Pan American
SILVER CORP.

Technical Report for the San Vicente Property, Potosí, Bolivia

Effective date: 31 December 2014

Prepared by:

Martin Wafforn, P. Eng. Vice President, Technical Services

Michael Steinmann, P. Geo. President

Americo Delgado, P. Eng. Director, Metallurgy

Contents

1 Summary

This technical report has been prepared by Pan American Silver Corp. ("Pan American") based on the disclosure requirements of Canadian National Instrument 43-101 ("NI 43-101") to disclose current information about the San Vicente property (the "Property" or "San Vicente").

1.1 Property description and ownership

This technical report refers to the San Vicente Property, an underground silver-zinc mine located in the department of Potosí in southwestern Bolivia. Pan American holds a 95% interest in Pan American Silver Bolivia ("PASB"). The remaining 5% of PASB is owned by Urion Holdings (Malta) Ltd. ("Urion"), an affiliate of Trafigura Beheer B.V. ("Trafigura"). PASB has a joint venture agreement with Corporación Minera de Bolivia ("COMIBOL"), the state mining company of the Plurinational State of Bolivia, pursuant to which it holds a 62.5% interest in the cash flow from the operations and is the operator of the San Vicente Property. COMIBOL is the holder of title to the mineral concessions.

1.2 Geology and mineralization

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 of Late Oligocene age. The clastic sediments are over-thrusted by a turbidite sequence of Ordovician age which outcrop on the east side of the mine. Mid-Miocene age volcanic rocks are also present on site.

The regional sedimentary sequence consists of a basement of Palaeozoic marine siliciclastic sediments. This sequence was folded and later unconformably overlain by non-continuous Cretaceous age continental sediments and a thick sequence of Tertiary age continental clastic sediments (the Potoco and San Vicente formations). Sedimentation in the Tertiary age basin was controlled by thrust faults to the east and west and contains various thin volcanic flows. A sequence of felsic volcanics forms the top of the Tertiary basin in the southern part.

An important lithology in the Property area is the fanglomerates of the San Vicente Formation which are in contact with Ordovician age shales along the strike of the San Vicente fault. The fanglomerates consist of poorly sorted conglomerate with fragments of Palaeozoic sediments cross cut by younger quartz veins. The matrix is red in colour and consists of iron-bearing sandstone.

Igneous activity is present in the form of pre- and post-mineralization porphyritic dacite dikes. The structural environment of the mine area consists of a series of moderately to steeply dipping pre-mineral faults striking west-northwest.

San Vicente is a polymetallic deposit formed by hydrothermal systems associated with repeated calc-alkaline intrusions and their extrusive products 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 dikes. 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.

1.3 Status of exploration, development, and operations

Mineralization at San Vicente has been defined by approximately 300 diamond drillholes and has been the subject of mineral resource and mineral reserve estimates. Typical near mine exploration takes place on an annual basis, including testing of the undrilled areas of the deposit at depth and along strike, as well as infill drilling to upgrade the confidence categories of mineral resource and mineral reserve estimates.

The existing infrastructure includes the typical components of an operating underground mine, including the mine workings, shaft, hoist room, compressors, workshops, laboratories, storage facilities, offices, drill core and logging sheds, water and power lines, access roads, and the worker's camp and recreational facilities.

Pan American has been underground mining and operating the current process plant at San Vicente since 2009, processing between 200,000 and 350,000 tonnes of ore annually, producing approximately 4.3 million ounces of silver, 6,000 tonnes of zinc and 600 tonnes of lead in silver rich zinc and lead concentrates. Between late 2001 and early 2009, prior to the construction of the current process plant, the ore was processed by toll milling agreement with Empresa Minera Unificada ("EMUSA") at the nearby Chilcobija mill.

The life of mine plan contemplates an annual processing rate of 330,000 tonnes throughout the mine life. Based on the mineral reserves estimated as of December 31, 2014, this corresponds to a remaining mine life of 8.2 years. The projected mine life may increase if the mineral resources can be converted to mineral reserves as the result of improvements to metallurgical recoveries, costs, or metal prices, or if additional mineral resources are defined and can be converted to mineral reserves. The ramp will continue to be developed downwards to accomplish the life of mine plan, which will allow access to exploration targets deeper than the currently available data.

1.4 Mineral resource and mineral reserve estimates

Pan American conducts infill and near-mine drilling annually and updates the mineral resource estimates on an annual basis following reviews of metal price trends, treatment and refining charge trends for base metal concentrates, operational performance and costs experienced in the previous year, and forecasts of production and costs over the life of the mine.

The drillhole data cut-off date for the commencement of the geological interpretation and mineral resource estimate was December 31, 2014. Other than normal course changes in metal prices, which fluctuate from time to time, no new material information has become available

between December 31, 2014 and the signature date given on the certificates of the qualified persons for this technical report.

Mineral resource estimates are prepared on an annual basis by Pan American staff under the supervision of and reviewed by Michael Steinmann, P. Geo., President of Pan American Silver, who is a qualified person as that term is defined by NI 43-101.

There are no known environmental, permitting, legal, title, taxation, socio-economic, marketing, political, or other factors or risks that could materially affect the development of the mineral resources. Mineral resources that are not mineral reserves do not have demonstrated economic viability. Mineral resources reported here are in addition to mineral reserves.

Mineral resources for San Vicente as at December 31, 2014 are given in Table 1.1. This tabulation includes material classified as measured, indicated, and inferred mineral resources, using metal prices of $18.50 per ounce of silver, $2,000 per tonne of lead, and $2,000 per tonne of zinc. The mineral resources were estimated as of December 31, 2014, and depleted for mining as of December 31, 2014. Mineral resources are given for Pan American's 95% share of PASB.

Table 1.1 San Vicente mineral resources as at December 31, 2014

Classification	Tonnes (Mt)	Ag ppm	Contained Ag (Moz)	Pb %	Zn %
Measured	0.6	169	3.4	0.15	2.45
Indicated	0.3	156	1.3	0.12	2.12
Measured + Indicated	0.9	165	4.7	0.14	2.35
Inferred	3.0	366	34.8	0.33	2.68

Notes: Mineral resources do not have demonstrated economic viability. Totals may not add up due to rounding. Mineral resource estimates were prepared under the supervision of or were reviewed by Michael Steinmann, P. Geo., President of Pan American. Metal prices used for the mineral resource estimate were $18.50 per ounce of silver, $2,000 per tonne of lead, and $2,000 per tonne of zinc. Mineral resources are given for Pan American's 95% share of PASB. Mineral resources are in addition to mineral reserves.

Pan American updates the mineral reserve estimates on an annual basis following reviews of metal price trends, treatment and refining charge trends for base metal concentrates, operational performance and costs experienced in the previous year, and forecasts of production and costs over the life of the mine. Other than normal course changes in metal prices, which fluctuate from time to time, no new material information has become available between

December 31, 2014 and the signature date given on the certificates of the qualified persons for this technical report.

Mineral reserve estimates were prepared by Pan American technical staff under the supervision of and reviewed by Martin Wafforn, P. Eng., Vice President, Technical Services of Pan American, who is a qualified person as that term is defined by NI 43-101.

Mineral reserve estimates are based on assumptions that include mining, metallurgical, infrastructure, permitting, taxation, and economic parameters. Increasing costs and taxation and lower metal prices will have a negative impact on the quantity of estimated mineral reserves. There are currently no known factors that may have a material negative impact on the estimate of mineral reserves at San Vicente.

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 conducting 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, Pan American anticipates 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. Pan American is assessing the potential impacts of the New Mining Law and is awaiting further regulatory developments, but the primary effects on the San Vicente operation and Pan American's interest therein will not be known until such time as Pan American has, if required to do so, renegotiated the existing contract, and the full impact may only be realized over time.

Mineral reserves for San Vicente as at December 31, 2014, comprising material classified as proven and probable mineral reserves using metal prices of $18.50 per ounce of silver, $2,000 per tonne of lead, and $2,000 per tonne of zinc, are given in Table 1.2. The mineral reserves were estimated as of December 31, 2014 and depleted for mining as of December 31, 2014. Mineral reserves are given for Pan American's 95% share of PASB. Mineral reserves are in addition to mineral resources.

Table 1.2 San Vicente mineral reserves as at December 31, 2014

Classification	Tonnes (Mt)	Ag ppm	Ag contained metal (Moz)	Pb %	Zn %
Proven	1.9	460	28.4	0.39	3.03
Probable	0.7	425	9.9	0.49	2.44
Proven + Probable	2.6	451	38.3	0.42	2.86
Notes: Totals may not add up due to rounding. Mineral reserve estimates were prepared under the supervision of or were reviewed by Martin Wafforn, P. Eng., Vice President, Technical Services of Pan American. Metal prices used for the mineral reserve estimate were $18.50 per ounce of silver, $2,000 per tonne of lead, and $2,000 per tonne of zinc. Mineral reserves are given for Pan American's 95% share of PASB. Mineral reserves are in addition to mineral resources.					

1.5 Conclusions and recommendations

Pan American has been underground mining and operating the current process plant at San Vicente since 2009, processing between 200,000 and 350,000 tonnes of ore annually, producing approximately 4.3 million ounces of silver, 6,000 tonnes of zinc and 600 tonnes of lead in silver rich zinc and lead concentrates.

The life of mine plan contemplates an annual processing rate of 330,000 tonnes throughout the mine life. Based on the mineral reserves estimated as of December 31, 2014, this corresponds to a remaining mine life of 8.2 years. The projected mine life may increase if the mineral resources can be converted to mineral reserves as the result of improvements to metallurgical recoveries, costs, or metal prices, or if additional mineral resources are defined and can be converted to mineral reserves. The ramp will continue to be developed downwards to accomplish the life of mine plan, which will allow access to exploration targets deeper than the currently available data.

Pan American conducts infill and near-mine drilling annually and updates the mineral resource and mineral reserve estimates on an annual basis following reviews of metal price trends, treatment and refining charge trends for base metal concentrates, operational performance and costs experienced in the previous year, and forecasts of production and costs over the life of the mine.

San Vicente is a producing mine and there is no proposed material expansion of the current production at the mine. No economic analyses or engineering studies are currently underway. Therefore, the authors of this report have no recommendations to make at this time.

2 Introduction

This technical report has been prepared by Pan American based on the disclosure requirements of NI 43-101 to disclose current information about the San Vicente Property.

The effective date of the mineral resource and mineral reserve estimates disclosed in this technical report is December 31st, 2014. Other than normal course changes in metal prices, which fluctuate from time to time, no new material information has become available between this date and the signature date given on the certificate of the qualified persons.

Pan American is a silver mining and exploration company listed on the Toronto (TSX:PAA) and NASDAQ (NASDAQ:PAAS) stock exchanges.

Unless otherwise stated, all information, data, and illustrations contained in this report or used in its preparation have been provided by Pan American for the purpose of this technical report. This technical report has been prepared by Martin Wafforn, P. Eng., Vice President, Technical Services for Pan American; Michael Steinmann, P. Geo., President of Pan American; and Americo Delgado, P. Eng., Director, Metallurgy for Pan American. Messrs. Wafforn, Steinmann, and Delgado are each qualified persons as defined by NI 43-101 and are not independent of Pan American. The responsibilities of each co-author are provided in Table 2.1.

Mr. Wafforn visited San Vicente most recently on July 11th and 12th, 2012, October 21st, 2013, and September 30th, 2014. He met with mine technical staff in Pan American's La Paz office on October 17th, 2012, October 22nd, 2013, and October 1st, 2014 to review the mine budget and long term plan. In addition, he met with mine technical staff in Pan American's Lima office on January 30th, 2012, February 1st, 2013, January 31st, 2014, and January 31st, 2015 to review the cut-off grade calculations, reconciliation, and the mineral reserve estimation process and parameters. During the site visits Mr. Wafforn reviewed operating costs, mining parameters, mine planning, and blasting protocols. He also reviewed the mining progress relative to the annual plan and estimated mining costs, and visited the underground operations to review key production areas, ground conditions, ventilation, development and pumping requirements, and the nature of the structures being mined. Other reviews included the plant facilities, the site layout and logistics for mining and processing, safety protocols and indicators, the environmental layout, and general business performance.

Mr. Steinmann visited San Vicente most recently on January 28th, 2010 and July 19th, 2011, and visited the Pan American La Paz office on October 24th, 2013. He also met with site technical staff in Pan American's Lima office in January 2012, February 2013, and February 2014. During these visits Mr. Steinmann reviewed operating costs, cut-off grade calculations, reconciliation, mining parameters, geological interpretations of the veins and mineralized structures, drill planning and the location of existing and planned drillholes, and the mineral resource estimation process and parameters. Additionally Mr. Steinmann reviewed the channel sampling, exploration drilling, sampling, and sample security protocols, drill core and the core cutting and storage facilities, the

onsite geochemical laboratory, geological mapping, grade control protocols, the operational mine plan, actual mine operation data, and general business performance.

Mr. Delgado visited the San Vicente mine site from January 7th to January 14th, 2015. He also met with the staff in Pan American's La Paz office on January 15th, 2015. During this visit Mr. Delgado reviewed the grinding circuit, flotation performance, concentrate sampling, analytical laboratory procedures, the metallurgical balance reconciliation, and general business performance.

Unless otherwise stated, all units are metric and currencies are expressed in United States dollars.

Table 2.1 Responsibilities of each qualified person

Qualified person	Company	Responsible for sections
Martin Wafforn, P. Eng. Vice President, Technical Services	Pan American Silver Corp.	1: Summary; 2: Introduction; 3: Reliance on Other Experts; 4: Property Description and Location; 5: Accessibility, Climate, Local Resources, Infrastructure and Physiography; 12: Data Verification; 15: Mineral Reserve Estimates; 16: Mining Methods; 19: Market Studies and Contracts; 20: Environmental Studies, Permitting and Social or Community Impact; 21: Capital and Operating Costs; 22: Economic Analysis; 24: Other relevant data and information; 25: Interpretation and Conclusions; 26: Recommendations; 27: References
Michael Steinmann, P. Geo. President	Pan American Silver Corp.	1: Summary; 2 :Introduction; 6: History; 7: Geological Setting and Mineralization; 8: Deposit Types, 9: Exploration; 10: Drilling; 11: Sample Preparation, Analyses and Security; 12: Data Verification: 14: Mineral Resource Estimates; 23: Adjacent Properties; 25: Interpretation and Conclusions; 26: Recommendations
Americo Delgado, P. Eng., Director, Metallurgy	Pan American Silver Corp.	1: Summary; 2: Introduction; 12: Data Verification; 13:Mineral Processing and Metallurgical Testing; 17: Recovery Methods; 18: Project Infrastructure; 21: Capital and Operating Costs; 25: Interpretation and Conclusions; 26: Recommendations

3 Reliance on other experts

The qualified persons preparing this technical report have not relied on the reports, opinions, and statements of other experts for the preparation of this technical report.

4 Property description and location

4.1 Location, mineral tenure, and surface rights

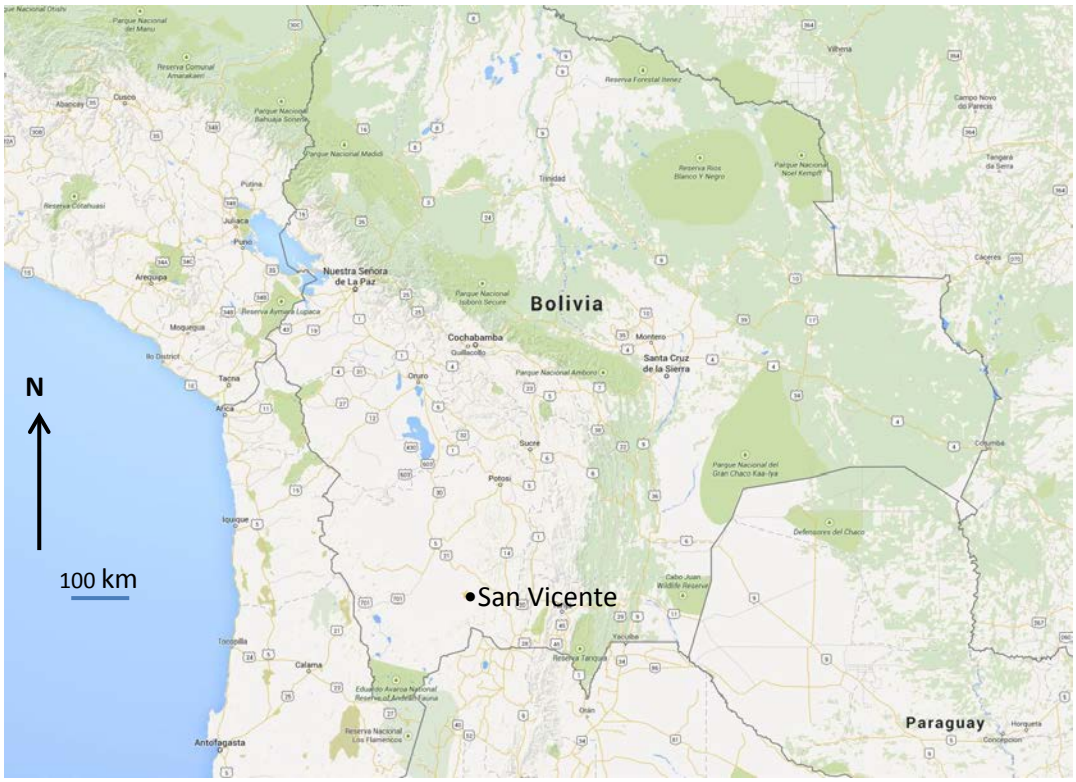
San Vicente is located in southern Bolivia, in the province of Sud-Chicas, Department of Potosí, at a latitude of 21°16’ south, longitude 66°19’ west, and an altitude of 4,500 metres above sea level. A location map sourced during May 2015 from Google Maps is given in Figure 4.1.

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 11 mining concessions with a total area of 7,021 hectares. The concessions include the rights for mining, water, and surface usage. All the mining property concessions 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 are in good standing. Details of the concessions are given in Table 4.1.

Table 4.1 Mining concession details

Concession name	Area (hectares)
Aguas Confianza	125
Aguas Confianza 2	145
Aguas Jayajmayu	103
Aguas San Francisco	60
Aguas San Vicente 2	229
Apolo 2	3,467
Cinturon	225
Codiciada	229
Marcela	1,163
Cinturon 2	1,275
Total	7,021

Figure 4.1 San Vicente location map (source: Google Maps May 2015)



4.2 Issuer's interest

Pan American holds a 95% share of PASB. The remaining 5% of PASB is owned by Urion, an affiliate of Trafigura. PASB owns a joint venture interest in, and is the operator of, the San Vicente Property. PASB's counter-party to the joint venture is COMIBOL, the state mining company of the Plurinational State of Bolivia.

4.3 Royalties, back-in rights, payments, agreements, and encumbrances

Pursuant to a joint venture agreement entered into with COMIBOL in July 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 operation's 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%. PASB is entitled to the remaining 62.5% of the cash flow from operations.

A 2% royalty on 80% of the net smelter return is also payable to 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 was paid in 2012 and payments have been made annually since then.

A Bolivian state mining royalty is applied to the gross metal value of sales before smelting and refining deductions, and the royalty percentage is a sliding scale depending on metal prices. At metal prices at the effective date of this Report, the royalty is 6% for silver metal value and 5% for zinc and copper metal value of sales. The royalty is deductible from taxable income but it is not creditable.

The principal tax of Bolivia affecting PASB includes income tax, asset and financial transaction taxes, export duties, a refundable value added tax, and a mining surtax of 12.5% on the annual income of mining companies.

4.4 Environmental liabilities

The environmental liabilities at San Vicente are typical of an operating mine in a historical mining district. Before commencing operation of the mine, 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 pre-existing situation of the environment at the Property and identifies environmental liabilities regarding pre-existing waste rock dumps, tailings, and solid residues from previous mining activities conducted on the property and their environmental impact on soil, water, and vegetation.

The most significant environmental issues currently associated with the San Vicente mine are related to the historic waste dumps, management of acidic water from the mine dewatering, and acidic drainage from the historic Pelayo stockpile that potentially affects the San Vicente River. PASB operates a low density sludge treatment plant that treats water from the above sources to improve the water quality and comply with its environmental permits. Improvements to capture seepage from the historic Pelayo stockpile were implemented in 2013 and 2014 to reduce contact with the San Vicente River.

Under the terms of 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.

There are no other known environmental or social issues that could materially impact the mine's ability to extract the mineral resources or mineral reserves.

4.5 Permits

Pan American holds all the necessary environmental and operating permits for the development and operation of the existing mine and is in compliance with Bolivian law.

Construction of the new processing plant, tailings facility and ancillary facilities at San Vicente required an 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. PASB submits monitoring reports and project updates in accordance with the terms of the environmental license.

Pan American has obtained other permits necessary for normal operations of the mine, including permits for water use, treated industrial and domestic waste water disposal, the use and storage of explosives, and facilities for liquid fuel storage.

4.6 Significant factors and risks

Mineral resource and mineral reserve estimates are based on assumptions that include mining, metallurgical, infrastructure, permitting, taxation, and economic parameters. Increasing costs and taxation and lower metal prices will have a negative impact on the quantity of estimated mineral reserves. There are currently no known factors that may have a material negative impact on the estimate of mineral resources and reserves at San Vicente.

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 conducting 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 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, Pan American anticipates 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. Pan American is assessing the potential impacts of the New Mining Law and is awaiting further regulatory developments, but the primary effects on the San Vicente operation and Pan American's interest therein will not be known until such time as Pan American has, if required to do so, renegotiated the existing contract, and the full impact may only be realized over time.

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.

There are no other known significant factors or risks that may affect access, title, or the right or ability to conduct mining, processing, and exploration activities at San Vicente.

5 Accessibility, climate, local resources, infrastructure, and physiography

5.1 Access, transport, and population centre

The Property is accessible by gravel road approximately 100 kilometres west of the town of Tupiza and approximately 120 kilometres south of the town of Uyuni. The best driving routes are via the capital city of La Paz in the north or from Arica or Antofagasta to the west. From La Paz, a paved highway leads to the town of Challapata, and from there a gravel road, which serves as the major north-south route in the country, leads to Uyuni. The mine is accessible throughout the year although access can be difficult during the rainy season. Transport to the mine is by road for equipment and workers. Daily commercial flights operate between Uyuni and La Paz. Both Uyuni and Tupiza are connected to the rail system, which serves Bolivia and connects with the ports of Arica and Antofagasta in Chile.

PASB has its primary office located in the city of La Paz, and has regional offices in Uyuni and Tupiza where the majority of the purchasing and mine site logistics are arranged. Many of the miners are resident in San Vicente and the surrounding communities, while the remaining workers, and most of the supervisory, technical, and support staff work on a rotation schedule, commuting to the property and housed in a camp facility at the mine.

5.2 Climate, length of operating season, and physiography

The San Vicente Property is located in a high plateau known as the Altiplano, which is characterized by its high elevation and arid climate. The topography at the mine is rugged and lies at approximately 4,400 metres above sea level. Vegetation is sparse and the only use of the land, other than for mining activities, is as wild pasture for llamas.

Daytime temperatures range from 4°C in winter and 14°C in the summer. In the winter, night time temperatures are frequently below zero with extremes of -15°C. The average annual rainfall is 190 millimetres, with little to no rain falling between May and September. Rainfall occurs mainly in the summer months, when up to 20 millimetres of rain can fall in one day. The mine operates year round.

5.3 Surface rights, land availability, infrastructure, and local resources

There are sufficient surface rights and area for the mining operations. Agreements are in place to obtain the water required for mining and processing from a combination of water wells and surface water. A power transmission line approximately 20 kilometres in length connects the mine to the Bolivian national power grid at Portugalete and supplies sufficient power for the plant and mining operations. The mine is located in a historical mining area and there is a sufficient local supply of mining personnel.

6 History

Mining in the area of San Vicente has occurred sporadically since colonial times when the initial exploitation was from veins exposed at the surface. The first written records of mining activity are from 1820, when the area was named the Guernica Mine. 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 tonne per day Vetillas concentrating plant in 1972, which produced a silver rich zinc concentrate. Mine infrastructure at the site included an underground mine, the Vetillas flotation mill, power and water supplies, and worker housing.

The mine was operated by COMIBOL until 1993, at which time mining was suspended pending the privatization of mining in Bolivia. There are no complete production records, but between 1988 and 1993 the mine produced an average of 106,000 tonnes per year at approximately 400 grams per tonne of silver and 3.6% zinc. There is no known historical exploration or drilling data or any known historical mineral resource or mineral reserve estimates.

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 (Contrato de Riesgo Compartido) 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 contemplated an increase in Pan American's 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%.

Pursuant to an amendment to the contract signed in August 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 facility 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 operating cash flow, subject to certain deductions in respect of development costs and to the reduction in the rate during the recovery period of PASB's investment.

In 2007, Pan American purchased EMUSA's 40% interest in PASB, increasing its share ownership from 55% to the current 95%, and Trafigura continued to hold its 5% interest in PASB.

Between 2008 and 2009, Pan American completed construction of a new 750 tonne per day 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.

7 Geological setting and mineralization

7.1 Regional, local, and property geology

The San Vicente Property 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 of Late Oligocene age. The clastic sediments are over-thrusted by a turbidite sequence of Ordovician age which outcrop on the east side of the mine. Mid-Miocene age volcanic rocks are also present on site.

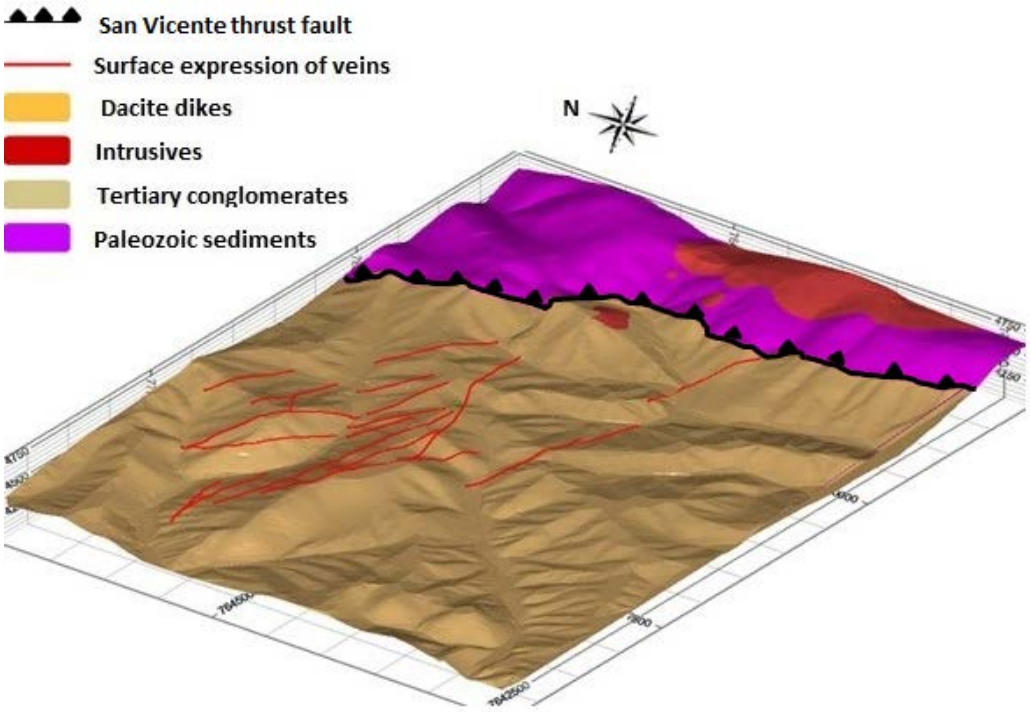
The regional sedimentary sequence consists of a basement of Palaeozoic marine siliciclastic sediments. This sequence was folded and later unconformably overlain by non-continuous Cretaceous age continental sediments and a thick sequence of Tertiary age continental clastic sediments (the Potoco and San Vicente formations). Sedimentation in the Tertiary age basin was controlled by thrust faults to the east and west and contains various thin volcanic flows. A sequence of felsic volcanics forms the top of the Tertiary basin in the southern part.

An important lithology in the Property area is the fanglomerates of the San Vicente Formation which are in contact with Ordovician age shales along the strike of the San Vicente fault. The fanglomerates consist of poorly sorted conglomerate with fragments of Palaeozoic sediments cross cut by younger quartz veins. The matrix is red in colour and consists of iron-bearing sandstone.

Igneous activity is present in the form of pre- and post-mineralization porphyritic dacite dikes. The structural environment of the mine area consists of a series of moderately to steeply dipping pre-mineral faults striking west-northwest.

A schematic diagram of the local geology and the orientation of the veins is given in Figure 7.1.

Figure 7.1 Schematic of local geology



7.2 Mineralization

The San Vicente Property contains a polymetallic deposit formed by hydrothermal systems associated with repeated calc-alkaline intrusions and their extrusive products 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 dikes. 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.

8 Deposit types

The polymetallic mineralization at the San Vicente Property is present as vertically continuous fault hosted veins, replacements of brecciated faults, and mineralization in dacitic dikes. The mineralized structures are on the order of one to five metres wide, dip moderately to steeply, and trend generally towards the northwest. The known mineralized structures comprise the current operating plan and the down dip extents of these structures are the target of Pan American's annual exploration drill plan.

9 Exploration

There is no known modern exploration on the San Vicente Property aside from the exploitation of silver from exposed veins. Pan American's exploration program began in 1999 following the execution of the joint venture agreement with COMIBOL. The work started with mapping and sampling the surface and was followed by the construction of drill access roads and platforms. 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. Soil sampling was conducted in six parallel lines on a 100 metre line spacing and a 50 metre sample spacing along the lines, which cut the extension of the Guernica vein, the Litoral area, and the extension of the San Francisco and San Lorenzo veins. 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 samples are taken by PASB employees from the backs of drifts, the ribs of crosscuts, the backs of stopes, and the ribs of raises. The channel samples are taken using a hammer and chisel every four metres across the veins in 20 centimetre wide channels approximately three centimetres deep. Stopes are channel sampled every 1.6 metre vertical cut on two metre centres along strike.

The sample interval width is based on the visible vein width, which varies from 0.2 to 10.8 metres. Wide vein intersections are sampled in several intervals dependent upon the variations in visible mineralization. In areas where the wall rock shows disseminated mineralization, additional samples are taken in regular intervals from 0.7 to 1.0 metres in length. As of December 31, 2014, there were nearly 26,000 channel samples in the database for a combined total of nearly 34 kilometres.

Channel sampling was originally partially done by COMIBOL and later by PASB employees under the supervision of PASB geologists. Some of the channel samples taken by COMIBOL did not extend across the full width of the economic vein intersection and are therefore not representative of the entire mineralized zone. Where possible, COMIBOL's channel samples were replaced by channels sampled by PASB. Mineral resource blocks that are estimated using entirely COMIBOL channel samples have not been converted to mineral reserves and remain in the mineral resource categories.

Channel sampling generally provides reliable data for the estimation of mineral resources and mineral reserves, provided that appropriate measures are taken to prevent contamination and to ensure a representative sample is taken. Because the channel samples are taken at a regular spacing in drifts above and below the mineral reserve volumes, the samples are as spatially representative as possible. There are no other known issues aside from COMIBOL's sampling protocol that could materially impact the reliability of the results.

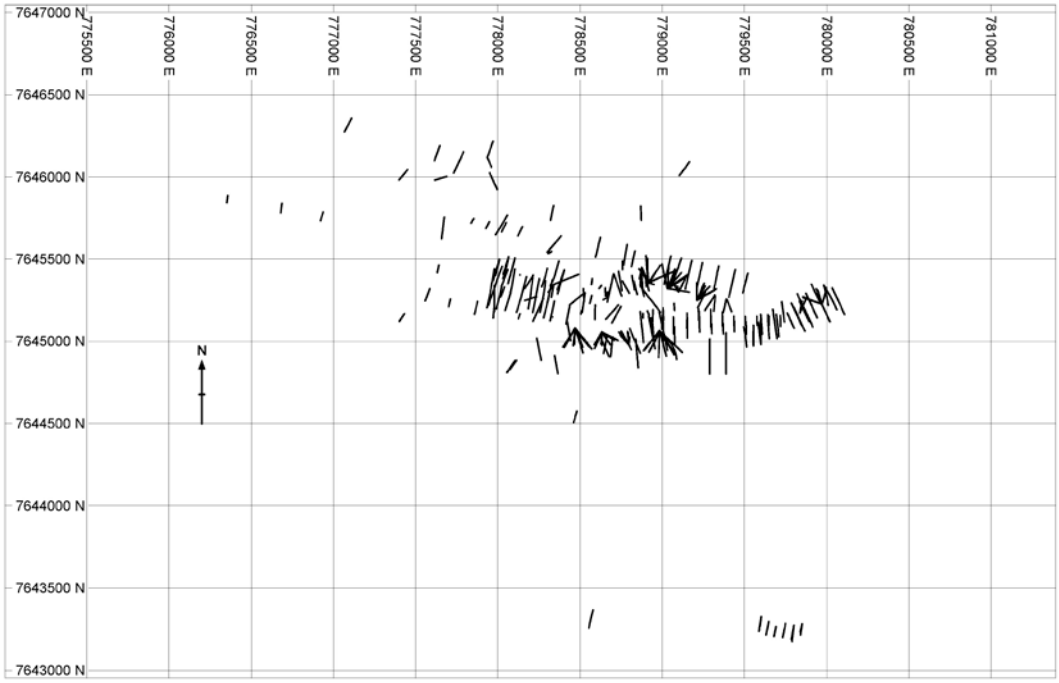
10 Drilling

Pan American orients diamond drillholes to intersect the targeted vein as close to perpendicular as possible and they are spaced as regularly as possible to ensure representative sample coverage. As of December 31, 2014, nearly 300 diamond drillholes have been drilled on the San Vicente Property for a total of over 53,000 metres. Over 12,000 samples have been selected from these holes. A plan showing the location of the drillholes is given in Figure 10.1.

Diamond drilling at the mine has been undertaken by an external contractor, Leduc Drilling S.R.L of La Paz, Bolivia, using a combination of HQ sized drill rigs at the surface and NQ sized drill rigs from underground. Downhole surveys are taken regularly down the drillhole. Drillhole spacing is variable and ranges from between 35 metres and 100 metres, depending on the vein.

Diamond drilling at the San Vicente Property generally provides reliable data for the estimation of mineral resources and mineral reserves, provided appropriate measures are taken to minimize material loss, to prevent contamination, and to ensure a representative sample is taken. Ground conditions for diamond drilling at San Vicente are good, resulting in high drill core recovery, and measures are taken to minimize potential contamination. There are no known drilling, sampling, or recovery factors that could materially impact the accuracy and reliability of the results.

Figure 10.1 Drillhole location map



11 Sample preparation, analyses, and security

11.1 On-site sample preparation and security

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

Diamond drillholes are split in half using a diamond bladed saw after the hole is logged by the geologist. One half of the sample is placed into a plastic bag with a sample number and stapled shut. The bagged samples are transported by PASB employees by truck to ALS Chemex in Oruro, Bolivia. The remaining half of the drill core is stored at the mine in a secure storage facility for reference.

The sample interval width is based on the visible vein width, which varies from 0.2 to 10.8 metres. Wide vein intersections are sampled in several intervals dependent upon the variations in visible mineralization. In areas where the wall rock shows disseminated mineralization, additional samples are taken in regular intervals from 0.7 to 1.0 metres in length.

There are no known core or sample recovery problems which could have materially impacted the accuracy and reliability of the results.

There was a bias in the COMIBOL channel methodology toward narrower vein widths and higher grades because they did not cover the entire width of the mineralization in the vein. This bias has been mitigated by replacing the COMIBOL channel samples by PASB channel samples wherever possible and by applying a lower resource confidence classification to blocks estimated with COMIBOL channel samples.

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

11.2 Laboratory sample preparation and security

In the past, the channel samples were prepared by Bondar-Clegg laboratories (now ALS Chemex) in Oruro or by SGS Laboratories 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.

11.3 Quality assurance and quality control

The QAQC programme includes the submission of blanks, standards, and duplicate samples to the primary laboratory and the submission of check samples to a secondary laboratory.

Approximately 400 blank samples comprising locally sourced sand is available for review. None of the results indicate any significant source of contamination. A recommendation is made to replace the sand with a full size blank material in order to test the full potential for contamination through the crushing, splitting, pulverising, and analytical process. Blank samples should be submitted both to the site and external laboratories at a frequency of one for every 20 regular samples, as well as to any other laboratory serving as a check laboratory.

Approximately 720 standard samples have been submitted to the primary and check laboratory. The exact details of the standard sample preparation and analyses are unknown. The results show approximately 20% of the samples failing three standard deviations of the known mean standard grade, with a slightly low bias. A recommendation is made to prepare three alternate standard samples from material sourced from the mine, at grades close to the mineral resource, mineral reserve, and high grades. The standard samples should be submitted to both the site and external laboratories at a frequency of one for every 20 regular samples, as well as to any other laboratory serving as a check laboratory.

1,270 duplicate samples comprising a second channel sample have been submitted to the onsite laboratory. The results show relatively poor precision but no consistent bias. A recommendation is made to review the process for collecting, preparing, and analysing the duplicate samples. Duplicate samples should be selected from the mineralized zone, comprising the second half of the drill core or a second channel sample from the same interval as the original, and submitted to the laboratory at a frequency of one for every 20 regular samples.

A further 1,475 duplicate pulp samples have been sent to a check laboratory, which was Conde Morales from 2009 to 2011, and ALS Chemex from 2012 to present. The results show an acceptable level of precision.

11.4 Conclusions

The qualified person responsible for this section of the technical report is of the opinion that the sample preparation, security, and analytical procedures are adequate and that the sample assays are sufficiently reliable for the estimation of mineral resources and mineral reserves at the San Vicente Property.

12 Data verification

12.1 Geology data reviews

On an annual basis, the qualified person responsible for this section of the technical report reviews the diamond drilling plans and the mineral resource estimation procedures including the vein interpretations, treatment of extreme sample grade values, and the estimate of tonnes and grade. The reconciliation between the mine plan and the processing plant are reviewed quarterly, and the drillhole vein intersection width and grade results and QAQC results are reviewed monthly. During mine visits, the exploration drilling, sampling, and security protocols are reviewed, along with the operational mine plan, actual mine operation data, and grade control protocols.

In the opinion of the qualified person responsible for this section of the technical report, the data and parameters used to estimate mineral resources and mineral reserves are sufficiently reliable for those purposes.

12.2 Mine engineering data reviews

The qualified person responsible for this section of the technical report undertakes regular reviews of the mine engineering data, including the mining fleet and mine operational and production data, grade control data including dilution and ore loss, geotechnical studies, waste disposal requirements, environmental and community factors, processing data, development of the life of mine plan including production and recovery rates, capital and operating cost estimates for the mine and processing facilities, transportation, logistics, and power and water consumption and future requirements, taxation and royalties, and the parameters and assumptions used in the economic model.

In the opinion of the qualified person responsible for this section of the technical report, the data and assumptions and parameters used to estimate mineral resources and mineral reserves are sufficiently reliable for those purposes.

12.3 Metallurgy data reviews

The qualified person responsible for this section of the technical report undertakes regular reviews of the processing plant and operational data including grinding circuit performance, treatment rates, flotation circuit performance, reagent consumptions, metallurgical testing, analytical lab procedures, concentrate sampling, production and quality, and general business performance.

In the opinion of the qualified person responsible for this section of the technical report, the data and assumptions used to estimate the metallurgical recovery model for the mineral resource and mineral reserve estimates are sufficiently reliable for those purposes.

13 Mineral processing and metallurgical testing

No metallurgical test work prior to Pan American's interest in the mine is available for disclosure. Metal recovery forecasts are based on the historical performance of the plant operation, taking into consideration metal grades and tonnages. As part of normal plant operation procedures, metallurgical analysis and testing is undertaken on an annual basis. The majority of these analyses comprise plant surveys to assess for grinding performance and flotation testing to assess metallurgical recovery. A summary of the metallurgical recovery by metal achieved in the plant over the past five years is given in Table 13.1.

The distribution of silver present in the concentrates is approximately 85% to the silver-lead concentrates, and 15% to the zinc-silver concentrates. Silver grades in the concentrates are approximately 18,300 ppm Ag in the silver-lead concentrate and 1,000 ppm Ag in the zinc-silver concentrate. The silver-lead concentrates average 10% lead and 12% of copper, and the zinc-silver concentrates average 49% zinc. Prior to 2012, the silver-lead concentrate was sold as a silver-copper concentrate, with copper recoveries of 72% and 74% in 2011 and 2010, respectively.

Table 13.1 Metallurgical recovery by year

Year	% recovery Ag	% recovery Zn	% recovery Pb[1]
2014	93.2	78.0	82.3
2013	93.9	78.5	82.2
2012	90.7	75.0	73.8
2011	90.0	74.9	-
2010	89.2	75.1	-

Note[1]: prior to 2012, the silver-lead concentrate was sold as a silver-copper concentrate, therefore no lead recoveries are shown for 2011 and 2010.

14 Mineral resource estimates

14.1 Disclosure

Pan American updates the mineral resource estimates on an annual basis following reviews of metal price trends, treatment and refining charge trends for base metal concentrates, operational performance and costs experienced in the previous year, and forecasts of production and costs over the life of the mine. Other than normal course changes in metal prices, which fluctuate from time to time, no new material information has become available between December 31, 2014 and the signature date given on the certificates of the qualified persons.

Pan American conducts infill and near-mine drilling annually. The drillhole data cut-off date for the commencement of the mineral resource estimate was December 31, 2014. Mineral resource estimates are prepared on an annual basis by Pan American staff under the supervision of and reviewed by Michael Steinmann, P. Geo., President of Pan American Silver, who is a qualified person as that term is defined by NI 43-101.

There are no known environmental, permitting, legal, title, taxation, socio-economic, marketing, political, or other factors or risks that could materially affect the development of the mineral resources. Mineral resources that are not mineral reserves do not have demonstrated economic viability. Mineral resources reported here are in addition to mineral reserves.

14.2 Method

Mineral resource estimates are prepared annually and updated with the additional drillhole and channel sample information collected during the year, using industry standard mining software. The samples are composited to the vein width and treated for outlier grades. A block model for each vein is constructed based on the interpretations from mapping, channel and drillhole logs, and assay values. Bulk density is estimated into each block based on the estimated grades and the formula:

Bulk density = 2.646 + (0.071 x Cu%) + (0.132 x Pb%) + (0.018 x Zn%).

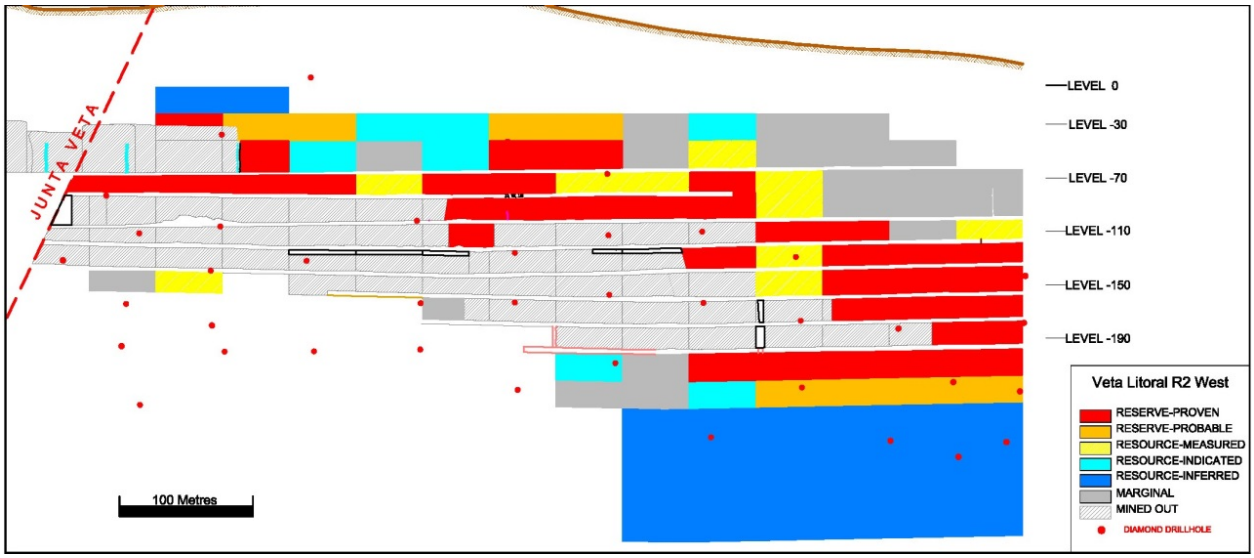
Variography is undertaken for each metal for every vein and used in the estimation of silver, lead, and zinc grades using ordinary kriging interpolation. The estimate is validated and classified for confidence categories depending on the number of samples available to the estimate and the grade continuity in each vein.

Any vein with a width of less than the minimum mining width is diluted with waste to the minimum mining width. The minimum mining width is 0.9 metres for both conventional shrinkage stoping and semi-mechanized shrinkage stoping, and 1.2 metres for Avoca long hole stoping. Mining dilution is then added to the resource depending on mining method. For both types of shrinkage stoping, planned dilution of a 0.10 metre width at zero grade is added to both the footwall and the hangingwall. For Avoca stoping, planned dilution of a 0.35 metre width at zero grade is added to both the footwall and the hangingwall. A mining recovery factor of 90% is

applied to each block in the shrinkage stoping areas to account for loss of material left behind for stability and safety reasons, which mostly occurs in sills, man ways, and crown pillars. A further 5% ore loss is planned to account for losses during stope cleaning. Mining losses for long hole stoping are assumed to be 2% for pillars and a further 5% for losses of ore into backfill. 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.

The mineral resources are defined from around 20 different mineralized structures. The majority of the tonnes and metal is sourced from three veins referred to as Litoral Ramo 2, Unión, and Ramo Guernica. An example long section from Litoral Ramo 2 is given in Figure 14.1.

Figure 14.1 Example long section through Litoral Ramo 2



14.3 Mineral resource tabulation

Mineral resources for San Vicente as at December 31, 2014 are given in Table 14.1. This tabulation includes material classified as measured, indicated, and inferred mineral resources, using metal prices of $18.50 per ounce of silver, $2,000 per tonne of lead, and $2,000 per tonne of zinc. The mineral resources were estimated as of December 31, 2014, and depleted for mining as of December 31, 2014. Mineral resources are given for Pan American's 95% share of PASB.

There are no known environmental, permitting, legal, title, taxation, socio-economic, marketing, political, or other factors or risks that could materially affect the development of the mineral resources. Mineral resources that are not mineral reserves do not have demonstrated economic viability. Mineral resources reported here are in addition to mineral reserves.

Table 14.1 San Vicente mineral resources as at December 31, 2014

Classification	Tonnes (Mt)	Ag ppm	Contained Ag (Moz)	Pb %	Zn %
Measured	0.6	169	3.4	0.15	2.45
Indicated	0.3	156	1.3	0.12	2.12
Measured + Indicated	0.9	165	4.7	0.14	2.35
Inferred	3.0	366	34.8	0.33	2.68

Notes: Mineral resources do not have demonstrated economic viability. Totals may not add up due to rounding. Mineral resource estimates were prepared under the supervision of or were reviewed by Michael Steinmann, P. Geo., President of Pan American. Metal prices used for the mineral resource estimate were $18.50 per ounce of silver, $2,000 per tonne of lead, and $2,000 per tonne of zinc. Mineral resources are given for Pan American's 95% share of PASB. Mineral resources are in addition to mineral reserves.

15 Mineral reserve estimates

15.1 Disclosure

Pan American updates the mineral reserve estimates on an annual basis following reviews of metal price trends, treatment and refining charge trends for base metal concentrates, operational performance and costs experienced in the previous year, and forecasts of production and costs over the life of the mine. Other than normal course changes in metal prices, which fluctuate from time to time, no new material information has become available between December 31, 2014 and the signature date given on the certificates of the qualified persons.

Mineral reserve estimates were prepared by Pan American technical staff under the supervision of and reviewed by Martin Wafforn, P. Eng., Vice President, Technical Services of Pan American, who is a qualified person as that term is defined by NI 43-101.

Mineral reserve estimates are based on assumptions that include mining, metallurgical, infrastructure, permitting, taxation, and economic parameters. Increasing costs and taxation and lower metal prices will have a negative impact on the quantity of estimated mineral reserves. There are currently no known factors that may have a material negative impact on the estimate of mineral reserves at San Vicente.

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 conducting 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 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, Pan American anticipates 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. Pan American is assessing the potential impacts of the New Mining Law and is awaiting further regulatory developments, but the primary effects on the San Vicente operation and Pan American's interest therein will not be known until such time as Pan American has, if required to do so, renegotiated the existing contract, and the full impact may only be realized over time.

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.

15.2 Method

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. The produced concentrates are assumed to be sold for the value of their silver, zinc, and lead content, but from time to time the market conditions may change and some concentrates may be sold for their copper content instead of for their lead content.

A minimum required value per tonne cut-off is calculated for the blocks depending on the block location in the mine. Processing costs are assumed to be the same for all ore types, and metallurgical recoveries are based on averages for all of the groups of veins or structures. Metal prices used to estimate mineral reserves were $18.50 per ounces of silver, $2,000 per tonne of lead, and $2,000 per tonne of zinc.

Any blocks which are considered uneconomic after the 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. Some small isolated blocks may be removed if the cost associated with development, production, and logistics make them uneconomic to mine. Any measured mineral resource block with a value per tonne greater than the cut-off is converted to proven mineral reserves, and any indicated mineral resource block with a value per tonne greater than the cut-off is converted to probable mineral reserves.

15.3 Mineral reserve tabulation

Mineral reserves for San Vicente as at December 31, 2014, comprising material classified as proven and probable mineral reserves using metal prices of $18.50 per ounce of silver, $2,000 per tonne of lead, and $2,000 per tonne of zinc, are given in Table 15.1. The mineral reserves were estimated as of December 31, 2014 and depleted for mining as of December 31, 2014. Mineral reserves are given for Pan American's 95% share of PASB. Mineral reserves are in addition to mineral resources.

Table 15.1 San Vicente mineral reserves as at December 31, 2014

Classification	Tonnes (Mt)	Ag ppm	Ag contained metal (Moz)	Pb %	Zn %
Proven	1.9	460	28.4	0.39	3.03
Probable	0.7	425	9.9	0.49	2.44
Proven + Probable	2.6	451	38.3	0.42	2.86
Notes: Totals may not add up due to rounding. Mineral reserve estimates were prepared under the supervision of or were reviewed by Martin Wafforn, P. Eng., Vice President, Technical Services of Pan American. Metal prices used for the mineral reserve estimate were					

$18.50 per ounce of silver, $2,000 per tonne of lead, and $2,000 per tonne of zinc. Mineral reserves are given for Pan American's 95% share of PASB. Mineral reserves are in addition to mineral resources.

16 Mining methods

16.1 Introduction

The conventional and mechanized underground mining methods at San Vicente are designed to extract ore from mineralized structures that range in width from a few centimetres to occasionally over ten metres, and range in dip from 45° to 90°. The mineral reserves are estimated from approximately 20 different structures and typically half of the structures will be in production during a given year.

In a typical year, 45% of the mine production is from Avoca long hole stoping, 35% from conventional and semi-mechanized shrinkage stoping, and the remaining 20% from development in ore.

16.1.1 Conventional mining

Conventional mining techniques are employed in areas of the mine that were in operation prior to Pan American's involvement, where the veins are typically narrow and range in width from a few centimetres up to two metres. Levels are spaced 40 metres apart vertically and are equipped with rails for the haulage of broken ore and waste as well as for the transportation of personnel and supplies. The main levels are equipped with four tonne trolley locomotives equipped with three tonne capacity mine cars. Access to these areas is primarily via a timber shaft that extends to the surface. Pan American replaced the hoist and other safety systems to allow the shaft to be utilized for personnel transport and for hoisting material. A small inclined shaft is also available for hoisting material.

Conventional shrinkage stoping methods have been used historically to extract ore from stopes that are normally designed with dimensions of 40 metres high by 40 metres along strike by the width of the vein. Horizontal track drifts 2.4 metres high and 2.4 metres wide are developed along the vein on the main levels located 40 metres apart. A four metre horizontal pillar is left below the rail. Raises are developed at the end of each stope extending from the bottom to the top level, with ladder ways for access, a central raise to provide ventilation and a free space for blasting, and a two metre vertical pillar to protect the ladder ways between each stope. Ore passes 1.2 metres wide and four metres long are excavated to transfer the broken ore to the level below for transport to the surface. Mining advances upwards using blast holes drilled with hand held jacklegs or stopers. Approximately 40% of the broken ore is extracted as swell from the ore passes and the remainder stays in the stope to serve as a work platform for subsequent cuts, until the stope is fully mined.

Semi-mechanized shrinkage stoping methods are also used which eliminates the requirement of the ore passes and the pillar between the stopes. A haulage drift is developed in the footwall of the extraction level, and 2.5 metre wide by 2.5 metre high drawpoints are developed into the vein on a 5.7 metre spacing. Scooptrams with a two cubic yard capacity are used for extracting the ore, which load either into 12 tonne capacity mine trucks for haulage up the ramp to the surface or into mine cars for hoisting up the shaft, depending on the mining location.

16.1.2 Mechanized mining

The mechanized zone was developed by Pan American, and is accessed by a 4.5 metre wide by 4.0 metre high ramp from the surface, with connections to the conventional mining zone. Broken ore from stoping and development is hauled up the ramp in 20 tonne capacity trucks, while development waste is utilized underground as unconsolidated backfill.

The Avoca long hole stoping method is used primarily for mining the wider veins comprising the majority of the mineral reserves. The minimum mining width necessary for the Avoca method is assumed to be 1.2 metres, and is more productive, safer, and less costly than shrinkage stoping. Sublevels are developed every 20 metres vertically along the width of the vein, and a 3.7 metre wide by 3.5 metre high drift is developed in the footwall, with drawpoints of the same dimensions developed across strike to access the vein every 50 metres along strike. Electric hydraulic drill jumbos are used to drill the development blastholes while electric hydraulic long hole drills are used to drill the vertical blastholes from one sublevel to the next. Scooptrams with 3.5 cubic yard capacity are used to move the broken ore and waste. When stope blasting has retreated past the first drawpoint providing sufficient space in the open stope, waste is dumped into the stope to act as backfill and to control dilution.

16.2 Geotechnical and hydrological parameters

The mine obtains advice from third party geotechnical consultants from time to time to assess the geotechnical conditions and to provide ground support advice. The geotechnical parameters and support requirements vary with rock type, and the ground conditions are generally very good with the exception of areas where development crosses an intrusive dike. Bolts are installed as required in the conglomerate zones close to the vein, and systematic bolting with wire mesh screen is required in the breccia and dacite where discontinuities form parallel to mine development. Timber cribbing may also be required in the breccia zone.

The climate at San Vicente is dry with very little precipitation during much of the year. One small pump station pumps an average of around 19 cubic metres per day to the surface, where it discharges into the acid water treatment plant for neutralization prior to discharge or use in the processing plant.

16.3 Production rates and expected mine life

The life of mine plan contemplates an annual processing rate of 330,000 tonnes throughout the mine life. Based on the mineral reserves estimated as of December 31, 2014, this corresponds to a remaining mine life of 8.2 years. The projected mine life may increase if the mineral resources can be converted to mineral reserves as the result of improvements to metallurgical recoveries, costs, or metal prices, or if additional mineral resources are defined and can be converted to mineral reserves. The ramp will continue to be developed downwards to accomplish the life of mine plan, which will allow access to exploration targets deeper than the currently available data.

16.4 Waste mining requirements

Waste development mining occurs at the rate of approximately 3,300 metres per annum and generates approximately 121,000 tonnes of waste annually. Approximately one quarter of the waste material is transported to the waste storage facilities on the surface while the remaining waste is retained underground for use as back fill. The waste development rate is higher than necessary to replace annual production and at present the mine has a considerable inventory of developed stopes that provide access for further definition drilling and production flexibility.

16.5 Mining fleet and machinery

The current mobile mining equipment fleet is shown in Table 16.1

Table 16.1 Current mobile mining equipment

Item	Specification	Quantity
Scooptram	2 cubic yard	2
Scooptram	3.5 cubic yard	3
Scooptram	0.6 cubic metre	2
Haul truck	20 tonne	3
Haul truck	12 tonne	2
Development drill jumbo	1 boom	2
Long hole drill	1 boom	2
Bolting jumbo	1 boom	1
Utility vehicle / scissor lift		2
Battery locomotives	1.5 to 2.5 tonne	7
Trolley locomotives	1.5 to 4.0 tonne	4
Tractor / personnel transport		6
Front end loader (surface)	3.25 cubic metre	2

17 Recovery methods

17.1 Introduction

The San Vicente mine operates a process plant with a capacity of approximately 350,000 tonnes per year, using selective flotation technology to produce silver in silver-lead and zinc-silver concentrates. The mill flowsheet consists of one-stage crushing, a semi-autogenous grinding / ball mill grinding circuit, and selective flotation followed by filtration of concentrates.

17.2 Crushing

The ore is transported from the mine using trucks to a stockpile with a capacity of 5,000 tonnes located next to the crushing plant. The ore is fed into a bin after passing through a static screen with 20 inch openings. Ore from the bin is fed to the crusher by an apron feeder that discharges onto a three inch aperture static screen. Screen oversize is fed to an 800 by 600 millimetre jaw crusher, and the crusher product is combined with the screen undersize and transported by two conveyors 24 inches wide by nine metres and 30 metres long respectively. The crushing circuit has capacity of 80 tonnes per hour with a crusher close setting of four inches. The crushing circuit product goes to a stockpile that has a live capacity of 2,000 tonnes before being fed to the grinding circuit.

17.3 Grinding

The grinding circuit consists of two stages of grinding to produce a final product of 75% passing 140 mesh (106 microns) that feeds the flotation circuit. The primary grinding is a closed circuit 14 foot diameter by five foot long semi-autogenous grinding mill with a 525 horsepower motor discharging onto a two foot by five foot vibratory screen. The secondary grinding is a nine foot diameter by 14 foot long ball mill with a 525 horsepower motor in closed circuit with a 15 inch diameter hydrocyclone. The secondary grinding product and undersize screen material from the semi-autogenous grinding mill is combined in a box that feeds the hydrocyclone using a pump with a 75 horsepower motor.

The underflow from the hydrocyclone is fed back to the ball mill and the overflow goes to a box passing through an automated sampler before being pumped to the flotation circuit by a horizontal pump of three inches by four inches with a 25 horsepower motor.

17.4 Flotation

The flotation circuit includes an initial stage of depression of sphalerite and pyrite, flotation of silver and lead, followed by cleaning of the silver-lead concentrate and reactivation of the sphalerite to float and clean the zinc-silver concentrate.

The depressants are added in the ball mill, and the flotation of the silver-lead concentrates is conducted in a ten cubic metre flash cell followed by a three metre diameter by three metre high conditioning tank and five 10 cubic metre rougher cells. Cleaning of the silver-lead concentrate is conducted in two stages, each stage in 1.5 cubic metre cells to produce the final silver-lead concentrate, and the cleaning tails are recirculated to the second rougher cell.

The zinc-silver circuit begins with the activation of the sphalerite in two conditioning tanks each three metres diameter by three metres high, followed by seven rougher cells of ten cubic metres. The rougher tails go to six scavenger cells of ten cubic metres each to produce the final tails. The rougher concentrate is cleaned in three stages in five 5 cubic metre cells to produce the final zinc-silver concentrate.

17.5 Thickening and filtering

The silver-lead and zinc-silver concentrates are pumped to two different six metre diameter by three metre high high-efficiency thickeners. The underflows are fed to two 1,200 by 1,200 millimetre press filters with 26 plates for the silver-lead concentrate and with 68 plates for the zinc-silver concentrate obtaining a final cake with approximately 6% and 7% moisture content respectively.

The flotation tails are pumped to a 15 metre diameter by three metre high high-efficiency thickener. The water from the thickener overflow is recirculated to the flotation plant and the tails in the thickener underflow are pumped to a box for their final disposition at the tailings storage facility.

17.6 Tailings storage

The flotation tailings are received in a box from where they are transported by gravity to the tailings storage facility through an approximately three kilometre long high density polyethylene line of 225 millimetres external diameter. The tailings storage facility is a centreline raise type facility where the tails are discharged from spigots along the length of the primary embankment. The clarified water is recirculated to the process plant by a 120 horsepower pump.

17.7 Power, water, and process consumable requirements

The primary source of power for San Vicente is from the Bolivian power grid, which is reduced to 34.5 kilovolts from 69.0 kilovolts at the substation at Portugalete. The annual power consumption at the mine is approximately 20.3 million kilowatt hours, distributed between about 12.2 million kilowatt hours at the plant, 5.4 million kilowatt hours at the mine, two million kilowatt hours to offices, camps and services, and 0.5 million kilowatt hours to maintenance.

The current annual fresh water consumption is around 190,000 cubic metres and there are sufficient sources of water for the requirements of the operation. The primary sources of fresh water are various wells located in the plant site area and the Angosto Mica river located approximately 18 kilometres from the Property. Approximately 120,000 cubic metres of mine discharge water is available for use after neutralization with lime. An additional 576,000 cubic metres of water are re-circulated from the tailings storage facility to the process plant operation.

A summary of the major process consumable requirements is given in Table 17.1.

Table 17.1 Summary of major process consumables

Item	Annual usage (tonnes)
Grinding media	320
Lime	1,400
Zinc sulphate	350
Copper sulphate	250
Flotation collectors	30

17.8 Summary of metal production

All of the figures cited in this section reflect Pan American's 95% interest in PASB. In 2014, the mill processed around 330,000 tonnes of ore with metallurgical recoveries averaging 93.2% for silver, 82.3% for lead, and 78.0% for zinc. Metal production during 2014 was approximately 3.9 million ounces of silver, 5,800 tonnes of zinc, and 510 tonnes of lead. Metal production for the past five years is given in Table 17.2. Prior to 2012, the silver-lead concentrate was sold as a silver-copper concentrate.

Table 17.2 Metal production for the past five years[1]

Year	Milled tonnes	Produced silver ounces (Moz)	Produced zinc tonnes	Produced lead tonnes[2]
2014	320,000	3.9	5,800	510
2013	320,000	4.0	6,200	560
2012	310,000	3.7	4,900	400
2011	280,000	3.1	4,800	-
2010	270,000	3.0	4,700	-

Note[1]: Metal production is given for Pan American's 95% share of PASB.
Note[2]: Prior to 2012, the silver-lead concentrate was sold as a silver-copper concentrate, with production of 600 tonnes of copper in 2011 and 500 tonnes of copper in 2010.

18 Project infrastructure

A plan of the mine infrastructure is shown in Figure 18.1.

18.1 Transportation and logistics

The San Vicente Property is accessible by gravel road approximately 100 kilometres west of the town of Tupiza and approximately 120 kilometres south of the town of Uyuni. The best road access routes are via the capital city of La Paz in the north or from Arica or Antofagasta to the west. From La Paz, a paved highway leads to the town of Challapata, and from there a gravel road, which serves as the major north-south route in the country, leads to Uyuni. The mine is accessible throughout the year although access can be difficult during the rainy season. Transport to the mine is by road for equipment and workers. Daily commercial flights operate between Uyuni and La Paz. Both Uyuni and Tupiza are connected to the rail system, which serves Bolivia and connects with the ports of Arica and Antofagasta in Chile.

The mine produces concentrates that are loaded into bags at the mine and trucked from the mine to a secure storage facility adjacent to the rail line at Uyuni. From there, the concentrate is either loaded into rail cars for onward transportation to the port of Antofagasta, Chile or continues in trucks to the port of Arica, Chile. At the ports the concentrates are sampled, weighed, placed into containers, and converted to the possession of the purchasers.

18.2 Mine facilities

The existing infrastructure includes the typical components of an operating underground mine, including the mine workings, shaft, hoist room, compressors, workshops, laboratories, storage facilities, offices, drill core and logging sheds, water and power lines, access roads, and the worker's camp and recreational facilities.

18.3 Processing facilities

The San Vicente process plant has a capacity to treat up to approximately 350,000 tonnes of ore per year and produces two concentrates, a silver-lead concentrate and a zinc-silver concentrate. The process plant consists of stockpiles, crushing, grinding, flotation, reagent preparation areas, thickening, filtration, and concentrate storage areas. The processing facilities area also includes process plant offices, maintenance, an analytical laboratory, a metallurgical laboratory, and the tailings storage facility for the storage of flotation tails.

Other major processing facilities include a stockpile area near the crusher, a water treatment plant for mine water discharge, a tailings storage facility, a potable water treatment plant, and a process water pumping facility.

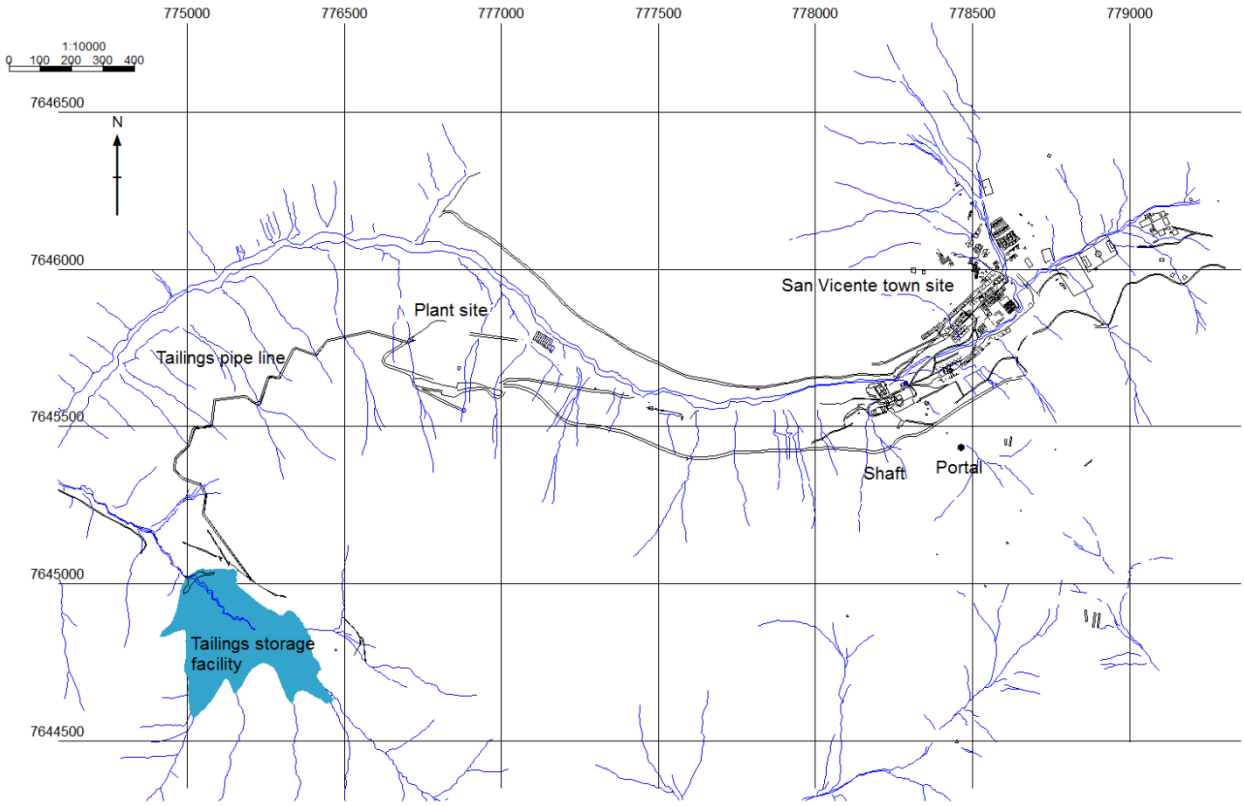
18.4 Power and water

The primary source of power for San Vicente is from the Bolivian power grid, which is reduced to 34.5 kilovolts from 69.0 kilovolts at the substation at Portugalete. The annual power consumption at the mine is approximately 20.3 million kilowatt hours, distributed between

about 12.2 million kilowatt hours at the plant, 5.4 million kilowatt hours at the mine, two million kilowatt hours to offices, camps and services, and 0.5 million kilowatt hours to maintenance.

The current annual fresh water consumption is around 190,000 cubic metres and there are sufficient sources of water for the requirements of the operation. The primary sources of fresh water are various wells around the plant site and the Angosto Mica river located approximately 18 kilometres from the Property. Approximately 120,000 cubic metres of mine discharge water is available for use after neutralization with lime. An additional 576,000 cubic metres of water are recirculated from the tailings storage facility to the process plant operation.

Figure 18.1 Mine infrastructure plan



19 Market studies and contracts

Pan American has been producing silver rich lead/copper and zinc concentrates at San Vicente since 2009, which are sold under contracts with arm's length smelters and concentrate traders and are transported to Asia and Europe through the ports of Antofagasta or Arica, both in Chile, for smelting and refining. San Vicente receives payment for an agreed upon percentage of the silver, lead, and zinc 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, Pan American may, from time to time, fix the price for a portion of the payable metal content during the month that the concentrates are produced, however, there can be no certainty that Pan American will always be able to do so or what terms will be available at the time.

Pan American has been able to secure contracts for the sale of all concentrates produced, however, there can be no certainty that Pan American will always be able to do so or what terms will be available at the time.

San Vicente has concentrate sales contracts in place with Trafigura of Switzerland and with Sumitomo Metal Mining Co. Ltd. of Japan. Other significant contracts in place at San Vicente are with Atlas Copco for the maintenance of mobile mining equipment, with CRETA Catering of Santa Cruz, Bolivia, for catering in the camp, and with Transportes Hector Vilca for the transport of concentrates from San Vicente to Uyuni.

Martin Wafforn, the qualified person responsible for this section of the technical report, has reviewed the contract terms, rates, and charges for the production and sale of the silver, lead, and zinc produced at San Vicente, and consider them sufficient to support the assumptions made in this technical report.

20 Environmental studies, permitting, and social or community impact

20.1 Environmental factors

There are no known environmental or social issues that could materially impact the mine's ability to extract the mineral resources or mineral reserves.

20.2 Environmental studies

A full suite of environmental baseline and impact assessment studies were completed by Pan American for an EIA that covers the construction of the existing process plant, tailings storage facility, and associated facilities. The studies performed include surface water, groundwater, biodiversity, seismic hazards, soils, geomorphology, transport, air quality, and climate. No material issues were identified in any environmental studies and the EIA was approved by the Bolivian Ministry for the Environment and Water in 2008.

20.3 Permitting

PASB holds all necessary environmental permits for the continued operation of the San Vicente mine, including environmental licenses, water use, and discharge permits.

20.4 Waste disposal

Waste rock is used principally as backfill in the underground mine and any excess material is deposited in an engineered waste rock facility located on the surface.

Process plant tailings are delivered to an engineered tailings storage facility area via a pipeline. The tailings impoundment area is contained behind a constructed retaining wall that is periodically raised to ensure adequate operating freeboard in accordance with the design. Monitoring instrumentation is in place to confirm that the facility performance is within design limits. Decant water from the tailings storage facility is recycled to the process plant in a closed circuit with zero discharge.

20.5 Site monitoring

Pan American conducts environmental monitoring in and around the mine in accordance with its approved environmental license. Monitoring continues to confirm legal compliance and add to the extensive database of environmental information. This monitoring includes water flow and quality monitoring, air quality, noise, soil, and flora and fauna. The mine also records waste generation, recycling, energy consumption, water use, and effluent quality and flow.

20.6 Water management

Process solutions are managed in a closed circuit with zero discharge. Plant make-up water and water supply for the camp is obtained from permitted surface water sources near the Vetillas camp. Water from mine dewatering is treated in a low density sludge treatment plant before discharge to the San Vicente River. Pan American conducts quality and flow monitoring of all effluent discharges including domestic wastewater treatment plants and the discharge of the

mine water treatment plant. There are no material issues arising from the results of this monitoring.

20.7 Social and community factors

There are no social or community pressures that materially affect Pan American's ability to extract the mineral reserves and mineral resources. Pan American's Bolivian community relations team implements an extensive program of community engagement activities including information sessions, health services, infrastructure works, and educational and training programs for the local people. Pan American is also engaged in a three year joint project with the Canadian Government which aims to improve livestock breeding in the 11 communities around San Vicente and currently benefits over 200 families.

20.8 Project reclamation and closure

A closure cost estimate for the San Vicente mine was prepared according to State of Nevada approved Standardized Reclamation Cost Estimator methodology in 2011 and is updated every year. The estimated present value of reclamation costs for the San Vicente property is approximately $2.5 million at December 31, 2014. Pan American does not include any amounts for any pre-existing environmental liabilities which are the responsibility of COMIBOL.

20.9 Expected material environmental issues

There are no known environmental or social issues that could materially impact the mine's ability to extract the mineral resources or mineral reserves.

21 Capital and operating costs

Since the mine is in operation, any sustaining capital expenditures are justified on an on-going basis based on actual experience at the mine. Sustaining capital expenditures throughout the life of mine are assumed to average $5.3 million per annum, including some diamond drilling. The amount of diamond drilling conducted to extend the mine life beyond the existing mineral reserves forming the basis of the current life of mine plan will be at the discretion of Pan American and may depend on the success of exploration and diamond drilling programs, if any, and prevailing market conditions.

On the basis of the current mineral reserves, the majority of the sustaining capital expenditures at the mine will be for on-going development, equipment replacement, major equipment overhauls, and tailings storage facility expansions on roughly three year cycles.

The long term assumptions for the operating cost estimates are shown in Table 21.1. The assumptions are justified on the basis of the current actual operating costs at the mine, and on the basis of an annual throughput of 330,000 tonnes with approximately 45% of the production sourced from Avoca long hole stoping. As there are a number of fixed costs associated with operating a large underground mine such as San Vicente, an increase in the annual throughput could reasonably be expected to increase the total costs and reduce unit operating costs, and similarly a reduction in throughput could reasonably be expected to decrease the total costs and to increase the unit operating costs.

Table 21.1 Estimated annual operating costs

Area	Estimated costs (US$ millions)	Estimated unit costs (US$ per tonne)
Mining	13.5	40.81
Processing	5.3	16.02
Maintenance	2.6	7.97
Geology	0.5	1.52
Technical services	0.6	1.94
Safety and environment	1.2	3.61
Mine administration	6.0	18.12
La Paz administration	2.6	7.90
Shipping, selling, ocean freight	2.4	7.17
Total operating costs	34.7	105.06

22 Economic analysis

Since San Vicente is a producing mine and there is no proposed material expansion of the current production at the mine, there is no requirement under NI 43-101 to include the information disclosed under Item 22. For current information about Pan American and its business activities at San Vicente and elsewhere, please refer to Pan American's quarterly Management's Discussion and Analysis of Financial Condition and Results of Operations, as well as the Company's Annual Information Form, which are available on SEDAR at www.sedar.com.

23 Adjacent properties

There is no relevant information on adjacent properties to report.

24 Other relevant data and information

There is no additional information to report.

25 Interpretation and conclusions

Pan American has been underground mining and operating the current process plant at San Vicente since 2009, processing between 200,000 and 350,000 tonnes of ore annually, producing approximately 4.3 million ounces of silver, 6,000 tonnes of zinc and 600 tonnes of lead in silver rich zinc and lead concentrates.

The life of mine plan contemplates an annual processing rate of 330,000 tonnes throughout the mine life. Based on the mineral reserves estimated as of December 31, 2014, this corresponds to a remaining mine life of 8.2 years. The projected mine life may increase if the mineral resources can be converted to mineral reserves as the result of improvements to metallurgical recoveries, costs, or metal prices, or if additional mineral resources are defined and can be converted to mineral reserves. The ramp will continue to be developed downwards to accomplish the life of mine plan, which will allow access to exploration targets deeper than the currently available data.

Pan American conducts infill and near-mine drilling annually and updates the mineral resource and reserve estimates on an annual basis following reviews of metal price trends, treatment and refining charge trends for base metal concentrates, operational performance and costs experienced in the previous year, and forecasts of production and costs over the life of the mine.

There are no known environmental, permitting, legal, title, taxation, socio-economic, marketing, political, or other factors or risks that could materially affect the development of the mineral resources. Mineral reserve estimates are based on assumptions that include mining, metallurgical, infrastructure, permitting, taxation, and economic parameters. Increasing costs and taxation and lower metal prices will have a negative impact on the quantity of estimated mineral reserves. There are currently no known factors that may have a material negative impact on the estimate of mineral reserves at San Vicente.

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 conducting 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 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, Pan American anticipates 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. Pan American is assessing the potential impacts of the New Mining Law and is awaiting further regulatory developments, but the primary effects on the San Vicente operation and Pan American's interest therein will not be known until such time as Pan American has, if required to do so, renegotiated the existing contract, and the full impact may only be realized over time.

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.

26 Recommendations

San Vicente is an operating mine and no economic analyses or engineering studies are currently underway. Therefore, the authors of this report have no recommendations to make at this time, aside from some minor continuous improvement items in section 11.3.

27 References

There are no references in this technical report to cite.

28 Date, signatures, and certificates

CERTIFICATE of QUALIFIED PERSON

I, Dr. Michael Steinmann, President of Pan American Silver Corp., 1500-625 Howe St, Vancouver, BC, V6C 2T6, Canada do hereby certify that:

a) I am the co-author of the technical report titled "Technical Report for the San Vicente Property, Potosí, Bolivia", with an effective date of December 31, 2014 (the "Technical Report").

b) I graduated with a Master of Science in Geology degree from the University of Zurich, Switzerland, in 1993. I earned a Doctor of Natural Science in Geology degree from the Swiss Federal Institute of Technology, Zurich, Switzerland, in 1997. I am a Professional Geologist in good standing with The Association of Professional Engineers and Geoscientists of the Province of British Columbia. My experience is primarily in the areas of mining geology and exploration and I have worked as a geologist for a total of 22 years since my graduation from the University of Zurich.

c) I have read the definition of 'qualified person' set out in National Instrument 43 101 ("the "Instrument") and certify that by reason of my education, affiliation with a professional association and past relevant work experience, I fulfil the requirements of a 'qualified person' for the purposes of the Instrument.

d) I am responsible for the preparation of the sections of the Technical Report as detailed in Table 2.1 – Responsibilities of each Qualified Person.

e) I am currently employed as the President of Pan American Silver Corp., the majority owner of the San Vicente Property, and by reason of my employment, I am not considered independent of the issuer as described in Section 1.5 of the Instrument.

f) I have had prior involvement with the San Vicente Property that is the subject of the Technical Report; I am an employee of Pan American Silver Corp. and have conducted numerous site visits to the San Vicente Property, including as described in Section 2 – Introduction of the Technical Report, and most recently on July 19th, 2011.

g) I have read the Instrument and Form 43 101F1, and the Technical Report has been prepared in compliance with the Instrument and that form.

h) As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the Technical Report contains all the scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Dated at Vancouver, British Columbia, this 13th day of July, 2015.

"Signed and sealed"

Michael Steinmann, P.Geo.

CERTIFICATE of QUALIFIED PERSON

I, Martin Wafforn, Vice President, Technical Services of Pan American Silver Corp., 1500-625 Howe St, Vancouver, BC, V6C 2T6, Canada do hereby certify that:

a) I am the co-author of the technical report titled "Technical Report for the San Vicente Property, Potosí, Bolivia", with an effective date of December 31, 2014 (the "Technical Report").

b) I graduated with a Bachelor of Science in Mining degree from the Camborne School of Mines in Cornwall, England in 1980. I am a Professional Engineer in good standing with The Association of Professional Engineers and Geoscientists of the Province of British Columbia. I am also a Chartered Engineer in good standing in the United Kingdom. My experience is primarily in the areas of mining engineering and I have worked as an engineer in the mining industry for a total of 34 years since my graduation from the Camborne School of Mines.

c) I have read the definition of 'qualified person' set out in National Instrument 43 101 ("the "Instrument") and certify that by reason of my education, affiliation with a professional association and past relevant work experience, I fulfil the requirements of a 'qualified person' for the purposes of the Instrument.

d) I am responsible for the preparation of the sections of the Technical Report as detailed in Table 2.1 - Responsibilities of each Qualified Person.

e) I am currently employed as the Vice President, Technical Services for Pan American Silver Corp., the majority owner of the San Vicente Property, and by reason of my employment, I am not considered independent of the issuer as described in Section 1.5 of the Instrument.

f) I have had prior involvement with the San Vicente Property that is the subject of the Technical Report; I am an employee of Pan American Silver Corp. and have conducted site visits to the San Vicente Property, including as described in Section 2 – Introduction of the Technical Report, and most recently on September 30th, 2014.

g) I have read the Instrument and Form 43 101F1, and the Technical Report has been prepared in compliance with the Instrument and that form.

h) As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the Technical Report contains all the scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Dated at Vancouver, British Columbia, this 13th day of July, 2015.

"Signed and sealed"

Martin Wafforn, P. Eng.

CERTIFICATE of QUALIFIED PERSON

I, Americo Delgado, Director, Metallurgy of Pan American Silver Corp., 1500-625 Howe St, Vancouver, BC, V6C 2T6, Canada, do hereby certify that:

a) I am the co-author of the technical report titled "Technical Report for the San Vicente Property, Potosí, Bolivia", with an effective date of December 31, 2014 (the "Technical Report").

b) I graduated with a Master of Science in Metallurgical and Material Engineering from the Colorado School of Mines in Golden, Colorado, in 2007, and with a Bachelor of Science in Metallurgical Engineering degree from the Universidad Nacional de Ingenieria, Lima, Peru, in 2000. I am a Professional Engineer in good standing with the Association of Professional Engineers and Geoscientists of the Province of British Columbia. My experience is primarily in the areas of metallurgy and mineral processing and I have worked as a metallurgist in the mining industry for a total of 15 years since my graduation from the Universidad Nacional de Ingenieria.

c) I have read the definition of 'qualified person' set out in National Instrument 43 101 ("the "Instrument") and certify that by reason of my education, affiliation with a professional association and past relevant work experience, I fulfil the requirements of a 'qualified person' for the purposes of the Instrument.

d) I am responsible for the preparation of the sections of the Technical Report as detailed in Table 2.1 - Responsibilities of each Qualified Person.

e) I am currently employed as the Director, Metallurgy for Pan American Silver Corp., the majority owner of the San Vicente Property, and by reason of my employment, I am not considered independent of the issuer as describe in Section 1.5 of the Instrument.

f) I have had prior involvement with the San Vicente Property that is the subject of the Technical Report; I am an employee of Pan American Silver Corp. and have conducted visits to the San Vicente Property, including as described in Section 2- Introduction of the Technical Report, and most recently from January 7th to 14th, 2015.

g) I have read the Instrument and Form 43 101F1, and the Technical Report has been prepared in compliance with the Instrument and that form.

h) As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the Technical Report contains all the scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Dated at Vancouver, British Columbia, this 13th day of July, 2015.

"Signed and sealed"

Americo Delgado, P. Eng.