7 million). The Company recorded gains of $1.0 million on the Diesel fuel swaps in the year ended December 31, 2016 (2015 - losses of $3.1 million).

During the year ended December 31, 2015 the Company entered into copper swap contracts designated to fix or limit the Company's exposure to lower copper prices (the "Copper swaps"). The copper swaps were on 4,080 metric tonnes ("MT") of copper at an average price of $6,044 USD/MT. The Company did not enter into any copper swap contracts during the year ended December 31, 2016. The Company recorded gains of $3.0 million on the copper contracts in the year ended December 31, 2015. There were no copper swap contracts outstanding as at December 31, 2016 or December 31, 2015.

During the year ended December 31, 2016, in order to limit its exposure to lower zinc prices on a portion of its zinc production, the Company used put and call contracts to collar the prices on 22,115 tonnes of zinc, of which only contracts for 10,265 tonnes of zinc remained outstanding at December 31, 2016. The outstanding contracts have a weighted average floor and cap of $2,043 and $2,887, respectively. The remaining contracts have settlement dates between January 2017 and December 2017. The Company recorded losses of $4.3 million on zinc positions during the year ended December 31, 2016.

Further, during the year ended December 31, 2016, in order to limit its exposure to lower lead prices on a portion of its lead production, the Company used put and call contracts to collar the prices on 3,720 tonnes of lead, of which only contracts for 620 tonnes remained outstanding at December 31, 2016. The outstanding contracts have a fixed minimum price of $1,650 and a maximum price of $1,965 per tonne. These remaining contracts have settlement dates between January 2017 and February 2017. The Company recorded losses of $0.2 million on the lead positions during the year ended December 31, 2016.

Convertible notes

The Company's unrealized gains and losses on the conversion feature of the Minefinders Notes were valued using observable inputs and as such were classified as Level 2 of the fair market value hierarchy. The conversion feature on the Minefinders Notes was considered an embedded derivative and previously re-measured at fair value each reporting period. The fair value of the conversion feature of the convertible notes was determined using a model that included the volatility and price of the Company's common shares and a credit spread structure with reference to the corresponding fair value of the debt component of the convertible notes. The notes were settled in December 2015 along with all accrued interest.

Receivables from Provisional Concentrate Sales

A portion of the Company's trade receivables arose from provisional concentrate sales and are valued using quoted market prices based on the forward London Metal Exchange ("LME") for copper, zinc and lead and the London Bullion Market Association P.M. fix ("London P.M. fix") for gold and silver.

8. Short-Term Investments

	December 31, 2016			December 31, 2015		
Available for Sale	**Fair Value**	**Cost**	**Accumulated unrealized holding gains**	Fair Value	Cost	Accumulated unrealized holding losses
Short-term investments	**$ 36,729**	**$ 36,295**	**$ 434**	$ 92,678	$ 93,136	$ (458)

9. Inventories

Inventories consist of:

		December 31, 2016		December 31, 2015
Concentrate inventory	**$**	**12,891**	$	17,216
Stockpile ore (1)		**31,964**		18,988
Heap leach inventory and in process (2)		**109,705**		82,846
Doré and finished inventory (3)		**36,864**		33,981
Materials and supplies		**45,905**		51,330
	$	**237,329**	$	204,361

(1) Includes an impairment charge of $6.0 million to reduce the cost of inventory to NRV at Manantial Espejo and Dolores mines (December 31, 2015 – $28.8 million at Manantial Espejo, Dolores and Alamo Dorado mines).
(2) Includes an impairment charge of $1.5 million to reduce the cost of inventory to NRV at Manantial Espejo mine (December 31, 2015 - $21.3 million at Manantial Espejo and Dolores mines).
(3) Includes an impairment charge of $3.4 million to reduce the cost of inventory to NRV at Manantial Espejo and Alamo Dorado mines (December 31, 2015 - $3.7 million at Manantial Espejo and Dolores mines).

Production costs, including depreciation and amortization, and royalties for the year ended December 31, 2016 were $575.9 million (2015 - $706.8 million). Production costs represent cost of inventories sold during the year. During 2016, a $42.8 million (2015 - $10.9 million net realizable value loss) net realizable value recovery was recognized, primarily driven by increased metal prices, and included in production costs (Note 21). Inventories held at net realizable value amounted to $48.2 million (2015 – $119.0 million). A portion of the Stockpile ore amounting to $18.4 million (2015 – $4.5 million) and a portion of the heap leach inventory amounting to $65.2 million (2015 - $57.6 million) are expected to be recovered or settled after more than twelve months.

10. Mineral Properties, Plant and Equipment

Acquisition costs of investment and non-producing properties together with costs directly related to mine development expenditures are capitalized. Exploration expenditures on investment and non-producing properties are charged to expense in the period they are incurred.

Capitalization of evaluation expenditures commences when there is a high degree of confidence in the project's viability and hence it is probable that future economic benefits will flow to the Company. Evaluation expenditures, other than that acquired from the purchase of another mining company, are carried forward as an asset provided that such costs are expected to be recovered in full through successful development and exploration of the area of interest or alternatively, by its sale. Evaluation expenditures include delineation drilling, metallurgical evaluations, and geotechnical evaluations amongst others.

Mineral properties, plant and equipment consist of:

	Mining Properties				
	Depletable	Non-depletable			
	Reserves and Resources	Reserves and Resources	Exploration and Evaluation	Plant and Equipment	Total
Carrying value					
As at January 1, 2016					
Net of accumulated depreciation	$ 620,035	$ 120,351	$ 276,307	$ 128,528	$ 1,145,221
Additions	88,331	—	—	112,506	200,837
Disposals	—	—	—	(1,208)	(1,208)
Depreciation and amortization	(34,803)	—	—	(81,152)	(115,955)
Depreciation charge captured in inventory	(9,675)	—	—	—	(9,675)
Transfers	21,976	(61,773)	(16,354)	51,021	(5,130)
Closure and decommissioning – changes in estimate	8,637	—	—	—	8,637
As at December 31, 2016	**$ 694,501**	**$ 58,578**	**$ 259,953**	**$ 209,695**	**$ 1,222,727**
Cost as at December 31, 2016	$ 1,916,954	$ 70,675	$ 661,357	$ 820,687	$ 3,469,673
Accumulated depreciation and impairments	**(1,222,453)**	**(12,097)**	**(401,404)**	**(610,992)**	**(2,246,946)**
Carrying value – December 31, 2016	**$ 694,501**	**$ 58,578**	**$ 259,953**	**$ 209,695**	**$ 1,222,727**

	Mining Properties				
	Depletable	Non-depletable			
	Reserves and Resources	Reserves and Resources	Exploration and Evaluation	Plant and Equipment	Total
Carrying value					
As at January 1, 2015					
Net of accumulated depreciation	$ 646,374	$ 129,944	$ 281,401	$ 208,672	$ 1,266,391
Additions	114,092	—	—	42,461	156,553
Disposals	—	—	—	(255)	(255)
Depreciation and amortization	(69,479)	—	—	(81,366)	(150,845)
Depreciation charge captured in inventory	15,661	—	—	—	15,661
Impairment charges	(90,431)	(14,571)	—	(45,266)	(150,268)
Transfers	(5,249)	4,978	(5,094)	4,282	(1,083)
Capitalized borrowing costs	1,994	—	—	—	1,994
Closure and decommissioning – changes in estimate	7,073	—	—	—	7,073
As at December 31, 2015	**$ 620,035**	**$ 120,351**	**$ 276,307**	**$ 128,528**	**$ 1,145,221**
Cost as at December 31, 2015	$ 1,502,411	$ 341,331	$ 677,846	$ 720,786	$ 3,242,374
Accumulated depreciation and impairments	**(882,376)**	**(220,980)**	**(401,539)**	**(592,258)**	**(2,097,153)**
Carrying value – December 31, 2015	**$ 620,035**	**$ 120,351**	**$ 276,307**	**$ 128,528**	**$ 1,145,221**

	December 31, 2016			December 31, 2015		
	Cost	**Accumulated Depreciation and Impairment**	**Carrying Value**	Cost	Accumulated Depreciation and Impairment	Carrying Value
Huaron mine, Peru	**$ 185,850**	**$ (95,195)**	**$ 90,655**	$ 171,574	$ (82,896)	$ 88,678
Morococha mine, Peru	**222,517**	**(183,289)**	**39,228**	214,855	(177,621)	37,234
Alamo Dorado mine, Mexico	**197,199**	**(197,199)**	**—**	198,950	(198,950)	—
La Colorada mine, Mexico	**262,516**	**(81,888)**	**180,628**	200,083	(72,732)	127,351
Dolores mine, Mexico	**1,358,923**	**(837,478)**	**521,445**	921,169	(512,308)	408,861
Manantial Espejo mine, Argentina	**361,553**	**(347,855)**	**13,698**	360,735	(341,457)	19,278
San Vicente mine, Bolivia	**124,618**	**(74,251)**	**50,367**	130,595	(72,230)	58,365
Other	**24,465**	**(16,290)**	**8,175**	25,237	(16,441)	8,796
Total	**$ 2,737,641**	**$ (1,833,445)**	**$ 904,196**	$ 2,223,198	$ (1,474,635)	$ 748,563
Land and Exploration and Evaluation:						
Land	**$ 4,900**	**$ (1,462)**	**$ 3,438**	$ 4,977	$ (1,462)	$ 3,515
Navidad project, Argentina	**566,572**	**(376,101)**	**190,471**	566,572	(376,101)	190,471
Minefinders projects, Mexico	**112,029**	**(16,929)**	**95,100**	399,348	(225,947)	173,401
Morococha, Peru	**9,674**	**(6,436)**	**3,238**	9,674	(6,436)	3,238
Other	**38,857**	**(12,573)**	**26,284**	38,606	(12,573)	26,033
Total non-producing properties	**$ 732,032**	**$ (413,501)**	**$ 318,531**	$ 1,019,177	$ (622,519)	$ 396,658
Total mineral properties, plant and equipment	**$ 3,469,673**	**$ (2,246,946)**	**$ 1,222,727**	$ 3,242,375	$ (2,097,154)	$ 1,145,221

Project Development

Dolores Mine, Mexico

During the year ended December 31, 2016 the Company capitalized $106.6 million of mineral properties, plant and equipment (2015 - $53.1 million) which included deferred stripping costs of $18.5 million, pulp agglomeration construction costs of $40.5 million, underground development costs of $17.2 million, powerline construction costs of $6.8 million, and pad 3 construction additions of $1.6 million (2015 - deferred stripping costs of $18.1 million, powerline construction costs of $11.5 million and pad 3 construction additions of $2.2 million). For the year ended December 31, 2016, the Company capitalized $nil in interest related to the capital expenditures (2015 - $2.0 million at a 8.7% capitalization rate).

La Colorada, Mexico

During the year ended December 31, 2016 the Company capitalized $52.9 million of mineral properties, plant and equipment (2015 - $45.4 million) which included shaft construction costs of $19.3 million, sulfide plant construction costs of $12.8 million, underground development costs of $2.9 million, and powerline construction costs of $6.1 million. (2015 - shaft construction costs of $11.3 million, sulfide plant construction costs of $21.3 million, underground development of $2.4 million, and powerline construction costs of $2.6 million)

Disposals

On May 8, 2016, the Company recorded a gain on sale of assets of $18.3 million on the sale of a 75% interest in the shares of Shalipayco S.A.C. (“Shalipayco”) for consideration of $15.0 million in cash and a one percent (1%) Net Smelter Returns Royalty (the “NSR”) on the property, which was subsequently disposed, on July 11, 2016 (Note 12) for proceeds of $3.3 million. Shalipayco is the owner of the Shalipayco zinc development project located in the provinces of Pasco and Junin, Peru.

On July 11, 2016, the Company recorded a gain on sale of assets in the amount of $6.6 million ($0.6 million gain after taxes) as a result of the disposition of certain royalties, precious metals streams, and payment arrangements (Note 12).

11. Impairment of Non-Current Assets and Goodwill

Non-current assets are tested for impairment when events or changes in circumstance indicate that the carrying amount may not be recoverable, or previous impairment on assets are recoverable. The Company performs an impairment test for goodwill at each financial year end and when events or changes in circumstances indicate that the related carrying value may not be recoverable. The Company considers its internal discounted cash flow economic models as a proxy for the calculation of fair value less cost to sell, given a willing market participant would use such models in establishing a value for the properties. The Company considers impairment, or if previous impairment charges should be reversed, at the cash generating unit ("CGU") level, which is considered to be an individual mine or a development property. The CGU carrying amount for purposes of this test includes the carrying value of the mineral properties plant and equipment less deferred tax liabilities and closure and decommissioning liabilities related to each CGU.

The Company's key assumptions for determining the recoverable amounts of its various CGUs, for the purpose of testing for impairment or impairment reversals, include the most current operating and capital costs information and risk adjusted project specific discount rates. The Company uses an average of analysts' consensus prices for the first four years of its economic modeling, and long term reserve prices for the remainder of each asset's life. The prices used can be found in the key assumptions and sensitivity section below.

During the fourth quarter of 2016, management determined that changes in operating assumptions for the Dolores and Manatial Espejo mines, including but not limited to changes in year-end reserves and resources and mine-life estimates, when considered together with increases to the Company's reserve prices and to consensus prices, could be indicative of changes in the assets' recoverable amounts significant enough to warrant either reversals of previous impairment charges, or additional impairment charges. As a result, management estimated the recoverable amounts of these mines as at December 31, 2016, determined on a fair value less costs to sell basis, and concluded that the carrying values were supportable and that no impairment charges or reversals were required.

Impairment at December 31, 2015

The sustained decrease in metal prices, that was most pronounced during the second half of 2015, led to the Company lowering its long term reserve prices at year-end. The year-end reserve price reduction and observed declines in near-term and mid-term period consensus metal prices referenced in the Company's life of mine cash flow models, led management to conclude that there was an indication of impairment to certain assets in the third and fourth quarter of 2015. Based on the Company's estimation of the recoverable amounts of its mineral properties as at September 30, 2015 and December 31, 2015, determined on a fair value less costs to sell basis, the Company concluded that impairment charges were required during the year on the Dolores, Manantial Espejo, Morococha, and Alamo Dorado mines.

As at December 31, 2015, the Company determined the carrying value of the Dolores mine, including mineral properties, plant and equipment, and stockpile inventories, net of associated deferred tax liabilities and closure and decommissioning liabilities of $434.3 million (the "Net Carrying Amount"), was greater than its then estimated recoverable amount of $413.6 million when using a 5.25% risk adjusted discount rate. Based on the assessment at December 31, 2015, the Company recorded an impairment charge related to the Dolores mine of $31.7 million before tax ($20.7 million net of tax).

As at December 31, 2015, the Company determined that the $12.9 million Net Carrying Amount of the Alamo Dorado mine, was greater than its then estimated recoverable amount of $nil when using a 4.00% risk adjusted discount rate. Based on this assessment the Company wrote–off the carrying value of the Alamo Dorado mine's mineral properties, plant and equipment assets of $9.1 million before tax ($6.0 million net of tax).

As at December 31, 2015, the Company determined that the $112.4 million Net Carrying Amount of the Morococha mine, was greater than its then estimated recoverable amount of $36.3 million when using a 6.50% risk adjusted discount rate. Based on the assessment at December 31, 2015, the Company recorded an impairment charge related to the Morococha mine of $80.7 million before tax ($59.1 million net of tax).

As at September 30, 2015, the Company determined that the Net Carrying Amount of the Manantial Espejo mine of approximately $83.4 million was greater than its then estimated recoverable amount of $29.9 million, when using an 8.25% risk adjusted discount rate. Based on this assessment the Company recorded an impairment charge related to the Manantial Espejo mineral properties, plant and equipment of $28.8 million before tax ($20.2 million net of tax).

Key assumptions and sensitivity

The metal prices used to calculate the recoverable amounts at December 31, 2016, December 31, 2015, and September 30, 2015 are based on analyst consensus prices and the Company's long term reserve prices, and are summarized in the following tables:

Metal prices used at December 31, 2016:

Commodity Prices	2017-2020 average	Long term
Silver price - $/oz.	$19.93	$18.50
Gold price - $/oz.	$1,327	$1,300
Zinc price - $/tonne	$2,567	$2,200
Copper price - $/tonne	$5,725	$5,000
Lead price - $/tonne	$2,142	$2,000

Metal prices used at December 31, 2015:

Commodity Prices	2016-2019 average	Long term
Silver price - $/oz.	$16.87	$17.00
Gold price - $/oz.	$1,184	$1,180
Zinc price - $/tonne	$2,264	$1,800
Copper price - $/tonne	$5,690	$5,000
Lead price - $/tonne	$1,935	$1,800

Metal prices used at September 30, 2015:

Commodity Prices	2015-2018 average	Long term
Silver price - $/oz.	$16.98	$18.50
Gold price - $/oz.	$1,199	$1,250

In 2016, the discount rates used to present value the Company's life of mine cash flows were derived from the Company's weighted average cost of capital which was calculated as 6.4% (2015 – 6.4%), with rates applied to the various mines and projects ranging from 5.00% to 9.00% (2015 - 4.00% to 10.00%), depending on the Company's assessment of country risk, project risk, and other potential risks specific to each CGU.

The key assumptions in determining the recoverable value of the Company's mineral properties are individual metal prices, operating and capital costs, foreign exchange rates and discount rates. At December 31, 2016, the Company performed a sensitivity analysis on all key assumptions that assumed a modest (10%) adverse change to each individual assumption while holding the other assumptions constant.

At December 31, 2016, an adverse 10% movement in any of the major assumptions in isolation did not cause the recoverable amount to be below the CGU carrying value for any of La Colorada, Alamo Dorado, San Vicente, Huaron, Morococha, or the Navidad project. For the Manantial Espejo mine, which in 2015 had its carrying values adjusted to fair value less cost to sell through impairment charges, a modest increase in operating costs would reduce the recoverable amount below the carrying amount. In the case of the Dolores mine, which in 2015 had its carrying values adjusted to fair value less cost to sell through impairment charges, a modest adverse change in any one key assumption would reduce the recoverable amount below the carrying amount.

At December 31, 2015, an adverse 10% movement in any of the major assumptions in isolation did not cause the recoverable amount to be below the CGU carrying value for any of La Colorada, San Vicente and Huaron. In the case of the Dolores mine, the Alamo Dorado mine, the Manantial Espejo mine, the Morococha mine, and the Navidad project and certain non-core exploration properties, which all have had their carrying values adjusted to fair value less cost to sell through impairment charges, a modest adverse change in any one key assumption would reduce the recoverable amount below the carrying amount.

Goodwill

Goodwill arose when the Company acquired Minefinders in 2012 and consists of:

As at December 31, 2014	**$**	**3,057**
Impairments		**—**
As at December 31, 2015	**$**	**3,057**
Impairments		**—**
As at December 31, 2016	**$**	**3,057**

12. Investment in Associates

Investment in associates consist of:

		December 31, 2016		December 31, 2015
Investment in Maverix Metals Inc. ("Maverix")	**$**	**48,284**	$	—
Investment in other		**1,450**		1,450
	$	**49,734**	$	1,450

The following table shows a continuity of the Company's investment in Maverix:

		2016		2015
Acquisition cost of investment in associate, July 11, 2016	**$**	**29,371**	**$**	**—**
Dilution gain		10,979		—
Adjustment for change in ownership interest		10,967		—
Loss in associate		(3,033)		—
Balance of investment in associate, December 31, 2016	**$**	**48,284**	**$**	**—**

Investment in Maverix:

On July 11, 2016 Maverix (formerly, MacMillan Minerals Inc.) and the Company closed a plan of arrangement (the "Arrangement") pursuant to which Maverix acquired 13 royalties, precious metals streams and payment agreements (the "Portfolio") from the Company. The chair of the board of Maverix is the Company's former CEO and two of the Company's senior executives serve on the board of Maverix.

As part of the Arrangement, Pan American received 42,850,000 common shares (the "Shares") and 20,000,000 common share purchase warrants (the "Initial Warrants") in exchange for the Portfolio. The Initial Warrants are exercisable without restriction for five years, at the option of the Company with one-half exercisable at $0.546 per share and the other half exercisable at $0.78 per share. Following the close of the Arrangement, Maverix had a total of 79,837,856 issued and outstanding common shares, of which the Company held approximately 54 percent on a non-diluted basis.

As a result of the Company's limited board representation in Maverix and restricted influence over Maverix's operating, strategic and financing decisions, the Company concluded that it has significant influence over, but does not control Maverix. As such, the investment in Maverix is considered an Investment in Associate, accounted for using the equity method, whereby the Company will record its portion of Maverix's income or loss based on Pan American's ownership interest in Maverix. Maverix was initially recorded based on the fair value of the Company's acquired interest, and the book value of the portion of the Portfolio retained through the Company's ownership in Maverix.

On December 23, 2016, Maverix closed a transaction with Gold Fields Netherlands Services BV (a wholly owned subsidiary of Gold Fields Limited) and certain of its affiliates (collectively "Gold Fields"), where Maverix acquired a portfolio of eleven (11) royalties from Gold Fields (the "GFI Royalty Portfolio"); and Maverix issued to Gold Fields a total of 42.85 million common shares and 10 million common share purchase warrants. Concurrent with this, the Company exercised 10 million Initial Warrants having an exercise price of $0.546 (CDN$0.70) per Maverix common share for aggregate proceeds of $5.5 million paid to Maverix (the "Warrant Exercise"). The Warrant Exercise was carried out as part of an early warrant exercise incentive arrangement with the Company pursuant to which Maverix issued to the Company 6.5 million Maverix common share purchase warrants (the

"Inducement Warrants") with an exercise price of $1.204 (CDN$1.60) per common share of Maverix and expiring on July 8, 2021 (collectively, the "Gold Fields Transaction").

The Company also concluded that the Initial Warrants and the Inducement Warrants represent an in substance ownership interest in Maverix rather than a derivative financial asset and were thus a component of the Maverix Investment in Associate. A corresponding warrant liability of $11.7 million was initially recognized as the aggregate exercise price of the Initial Warrants discounted at 2.6%. The exercise of 10 million Initial Warrants triggered the de-recognition of $4.8 million in warrant liability and a further $7.0 million in warrant liablity was recorded for the Inducement Warrants (calculated as the aggregate exercise price discounted at 2.6%). Based on this treatment, the Company's share of Maverix income or loss was recorded, from July 11, 2016 to December 23, 2016, based on its 63% interest and 43% for the period of December 24, 2016 to December 31, 2016, representing the Company's fully diluted ownership. As at December 31, 2016, the warrant liability was $13.8 million.

Deferred Revenue:

Included in the Portfolio are precious metal streams whereby the Company will sell 100% of the future gold production from La Colorada and 5% of the future gold production from La Bolsa, which is in the exploration stage, to Maverix for $650 and $450 per ounce, respectively (the "Streams").

A deferred revenue liability of $7.8 million was recognized on July 11, 2016 for the Streams and represents the fair value of the differential between the fixed contracted gold prices in the streams, and the assumed future market gold prices included in the underlying La Colorada and La Bolsa mine models. The liability recognized by the Company is the portion of the deferred revenue to be paid to Maverix owners other than Pan American through its ownership in Maverix. On December 23, 2016, the Company recorded an additional $4.0 million of deferred revenue as a result of the diluted ownership in Maverix that arose on the Gold Fields Transaction. The deferred revenue related to the Streams will be recognized as revenue by Pan American as the gold ounces are delivered to Maverix. As at December 31, 2016, the deferred revenue liability was $11.6 million.

During the 173 days ended December 31, 2016, $0.2 million of revenue was recognized for the delivery of 604 ounces of gold from La Colorada to Maverix. All transactions with Maverix were in normal course and measured at exchange amounts, which were the amounts of consideration established and agreed to by the Company and Maverix.

Income Statement Impacts:

The initial transaction on July 11, 2016 resulted in the recognition of an initial gain on the sale of assets in the amount of $6.6 million ($0.6 million gain after taxes).

The Gold Fields Transaction resulted in a $11.0 million dilution gain recorded in share of loss from associate and dilution gain comprised of $23.0 million gain recorded for the proportionate increase in assets acquired offset by a $8.1 million loss recorded for the dilution of ownership in Maverix and a $3.9 million loss recorded as a result of the Inducement Warrants in Maverix.

The Company also recognized a share of loss from associate of $3.0 million recorded in share of loss from associate and dilution gain which represents the Company's 63% share of Maverix's loss from the date of acquisition of interest in Maverix until the Gold Fields Transaction and 43% for the remaining period ended December 31, 2016.

13. Other Assets

Other assets consist of:

		December 31, 2016		December 31, 2015
Reclamation bonds	**$**	**199**	$	199
Lease receivable		**91**		185
Other assets		**89**		37
	$	**379**	$	421

14. Accounts Payable and Accrued Liabilities

Accounts payable and accrued liabilities consist of:

	December 31, 2016	December 31, 2015
Trade accounts payable(1)	**$ 45,344**	$ 53,570
Royalties payable	**4,612**	1,947
Other accounts payable and trade related accruals	**48,767**	28,796
Payroll and related benefits	**24,971**	17,366
Severance accruals	**688**	720
Other taxes payable	**1,791**	1,220
Advances on concentrate inventory	**33**	—
Other	**17,296**	9,210
	$ 143,502	$ 112,829

(1) No interest is charged on the trade accounts payable ranging from 30 to 60 days from the invoice date. The Company has policies in place to ensure that all payables are paid within the credit terms.

15. Loans payable

	December 31, 2016	December 31, 2015
Loans payable	**$ —**	$ 19,578
Net loans payable(1)	**$ —**	$ 19,578

(1)

As at December 31, 2015

Due	Argentine Peso	US$	Int. Rate	Total US$
January 6, 2016	$ 5,291	$ —	40.00%	$ 406
January 15, 2016	89,065	—	30.00%	6,872
January 23, 2016	—	2,305	3.90%	2,305
January 29, 2016	—	300	5.30%	300
January 29, 2016	—	2,500	3.82%	2,500
February 28, 2016	—	3,195	4.25%	3,195
March 9, 2016	—	3,200	3.35%	3,200
March 9, 2016	—	800	3.85%	800
	$ 94,356	$ 12,300		$ 19,578

16. Provisions

	Closure and Decommissioning	Litigation	Total
December 31, 2014	$ 43,173	$ 5,011	$ 48,184
Revisions in estimates and obligations incurred	$ 6,859	—	6,859
Charged (credited) to earnings:			
-new provisions	—	125	125
-change in estimate	—	(86)	(86)
-exchange gains on provisions	—	(377)	(377)
Charged in the year	—	(255)	(255)
Reclamation expenditures	(2,818)	—	(2,818)
Accretion expense (Note 23)	3,239	—	3,239
December 31, 2015	$ 50,453	$ 4,418	$ 54,871
Revisions in estimates and obligations incurred	**6,875**	**—**	**6,875**
Charged (credited) to earnings:			
-new provisions	**—**	**347**	**347**
-change in estimate	**—**	**(104)**	**(104)**
-exchange gains on provisions	**—**	**(32)**	**(32)**
Charged in the year	**—**	**(297)**	**(297)**
Reclamation expenditures	**(6,080)**	**—**	**(6,080)**
Accretion expense (Note 23)	**4,363**	**—**	**4,363**
December 31, 2016	**$ 55,611**	**$ 4,332**	**$ 59,943**

Maturity analysis of total provisions:	**December 31, 2016**	December 31, 2015
Current	**$ 8,499**	$ 8,979
Non-Current	**51,444**	45,892
	$ 59,943	$ 54,871

Closure and Decommissioning Cost Provision

The total inflated and undiscounted amount of estimated cash flows required to settle the Company's estimated future closure and decommissioning costs is $122.1 million (2015 - $107.2 million) which has been inflated using inflation rates of between 1% and 23% (2015 – between 1% and 17%). The total provision for closure and decommissioning cost is calculated using discount rates of between 1% and 30% (2015 - between 1% and 20%). Revisions made to the reclamation obligations in 2016 were primarily a result of increased site disturbance at the mines as well as revisions to the estimate based on periodic reviews of closure plans, actual expenditures incurred and concurrent closure activities completed. These obligations will be funded from operating cash flows, reclamation deposits and cash on hand.

The accretion expense charged to 2016 earnings as finance expense was $4.4 million (2015 - $3.2 million). Reclamation expenditures paid during the current year were $6.1 million (2015 - $2.8 million).

Litigation Provision

The litigation provision consists of amounts accrued for labour claims at several of the Company's mine operations. The balance of $4.3 million at December 31, 2016 (2015 - $4.4 million) represents the Company's best estimate for all known and anticipated future obligations related to the above claims. The amount and timing of any expected payments are uncertain as their determination is outside the control of the Company.

17. Finance Lease Obligations

		December 31, 2016		December 31, 2015
Lease obligations(1)	**$**	**7,101**	$	3,997

		December 31, 2016		December 31, 2015
Maturity analysis of finance leases:				
Current	**$**	**3,559**	$	2,238
Non-Current		**3,542**		1,759
	$	**7,101**	$	3,997

(1) Represents equipment lease obligations at several of the Company's subsidiaries. A reconciliation of the total future minimum lease payments at December 31 to their present value is presented in the table below.

		December 31, 2016		December 31, 2015
Less than a year	**$**	**3,720**	$	2,319
2 years		**3,242**		1,030
3 years		**359**		775
4 years		**—**		—
5 years		**—**		—
		7,321		4,124
Less future finance charges		**(220)**		(127)
Present value of minimum lease payments	**$**	**7,101**	$	3,997

18. Long Term Debt

		December 31, 2016		December 31, 2015
Credit Facility	**$**	**36,200**	$	36,200
Total long-term debt	**$**	**36,200**	$	36,200

		December 31, 2016		December 31, 2015
Maturity analysis of Long Term Debt:				
Current	**$**	**—**	$	—
Non-Current		**36,200**		36,200
	$	**36,200**	$	36,200

On April 15, 2015 the Company entered into a $300.0 million secured revolving credit facility with a 4-year term (the "Credit Facility") and upfront costs of $3.0 million. On May 31, 2016, the Company amended its Credit Facility by extending the term by 1 year, with additional upfront costs of $0.4 million. As part of the amendment, the financial covenants were amended to require the Company to maintain a tangible net worth (exclusive of any prospective write-downs of certain assets) of greater than $1,036.4 million plus 50% of the positive net income from and including the fiscal quarter ended March 31, 2016. In addition, the financial covenants continue to include the requirement for the Company to maintain: (i) a leverage ratio less than or equal to 3.5:1; and (ii) an interest coverage ratio more than or equal to 3.0:1. As of December 31, 2016 the Company was in compliance with all covenants required by the Credit Facility.

The upfront costs have been recorded as an asset under the classification Prepaid expenses and other current assets and are being amortized over the life of the Credit Facility. The Credit Facility can be drawn down at any time to finance the Company's working capital requirements, acquisitions, investments and for general corporate purposes.

At the option of the Company, amounts can be drawn under the Credit Facility and will incur interest based on the Company's leverage ratio at either (i) LIBOR plus 2.125% to 3.125% or; (ii) the Bank of Nova Scotia's Base Rate plus 1.125% to 2.125%. Undrawn amounts under the Credit Facility are subject to a stand-by fee of 0.478% to 0.703% per annum, dependent on the Company's leverage ratio.

At December 31, 2016 and December 31, 2015 $36.2 million was drawn on the Credit Facility under LIBOR loans at an average annual rate of 2.55%. During the year ended December 31, 2016, the Company has incurred $1.2 million (2015 - $1.1 million) in standby charges on undrawn amounts and $1.0 million (2015 - $nil) in interest on drawn amounts under this Facility.

Also, as part of the Minefinders acquisition and pursuant to the First Supplemental Indenture Agreement, the Company issued replacement unsecured convertible senior notes with an aggregate principal amount of $36.2 million (the "Minefinders Notes"). Until such time as the earlier of December 15, 2015 and the date the Minefinders Notes were converted, each note bore interest at 4.5% payable semi-annually on June 15 and December 15 of each year. The principal outstanding on the Minefinders Notes was due and settled on December 15, 2015. During the year ended December 31, 2015, the Company recorded a $0.3 gain on the settlement of the embedded derivative on the convertible notes.

19. Other Long Term Liabilities

Other long term liabilities consist of:

		December 31, 2016		December 31, 2015
Deferred credit(1)	**$**	**20,788**	$	20,788
Other income tax payable		**3,321**		6,624
Severance accruals		**3,299**		3,091
	$	**27,408**	$	30,503

(1) As part of the 2009 Aquiline transaction the Company issued a replacement convertible debenture that allowed the holder to convert the debenture into either 363,854 Pan American Shares or a Silver Stream contract related to certain production from the Navidad project. Regarding the replacement convertible debenture, it was concluded that the deferred credit presentation was the most appropriate and best representation of the economics underlying the contract as of the date the Company assumed the obligation as part of the Aquiline acquisition. Subsequent to the acquisition, the counterparty to the replacement debenture selected the Silver Stream alternative. The final contract for the alternative is being discussed and pending the final resolution of this discussion, the Company continues to classify the fair value calculated at the acquisition of this alternative, as a deferred credit.

20. Share Capital and Employee Compensation Plans

The Company has a comprehensive stock option and compensation share plan for its employees, directors and officers (the "Compensation Plan"). The Compensation Plan provides for the issuance of common shares and stock options, as incentives. The maximum number of shares which may be issued pursuant to options granted or bonus shares issued under the Compensation Plan may be equal to, but will not exceed 6,461,470 shares. The exercise price of each option shall be the weighted average trading price of the Company's stock for the five trading days prior to the award date. The options can be granted for a maximum term of 10 years with vesting provisions determined by the Company's Board of Directors. Subject to certain exceptions, any modifications to the Compensation Plan require shareholders' approval.

The Board has developed long term incentive plan ("LTIP") guidelines, which provide annual compensation to the senior managers of the Company based on the long term performance of both the Company and the individuals that participate in the plan. The LTIP consists of an annual grant of options to buy shares of the Company and a grant of the Company's common shares with a two year no trading legend. The options are seven year options which vest evenly in two annual instalments. Options and common shares granted under the LTIP plan are based on employee salary levels, individual performance and their future potential. In addition, the restricted share units ("RSUs") plan described below is part of the LTIP plan. In early 2014, the Board approved the adding of performance share units ("PSUs") to the Company's LTIP, plan described below.

The Compensation Committee oversees the LTIP on behalf of the Board of Directors. The LTIP plan guidelines can be modified or suspended, at the discretion of the Board of Directors. Additionally, from time to time, the Company issues replacement awards and warrants related to acquisitions.

Transactions concerning stock options are summarized as follows in CAD:

	Stock Options	
	Shares	**Weighted Average Exercise Price CAD$**
As at December 31, 2014	**1,394,515**	**$ 19.74**
Granted	446,279	$ 9.76
Exercised	—	$ —
Expired	(190,862)	$ 25.19
Forfeited	(97,009)	$ 23.21
As at December 31, 2015	**1,552,923**	**$ 15.98**
Granted	45,705	$ 23.61
Exercised	(254,146)	$ 12.30
Expired	(9,352)	$ 24.70
Forfeited	(24,266)	$ 21.07
As at December 31, 2016	**1,310,864**	**$ 16.81**

Long Term Incentive Plan

During the year ended December 31, 2016, the Company awarded 82,338 (2015 - 215,234) shares of common stock with a two year holding period and granted 45,705 (2015 – 446,279) options under this plan. During 2016, 14,434 common shares were issued to Directors in lieu of Directors fees of $0.2 million (2015 - 25,128 of $0.2 million). The Company used as its assumptions for calculating the fair value, a risk free interest rate of 1.2% - 1.3% (2015 – 1.5% - 2.2%), weighted average volatility of 54% using a historical volatility (2015 – 54%), expected lives ranging from 3.5 to 4.5 (2015 – 3.5 to 4.5) years, expected dividend yield of 1.4% - 1.7% (2015 – 5.4% - 6.4%), and an exercise price of CAD $23.61 (2015 – CAD $9.76) per share. The weighted average fair value of each option was determined to be CAD $8.94 (2015 – CAD $3.30).

During the year ended December 31, 2016, 254,146 common shares were issued in connection with the exercise of options under the plan (2015 – nil common shares) 9,352 options expired (2015 - 190,862) and 24,266 options were forfeited (2015 – 97,009).

Share Option Plan

The following table summarizes information concerning stock options outstanding and options exercisable as at December 31, 2016. The underlying option agreements are specified in Canadian dollar amounts.

	Options Outstanding			Options Exercisable	
Range of Exercise Prices CAD$	**Number Outstanding as at December 31, 2016**	Weighted Average Remaining Contractual Life (months)	Weighted Average Exercise Price CAD$	**Number Exercisable as at December 31, 2016**	Weighted Average Exercise Price CAD$
$9.76 - $11.57	**561,577**	66.26	$ 10.13	**338,443**	$ 10.37
$11.58 - $17.01	**186,122**	61.30	$ 11.70	**186,122**	$ 11.70
$17.02 - $18.53	**145,014**	37.94	$ 18.40	**145,014**	$ 18.40
$18.54 - $24.90	**343,543**	31.24	$ 24.73	**297,838**	$ 24.90
$24.91 - $40.22	**74,608**	11.30	$ 40.22	**74,608**	$ 40.22
	1,310,864	50.12	$ 16.81	**1,042,025**	$ 18.02

For the year ended December 31, 2016, the total employee stock-based compensation expense recognized in the income statement was $3.8 million (2015 - $2.6 million).

Performance Shares Units

In early 2014, the Board approved the adding of performance share units (“PSUs”) to the Company’s LTIP. PSUs are notional share units that mirror the market value of the Company’s common shares (the “Shares”). Each vested PSU entitles the participant to

a cash payment equal to the value of an underlying share, less applicable taxes, at the end of the term, plus the cash equivalent of any dividends distributed by the Company during the three-year performance period. PSU grants will vest on the date that is three years from the date of grant subject to certain exceptions. Performance results at the end of the performance period relative to predetermined performance criteria and the application of the corresponding performance multiplier determine how many PSUs vest for each participant. The Board approved the issuance of 38,119 PSUs (2015 – 73,263) with a share price of CAD $22.22 (2015 – CAD $9.33) as of December 31, 2016. Compensation expense for PSUs was $0.6 million in 2016 (2015 - $0.08 million) and is presented as a component of general and administrative expense.

At December 31, 2016, the following PSU's were outstanding:

PSU	Number Outstanding	Fair Value
As at December 31, 2014	**30,408**	**$ 281**
Granted	73,263	503
Paid out	**—**	**—**
Forfeited	**—**	**—**
Change in value	**—**	(101)
As at December 31, 2015	**103,671**	**$ 683**
Granted	**38,119**	**638**
Paid out	**—**	**—**
Forfeited	**—**	**—**
Change in value	**—**	**831**
As at December 31, 2016	**141,790**	**$ 2,152**

Restricted Share Units

Under the Company's RSU plan, selected employees are granted RSUs where each RSU has a value equivalent to one Pan American common share. The RSUs are settled in cash or Common Shares at the discretion of the Board and vest in two installments, the first 50% vest on the first anniversary date of the grant and a further 50% vest on the second anniversary date of the grant. Additionally, RSU value is adjusted to reflect dividends paid on Pan American common share over the vesting period.

Compensation expense for RSU's was $3.5 million in 2016 (2015 – $0.6 million) and is presented as a component of general and administrative expense.

At December 31, 2016, the following RSU's were outstanding:

RSU	Number Outstanding	Fair Value
As at December 31, 2014	**240,757**	**$ 2,261**
Granted	305,455	2,192
Paid out	(148,891)	(1,068)
Forfeited	(17,177)	(112)
Change in value	—	(778)
As at December 31, 2015	**380,144**	**$ 2,495**
Granted	164,132	2,919
Paid out	(224,805)	(3,769)
Forfeited	(4,048)	(61)
Change in value	—	3,180
As at December 31, 2016	**315,423**	**$ 4,764**

Issued share capital

The Company is authorized to issue 200,000,000 common shares of no par value.

Dividends

On February 14, 2017, the Company declared a quarterly dividend of $0.025 per common share paid to holders of record of its common shares as of the close of business day on February 27, 2017. These dividends were declared subsequent to the year end and have not been recognized as distributions to owners during the period presented.

On November 14, 2016, the Company declared a quarterly dividend of $0.0125 per common share paid to holders of record of its common shares as of the close of business day on November 25, 2016.

On August 11, 2016, the Company declared a quarterly dividend of $0.0125 per common share paid to holders of record of its common shares as of the close of business day on August 23, 2016.

On May 11, 2016, the Company declared a quarterly dividend of $0.0125 per common share paid to holders of record of its common shares as of the close of business day on May 24, 2016.

On February 17, 2016, the Company declared a quarterly dividend of $0.0125 per common share paid to holders of record of its common shares as of the close of business day on February 29, 2016.

On November 11, 2015, the Company declared a quarterly dividend of $0.05 per common share paid to holders of record of its common shares as of the close of business on November 23, 2015.

On August 13, 2015, the Company declared a quarterly dividend of $0.05 per common share paid to holders of record of its common shares as of the close of business on August 25, 2015.

On May 11, 2015, the Company declared a quarterly dividend of $0.05 per common share paid to holders of record of its common share as of the close of business on May 22, 2015.

On February 18, 2015, the Company declared a quarterly dividend of $0.125 per common share paid to holders of record of its common share as of the close of business on March 2, 2015.

21. Production Costs

Production costs are comprised of the following:

		2016		2015
Consumption of raw materials and consumables	**$**	**163,675**	$	202,909
Employee compensation and benefits expense (Note 22)		**148,256**		158,952
Contractors and outside services		**81,241**		84,474
Utilities		**20,335**		20,656
Other expenses (2)		**43,400**		37,034
Changes in inventories (1)		**(28,574)**		28,006
	$	**428,333**	$	532,031

(1) Includes NRV adjustments to inventory to reduce production costs by $42.8 million (2015 - increase by $10.9 million).
(2) Includes closure and decommissioning liability adjustments to reduce production costs of $1.7 million (2015 - $nil).

22. Employee Compensation and Benefit Expenses

		2016		2015
Wages, salaries and bonuses	**$**	**166,595**	$	175,242
Share-based payments		**3,826**		2,569
Total employee compensation and benefit expenses		**170,421**		177,811
Less: Expensed within General and Administrative expenses		**(18,243)**		(15,134)
Less: Expensed Exploration expenses		**(3,922)**		(3,725)
Employee compensation and benefits expenses included in production costs (Note 21)	**$**	**148,256**	$	158,952

23. Interest and Finance Expense

		2016		2015
Interest expense	**$**	**2,115**	$	3,640
Finance fees		**3,073**		1,573
Accretion expense (Note 16)		**4,363**		3,239
	$	**9,551**	$	8,452

24. Earnings (Loss) Per Share (Basic and Diluted)

For the year ended December 31,	**2016**			2015		
	Earnings (Numerator)	**Shares (000's) (Denominator)**	**Per-Share Amount**	Earnings (Numerator)	Shares (000's) (Denominator)	Per-Share Amount
Net earnings (loss)(1)	**$ 100,085**			$ (226,650)		
Basic EPS (LPS)	**$ 100,085**	**152,118**	**$ 0.66**	$ (226,650)	151,664	$ (1.49)
Effect of Dilutive Securities:						
Stock Options	**—**	**386**		—	—	
Diluted EPS (LPS)	**$ 100,085**	**152,504**	**$ 0.66**	$ (226,650)	151,664	$ (1.49)

(1) Net earnings (loss) attributable to equity holders of the Company.

Potentially dilutive securities excluded in the diluted earnings per share calculation for the twelve months ended December 31, 2016 were 418,151 out-of-money options (2015 – 1,552,923).

25. Supplemental Cash Flow Information

The following tables summarize the changes in operating working capital items and significant non-cash items:

Changes in non-cash operating working capital items:		**2016**		2015
Trade and other receivables	**$**	**(29,125)**	$	27,514
Inventories		**19,527**		23,412
Prepaid expenses		**(3,675)**		(2,111)
Accounts payable and accrued liabilities		**13,722**		(26,750)
Provisions		**(5,994)**		(2,225)
	$	**(5,545)**	$	19,840

Significant non-cash items:		**2016**		2015
Advances received for equipment leases	**$**	**6,151**	$	3,491
Share-based compensation issued to employees and directors	**$**	**2,365**	$	1,718

Cash and Cash Equivalents		**2016**		2015
Cash in banks	**$**	**157,778**	$	123,144
Short-term money markets investments		**23,103**		10,819
Cash and cash equivalents	**$**	**180,881**	$	133,963

26. Segmented Information

All of the Company's operations are within the mining sector, conducted through operations in four countries. Due to geographic and political diversity, the Company's mining operations are decentralized in nature whereby Mine General Managers are responsible for achieving specified business results within a framework of global policies and standards. We have determined that each producing mine and significant development property represents an operating segment. Country corporate offices provide support infrastructure to the mines in addressing local and country issues including financial, human resources, and exploration support. The Company has a separate budgeting process and measures the results of operations and exploration activities independently. Operating results of operating segments are reviewed by the Company's chief operating decision maker to make decisions about resources to be allocated to the segments and assess their performance. The Corporate office provides support to the mining and exploration activities with respect to financial, human resources and technical support. Major products are silver, gold, zinc, lead and copper produced from mines located in Mexico, Peru, Argentina and Bolivia.

Significant information relating to the Company's reportable operating segments is summarized in the table below:

	for the year ended December 31, 2016									
	Peru		Mexico			Argentina		Bolivia		
	Huaron	Morococha	Dolores	Alamo Dorado	La Colorada	Manantial Espejo	Navidad	San Vicente	Other	**Total**
Revenue	$ 105,707	$ 92,889	$ 189,288	$ 45,843	$ 118,292	$ 144,048	$ —	$ 78,708	$ —	$ 774,775
Depreciation and amortization	$ (12,668)	$ (11,225)	$ (60,414)	$ (2,336)	$ (9,999)	$ (9,190)	$ (120)	$ (9,474)	$ (529)	$ (115,955)
Exploration and project development	$ (837)	$ (1,053)	$ (1,685)	$ —	$ (186)	$ —	$ (3,377)	$ —	$ (4,196)	$ (11,334)
Interest income	$ 27	$ 67	$ —	$ —	$ —	$ 389	$ 19	$ 1	$ 879	$ 1,382
Interest and financing expenses	$ (673)	$ (436)	$ (630)	$ (420)	$ (307)	$ (3,069)	$ (66)	$ (218)	$ (3,732)	$ (9,551)
Gain (loss) on disposition of assets	$ 5	$ 144	$ (22)	$ 136	$ 16,525	$ (8)	$ —	$ 23	$ 8,297	$ 25,100
Share of loss from associate and dilution gain	$ —	$ —	$ —	$ —	$ —	$ —	$ —	$ —	$ 7,946	$ 7,946
Foreign exchange gain (loss)	$ (64)	$ (57)	$ 1,539	$ (393)	$ 13,887	$ (2,780)	$ 208	$ 1,511	$ (22,905)	$ (9,054)
Loss on commodity, fuel swaps and foreign currency contracts	$ —	$ —	$ —	$ —	$ —	$ —	$ —	$ —	$ (4,944)	$ (4,944)
Earnings (loss) before income taxes	$ 24,062	$ 21,497	$ 8,222	$ 3,269	$ 61,178	$ 42,097	$ (4,536)	$ 17,687	$ 2,795	$ 176,271
Income tax expense	$ (10,021)	$ (4,351)	$ (10,697)	$ (3,495)	$ (21,860)	$ (431)	$ (33)	$ (8,379)	$ (15,179)	$ (74,446)
Net earnings (loss) for the year	$ 14,041	$ 17,146	$ (2,475)	$ (226)	$ 39,318	$ 41,666	$ (4,569)	$ 9,308	$ (12,384)	$ 101,825
Capital expenditures	$ 8,854	$ 8,034	$ 113,227	$ —	$ 64,519	$ 2,868	$ 5	$ 4,864	$ 290	$ 202,661
Total assets	$ 134,579	$ 65,386	$ 827,858	$ 35,853	$ 227,923	$ 111,260	$ 193,195	$ 91,893	$ 210,194	$ 1,898,141
Total liabilities	$ 45,986	$ 23,171	$ 199,127	$ 8,880	$ 52,636	$ 40,788	$ 1,112	$ 27,161	$ 100,276	$ 499,137

	for the year ended December 31, 2015									
	Peru		Mexico			Argentina		Bolivia		
	Huaron	Morococha	Dolores	Alamo Dorado	La Colorada	Manantial Espejo	Navidad	San Vicente	Other	**Total**
Revenue	$ 75,678	$ 64,761	$ 166,125	$ 69,206	$ 89,575	$ 145,014	$ —	$ 64,329	$ —	$ 674,688
Depreciation and amortization	$ (11,537)	$ (20,398)	$ (48,626)	$ (11,567)	$ (10,918)	$ (38,453)	$ (175)	$ (8,565)	$ (606)	$ (150,845)
Exploration and project development	$ (765)	$ (1,202)	$ (400)	$ —	$ (254)	$ —	$ (6,827)	$ —	$ (2,492)	$ (11,940)
Interest income	$ 75	$ 13	$ 3	$ 345	$ 3	$ 525	$ 11	$ —	$ 37	$ 1,012
Interest and financing expenses	$ (709)	$ (565)	$ 853	$ (239)	$ (258)	$ (4,432)	$ (45)	$ (226)	$ (2,831)	$ (8,452)
Gain (loss) on disposition of assets	$ 5	$ 283	$ 40	$ 3	$ 61	$ (62)	$ —	$ 23	$ 19	$ 372
Gain on derivatives	$ —	$ —	$ —	$ —	$ —	$ —	$ —	$ —	$ 278	$ 278
Foreign exchange gain (loss)	$ 250	$ 59	$ (2,267)	$ (2,728)	$ (1,488)	$ 2,939	$ 1,324	$ 921	$ (12,014)	$ (13,004)
Loss on commodity, fuel swaps and foreign currency contracts	$ —	$ —	$ —	$ —	$ —	$ —	$ —	$ —	$ (324)	$ (324)
Impairment charge	$ —	$ (62,534)	$ (31,750)	$ (9,104)	$ —	$ (28,755)	$ —	$ —	$ (18,125)	$ (150,268)
(Loss) earnings before income taxes	$ (3,393)	$ (88,214)	$ (53,968)	$ (14,735)	$ 4,745	$ (75,040)	$ (8,422)	$ 9,559	$ (6,287)	$ (235,755)
Income tax (expense) recovery	$ (2,353)	$ 7,687	$ 12,602	$ (7,892)	$ (37)	$ 1,502	$ (38)	$ (2,209)	$ (5,063)	$ 4,199
Net (loss) earnings for the year	$ (5,746)	$ (80,527)	$ (41,366)	$ (22,627)	$ 4,708	$ (73,538)	$ (8,460)	$ 7,350	$ (11,350)	$ (231,556)
Capital expenditures	$ 11,074	$ 6,758	$ 53,118	$ —	$ 58,037	$ 14,061	$ 111	$ 3,286	$ 290	$ 146,735
Total assets	$ 111,999	$ 62,012	$ 721,926	$ 68,575	$ 167,836	$ 95,866	$ 193,213	$ 81,981	$ 211,629	$ 1,715,037
Total liabilities	$ 33,576	$ 19,235	$ 164,900	$ 16,909	$ 25,305	$ 63,020	$ 1,379	$ 17,974	$ 74,123	$ 416,421

	for the year ended Dec 31,	
Product Revenue	**2016**	2015
Refined silver and gold	**$ 399,339**	$ 400,790
Zinc concentrate	**93,237**	54,239
Lead concentrate	**164,217**	135,926
Copper concentrate	**117,982**	83,733
Total	**$ 774,775**	$ 674,688

The Company has 20 customers that account for 100% of the concentrate and silver and gold sales revenue. The Company has 7 customers that accounted for 18%, 16%, 14%, 10%, 10%, 9%, and 7% of total sales in 2016, and 7 customers that accounted for 25%, 14%, 11%, 10%, 9%, 8%, and 8% of total sales in 2015. The loss of certain of these customers or curtailment of purchases by such customers could have a material adverse effect on the Company's results of operations, financial condition, and cash flows.

27. Other Income and (expenses)

	2016	2015
Royalties income	**$ 204**	$ 161
Other income (expenses)	**1,338**	(4,923)
Total	**$ 1,542**	$ (4,762)

28. Income Taxes

Components of Income Tax Expense

		2016		2015
Current tax expense (recovery)				
Recognized in profit or loss in current year	**$**	**44,751**	$	18,079
Adjustments recognized in the current year with respect to prior years		**(720)**		(2,225)
		44,031		15,854
Deferred tax expense (recovery)				
Deferred tax expense (recovery) recognized in the current year		**27,942**		(14,241)
Adjustments recognized in the current year with respect to prior years		**1,124**		(1,747)
Adjustments to deferred tax attributable to changes in tax rates and laws		**1,302**		—
Reduction in deferred tax liabilities due to tax impact of impairment of mineral properties, plant, and equipment (Note 10,11)		**—**		(44,512)
De-recognition of previously recognized deferred tax assets		**—**		44,218
Benefit from previously unrecognized losses		**(7,861)**		—
Increase in deferred tax liabilities due to tax impact of net realizable value reversal (charge) to inventory (Note 21)		**7,908**		(3,771)
		30,415		(20,053)
Income tax expense (recovery)	**$**	**74,446**	$	(4,199)

Income tax expense (recovery) differs from the amount that would result from applying the Canadian federal and provincial income tax rates to earnings before income taxes. These differences result from the items shown on the following table which results in an effective tax rate that varies considerably from the comparable period. The main factors which have affected the effective tax rate for the year ended December 31, 2016 and the comparable period of 2015 were non-taxable foreign exchange fluctuations, changes in the non-recognition of certain deferred tax assets, mining taxes paid, and withholding taxes on payments from foreign subsidiaries.

In 2015, the Company determined that it could not support the utilization of certain deferred tax assets related to the Alamo Dorado, Manantial Espejo and Morococha properties. As a result, a deferred tax expense of $44.2 million was recorded to de-recognize these assets.

The Company continues to expect that these and other factors will continue to cause volatility in effective tax rates in the future.

Reconciliation of Effective Income Tax Rate

		2016		2015
Earnings (loss) before taxes and non-controlling interest	**$**	**176,271**	$	(235,755)
Statutory Canadian income tax rate		**26.00%**		26.00%
Income tax expense (recovery) based on above rates	**$**	**45,830**	$	(61,296)
Increase (decrease) due to:				
Non-deductible expenditures		**5,082**		5,683
Foreign tax rate differences		**9,729**		(17,626)
Change in net deferred tax assets not recognized:				
- Argentina exploration expenditures		**1,794**		2,717
- Other deferred tax assets		**(14,406)**		8,800
De-recognition of deferred tax assets previously recognized		**—**		44,218
Non-taxable portion of net earnings of affiliates		**(4,852)**		(4,915)
Changes to temporary differences		**1,429**		(1,767)
Non-taxable unrealized gains on derivative financial instruments		**—**		(72)
Effect of other taxes paid (mining and withholding)		**13,678**		6,628
Effect of foreign exchange on tax expense		**14,323**		12,941
Impairment charges and net realizable value adjustments		**—**		2,219
Other		**1,839**		(1,729)
Income tax expense (recovery)	**$**	**74,446**	$	(4,199)
Effective income tax rate		**42.23%**		1.78%

Deferred tax assets and liabilities

The following is the analysis of the deferred tax assets (liabilities) presented in the consolidated financial statements:

		2016		2015
Net deferred tax liability, beginning of year	**$**	**(138,397)**	$	(157,488)
Recognized in net earnings or loss for the year		**(30,415)**		20,053
Reduction due to Mexican de-consolidation payments applied to current tax		**(383)**		(1,009)
Other		**59**		47
Net deferred liability, end of year	**$**	**(169,136)**	$	(138,397)
Deferred tax assets		**1,727**		3,730
Deferred tax liabilities		**(170,863)**		(142,127)
Net deferred tax liability	**$**	**(169,136)**	$	(138,397)

Components of deferred tax assets and liabilities

The deferred tax assets (liabilities) are comprised of the various temporary differences as detailed below:

		2016		2015
Deferred tax assets (liabilities) arising from:				
Closure and decommissioning costs	**$**	**7,133**	$	5,657
Tax losses and mining tax credits		**26,646**		30,039
Deductible Mexican mining taxes		**2,344**		1,223
Tax credit resulting from Mexican de-consolidation		**4,790**		6,671
Accounts payable and accrued liabilities		**2,373**		2,311
Trade and other receivables		**10,526**		4,641
Provision for doubtful debts and inventory adjustments		**(16,261)**		(4,802)
Mineral properties, plant, and equipment		**(192,046)**		(176,861)
Estimated sales provisions		**(14,907)**		(7,675)
Prepaids and other current assets		**(883)**		(429)
Other temporary differences and provisions		**1,149**		828
Net deferred tax liability	**$**	**(169,136)**	$	(138,397)

At December 31, 2016, the net deferred tax liability above included the deferred tax benefit of $26.6 million related to tax losses of approximately $89.0 million. These losses will begin to expire after the 2024 year end, if unused.

At December 31, 2015, the net deferred tax liability above included the deferred tax benefit of $30.0 million related to tax losses of approximately $101.0 million. Aside from $1.5 million that was utilized against income in 2016, these losses will begin to expire after the 2024 year end, if unused.

Unrecognized deductible temporary differences, unused tax losses and unused tax credits

Deductible temporary differences, unused tax losses and unused tax credits for which no deferred tax assets have been recognized are attributable to the following:

		2016		2015
Tax loss (revenue in nature)	**$**	**171,077**	$	190,464
Net tax loss (capital in nature)		**18,759**		10,732
Resource pools and other tax credits		**20,116**		22,653
Financing fees		**1,803**		47
Mineral properties, plant, and equipment		**34,268**		45,344
Closure and decommissioning costs		**34,809**		33,788
Exploration and other expenses not currently deductible		**62,503**		59,572
Intercompany debt		**34,769**		—
Doubtful debt and inventory		**13,997**		48,485
Deferred income and estimated sales		**924**		4,072
Deductible Mexican mining taxes		**335**		946
Payroll and vacation accruals		**3,174**		1,257
Other temporary differences		**2,532**		827
	$	**399,066**	$	418,187

Included in the above amounts are operating losses, which if not utilized will expire as follows:

At December 31, 2016,

	Canada	US	Spain	Peru	Mexico	Barbados	Argentina	Total
2017	—	—	—	—	—	5	—	5
2018	—	120	—	—	—	6	7	133
2019 – and after	116,009	13,642	—	39,057	2,160	47	24	170,939
Total tax losses	**$ 116,009**	**$ 13,762**	**$ —**	**$ 39,057**	**$ 2,160**	**$ 58**	**$ 31**	**171,077**

At December 31, 2015,

	Canada	US	Spain	Peru	Mexico	Barbados	Argentina	Total
2016	—	—	—	104	—	8	—	112
2017	—	—	—	506	—	5	—	511
2018 – and after	95,054	13,732	17,520	51,476	1,752	39	10,268	189,841
Total tax losses	**$ 95,054**	**$ 13,732**	**$ 17,520**	**$ 52,086**	**$ 1,752**	**$ 52**	**$ 10,268**	**$ 190,464**

Taxable temporary differences associated with investment in subsidiaries

As at December 31, 2016, taxable temporary differences of $60.4 million (2015 – $55.4 million) associated with the investments in subsidiaries have not been recognized as the Company is able to control the timing of the reversal of these differences which are not expected to reverse in the foreseeable future.

29. Commitments and Contingencies

a. General

The Company is subject to various investigations, claims and legal and tax proceedings covering matters that arise in the ordinary course of business activities. Each of these matters is subject to various uncertainties and it is possible that some of these matters may be resolved unfavorably to the Company. Certain conditions may exist as of the date the financial statements are issued, which may result in a loss to the Company. In the opinion of management none of these matters are expected to have a material effect on the results of operations or financial conditions of the Company.

b. Environmental Matters

The Company's mining and exploration activities are subject to various laws and regulations governing the protection of the environment. These laws and regulations are continually changing and are generally becoming more restrictive. The Company conducts its operations so as to protect the public health and environment and believes its operations are in compliance with applicable laws and regulations in all material respects. The Company has made, and expects to make in the future, expenditures to comply with such laws and regulations, but cannot predict the full amount of such future expenditures.

Estimated future reclamation costs are based on the extent of work required and the associated costs are dependent on the requirements of relevant authorities and the Company's environmental policies. As of December 31, 2016, $55.6 million (2015 - $50.5 million) was accrued for reclamation costs relating to mineral properties. See also Note 16.

c. Credit Facility

On April 15, 2015 the Company entered into a $300.0 million secured revolving credit facility with a 4-year term (Note 18).

d. Income Taxes

The Company operates in numerous countries around the world and accordingly it is subject to, and pays annual income taxes under the various income tax regimes in the countries in which it operates. Some of these tax regimes are defined by contractual agreements with the local government, and others are defined by the general corporate income tax laws of the country. The Company has historically filed, and continues to file, all required income tax returns and to pay the taxes reasonably determined to be due. The tax rules and regulations in many countries are highly complex and subject to interpretation. From time to time, the Company is subject to a review of its historic income tax filings and in connection with such reviews, disputes can arise with

the taxing authorities over the interpretation or application of certain rules to the Company's business conducted within the country involved.

In December 2013, the Mexican President passed a bill that increased the effective tax rate applicable to the Company's Mexican operations. The law was effective January 1, 2014 and increased the future corporate income tax rate to 30%, creating a 10% withholding tax on dividends paid to non-resident shareholders (subject to any reduction by an Income Tax Treaty) and created a new Extraordinary Mining Duty equal to 0.5% of gross revenues from the sale of gold, silver, and platinum. In addition, the law requires taxpayers with mining concessions to pay a new 7.5% Special Mining Duty. The Extraordinary Mining Duty and Special Mining Duty is tax deductible for income tax purposes. The Special Mining Duty is generally applicable to earnings before income tax, depreciation, depletion, amortization, and interest. In calculating the Special Mining Duty there are no deductions related to development type costs but exploration and prospecting costs are deductible when incurred.

e. Finance Leases

The present value of future minimum lease payments classified as finance leases at December 31, 2016 is $7.1 million (2015 - $4.0 million) and the schedule of timing of payments for this obligation is found in Note 17.

f. Law changes in Argentina

Under the previous political regime in Argentina, the government intensified the use of price, foreign exchange, and import controls in response to unfavourable domestic economic trends. Historically, the Argentine government also imposed restrictions on the importation of goods and services and increased administrative procedures required to import equipment, materials and services required for operations at Manantial Espejo. In support of this policy, in May 2012, the government mandated that mining companies establish an internal function to be responsible for substituting Argentinian-produced goods and materials for imported goods and materials and required advance government review of plans to import goods and materials. In addition, the government of Argentina also tightened control over capital flows and foreign exchange in an attempt to curtail the outflow of hard currencies and protect its foreign currency reserves, including mandatory repatriation and conversion of foreign currency funds in certain circumstances, informal restrictions on dividend, interest, and service payments abroad and limitations on the ability of individuals and businesses to convert Argentine pesos into USD or other hard currencies, exposing us to additional risks of Peso devaluation and high domestic inflation.

While a new federal government was elected in Argentina in late 2015 and has since taken steps to ease some of the previously instituted controls and restrictions, particularly relaxing certain rules relating to the inflow and outflow of foreign currencies, many of the policies of the previous government continue to adversely affect the Company's Argentine operations. It is unknown whether these recent changes will be lasting, what, if any, additional steps will be taken by the new administration or what financial and operational impacts these and any future changes might have on the Company. As such, the Company continues to monitor and assess the situation in Argentina.

g. Political changes in Bolivia

On May 28, 2014, the Bolivian government enacted Mining Law No. 535 (the "New Mining Law"). Among other things, the New Mining Law has established a new Bolivian mining authority to provide principal mining oversight (varying the role of COMIBOL) and sets out a number of new economic and operational requirements relating to state participation in mining projects. Further, the New Mining Law provides that all pre-existing contracts are 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 migration to a new form of agreement and may require renegotiation of some terms in order to conform to the New Mining Law requirements. We are assessing the potential impacts of the New Mining Law on our business and are awaiting further regulatory developments, but 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. In the meantime, we understand that pre-existing agreements will be respected during the period of migration and 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.

h. Other Legal Matters

The Company is subject to various claims and legal proceedings covering a wide range of matters that arise in the ordinary course of business activities, many of them relating to ex-employees. Each of these matters is subject to various uncertainties and it is

possible that some of these matters may be resolved unfavorably to the Company. The Company establishes provisions for matters that are probable and can be reasonably estimated, included within current liabilities, and amounts are not considered material.

In assessing loss contingencies related to legal proceedings that are pending against the Company or un-asserted claims that may result in such proceedings, the Company and its legal counsel evaluate the perceived merits of any legal proceedings or un-asserted claims as well as the perceived merits of the amount of relief sought or expected to be sought. In the opinion of management there are no claims expected to have a material effect on the results of operations or financial condition of the Company.

i. Title Risk

Although the Company has taken steps to verify title to properties in which it has an interest, these procedures do not guarantee the Company's title. Property title may be subject to, among other things, unregistered prior agreements or transfers and may be affected by undetected defects.

j. Royalty Agreements and Participation Agreements

The Company has various royalty agreements on certain mineral properties entitling the counterparties to the agreements to receive payments per terms as summarized below. Royalty liabilities incurred on acquisitions of properties are netted against mineral property while royalties that become payable upon production are expensed at the time of sale of the production.

As part of the Arrangement closed with Maverix on July 11, 2016 (Note 12), Maverix acquired from the Company a portfolio of royalties, precious metals streams and payment agreements, in exchange for a 54% interest in Maverix (43% fully diluted as at December 31, 2016). The key portfolio assets included the economic equivalent of one hundred percent (100%) of the gold produced from Pan American's operating La Colorada silver mine, less a fixed price of US$650 per ounce for the life of the mine, as well as an agreement to purchase five percent (5%) of future gold production at a fixed price of US$450 per ounce from the feasibility stage La Bolsa project. The portfolio also included, among others, the equivalent of a net smelter returns royalty of one and one-quarter percent (1¼%) on all metals produced from the pre-feasibility stage Calcatreu project, and a net smelter returns royalty of one percent (1%) on the Pico Machay project, both of which are currently owned by Pan American.

On September 22, 2011, Peru's Parliament approved a law that increased mining taxes to fund anti-poverty infrastructure projects in the country, effective October 1, 2011. The law changed the scheme for royalty payments, so that mining companies that had not signed legal stability agreements with the government had to pay royalties of 1% to 12% on operating profit; royalties under the previous rules were 1% to 3% on net sales. In addition to these royalties, such companies were subject to a "special tax" at a rate ranging from 2% to 8.4% of operating profit. Companies that had concluded legal stability agreements (under the General Mining Law) will be required to pay a "special contribution" of between 4% and 13.12% of operating profits. The change in the royalty and the new tax had no material impact on the results of the Company's Peruvian operations.

In the province of Chubut, Argentina which is the location of the Company's Navidad property, there is a provincial royalty of 3% of the "Operating Income". Operating income is defined as revenue minus production costs (not including mining costs), treatment and transportation charges. Refer below to the Navidad project section below for further details.

As part of the 2009 Aquiline transaction the Company issued a replacement convertible debenture that allowed the holder to convert the debenture into either 363,854 Pan American shares or a silver stream contract related to certain production from the Navidad project. Subsequent to the acquisition, the counterparty to the replacement debenture has indicated its intention to elect the silver stream alternative. The final contract for the alternative is being discussed and pending the final resolution to this alternative, the Company continues to classify the fair value calculated at the acquisition of this alternative, as a deferred credit as disclosed in Note 19.

Huaron and Morococha mines

In June 2004, Peru's Congress approved a bill that allows royalties to be charged on mining projects. These royalties are payable on Peruvian mine production at the following progressive rates: (i) 1.0% for companies with sales up to $60.0 million; (ii) 2.0% for companies with sales between $60.0 million and $120.0 million; and (iii) 3.0% for companies with sales greater than $120.0 million. This royalty is a net smelter returns royalty, the cost of which is deductible for income tax purposes.

Manantial Espejo mine

Production from the Manantial Espejo property is subject to royalties to be paid to Barrick Gold Corp. according to the following: (i) $0.60 per metric tonne of ore mined from the property and fed to process at a mill or leaching facility to a maximum of 1 million tonnes; and (ii) one-half of one percent (0.5%) of net smelter returns derived from the production of minerals from the

property. In addition, the Company has negotiated a royalty equal to 3.0% of operating cash flow payable to the Province of Santa Cruz.

San Vicente mine

Pursuant to an option agreement entered into with COMIBOL, a Bolivian state mining company, with respect to the development of the San Vicente property, the Company is obligated to pay COMIBOL a participation fee of 37.5% (the "Participation Fee") of the operation's cash flow. Once full commercial production of San Vicente began, the Participation Fee was reduced by 75% until the Company recovered its investment in the property. The Participation Fee has now reverted back to the original percentage. For the year ended December 31, 2016, the royalties paid to COMIBOL amounted to approximately $14.3 million (2015 - $8.1 million).

A royalty is also payable to EMUSA, a former partner of the Company on the project. The royalty is a 2% net smelter return royalty (as per the Agreement) payable only after the Company has recovered its capital investment in the project and only when the average price of silver in a given financial quarter is $9.00 per ounce or greater. For the year ended December 31, 2016 the royalties paid to EMUSA amounted to approximately $1.0 million (2015 - $0.8 million).

In December 2007, the Bolivian government introduced a new mining royalty that affects the San Vicente project. The royalty is applied to gross metal value of sales (before smelting and refining deductions) and the royalty percentage is a sliding scale depending on metal prices. At current metal prices, the royalty is 6% for silver metal value and 5% for zinc and copper metal value of sales. The royalty is income tax deductible. For the year ended December 31, 2016 the royalty amounted to $5.6 million (2015 - $5.2 million).

Dolores mine

Production from the Dolores mine is subject to underlying net smelter return royalties comprised of 2% on gold and silver production and 1.25% on gold production. These royalties are payable to Royal Gold Inc. and were effective in full as of May 1, 2009, on the commencement of commercial production at the Dolores mine. The royalties to Royal Gold amounted to approximately $5.3 million for the year ended December 31, 2016 (2015 – $4.3 million).

Navidad project

In late June 2012 the governor of the province of Chubut submitted to the provincial legislature a draft law which, if passed, would regulate all future oil and gas and mining activities in the province. The draft legislation incorporated the expected re-zoning of the province, allowing for the development of Navidad as an open pit mine. However, the draft legislation also introduced a series of new regulations that would have greatly increased provincial royalties and imposed the province's direct participation in all mining projects, including Navidad.

In October 2012, the proposed bill was withdrawn for further study; however, as a result of uncertainty over the zoning, regulatory and tax laws which will ultimately apply, the Company has temporarily suspended project development activities at Navidad.

The Company remains committed to the development of Navidad and to contributing to the positive economic and social development of the province of Chubut upon the adoption of a favorable legislative framework.

30. Related Party Transactions

The Company's related parties include its subsidiaries, associates over which it exercises significant influence, and key management personnel. During its normal course of operation, the Company enters into transactions with its related parties for goods and services. All related party transactions for the years ended December 31, 2016 and 2015 have been disclosed in these consolidated financial statements. Related party transactions with Maverix have been disclosed in Note 12 of these consolidated financial statements.

During the year ended December 31, 2016, a director of the Company was paid approximately $0.1 million (2015 - $nil) directly for consulting services from January 1, 2016 to June 30, 2016. During the year ended December 31, 2016, a company indirectly owned by a trust of which a director of the Company is a beneficiary, was paid approximately $nil (2015 - $1.4 million) for consulting services. These transactions are in the normal course of operations and are measured at the exchange amount, which is the amount of consideration established and agreed to by the parties.

Compensation of key management personnel

The remuneration of directors and other members of key management personnel during the year were as follows:

		2016		2015
Short-term benefits	**$**	**10,052**	$	9,069
Share-based payments		**2,172**		3,161
	$	**12,224**	$	12,230

31. Subsequent Event

On January 13, 2017, the Company entered into a definitive agreement with Coeur Mining Inc. to acquire 100% of Coeur's Joaquin project, located in the Santa Cruz province of southern Argentina. Under the terms of the definitive agreement, consideration payable to Coeur included $15 million in cash and $10 million in Pan American common shares, along with a 2.0% net smelter returns royalty ("NSR") on the Joaquin project. The Joaquin transaction closed on February 10, 2017.

Exhibit 23.1

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in Registration Statement No. 333-212468 on Form F-10 and Registration Statement Nos. 333-180494, 333-180495 and 333-206162 on Form S-8, and to the use of our reports dated March 22, 2017 relating to the consolidated financial statements of Pan American Silver Corp. and subsidiaries (the "Company") and the effectiveness of the Company's internal control over financial reporting appearing in this Annual Report on Form 40-F of Pan American Silver Corp. for the year ended December 31, 2016.

/s/ *Deloitte LLP*

Chartered Professional Accountants
Vancouver, Canada
March 22, 2017

Exhibit 23.2

CONSENT OF MARTIN WAFFORN, P. ENG.

To: United States Securities and Exchange Commission

Re: Expert Consent for Annual Report on Form 40-F

Technical reports entitled:

1. "Manantial-Espejo Project Canadian Standard NI 43-101, Santa Cruz Province, Argentina" dated March 2006 relating to the Manantial Espejo property;
2. "Feasibility Study Volume I – NI 43-101 Technical Report for Alamo Dorado Project, Alamos, Sonora, Mexico" dated March 31, 2005 relating to the Alamo Dorado property;
3. "Technical Report for the San Vincente Property, Potosi Bolivia" dated effective December 31, 2014 relating to the San Vincente property;
4. "Pan American Silver Corp. Navidad Project, Chubut Province, Argentina: Preliminary Assessment" dated January 14, 2011 relating to the Navidad property;
5. "Technical Report – Preliminary Economic Analysis for the Expansion of the La Colorada Mine, Zacatecas, Mexico" dated effective December 31, 2013 relating to the La Colorada property;
6. "Technical Report for the Dolores Property, Chihuahua, Mexico" dated effective December 31, 2016 relating to the Dolores Property;
7. "Technical Report for the Huaron Property, Pasco, Peru" dated effective June 30, 2014 relating to the Huaron property; and
8. "Technical Report for the Morococha Property, Yauli, Peru" dated effective June 30, 2014 relating to the Morococha property.

(collectively, the "**Technical Reports**")

were prepared for Pan American Silver Corp. (the "**Corporation**") in accordance with National Instrument 43-101 – *Standards of Disclosure for Mineral Projects* by Martin Wafforn, P. Eng., in whole or in part, and filed with applicable securities regulatory authorities.

The undersigned does hereby consent to the inclusion of the written disclosure of the Technical Reports and the extracts from, or summary of, or references to the Technical Reports and other scientific and technical information attributed to the undersigned by the Corporation in the annual information form of the Corporation, dated March 22, 2017 (the "**AIF**") and in the Annual Report on Form 40-F of the Corporation, dated March 22, 2017 (the "**40-F**"). The undersigned does also hereby consent to the reference to my name in the AIF and the 40-F.

The undersigned consents to the incorporation by reference in the Registration Statements on Form S-8 (File Nos., 333-180494, 333-180495 and 333-206162) and on Form F-10 (File No. 333-212468) of the references to my name and the above mentioned information in the AIF and 40-F.

The undersigned does hereby confirm that I have read the AIF and the 40-F and have no reason to believe that there are any misrepresentations in the information contained in the AIF or the 40-F that are (a) derived from the Technical Reports; or (b) within my knowledge as a result of the services I performed in connection with the Technical Reports.

Dated this 22 day of March, 2017.

Signed: /s/ *Martin Wafforn*
Martin Wafforn, P. Eng.

Exhibit 23.3

CONSENT OF MICHAEL STEINMANN, P. GEO.

To: United States Securities and Exchange Commission

Re: Expert Consent for Annual Report on Form 40-F

Technical reports entitled:

1. "Manantial-Espejo Project Canadian Standard NI 43-101, Santa Cruz Province, Argentina" dated March 2006 relating to the Manantial Espejo property;
2. "Feasibility Study Volume I – NI 43-101 Technical Report for Alamo Dorado Project, Alamos, Sonora, Mexico" dated March 31, 2005 relating to the Alamo Dorado property;
3. "Technical Report for the San Vincente Property, Potosi Bolivia" dated effective December 31, 2014 relating to the San Vincente property;
4. "Pan American Silver Corp. Navidad Project, Chubut Province, Argentina: Preliminary Assessment" dated January 14, 2011 related to the Navidad property;
5. "Technical Report – Preliminary Economic Analysis for the Expansion of the La Colorada Mine, Zacatecas, Mexico" dated effective December 31, 2013 relating to the La Colorada property;
6. "Technical Report for the Huaron Property, Pasco, Peru" dated effective June 30, 2014 relating to the Huaron property; and
7. "Technical Report for the Morococha Property, Yauli, Peru" dated effective June 30, 2014 relating to the Morococha property.

(collectively, the "**Technical Reports**")

were prepared for Pan American Silver Corp. (the "**Corporation**") in accordance with National Instrument 43-101 – *Standards of Disclosure for Mineral Projects* by Michael Steinmann, P. Geo., in whole or in part, and filed with applicable securities regulatory authorities.

The undersigned does hereby consent to the inclusion of the written disclosure of the Technical Reports and the extracts from, or summary of, or references to the Technical Reports and other scientific and technical information attributed to the undersigned by the Corporation in the annual information form of the Corporation, dated March 22, 2017 (the "**AIF**") and in the Annual Report on Form 40-F of the Corporation, dated March 22, 2017 (the "**40-F**"). The undersigned does also hereby consent to the reference to my name in the AIF and the 40-F.

The undersigned consents to the incorporation by reference in the Registration Statements on Form S-8 (File Nos. 333-180494, 333-180495 and 333-206162) and on Form F-10 (File No. 333-212468) of the references to my name and the above mentioned information in the AIF and 40-F.

The undersigned does hereby confirm that I have read the AIF and the 40-F and have no reason to believe that there are any misrepresentations in the information contained in the AIF or the 40-F that are (a) derived from the Technical Reports; or (b) within my knowledge as a result of the services I performed in connection with the Technical Reports.

Dated this 22 day of March, 2017.

Signed: */s/ Michael Steinmann*
Michael Steinmann, P. Geo.

Exhibit 23.4

CONSENT OF PAMELA DE MARK, P. GEO., BAPPSC (APP GEO, HONS), MAUSIMM

To: United States Securities and Exchange Commission

Re: Expert Consent for Annual Report on Form 40-F

A technical report "Pan American Silver Corp. Navidad Project, Chubut Province, Argentina: Preliminary Assessment" and dated effective January 14, 2011, (the "**Technical Report**") was prepared for Pan American Silver Corp. (the "**Corporation**") in accordance with National Instrument 43-101 – *Standards of Disclosure for Mineral Projects* by Pamela De Mark, P. Geo. BAppSc (App Geo, Hons), MAusIMM, in whole or in part, and filed with applicable securities regulatory authorities.

The undersigned does hereby consent to the inclusion of the written disclosure of the Technical Report and the extracts from, or summary of, or references to the Technical Report and other scientific and technical information attributed to the undersigned by the Corporation in the annual information form of the Corporation, dated March 22, 2017 (the "**AIF**") and in the Annual Report on Form 40-F of the Corporation, dated March 22, 2017 (the "**40-F**"). The undersigned does also hereby consent to the reference to my name in the AIF and the 40-F.

The undersigned consents to the incorporation by reference in the Registration Statements on Form S-8 (File Nos. 333-180494, 333-180495 and 333-206162) and on Form F-10 (File No. 333-212468) of the references to my name and the above mentioned information in the AIF and 40-F.

The undersigned does hereby confirm that I have read the AIF and the 40-F and have no reason to believe that there are any misrepresentations in the information contained in the AIF or the 40-F that are (a) derived from the Technical Report; or (b) within my knowledge as a result of the services I performed in connection with the Technical Report.

Dated this 22 day of March, 2017.

Signed: */s/ Pamela De Mark*
Pamela De Mark,
P. Geo., BAppSc (App Geo, Hons), MAusIMM

Exhibit 23.5

CONSENT OF AMERICO DELGADO, P. ENG.

To: United States Securities and Exchange Commission

Re: Expert Consent for Annual Report on Form 40-F

Technical reports entitled:

1. "Technical Report for the Dolores Property, Chihuahua, Mexico" dated effective December 31, 2016 relating to the Dolores property;
2. "Technical Report for the Huaron Property, Pasco, Peru" dated effective June 30, 2014 relating to the Huaron property;
3. "Technical Report for the Morococha Property, Yauli, Peru" dated effective June 30, 2014 relating to the Morococha property; and
4. "Technical Report for the San Vincente Property, Potosi Bolivia" dated effective December 31, 2014 relating to the San Vincente property.

(collectively, the "**Technical Reports**")

were prepared for Pan American Silver Corp. (the "**Corporation**") in accordance with National Instrument 43-101 – *Standards of Disclosure for Mineral Projects* by Americo Delgado, P. Eng., in whole or in part, and filed with applicable securities regulatory authorities.

The undersigned does hereby consent to the inclusion of the written disclosure of the Technical Reports and the extracts from, or summary of, or references to the Technical Reports and other scientific and technical information attributed to the undersigned by the Corporation in the annual information form of the Corporation, dated March 22, 2017 (the "**AIF**") and in the Annual Report on Form 40-F of the Corporation, dated March 22, 2017 (the "**40-F**"). The undersigned does also hereby consent to the reference to my name in the AIF and the 40-F.

The undersigned consents to the incorporation by reference in the Registration Statements on Form S-8 (File Nos. 333-180494, 333-180495 and 333-206162) and on Form F-10 (File No. 333-212468) of the references to my name and the above mentioned information in the AIF and 40-F.

The undersigned does hereby confirm that I have read the AIF and the 40-F and have no reason to believe that there are any misrepresentations in the information contained in the AIF or the 40-F that are (a) derived from the Technical Reports; or (b) within my knowledge as a result of the services I performed in connection with the Technical Reports.

Dated this 22 day of March, 2017.

Signed: */s/ Americo Delgado*
Americo Delgado, P. Eng

Exhibit 23.6

CONSENT OF CHRISTOPHER EMERSON, FAusIMM.

To: United States Securities and Exchange Commission

Re: Expert Consent for Annual Report on Form 40-F

A technical report "Technical Report for the Dolores Property, Chihuahua, Mexico" and dated effective December 31, 2016, (the " **Technical Report**") was prepared for Pan American Silver Corp. (the " **Corporation**") in accordance with National Instrument 43-101 – *Standards of Disclosure for Mineral Projects* by Christopher Emerson, FAusIMM, in whole or in part, and filed with applicable securities regulatory authorities.

The undersigned does hereby consent to the inclusion of the written disclosure of the Technical Report and the extracts from, or summary of, or references to the Technical Report and other scientific and technical information attributed to the undersigned (the "Technical Information") by the Corporation in the annual information form of the Corporation, dated March 22, 2017 (the "**AIF**") and in the Annual Report on Form 40-F of the Corporation, dated March 22, 2017 (the "**40-F**"). The undersigned does also hereby consent to the reference to my name in the AIF and the 40-F.

The undersigned consents to the incorporation by reference in the Registration Statements on Form S-8 (File Nos. 333-180494, 333-180495 and 333-206162) and on Form F-10 (File No. 333-212468) of the references to my name and the above mentioned information in the AIF and 40-F.

The undersigned does hereby confirm that I have read the AIF and the 40-F and have no reason to believe that there are any misrepresentations in the information contained in the AIF or the 40-F that are (a) derived from the Technical Report or the Technical Information; or (b) within my knowledge as a result of the services I performed in connection with the Technical report or the Technical Information.

Dated this 22 day of March, 2017.

/s/ "Christopher Emerson"
Christopher Emerson, FAusIMM.

Exhibit 31.1

Certification
Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002

I, Michael Steinmann, certify that:

1. I have reviewed this annual report on Form 40-F of Pan American Silver Corp.;

1. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the issuer as of, and for, the periods presented in this report;

4. The issuer's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the issuer and have:

    a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the issuer, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

    b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

    c. Evaluated the effectiveness of the issuer's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

    d. Disclosed in this report any change in the issuer's internal control over financial reporting that occurred during the period covered by the annual report that has materially affected, or is reasonably likely to materially affect, the issuer's internal control over financial reporting; and

5. The issuer's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the issuer's auditors and the audit committee of the issuer's board of directors (or persons performing the equivalent functions):

    a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the issuer's ability to record, process, summarize and report financial information; and

    b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the issuer's internal control over financial reporting.

Dated: March 22, 2017

/s/ “Michael Steinmann ”

By: Michael Steinmann

Title: President and Chief Executive Officer

Exhibit 31.2

Certification
Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002

I, A. Robert Doyle, certify that:

1. I have reviewed this annual report on Form 40-F of Pan American Silver Corp.;

1. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the issuer as of, and for, the periods presented in this report;

4. The issuer's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the issuer and have:

    a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the issuer, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

    b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

    c. Evaluated the effectiveness of the issuer's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

    d. Disclosed in this report any change in the issuer's internal control over financial reporting that occurred during the period covered by the annual report that has materially affected, or is reasonably likely to materially affect, the issuer's internal control over financial reporting; and

5. The issuer's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the issuer's auditors and the audit committee of the issuer's board of directors (or persons performing the equivalent functions):

    a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the issuer's ability to record, process, summarize and report financial information; and

    b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the issuer's internal control over financial reporting.

Dated: March 22, 2017

/s/ "A. Robert Doyle"

By: A. Robert Doyle
Title: Chief Financial Officer

Exhibit 32.1

Certification of CEO and CFO
Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002

In connection with the Annual Report of Pan American Silver Corp. (the "Registrant") filed under cover of Form 40- F for the year ended December 31, 2016, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), Michael Steinmann, as Chief Executive Officer of the Registrant, and A. Robert Doyle, as Chief Financial Officer of the Registrant, each hereby certifies, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, to the best of his knowledge, that:

(1) The Report fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and result of operations of the Registrant.

/s/ "Michael Steinmann"
By: Michael Steinmann
Title: President & Chief Executive Officer
March 22, 2017

/s/ "A. Robert Doyle"
By: A. Robert Doyle
Title: Chief Financial Officer
March 22, 2017

This certification accompanies the Report pursuant to § 906 of the Sarbanes-Oxley Act of 2002 and shall not, except to the extent required by the Sarbanes-Oxley Act of 2002, be deemed filed by the Registrant for purposes of §18 of the Securities Exchange Act of 1934, as amended.