PAN AMERICAN SILVER

NI 43-101 Technical Report

for the El Peñón Gold-Silver Mine, Antofagasta Region, Chile

Qualified Persons:

Jimmy Avendaño, Reg. Member CMC

Christopher Emerson, FAusIMM

Americo Delgado, P. Eng.

Carlos Iturralde, P.Eng.

Matthew Andrews, FAusIMM

Effective date: June 30, 2024

Signature Date: January 20, 2025

Pan American Silver Corp.
2100 – 733 Seymour Street
Vancouver, B.C. Canada
V6B 0S6

NI 43-101 Technical Report for the El Peñón Gold-Silver Mine, Antofagasta Region, Chile

Effective Date: **June 30, 2024**

Signature Date: **January 20, 2025**

Authors:

[Signed]
Jimmy Avendaño, Reg. Member CMC
Manager, Technical Services
Minera Meridian Limitada

[Signed]
Christopher Emerson, FAusIMM
Vice President, Exploration and Geology
Pan American Silver Corp.

[Signed]
Americo Delgado, P.Eng.
Vice President, Mineral Processing, Tailings, and Dams
Pan American Silver Corp.

[Signed]
Carlos Iturralde, P. Eng.
Senior Director, Critical Facilities
Pan American Silver Corp.

[Signed]
Matthew Andrews, FAusIMM
Vice President, Environment
Pan American Silver Corp.

TABLE OF CONTENTS

List of Figures

List of Tables

CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This National Instrument 43-101 Standards of Disclosure for Mineral Projects (NI 43-101) technical report (the Technical Report) contains or incorporates by reference "forward-looking statements" and "forward-looking information" under applicable Canadian securities legislation within the meaning of the United States Private Securities Litigation Reform Act of 1995. Forward looking information includes, but is not limited to: cash flow forecasts, projected capital, operating and exploration expenditures, targeted cost reductions, mine life and production rates, grades, infrastructure, capital, operating and sustaining costs, the future price of gold and silver, potential mineralization and metal or mineral recoveries, estimates of mineral resources and mineral reserves and the realization of such mineral resources and mineral reserves, the ability to replace mineral reserves net of depletion, information pertaining to potential improvements to financial and operating performance and mine life at El Peñón (as defined herein) that may result from optimization projects or other initiatives, the timing and expected outcomes of the optimization projects, maintenance and renewal of permits of mineral tenure, estimates of mine closure obligations, leverage ratios and information with respect to the Company's (as defined herein) strategy, plans or future financial or operating performance. Forward-looking statements are characterized by words such as "plan", "expect", "budget", "target", "project", "intend", "believe", "anticipate", "estimate" and other similar words, or statements that certain events or conditions "may" or "will" occur, including the negative connotations of such terms. Forward-looking statements are statements that are not historical facts and are based on the opinions, assumptions and estimates of qualified persons, as defined in NI 43-101, considered reasonable at the date the statements are made, and are inherently subject to a variety of risks and uncertainties and other known and unknown factors that could cause actual events or results to differ materially from those projected in the forward-looking statements. These factors include, but are not limited to: the impact of domestic and foreign business; economic and political conditions; global liquidity and credit availability on the timing cash flows and the values of assets and liabilities based on projected future conditions; fluctuating metal and commodity prices (such as gold, silver, diesel fuel, natural gas and electricity); currency exchange rates (such as the Chilean Peso and the Canadian dollar versus the United States dollar); changes in interest rates; possible variations in ore grade or recovery rates; the speculative nature of mineral exploration and development; changes in mineral production performance, exploitation and exploration successes; diminishing quantities or grades of mineral reserves; increased costs, delays, suspensions, and technical challenges associated with the construction of capital projects; operating or technical difficulties in connection with mining or development activities, including disruptions in the maintenance or provision of required infrastructure and information technology systems; damage to the Company's or El Peñón's reputation due to the actual or perceived occurrence of any number of events, including negative publicity with respect to the handling of environmental matters or dealings with community groups, whether true or not; risk of loss due to acts of war, terrorism, sabotage and civil disturbances; risks associated with infectious diseases, including COVID-19; risks associated with nature and climatic conditions; uncertainty regarding weather El Peñón will meet the Company's capital allocation objectives; the impact of inflation; fluctuations in the currency markets; changes in national and local government legislation, taxation, controls or regulations and/or changes in the administration of laws, policies and practices, expropriation or nationalization of property and political or economic developments in Chile; failure to comply with environmental and health and safety laws and regulations; timing of receipt of, or failure to comply with, necessary permits and approvals; changes in project parameters as plans continue to be refined; changes in project development, construction, production and commissioning time frames; contests over title to properties or over access to water, power, and other required infrastructure; increased costs and physical risks including extreme weather events and resource shortages related to climate change and seismic events; availability and increased costs associated with mining inputs and labor; the possibility of project cost overruns or unanticipated costs and expenses, potential impairment charges, higher prices for fuel, steel, power, labour, and other consumables contributing to higher costs; unexpected changes in mine life; final pricing for product sales; unanticipated results of future studies; seasonality and unanticipated weather changes; costs and timing of the development of new deposits; success of exploration activities; risks

related to relying on local advisors and consultants in foreign jurisdictions; unanticipated reclamation expenses; limitations on insurance coverage; timing and possible outcome of pending and outstanding litigation and labour disputes; risks related to enforcing legal rights in foreign jurisdictions, vulnerability of information systems and risks related to global financial conditions. In addition, there are risks and hazards associated with the business of mineral exploration, development, and mining, including environmental hazards, industrial accidents, unusual or unexpected formations, pressures, cave-ins, flooding, failure of plant, equipment, or processes to operate as anticipated (and the risk of inadequate insurance, or inability to obtain insurance to cover these risks), as well as those risk factors discussed or referred to herein and in the Company's Annual Information Form filed with the securities regulatory authorities in all of the provinces and territories of Canada and available under the Company's profile at www.sedarplus.ca, and the Company's Annual Report on Form 40-F filed with the United States Securities and Exchange Commission. Although the Company has attempted to identify important factors that could cause actual actions, events, or results to differ materially from those described in forward-looking statements, there may be other factors that cause actions, events, or results not to be anticipated, estimated or intended. There can be no assurance that forward-looking statements will prove to be accurate, as actual results and future events could differ materially from those anticipated in such statements. The Company undertakes no obligation to update forward-looking statements if circumstances or management's estimates, assumptions, or opinions should change, except as required by applicable law. The reader is cautioned not to place undue reliance on forward-looking statements. The forward-looking information contained herein is presented for the purpose of assisting investors in understanding the Company's expected financial and operational performance and results as at and for the periods ended on the dates presented in the Company's plans and objectives and may not be appropriate for other purposes.

Cautionary Note to United States Investors Concerning Estimates of Mineral Reserves and Mineral Resources

This Technical Report has been prepared in accordance with the requirements of the securities laws in effect in Canada, which differ in certain material respects from the disclosure requirements promulgated by the Securities and Exchange Commission (SEC). For example, the terms "Mineral Reserve", "Proven Mineral Reserve", "Probable Mineral Reserve", "Mineral Resource", "Measured Mineral Resource", "Indicated Mineral Resource" and "Inferred Mineral Resource" are Canadian mining terms as defined in accordance with NI 43-101 and the Canadian Institute of Mining, Metallurgy and Petroleum (CIM) Definition Standards for Mineral Resources and Mineral Reserves, May 2014 (the CIM Definition Standards), adopted by the CIM Council, as amended. These definitions differ from the definitions in the disclosure requirements promulgated by the SEC. Accordingly, information contained in this Technical Report may not be comparable to similar information made public by U.S. companies reporting pursuant to SEC disclosure requirements.

List of Abbreviations

Units of measurement used in this Technical Report conform to the metric system. All currency in this Technical Report is listed in US dollars (US$) unless noted otherwise.

°	degrees
>	greater than
<	less than
%	percent
°C	degrees Celsius
Ag	silver
Au	gold
AAS	atomic absorption spectrometry
B&F	bench and fill
C&F	cut and fill
cm	centimetre
cm^3	cubic centimetre
CADL	Closure and Decommissioning Liability
CCD	counter-current decantation
CRM	certified reference materials
d	day
DDH	diamond drill hole
dmt	dry metric tonne
E	east
ELOS	estimated equivalent linear overbreak slough
FA	fire assay
g	gram
g/l	grams per litre
g/t	grams per tonne
h	hour
ha	hectare
HDPE	high density poly ethilene
hp	horsepower
ILO	International Labour Organization
ISO	International Organization for Standardization
ICP	inductively coupled plasma
ID3	inverse distance squared or to the power of three
k	kilo (thousand)
km	kilometre
koz	kilo-ounce (a thousand Troy ounces)
kt	thousand tonnes
ktpd	thousand tonnes per day
kV	kilovolt
kVA	kilovolt-ampere

kg	kilogram
kg/t	kilograms per tonne
kW	kilowatt
kW/dmt	kilowatts per dry metric tonne
kWh/t	kilowatt hours per tonne
l/s	litres per second
LHD	load-haul-dump
LOM	life of mine
m	metre
m^2	square metre
m^3	cubic metre
m^3/h	cubic metre per hour
M	mega, million
Ma	mega annum, millions of years ago
MAC	Mining Association of Canada
masl	metres above sea level
mm	millimetre
Moz	million Troy ounces
MSO	mineable shape optimizer
Mt	million tonnes
MVA	megavolt-ampere
MW	megawatt
MW/h	megawatts per hour
N	north
NN	nearest-neighbour
NSR	net smelter return
NTU	Nephelometric turbidity unit
OK	ordinary kriging
oz	Troy ounce (31.1035 g)
ppm	parts per million
QA	quailty assurance
QA/QC	quality assurance and quality control
QC	quality control
QP	qualified person
RAR	return air raise
RCA	Environmental Qualification Resolutions
RMR	rock mass rating
RMR89	1989 rock mass rating modification
ROM	run of mine
RPEEE	reasonable prospect of eventual economic extraction

RQD	Rock Quality Designation
s	second
S	south
SAG	semi-autogenous grinding
SRCE	standard reclamation cost estimator
t	metric tonne
tpd	tonnes per calendar day
TSF	tailings storage facility
TSM	Towards Sustainable Mining
US$	United States dollar
VFD	variable frequency drive
VSO	Vulcan Stope Optimiser
W	west

1 Summary

This Technical Report has been prepared by Pan American Silver Corp. (Pan American or the Company) to disclose relevant information about the El Peñón mine (El Peñón). El Peñón is an underground and open-pit gold-silver mine located in northern Chile in the Atacama Desert. Pan American holds a 100% interest in El Peñón through its subsidiary, Minera Meridian Limitada (Minera Meridian).

With nearly 30 years of experience in the Americas, Pan American is a Canadian-based leader in producing precious metals in the region. Pan American operates mines that produce silver and gold in Canada, Mexico, Peru, Bolivia, Argentina, Chile and Brazil. In addition, Pan American owns the Escobal mine in Guatemala, which is not currently in operation. Pan American has earned a reputation for excellence in sustainability performance, operational efficiency, and financial prudence.

This document is a technical report prepared in accordance with NI 43-101. It presents the mineral resource and mineral reserve estimates for El Peñón as of June 30, 2024, describes the current operations and summarizes the life of mine (LOM) plan and the capital and operating cost estimates.

1.1 Property Description

El Peñón is located approximately 165 km southeast of the city of Antofagasta. The mine site, situated approximately midway between the Pacific Coast and the border with Argentina, is in the Atacama Desert, a desert plateau with one of the driest climates on earth. The mine has been in operation since 1999 and operates on a year-round basis.

Pan American acquired El Peñón when it purchased Yamana Gold Inc. (Yamana) in March 2023, following the sale by Yamana of its Canadian assets to Agnico Eagle Mines Limited (Agnico Eagle). The El Peñón property consists of 569 individual mining claims, 527 exploitation claims and 42 exploration clams, owned by Minera Meridian, a wholly-owned subsidiary of Pan American. The claims comprise an area measuring 121,473 ha that covers the El Peñón core mine area, the Chiquilla Chica area, the Fortuna area, the Laguna area, the Pampa Augusta Victoria (PAV) area, the Tostado Sur area, and the surrounding exploration lands.

Minera Meridian has all required permits to continue carrying out mining and processing operations on the El Peñón property. Minera Meridian is subject to a royalty tax, based on the mining gross profit margin, of 5% on taxable mining income. In addition, El Peñón is also subject to First Category Tax (i.e., income tax) in Chile at a rate of 27%.

Part of the mining property of El Peñón was incorporated into the asset portfolio through agreements that defined net smelter return (NSR) royalties. These are: NSR ANGELINA, 1% NSR royalty payable to Triple Flag Precious Metals Corp. (3 concessions, 100 ha); NSR FORTUNA, 2% NSR royalty payable to Triple Flag Precious Metals Corp. (27 concessions, 7,800 ha); NSR SQM1, 2% NSR royalty payable to Soquimich Comercial SA (18 concessions, 4,450 ha); and NSR SQM2, 2% NSR royalty payable to Soquimich Comercial SA (53 concessions, 11,843 ha).

1.2 Geology and Mineralization

The discovery of the El Peñón gold-silver deposit was the result of successful grassroots exploration throughout the early 1990s. El Peñón is classified as a low- to intermediate-sulphidation epithermal gold-silver deposit associated with steeply dipping fault-controlled veins emplaced following rhyolite dome emplacement.

The gold-silver mineralization is hosted in near-horizontal to gently dipping Paleocene to Eocene basaltic to rhyolitic volcanic rocks. The deposit comprises many individual tabular and steeply dipping zones that are amenable to mining by both underground and surface methods. Vein thickness range from decimetre-scale to several metres. The strike length of individual mineralized zones ranges from less than 1 km to 4 km and the down-dip extent reaches up to over 600 m in some areas.

1.3 Exploration Status

Since the beginning of operations, the footprint of mineralization has been expanded through geological mapping, geochemical characterization, geophysics, and abundant surface and underground drilling within the northeast trend, first starting at the El Peñón core mine area, with Quebrada Orito to the southwest and ending at Angosta in the northeast.

Exploration has also been successful at the Fortuna, Laguna, Tostado Sur and Chiquilla Chica areas to the southwest and at the PAV area to the north of El Peñón. Geophysical anomalies and positive drill intersections remain to be followed up in all areas. GoldSpot Discoveries Corp. (GoldSpot) was contracted in 2019 to apply machine learning to target unknown mineralization.

Significant exploration results have been obtained by ongoing surface and underground core and RC drilling. As of the end of June 2024, over 3,700,000 m of exploration and infill drilling have been completed. Pan American continually conducts exploration work to develop drill targets to replenish mineral reserves. Exploration drilling to define new inferred mineral resources is carried out on a 60 x 60 m grid with infill drill holes on a 30 x 30 m grid pattern.

Drilling activities have been successful in defining and expanding known mineralized zones and have led to the discovery of new mineralized zones. These exploration successes and the production history of El Peñón highlight the excellent potential exists for the discovery of new zones of mineralization in proximity of the current mine infrastructure and along the strike and dip extents of known mineralized horizons.

Analytical samples include both drill core and channel samples. The drill core samples are generated from exploration and infill drilling programs that are conducted on surface and underground; they are used for target generation and estimation of mineral resources and mineral reserves. The sample preparation, sample security, and analytical procedures at El Peñón are adequate and consistent with industry standards. The verification of the sampling data by Pan American and external consultants, including the analytical quality assurance/quality control (QA/QC) data produced by Pan American for samples submitted to various laboratories, suggests that the analytical results delivered by the laboratories are sufficient for the purpose of mineral resource and mineral reserve estimation.

1.4 Mineral Resource and Mineral Reserve Estimates

Interpreted geological wireframes were constructed in Leapfrog based on geology sections, assay results, lithological information and structural data. Assays were generally composited to full-width composites (a single composite across the vein width). Gold and silver grades were interpolated into block models with a parent block size of 5 x 5 x 5 m and sub-blocks with minimum dimensions of 0.20 x 0.50 x 0.25 m to accurately fit wireframe volumes. Grades were estimated using top capped composites, a high-yield restriction for anomalously high grades, and an Inverse Distance Cubed (ID3) method. Block estimates were validated using industry standard validation techniques and an Nearest Neighbor (NN) interpolated grade. Classification of blocks was completed following distance-based criteria.

El Peñón mineral resources have been estimated in conformity with generally accepted standards set out in CIM Mineral Resource and Mineral Reserves Estimation Best Practices Guidelines, November 2019 (the CIM Guidelines) and were classified according to the CIM Definition Standards. Mineral Resources are reported exclusive of mineral reserves. Mineral resources are not mineral reserves and have not demonstrated economic viability. Underground mineral resources are estimated within conceptual underground mining shapes at an NSR cut-off value of US$ 148.39/t. A minimum mining width of 0.60 m as well as 0.30 m of hanging-wall and 0.30 m of footwall overbreak are used to construct the conceptual mining shapes (resulting in a minimum shape width of 1.20 m). Mineral resources are reported fully diluted. The Mineral Resource Statement of El Peñón as of June 30, 2024, exclusive of mineral reserves is presented in Table 1-1.

Table 1-1: El Peñón Mineral Resource Statement as of June 30, 2024

Mineral Resources	Category	Tonnes	Grade		Contained Metal	
		(kt)	Au (g/t)	Ag (g/t)	Au koz	Ag koz
Underground	Measured	1,554	5.25	166.3	262	8,307
	Indicated	3,828	3.44	112	423	13,789
	Measured + Indicated	**5,382**	**3.96**	**127.7**	**685**	**22,096**
	Inferred	4,677	3.8	133.8	572	20,115
Open Pit	Measured	—	—	—	—	—
	Indicated	2	0.02	362.7	—	25
	Measured + Indicated	**2**	**0.02**	**362.7**	**—**	**25**
	Inferred	2	0.03	858.2	—	69
Tailings	Measured	—	—	—	—	—
	Indicated	—	—	—	—	—
	Measured + Indicated	**—**	**—**	**—**	**—**	**—**
	Inferred	13,767	0.55	18.9	245	8,380
Combined	Measured	1,554	5.25	166.3	262	8,307
	Indicated	3,830	3.44	112.2	423	13,813
	Measured + Indicated	**5,384**	**3.96**	**127.8**	**685**	**22,120**
	Inferred	18,446	1.38	48.2	816	28,564

1. *Mineral resources were estimated by the El Peñón resource geology team and reviewed by Christopher Emerson, FAusIMM, who is a qualified person as that term is defined by NI 43-101.*
2. *Mineral resources were estimated in accordance with the guidelines laid out in the CIM Guidelines and classified according to the CIM Definition Standards.*
3. *Mineral resources are reported exclusive of mineral reserves. Mineral resources were estimated using an inverse distance weighing algorithm informed by capped composites and constrained by three-dimensional mineralization wireframes.*
4. *Mineral resources are not mineral reserves and do not have demonstrated economic viability. Metal price assumptions of US$ 1,850/oz for gold and US$ 22.00/oz for silver were used and selling costs of US$ 13.20/oz for gold and US$ 0.15/oz for silver were considered.*
5. *Open pit mineral resources are reported at a cut-off NSR of US$ 64.00/t. Processing recovery assumptions range from 90.37% to 94.63% for gold and from 76.25% to 88.89% for silver. Mine operating (including haulage to the processing plant), processing, general and administrative (G&A), and sustaining capital costs assumptions of US$ 10.00/t, US$ 32.80/t, US$ 15.75/t and US$ 5.44/t were considered respectively. Open pit mineral resources are reported constrained within the current Tostado Sur mineral reserves pit design. A bulk density of 2.40 g/cm^3 was used to convert volume to tonnage.*
6. *Underground mineral reserves are reported at a cut-off NSR of US$ 148.39/t. Processing recoveries assumptions range from 84.39% to 96.14% for gold and from 75.23% to 90.02% for silver. The following cost assumptions were considered: mine-operating costs: US$ 94.39/t; processing cost: US$ 32.80/t; G&A cost: US$ 15.75/t, and sustaining capital cost: US$ 5.44/t. A royalty of 2% was considered for mineral resources contained in the Fortuna zone.*

Underground primary development cost is excluded from the cut-off NSR calculation. Underground mineral resources are reported fully diluted; they consider a minimum mining width of 0.60 m and hangingwall and footwall overbreak dilutions of 0.30 m each to determine reasonable prospects of eventual economic extraction. Bulk densities ranging from 2.36 g/cm^3 to 2.57 g/cm^3 were used to convert volume to tonnage.

7. *Mineral resources contained in tailings are reported at a cut-off grade of 0.50 g/t gold-equivalent, using metallurgical recoveries of 60% for gold and 30% for silver, and a rehandling and reprocessing cost US$ 11.70/t. A bulk density value of 1.75 g/cm^3 was used to convert tailings volume to tonnage.*
8. *Mineral resources are reported as of June 30, 2024.*
9. *All figures are rounded to reflect the relative accuracy of the estimate. Numbers may not add up due to rounding.*
10. *The qualified person responsible for this section of the Technical Report is not aware of any environmental, permitting, legal, title, taxation, socio-economic, marketing, political or other relevant factors that could materially affect the mineral resource estimate.*

The methodology used at El Peñón to convert mineral resources to mineral reserves is summarized as follows:

- Verify geometries for the block model and confirm block model depletion with current excavated wireframes up to the effective reporting date.
- NSR values are calculated on the block models considering gold and silver price assumptions and estimated grades, mineral resource classification, metallurgical recoveries, selling costs and royalties if applicable.
- Drift and stope mining shapes are designed using Mineable Shape Optimiser (MSO) or Vulcan Stope Optimiser (VSO), considering the NSR value calculated on the block models, the NSR cut-off values, and appropriate design parameters. All the designed mining shapes are evaluated against the block models to report tonnes, gold and silver grades by classification.
- The metal prices assumptions, processing recoveries and operating costs, excluding primary development costs, are used to determine an operating margin for each shape.
- Design primary development, including ramps, ventilation, materials handling, access and other infrastructure.
- Before including mining shapes to the mineral reserves inventory, geomechanical considerations are revised, especially in areas with poor ground conditions or were pillars between the designed stopes and previously mined areas are narrow. Design is adjusted when required.
- The designed mining panels, levels and individual shapes are subject to an economic evaluation to ensure the operational cash-flow expected to be obtained by mining and processing them affords the required development and infrastructure. As a result, isolated zones, levels or shapes with NSR values higher than the cut-off values, that do not pay for the necessary development, are excluded from the mineral reserves.
- Drift segments that must be developed to access zones with a positive economic evaluation and that have an NSR value below the break-even cut-off value but above the marginal cut-off value, are also included in the mineral reserves inventory.
- Mining shapes containing a majority portion of measured or indicated tonnes are converted to proven or probable mineral reserves, respectively.

The Mineral Reserve Statement of El Peñón as of June 30, 2024, is presented in Table 1-2.

Table 1-2: El Peñón Mineral Reserve Statement, June 30, 2024

Reserves	Category	Tonnes (kt)	Grade		Contained Metal	
			Au (g/t)	Ag (g/t)	Au (koz)	Ag (koz)
Open Pit	Proven	—	—	—	—	—
	Probable	21	0.03	412.9	—	272
	Total Open Pit	**21**	**0.03**	**412.9**	**—**	**272**
Underground	Proven	828	5.46	208.1	145	5,540
	Probable	3,132	4.72	154.7	475	15,574
	Total Underground	**3,960**	**4.87**	**165.8**	**620**	**21,114**
Low-grade Stockpile	Proven	—	—	—	—	—
	Probable	799	1.26	32	32	821
	Total Low-grade Stockpile	**799**	**1.26**	**32**	**32**	**821**
Combined	Proven	828	5.46	208.1	145	5,540
	Probable	3,952	3.99	131.2	507	16,667
	Grand Total	**4,779**	**4.25**	**144.5**	**653**	**22,207**

1. *Mineral reserves have been estimated by the El Peñón long-term mine planning team and reviewed by Jimmy Avendaño, Registered Member of the Chilean Mining Commission, Technical Services Manager of El Peñón, and a qualified person as defined by NI 43-101. The mineral reserve estimate conforms to the CIM Definition Standards.*
2. *Metal price assumptions of US$1,700/oz for gold and US$20.00/oz for silver were used. Selling costs of US$ 13.20/oz for gold and US$ 0.15/oz for silver were considered.*
3. *Open pit mineral reserves are reported at a cut-off NSR of US$ 64.00/t. Processing recovery assumptions range from 90.37% to 94.63% for gold and from 76.25% to 88.89% for silver. Mine operating (including haulage to the processing plant), processing, G&A, and sustaining capital costs assumptions of US$ 10.00/t, US$ 32.80/t, US$ 15.75/t and US$ 5.44/t were considered, respectively.*
4. *Underground mineral reserves are reported at a cut-off NSR of US$ 148.39/t. Processing recoveries assumptions range from 84.39% to 96.14% for gold and from 75.23% to 90.02% for silver. The following cost assumptions were considered: mine-operating costs: US$ 94.39/t; processing cost: US$ 32.80/t; G&A cost: US$ 15.75/t, and sustaining capital cost: US$ 5.44/t. A royalty of 2% was considered for mineral reserves planned to be mined in the Fortuna zone. Underground development cost assumptions of US$ 3,182/m for primary development faces of 4.3m wide by 4.5m high sections, and of US$ 3,008/m for primary development faces of 4.0m wide by 4.0m high sections are excluded from the cut-off NSR calculation. Development costs are considered during the economic evaluation stage before conversion of mineral resources to mineral reserves, considering the specific development requirements of each mining panel. All stope and development shapes included in the mineral reserves contain a majority of measured and indicated mineral resources and may include minority portions of inferred mineral resources and unclassified material.*
5. *Mineral reserves contained in low-grade stockpiles are reported at a cut-off grade of 0.75 g/t gold-equivalent. Processing recoveries assumptions of 88.0% for gold and 80.8% for silver were used. Operating and processing cost assumptions of US$ 3.03/t and US$ 32.80/t, respectively, were considered.*
6. *Mineral reserves are stated at a mill feed reference point and account for minimum mining widths, diluting material, and mining losses.*
7. *Mineral reserves are reported as of June 30, 2024.*
8. *All figures are rounded to reflect the relative accuracy of the estimate. Numbers may not add up due to rounding.*
9. *The qualified person responsible for this section of the Technical Report is not aware of any environmental, permitting, legal, title, taxation, socio-economic, marketing, political or other relevant factors that could materially affect the mineral reserve estimate.*

1.5 Mining and Processing Methods

Ore from underground mines has recently been -and will continue to be- the main source of feed for the El Peñón mill.

The various underground mining zones are accessed by ramps; this type of access is suitable for this mine due to its shallow depth and lateral extension. The underground workings of the core mine extend approximately 10 km along strike and span a vertical extent of approximately 600 m, measured from the highest portal collar elevation to the bottom-most mine workings. The ramps provide flexibility for rapid adjustments for changes in direction and elevation and allow access to the veins at appropriate elevations.

The main underground mining method utilized at El Peñón is the bench-and-fill method, which is a narrow long-hole stoping method that uses a combination of rockfill and cemented rockfill. The method involves ore development at regular level intervals, which, at El Peñón, range generally between 10 and 20 m. Due to narrow vein widths, a “split-blasting” technique is regularly used to reduce dilution in secondary development of ore zones.

The major assets and facilities associated with El Peñón are: the mining and processing infrastructure, which includes office buildings, shops, and equipment; a processing plant which produces gold doré by crushing, grinding, leaching, counter-current decantation (CCD) concentrate solution recovery, zinc precipitation and refining; concrete and cemented backfill plants, and a filtered tailings stack storage facility.

El Peñón is connected to the National Electric Grid through a 66 kV transmission line connected to the Palestina substation. The tailings produced at the El Peñón mill are stored in a filtered tailings stack storage facility, located 1.5 km southeast of the mineral processing plant. The current filter stack has a considerably higher capacity than required for current mineral reserves.

The El Peñón mineral processing plant and associated facilities process run-of-mine as well as stockpiled ore. Comminution comprises a single stage of crushing followed by wet grinding in a SAG mill operating in series with a ball mill; these feed a battery of hydrocyclones. Leaching starts at the SAG mill, where sodium cyanide is added as a leaching agent. The hydrocyclones overflow is subsequently clarified and leached in reactors with mechanical agitators. The leached pulp is finally transported by gravity to a CCD thickener circuit to wash the pulp and recover the pregnant solution for gold and silver by zinc precipitation and refining to doré.

1.6 Environmental Studies, Permitting, and Social or Community Impact

Pan American holds all necessary environmental and operating permits for the development and operation of the mine and is in compliance with Chilean law in all material aspects. The Environmental Commission of the Region of Antofagasta (Comisión Regional de Medio Ambiente de Antofagasta) approved applications for the construction and operation of El Peñón with Exempt Resolution Nr. 043 in 1998. The permit Environmental Impact Assessment (EIA) includes a full assessment of the environmental and social impacts of the mine and environmental management plans, which describe the ongoing management and environmental monitoring programs.

Permits for El Peñón have undergone a series of modifications and updates since 1998. Permits have been obtained for additional deposits including Fortuna, PAV, and Chiquilla Chica. Subsequent Environmental Qualification Resolutions (RCAs) were granted through a series of Declaration of Environmental Impacts (DIAs). The most recent RCA (Nr. 0178) updating the mineral resources and mineral reserves of El Peñón was approved in 2022. Other sectoral licences and permits have been obtained and renewed as necessary. The operation has not been subject to sanctioning for environmental compliance by any of the regulatory agencies.

El Peñón has implemented an integrated management system covering health, safety, environment, and community through internationally accredited systems that include ISO 14001 Environmental Management System and the ISO 45001 Occupational Health and Safety Management System. A risk assessment matrix has been developed for El Peñón as part of the management system.

El Peñón also implements Mining Association of Canada's (MAC) Towards Sustainable Mining (TSM) framework as well as the World Gold Council's Responsible Gold Mining Principles. El Peñón completed its self-evaluation of TSM most recently in 2023, achieving Level A or higher for all protocols assessed except Climate Change which was assessed at Level B. The mine has worked to update its systems to the revised TSM Climate Change protocol in 2024 and is expected to achieve Level A on that protocol this year. Minera Meridian is a signatory to the International Cyanide Management Code and was externally certified most recently in July 2024.

Water conservation is a primary focus at El Peñón. The water management system at El Peñón has been designed as a closed circuit. Process water from the mill is recovered in the tailings filter plant and recirculated back to the processing plant.

Even though no communities are located near El Peñón, Pan American has made a number of commitments to the well-being, health, and safety of the communities in the area. As such, the social and community activities conducted are concentrated in the Taltal District and are of philanthropic orientation.

El Peñón has developed a closure plan covering all current and approved facilities; this plan is in accordance with applicable legal requirements. The closure plan addresses progressive and final closure actions, post-closure inspections, and monitoring.

1.7 Conclusions and Recommendations

More than 5.9 Moz of gold and 146 Moz of silver has been produced at El Peñón since commercial production commenced in 2000. El Peñón's current production rate, is a result of an operation rightsizing initiated in late 2016 to increase free cash flow generation, reduce capital expenditures and ensure the long-term sustainability of the mine through replacement of mineral reserves and mineral resources through infill and exploration drilling. Exploration results at El Peñón continue to highlight the expansion potential of the mine and to extend the LOM plan past its current mineral reserves base.

El Peñón mineral resources and mineral reserves have been estimated in conformity with generally accepted CIM Guidelines (November 2019) and classified in accordance with the CIM Definition Standards. The total proven and probable mineral reserves at El Peñón as of June 30, 2024 is 4.8 Mt averaging 4.25 g/t gold and 144.5 g/t silver, with a metal content of approximately 653 koz gold and 22,207 koz silver. In addition, measured and indicated mineral resources are estimated at 5.4 Mt grading 3.96 g/t gold (685 koz gold) and 127.8 g/t silver (22,120 koz silver), and inferred mineral resources are estimated at 18.4 Mt grading 1.38 g/t gold (816 koz gold) and 48.2 g/t silver (28,564 koz silver).

The LOM plan supported by mineral reserves only consists of an integrated operation, mining mainly underground ore and a small amount of ore from the Tostado Sur open pit. The ore produced by the mining operations and reclaimed from stockpiles is fed to the mill to sustain a five-year mine life. LOM production is estimated at 617 koz gold and 19,320 koz silver. The LOM plan does not include any inferred mineral resources or exploration potential that could be upgraded to indicated and measured mineral resources with the necessary infill drilling, which could extend the mine life beyond the current LOM plan given El Peñón's track record of replacing depleted mineral reserves.

The capital and operating cost estimates are based on mine budget data and recent operating performance and are appropriate for the known mining methods and production schedule. Under the assumptions in this Technical Report, El Peñón has positive project economics until the end of mine life, which supports the mineral reserve estimate. Capital costs over the LOM period are estimated at approximately US$47M consisting mainly of capital required for equipment replacement (64%) and capital mine development (33%). An additional US$37M are estimated for mine closure purposes.

No legal, political, environmental, social or other risks were identified that could materially impact the ability to extract the mineral resources and mineral reserves. El Peñón has all the operational licenses required for operation according to national legislation. The approved licenses address the authority's requirements for mining extraction and operation activities.

The results of this Technical Report are subject to variations in operational conditions including but not limited to the following:

- Assumptions related to commodity prices and foreign exchange rates (in particular, the relative movement of gold and silver prices and the Chilean peso/US dollar exchange rate)
- Unanticipated inflation of capital or operating costs
- Significant changes in equipment productivities
- Geological continuity of the mineralized structures
- Geotechnical assumptions in pit and underground designs
- Ore dilution and ore loss
- Throughput and metallurgical recovery rate assumptions
- Changes in political and regulatory requirements that may affect the operation or future closure plans
- Changes in closure plan costs
- Availability of financing and changes in modelled taxes

Pan American's business involves many risks and uncertainties, both known and unknown, that affect its ability to operate successfully and accurately estimate mineral reserves and mineral resources. The qualified persons and Pan American do not expect any significant negative impact from external factor such as environmental, permitting, title, access, legal, taxation, availability of resources, and other similar factors, but these factors may change and are unpredictable in the mining industry and may have a material impact on Pan American's business and performance. The political, economic, regulatory, judicial and social risks of doing business in foreign jurisdictions, and changes in metal and commodity prices, are especially challenging and uncertain for Pan American. In addition to external factors and risks, the accuracy of any mineral reserve and mineral resource estimate is, among other things, the function of quality and quantity of available data and of engineering and geological interpretation and judgement. Drilling, testing, production, metal prices, mining method, or operating factors may change after the date of the estimate and may require revision of the estimate and may differ significantly from what is currently expected. Readers are cautioned against attributing undue certainty to estimates of mineral reserves and mineral resources.

Based on the information presented in this Technical Report, the qualified persons recommend the following action items.

Over the past 24 years, El Peñón has established an exploration strategy to continually add mineral reserves to the inventory and extend the mine life. The strategy involves maintaining a pipeline of mineral resources and exploration targets. To continue this trend, drilling programs should continue to be carried out with the following objectives:

- Infill drilling to replace depletion by upgrading and extending known mineral resources.
- Expansion exploration drilling to upgrade mineral resources to measured or indicated categories, or to transform zones of geological potential into inferred mineral resources.
- District exploration to test the extension of little-known areas of mineralization or to discover new primary structures by testing targets identified in geological and alteration mapping, geochemistry, geophysics, or machine learning programs.

Ongoing exploration success could also unlock the opportunity to leverage the available mineral processing capacity at the mill, which could increase annual gold and silver production and reduce unit costs.

In the underground mine, El Peñón should maintain a lateral development rate of approximately 38,500 m per year to keep operational flexibility and several mining zones available at any given time. Optimization of development cycle times, dilution and over-excavation are key to control unit costs. Recent mining initiatives include optimization of stoping and development face drill patterns and the possible implementation of fleet management and short-interval control systems to improve productivity. Pan American is currently reviewing ground support standards, which could potentially increase the operating cost by approximately US$ 5/t-mined.

2 Introduction

El Peñón is an underground and open-pit gold-silver mine located in the Antofagasta Region of Chile, approximately 165 km southeast of the city of Antofagasta. Pan American holds a 100% interest in El Peñón through its subsidiary, Minera Meridian.

Pan American is a Canadian-based leading producer of precious metals in the Americas, operating silver and gold mines in Canada, Mexico, Peru, Bolivia, Argentina, Chile and Brazil. Pan American also owns the Escobal Mine in Guatemala, which is not currently in operation. Pan American has been operating in the Americas for three decades, earning an industry-leading reputation for sustainability performance, operational excellence and prudent financial management.

Pan American acquired El Peñón when it purchased Yamana in March 2023, following the sale by Yamana of its Canadian assets to Agnico Eagle.

Pan American's other operations include:

- 100% ownership in the Jacobina underground gold mine in the state of Bahia of northeastern Brazil.
- 100% ownership of the La Colorada silver-lead-zinc underground mine in Zacatecas, Mexico. The property hosts a large polymetallic skarn discovered through brownfield exploration in 2018.
- 100% ownership of the Timmins operation in Ontario, Canada, consisting of two underground mines, the Timmins West Mine and the Bell Creek Mine, which both feed the Bell Creek mill.
- 100% ownership of the Shahuindo open-pit gold mine in Cajamarca, Peru.
- 100% ownership of the Huarón underground silver, zinc, copper, and lead mine in Pasco, Peru.
- 100% ownership of the Cerro Moro underground and open-pit gold-silver mine located in the Santa Cruz Province, Argentina.
- 100% ownership of the Minera Florida underground gold-silver-zinc mine located south of Santiago, Chile.
- 95% ownership of the San Vicente underground silver, zinc, copper, and lead mine in Potosí, Bolivia.
- 100% ownership of the Escobal silver, gold, lead, and zinc underground mine, in Santa Rosa, Guatemala. The operation is currently on care and maintenance pending completion of an ILO 169 consultation.

This Technical Report was prepared by Pan American in accordance with NI 43-101 to disclose relevant information about El Peñón; it documents the mineral resource and mineral reserve estimates as of June 30, 2024.

This Technical Report was prepared by Pan American following the guidelines of NI 43-101 and Form 43-101F. The mineral resource and mineral reserve estimates reported herein were prepared in conformity with generally accepted standards set out in the CIM Guidelines and were classified according to the CIM Definition Standards.

2.1 Sources of Information

The qualified persons for this Technical Report are Jimmy Avendaño, Registered Member of the Chilean Mining Commission; Christopher Emerson, FAusIMM; Americo Delgado, P.Eng.; Carlos Iturralde, P.Eng.; and Matthew Andrews, FAusIMM, each of whom is a full-time employee of Pan American. Table 2-1 lists the qualified persons, their responsibilities, and personal inspections on the property.

Table 2-1: Qualified persons and personal inspections

Qualified Persons
Jimmy Avendaño, Registered Member of the Chilean Mining Commission, Manager, Technical Services
Responsible for Sections: 4: Property Description and Location; 5: Accessibility, Climate, Local Resources, Infrastructure and Physiography; 15: Mineral Reserve Estimates; 16: Mining Methods; 18: Project Infrastructure (excluding 18.1); 19: Market Studies and Contracts; 21: Capital and Operating Costs; 22: Economic Analysis
Personal Inspection: Works at site
Christopher Emerson, FAusIMM, Vice President, Exploration and Geology
Responsible for Sections: 6: History; 7: Geological Setting and Mineralization; 8: Deposit Types; 9: Exploration; 10: Drilling; 11: Sample Preparation, Analyzes and Security; 14: Mineral Resource Estimates; 23: Adjacent Properties
Personal Inspection: Visited El Peñón on numerous occasions including most recently between June 5th and 8th, 2024.
Americo Delgado, P.Eng., Vice President, Mineral Processing, Tailings and Dams
Responsible for Sections: 13: Mineral Processing and Metallurgical Testing; 17: Recovery Methods
Personal Inspection: Visited El Peñón on numerous occasions including most recently between April 21st and 25th, 2024.
Carlos Iturralde, P.Eng., Senior Director, Senior Director, Critical Facilities
Responsible for Sections: 18.1: Filtered Tailings Stack Design and Construction; 20.2.2: Tailings Management
Personal Inspection: Visited El Peñón on numerous occasions including most recently in 2022.
Matthew Andrews, FAusIMM, Vice President, Environment
Responsible for Sections: 20: Environmental Studies, Permitting and Social or Community Impact (excluding 20.2.2)
Personal Inspection: Visited El Peñón on numerous occasions including most recently between August 19th and 21st, 2024.
Shared Responsibility by all QPs for Related Disclosure in Sections: 1: Summary; 2: Introduction; 3: Reliance on Other Experts; 12: Data Verification; 24: Other Relevant Data and Information 25: Interpretation and Conclusions; 26: Recommendations; 27: References

In preparation of this Technical Report, the qualified persons reviewed technical documents and reports on El Peñón supplied by on-site personnel. The documentation reviewed, and other sources of information, are listed at the end of this Technical Report in Section 27.

The most recent technical report on El Peñón was compiled by Yamana, titled "NI 43-101 Technical Report El Peñón Gold-Silver Mine Antofagasta Region, Chile", with an effective date of December 31, 2020, and a signature date of March 25, 2021 (Castro et al., 2021) (the 2021 Yamana Report). This 2021 Yamana Report served as the foundation for this current Technical Report which updates the information as of an effective date of June 30, 2024.

3 Reliance on Other Experts

The qualified persons have relied on information derived from Pan American's internal records regarding legal matters related to land title and tenure, and taxes (including royalties and other government levies or interests) applicable to revenue or income from the El Peñón mine, as described in Sections 4, 16, 19, 21 and 22.

The qualified persons have not performed an independent verification of the land title and tenure information, as summarized in Section 4 of this Technical Report, nor have they verified the legality of any underlying agreement(s) that may exist concerning the permits or other agreement(s) between third parties, as summarized in Section 4 of this Technical Report. For these matters, the qualified persons have relied on information provided by Pan American.

Except for the purposes legislated under applicable securities laws, any use of this Technical Report by any third party is at that party's sole risk.

4 Property Description and Location

El Peñón is located in north-central Chile, at latitude 24°40` S and longitude 69°50` W, approximately 165 km southeast of the city of Antofagasta (Figure 4-1). The mine site, situated approximately midway between the Pacific Coast and the border with Argentina, is in the Atacama Desert, a desert plateau with one of the driest climates on earth. The mine operates on a year-round basis.

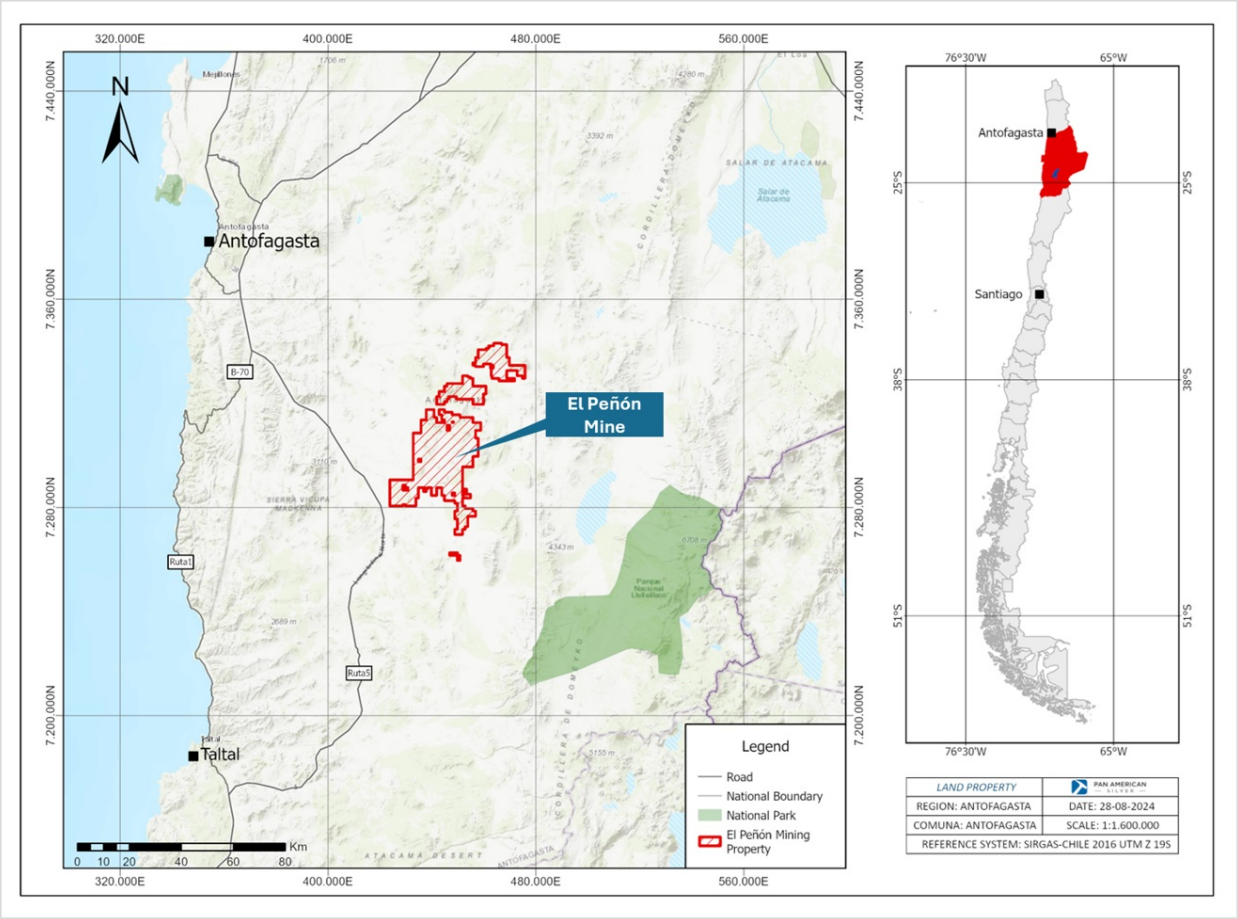

Figure 4-1: General location map

4.1 Mineral and Surface Tenure

The El Peñón property consists of 569 individual mining claims, 527 exploitation claims and 42 exploration claims, owned by Minera Meridian, a wholly-owned subsidiary of Pan American. The claims comprise an area measuring 121,473 ha that covers the El Peñón core mine area, the Chiquilla Chica area, the Fortuna area, the Laguna area, the PAV area, the Tostado Sur area, and the surrounding exploration lands (Figure 4-2, Figure 4-3 and Table 4-1). Canons are paid annually to maintain the active claim status. The boundaries of the mining concessions are legally surveyed and are covered by an additional layer of claims for increased legal protection.

El Peñón has been in operation since 1999 and the existing surface rights are deemed sufficient for mining and processing operations. As well, El Peñón has sufficient water, power, and labour supplies and sufficient areas for tailings and waste disposal.

Minera Meridian is subject to a royalty tax, based on the mining gross profit margin, of 5% on taxable mining income. In addition, El Peñón is also subject to First Category Tax (i.e., income tax) in Chile at a rate of 27%.

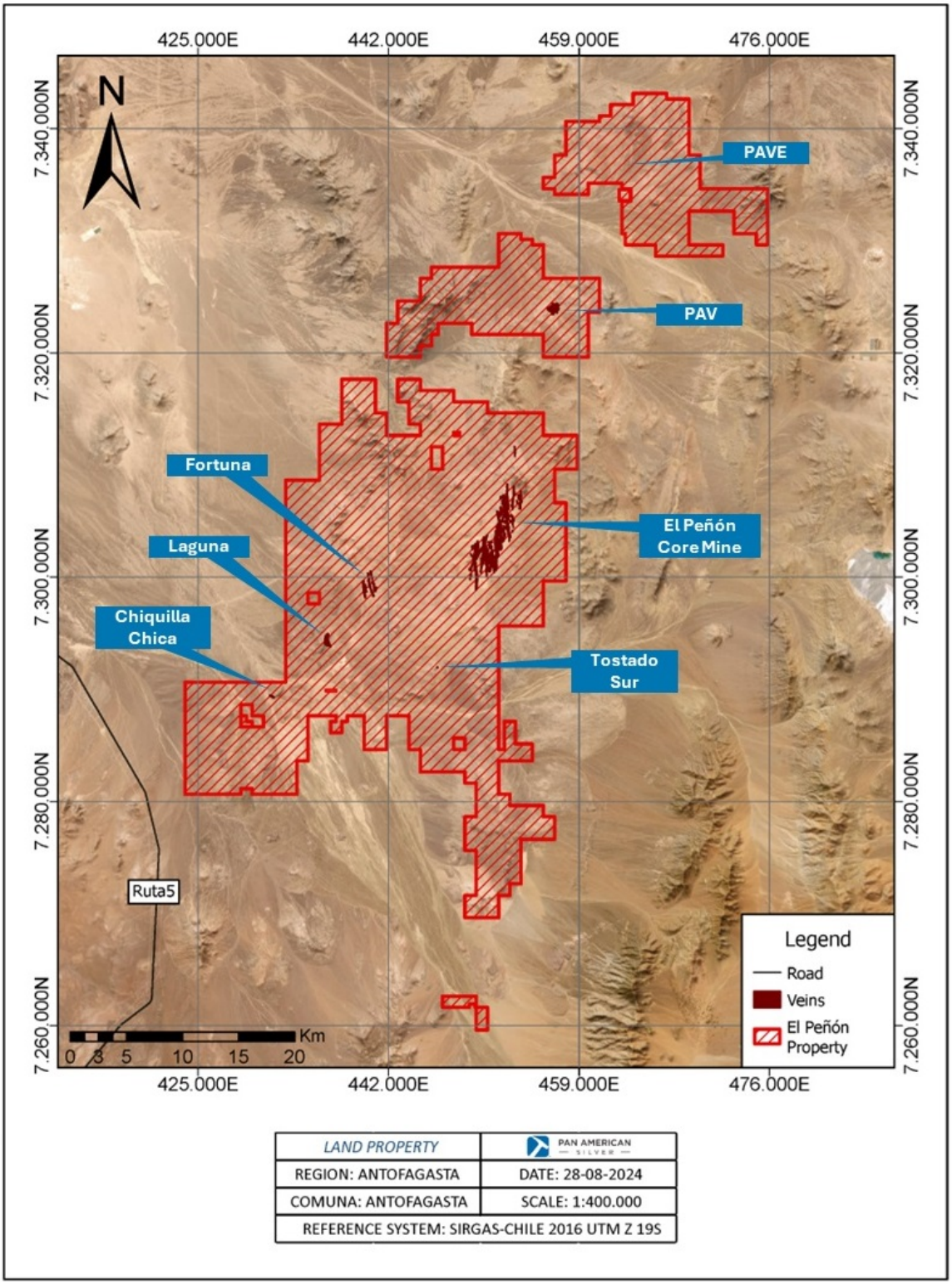

Figure 4-2: Map of mineral tenure

Table 4-1: Mineral tenure list

Property Name	Type	National ID	Area (ha)
AGUSTIN 2 1/30	EXPLOTACIÓN	022013041-K	300
AGUSTIN 2 121/150	EXPLOTACIÓN	022013045-2	300
AGUSTIN 2 31/60	EXPLOTACIÓN	022013042-8	300
AGUSTIN 2 61/90	EXPLOTACIÓN	022013043-6	300
AGUSTIN 2 91/120	EXPLOTACIÓN	022013044-4	300
AMARILLO 15 DEL 1 AL 2	EXPLOTACIÓN	022016758-5	10
AMARILLO 6 DEL 1 AL 10	EXPLOTACIÓN	022015761-K	50
AMARILLO 7 DEL 1 AL 20	EXPLOTACIÓN	022015762-8	160
AMARILLO 8 DEL 1 AL 20	EXPLOTACIÓN	022015795-4	200
AUGUSTA 1 DEL 1 AL 5	EXPLOTACIÓN	022015639-7	50
AUGUSTA 10 DEL 1 AL 20	EXPLOTACIÓN	022015648-6	200
AUGUSTA 11 DEL 1 AL 20	EXPLOTACIÓN	022015649-4	200
AUGUSTA 2 DEL 1 AL 5	EXPLOTACIÓN	022015640-0	50
AUGUSTA 3 DEL 1 AL 30	EXPLOTACIÓN	022015641-9	300
AUGUSTA 4 DEL 1 AL 5	EXPLOTACIÓN	022015642-7	50
AUGUSTA 46 DEL 1 AL 20	EXPLOTACIÓN	022015967-1	200
AUGUSTA 47 DEL 1 AL 30	EXPLOTACIÓN	022015968-K	300
AUGUSTA 48 DEL 1 AL 30	EXPLOTACIÓN	022015969-8	300
AUGUSTA 49 DEL 1 AL 30	EXPLOTACIÓN	022015970-1	300
AUGUSTA 5 DEL 1 AL 10	EXPLOTACIÓN	022015643-5	100
AUGUSTA 50 DEL 1 AL 30	EXPLOTACIÓN	022015971-K	300
AUGUSTA 54 DEL 1 AL 20	EXPLOTACIÓN	022015975-2	200
AUGUSTA 6 DEL 1 AL 10	EXPLOTACIÓN	022015644-3	95
AUGUSTA 7 DEL 1 AL 30	EXPLOTACIÓN	022015645-1	300
AUGUSTA 72 DEL 1 AL 30	EXPLOTACIÓN	022015992-2	300
AUGUSTA 73 DEL 1 AL 30	EXPLOTACIÓN	022015993-0	300
AUGUSTA 74 DEL 1 AL 20	EXPLOTACIÓN	022015994-9	200
AUGUSTA 8 DEL 1 AL 30	EXPLOTACIÓN	022015646-K	300
AUGUSTA 9 DEL 1 AL 20	EXPLOTACIÓN	022015647-8	200
AV NORTE 1 AL 60	EXPLOTACIÓN	022018293-2	300
AZUL 01 1/10	EXPLOTACIÓN	022012619-6	100
AZUL 02 1/10	EXPLOTACIÓN	022012620-K	100
AZUL 03 1/10	EXPLOTACIÓN	022012621-8	100
AZUL 04 1/10	EXPLOTACIÓN	022012622-6	100
AZUL 05 1/10	EXPLOTACIÓN	022012623-4	100
AZUL 06 1/10	EXPLOTACIÓN	022012624-2	100
AZUL 07 1/10	EXPLOTACIÓN	022012625-0	100
AZUL 08 1/10	EXPLOTACIÓN	022012626-9	100
AZUL 09 1/10	EXPLOTACIÓN	022012627-7	100
AZUL 10 1/10	EXPLOTACIÓN	022012628-5	100
AZUL 11 1/10	EXPLOTACIÓN	022012629-3	100
AZUL 12 1/10	EXPLOTACIÓN	022012630-7	100
AZUL 13 1/10	EXPLOTACIÓN	022012631-5	100
AZUL 14 1/10	EXPLOTACIÓN	022012632-3	100
AZUL 15 1/10	EXPLOTACIÓN	022012633-1	100
AZUL 16 1/10	EXPLOTACIÓN	022012634-K	100
AZUL 17 1/10	EXPLOTACIÓN	022012635-8	100
AZUL 18 1/10	EXPLOTACIÓN	022012636-6	50
AZUL 19 1/10	EXPLOTACIÓN	022012637-4	100
AZUL 22 1/5	EXPLOTACIÓN	022012640-4	50
AZUL 23 1/10	EXPLOTACIÓN	022012641-2	100
AZUL 24 1/10	EXPLOTACIÓN	022012642-0	100
BLANCA 1 1/20	EXPLOTACIÓN	022014370-8	100
BLANCA 1, 1 AL 30	EXPLOTACIÓN	022015721-0	300
BLANCA 10, 1 AL 30	EXPLOTACIÓN	022015727-K	300
BLANCA 11, 1 AL 20	EXPLOTACIÓN	022015728-8	200
BLANCA 12, 1 AL 20	EXPLOTACIÓN	022015729-6	200
BLANCA 13, 1 AL 20	EXPLOTACIÓN	022015730-K	200
BLANCA 14, 1 AL 30	EXPLOTACIÓN	022015731-8	300
BLANCA 15, 1 AL 30	EXPLOTACIÓN	022015732-6	300
BLANCA 16, 1 AL 30	EXPLOTACIÓN	022015733-4	300
BLANCA 17, 1 AL 30	EXPLOTACIÓN	022015734-2	300
BLANCA 18, 1 AL 30	EXPLOTACIÓN	022015735-0	300
BLANCA 3, 1 AL 30	EXPLOTACIÓN	022015722-9	300
BLANCA 5, 1 AL 20	EXPLOTACIÓN	022015723-7	200
BLANCA 7, 1 AL 30	EXPLOTACIÓN	022015724-5	300
BLANCA 8, 1 AL 30	EXPLOTACIÓN	022015725-3	300
BLANCA 9, 1 AL 30	EXPLOTACIÓN	022015726-1	300
BLANCO CHIQUILLA 2, 1 AL 16	EXPLOTACIÓN	022016498-5	147
BLANCO NORTE 110, 1 AL 30	EXPLOTACIÓN	022016524-8	300
BLANCO NORTE 2B, 1 AL 20	EXPLOTACIÓN	022016218-4	200

Property Name	Type	National ID	Area (ha)
BLANCO NORTE 3B, 1 AL 20	EXPLOTACIÓN	022016215-K	200
BLANCO NORTE 4B, 1 AL 10	EXPLOTACIÓN	022016216-8	100
BLANCO NORTE 5B, 1 AL 10	EXPLOTACIÓN	022016217-6	100
BLANCO NORTE 8, 1 AL 30	EXPLOTACIÓN	022016351-2	300
BLANCO NORTE 9, 1 AL 30	EXPLOTACIÓN	022016352-0	300
BLANCO SUR 1, 1 AL 30	EXPLOTACIÓN	022016499-3	300
BLANCO SUR 10, 1 AL 30	EXPLOTACIÓN	022016508-6	300
BLANCO SUR 2, 1 AL 30	EXPLOTACIÓN	022016500-0	300
BLANCO SUR 3, 1 AL 30	EXPLOTACIÓN	022016501-9	300
BLANCO SUR 4, 1 AL 30	EXPLOTACIÓN	022016502-7	300
BLANCO SUR 5, 1 AL 20	EXPLOTACIÓN	022016503-5	200
BLANCO SUR 6, 1 AL 30	EXPLOTACIÓN	022016504-3	300
BLANCO SUR 7, 1 AL 30	EXPLOTACIÓN	022016505-1	300
BLANCO SUR 8, 1 AL 30	EXPLOTACIÓN	022016506-K	200
BLANCO SUR 9, 1 AL 30	EXPLOTACIÓN	022016507-8	300
CAMBIAR 131, 1 AL 60	EXPLOTACIÓN	022016373-3	300
CAMBIAR 132, 1 AL 60	EXPLOTACIÓN	022016413-6	300
CAMBIAR 133, 1 AL 60	EXPLOTACIÓN	022016374-1	300
CAMBIAR 134, 1 AL 60	EXPLOTACIÓN	022016375-K	300
CAMBIAR 135, 1 AL 40	EXPLOTACIÓN	022016376-8	200
CAMBIAR 136, 1 AL 60	EXPLOTACIÓN	022016377-6	300
CAMBIAR 137, 1 AL 60	EXPLOTACIÓN	022016378-4	300
CAMBIAR 138, 1 AL 60	EXPLOTACIÓN	022016379-2	300
CAMBIAR 139, 1 AL 60	EXPLOTACIÓN	022016380-6	300
CAMBIAR 140, 1 AL 40	EXPLOTACIÓN	022016381-4	200
CAMBIAR 141, 1 AL 60	EXPLOTACIÓN	022016382-2	300
CAMBIAR 142, 1 AL 60	EXPLOTACIÓN	022016383-0	300
CAMBIAR 143, 1 AL 60	EXPLOTACIÓN	022016384-9	300
CAMBIAR 144, 1 AL 60	EXPLOTACIÓN	022016385-7	300
CAMBIAR 145, 1 AL 60	EXPLOTACIÓN	022016386-5	300
CAMBIAR 146, 1 AL 20	EXPLOTACIÓN	022016387-3	100
CAMBIAR A, 1 AL 40	EXPLOTACIÓN	022018617-2	200
CAMBIAR B, 1 AL 40	EXPLOTACIÓN	022018612-1	200
CAMBIAR IV 59, 1 AL 60	EXPLOTACIÓN	022018613-K	300
CAMBIAR IV 96, 1 AL 60	EXPLOTACIÓN	022018614-8	300
CAMBIAR IV 97, 1 AL 60	EXPLOTACIÓN	022018615-6	300
CAMBIAR IV 98, 1 AL 60	EXPLOTACIÓN	022018618-0	300
CEBADA A 1	EXPLORACIÓN	02201V483-3	300
CEBADA A 2	EXPLORACIÓN	02201V560-0	300
CEBADA A 3	EXPLORACIÓN	02201V476-0	100
CEBADA D 2	EXPLORACIÓN	02201V845-6	300
CERRO 1 1/20	EXPLOTACIÓN	022014311-2	100
CERRO 2 1/20	EXPLOTACIÓN	022014312-0	100
CERRO AZUL 01 1/5	EXPLOTACIÓN	022012704-4	50
CERRO AZUL 02 1/10	EXPLOTACIÓN	022012705-2	100
CERRO AZUL 03 1/5	EXPLOTACIÓN	022012706-0	50
CERRO AZUL 04 1/10	EXPLOTACIÓN	022012707-9	100
CERRO AZUL 05 1/10	EXPLOTACIÓN	022012708-7	100
CERRO AZUL 06 1/10	EXPLOTACIÓN	022012709-5	100
CERRO AZUL 07 1/5	EXPLOTACIÓN	022012710-9	50
CERRO AZUL 08 1/10	EXPLOTACIÓN	022012711-7	100
CERRO AZUL 09 1/10	EXPLOTACIÓN	022012712-5	100
CERRO AZUL 10 1/10	EXPLOTACIÓN	022012713-3	100
CERRO AZUL 11 1/10	EXPLOTACIÓN	022012714-1	100
CERRO AZUL 12 1/5	EXPLOTACIÓN	022012715-K	50
CERRO AZUL 13 1/5	EXPLOTACIÓN	022012716-8	50
CERRO AZUL 14 1/10	EXPLOTACIÓN	022012717-6	100
CERRO AZUL 15 1/10	EXPLOTACIÓN	022012718-4	100
CERRO AZUL 16 1/5	EXPLOTACIÓN	022012719-2	50

Property Name	Type	National ID	Area (ha)
CERRO AZUL 17 1/10	EXPLOTACIÓN	022012720-6	100
CERRO AZUL 18 1/5	EXPLOTACIÓN	022012721-4	50
CERRO AZUL 19 1/10	EXPLOTACIÓN	022012722-2	100
CERRO AZUL 20 1/10	EXPLOTACIÓN	022012723-0	100
CERRO AZUL 21 1/10	EXPLOTACIÓN	022012724-9	100
CERRO AZUL 22 1/10	EXPLOTACIÓN	022012725-7	100
CERRO AZUL 23 1/5	EXPLOTACIÓN	022012726-5	50
CERRO AZUL 24 1/10	EXPLOTACIÓN	022012727-3	100
CERRO AZUL 25 1/10	EXPLOTACIÓN	022012728-1	100
CERRO AZUL 26 1/10	EXPLOTACIÓN	022012729-K	100
CERRO AZUL 27 1/10	EXPLOTACIÓN	022012730-3	100
CERRO AZUL 28 1/10	EXPLOTACIÓN	022012731-1	100
CERRO AZUL 29 1/5	EXPLOTACIÓN	022012732-K	50
CERRO AZUL 30 1/10	EXPLOTACIÓN	022012733-8	100
CERRO AZUL 31 1/10	EXPLOTACIÓN	022012734-6	100
CERRO AZUL 32 1/10	EXPLOTACIÓN	022012735-4	100
CERRO AZUL 33 1/10	EXPLOTACIÓN	022012736-2	100
CERRO AZUL 34 1/10	EXPLOTACIÓN	022012737-0	100
CERRO AZUL 35 1/5	EXPLOTACIÓN	022012738-9	50
CERRO AZUL 36 1/5	EXPLOTACIÓN	022012739-7	50
CERRO AZUL 37 1/5	EXPLOTACIÓN	022012740-0	50
CERRO AZUL 38 1/5	EXPLOTACIÓN	022012741-9	50
CERRO AZUL 39 1/5	EXPLOTACIÓN	022012742-7	25
CERRO AZUL A 1/10	EXPLOTACIÓN	022012608-0	100
CERRO AZUL B 1/5	EXPLOTACIÓN	022012609-9	50
CERRO AZUL PONIENTE A 1/5	EXPLOTACIÓN	022012610-2	50
CERRO AZUL PONIENTE B 1/10	EXPLOTACIÓN	022012611-0	100
CERRO AZUL PONIENTE C 1/10	EXPLOTACIÓN	022012612-9	100
CERRO AZUL PONIENTE D 1/10	EXPLOTACIÓN	022012613-7	100
CERRO AZUL PONIENTE E 1/5	EXPLOTACIÓN	022012614-5	50
CERRO AZUL PONIENTE F 1/5	EXPLOTACIÓN	022012615-3	50
CERRO AZUL PONIENTE G 1/5	EXPLOTACIÓN	022012616-1	50
CERRO AZUL PONIENTE H 1/10	EXPLOTACIÓN	022012617-K	100
CERRO AZUL PONIENTE I 1/10	EXPLOTACIÓN	022012618-8	100
CERRO IMAN 1/30	EXPLOTACIÓN	022011796-0	300
CERRO IMAN II 1/10	EXPLOTACIÓN	022011845-2	100
CERRO IMAN III 1/10	EXPLOTACIÓN	022011846-0	100
CERRO IMAN IV 1/5	EXPLOTACIÓN	022011847-9	50
CERRO IMAN IX 1/10	EXPLOTACIÓN	022012315-4	100
CERRO IMAN SUR 1/10	EXPLOTACIÓN	022014488-7	50
CERRO IMAN SUR 1/5	EXPLOTACIÓN	022012369-3	50
CERRO IMAN V 1/10	EXPLOTACIÓN	022011848-7	100
CERRO IMAN VI 1/10	EXPLOTACIÓN	022011849-5	100
CERRO IMAN VII 1/10	EXPLOTACIÓN	022011850-9	100
CERRO IMAN VIII 1/10	EXPLOTACIÓN	022012314-6	100
CERRO IMAN X 1/10	EXPLOTACIÓN	022012316-2	100
CERRO IMAN XI 1/10	EXPLOTACIÓN	022012317-0	100
CERRO IMAN XII 1/10	EXPLOTACIÓN	022012318-9	100
CERRO IMAN XIII 1/10	EXPLOTACIÓN	022012319-7	100
CERRO IMAN XIV 1/10	EXPLOTACIÓN	022012320-0	100
CERRO IMAN XV 1/10	EXPLOTACIÓN	022012321-9	100
CERRO IMAN XVII 1/10	EXPLOTACIÓN	022012450-9	100
CERRO IMAN XVIII 1/15	EXPLOTACIÓN	022012366-9	75
CHICA 15 1 AL 20	EXPLOTACIÓN	022015443-2	200
CHICA 28 1 AL 10	EXPLOTACIÓN	022015444-0	100
CHICA 29 1 AL 20	EXPLOTACIÓN	022015445-9	200
CHICA 30 1 AL 20	EXPLOTACIÓN	022015446-7	200
CHICA 31A 1 AL 10	EXPLOTACIÓN	022015447-5	75
CHICA 31B 1 AL 10	EXPLOTACIÓN	022015448-3	100
CHIQUILLA CHICA II 1 AL 30	EXPLOTACIÓN	022014786-K	300
CHIQUILLA CHICA III 1 AL 30	EXPLOTACIÓN	022014787-8	300
CHIQUILLA CHICA IV 1 AL 30	EXPLOTACIÓN	022014788-6	300

Property Name	Type	National ID	Area (ha)
CHIQUILLA CHICA IX 1 AL 30	EXPLOTACIÓN	022014792-4	300
CHIQUILLA CHICA V 1 AL 30	EXPLOTACIÓN	022014789-4	300
CHIQUILLA CHICA VI 1 AL 30	EXPLOTACIÓN	022014790-8	300
CHIQUILLA CHICA VII 1 AL 30	EXPLOTACIÓN	022014791-6	300
CHIQUILLA CHICA VIII 1 AL 30	EXPLOTACIÓN	022014829-7	300
CHIQUILLA CHICA X 1 AL 30	EXPLOTACIÓN	022014830-0	300
CHIQUILLA CHICA XI 1 AL 30	EXPLOTACIÓN	022014793-2	300
CHIQUILLA CHICA XIX 1 AL 30	EXPLOTACIÓN	022014798-3	300
CHIQUILLA CHICA XVI 1 AL 30	EXPLOTACIÓN	022014832-7	300
CHIQUILLA CHICA XVII 1 AL 30	EXPLOTACIÓN	022014833-5	300
CHIQUILLA CHICA XVIII 1 AL 30	EXPLOTACIÓN	022014797-5	300
CHIQUILLA CHICA XX 1 AL 30	EXPLOTACIÓN	022014799-1	300
CHIQUILLA CHICA XXIII 1 AL 30	EXPLOTACIÓN	022014801-7	300
CHIQUILLA CHICA XXIX 1 AL 30	EXPLOTACIÓN	022014804-1	300
CHIQUILLA CHICA XXVI 1 AL 30	EXPLOTACIÓN	022014834-3	300
CHIQUILLA CHICA XXVII 1 AL 30	EXPLOTACIÓN	022014802-5	300
CHIQUILLA CHICA XXVIII 1 AL 30	EXPLOTACIÓN	022014803-3	300
CHIQUILLA CHICA XXX 1 AL 30	EXPLOTACIÓN	022014805-K	300
CLARO II 1	EXPLORACIÓN	02201V835-9	300
CLARO II 2	EXPLORACIÓN	02201V821-9	300
CLARO II 3	EXPLORACIÓN	02201V826-k	300
CLARO II 4	EXPLORACIÓN	02201V844-8	300
CLARO II 5	EXPLORACIÓN	02201V834-0	300
CLARO II 6	EXPLORACIÓN	02201V820-0	100
DOMINADOR 1 1/20	EXPLOTACIÓN	022013109-2	100
DOMINADOR 1 1/5	EXPLOTACIÓN	022012743-5	50
DOMINADOR 2 1/20	EXPLOTACIÓN	022013110-6	100
DOMINADOR 2 1/5	EXPLOTACIÓN	022012744-3	50
DOMINADOR 3 1/20	EXPLOTACIÓN	022013111-4	100
DOMINADOR 4 1/10	EXPLOTACIÓN	022013112-2	50
DOMINADOR 4 1/15	EXPLOTACIÓN	022012745-1	150
DON JAIME 77 DEL 1 AL 30	EXPLOTACIÓN	022016152-8	300
DON JAIME 78 DEL 1 AL 30	EXPLOTACIÓN	022016153-6	300
DON JAIME 79 DEL 1 AL 25	EXPLOTACIÓN	022016154-4	250
EL PEÑÓN 10 1/20	EXPLOTACIÓN	022013491-1	100
EL PEÑÓN 11 1/20	EXPLOTACIÓN	022013492-K	100
EL PEÑÓN 12 1/20	EXPLOTACIÓN	022013493-8	100
EL PEÑÓN 13 1/30	EXPLOTACIÓN	022013494-6	150
EL PEÑÓN 14 1/50	EXPLOTACIÓN	022013495-4	250
EL PEÑÓN 15 1/40	EXPLOTACIÓN	022013496-2	200
EL PEÑÓN 16 1/40	EXPLOTACIÓN	022013497-0	200
EL PEÑÓN 17 1/10	EXPLOTACIÓN	022013498-9	50
EL PEÑÓN 18 1/10	EXPLOTACIÓN	022013650-7	50
EL PEÑÓN 18 1/50	EXPLOTACIÓN	022013518-7	250
EL PEÑÓN 19 1/60	EXPLOTACIÓN	022013519-5	300
EL PEÑÓN 20 1/60	EXPLOTACIÓN	022013520-9	300
EL PEÑÓN 21 1/60	EXPLOTACIÓN	022013521-7	300
EL PEÑÓN 22 1/60	EXPLOTACIÓN	022013522-5	300
EL PEÑÓN 23 1/60	EXPLOTACIÓN	022013523-3	300
EL PEÑÓN 24 1/60	EXPLOTACIÓN	022013524-1	300
EL PEÑÓN 25 1/40	EXPLOTACIÓN	022013525-K	200
EL PEÑÓN 26 1/60	EXPLOTACIÓN	022013526-8	300
EL PEÑÓN 27 1/60	EXPLOTACIÓN	022013527-6	300
EL PEÑÓN 28 1/60	EXPLOTACIÓN	022013528-4	300
EL PEÑÓN 29 1/60	EXPLOTACIÓN	022013529-2	300
EL PEÑÓN 3 1/20	EXPLOTACIÓN	022013482-2	100
EL PEÑÓN 30 1/60	EXPLOTACIÓN	022013530-6	300
EL PEÑÓN 31 1/60	EXPLOTACIÓN	022013531-4	300
EL PEÑÓN 32 1/40	EXPLOTACIÓN	022013532-2	200
EL PEÑÓN 33 1/60	EXPLOTACIÓN	022013533-0	300
EL PEÑÓN 34 1/60	EXPLOTACIÓN	022013534-9	300
EL PEÑÓN 35 1/60	EXPLOTACIÓN	022013535-7	300
EL PEÑÓN 36 1/60	EXPLOTACIÓN	022013536-5	300
EL PEÑÓN 37 1/40	EXPLOTACIÓN	022013537-3	200
EL PEÑÓN 38 1/40	EXPLOTACIÓN	022013538-1	200
EL PEÑÓN 39 1/60	EXPLOTACIÓN	022013539-K	300
EL PEÑÓN 4 1/20	EXPLOTACIÓN	022013483-0	100
EL PEÑÓN 40 1/60	EXPLOTACIÓN	022013540-3	300
EL PEÑÓN 41 1/60	EXPLOTACIÓN	022013541-1	300
EL PEÑÓN 42 1/40	EXPLOTACIÓN	022013543-8	200
EL PEÑÓN 42 1/60	EXPLOTACIÓN	022013542-K	300
EL PEÑÓN 43 1/40	EXPLOTACIÓN	022013544-6	200
EL PEÑÓN 44 1/60	EXPLOTACIÓN	022013545-4	300
EL PEÑÓN 45 1/60	EXPLOTACIÓN	022013546-2	300
EL PEÑÓN 46 1/60	EXPLOTACIÓN	022013547-0	300

Property Name	Type	National ID	Area (ha)
EL PEÑÓN 5 1/10	EXPLOTACIÓN	022013484-9	50
EL PEÑÓN 6 1/10	EXPLOTACIÓN	022013485-7	50
EL PEÑÓN 7 1/40	EXPLOTACIÓN	022013488-1	200
EL PEÑÓN 8 1/60	EXPLOTACIÓN	022013489-K	300
EL PEÑÓN 9 1/50	EXPLOTACIÓN	022013490-3	250
ENCANTADA 1 1/60	EXPLOTACIÓN	022013964-6	300
ENCANTADA 12 1/60	EXPLOTACIÓN	022013968-9	300
ENCANTADA 13 1/60	EXPLOTACIÓN	022013969-7	300
ENCANTADA 14 1/60	EXPLOTACIÓN	022013970-0	300
ENCANTADA 15 1/60	EXPLOTACIÓN	022013971-9	300
ENCANTADA 16 1/60	EXPLOTACIÓN	022013972-7	300
ENCANTADA 18 1/40	EXPLOTACIÓN	022014110-1	200
ENCANTADA 2 1/40	EXPLOTACIÓN	022014109-8	200
ENCANTADA 21 1/60	EXPLOTACIÓN	022013975-1	300
ENCANTADA 22 1/20	EXPLOTACIÓN	022013976-K	100
ENCANTADA 3 1/60	EXPLOTACIÓN	022013965-4	300
ENCANTADA 44 1/17	EXPLOTACIÓN	022014270-1	85
ENCANTADA 5 1/40	EXPLOTACIÓN	022013967-0	200
FRANCISCA XIX 1 AL 20	EXPLOTACIÓN	022014780-0	200
FRANCISCA XXIII 1 AL 30	EXPLOTACIÓN	022014781-9	300
FRANCISCA XXIV 1 AL 30	EXPLOTACIÓN	022014782-7	300
GALO A, 1 AL 60	EXPLOTACIÓN	022018665-2	270
GALO III 10, 1 AL 60	EXPLOTACIÓN	022018672-5	300
GALO III 11, 1 AL 60	EXPLOTACIÓN	022018673-3	300
GALO III 2, 1 AL 60	EXPLOTACIÓN	022018668-7	300
GALO III 3, 1 AL 60	EXPLOTACIÓN	022018669-5	300
GALO III 4, 1 AL 60	EXPLOTACIÓN	022018662-8	300
GALO III 5, 1 AL 60	EXPLOTACIÓN	022018670-9	300
GALO III 6, 1 AL 60	EXPLOTACIÓN	022018671-7	300
GRILLO I 1/20	EXPLOTACIÓN	022013295-1	200
GRILLO II 1/20	EXPLOTACIÓN	022013296-K	200
GRILLO V 1/20	EXPLOTACIÓN	022014961-7	200
GRILLO VI 1/30	EXPLOTACIÓN	022014962-5	300
GRILLO VII 1/30	EXPLOTACIÓN	022014963-3	300
ISABEL 1	EXPLORACIÓN	02201X415-K	300
ISABEL 2	EXPLORACIÓN	02201X417-6	200
ISABEL 3	EXPLORACIÓN	02201X416-8	200
ISABEL 4	EXPLORACIÓN	02201X412-5	300
LA SUERTE 1 AL 20	EXPLOTACIÓN	022014965-K	100

Property Name	Type	National ID	Area (ha)
LACALLE 1 III	EXPLOTACIÓN	022018545-1	3
LAGO HUILIPILIN 1/10	EXPLOTACIÓN	022011533-K	100
LAGUNA 1 1/60	EXPLOTACIÓN	022014099-7	300
LAGUNA 2 1/60	EXPLOTACIÓN	022014100-4	300
LAGUNA 3 1/60	EXPLOTACIÓN	022014101-2	300
LAGUNA 4 1/60	EXPLOTACIÓN	022014102-0	300
LAGUNA 5 1/60	EXPLOTACIÓN	022014103-9	300
LAGUNA 6 1/60	EXPLOTACIÓN	022014104-7	300
LAGUNA 7 1/60	EXPLOTACIÓN	022014105-5	300
LAS CONDES 1 1/40	EXPLOTACIÓN	022013147-5	200
LAS CONDES 10 1/10	EXPLOTACIÓN	022013156-4	50
LAS CONDES 11 1/10	EXPLOTACIÓN	022013157-2	50
LAS CONDES 2 1/30	EXPLOTACIÓN	022013148-3	150
LAS CONDES 3 1/20	EXPLOTACIÓN	022013149-1	100
LAS CONDES 4 1/60	EXPLOTACIÓN	022013150-5	300
LAS CONDES 5 1/60	EXPLOTACIÓN	022013151-3	300
LAS CONDES 6 1/30	EXPLOTACIÓN	022013152-1	150
LAS CONDES 7 1/30	EXPLOTACIÓN	022013153-K	150
LAS CONDES 8 1/60	EXPLOTACIÓN	022013154-8	300
LAS CONDES 9 1/60	EXPLOTACIÓN	022013155-6	300
LINA 1 1/60	EXPLOTACIÓN	022014251-5	300
LINA 10 1/10	EXPLOTACIÓN	022014260-4	50
LINA 11 1/40	EXPLOTACIÓN	022014455-0	200
LINA 12 1/60	EXPLOTACIÓN	022014456-9	300
LINA 14 1/10-21/40	EXPLOTACIÓN	022014457-7	150
LINA 2 1/60	EXPLOTACIÓN	022014252-3	300
LINA 3 1/20	EXPLOTACIÓN	022014253-1	100
LINA 4 1/60	EXPLOTACIÓN	022014254-K	300
LINA 5 1/60	EXPLOTACIÓN	022014255-8	300
LINA 6 1/60	EXPLOTACIÓN	022014256-6	300
LINA 7 1/20	EXPLOTACIÓN	022014257-4	100
LINA 8 1/30	EXPLOTACIÓN	022014258-2	150
LINA 9 1/30	EXPLOTACIÓN	022014259-0	150
LINEA 1 1/60	EXPLOTACIÓN	022014136-5	300
LINEA 2 1/60	EXPLOTACIÓN	022014137-3	300
LINEA 3 1/60	EXPLOTACIÓN	022014138-1	300
LINEA 4 1/60	EXPLOTACIÓN	022014139-K	300
LINEA C	EXPLORACIÓN	02201V610-0	100
LLANO 1 1/20	EXPLOTACIÓN	022014539-5	100
LLANO 10 1/20	EXPLOTACIÓN	022014548-4	100
LLANO 2 1/20	EXPLOTACIÓN	022014540-9	100
LLANO 3 1/20	EXPLOTACIÓN	022014541-7	100
LLANO 4 1/20	EXPLOTACIÓN	022014542-5	100
LLANO 5 1/20	EXPLOTACIÓN	022014543-3	100
LLANO 6 1/20	EXPLOTACIÓN	022014544-1	100
LLANO 7 1/20	EXPLOTACIÓN	022014545-K	100

Property Name	Type	National ID	Area (ha)
LLANO 8 1/20	EXPLOTACIÓN	022014546-8	100
LLANO 9 1/20	EXPLOTACIÓN	022014547-6	100
LOBA 1 1/60	EXPLOTACIÓN	022014061-K	300
LOBA 3 1/60	EXPLOTACIÓN	022014063-6	300
LOBA 34 1/60	EXPLOTACIÓN	022014520-4	300
LOBA 35 1/60	EXPLOTACIÓN	022014519-0	300
LOBA 4 1/60	EXPLOTACIÓN	022014064-4	300
LOBA 5 1/60	EXPLOTACIÓN	022014065-2	300
LOBA 6 1/60	EXPLOTACIÓN	022014066-0	300
LOBA 7 1/40	EXPLOTACIÓN	022014067-9	200
LOBITA 1 1/40	EXPLOTACIÓN	022014002-4	200
LOBITA 23 1/40	EXPLOTACIÓN	022014024-5	200
LOBITA 24 1/60	EXPLOTACIÓN	022014025-3	300
LOBITA 25 1/60	EXPLOTACIÓN	022014026-1	300
LOBITA 3 1/60	EXPLOTACIÓN	022014004-0	300
LOBITA 38 1/60	EXPLOTACIÓN	022014106-3	300
LOBITA 39 1/60	EXPLOTACIÓN	022014035-0	300
LOBITA 4 1/60	EXPLOTACIÓN	022014005-9	300
LOBITA 40 1/60	EXPLOTACIÓN	022014036-9	300
LOBITA 41 1/60	EXPLOTACIÓN	022014037-7	300
LOBITA 42 1/60	EXPLOTACIÓN	022014038-5	300
LOBO 18 DEL 1 AL 30	EXPLOTACIÓN	022016197-8	300
LOBO 19 DEL 1 AL 30	EXPLOTACIÓN	022016196-K	300
LOBO 20 DEL 1 AL 30	EXPLOTACIÓN	022016195-1	300
MAGICA 1, 1 AL 40	EXPLOTACIÓN	022016565-5	200
MAGICA 2, 1 AL 40	EXPLOTACIÓN	022016566-3	200
MANCHADO 1 1/30	EXPLOTACIÓN	022012789-3	300
MANCHADO 2 1/30	EXPLOTACIÓN	022012790-7	300
MERLIN 40, 1 AL 60	EXPLOTACIÓN	022016656-2	300
MICHELLE 1	EXPLORACIÓN	02201W434-0	100
MICHELLE 2	EXPLORACIÓN	02201W439-1	200
MICHELLE 3	EXPLORACIÓN	02201W437-5	200
NADIAN 4 A, 1 AL 40	EXPLOTACIÓN	022016169-2	200
NADIAN 4 B, 1 AL 40	EXPLOTACIÓN	022016170-6	200
NADIAN 7 A, 1 AL 60	EXPLOTACIÓN	022016171-4	300
NADIAN 7 B, 1 AL 60	EXPLOTACIÓN	022016172-2	300
NADIAN 8 A, 1 AL 60	EXPLOTACIÓN	022016173-0	300
NADIAN 8 B, 1 AL 60	EXPLOTACIÓN	022016174-9	300
NADIAN 9 A, 1 AL 40	EXPLOTACIÓN	022016175-7	200
NADO 1, 1 AL 60	EXPLOTACIÓN	022015529-3	300

Property Name	Type	National ID	Area (ha)
NADO 10, 1 AL 60	EXPLOTACIÓN	022015538-2	300
NADO 11, 1 AL 60	EXPLOTACIÓN	022015539-0	300
NADO 12, 1 AL 60	EXPLOTACIÓN	022015540-4	300
NADO 13, 1 AL 60	EXPLOTACIÓN	022015541-2	300
NADO 14, 1 AL 60	EXPLOTACIÓN	022015542-0	300
NADO 15, 1 AL 60	EXPLOTACIÓN	022015543-9	300
NADO 16, 1 AL 60	EXPLOTACIÓN	022015544-7	300
NADO 17, 1 AL 60	EXPLOTACIÓN	022015545-5	300
NADO 18, 1 AL 60	EXPLOTACIÓN	022015546-3	300
NADO 19, 1 AL 60	EXPLOTACIÓN	022015547-1	300
NADO 2, 1 AL 60	EXPLOTACIÓN	022015530-7	300
NADO 20, 1 AL 60	EXPLOTACIÓN	022015548-K	300
NADO 21, 1 AL 60	EXPLOTACIÓN	022015549-8	300
NADO 22, 1 AL 60	EXPLOTACIÓN	022015550-1	300
NADO 23, 1 AL 20	EXPLOTACIÓN	022015551-K	100
NADO 24, 1 AL 40	EXPLOTACIÓN	022015552-8	200
NADO 25, 1 AL 60	EXPLOTACIÓN	022015553-6	300
NADO 26, 1 AL 60	EXPLOTACIÓN	022015554-4	300
NADO 27, 1 AL 60	EXPLOTACIÓN	022015555-2	300
NADO 3, 1 AL 60	EXPLOTACIÓN	022015531-5	300
NADO 4, 1 AL 60	EXPLOTACIÓN	022015532-3	300
NADO 5, 1 AL 60	EXPLOTACIÓN	022015533-1	300
NADO 6, 1 AL 60	EXPLOTACIÓN	022015534-K	300
NADO 7, 1 AL 60	EXPLOTACIÓN	022015535-8	300
NADO 8, 1 AL 60	EXPLOTACIÓN	022015536-6	300
NADO 9, 1 AL 60	EXPLOTACIÓN	022015537-4	300
NIVA 3 DEL 1 AL 60	EXPLOTACIÓN	022025455-0	285
NIVA 7, 1 AL 40	EXPLOTACIÓN	022025457-7	200
NORPE A 1	EXPLORACIÓN	02201V482-5	200
NORPE A 11	EXPLORACIÓN	02201V473-6	200
NORPE A 12	EXPLORACIÓN	02201V492-2	200
NORPE A 13	EXPLORACIÓN	02201V479-5	300
NORPE A 15	EXPLORACIÓN	02201V472-8	300
NORPE A 16	EXPLORACIÓN	02201V491-4	300
NORPE A 18	EXPLORACIÓN	02201X140-1	100
NORPE A 2	EXPLORACIÓN	02201V559-7	300
NORPE A 3	EXPLORACIÓN	02201V475-2	300
NORPE A 4	EXPLORACIÓN	02201V485-k	300
NORPE A 4	EXPLORACIÓN	02201V485-k	300
NORPE A 5	EXPLORACIÓN	02201V481-7	300
NORPE A 6	EXPLORACIÓN	02201W501-0	300
NORPE A 7	EXPLORACIÓN	02201V474-4	300
NORPE A 8	EXPLORACIÓN	02201V493-0	200
NORPE A 9	EXPLORACIÓN	02201V480-9	100
NORPE B 10	EXPLORACIÓN	02201V608-9	200
NORPE B 14	EXPLORACIÓN	02201V609-7	100
NORPE B 17	EXPLORACIÓN	02201W524-K	200
NORPE D 2	EXPLORACIÓN	02201V830-8	300

Property Name	Type	National ID	Area (ha)
PAISAJE 1 1/20	EXPLOTACIÓN	022013208-0	100
PAISAJE 1 1/40	EXPLOTACIÓN	022013651-5	200
PAISAJE 11 1/60	EXPLOTACIÓN	022013661-2	300
PAISAJE 12 1/60	EXPLOTACIÓN	022013662-0	300
PAISAJE 13 1/20	EXPLOTACIÓN	022013663-9	100
PAISAJE 14 1/20	EXPLOTACIÓN	022013664-7	100
PAISAJE 18 1/60	EXPLOTACIÓN	022013668-K	300
PAISAJE 19 1/60	EXPLOTACIÓN	022013669-8	300
PAISAJE 2 1/40	EXPLOTACIÓN	022013652-3	200
PAISAJE 20 1/40	EXPLOTACIÓN	022013670-1	200
PAISAJE 21 1/40	EXPLOTACIÓN	022013671-K	200
PAISAJE 22 1/40	EXPLOTACIÓN	022013672-8	200
PAISAJE 23 1/40	EXPLOTACIÓN	022013962-K	200
PAISAJE 24 1/40	EXPLOTACIÓN	022013963-8	200
PAISAJE 3 1/40	EXPLOTACIÓN	022013653-1	200
PAISAJE 4 1/40	EXPLOTACIÓN	022013654-K	200
PAISAJE 5 1/40	EXPLOTACIÓN	022013655-8	200
PAISAJE 6 1/40	EXPLOTACIÓN	022013656-6	200
PAMPA 4 1/60	EXPLOTACIÓN	022014730-4	300
PAMPA 5 1/60	EXPLOTACIÓN	022014731-2	300
PAMPA 6 1/40	EXPLOTACIÓN	022014732-0	200
PAMPA 7 1/60	EXPLOTACIÓN	022014733-9	300
PAMPA 8 1/60	EXPLOTACIÓN	022014734-7	300
PAMPA 9 1/60	EXPLOTACIÓN	022014735-5	300
PAMPA AUGUSTA I 1/59	EXPLOTACIÓN	022015271-5	268
PAMPA AUGUSTA I 1/59	EXPLOTACIÓN	022016792-5	25
PANAZ 1, 1 AL 60	EXPLOTACIÓN	022018437-4	300
PANAZ 2, 1 AL 60	EXPLOTACIÓN	022018438-2	300
PANAZ 3, 1 AL 40	EXPLOTACIÓN	022018439-0	200
PANAZ 4, 1 AL 10	EXPLOTACIÓN	022018440-4	200
PAVE 4, 1 AL 60	SOLICITUD DE MENSURA	022019767-0	300
PEÑÓN 50 1/10	EXPLOTACIÓN	022013977-8	50
PEÑÓN 51 1/20	EXPLOTACIÓN	022013978-6	100
PEÑÓN 53 1/60	EXPLOTACIÓN	022013980-8	300
PEÑÓN 54 1/60	EXPLOTACIÓN	022013981-6	300
PEÑÓN 55 1/60	EXPLOTACIÓN	022013982-4	300
PEÑÓN 56 1/60	EXPLOTACIÓN	022013983-2	300
PEÑÓN 57 1/60	EXPLOTACIÓN	022013984-0	300
PEÑÓN 58 1/60	EXPLOTACIÓN	022013985-9	300
PEÑÓN 59 1/60	EXPLOTACIÓN	022013986-7	300
PEÑÓN 60 1/60	EXPLOTACIÓN	022013987-5	300
PEÑÓN 61 1/40	EXPLOTACIÓN	022013988-3	200
PEÑÓN 62 1/40	EXPLOTACIÓN	022013989-1	200
PEÑÓN 63 1/20	EXPLOTACIÓN	022013990-5	100
PENUELA XII 1/30	EXPLOTACIÓN	022013279-K	300
PENUELA XIII 1/30	EXPLOTACIÓN	022013280-3	300
PENUELA XIV 1/30	EXPLOTACIÓN	022013281-1	300
PLOMO 17 DEL 1 AL 20	EXPLOTACIÓN	022017389-5	200
PLOMO 18 DEL 1 AL 10	EXPLOTACIÓN	022017390-9	100
PROVIDENCIA 1 1/40	EXPLOTACIÓN	022013073-8	200
PROVIDENCIA 1 II 1/30	EXPLOTACIÓN	022013556-K	300
PROVIDENCIA 1 II 31/60	EXPLOTACIÓN	022013557-8	300
PROVIDENCIA 1 II 61/90	EXPLOTACIÓN	022013558-6	300
PROVIDENCIA 1 II 91/120	EXPLOTACIÓN	022013559-4	300
PROVIDENCIA 10 1/10	EXPLOTACIÓN	022013082-7	50
PROVIDENCIA 11 1/10	EXPLOTACIÓN	022013083-5	50
PROVIDENCIA 2 1/30	EXPLOTACIÓN	022013074-6	150
PROVIDENCIA 2 II 1/40	EXPLOTACIÓN	022013561-6	400
PROVIDENCIA 29 DEL 1 AL 20	EXPLOTACIÓN	022015829-2	200
PROVIDENCIA 3 1/20	EXPLOTACIÓN	022013075-4	100
PROVIDENCIA 3 II 1/30	EXPLOTACIÓN	022013562-4	300
PROVIDENCIA 3 II 121/150	EXPLOTACIÓN	022013566-7	300
PROVIDENCIA 3 II 31/60	EXPLOTACIÓN	022013563-2	300
PROVIDENCIA 3 II 61/90	EXPLOTACIÓN	022013564-0	300
PROVIDENCIA 3 II 91/120	EXPLOTACIÓN	022013565-9	300
PROVIDENCIA 4 1/60	EXPLOTACIÓN	022013076-2	300
PROVIDENCIA 4 II 1/40	EXPLOTACIÓN	022013567-5	400
PROVIDENCIA 4 II 41/80	EXPLOTACIÓN	022013568-3	400
PROVIDENCIA 5 1/60	EXPLOTACIÓN	022013077-0	300
PROVIDENCIA 5 II 1/10	EXPLOTACIÓN	022013569-1	100
PROVIDENCIA 5 II 31/40	EXPLOTACIÓN	022013570-5	100
PROVIDENCIA 5 II 61/70	EXPLOTACIÓN	022013571-3	100
PROVIDENCIA 6 1/30	EXPLOTACIÓN	022013078-9	150

Property Name	Type	National ID	Area (ha)
PROVIDENCIA 7 1/30	EXPLOTACIÓN	022013079-7	150
PROVIDENCIA 8 1/60	EXPLOTACIÓN	022013080-0	300
PROVIDENCIA 9 1/60	EXPLOTACIÓN	022013081-9	300
PUNTA BLANCA 1, 1 AL 30	EXPLOTACIÓN	022015474-2	300
PUNTA BLANCA 2, 1 AL 30	EXPLOTACIÓN	022015475-0	300
PUNTA BLANCA 3, 1 AL 30	EXPLOTACIÓN	022015476-9	300
SERRU 1 AL 10	EXPLOTACIÓN	022018627-K	50
SERRUCHO 1 1/60	EXPLOTACIÓN	022013591-8	300
SERRUCHO 2 1/60	EXPLOTACIÓN	022013592-6	300
SERRUCHO 3 1/60	EXPLOTACIÓN	022013593-4	300
SERRUCHO 4 1/20	EXPLOTACIÓN	022014600-6	100
SERRUCHO 5 1/20	EXPLOTACIÓN	022014601-4	100
SHALA 1, 1 AL 40	EXPLOTACIÓN	022019481-7	200
SHALA 2, 1 AL 20	EXPLOTACIÓN	022019482-5	100
SHALA 3, 1 AL 20	EXPLOTACIÓN	022019483-3	50
SHALA 4, 1 AL 40	EXPLOTACIÓN	022019484-1	200
SHALA 5, 1 AL 40	EXPLOTACIÓN	022019485-k	200
SHALA A 6, 1 AL 40	SOLICITUD DE MENSURA	022019768-9	200
SOBRANTE 4, 1 AL 10	EXPLOTACIÓN	022018664-4	50
SURPE B 5	EXPLORACIÓN	02201V477-9	300
SURPE B 6	EXPLORACIÓN	02201V558-9	200
SURPE B 7	EXPLORACIÓN	02201V470-1	300
SURPE D 6	EXPLORACIÓN	02201V822 -7	200
TACO 1 1/20	EXPLOTACIÓN	022014154-3	100
TOSTADO 1 1/60	EXPLOTACIÓN	022013612-4	300
TOSTADO 1 1/60	EXPLOTACIÓN	022013145-9	300
TOSTADO 10 1/60	EXPLOTACIÓN	022013621-3	300
TOSTADO 11 1/20	EXPLOTACIÓN	022013622-1	100
TOSTADO 12 1/40	EXPLOTACIÓN	022013623-K	200
TOSTADO 13 1/20	EXPLOTACIÓN	022013624-8	100
TOSTADO 15 1/40	EXPLOTACIÓN	022013626-4	200
TOSTADO 16 1/60	EXPLOTACIÓN	022013627-2	300
TOSTADO 17 1/20	EXPLOTACIÓN	022013628-0	100
TOSTADO 18 1/40	EXPLOTACIÓN	022013629-9	200
TOSTADO 19 1/60	EXPLOTACIÓN	022013630-2	300
TOSTADO 2 1/20	EXPLOTACIÓN	022013146-7	100
TOSTADO 2 1/60	EXPLOTACIÓN	022013613-2	300
TOSTADO 20 1/60	EXPLOTACIÓN	022013631-0	300
TOSTADO 21 1/20	EXPLOTACIÓN	022013632-9	100
TOSTADO 22 1/60	EXPLOTACIÓN	022013633-7	300
TOSTADO 23 1/40	EXPLOTACIÓN	022013635-3	200
TOSTADO 24 1/60	EXPLOTACIÓN	022014186-1	300
TOSTADO 25 1/40	EXPLOTACIÓN	022014187-K	200
TOSTADO 3 1/60	EXPLOTACIÓN	022013614-0	300
TOSTADO 4 1/60	EXPLOTACIÓN	022013615-9	300
TOSTADO 5 1/60	EXPLOTACIÓN	022013616-7	300
TOSTADO 6 1/60	EXPLOTACIÓN	022013617-5	300
TOSTADO 7 1/20	EXPLOTACIÓN	022013618-3	100
TOSTADO 8 1/40	EXPLOTACIÓN	022013619-1	200
TOSTADO 9 1/60	EXPLOTACIÓN	022013620-5	300
TOSTADO I 1/30	EXPLOTACIÓN	022013242-0	300
TOSTADO II 1/30	EXPLOTACIÓN	022013243-9	300
TOSTADO III 1/30	EXPLOTACIÓN	022013244-7	300
TOSTADO IV 1/30	EXPLOTACIÓN	022013245-5	300
TOSTADO V 1/30	EXPLOTACIÓN	022013246-3	300
VERDE 4 6/10-16/20	EXPLOTACIÓN	022014317-1	50
Total 569 Claims			121,473.00

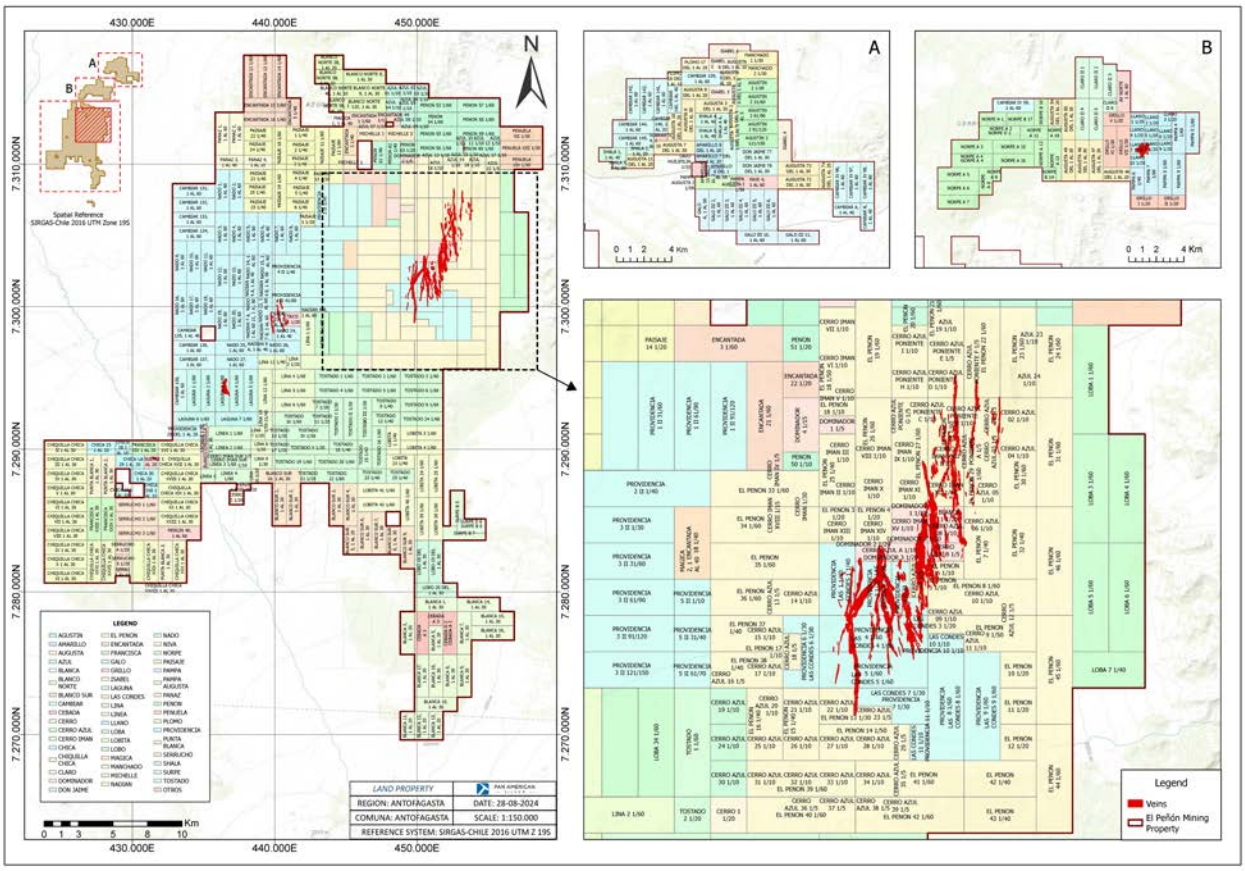

Figure 4-3: Detailed map of mineral tenure

4.2 Underlying Agreements

Part of the mining property of El Peñón was incorporated into the asset portfolio through agreements that defined NSR royalties. These are: NSR ANGELINA, 1% NSR royalty payable to Triple Flag Precious Metals Corp. (3 concessions, 100 ha); NSR FORTUNA, 2% NSR royalty payable to Triple Flag Precious Metals Corp. (27 concessions, 7,800 ha); NSR SQM1, 2% NSR royalty payable to Soquimich Comercial SA (18 concessions, 4,450 ha); and NSR SQM2, 2% NSR royalty payable to Soquimich Comercial SA (53 concessions, 11,843 ha). The location of the concessions subject to NSR royalties is shown in Figure 4-4.

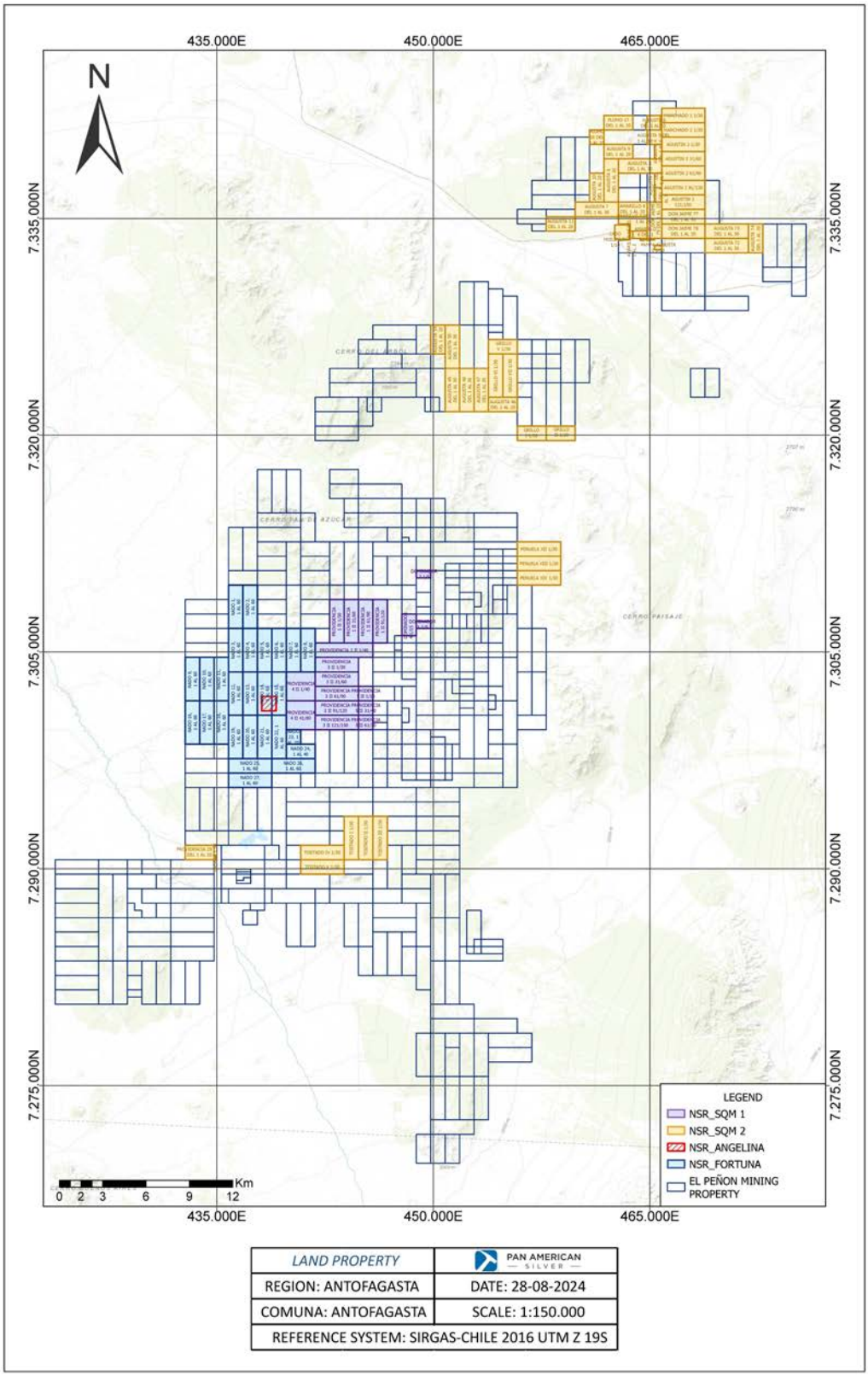

Figure 4-4: Detailed map of mining concessions subject to NSR royalties

4.3 Permits and Authorizations

Minera Meridian has all required permits to continue carrying out mining and processing operations at El Peñón. Further details of these permits can be found in Section 20 of this Technical Report.

Government regulations require that a full closure plan be submitted when mine life is less than five years. The latest closure plan was approved through Exempt Resolution N° 2658/2019. Updates to the closure plan are required whenever the LOM is extended.

4.4 Environmental Considerations

The primary environmental considerations and potential liabilities for El Peñón are related to the operations of the tailings storage facility (TSF) and the management of seepage water and mine water. Minera Meridian prioritizes the management of tailings and is aligned with best practices proposed by MAC, TSM Protocol, and the Canadian Dam Association (CDA) guidelines.

Additional details on tailings infrastructure and management at El Peñón are provided in Sections 18 and 20 of this Technical Report.

4.5 Significant Factors and Risks

Pan American is exposed to many risks in conducting its business, both known and unknown, and there are numerous uncertainties inherent in estimating mineral reserves and mineral resources and in maintaining viable operations. Although the qualified persons and Pan American have no current expectation that the mineral reserve and mineral resource estimates in this Technical Report will be materially negatively impacted by external factors such as environmental, permitting, title, access, legal, taxation, availability of resources, and other similar factors, changes in relation to such factors are not uncommon in the mining industry and there can be no assurance that these factors will not have a material impact. Changes in metal and commodity prices and the political, economic, regulatory, judicial and social risks related to conducting business in foreign jurisdictions pose particular risk and uncertainty to Pan American and could result in material impacts to Pan American's business and performance. In addition to external factors and risks, the accuracy of any mineral reserve and mineral resource estimate is, among other things, the function of the quality and quantity of available data and of engineering and geological interpretation and judgment. Results from drilling, testing, and production, as well as a material change in metal prices, changes in the planned mining method, or various operating factors that occur subsequent to the date of the estimate may justify revision of such estimates and may differ, perhaps materially, from those currently anticipated, and readers are cautioned against attributing undue certainty to estimates of mineral reserves and mineral resources.

5 Accessibility, Climate, Local Resources, Infrastructure, and Physiography

5.1 Accessibility

El Peñón is located approximately 165 km southeast of Antofagasta. It is accessible by paved roads, a trip taking approximately 2.5 hours. Antofagasta, the principal source of supplies for the mine is linked with Santiago (the capital) by daily air service. Minera Meridian has surface rights deemed sufficient for mining and processing operations.

5.2 Climate

The climate in the Atacama Desert is renowned as among the most arid in the world, with a mean annual precipitation between 0 and 15 mm per year, with some areas with no precipitation whatsoever. Temperatures in the area close to the mine can range from -5 °C to +30 °C. Climatic conditions do not hinder mining operations, which can be carried out throughout the whole year.

5.3 Local Resources

There are no significant population centres or infrastructure in the immediate vicinity of El Peñón. Antofagasta, a port city with a population of around 380,000, is the main supply source for the mine. It hosts a variety of commercial establishments, hotels, restaurants, retailers, service suppliers, high schools, and universities as well as hospitals and health clinics. The city also hosts a large number of manufacturing companies and suppliers who serve the mining industry.

Skilled personnel can be easily sourced from Antofagasta or from other cities of the region and country, where mining is the main economic activity.

5.4 Infrastructure

The current major assets and facilities associated with the mining operations at El Peñón are listed as follows:

- Mine and mill infrastructure, including office buildings, shops, laboratories, stockpiles, TSF, and equipment.
- Campsite/housing facilities.
- Facilities providing basic infrastructure to the mine, such as access roads, electric power distribution systems connected to the national power grid, water treatment and supply and sewage treatment.
- Underground infrastructure including portals, access ramps, ventilation raises, maintenance shops, and mobile fleet equipment.
- Surface infrastructure including haulage roads.

5.5 Physiography

The mine is located in the Atacama region of Chile at an elevation of approximately 1,800 masl. Relief in the area is modest, with widely spaced hills and peaks separated by broad open valleys. There is little to no vegetation or wildlife in the area around the mine, and the principal land use is mining.

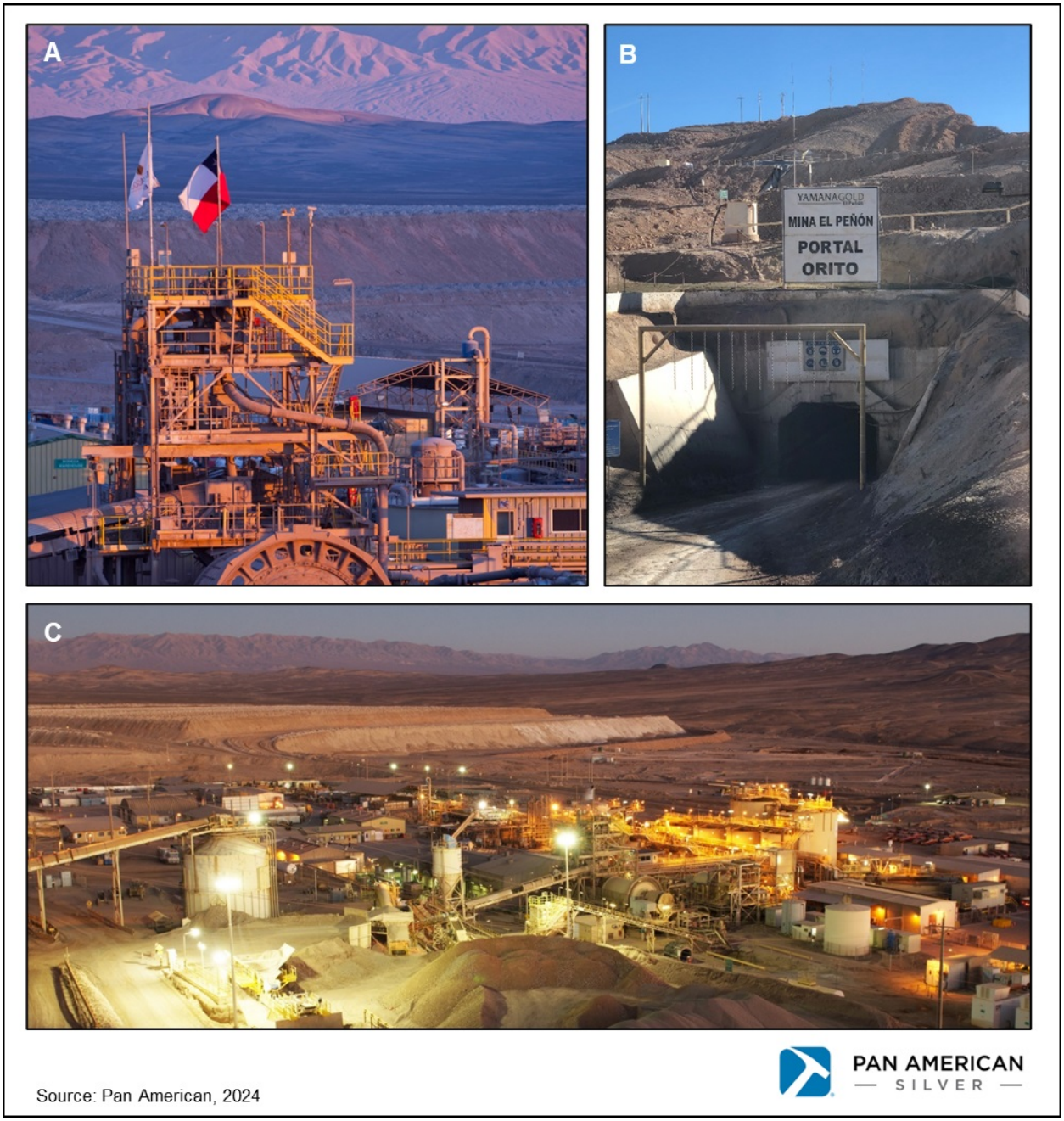

Figure 5-1: Infrastructure and typical landscape

A: Atacama Desert and mineral processing plant
B: Orito portal
C: Mine site overview at surface and Atacama Desert

6 History

The history of El Peñón has been described in Pearson and Rennie (2008) and Collins, Moore and Scott (2010). Information from both reports is summarized below.

The El Peñón gold-silver deposit was discovered by Minera Meridian in the early 1990s and went into production in 1999. Minera Meridian was acquired by Yamana Gold in late 2007. Pan American acquired El Peñón when it purchased Yamana on March 31, 2023, following the sale by Yamana of its Canadian assets to Agnico Eagle.

Regional exploration throughout the 1990s focused on the Early to Mid-Eocene volcanic belts in northern Chile and led to the acquisition of the El Peñón property in 1993. Trenching carried out that year was followed by a 13-hole drilling program which led to the discovery of significant gold-silver mineralization. The next year, the first hole of a follow-up program intersected 100 m grading 10.9 g/t Au and 123.4 g/t Ag in what eventually became the Quebrada Orito deposit.

In July 1998, it was decided to advance the property into production, and construction on a 2,000 tpd mine and mill facility commenced later that year. Production began in September 1999, ramping up to full capacity in January 2000. Production has continued uninterrupted to the present day. Since then, the footprint of mineralization has been expanded through geological mapping, geochemical characterization, geophysics, and abundant surface and underground drilling within the northeast trend, first starting at the El Peñón core mine area, with Quebrada Orito in the southwest and ending to Angosta in the northeast. Exploration has also been successful at the Fortuna, Laguna, Chiquilla Chica, areas to the southwest and at the PAV area to the north of El Peñón.

Various geological, petrographic, and mineralogical studies occurred during the exploration and operation stages of the project. These include Pérez (1999), Robbins (2000), Warren et al. (2004), Zuluaga (2004), Warren (2005), and Cornejo et al. (2006). Various geophysical surveys were performed on the property including transient electromagnetic (TEM) surveys in 2001, a magnetotelluric (CSAMT) survey in 2002, a gravity survey in the El Peñón core mine area in 2003, a very low frequency (VLF) electromagnetic (EM) survey in 2004, and an aeromagnetic and radiometric survey in 2005. Geochemical soil sampling was also undertaken in targeted areas of the deposit. The geophysical and geochemical surveys provided key data to map the lithology, alteration, and structures on the El Peñón property.

6.1 Historical Mineral Resource and Mineral Reserve Estimates

Although a number of historical mineral resource estimates and mineral reserve estimates have been prepared for El Peñón throughout its life, none of these estimates are currently regarded as significant.

6.2 Past Production

Since September 1999, the operation has run continually at design and increased capacity, treating both open-pit and underground ore. As of June 30, 2024, the mine had processed approximately 28.4 million tonnes (Mt) of ore grading 6.87 g/t gold and 184.5 g/t silver, producing 5.9 million ounces (Moz) of gold and 146.1 of silver as shown in Table 6-1. Since late 2016, the operation has been rightsized to promote and sustain cash flow generation rather than maximizing production.

Table 6-1: Commercial production at El Peñón, 2000 to June 30, 2024

Year	Tonnes Processed (t)	Gold Feed Grade (g/t Au)	Silver Feed Grade (g/t Ag)	Metallurgical Recovery (% Au)	Metallurgical Recovery (% Ag)	Gold Produced (oz Au)	Silver Produced (oz Ag)
2000	739,450	13.18	194.4	93.6 %	89.1 %	282,718	4,018,397
2001	715,413	14.87	234.4	94.5 %	89.0 %	318,012	4,751,758
2002	688,876	15.33	249.5	95.3 %	90.8 %	328,061	5,077,188
2003	703,775	14.62	204.5	96.6 %	92.4 %	320,998	4,283,436
2004	837,111	11.96	192.7	96.5 %	92.2 %	314,080	4,812,152
2005	880,229	11.13	211.1	96.4 %	92.8 %	303,508	5,537,589
2006	935,105	8.1	234.6	95.5 %	92.8 %	230,145	6,428,905
2007[1]	998,252	7.64	274.6	94.2 %	91.8 %	234,598	8,186,718
2008	1,124,567	6.73	305.4	92.0 %	89.2 %	224,990	9,864,275
2009	1,271,596	5.79	276.3	91.2 %	86.9 %	215,846	9,820,474
2010	1,522,366	5.74	228.5	91.1 %	84.1 %	256,530	9,427,207
2011	1,452,090	7.05	215.9	93.0 %	84.0 %	306,184	8,470,112
2012	1,415,292	7.47	199.2	93.4 %	80.0 %	317,508	7,249,430
2013	1,422,055	7.94	187.2	93.0 %	75.6 %	338,231	6,464,623
2014	1,475,857	6.36	212.0	93.3 %	83.9 %	282,617	8,475,133
2015	1,418,132	5.32	194.0	93.6 %	86.9 %	227,228	7,692,811
2016	1,421,243	5.11	153.9	94.3 %	85.7 %	220,209	6,020,758
2017	1,041,199	5.05	148.3	95.1 %	86.4 %	160,510	4,282,339
2018	1,103,835	4.53	131.3	94.1 %	83.6 %	151,893	3,903,961
2019	1,290,239	4.09	120.6	94.0 %	86.2 %	159,515	4,317,292
2020	1,266,829	4.22	138.9	93.7 %	86.7 %	160,824	4,917,101
2021	1,304,807	4.49	100.6	94.3 %	86.7 %	176,439	3,587,092
2022	1,355,596	4.31	81.6	95.3 %	86.5 %	179,331	3,085,077
2023[2]	1,363,471	3.06	96.6	94.7 %	89.0 %	127,019	3,763,457
2024[3]	675,326	3.26	90.1	94.9 %	86.4 %	67,439	1,700,509
Total	**28,422,712**	**6.87**	**184.5**	**94.1 %**	**86.7 %**	**5,904,433**	**146,137,794**

Notes to the foregoing table:

1. *Acquisition by Yamana in late 2007*
2. *Acquisition by Pan American on March 31, 2023*
3. *Production as of June 30, 2024*

7 Geological Setting and Mineralization

The geological setting and mineralization of El Peñón are described in Robbins (2000) and in former technical reports of El Peñón (Pearson and Rennie (2008); Collins, Moore and Scott (2010)). The most recent update to the regional and district geology is outlined in the Aguas Blancas (Ferrando et al., 2013) and Augusta Victoria (Astudillo et al., 2017) geological maps by SERNAGEOMIN, the Chilean National Geology and Mining Service. This section is based on these reports and maps.

7.1 Regional Geology

El Peñón is located in the Central Depression (also known as the Central or Longitudinal Valley), that extends from the Chile-Peru border in the north to south-central Chile in the south. In the Atacama Desert, this valley corresponds in part to a Late Cretaceous to Paleogene volcanic belt that separates the Mesozoic magmatic arc, exposed in the Coast Mountains located to the west, from the Paleozoic and Triassic volcanic and sedimentary assemblages of the Domeyko Cordillera to the east.

The Late Cretaceous to Eocene volcanic and intrusive rocks within the Central Depression consist of an alkali-enriched calk-alkaline bimodal suite. Rocks consist of basaltic andesite to rhyolitic lavas, domes and tuffs, subvolcanic porphyritic intrusions, and granitoid stocks. This belt is host to many epithermal deposits and subvolcanic porphyry systems.

Late Cretaceous volcanic and volcaniclastic rocks were deposited in narrow fault-bounded extensional basins (84 Ma to 65 Ma). The margins of the basins were intruded by dioritic to monzonitic plutons. Compressive tectonism. Active from 65 Ma to 62 Ma, resulted in the inversion of the Late Cretaceous basins, uplift and erosion of the Late Cretaceous plutonic rocks to the west of the basin, and syn-tectonic magmatism along the basin-bounding faults.

Volcanism continued through the Paleocene and into the middle Eocene, with mafic to felsic magmatism depositing flows, volcaniclastic, epiclastic, and subvolcanic rocks. A sequence of late Paleocene felsic domes, tuffs, and subvolcanic rocks is associated with the hydrothermal veining and brecciation responsible for the mineralization at El Peñón. These rocks are overlain by Eocene volcanic and subvolcanic rocks (rhyolitic dome complexes, andesites and basalts) that host significant areas of sulphate or high-sulphidation alteration.

Deformation occurred in the Middle to Late Eocene with uplift of the pre-Cordillera, triggering copper porphyry emplacement further to the east. Low-angle offset of the El Peñón vein system occurred during this period.

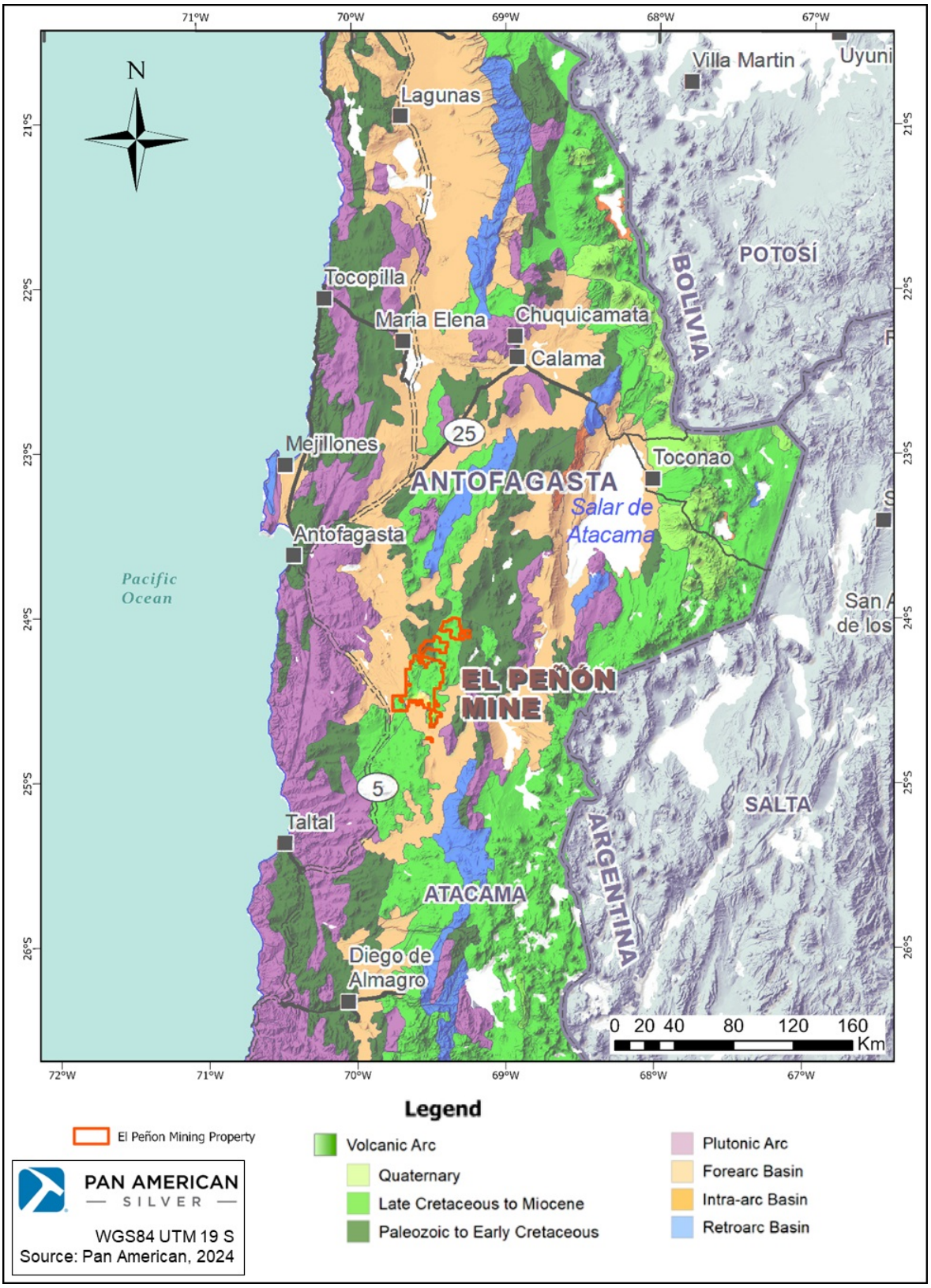

Figure 7-1: Regional geological setting

7.2 Local Geology

The area is underlain by a fault-bounded north-south trending panel of Paleocene to Eocene volcanic rocks. This panel is bounded to the east and west by rocks of Permian to Cretaceous age. Formation names and ages as reported below are from updated extensive recent work by the Servicio Nacional de Geología y Minería (SERNAGEOMIN), which resulted in significant changes from stratigraphic divisions reported in earlier reports (Robbins, 2000). The Cretaceous sequence (95-90 Ma) dominates and consists of volcanic and minor sedimentary rocks of the Paradero del Desierto Strata Formation and continental sedimentary and volcanic rocks Quebrada Mala Formation. The Paradero del Desierto strata outcrops northwest of the deposit area. The Upper Cretaceous Quebrada Mala Formation is present to the west, north, and northeast of El Peñón; it consists of volcanic rocks varying in composition from basaltic andesite to high-silica rhyolite; textures vary from flows to ignimbrites (Astudillo et al., 2017; Ferrando et al., 2013). Ignimbrites and other rock types formerly assigned to the Augusta Victoria Formation are now included in the Quebrada Mala Formation. Away from the deposit, these rocks are intruded by large granitic to dioritic stocks dated at between 40 and 50 Ma.

The geology of the El Peñón deposit area is characterized by the emplacement of a Paleocene to Lower Eocene dacite/rhyolite dome complex into volcanic and tuffaceous rocks of the Chile Alemania Formation (Figure 7-2).

The kilometre-scale Paleocene to Lower Eocene dome consists of several layer or sill-like masses of rhyolite, up to 200 m-thick, intercalated with units of pyroclastic rocks, volcaniclastic rocks, and volcanic flows of intermediate composition assigned to the Chile Alemania Formation (Ferrando et al., 2013; Figure 7-3); these are interpreted to provide important lithological controls for development of vein mineralization.

Extensive colluvium, alluvial gravel, and saline crust deposits cover the bedrock.

The main rock types in the area are described in Table 7-1. The local and property-scale geology of the El Peñón property is illustrated in Figure 7-2.

Table 7-1: Description of main lithologies

Age	Formation	Description
Cretaceous to Eocene	N/A	Diorite and monzonite intrusions
Paleocene to Lower Eocene	Chile Alemania Formation	Basalt, andesite, dacite, and rhyolite volcanic rocks. Flow breccia, pyroclastic rocks, and minor epiclastic volcanic sandstone and conglomerate. Prominent rhyolite to dacite domes and highly welded ignimbrites that host mineralization.
Upper Cretaceous	Quebrada Mala Formation	Andesitic lavas, breccia, volcaniclastic and epiclastic sandstone, rhyolite and dacite with characteristic quartz phenocrysts.
Lower Cretaceous	Estratos de Paradero del Desierto	Fluvial sandstone, volcanic breccia, andesitic lava, with some dacitic tuff.

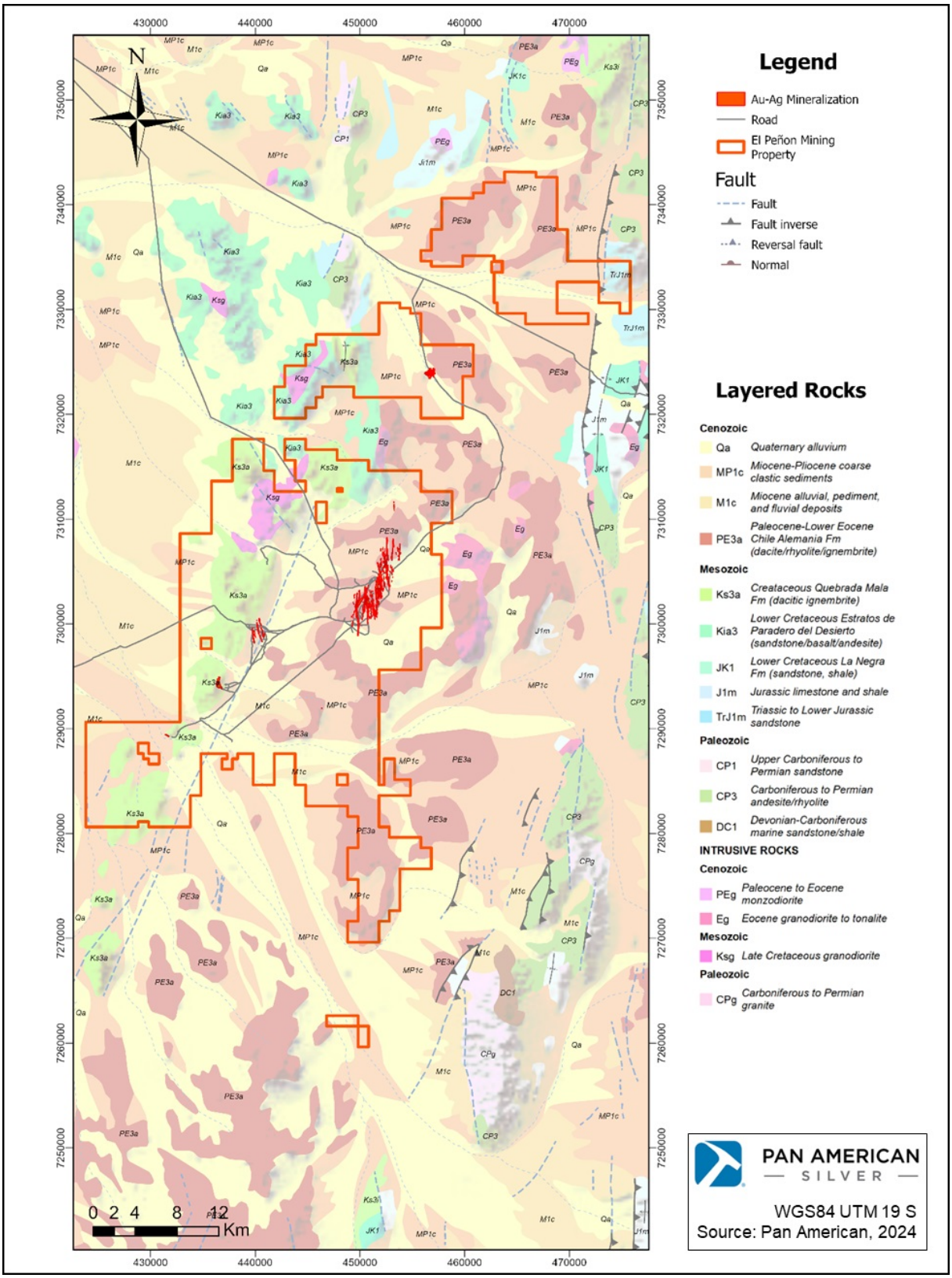

Figure 7-2: Local and property geology

7.3 Property Geology

Surface exposures at El Peñón are not common, and much of the mapping for the area is based on float. The property is mostly underlain by Late Cretaceous to Early Eocene pyroclastic flows and lavas, volcaniclastic breccias, and tuffs of basaltic to rhyolitic composition. Several thin Early Cretaceous rhyolite tuff and dacite to andesite flow layers occur in the northern part of the property. These rocks are intruded by Late Cretaceous diorite and monzodiorite stocks and dacite domes.

The rocks hosting gold-silver mineralization at El Peñón are near-horizontal to gently dipping Paleocene to Eocene basaltic to rhyolitic volcanic rocks. The stratigraphy consists of a lower sequence of volcanic breccias and andesitic to basaltic flows overlain by rhyolitic to dacitic pyroclastic rocks, dacitic to andesitic flows, and volcanic breccias. Rhyolitic intrusions, domes, and associated flows are intercalated with earlier volcanic units.

7.3.1 Structure

The distribution of Cretaceous and Eocene volcanic rocks is controlled by graben structures bounded by north-northeast-trending faults. These are steeply dipping regional-scale structures with displacements in the order of hundreds of metres. The dominant orientation of late dykes and many of the highest-grade mineralized faults is parallel to the bounding faults. Mineralized faults dip steeply eastward on the east side of the property and westward on the west side, in a distribution interpreted as a horst/graben extensional structure (Figure 7-3).

Most of the mining takes place along north-trending veins (dipping 75°-85° W or 55-80 E). A relatively minor amount of production has also taken place along northeast-striking structures dipping 65° NW. Locally, striking shallow-dipping faults dipping 20° SE displace the veins.

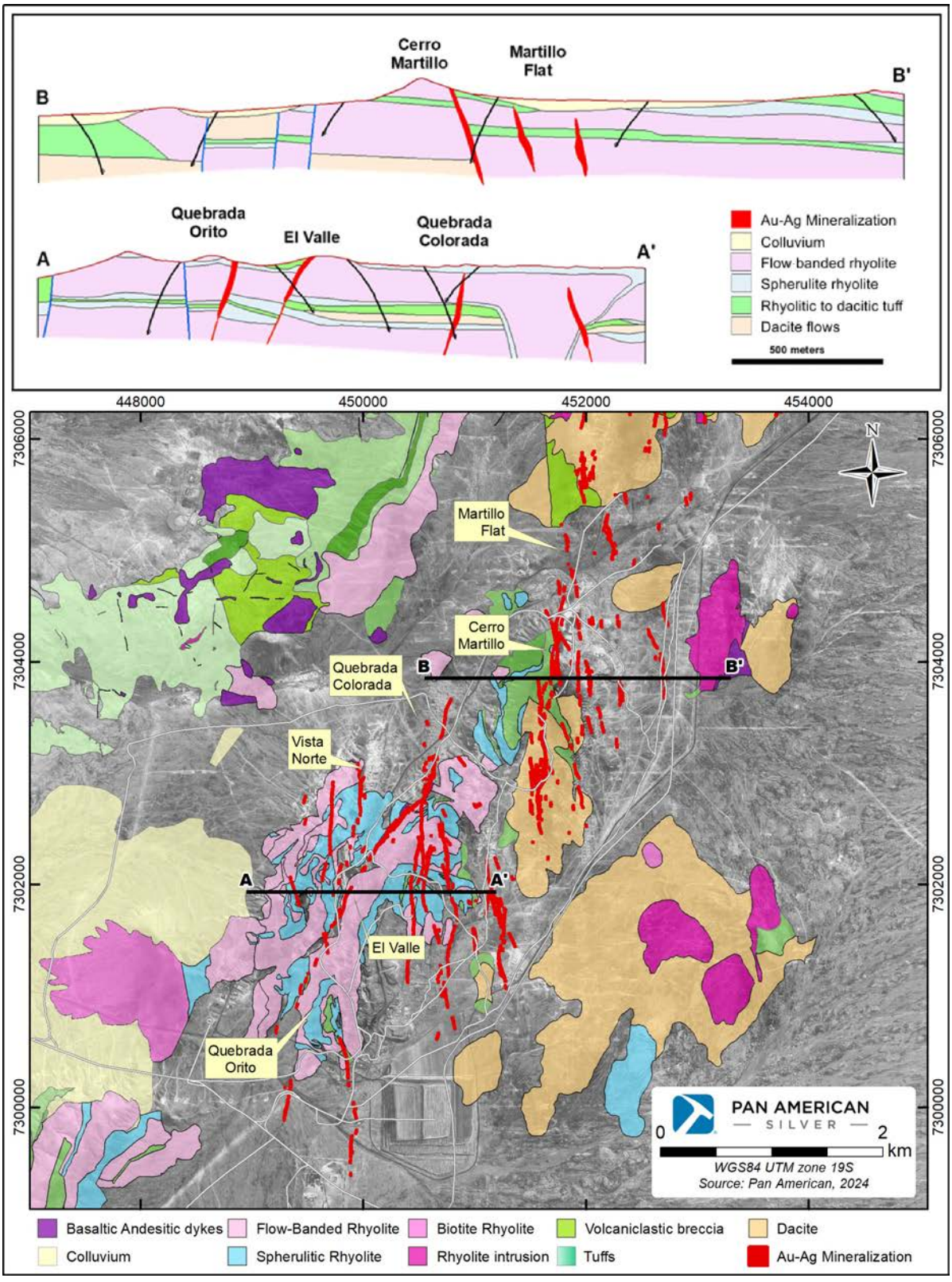

Figure 7-3: Schematic geological plan and cross-sections of the El Peñón deposit

7.4 Mineralization

The gold-silver mineralization at El Peñón is hosted in near-horizontal to gently dipping Paleocene to Eocene basaltic to rhyolitic volcanic rocks. The El Peñón deposit comprises many individual tabular and steeply dipping zones that are amenable to mining by both underground and surface methods. Vein thickness range from decimetre-scale to more than 20 m. The strike length of individual mineralized zones ranges from less than 1 km to 4 km and the down-dip extent reaches up to more than 600 m. Photographs depicting examples of the gold-silver mineralization at El Peñón are presented in Figure 7-4.

The known deposit consists of 21 main vein zones and many subsidiary veins. They are grouped in vein systems that have previously supported, currently support, or are planned to support surface and underground mining operations. These main mineralized veins are listed as follows:

- Abundancia/La Paloma
- Angosta
- Aleste/Bonanza
- Borde Oeste
- Cerro Martillo/Dorada
- Chiquilla Chica
- Dominador
- El Valle/Discovery Wash
- Esmeralda/Esperanza
- Fortuna
- Laguna
- Martillo Flat
- Pampa Augusta Victoria (PAV)
- Pampa Campamento/Sorpresa
- Playa
- Providencia
- Quebrada Colorada
- Quebrada Orito
- Tostado Sur
- Ventura
- Veta NW

The veins strike predominantly north-south and dip steeply to the east and west. A small proportion of the deposit is also hosted in fault zones striking north-northeast to northeast. Chiquilla Chica strikes northwest and dips steeply to the northeast.

Vein textures often display crustiform textures, although the highest-grade gold and silver mineralization is associated with massive banded quartz-adularia. Gangue minerals occur as open space filling as well as replacements of primary host rock mineral phases.

Gold and silver mineralization occurs as disseminated electrum, acanthite, native gold, native silver, silver sulphosalts, and silver halides; these minerals are hosted in a gangue dominated by quartz, adularia, carbonate, and clay. Precious metals occur mainly as micron- to millimetre-size subrounded and irregular grains of electrum. Two phases of electrum are present: a primary phase, which contains approximately 55 to 65% gold, and a secondary phase where the gold content is usually greater than 95%, due to supergene remobilization of silver.

Sulphide minerals are relatively rare, except at the northeastern portion of the El Peñón mine area. This paucity of sulphides may be due to oxidation, or to an initial overall low abundance of sulphides as would be expected in a

low-sulphidation environment. Iron- and manganese-oxyhydroxides are common, with only trace occurrences of relict sulphides. In order of abundance, trace amounts of pyrite, galena, sphalerite, chalcocite and covellite occur locally.

Age-dating of adularia from the veins at El Peñón suggests that mineralization took place at around 52 Ma to 53 Ma (Early Eocene). Two mineralization and alteration events have been defined from fluid inclusion studies. The principal mineralization event resulted from circulation of neutral reduced fluids that replaced host-rock phenocrysts and groundmass by quartz, adularia, albite, carbonate, clays, calcite, and chlorite. It also produced quartz-adularia flooding and breccia-filling in the vicinity of the veins. Another, more widespread, alteration process was derived from acidic oxidized hydrothermal solutions. This event resulted in the formation of lithocaps of quartz-alunite alteration, quartz-alunite breccia-filling, with minor copper and silver and little or no gold.

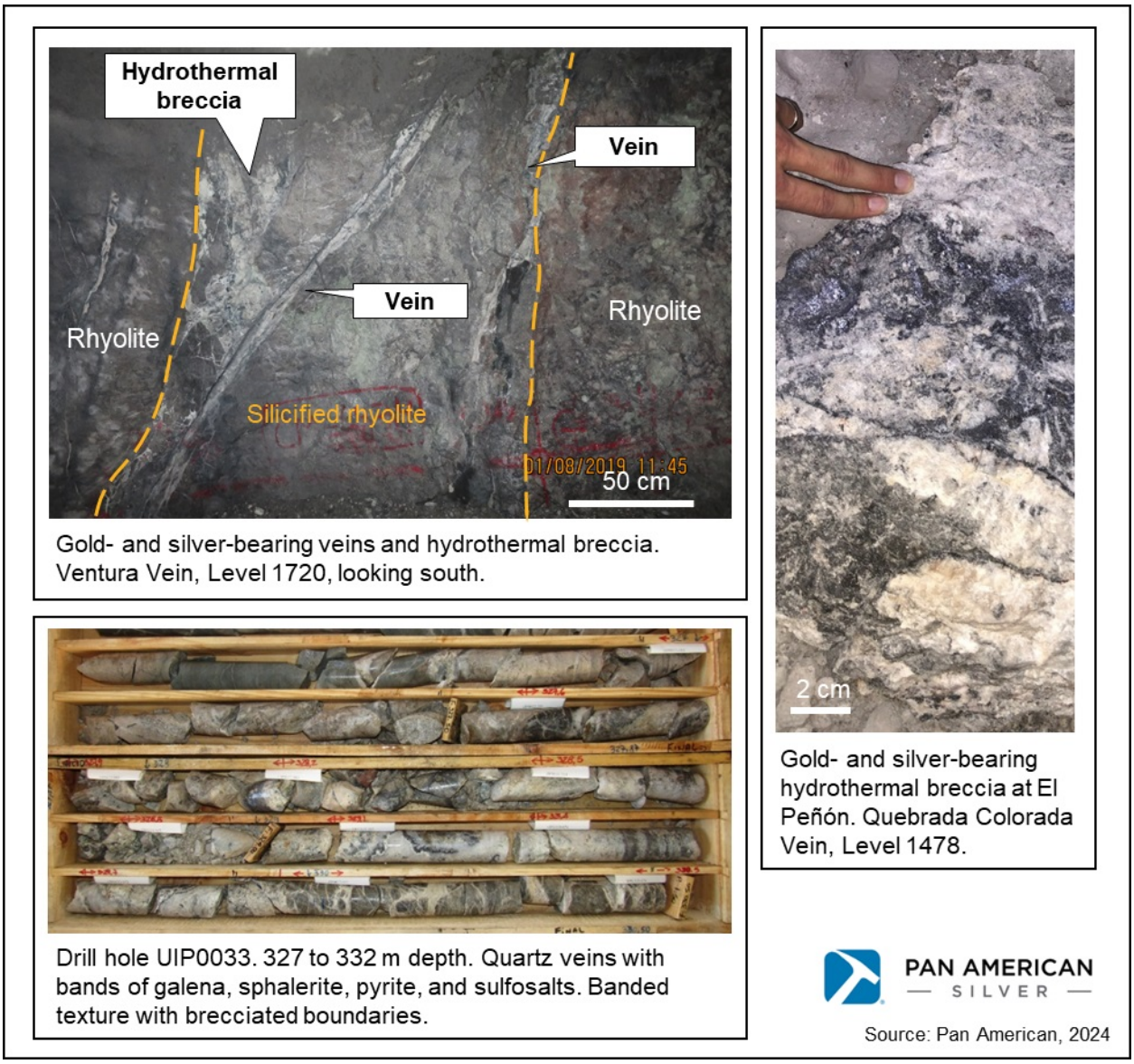

Figure 7-4: Photographs of mineralization in underground exposures and in drill core

8 Deposit Types

El Peñón is classified as a low- to intermediate-sulphidation epithermal gold-silver deposit associated with steeply dipping fault-controlled veins emplaced following rhyolite dome emplacement. Gold and silver mineralization consists of disseminations of electrum, native gold and silver, acanthite, silver sulphosalts, halides, and accessory pyrite occurring with quartz, adularia, carbonates, and clay minerals (Pearson and Rennie, 2008). Some veins host semi-massive to massive base-metal sulphide bands, mainly comprising coarse sphalerite and lesser galena. Epithermal deposits represent shallow parts of larger, mainly subaerial, hydrothermal systems (Figure 8-1) formed at temperatures as high as about 300 °C and at depths from about 50 to as much as 1,500 m below the water table (John et al., 2010).

Analogous epithermal gold-silver deposits set in an extensional-transtensional continental- margin arc are the Comstock Lode in Nevada, Martha Hill in New Zealand, Peñasquito in Mexico, and Hishikari in Japan (John et al., 2010).

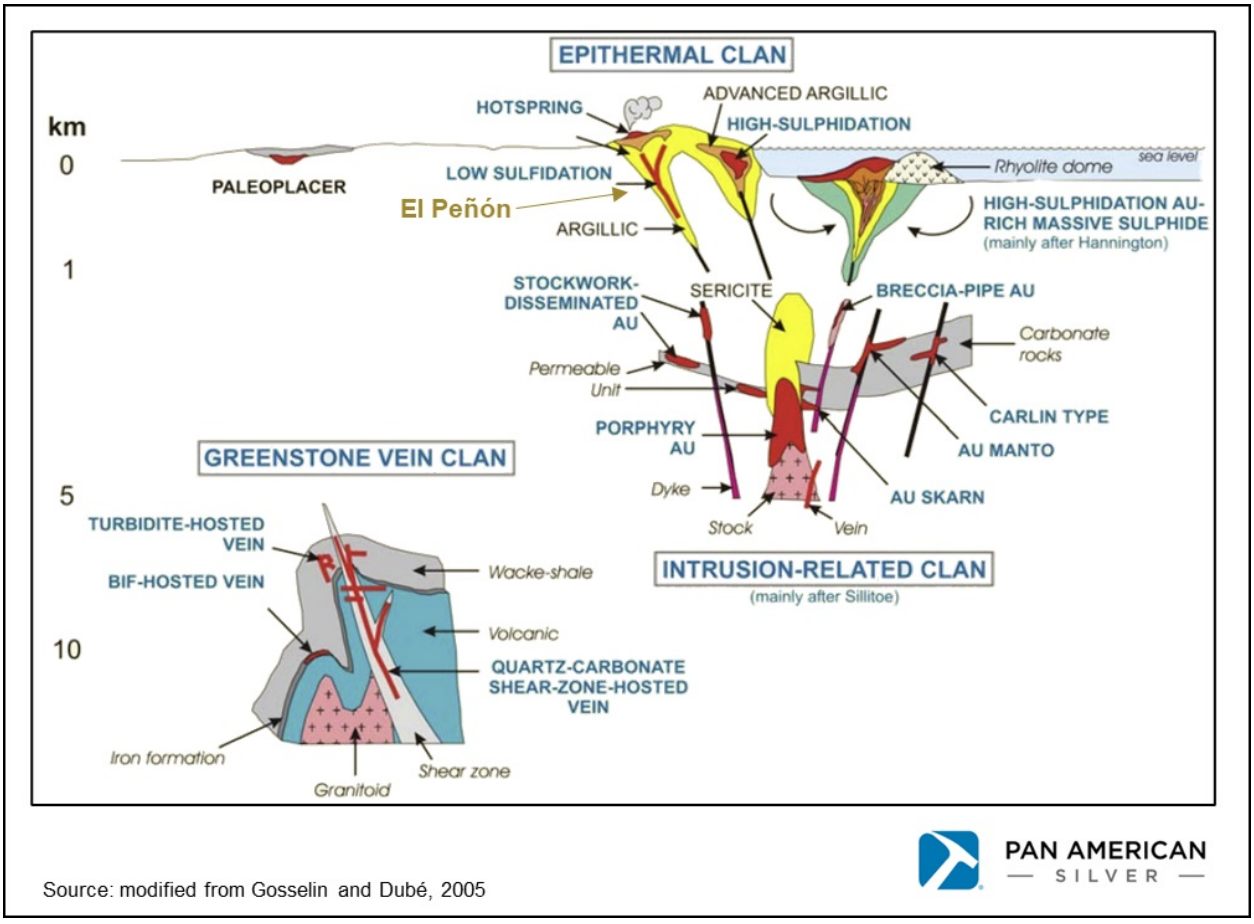

Figure 8-1: Generalized gold deposit types and environments

9 Exploration

Exploration work completed to date has defined 21 main mineralized zones and subsidiary veins, within 12 geological trends. Exploration drilling to extend the known structures continues to provide additional new resources such as the southern extension of Pampa Campamento and Pampa Sur in the El Peñón core mine area and Tostado Sur to the southwest. Geophysical anomalies and positive drill intersections remain to be followed up in all areas.

The significant exploration results at El Peñón that are material to this technical report were obtained by surface and underground core drilling. This work and resulting interpretations are summarized in Sections 10, 14 and 15 of this Technical Report.

9.1 Exploration Potential

Exploration work conducted at El Peñón can be divided into three categories: infill, expansion and district.

- Infill drilling is designed to upgrade inferred mineral resources to measured or indicated categories.
- Expansion (or step-out) exploration drilling aims designed to replace production by upgrading and extending known mineral resources with a combination of reverse circulation (RC) and core drilling methodology (ratio of approximately 70% RC to 30% core drilling).
- District exploration is meant to test the extension of little-known areas of mineralization or to discover new primary structures by testing targets identified in mapping, geochemistry, geophysics, or machine learning programs.

Infill targets in 2023-2024 included La Paloma, Martillo Flat, Pampa Campamento, El Valle, Chiquilla Chica, Tostado Sur. Expansion targets tested in 2024 included Pampa Sur, deeper portions of El Valle and deep extensions of Pampa Campamento, Chiquilla Chica, Tostado Sur, Sorpresa, and other veins. District targets tested in 2024 included Tostado Sur, Orito Sur and Santa Laura.

Exploration results at El Peñón continue to highlight the expansion potential of the mine and the ability to replace depletion of mineral reserves and mineral resources so as to extend the life of the mine past its current mineral reserve base.

Additional details on sampling methods and sampling quality of exploration work at El Peñón are provided in Section 11 of this Technical Report.

10 Drilling

Systematic testing of the gold-silver-bearing zones was started by Minera Meridian in 1993. The property has been continuously drilled since then to expand the mineral resources and replace depletion of mineral reserves. To the end of June 2024, over 3,700,000 m have been drilled at El Peñón including the core mine and surrounding areas. This includes 69,110 m completed in the first half of 2024 (22,245 m exploration and 46,865 m infill drilling), with intersections at El Valle, Pampa Campamento, Pampa Sur, La Paloma, Chiquilla Chica and elsewhere.

Figure 10-1 illustrates the location of drilling in the El Peñón core mine area. Significant exploration results and interpretations obtained from surface and underground drilling are summarized in Sections 14 and 15 of this Technical Report.

Table 10-1: Exploration and infill drilling by year and type, 1993 to June 30, 2024

Year	Exploration (m)	Infill (m)	Total (m)
1993	2,507	—	2,507
1994	16,606	—	16,606
1995	51,451	—	51,451
1996	48,370	—	48,370
1997	85,248	—	85,248
1998	73,941	—	73,941
1999	58,561	48,325	106,886
2000	49,388	134,994	184,382
2001	101,440	80,905	182,345
2002	84,753	56,573	141,326
2003	87,581	39,072	126,653
2004	99,674	58,498	158,172
2005	107,443	52,851	160,294
2006	72,526	107,887	180,413
2007[1]	113,507	70,534	184,041
2008	66,917	65,911	132,828
2009	93,690	22,592	116,282
2010	69,470	77,724	147,194
2011	78,746	49,919	128,665
2012	65,401	57,937	123,338
2013	70,323	26,440	96,763
2014	68,582	57,262	125,844
2015	40,950	105,807	146,757
2016	95,701	70,397	166,098
2017	29,240	82,875	112,115
2018	31,179	66,630	97,809
2019	45,325	69,885	115,210
2020	71,263	59,035	130,298
2021	83,576	47,703	131,279
2022	76,373	41,874	118,247
2023[2]	41,948	20,149	62,097
2024[3]	22,245	46,865	69,110
Total	**2,103,925**	**1,618,644**	**3,722,569**

Notes to the foregoing table:

1. *Acquisition by Yamana in late 2007*
2. *Acquisition by Pan American on March 31, 2023*
3. *Drilling as of June 30, 2024*

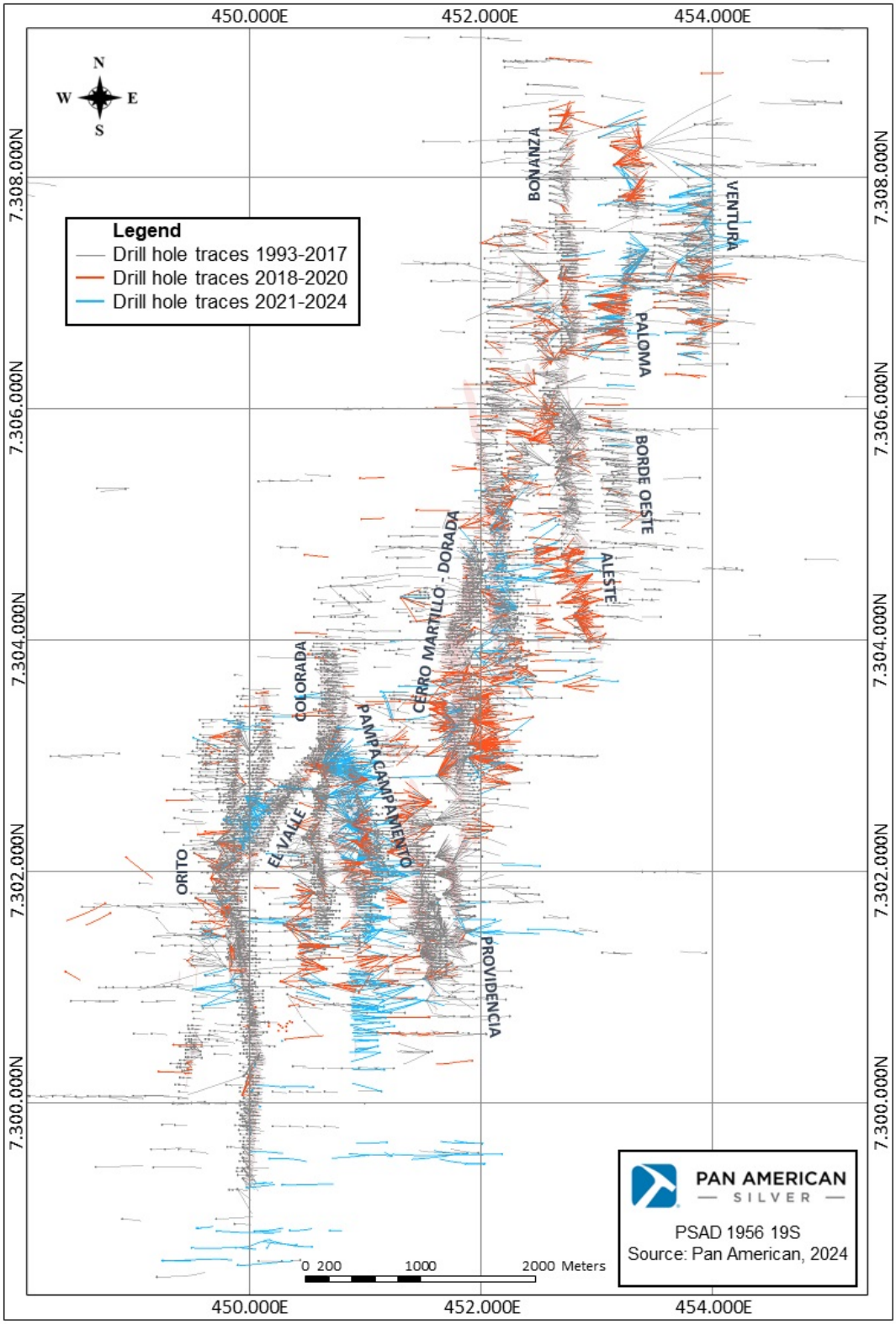

Figure 10-1: Plan view of drillholes in El Peñón core mine area

Exploration work is continually conducted at El Peñón to develop drill targets to replenish mineral reserves. Drilling is carried out on a 60 x 60 m grid; infill drill holes are based on a 30 x 30 m grid pattern. Preliminary mineral resource estimates are made using the drill information. Later, the mineral resource models are refined using chip sample assays collected from the underground development. Underground definition core drilling is completed on a 30 x 30 m spacing, and short test drill holes are drilled from underground to locate veins and parallel structures and to assist with mining and grade control.

Surface drilling is mostly collared with RC and converted to core drilling prior to intersecting the mineralized zone. At least one hole per 30 m section is drilled as a core drill hole for its entire length. Core size is HQ (63.5 mm core diameter), sometimes reduced to NQ (47.6 mm core diameter). RC holes are drilled with 146 mm diameter equipment, which produces a hole approximately 152 mm in diameter. Drilling on the mine property from 2018 to 2024 was performed by AKD Internation Chile S.A., Basalto Drilling SpA and ICEM S.A.

The procedures used during drilling programs are as follows:

- The collar locations of all drill holes are surveyed and marked by El Peñón crews.
- Directional deviation (for both azimuth and inclination) is surveyed in each drill hole using a REFLEX multi-shot survey instrument by IMDEX Ltd for underground drill holes and using a gyroscope instrument by Axis Mining Technology for drill holes drilled from surface.
- Lithological logging is done on drill core and RC chips. Geotechnical observations are made by company geologists and technicians. All information is recorded on digital tablets using commercial software and depicts all downhole data. This includes recording the following items as appropriate for the drilling method:
    - Drill type
    - Collar coordinates
    - Core diameter
    - Downhole inclination
    - Percent core recovery record
    - Rock Quality Designation (RQD) measurements
    - Lithologic contacts
    - Descriptive geology
    - Core angles
    - Intensity of various alteration types
    - Structural features, such as foliation, fractures, and brecciated zones
    - Recording of mineralization, such as quartz type, sulphide type and content
    - A photographic record of the core is taken with a digital camera

- And currently, magnetic susceptibility information and alteration terraspec to some representative drill hole of the area.

Drill core recoveries are generally good (>95%) but moderately lower at the Quebrada Orito and El Valle veins (>85%). The lower recovery in those veins, however, does not have significant impact on the quality of the samples.

Collars of surface drill holes are preserved by a PVC casing. A wooden stake is placed close to each collar; it is affixed with metal plates, on which the code, azimuth, dip, and other relevant drill hole information is recorded.

The qualified person responsible for this section of the Technical Report is of the opinion that the logging and recording procedures are comparable to industry standards. There are no other known drilling, sampling, or recovery factors that could materially impact the accuracy and reliability of the results.

11 Sample Preparation, Analyzes, and Security

Analytical samples include both drill core and channel samples. The drill core samples are generated from exploration and infill drilling programs that are conducted on surface and underground; they are used for target generation and estimation of mineral resources and mineral reserves. The channel samples come from underground grade-control channels in development drifts; they are used for short-term forecasting and grade control as well as for estimation of mineral resources and mineral reserves.

11.1 Sample Preparation and Security

Sample preparation and analysis of drill core and underground channel samples at El Peñón are carried out according to a series of standard operating procedures (SOPs) listed in Table 11-1 and are described below.

Table 11-1: Sample preparation and analytical standard operating procedures

Procedure Number	Description
GE-P06_R02	DDH sampling
GE-P11_R02	Results Validation
GE-P14_R01	Quality Control of Exploration Samples
GE-P37_R02	Quality Control of Production Samples
GE-P03_R02	Sampling and splitting samples in RC Drill Holes
GE-I02_R02	Creation of Dispatch Forms
GE-P04_R03	Underground sampling
GE-P07_R02	QA/QC Monthly Report
GE-P08_R02	CRM Control
GE-P09_R02	Samples Control
GE-P36_R02	Treatment of Non-Conforming Products

11.1.1 Sampling of Drill Core

Sampling of Exploration Drill Holes

For exploration drill holes, the complete length of the drill hole is sampled and sent for analysis. The sample lengths are determined by the presence or absence of quartz veins or veinlets.

In mineralized zones of Hydrothermal Breccia (HyB) or Massive Quartz Vein (MQV) with abundant sulphides, the minimum sample length is 0.35 m, and the maximum sample length is 0.50 m. For drill core without veins or sulphides and in exploration areas, the maximum sample length is 2 m.

The exploration drill cores are cut in half along the longitudinal axis, using a hydraulic core splitter. Half of the core is placed in previously labelled plastic bags; the other half is left in the core box as a reference.

Sampling of Infill Drill Holes

For infill drill holes, the minimum and maximum sample lengths in mineralized zones are 0.30 and 0.50 m, respectively. For each interval, the full drill core is broken into sampling intervals using a hammer and placed in a previously labelled plastic sampling bag.

Sample Shipments

The bagged samples are placed in plastic bins to be sent to the laboratory along with the submittal form (Dispatch Order).

11.1.2 Underground Channel Sampling

Underground face sampling of underground faces is carried out systematically by production geologists and technicians in the drifts after each round. After the face is washed and scaled, the sample is taken from left to right along a line of constant elevation, generally 1.5 m above the floor. The sample location is determined by measuring the distance and azimuth from the nearest bolt left by the surveying team.

Geological contacts (lithology, alteration, mineralization, structures, etc.) are identified and sampling intervals respect these contacts. Once the limit of the samples has been defined, they are marked with red spray paint. The area to be sampled is then delimited by a rectangle. In mineralized zones mapped as MQV or HyB, the maximum sample length is 1.0 m, whereas in host rocks the maximum sample length is 2.0 m.

Sampling is done with a rock hammer or with a mallet and chisel. The rock fragments that are detached from the wall are collected in a bag on the ground and then placed in plastic bags properly identified with correlated numbering tags. The samples are then transported to the El Peñón mine laboratory for preparation and assaying.

The results of the underground channel samples are used for short-term forecasting and grade control as well as in the grade estimation process for mineral resource models.

In the opinion of the qualified person responsible for this section of the Technical Report, the sampling methodologies at El Peñón conform to industry standards and are adequate for use in mineral resource estimation.

11.1.3 Preparation and Analytical Procedures

Primary Exploration and Infill Drilling Analytical Laboratories

From March 2020 to June 1, 2024, the Geoassay Group Ltda. (Geoassay) laboratory in Antofagasta, Chile, was the primary laboratory for exploration and infill drilling samples. Geoassay is a local laboratory, independent of Pan American and certified to ISO/IEC 17025 standards.

Since June 1, 2024, a new contract was started with Bureau Veritas as the primary laboratory for exploration and infill drilling samples. The headquarter is located in the La Negra sector, Antofagasta, Chile. Bureau Veritas is an international laboratory part of the Bureau Veritas SA group, independent of Pan American and certified to ISO/IEC 17025 standards.

Laboratory for Underground Channel Samples

Samples from underground channels and some infill drilling samples are assayed at the in-house El Peñón mine laboratory. This laboratory is owned and operated by Pan American and is certified to ISO/IEC 17025 standards.

Umpire Laboratories

Umpire laboratory check assays for channel samples were carried out at the Geoassay laboratory in Antofagasta, Chile. Additionally, in April 2022, a few laboratory check assay samples were sent to Bureau Veritas laboratory in Coquimbo, Chile.

For exploration samples the Bureau Veritas laboratory was used as an umpire laboratory from 2021 to June 2024.

Analytical Procedures

The following procedures are used for channel sample preparation and analysis at Geoassay, Bureau Veritas, and El Peñón laboratories:

- A submittal form (or Dispatch Form) is filled out by an El Peñón geologist or technician and delivered with the samples to the El Peñón or Geoassay / Bureau Veritas laboratories.
- Samples are sorted, logged in the laboratory database (LIMS), weighed, and dried in a furnace at 105 °C.
- The complete sample is crushed to 85% less than # 10 mesh (passing 2 mm) and split to obtain 1 kg of material.
- A 1 kg sample is pulverized at 95% through # 140 mesh (passing 0.105 mm).
- The laboratories clean the crushing and grinding instruments with compressed air between samples, insert sterile quartz every 10 samples, and perform a granulometric control of crushing and pulverization on at least 3% of the samples.
- Two pulp packages of 250 g each (labelled A and B) are prepared at Geoassay and Bureau Veritas. The master pulp (pulp A) is used for the analysis. Remaining material from pulp A is combined with pulp B, which is returned to site for storage. At the El Peñón mine laboratory, only a single package of 250 g pulp is prepared and used for analysis.
- To determine the gold content, the samples are analyzed by fire assay (FA) on 30 g samples. Fluxes, lead oxide litharge, and silver are mixed and fired at 1,100 °C to 1,170 °C for 50 to 60 minutes to separate the precious metals as a molten lead metallic phase. The samples are removed from the oven and poured into moulds. Next, the slag is removed from the cooled lead button and the button is placed in a cupel and fired at 920 °C to 960 °C for an hour to oxidize all the lead and make a precious metal bead.
    - The cupels are removed from the furnace and the beads are separated by acid digestion using nitric and hydrochloric acid to dissolve the precious metals into solution.
    - At Geoassay, and Bureau Veritas laboratories the sample solutions are analyzed by atomic absorption spectrometry (AAS) and samples containing more than 5 g/t gold are finished by gravimetry.
    - At the El Peñón mine laboratory, the analysis is finished by gravimetry.
- The silver determination is done by AAS at Geoassay, and Bureau Veritas laboratories and by fire assay at the internal El Peñón mine laboratory.
    - At Geoassay, and Bureau Veritas, a 2 g sample is first digested in a solution of four acids (nitric, hydrochloric, perchloric, and hydrofluoric). The digested solution is brought to volume with hydrochloric acid for the quantification of the analytes through AAS. If the sample contains more than 220 g/t silver, the silver content is quantified by gravimetry.
    - At the El Peñón mine laboratory, the silver is determined in a manner similar to gold, using fire assay and finished by gravimetry.

- Some samples considered to contain coarse gold are analyzed by metallic screen.
    - For screened metallic assays, the totality of the coarse fraction is assayed, and an aliquot of the fine fraction is analyzed. The gold concentration of the entire sample is determined by weighted average.

In addition, the laboratories perform granulometric control of the crushing and pulverization of 3% of the samples.

At the El Peñón mine laboratory, analytical batches contain 24 samples, described as follows:

- 18 client samples
- 1 preparation blank (quartz)
- 2 CRMs
- 1 analytical blank

The laboratory performs granulometric controls of the crushing and pulverization every 20th processed samples.

The qualified person responsible for this section of the Technical Report is of the opinion that the sample preparation, analytical, and assay procedures of channel samples and drill core samples used for production and exploration are consistent with industry standards and adequate for use in the estimation of mineral resources.

11.2 Quality Assurance/Quality Control

A comprehensive QA/QC program is employed for the El Peñón exploration drilling programs, infill drilling programs, and grade control channel samples. The program applied the following steps to monitor the accuracy and bias of the gold and silver:

- Insertion of CRMs.
- Monitoring of contamination in preparation and analysis by inserting blanks in the preparation and analytical sampling streams.
- Control of the precision by taking duplicates during preparation and analysis.
- Sending pulp samples for umpire check assaying at secondary laboratories.

Protocols are in place for describing the insertion frequency and the type of QA/QC samples as well as failure limits for each type of control sample. The insertion protocol for control samples states that one blank pulp, one coarse blank and two CRMs per batch of 75 samples should be inserted. This results in an insertion rate of quality control samples for exploration and infill drilling of approximately 5%. There are also established criteria to be followed in case of failure when a failure is flagged in the QA/QC database. The results from the QA/QC program are reviewed and monitored by a geologist who presents the results in monthly reports.

Table 11-2: Lower detection limits and acceptance limits for blanks

Laboratory	Analyte	Method	Detection Limit (g/t)	Blank Acceptance Limit (DL x 10) (g/t)
El Peñón	Au	FA Grav	0.2	2
	Ag	FA Grav	1	10
Bureau Veritas	Au	FA AAS	0.02	0.2
		FA Grav		
	Ag	MA AAS	0.5	5
		Grav		
Geoassay	Au	FA AAS	0.02	0.05
		FA Grav	0.2	
	Ag	MA AAS	0.5	5
		Grav	10	

Table 11-3: Summary of analytical quality control data produced between December 2020 and June 2024

			December 2020 to June 2024								
			Production		Exploration				Total		
			Peñón Laboratory		Geoassay		Bureau Veritas		All Laboratories		
			Samples	(%)	Samples	(%)	Samples	(%)	Samples	(%)	Source
Sample Count			**116,363**		**212,279**		**317**		**328,959**		
Blanks			**4,290**	**3.7 %**	**6,003**	**2.8 %**	**21**	**6.6 %**	**10,314**	**3.1 %**	
Pulp Blank			1,890		1,809		—		3,699		CDN Laboratories
Sterile Blank			2,400		1,975		3		4,378		Core from previous drilling
Quartz Blank			—		2,219		18		2,237		Winkler milled quartz
CRM	**Au (g/t)**	**Ag (g/t)**	**2,363**	**2.0 %**	**2,723**	**1.3 %**	**12**	**3.8 %**	**5,098**	**1.5 %**	
EP_STD7	0.52	48.6	—		676		—				Geoassay from El Peñón material
EP_601b	0.78	50.1	2		504		3				OREAS
EP_STD8	1.91	86.6	—		191		—				Geoassay from El Peñón material
EP_602b	2.29	119	5		404		4				OREAS
EP_STD9	3.41	173.1	30		520		—				Geoassay from El Peñón material
EP_STD10	8	341	4		70		—				Geoassay from El Peñón material
EP_STD11	13.11	501.8	170		42		—				Geoassay from El Peñón material
IN-55	13.37	429	2,105		240		5				INTEM from El Peñón material
EP_STD12	25.54	923	47		76		—				Geoassay from El Peñón material
Umpire Check Assay Bureau Veritas			**58**		**1,613**		**—**		**1,671**		Inter-laboratory check
Umpire Check Assay Geoassay			**748**		**—**		**—**		**748**		Inter-laboratory check
QA/QC Samples			**7,459**	**6.4 %**	**10,339**	**4.9 %**	**6,299**	**4.8 %**	**5,749**	**4.7 %**	

11.2.1 Certified Reference Materials

Two CRMs (or standards) are inserted for every 75 samples submitted to the primary laboratories (Geoassay and Bureau Veritas laboratories) to control accuracy and bias. The majority of reference materials have been manufactured with material from El Peñón. The CRMs have been prepared by the National Institute of Technology, Standardization and Metrology (INTEM) in Chile, and Geoassay Group, both in Antofagasta, Chile. Each CRM is provided with a certificate listing the round-robin assay results and the expected standard deviation. These CRMs are individually packed in paper envelopes (100 to 120 g per envelope), inserted in plastic bags, and vacuum sealed.

The remaining two certified reference materials were purchased from Ore Research & Exploration Pty Ltd in Australia.

El Peñón staff submitted 5,098 CRMs between December 2020 and June 2024 (Table 11-2); of these, 2,363 to be analyzed at the El Peñón laboratory together with production samples; 2,723 at Geoassay; and 12 at Bureau Veritas. Results from commonly used CRMs at Geoassay are presented in Z-score charts for gold and silver Figure 11-1 and Figure 11-2 respectively.

Project	El Peñón	Statistics	EP_STD7	EP_STD8	EP_STD9	EP_STD 10	EP_STD11	EP_STD12	EP_IN55	EP_601b	EP_602b
Data Series	Dec 2020 - June 2024 CRMs	Sample Count	676	191	520	70	42	76	240	504	404
Data Type	Exploration Samples	Expected Value	0.520	1.910	3.410	8.000	13.110	25.540	13.370	0.780	2.290
Commodity	Au (g/t)	Standard Deviation	0.047	0.108	0.245	0.447	0.528	1.045	0.505	0.021	0.094
Laboratory	Geoassay Laboratory	Observed Average	0.511	1.888	3.423	8.203	13.363	25.603	13.403	0.767	2.244
Analytical Method	Fire Assay - Gravimetric	Mean Bias %	-0.3%	-1.7%	-0.8%	1.3%	-1.5%	-0.2%	0.2%	-0.7%	0.0%
Detection Limit	0.02 g/t Au	Outside 3 Std. Dev.	0.4%	0.0%	0.4%	0.0%	0.0%	0.0%	0.0%	1.2%	0.5%
Source	PAS, September 2024										

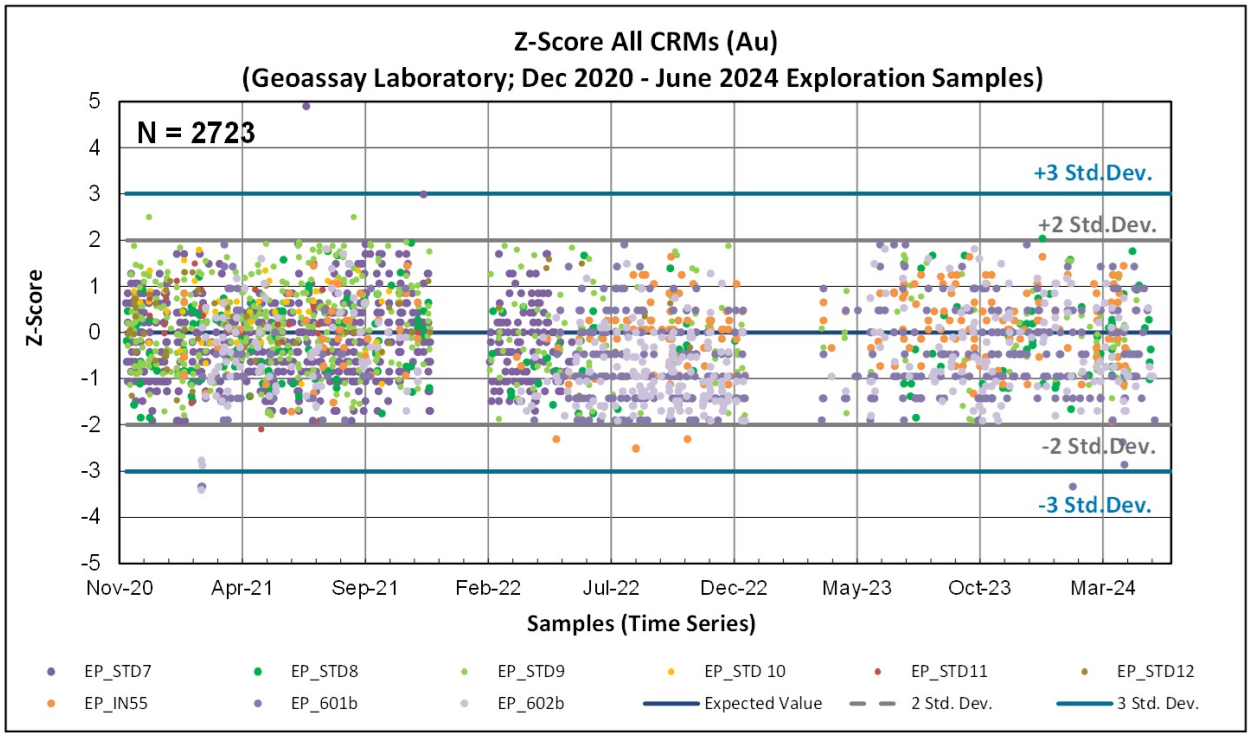

Figure 11-1: Z-score for all CRMs for gold analyzed at Geoassay, December 2020 to June 2024

Project	El Peñón	Statistics	EP_STD7	EP_STD8	EP_STD9	EP_STD 10	EP_STD11	EP_STD12	EP_IN55	EP_601b	EP_602b
Data Series	Dec 2020 - June 2024 CRMs	Sample Count	676	191	520	70	42	76	240	505	403
Data Type	Exploration Samples	Expected Value	48.64	86.60	173.11	341.00	501.78	923.04	429.00	50.10	119.00
Commodity	Ag (g/t)	Standard Deviation	2.09	3.63	4.32	16.90	23.37	45.38	12.00	1.74	4.00
Laboratory	Geoassay Laboratory	Observed Average	48.51	85.14	171.77	345.70	494.04	921.20	429.76	49.73	119.03
Analytical Method	Fire Assay - AAS/Gravimetric	Mean Bias %	-0.3%	-1.7%	-0.8%	1.4%	-1.5%	-0.2%	0.2%	-0.7%	0.0%
Detection Limit	0.5 g/t Ag	Outside 3 Std. Dev.	0.1%	0.5%	0.6%	0.0%	2.4%	0.0%	4.6%	0.0%	0.5%
Source	PAS, September 2024										

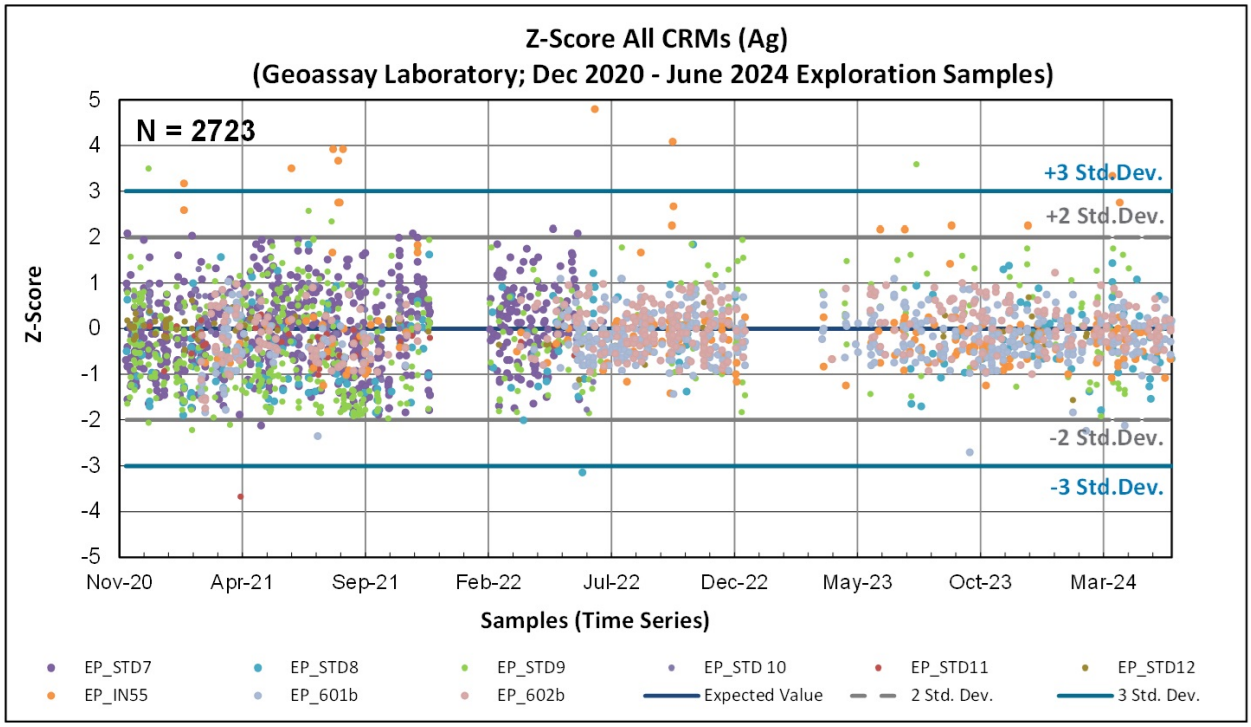

Figure 11-2: Z-score for all CRMs for silver analyzed at Geoassay, December 2020 to June 2024

11.2.2 Blank Samples

Three types of blank samples are inserted that are known to contain gold and silver grades that are less than the detection limit of the analytical methods. The first type consists of pulp blanks purchased from CDN Resource Laboratories Ltd. in British Columbia, Canada. Insertion of this type of control samples was discontinued at the end of 2023 following the Pan American's guidelines, increasing the blank controls that monitor contamination during the preparation and analysis.

The second type consists of sterile core from previous drilling campaigns that assayed below detection limit for gold and silver. The third type consists of coarse quartz purchased from Winkler Ltda. in Antofagasta, Chile, with granulometry within 2.00 and 2.83 mm.

The insertion protocol established that one coarse quartz blank should be inserted per batch of 75 samples. In addition, a sterile blank should be inserted immediately after an expected mineralized zone. Between 2020 and 2024, El Peñón staff, submitted 4,290 blank samples with channel samples to the El Peñón laboratory; 6,003 with exploration drill samples to Geoassay and 21 to Bureau Veritas. These correspond to 3.7%, 2.8% and 6.6% of the samples analyzed at each laboratory, respectively (Table 11-3). The criteria for acceptance or rejection of results due to contamination of all the blank control samples is ten times the lower detection limit (DL x 10) (Table 11-2). Results from select blanks at two primary laboratories are shown in Figure 11-3. Less than 1% of the blank samples

for each variable in both blanks show results above the upper acceptable limit, which indicates no significant contamination is present in the sample preparation procedure.

		Laboratory	El Peñón		Geoassay			
		Control Samples	Sterile		Quartz		Sterile	
Project	El Peñón	Statistics	Au	Ag	Au	Ag	Au	Ag
Data Series	Dec 2020 - June 2024	Sample Count	2,400	2,400	1,975	1,975	2,219	2,219
Data Type	Drill Core samples	Expected Value	0.02	0.5	0.02	0.5	0.02	0.5
Commodity	Au (g/t); Ag (ppm)	Observed Average	0.202	1.072	0.011	0.309	0.021	0.652
Laboratories	El Peñón & Geoassay	Standard Deviation	0.048	0.315	0.014	0.176	1.214	7.662
Detection Limit	El Peñón: Au 0.2 g/t; Ag 1g/t Geoassay: Au 0.02 g/t; Ag 0.5 ppm	Upper Limit (10xDL)	0.04%	0.00%	0.10%	0.20%	0.50%	0.68%
Source	PAS, September 2024							

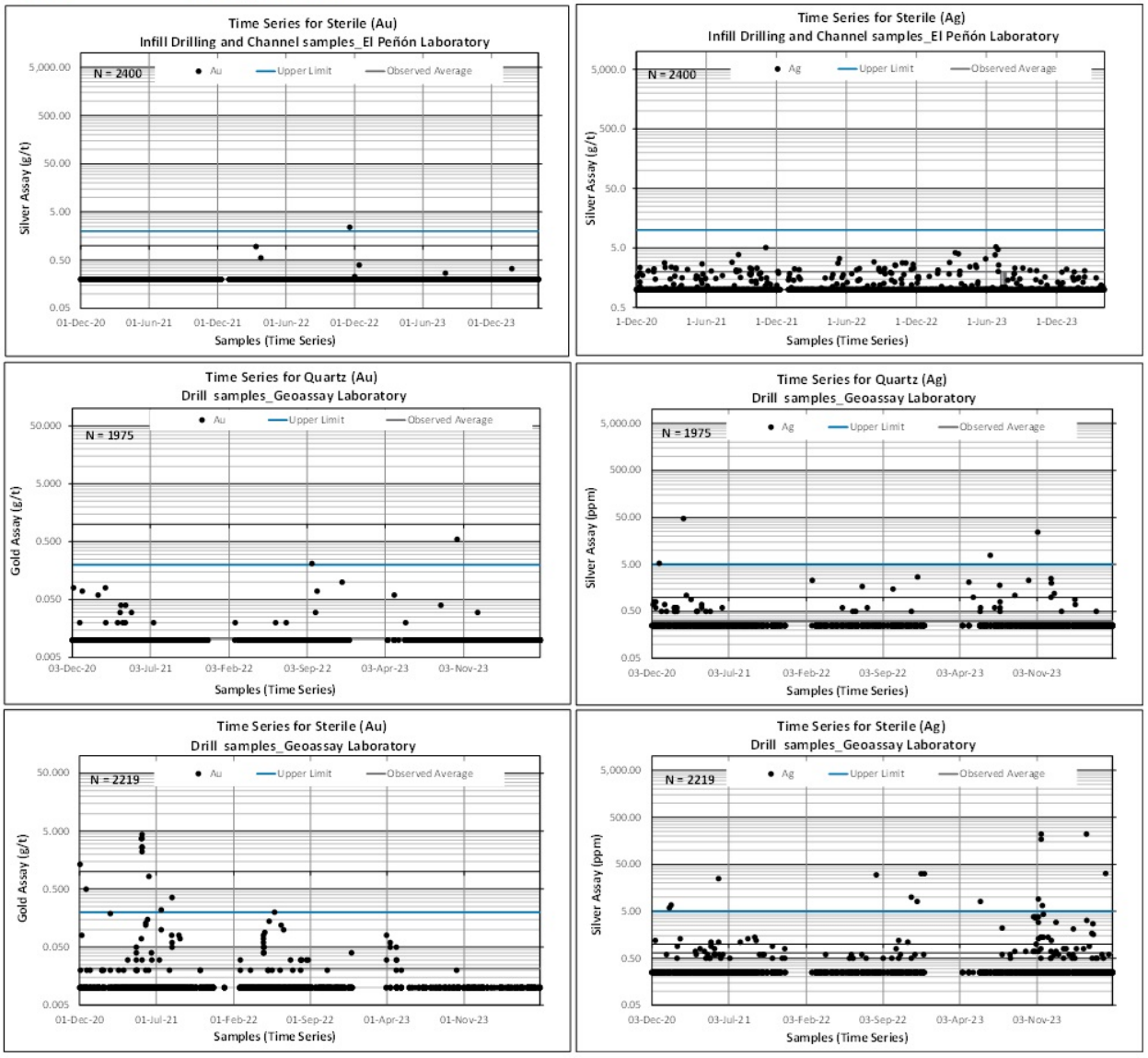

Figure 11-3: Time series plots: gold and silver assays of select blanks by type and laboratory

11.2.3 Umpire Laboratory Check Assays

The primary laboratories are requested to send pulp samples, as selected by El Peñón staff, on a monthly basis to the secondary laboratory as defined in Section 11.1.3, for umpire check assays. Analysis of these pulps is useful for measuring the precision of the analytical process of the primary laboratories, including the in-house mine laboratory, assuring a better degree of accuracy and control on assays. A total of 748 channel pulp samples were sent between December 2020 and April 2023 for check assay to Geoassay and 58 to Bureau Veritas (Table 11-3). In the same period, 1,613 drill hole samples first assayed at Geoassay were sent to Bureau Veritas for check. The plots indicate no significant bias in results between the assay laboratories.

Results of umpire check assays comparing Geoassay and Bureau Veritas are shown in Figure 11-4.

			Au		Ag	
Project	**El Peñón Mine**	**Statistics**	**Original**	**Duplicate**	**Original**	**Duplicate**
Data Series	December 2020 - June 2024	**Sample Count**	1,613	1,613	1,613	1,613
Data Type	Exploration Drill hole samples	**Minimum Value**	0.010	0.005	0.250	0.250
Commodity	Au in g/t	**Maximum Value**	304	289	4,982	5,165
Analytical Method	FA AAS; MA AAS	**Samples > 10DL**	1,501		1,345.00	
Detection Limit	0.02 g/t Au; 0.5 g/t Ag	**Pairs +/- 20% RPD if > 10DL**	67.0%		84.6%	
Original Dataset	Original Assays	**Precision = 2xCV**				
Paired Dataset	Check Assay	**Precision 10DL to 5 g/t Au - 10g/t Ag**	45.1%		33.6%	
		Precision 5 to 15 g/t Au - 10 to 220 g/t Ag	46.0%		25.1%	
Source	PAS, September 2024	**Precision > 15 g/t Au - >220 g/t Ag**	36.1%		19.6%	

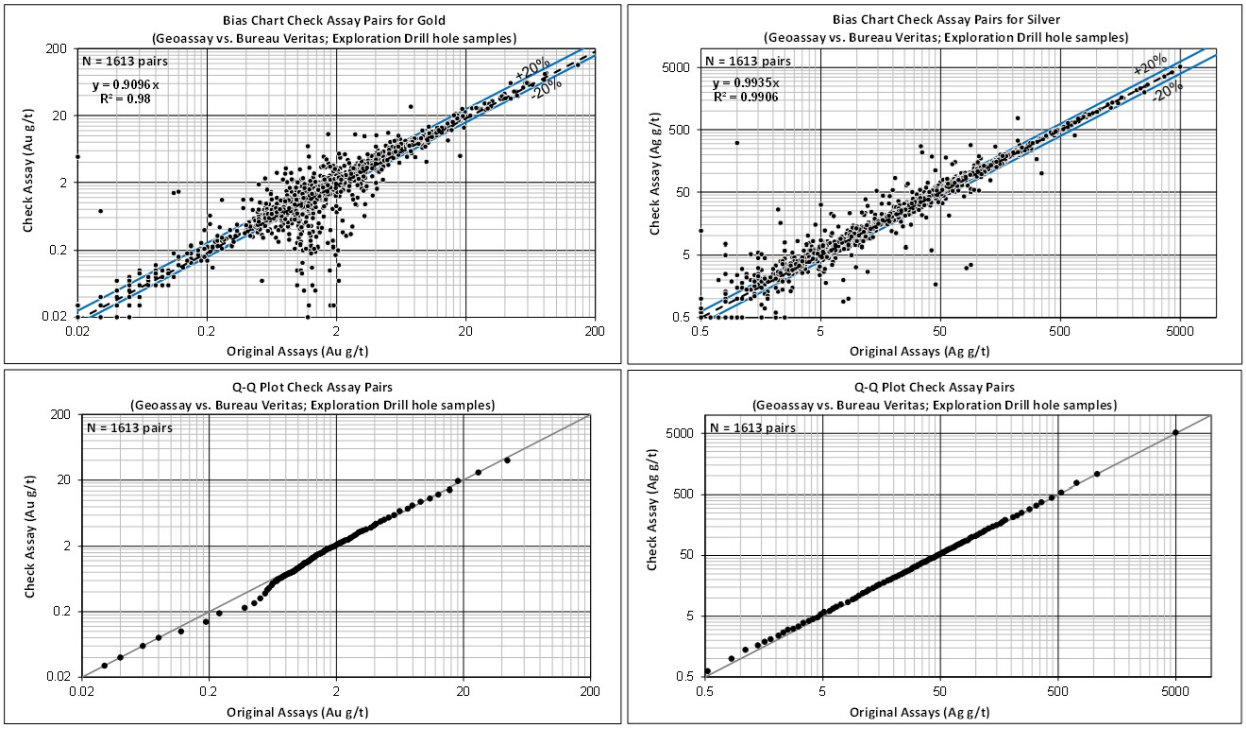

Figure 11-4: Comparison between Geoassay and Bureau Veritas umpire checks for gold by fire assay and AAS and for silver by multi-acid AAS finish

11.3 Sample Security

Samples are handled only by personnel authorized by Pan American. Channel samples from the mining operation are delivered directly to the El Peñón mine laboratory each day upon completion of underground sampling. All drill core from surface and underground drill holes is taken directly by authorized exploration personnel to a drill logging and sampling area within the secured and guarded mine property. The mineralized core intervals are logged, sampled, placed in plastic bags properly labelled for identification. Core samples are subsequently delivered to the primary laboratory in Antofagasta by truck in secured plastic bins along with dispatch forms. The pulps and rejects that are returned by the laboratory are transported inside the plastic bins, by the same truck that collects the samples at the mine.

Each sample is assigned a unique sample number that allows it to be traced through the sampling, database, and analytical procedure workflow, and is validated against the original sample site. For exploration drill holes, the remaining half of the split core is stored on-site as a control sample, available for review and resampling if required. The photographic record of all drill holes is kept as a reference.

In the opinion of the qualified person responsible for this section of the Technical Report, the sample preparation, sample security, and analytical procedures and results at El Peñón are adequate and consistent with industry standards, and the analytical data is acceptable for use in the estimation of mineral resources and mineral reserves.

12 Data Verification

This section describes the information verification procedures performed by Pan American and those reviewed by the qualified persons responsible for this Technical Report. There were no limitations in the ability of the qualified persons to verify the data. All qualified persons have completed site visits to verify available information and discuss with on-site personnel. It is the opinion of the qualified persons that the data used for the purposes of this Technical Report are adequate.

12.1 Mine Engineering Data Verification

The qualified person, Jimmy Avendaño, Registered Member of the Chilean Mining Commission, has worked at El Peñón since 2016 and is the Technical Services Manager (since 2022). He is responsible for geomechanics, surveying, drilling and blasting and short and long term mine planning, including the yearly update of the mineral reserves estimate and the development of the life-of-mine plan.

The qualified person continuously undertakes reviews of El Peñón's mining fleet; mine operational and production data; grade control data including dilution and ore loss; waste disposal requirements; permitting factors; processing and geometallurgical data including production and recovery rates; capital and operating actual costs and cost estimates; power and water consumption and future requirements; taxation and royalties. The qualified person has also reviewed the parameters and assumptions used in the mineral resource and mineral reserve estimates and the economic analysis that supports the mineral reserves estimate.

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

12.2 Geology Data Verification

The qualified person, Christopher Emerson, FAusIMM, undertakes regular reviews of El Peñón's drilling plans; drilling, sampling, and QA/QC results; drill core and geological interpretations; mineral resource estimation procedures including the interpretation and modelling of estimation domains; and reconciliation. During site visits, the exploration drilling, sample 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, the data and parameters used to estimate mineral resources and mineral reserves are sufficiently reliable for those purposes.

12.3 Metallurgy Data Verification

The qualified person, Americo Delgado, P. Eng., undertakes regular reviews of Pan American's processing plants and operational data including metallurgical results, production, reagent consumption, treatment rates, plant availabilities and utilization, metallurgical and analytical laboratory procedures, and general business performance.

In the opinion of the qualified person, the metallurgical testing and analytical procedures are reliable for the purposes used in this Technical Report. The available operating results relating to the recoverability of gold and silver show that the processing methods used at El Peñón are consistent and adequate for the mineralization of the deposit.

12.4 Tailings Data Verification

The qualified person, Carlos Iturralde, P. Eng., undertakes regular reviews of Pan American's TSFs. El Peñón is aligned with industry standards and best practices proposed by MAC, TSM Protocol, and the CDA guidelines.

In the opinion of the qualified person, plans for tailings disposal are considered suitable for the project.

12.5 Environment, Social, and Permitting Data Verification

The qualified person, Matthew Andrews, FAusIMM, undertake regular reviews of Pan American's environmental and permitting factors.

In the opinion of the qualified person, El Peñón's environmental studies, project permitting status, social and community involvement, and mine closure plans are considered to be adequate for this operation based on information reviewed from the site.

13 Mineral Processing and Metallurgical Testing

13.1 Processing Plant

The El Peñón processing plant has a nominal production capacity of approximately 1.533 Mtpa, or 4,200 tpd, for stockpiled and mined ore. Mineral processing includes the following principal stages:

- Crushing
- Grinding and pre-leaching thickening
- Leaching
- Recovery of concentrate solution from counter-current decantation
- Pregnant solution clarification
- Gold and silver recovery by zinc precipitation (Merrill-Crowe process)
- Filtering of precipitate
- Refining to doré

Tailings are vacuum filtered to recover water and these are subsequently loaded on trucks and transported to the nearby TSF.

13.2 Metallurgical Testing

Significant metallurgical testwork has been carried out at El Peñón since 2014. Samples, both from drill holes and from chip samples obtained from faces, have been collected across a range of grades and from different zones that include oxides and material with high and low sulphide content. The following metallurgical tests have been conducted:

- Leaching tests to address gold and silver recoveries as well as cyanide consumption
- Sedimentation and filtration tests
- Mill time or Bond Work Index tests

The historical test results have provided gold and silver metallurgical recovery matrices based on zone and grade, which are used to calculate NSR (Section 15) on the block models, are considered for mineral resource and mineral reserve estimation, and are continuously updated with actual process plant recovery data. The metallurgical recovery matrices for gold and silver are shown in Table 13-1.

Table 13-1: Metallurgical recoveries by zone and grade category

Metallurgical Recovery Matrix					
Zone	**Characteristic**	**Grade Range**	**Amount of Data (N°)**	**Gold Recovery (%)**	**Silver Recovery (%)**
Chiquilla Chica	Low Sulphide Content	High Grade[1]	4	96.14	86.25
		Medium Grade[2]	410	94.77	86.73
		Low Grade[3,5]	24	95.15	87.11
		Marginal[4,5]	9	90.37	76.25
Laguna	Low Sulphide Content	High Grade	154	94.50	85.81
		Medium Grade	661	94.56	87.11
		Low Grade	532	94.31	85.93
		Marginal	9	90.37	76.25
Tostado Sur	Low Sulphide Content	High Grade	23	94.63	88.89
		Medium Grade	23	94.63	88.89
		Low Grade	23	94.63	88.89
		Marginal	9	90.37	76.25
Fortuna	High Clay Content	High Grade	36	94.87	87.13
		Medium Grade	605	94.87	87.41
		Low Grade	185	84.39	79.04
		Marginal	9	90.37	76.25
El Peñón Mina Sur	Low Sulphide Content	High Grade	550	94.89	86.57
		Medium Grade	8,134	94.56	87.57
		Low Grade	3,396	94.62	87.34
		Marginal	9	90.37	76.25
El Peñón Mina Norte	Low Sulphide Content	High Grade	57	94.73	86.92
		Medium Grade	4,735	94.58	87.86
		Low Grade	1,325	94.64	87.57
		Marginal	9	90.37	76.25
El Peñón Bloque Norte	High Sulphide Content	High Grade	911	95.13	86.91
		Medium Grade	2,511	94.80	87.16
		Low Grade	1,837	94.88	86.90
		Marginal	9	90.37	76.25
Pampa Augusta Victoria (PAV)	Low Sulphide Content	High Grade	Historical	92.57	75.23
		Medium Grade	Historical	94.42	89.27
		Low Grade	Historical	93.10	90.02
		Marginal	9	90.37	76.25

1. *High grade defined as material with a gold grade equal to or higher than 10.0 g/t*
2. *Medium grade defined as material with a gold grade equal to or higher than 6.0 g/t and lower than 10.0 g/t*
3. *Low grade defined as material with a gold-equivalent grade equal to or higher than 3.1 g/t and a gold grade lower than 6.0 g/t*
4. *Marginal defined as material with a gold-equivalent content equal to or higher than 1.1 g/t and lower than 3.1 g/t*
5. *A 93.3 gold-equivalency factor was considered*

Results from metallurgical tests are also utilized for operational and mine planning purposes. These include estimates, based on test results statistics, for gold and silver recoveries, cyanide consumption, and sedimentation and filtration rates. Grinding parameters for different ores have also been established. Typically, the ores are relatively hard, with Bond Work Index values of between 18 and 20 kWh/t.

Actual monthly plant-adjusted production figures with gold and silver recoveries for 2023 and the first 6 months of 2024 are presented in Table 13-2 and Table 13-3. Historical yearly plant-adjusted production for El Peñón is shown in Section 6.

Table 13-2: Processing plant production for 2023

		Gold			Silver		
	Tonnes	Grade	Production	Recovery	Grade	Production	Recovery
Month	(t)	(g/t Au)	(Au oz)	(% Au)	(g/t Ag)	(Ag oz)	(% Ag)
January	119,448	2.59	9,816	94.62	78.11	268,360	88.98
February	103,677	3.43	10,283	94.84	89.65	265,411	89.36
March	114,271	3.25	11,634	94.42	101.85	334,970	89.16
April	102,907	3.38	10,438	94.93	117.11	342,856	90.28
May	119,238	2.90	10,489	94.24	92.26	312,559	87.97
June	107,979	3.44	11,331	94.14	123.45	375,543	89.77
July	122,312	2.80	10,400	93.82	108.58	385,099	90.19
August	118,933	2.42	8,932	94.37	78.10	286,009	89.99
September	111,988	2.91	9,810	95.02	107.54	339,829	89.12
October	120,148	2.96	10,622	94.92	84.42	280,830	89.72
November	108,518	3.40	11,259	95.19	96.24	295,439	86.27
December	114,053	3.39	12,005	95.30	85.95	276,552	87.10
Total 2023	**1,363,471**	**3.06**	**127,019**	**94.66**	**96.55**	**3,763,457**	**89.05**

Table 13-3: Processing plant production for January to June 2024

		Gold			Silver		
	Tonnes	Grade	Production	Recovery	Grade	Production	Recovery
Month	(t)	(g/t Au)	(Au oz)	(% Au)	(g/t Ag)	(Ag oz)	(% Ag)
January	109,211	3.10	10,057	94.86	104.5	336,762	89.48
February	110,730	3.59	12,594	95.18	84.22	255,457	86.33
March	106,634	3.44	8,818	94.79	85.65	258,395	86.74
April	111,070	3.23	13,185	94.48	89.86	268,474	83.98
May	123,472	3.00	10,942	94.61	90.23	309,967	85.68
June	114,208	3.25	11,843	95.46	86.14	271,454	86.03
Total H1-2024	**675,326**	**3.26**	**67,439**	**94.90**	**90.08**	**1,700,509**	**86.43**

14 Mineral Resource Estimates

14.1 Mineral Resource Summary

The El Peñón mineral resource estimate has been estimated in accordance with the generally accepted standards set out in CIM Guidelines and has been classified according to the CIM Definition Standards.

Interpreted geological wireframes were constructed in Leapfrog based on geological sections, assay results, lithological information and structural data. Assays were generally composited to full-width composites (a single composite across the vein width). Gold and silver grades were interpolated into block models with a parent size of 5 x 5 x 5 m and sub-blocks with minimum dimensions of 0.20 x 0.50 x 0.25 m to accurately fit wireframe volumes. Grades were estimated using top capped composites, a high-yield restriction for anomalously high grades, and an ID3 interpolation method. Block estimates were validated using industry standard validation techniques and an NN interpolated grade. Classification of blocks was completed following distance-based criteria.

Mineral resources are reported exclusive of mineral reserves. Mineral resources are not mineral reserves and do not have not demonstrated economic viability. Underground mineral resources are estimated within conceptual underground mining shapes at an NSR cut-off value of US$ 148.39/t. A minimum mining width of 0.60 m plus 0.30 m of each hanging-wall a footwall overbreak are used to construct the conceptual mining shapes (resulting in a minimum shape width of 1.20 m). Mineral resources are reported fully diluted.

Open pit mineral resources are reported above an NSR cut-off value of US$64/t within the current Tostado Sur mineral reserves pit design.

The Mineral Resource Statement of El Peñón as of June 30, 2024, exclusive of mineral reserves is presented in Table 14-1.

Table 14-1: El Peñón Mineral Resource Statement as of June 30, 2024

Mineral Resources	Category	Tonnes	Grade		Contained Metal	
		(kt)	Au (g/t)	Ag (g/t)	Au (koz)	Ag (koz)
Underground	Measured	1,554	5.25	166.3	262	8,307
	Indicated	3,828	3.44	112.0	423	13,789
	Measured + Indicated	**5,382**	**3.96**	**127.7**	**685**	**22,096**
	Inferred	4,677	3.80	133.8	572	20,115
Open Pit	Measured	—	—	—	—	—
	Indicated	2	0.02	362.7	—	25
	Measured + Indicated	**2**	**0.02**	**362.7**	**—**	**25**
	Inferred	2	0.03	858.2	—	69
Tailings	Measured	—	—	—	—	—
	Indicated	—	—	—	—	—
	Measured + Indicated	**—**	**—**	**—**	**—**	**—**
	Inferred	13,767	0.55	18.9	245	8,380
Combined	Measured	1,554	5.25	166.3	262	8,307
	Indicated	3,830	3.44	112.2	423	13,813
	Measured + Indicated	**5,384**	**3.96**	**127.8**	**685**	**22,120**
	Inferred	18,446	1.38	48.2	816	28,564

1. *Mineral resources were estimated by the El Peñón resource geology team and reviewed by Christopher Emerson, FAusIMM, who is a qualified person as that term is defined by NI 43-101.*

2. *Mineral resources were estimated in accordance with the guidelines laid out in the CIM Guidelines and classified according to the CIM Definition Standards.*
3. *Mineral resources are reported exclusive of mineral reserves. Mineral resources were evaluated using an inverse distance weighing algorithm informed by capped composites and constrained by three-dimensional mineralization wireframes.*
4. *Mineral resources are not mineral reserves and do not have demonstrated economic viability. Metal price assumptions of US$ 1,850/oz for gold and US$ 22.00/oz for silver were used and selling costs of US$ 13.20/oz for gold and US$ 0.15/oz for silver were considered.*
5. *Open pit mineral resources are reported at a cut-off NSR of US$ 64.00/t. Processing recovery assumptions range from 90.37% to 94.63% for gold and from 76.25% to 88.89% for silver. Mine operating (including haulage to the processing plant), processing, G&A, and sustaining capital costs assumptions of US$ 10.00/t, US$ 32.80/t, US$ 15.75/t and US$ 5.44/t were considered, respectively. Open pit mineral resources are reported constrained within the current Tostado Sur mineral reserves pit design. A bulk density of 2.40 g/cm^3 was used to convert volume to tonnage.*
6. *Underground mineral reserves are reported at a cut-off NSR of US$ 148.39/t. Processing recoveries assumptions range from 84.39% to 96.14% for gold and from 75.23% to 90.02% for silver. The following cost assumptions were considered: mine-operating costs: US$ 94.39/t; processing cost: US$ 32.80/t; G&A cost: US$ 15.75/t, and sustaining capital cost: US$ 5.44/t. A royalty of 2% was considered for mineral resources contained in the Fortuna zone. Underground primary development cost is excluded from the cut-off NSR calculation. Underground mineral resources are reported fully diluted; they consider a minimum mining width of 0.60 m and hangingwall and footwall overbreak dilutions of 0.30 m each to determine reasonable prospects of eventual economic extraction. Bulk densities ranging from 2.36 g/cm^3 to 2.57 g/cm^3 were used to convert volume to tonnage.*
7. *Mineral resources contained in tailings are reported at a cut-off grade of 0.50 g/t gold-equivalent, using metallurgical recoveries of 60% for gold and 30% for silver, and a rehandling and reprocessing cost US$11.70/t. A bulk density value of 1.75 g/cm^3 was used to convert tailings volume to tonnage.*
8. *Mineral resources are reported as of June 30, 2024.*
9. *All figures are rounded to reflect the relative accuracy of the estimate. Numbers may not add up due to rounding.*
10. *The qualified person responsible for this section of the Technical Report is not aware of any environmental, permitting, legal, title, taxation, socio-economic, marketing, political or other relevant factors that could materially affect the mineral resource estimate.*

14.2 Resource Database and Validation

All information used for the mineral resource and mineral reserve estimates, including drill core, survey, geological, and assay data, is verified and approved by the El Peñón geological staff and is maintained in on-site databases. Verification is done using the Maptek Vulcan software data validation tools. Drill hole data are stored in 5 databases; underground face samples are stored in 27 databases.

14.3 Definition and Interpretation of Estimation Domains

Resource estimation domains are constructed in Leapfrog as wireframes containing vein-width drill hole and channel sample assay composites logged and mapped as either massive quartz vein (MQV), or hydrothermal breccia (HYB) along continuous structural features. In some cases intervals of stockwork (STK) mineralization are included along structural features and between MQV and HYB mineralization but STK mineralization is excluded from the estimation domains where it occurs in the hangingwall or footwall of the main MQV and HYB mineralized zone.

The estimation domain units with geological and structural continuity are not defined using a cutoff grade allowing lower grade intersections of MQV, HYB and STK to be incorporated where they lie along structural features.

The MQV, HYB and STK intervals are selected and the vein wireframes are projected a maximum of 10 m down dip and 2 to 3 m along strike from sampled development, and a maximum of 60 m along strike and down-dip from drill hole intersections.

Estimation domain wireframes are coded individually with a unique estimation domain code (ug) and in groups by zone (shellug). Drill hole composites and blocks are assigned the estimation domain and zone codes from the wireframes. The resulting estimation domain wireframes are shown colour coded by mining block in Figure 14-1.

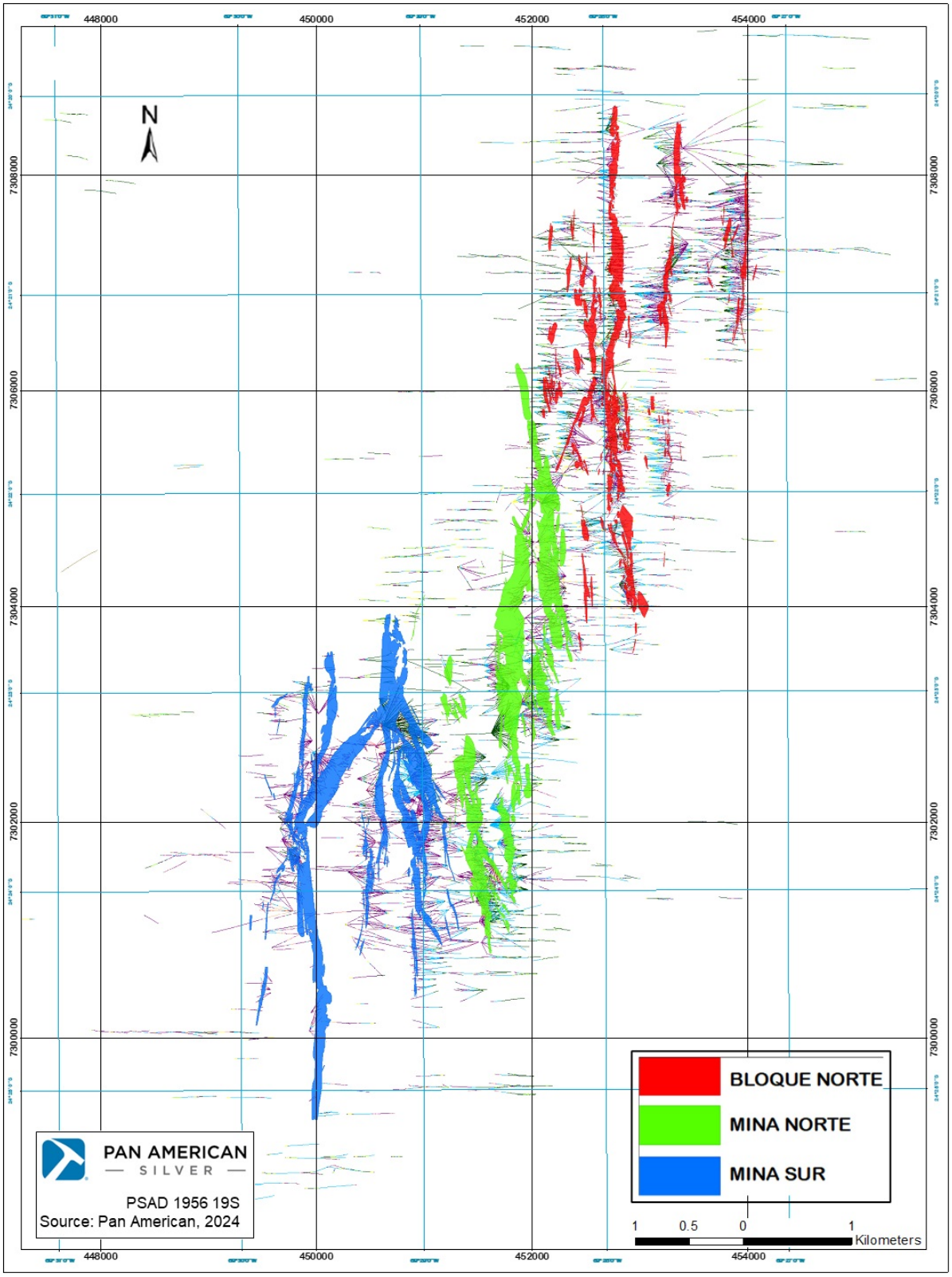

Figure 14-1: Plan view of estimation domains coloured mining zone

14.4 Compositing Methods

Since veins at El Peñón are currently narrower than 1.0 m, generally total width composites, with a length equal to the full drill hole intersection width of the vein were generated. Interpreted vein wireframes are used as a hard boundary for compositing.

Before exploratory data analysis (EDA) is carried out, coordinates of the centre of each composite as well as vein- and splay-codes were assigned.

14.5 Basic Statistics

Descriptive statistics were computed for every interpreted vein domain on composite datasets; the exploratory data analysis was done using histograms, probability plots, and boxplots.

Since the presence of local high-grade outliers could potentially affect the accuracy of the mineral resource estimate, composite samples were statistically examined for the presence of grade outliers using a combination of methodologies, such as inspection of probability plots, histogram analysis, and metal contribution above threshold values. Based on historical calibration with production data, outliers were usually defined for channel samples at the 96th percentile of the cumulative distribution, while for drill hole data this threshold was generally set at close to the 99th percentile.

Once defined, capping and generally high-yield restriction were used to control the influence of the high-grade composites during estimation. High-yield restrictions, when applied, were used by setting the thresholds equal to the capping thresholds and by limiting the influence to a 5.5 x 2.5 x 2.5 m search ellipse. The threshold used for capping Au and Ag in each zone are summarized in Table 14-2.

Table 14-2: Summary of gold and silver capping values by vein

Vein	Gold			Silver		
	Drill Hole Samples (g/t)	UG Samples (g/t)	Surface Samples (g/t)	Drill Hole Samples (g/t)	UG Samples (g/t)	Surface Samples (g/t)
505	47.10	135.30	135.30	473.0	947.0	947.0
Abundancia	40.00	82.00	N/A	2,000.0	2,072.0	N/A
Aleste	50.00	146.00	N/A	3,300.0	4,954.0	N/A
Angelina	100.00	80.00	192.00	300.0	430.0	540.0
Angosta	30.00	N/A	N/A	500.0	N/A	N/A
Bermellon	80.00	148.00	N/A	2,000.0	3,222.0	N/A
Bermuda	10.00	N/A	N/A	400.0	N/A	N/A
Bonanza	100.00	173.00	N/A	1,000.0	2,057.0	N/A
Borde Oeste	70.00	N/A	N/A	1,990.0	N/A	N/A
Caracoles	N/A	N/A	N/A	N/A	N/A	N/A
Carmin-Escarlata	133.00	157.00	N/A	1,732.0	2,020.0	N/A
Cerro Martillo	12.00	37.00	N/A	425.0	1,385.0	N/A
Cerro Martillo Central Sur	36.00	111.00	N/A	2,225.0	6,155.0	N/A
Chiquilla Chica	0.68	3.00	1.71	762.0	3,500.0	1,957.7
Colorada Sur	30.00	50.92	N/A	1,000.0	1,448.6	N/A
Diablada	40.00	70.00	N/A	300.0	360.0	N/A
Discovery Wash	24.60	19.00	N/A	700.0	530.0	N/A
Dominador	45.00	35.00	N/A	1,540.0	920.0	N/A
Dorada	60.00	44.96	N/A	1,200.0	2,898.8	N/A

Dorada SW	27.00	26.50	N/A	2,200.0	2,055.0	N/A
El Valle	72.50	24.00	N/A	1,820.0	1,105.0	N/A
El Valle HW	72.50	N/A	N/A	1,820.0	N/A	N/A
Elizabeth	15.00	64.86	110.50	1,420.0	10,927.0	11,000.0
Esmeralda	200.00	175.00	N/A	1,000.0	5,562.0	N/A
Esmeralda NE	100.00	130.00	N/A	3,000.0	5,562.0	N/A
Esperanza	80.00	46.40	N/A	1,700.0	1,949.0	N/A
Fortuna	18.00	54.00	N/A	1,500.0	3,507.0	N/A
Fortuna Este	20.00	N/A	N/A	1,500.0	N/A	N/A
La Paloma	35.00	200.00	N/A	400.0	2,027.0	N/A
La Paloma - High Grade	N/A	465.00	N/A	N/A	569.0	N/A
Laguna	21.00	46.00	N/A	224.0	463.0	N/A
Laguna West	43.00	120.00	N/A	386.0	1,890.0	N/A
Magenta	60.00	98.59	N/A	770.0	1,815.0	N/A
Martillo Flat Main	48.00	42.50	N/A	3,150.0	2,450.0	N/A
Martillo Flat HW1	28.50	65.00	N/A	2,675.0	4,700.0	N/A
Martillo Flat HW2	45.00	35.42	N/A	2,600.0	1,862.0	N/A
Orito Norte	20.00	47.05	47.05	250.0	368.0	368.0
Orito Sur	50.00	44.00	N/A	850.0	768.0	N/A
Orito West	35.00	15.00	N/A	1,500.0	389.0	N/A
Pampa Campamento	63.00	170.00	N/A	1,569.0	2,500.0	N/A
Pampa Sur	16.00	N/A	N/A	696.0	N/A	N/A
Pampa Providencia	35.00	N/A	N/A	600.0	N/A	N/A
Playa	21.00	55.00	N/A	404.0	1,480.0	N/A
Providencia Main	46.00	30.00	N/A	2,275.0	1,814.0	N/A
Providencia FW	40.00	20.00	N/A	1,500.0	1,383.0	N/A
Providencia HW	30.00	18.00	N/A	1,050.0	1,273.0	N/A
Providencia Nueva	30.00	N/A	N/A	700.0	N/A	N/A
Purpura	20.00	60.00	N/A	2,000.0	1,292.0	N/A
Rieles	N/A	N/A	N/A	N/A	N/A	N/A
Sorpresa	44.00	48.00	N/A	1,574.0	1,848.0	N/A
Tostado Sur	0.49	N/A	0.20	2,750.0	N/A	2,342.7
Ventura	30.00	70.85	N/A	1,500.0	3,980.2	N/A
Veta NW (63)	11.27	21.00	N/A	862.6	1,352.0	N/A
Veta NW (64)	10.00	29.46	N/A	580.0	2,638.0	N/A
Veta NW (65)	26.00	38.84	N/A	1,600.0	2,820.0	N/A
Victoria	35.00	96.99	110.50	500.0	3,012.0	11,000.0
Vista Norte	67.00	89.00	N/A	374.0	1,015.0	N/A

14.6 Specific Gravity

Specific gravity (or density) measurements using the water immersion method were performed on core samples and on specimens collected underground. Approximately 670 samples were analysed at the University of Antofagasta between September 2011 and July 2014, and 7% of those samples were cross-checked at Laboratorio Geoanalítica in Antofagasta. Average bulk densities were calculated for each zone (Table 14-3) and single density values were assigned to the block models for each zone for both mineralization and waste.

Table 14-3: Specific gravity density values assigned to each zone

Zone	SG	Zone	SG	Zone	SG
505	2.36	El Valle	2.43	Pampa Sur	2.43
Abundancia	2.40	El Valle HW	2.43	Pampa Providencia	2.40
Aleste	2.57	Elizabeth	2.50	Playa	2.36
Angelina	2.44	Esmeralda	2.40	Providencia Main	2.40
Angosta	2.40	Esmeralda NE	2.40	Providencia FW	2.40
Bermellon	2.43	Esperanza	2.40	Providencia HW	2.40
Bermuda	2.40	Fortuna	2.40	Providencia Nueva	2.40
Bonanza	2.57	Fortuna Este	2.40	Purpura	2.43
Borde Oeste	2.40	La Paloma	2.40	Rieles	2.40
Caracoles	2.40	La Paloma - High Grade	2.40	Sorpresa	2.43
Carmin-Escarlata	2.43	Laguna	2.40	Tostado Sur	2.40
Cerro Martillo	2.40	Laguna West	2.40	Ventura	2.57
Cerro Martillo CS	2.40	Magenta	2.43	Veta NW (63)	2.40
Chiquilla Chica	2.40	Martillo Flat Main	2.40	Veta NW (64)	2.40
Colorada Sur	2.43	Martillo Flat HW1	2.40	Veta NW (65)	2.40
Diablada	2.44	Martillo Flat HW2	2.40	Victoria	2.50
Discovery Wash	2.43	Orito Norte	2.44	Vista Norte	2.44
Dominador	2.40	Orito Sur	2.36		
Dorada	2.40	Orito West	2.36		
Dorada SW	2.40	Pampa Campamento	2.43		

14.7 Variography

During 2023 the El Peñón resource geology team updated variography using the methodology explained below. Grade is highly variable at El Peñón, and so experimental correlograms were generated for each vein, since they are more stable than traditional semi-variograms, in the presence of outliers. Experimental correlograms were calculated using combined drill hole and underground channel samples in the preferential grade spatial continuity directions of each main resource domain using combined drill hole and underground channel samples. Correlograms obtained for the main domains were used for neighboring splays which did not have enough data to obtain reliable correlograms. Nugget effect values were obtained from “down-the-hole” correlograms. Typical experimental correlogram calculation parameters are shown in Table 14-4. Examples of variogram model parameters for the El Valle and Pampa Campamento veins are shown in Table 14-5.

Table 14-4: Typical calculation parameters for experimental correlograms

Direction	Azimuth Tolerance (°)	Azimuth Band (m)	Dip Tolerance (°)	Dip Band	Lag	Lag Tolerance
Major	22.5	12.5	22.5	30 m	Level Spacing	1/2 Lag
Semi-major	22.5	12.5	22.5	1/2 Level Spacing	Face Sample Spacing	1/2 Lag
Minor	22.5	12.5	22.5	1/2 Level Spacing	1 m	1/2 Lag

Table 14-5: Correlogram model parameters for El Valle and Pampa Campamento veins

Element	Vein	Structure	Contribution	Model	Rx (m)	Ry (m)	Rz (m)	Angle 1 (°)	Angle 2(°)	Angle 3(°)
Au	El Valle	C0	0.2	Nugget	—	—	—	—	—	—
		C1	0.66	Sph	18	15	10	168.1	65.2	144.6
		C2	0.14	Sph	40	40	12	168.1	65.2	144.6
	Pampa Campamento	C0	0.2	Nugget	—	—	—	—	—	—
		C1	0.75	Exp	9	10	2	163	-25	84
		C2	0.05	Sph	70	60	10	163	-25	84
Ag	El Valle	C0	0.2	Nugget	—	—	—	—	—	—
		C1	0.66	Sph	18	15	10	168.1	65.2	144.6
		C2	0.14	Sph	40	40	12	168.1	65.2	144.6
	Pampa Campamento	C0	0.2	Nugget	—	—	—	—	—	—
		C1	0.45	Sph	12	18	3	163	-20	85
		C2	0.35	Sph	50	40	11	163	-20	85

14.8 Block Models

A total of 42 independent block models were constructed at El Peñón. Typical block models contain one to three main veins. Rotated block models were constructed using a common parent block size of 5 x 5 x 5 m and sub-block size of 0.20 x 0.50 x 0.25 m. The main block model variables are described in Table 14-6. Additional auxiliary flag and distance variables are not shown. A summary of the main veins contained in each block model, as well as the zones in which each vein is located are shown in Table 14-7.

Table 14-6: Generalized block model variables

Variable	Format	Description
density	Float (Real * 4)	Bulk density assigned per vein
shellug	Integer (Integer * 4)	Vein code
ug	Integer (Integer * 4)	Splay (estimation domain) code
au1	Float (Real * 4)	Estimated gold grade (g/t)
ag1	Float (Real * 4)	Estimated silver grade (g/t)
Categ_30	Integer (Integer * 4)	Original resource classification Grid 30x30
Class_30	Integer (Integer * 4)	Official smoothed resource classification Grid 30x30
aunn1	Float (Real * 4)	Gold grade estimated by nearest neighbour (g/t)
agnn1	Float (Real * 4)	Silver grade estimated by nearest neighbour (g/t)
Redox	Integer (Integer * 4)	Mineralization code (oxides / sulfides)
Lito	Integer (Integer * 4)	Lithology code

Table 14-7: Block models per veins and per mining zones

Veins	Zone
505, 506	Mina Sur
Abundancia	Bloque Norte
Aleste	Bloque Norte
Angosta	Bloque Norte
Bermellon, Colorada Sur	Mina Sur
Bermuda	Mina Norte
Bonanza	Bloque Norte
Borde Oeste	Bloque Norte
Carmin, Carmin Sur, Escarlata	Mina Sur
Cerro Martillo Central Sur	Mina Norte
Cerro Martillo	Mina Norte
Chiquilla Chica	Chiquilla Chica
Diablada	Mina Sur
Discovery Wash	Mina Sur
Dominador, Caracoles	Fortuna
Dorada	Mina Norte
Dorada SW	Mina Norte
El Valle	Mina Sur
El Valle HW	Mina Sur
Esmeralda, Esmeralda NE, Esperanza	Bloque Norte
Fortuna	Fortuna
Fortuna Este	Fortuna
La Paloma, La Paloma - High Grade	Bloque Norte
Laguna, Laguna West	Laguna
Magenta	Mina Sur
Martillo Flat Main, HW1, HW2	Mina Norte
Orito Norte, Angelina	Mina Sur
Orito Sur	Mina Sur
Orito West	Mina Sur
Pampa Campamento	Mina Sur
Pampa Sur	Mina Sur
Pampa Providencia	Mina Sur
Elizabeth, Victoria	PAV
Playa	Mina Sur
Providencia Main, FW, HW, Nueva	Mina Norte
Purpura	Mina Sur
Rieles	Bloque Norte
Sorpresa	Mina Sur
Tostado Sur	Tostado Sur
Ventura	Bloque Norte
Veta NW 63, 64, 65	Mina Norte
Vista Norte	Mina Sur

Gold and silver grades were interpolated into blocks using ID3 considering hard boundaries between estimation domains. Correlogram models were used to orient search ellipsoid axes and ID3 weights were scaled to search ellipsoid axis lengths and correlogram ranges. A summary of typical estimation and search parameters is shown in Table 14-8.

Table 14-8: Summary of typical estimation and search parameters

Estimation Pass[1]	1st	2nd	3rd	4th	5th	6th
Block type[2]	ST	ST	ST	LT	LT	LT
Sample type[3]	CH	CH	CH	CH+DH	CH+DH	DH
Interpolation Method	ID3	ID3	ID3	ID3	ID3	ID3
Search range (m) - Major	8	10	15	15	35	60
Search range (m) - Semi-major	5	8	10	15	35	60
Search range (m) - Minor	4	6	8	5	10	15
Minimum number of composites	3	2	1	4	3	1
Maximum number of composites	6	6	6	6	6	6
Octant search	No	No	No	No	No	No
Maximum number of composites/DH	1	1	1	3	2	—

Notes to the foregoing table:

1. *Parameters can change slightly for some veins*
2. *ST: Blocks located in zones supported by channel samples; LT: Blocks located in zones supported by drill holes*
3. *CH: Channel samples; DH: Drill hole samples*

14.9 Block Model Validation

Block models were validated by means of global mean comparisons (between estimated means and declustered composite means obtained by NN estimation), swath-plots against NN estimates, and graphic analysis of charts showing results displaying both the estimated grades and the informing composite grades in plan views and long sections. The following tables and figures illustrate examples of the validations and results obtained for the El Valle and Pampa Campamento veins. Table 14-9 show the statistical differences between the ID3 and NN model results. Figure 14-2 and Figure 14-3 show swath-plots for the El Valle and Pampa Campamento veins, with the average gold grades estimated by ID3 (in red) and by NN (in blue), and the informing capped composites (in black).

The results of the validation are considered to be adequate, demonstrating that the estimated models honour the input data.

Table 14-9: Statistical validation of the estimated block model - El Valle vein and Pampa Campamento vein

Vein: El Valle	ID3	NN
Number of blocks	5,685,019	5,702,263
Gold Statistics (g/t Au):		
Minimum	0.004	0.004
Q1	0.653	0.349
Median	1.539	1.048
Q3	3.335	2.908
Maximum	72.461	72.500
Mean	2.747	2.712
Standard Deviation	3.371	4.269
Variance	11.364	18.224
Coefficient of Variation	1.227	1.574
Vein: Pampa Campamento	**ID3**	**NN**
Number of blocks	6,001,260	6,001,260
Gold Statistics (g/t Au):		
Minimum	0.010	0.010
Q1	1.404	0.725
Median	3.207	2.298
Q3	7.427	6.230
Maximum	169.684	170.000
Mean	6.332	6.372
Standard Deviation	9.226	12.110
Variance	85.119	146.652
Coefficient of Variation	1.457	1.901

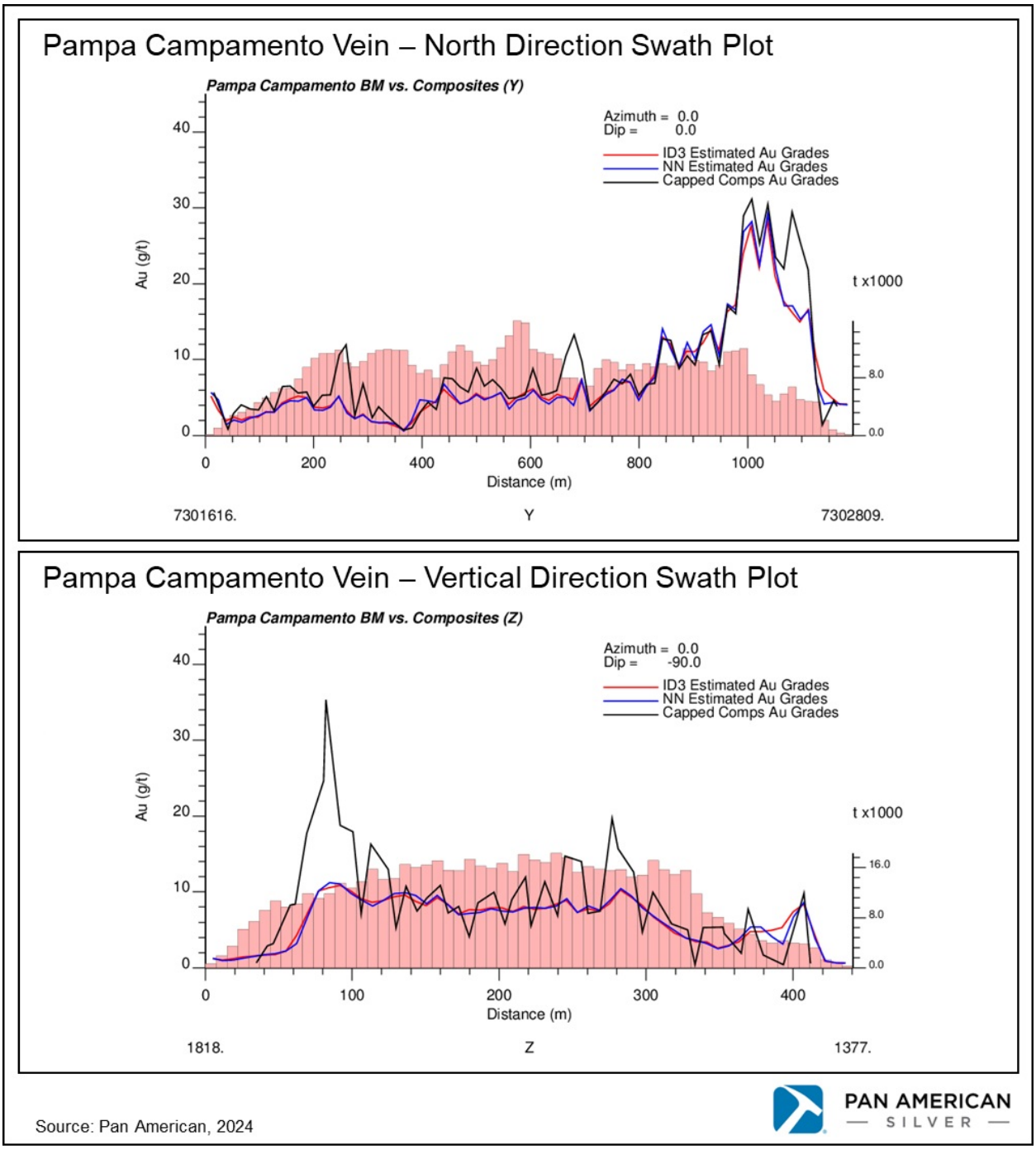

Figure 14-2: Gold swath plots for El Valle vein

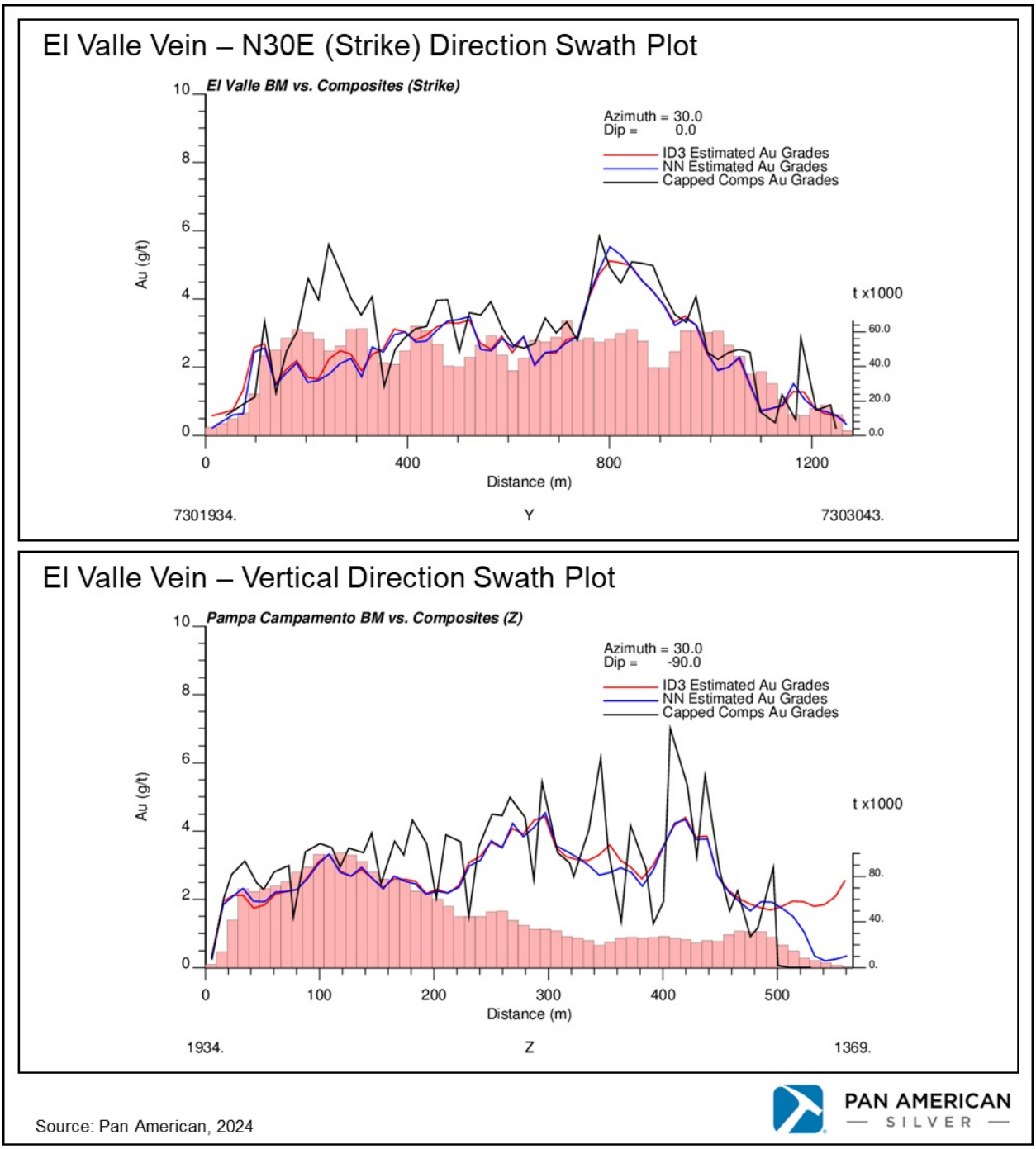

Figure 14-3: Gold swath plots for Pampa Campamento vein

14.10 Resource Classification

Resource classification was completed using an in-house algorithm which works according to the following workflow:

- Blocks located in areas supported by underground channel samples are classified as measured.
- Blocks located in areas supported by drill hole information and that are within a 10 m-radius from underground channel samples are classified as indicated.
- Blocks supported only by drill holes are classified as indicated if they meet both following criteria: blocks are contained within a 18.75 m-search square from a single informing intercept AND the informing intercept is contained within a 37.5 m search square that includes at least one additional informing intercept. Distances defining both search squares are measured in the plane of the vein (in the strike and dip directions) and from the centre (intercept position) to the edge of the search square.
- The remainder of the blocks estimated within the interpreted vein wireframes are classified as inferred.
- Blocks located outside the vein wireframes are not classified and are considered dilution for mineral resources reporting.
- Finally, the mineral resource classification results are smoothed, using an in-house algorithm based on local classification proportions, to remove geometrical artifacts. The local proportions are calculated in a 10 x 10 m moving window.

14.11 Resource Estimation of Stockpiles and Tailings

In addition to the 42 block models constructed by applying the methodologies previously described, mineral resources contained within the Escarlata low-grade stockpile and within tailings were also estimated.

In 2017, El Peñón commissioned a concept-level metallurgical study to explore alternative extraction processes to recover metal from tailings. Heap leaching was proposed as a viable option for metal extraction from tailings. Twenty shallow boreholes were drilled on a 100 m-grid spacing, while the Escarlata stockpile was drilled by 32 drill holes at a 25 m-grid spacing. Grade estimations for the tailings and stockpile were based on capped assay data interpolated using ordinary kriging in three estimation passes. Mineral resources contained in the stockpile are classified as indicated, were converted to probable mineral reserves and have successfully been processed at the El Peñón mill since 2017. Mineral resources contained in tailings are classified as inferred.

14.12 Mineral Resource Estimate

The mineral resources are reported at El Peñón exclusive of mineral reserves and are prepared using conceptual mining shapes (from VSO) that are based on an NSR cut-off value of US$ 148.39/t. The cut-off value is based on the calculation parameters shown in Table 14-10.

Mined out, sterilized (non-mineable blocks), and current mineral reserves are subtracted from the block models. Selective mining units (SMUs) measuring 5 m-long x 4 m-high, similar to cut-and-fill SMUs, are then constructed using VSO using a minimum mining width of 0.60 m and hangingwall and footwall overbreaks of 0.30 m (per side).

Blocks lying outside the interpreted geological vein wireframes are considered to have zero NSR for stope optimization. Subsequently, the constructed SMUs are classified by majority tonnes criteria into measured, indicated, or inferred categories, and are included into the mineral resources inventory and reported fully diluted.

Mineral resources contained in tailings are reported at a 0.50 g/t gold-equivalent cut-off grade.

Open pit mineral resources are reported above an NSR cut-off value of US$64/t within the current Tostado Sur mineral reserves pit design. The use of constraining conceptual mining shapes to report underground mineral resources and cut-offs to report mineral resources contained in tailings demonstrate that the “reasonable prospects for eventual economic extraction” criteria, as defined in the CIM Definition Standards, is met.

Table 14-10: Resource NSR cut-off value calculation parameters

Parameters	Units	Value
Gold Price	US$/oz	1,850
Silver Price	US$/oz	22.00
Gold Selling Cost	US$/oz	13.20
Silver Selling Cost	US$/oz	0.15
Gold Metallurgical Recovery	%	Model
Silver Metallurgical Recovery	%	Model
Open Pit Mining Cost	US$/t	10.00
Underground Mining Cost1	US$/t	94.39
Processing Cost	US$/t	32.80
G&A Cost	US$/t	15.75
Sustaining Capital Cost	US$/t	5.44
Open Pit Mineral Resources NSR Cut-off Value	**US$/t**	**64.00**
Underground Mineral Resources NSR Cut-off Value	**US$/t**	**148.39**

The Mineral Resource Statement of El Peñón as of June 30, 2024, exclusive of mineral reserves, is presented at the beginning of this Section 14 in Table 14-1. A summary of the mineral resources by zone is presented in Table 14-11.

Table 14-11: Summary of El Peñón mineral resources by zone, as of June 30, 2024

Mineral Resources	Category	Tonnes	Grade		Contained Metal	
		(kt)	Au (g/t)	Ag (g/t)	Au (koz)	Ag (koz)
Chiquilla Chica	Measured	5	0.71	459.1	0	70
	Indicated	31	0.32	321.9	0	324
	Measured + Indicated	36	0.37	339.9	0	393
	Inferred	94	0.27	345.1	1	1,042
Laguna	Measured	12	4.25	35.1	2	14
	Indicated	57	3.00	45.2	5	82
	Measured + Indicated	69	3.22	43.4	7	96
	Inferred	29	3.07	49.8	3	47
Fortuna	Measured	65	3.93	238.6	8	502
	Indicated	255	2.72	149.1	22	1,222
	Measured + Indicated	320	2.97	167.4	31	1,724
	Inferred	204	3.75	289.5	25	1,898
Tostado Sur	Measured	0	0.00	0.0	0	0
	Indicated	2	0.02	362.7	0	25
	Measured + Indicated	2	0.02	362.7	0	25
	Inferred	2	0.03	858.2	0	69
El Peñón Mina Sur	Measured	669	5.64	90.8	121	1,954
	Indicated	1,318	3.74	72.0	159	3,053
	Measured + Indicated	1,987	4.38	78.4	280	5,007
	Inferred	1,505	4.30	86.6	208	4,191
El Peñón Mina Norte	Measured	523	3.99	207.8	67	3,495
	Indicated	1,191	3.01	140.7	115	5,389
	Measured + Indicated	1,714	3.31	161.2	182	8,884
	Inferred	1,387	3.36	126.2	150	5,626
El Peñón Bloque Norte	Measured	246	7.50	254.5	59	2,011
	Indicated	806	3.99	126.1	103	3,268
	Measured + Indicated	1,052	4.81	156.1	163	5,279
	Inferred	1,322	4.07	154.6	173	6,573
Pampa Augusta Victoria (PAV)	Measured	33	4.30	244.2	5	261
	Indicated	169	3.25	82.7	18	450
	Measured + Indicated	202	3.43	109.2	22	711
	Inferred	135	2.87	169.9	12	738
Tailings	Measured	0	0.00	0.0	0	0
	Indicated	0	0.00	0.0	0	0
	Measured + Indicated	0	0.00	0.0	0	0
	Inferred	13,767	0.55	18.9	245	8,380
Combined	Measured	1,554	5.25	166.3	262	8,307
	Indicated	3,830	3.44	112.2	423	13,813
	Measured + Indicated	5,384	3.96	127.8	685	22,120
	Inferred	18,446	1.38	48.2	816	28,564

1. *Mineral resources were estimated by the El Peñón resource geology team and reviewed by Christopher Emerson, FAusIMM, who is a qualified person as that term is defined by NI 43-101.*
2. *Mineral resources were estimated in accordance with the guidelines laid out in the CIM Mineral Resource and Mineral Reserves Estimation Best Practice Guidelines (November 2019) and classified according to the CIM Definition Standards for Mineral Resources and Mineral Reserves (May 2014) guidelines.*

3. *Mineral resources are reported exclusive of mineral reserves. Mineral resources were evaluated using an inverse distance weighing algorithm informed by capped composites and constrained by three-dimensional mineralization wireframes.*
4. *Mineral resources are not mineral reserves and do not have demonstrated economic viability. Metal price assumptions of US$ 1,850/oz for gold and US$ 22.00/oz for silver were used and selling costs of US$ 13.20/oz for gold and US$ 0.15/oz for silver were considered.*
5. *Open pit mineral resources are reported at a cut-off NSR of US$ 64.00/t. Processing recovery assumptions range from 90.37% to 94.63% for gold and from 76.25% to 88.89% for silver. Mine operating (including haulage to the processing plant), processing, G&A, and sustaining capital costs assumptions of US$ 10.00/t, US$ 32.80/t, US$ 15.75/t and US$ 5.44/t were considered, respectively. Open pit mineral resources are reported constrained within the current Tostado Sur mineral reserves pit design. A bulk density of 2.40 g/cm^3 was used to convert volume to tonnage.*
6. *Underground mineral reserves are reported at a cut-off NSR of US$ 148.39/t. Processing recoveries assumptions range from 84.39% to 96.14% for gold and from 75.23% to 90.02% for silver. The following cost assumptions were considered: mine-operating costs: US$ 94.39/t; processing cost: US$ 32.80/t; G&A cost: US$ 15.75/t, and sustaining capital cost: US$ 5.44/t. A royalty of 2% was considered for mineral resources contained in the Fortuna zone. Underground primary development cost is excluded from the cut-off NSR calculation. Underground mineral resources are reported fully diluted; they consider a minimum mining width of 0.60 m and hangingwall and footwall overbreak dilutions of 0.30 m each to determine reasonable prospects of eventual economic extraction. Bulk densities ranging from 2.36 g/cm^3 to 2.57 g/cm^3 were used to convert volume to tonnage.*
7. *Mineral resources contained in tailings are reported at a cut-off grade of 0.50 g/t gold-equivalent, using metallurgical recoveries of 60% for gold and 30% for silver, and a rehandling and reprocessing cost of US$ 11.70/t. A bulk density value of 1.75 g/cm^3 was used to convert tailings volume to tonnage.*
8. *Mineral resources are reported as of June 30, 2024.*
9. *All figures are rounded to reflect the relative accuracy of the estimate. Numbers may not add up due to rounding.*

15 Mineral Reserve Estimates

15.1 Mineral Reserve Summary

The Mineral Reserve Statement of El Peñón as of June 30, 2024, is presented in Table 15-1.

Table 15-1: El Peñón Mineral Reserve Statement, June 30, 2024

Reserves	Category	Tonnes	Grade		Contained Metal	
		(kt)	Au (g/t)	Ag (g/t)	Au (koz)	Ag (koz)
Open Pit	Proven	—	—	—	—	—
	Probable	21	0.03	412.9	—	272
	Total Open Pit	**21**	**0.03**	**412.9**	**—**	**272**
Underground	Proven	828	5.46	208.1	145	5,540
	Probable	3,132	4.72	154.7	475	15,574
	Total Underground	**3,960**	**4.87**	**165.8**	**620**	**21,114**
Low-grade Stockpile	Proven	—	—	—	—	—
	Probable	799	1.26	32.0	32	821
	Total Low-grade Stockpile	**799**	**1.26**	**32.0**	**32**	**821**
Combined	Proven	828	5.46	208.1	145	5,540
	Probable	3,952	3.99	131.2	507	16,667
	Grand Total	**4,779**	**4.25**	**144.5**	**653**	**22,207**

1. *Mineral reserves have been estimated by the El Peñón long-term mine planning team and reviewed by Jimmy Avendaño, Registered Member of the Chilean Mining Commission, Technical Services Manager of El Peñón, and a qualified person as defined by NI 43-101. The mineral reserve estimate conforms to the CIM Definition Standards.*
2. *Metal price assumptions of US$1,700/oz for gold and US$20.00/oz for silver were used. Selling costs of US$ 13.20/oz for gold and US$ 0.15/oz for silver were considered.*
3. *Open pit mineral reserves are reported at a cut-off NSR of US$ 64.00/t. Processing recovery assumptions range from 90.37% to 94.63% for gold and from 76.25% to 88.89% for silver. Mine operating (including haulage to the processing plant), processing, G&A, and sustaining capital costs assumptions of US$ 10.00/t, US$ 32.80/t, US$ 15.75/t and US$ 5.44/t were considered respectively.*
4. *Underground mineral reserves are reported at a cut-off NSR of US$ 148.39/t. Processing recoveries assumptions range from 84.39% to 96.14% for gold and from 75.23% to 90.02% for silver. The following cost assumptions were considered: mine-operating costs: US$ 94.39/t; processing cost: US$ 32.80/t; G&A cost: US$ 15.75/t, and sustaining capital cost: US$ 5.44/t. A royalty of 2% was considered for mineral reserves planned to be mined in the Fortuna zone. Underground development cost assumptions of US$ 3,182/m for primary development faces of 4.3m wide by 4.5m high sections, and of US$ 3,008/m for primary development faces of 4.0m wide by 4.0m high sections are excluded from the cut-off NSR calculation. Development costs are considered during the economic evaluation stage before conversion of mineral resources to mineral reserves, considering the specific development requirements of each mining panel. All stope and development shapes included in the mineral reserves contain a majority of measured and indicated mineral resources and may include minority portions of inferred mineral resources and unclassified material.*
5. *Mineral reserves contained in low-grade stockpiles are reported at a cut-off grade of 0.75 g/t gold-equivalent. Processing recoveries assumptions of 88.0% for gold and 80.8% for silver were used. Operating and processing cost assumptions of US$ 3.03/t and US$ 32.80/t, respectively, were considered.*
6. *Mineral reserves are stated at a mill feed reference point and account for minimum mining widths, diluting material, and mining losses.*
7. *Mineral reserves are reported as of June 30, 2024.*
8. *All figures are rounded to reflect the relative accuracy of the estimate. Numbers may not add up due to rounding.*

9. *The qualified person responsible for this section of the Technical Report is not aware of any environmental, permitting, legal, title, taxation, socio-economic, marketing, political or other relevant factors that could materially affect the mineral reserve estimate.*

15.2 Conversion Methodology

The methodology used at El Peñón to convert mineral resources to mineral reserves is summarized as follows:

- Verify geometries for the block model and confirm block model depletion with current excavated wireframes up to the effective reporting date.
- NSR values are calculated on the block models considering gold and silver price assumptions and estimated grades, mineral resource classification, metallurgical recoveries, selling costs and royalties if applicable.
- Drift and stope mining shapes are designed using MSO or VSO, considering the NSR value calculated on the block models, the NSR cut-off values shown in Table 15-3, and the design parameters summarized in Table 15-4 and Table 15-5. All the designed mining shapes are evaluated against the block models to report tonnes, gold and silver grades by classification.
- The metal prices, processing recoveries and operating costs, excluding primary development costs, summarized in Table 15-2 and Table 15-3, are used to determine an operating margin for each shape.
- Design primary development, including ramps, ventilation, materials handling, access and other infrastructure.
- Before including mining shapes to the mineral reserves inventory, geomechanical considerations are revised, especially in areas with poor ground conditions or where pillars between the designed stopes and previously mined areas are narrow. Design is adjusted when required.
- The designed mining panels, levels and individual shapes are subject to an economic evaluation to ensure the operational cash-flow expected to be obtained by mining and processing them pays for the required development and infrastructure. As a result, isolated zones, levels or shapes with NSR values higher than the cut-off values, that do not pay for the necessary development, are excluded from the mineral reserves.
- Drift segments that must be developed to access zones with a positive economic evaluation and that have an NSR value below the break-even cut-off value but above the marginal cut-off value, are also included in the mineral reserves inventory.
- Mining shapes containing a majority portion of measured or indicated tonnes are converted to proven or probable mineral reserves, respectively.

15.3 NSR Value Calculation

NSR values are calculated for each block contained in the block models considering the parameters summarized in Table 15-2. Unclassified blocks contained in the hangingwall or footwall of the vein are assigned a zero NSR value assigned, to avoid designing stope or drift mining shapes that may exceed the NSR cut-off value as a result of considering a revenue contribution from waste. Metallurgical recoveries considered for NSR value calculation on blocks are variable depending on the zone and grade range. Recoveries used are summarized in Section 13 of this Technical Report.

Table 15-2: NSR calculation parameters

Parameters	Units	Value
Gold Price	US$/oz	1,700
Silver Price	US$/oz	20
Gold Selling Cost	US$/oz	13.2
Silver Selling Cost	US$/oz	0.15
Royalties (only Fortuna zone)	%	2
Gold Metallurgical Recovery	%	Variable
Silver Metallurgical Recovery	%	Variable

15.4 NSR Cut-Off Value

NSR cut-off values (COV) used for the underground mineral reserve estimate were based on average actual operating costs from April 2023 to February 2024 at El Peñón. Primary development costs were excluded from the COV calculation since development requirements for each mining zone are evaluated in a subsequent step of the mineral reserve estimation process. The underground mineral reserves at El Peñón were completed using a breakeven COV of US$ 148.39/t. A marginal COV of US$ 53.50/t was used to identify marginal development ore.

The open pit mineral reserves were completed using a cut-off value of US$ 64.00/t, based on the operating cost estimate for the Tostado Sur zone. The main parameters used to complete the COV calculations are summarized in Table 15-3.

Table 15-3: NSR Cut-off value calculation parameters

Parameters	Units	Value
Open Pit Mining Cost	US$/t	10.00
Underground Mining Cost1	US$/t	94.39
Underground Incremental Mining Cost	US$/t	30.21
Processing Cost	US$/t	32.80
Incremental Processing Cost	US$/t	23.29
G&A Cost	US$/t	15.75
Sustaining Capital Cost	US$/t	5.44
Open Pit NSR Cut-off Value	**US$/t**	**64.00**
Underground NSR Cut-off Value	**US$/t**	**148.39**
Marginal Underground NSR Cut-off Value	**US$/t**	**53.50**

15.5 Mining Shapes Design Parameters

Key stope shape design parameters required for automatic shape design by MSO or VSO are summarized in Table 15-4. Hangingwall and footwall over breaks are applied to the stope design of mineral reserves. The over breaks applied consider actual stope reconciliation results for each zone and stope span, which is determined by the sub-level spacing and maximum stope length opened before the backfill cycle is started. Parameters summarized in Table 15-4 show typical over breaks for standard design configurations (open stope length of 30 m and a stope height measured from the back of the bottom drift to the floor of the top drift of 12 m). These may vary locally depending on the specific design configuration finally selected.

Table 15-4: Stope design parameters by zone

Zone	Stope Length (m)	Stope Height (m)	Minimum Mining Width (m)	Minimum Waste Pillar Width (m)	Hangingwall + Footwall Overbreak (m)	Mining Recovery (%)
Chiquilla Chica	30	12	1.0	3.0	1.0	97.50
Laguna	30	12	1.0	3.0	1.0	97.50
Fortuna	30	12	1.0	3.0	0.80 to 1.80	97.50
Mina Sur	30	12	1.0	3.0	0.50 to 2.60	97.50
Mina Norte	30	12	1.0	3.0	0.45 to 1.20	97.50
Bloque Norte	30	12	1.0	3.0	0.44 to 1.20	97.50
PAV	30	12	1.0	3.0	0.70 to 1.10	97.50

Due to the narrow vein width, split-blasting is usually applied at El Peñón, and drift mining shapes are therefore designed accordingly. Split blasting at El Peñón is used in development along the vein where the vein material and the wall rocks are blasted and mucked separately (typically vein material first) in order to reduce dilution (split blasting is often termed resuing). Drift design parameters used for automatic design are summarized in Table 15-5. It is important to note that the minimum excavation width corresponds to the 0.60 m minimum mining width plus the hangingwall and footwall overbreak, totalling 1.10 m. For any vein narrower than 0.60 m the excavation width will be driven by the minimum mining width, while for veins wider than 0.60 m the width will be driven by the overbreak. As an example different configurations are shown in Table 15-6.

Table 15-5: Drift (considering split-blasting) design parameters

Parameters	Units	All Zones
Drift Height	m	4.00
Minimum Mining Width	m	0.60
Hangingwall Overbreak	m	0.25
Footwall Overbreak	m	0.25
Mining Recovery	%	97.50

Table 15-6: Split-blasting design configurations by vein width

Vein width (m)	Minimum mining width (m)	HW + FW overbreak (m)	Design width (m)
0.20	0.60	0.50	1.10
0.40	0.60	0.50	1.10
0.60	0.60	0.50	1.10
0.80	0.60	0.50	1.30
1.00	0.60	0.50	1.50
1.20	0.60	0.50	1.70

15.6 Primary Development Design and Economic Evaluation

Designed mining shapes are evaluated against the block models to report tonnes, gold and silver grades by classification. An operating margin is calculated for each mining shape which is obtained by subtracting all operating costs, excluding primary development, from the estimated revenue to be obtained by mining and processing the tonnes contained. The estimated revenue considers gold and silver prices, selling costs, estimated metallurgical recoveries and royalties if applicable.

Primary development required to access mining panels or levels with positive operating margins is designed and includes ramps, materials handling, ventilation and auxiliary infrastructure. Typical design parameters and unit costs for the most relevant underground development types are summarized in Table 15-7.

Table 15-7: Development design parameters and cost

Item	Dimensions	Development Cost (US$/m)	Comment
Ramp Decline	4.3 (w) x 4.5 (h)	3,182	Minimum turning radius of 15m and maximum decline of 15%
Ventilation Drifts	4.0 (w) x 4.0 (h)	3,182	To connect exhaust drop raises of raise borers
Remucks	4.0 (w) x 4.0 (h)	3,182	For materials handling purposes
Access	4.0 (w) x 4.0 (h)	3,008	To access ore drives, gradient varies depending on layout
Ventilation Raise	2.4 m diameter	3,196	Generally exhaust raise borer to surface

Once primary development design is completed, all mining panels, levels and shapes are subject to economic evaluation to ensure the operating margin estimated to be obtained by mining and processing them is enough to pay for the primary development required. If the result of the economic evaluation is positive, mining shapes located in the evaluated zone that contain a majority portion of measured or indicated tonnes are converted to proven and probable mineral reserves, respectively.

15.7 Reconciliation

Mine to mill reconciliation for the period from July 2023 to June 2024 is presented in Table 15-8. Positive gold grade differences are mainly attributed to the underestimation of high gold grades in the La Paloma vein short-term block models.

Table 15-8: Reconciliation, July 2023 to June 2024

Reconciliation - July 2023 to June 2024	Tonnes (kt)	Au (g/t)	Ag (g/t)
Total mined and reclaimed from stockpiles	1,371,278	2.66	94.6
Processed feed reported	1,371,278	3.11	91.76
Difference (%)	**0.0%**	**17.2%**	**-3.0%**

15.8 Mineral Reserve Estimate

The Mineral Reserves Statement for El Peñón as of June 30, 2024, is presented at the beginning of Section 15 in Table 15-1. A summary of the mineral reserves by mining block is presented in Table 15-9.

The qualified person responsible for this section of the Technical Report is not aware of any mining, metallurgical, infrastructure, permitting, or other relevant factors that could materially affect the mineral reserve estimate.

Table 15-9: Summary of El Peñón mineral reserves by zone, June 30, 2024

Zone	Category	Tonnes (kt)	Grade		Contained Metal	
			Au (g/t)	Ag (g/t)	Au (koz)	Ag (koz)
Chiquilla Chica	Proven	10	0.59	423.9	—	135
	Probable	27	0.52	387.9	—	334
	Total Chiquilla Chica	**37**	**0.54**	**397.6**	**1**	**470**
Laguna	Proven	11	6.77	65.6	2	23
	Probable	29	4.75	46.6	4	43
	Total Laguna	**40**	**5.29**	**51.8**	**7**	**66**
Fortuna	Proven	32	5.08	244.4	5	250
	Probable	157	3.94	250.5	20	1,268
	Total Fortuna	**189**	**4.13**	**249.5**	**25**	**1,519**
Tostado Sur	Proven	—	—	—	—	—
	Probable	21	0.03	412.9	—	272
	Total Tostado Sur	**21**	**0.03**	**412.9**	**—**	**272**
El Peñón Mina Sur	Proven	323	6.17	145.6	64	1,511
	Probable	1,347	5.23	112.3	226	4,864
	Total El Peñón Mina Sur	**1,669**	**5.41**	**118.8**	**290**	**6,375**
El Peñón Mina Norte	Proven	331	4.03	239.8	43	2,553
	Probable	888	3.90	177.8	111	5,077
	Total El Peñón Mina Norte	**1,219**	**3.93**	**194.6**	**154**	**7,630**
El Peñón Bloque Norte	Proven	108	8.37	261.9	29	906
	Probable	675	5.13	183	111	3,972
	Total El Peñón Bloque Norte	**783**	**5.57**	**193.8**	**140**	**4,877**
Pampa Augusta Victoria (PAV)	Proven	14	4.13	359.5	2	162
	Probable	9	4.55	51.4	1	15
	Total PAV	**23**	**4.30**	**239.5**	**3**	**176**
Low-grade Stockpile	Proven	—	—	—	—	—
	Probable	799	1.26	32.0	32	821
	Total Low-grade Stockpile	**799**	**1.26**	**32.0**	**32**	**821**
Combined	Proven	828	5.46	208.1	145	5,540
	Probable	3,952	3.99	131.2	507	16,667
	Grand Total	**4,779**	**4.25**	**144.5**	**653**	**22,207**

1. *Mineral reserves have been estimated by the El Peñón long-term mine planning team and reviewed by Jimmy Avendaño, Registered Member of the Chilean Mining Commission, Technical Services Manager of El Peñón, and a qualified person as defined by NI 43-101. The mineral reserve estimate conforms to the CIM Definition Standards.*
2. *Metal price assumptions of US$1,700/oz for gold an US$20.00/oz for silver were used. Selling costs of US$ 13.20/oz for gold and US$ 0.15/oz for silver were considered.*
3. *Open pit mineral reserves are reported at a cut-off NSR of US$ 64.00/t. Processing recovery assumptions range from 90.37% to 94.63% for gold and from 76.25% to 88.89% for silver. Mine operating (including haulage to the processing plant), processing, G&A, and sustaining capital costs assumptions of US$ 10.00/t, US$ 32.80/t, US$ 15.75/t and US$ 5.44/t were considered, respectively.*
4. *Underground mineral reserves are reported at a NSR cut-off of US$ 148.39/t. Processing recoveries assumptions range from 84.39% to 96.14% for gold and from 75.23% to 90.02% for silver. The following cost assumptions were considered: mine-operating costs: US$ 94.39/t; processing cost: US$ 32.80/t; G&A cost: US$ 15.75/t, and sustaining capital cost: US$ 5.44/t. A royalty of 2% was considered for mineral reserves planned to be mined in the Fortuna zone. Underground development cost assumptions of US$ 3,182/m for primary development faces of 4.3m wide by 4.5m high sections, and of US$ 3,008/m for primary development faces of 4.0m wide by 4.0m high sections are excluded from the cut-off NSR calculation. Development costs are considered during the economic evaluation stage before*

conversion of mineral resources to mineral reserves, considering the specific development requirements of each mining panel. All stope and development shapes included in the mineral reserves contain a majority of measured and indicated mineral resources and may include minority portions of inferred mineral resources and unclassified material.

5. *Mineral reserves contained in low-grade stockpiles are reported at a cut-off grade of 0.75 g/t gold-equivalent. Processing recoveries assumptions of 88.0% for gold and 80.8% for silver were used. Operating and processing cost assumptions of US$ 3.03/t and US$ 32.80/t, respectively, were considered.*
6. *Mineral reserves are stated at a mill feed reference point and account for minimum mining widths, diluting material, and mining losses.*
7. *Mineral reserves are reported as of June 30, 2024.*
8. *All figures are rounded to reflect the relative accuracy of the estimate. Numbers may not add up due to rounding.*
9. *The qualified person responsible for this section of the Technical Report is not aware of any environmental, permitting, legal, title, taxation, socio-economic, marketing, political or other relevant factors that could materially affect the mineral reserve estimate.*

16 Mining Methods

Ore from underground mines is, and will continue to be, the main source of feed for the El Peñón mill. Currently, ore is sourced from four of the seven underground mining zones. A small open pit (Tostado Sur) is expected to contribute to production starting in the second half of 2024.

The various underground mining zones are accessed by ramps; this type of access is suitable for this mine due to its shallow depth and large lateral extension. The underground workings of the core mine extend approximately 10 km along strike and span a vertical extent of approximately 600 m, measured from the highest portal collar elevation to the bottom-most mine workings. The ramps provide flexibility for rapid adjustments for changes in direction and elevation and allow access to the veins at appropriate elevations.

Mining at El Peñón utilizes the bench-and-fill mining method (B&F) and variants of sub-level stoping. A small percentage of cut-and-fill mining (C&F) is also applied where required, depending on the characteristics of vein geometry and ground conditions.

16.1 Underground Mining Methods

The main underground mining method utilized at El Peñón is the bench-and-fill method, which is a narrow long-hole stoping method that uses a combination of rockfill and cemented rockfill. The method involves ore development at regular level intervals, which, at El Peñón, range generally between 10 and 20 m. Due to narrow vein widths, a “split-blasting” technique is regularly used to reduce dilution in secondary development of ore zones. The minimum mining width of a split blast is of 0.6 m plus 0.5 m of total overbreak, generating a minimum blast void of 1.1 m width. However, typical designs result in a blast void of around 1.8 m width. Once the split-blast ore is mucked out, the remaining waste is slashed out and is either used for rockfill purposes or sent to waste dumps on surface. A schematic cross-section of a split blasting face is shown in Figure 16-1. The split-blasting technique has been refined and improved at El Peñón since 2016, reducing the achievable ore mining width, minimizing dilution and ore loss and improving productivities for faster cycle times. In some cases, development rounds that would have previously been mined out as waste if blasted to the full drift dimensions are mined selectively as separate ore and waste rounds.

Stopes are formed by drilling blast holes between levels or by drilling upper blastholes from the lower level to undercut the back. After blasting, the broken ore is extracted from the lower level using conventional and remotely operated load-haul-dumps (LHDs). Bench-and-fill is a bottom-up method in which mining takes place above and adjacent to previously mined and backfilled stope voids. Once the maximum-allowed stope span is reached, and after completion of ore extraction from the blasted stope, stopes are filled with rockfill and selective use of cemented rockfill.

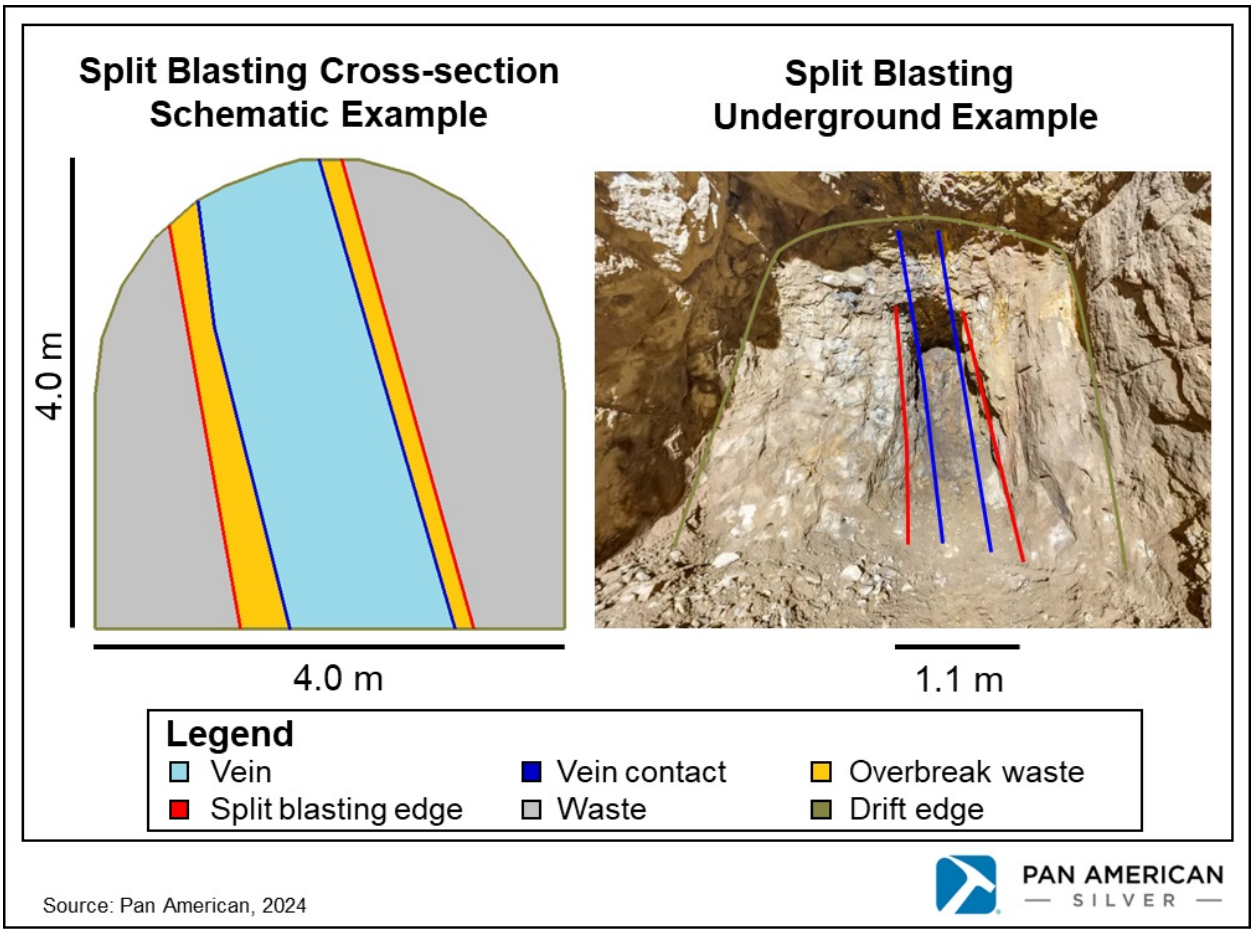

Figure 16-1: Schematic cross-section of drift and vein showing extent of split-blasting technique

16.2 Underground Mine Design

Mine access is achieved via spiral declines generally located in vein footwall. The declines have section dimensions of 4.3 m wide x 4.5 m high at a gradient of up to ± 15% and a minimum turning radius of 15 m. Access to the ore is made approximately every 10 to 20 vertical metres via crosscuts that have section dimension of 4.0 m wide x 4.5 high. Infrastructure generally included at every intersection of declines with crosscuts consists of service bays, ventilation drifts to connect crosscuts to return air raises, remucks, and dewatering infrastructure when required.

Drifts are designed at 4.0 m wide x 4.0 m high and are developed as mentioned in the previous section, using a split-blasting technique when required. The drift dimensions enable the use of medium-sized equipment for improved productivity. Ore drift development is guided by geological controls to ensure that development closely follows the mineralization. All ore drifts faces are therefore chip-sampled for grade control during every drill, blast, load, and haul cycle, at approximately 3.3 m intervals. These samples are used to delimit the economic portion of each stope, which generally varies in width between 1.8 and 6.0 m. An example of a bench-and-fill mining panel is shown in Figure 16-2.

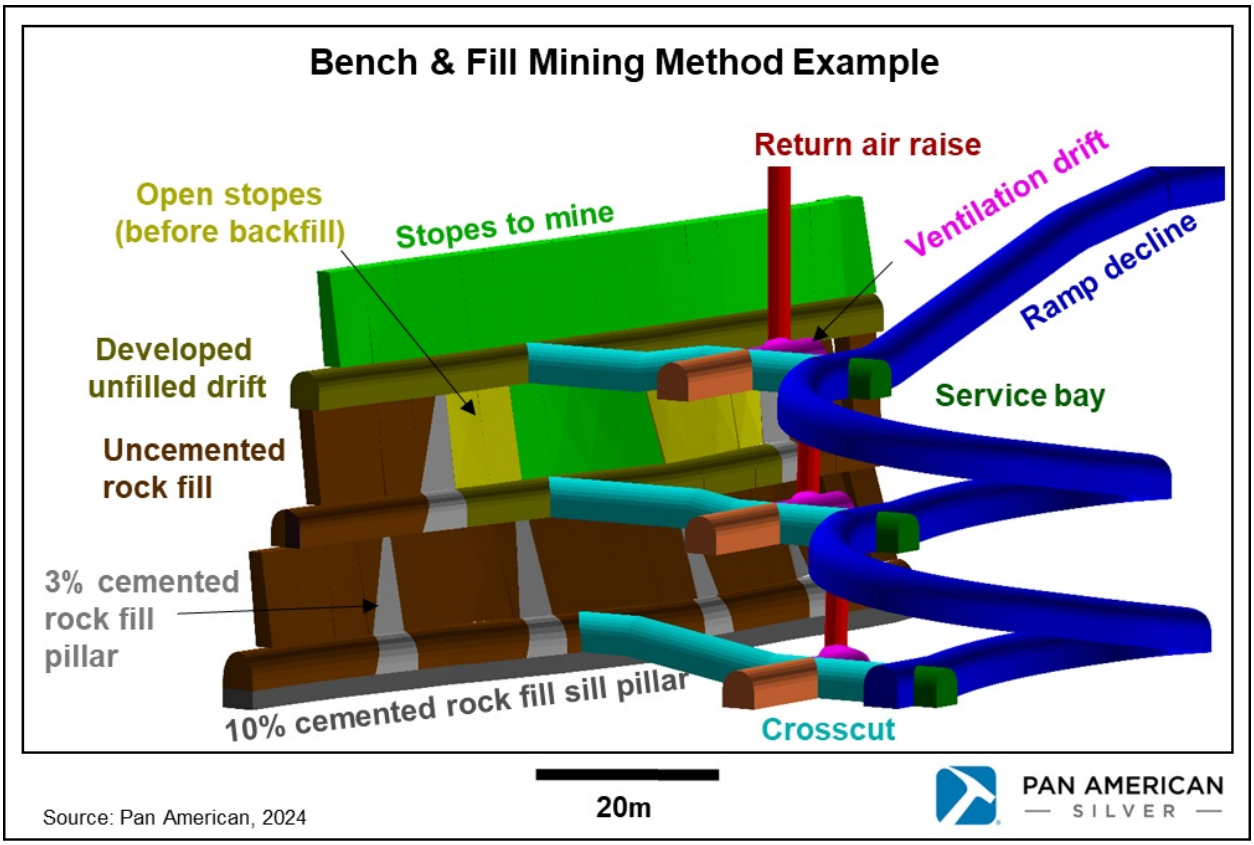

Figure 16-2: Schematic example of bench-and-fill mining method

16.3 Mining Sequence

The underground mining sequence starts with the development of the spiral ramp decline. Once the ramp decline reaches the required elevation, three faces are generated which consist of: the continuation of the ramp decline; the access crosscut to the ore; and the service bay, which is located opposite the crosscut at the ramp. The crosscut development continues until the vein is intersected. During the development of the crosscut, the remuck and the ventilation drift (which is subsequently connected to the upper-level ventilation drift via drop raising for descending ramps or directly to the raise borer ventilation exhaust raise to surface for ascending ramps) are also developed. Once services are available at the crosscut, the drift development starts, generally in both directions along the vein strike. The ramp decline development continues in parallel towards the next level, where the development sequence is repeated.

For mining sequence optimization purposes, large mining zones are divided into panels, generally consisting of three to four levels per panel. At the bottom-level drift, once development is completed, a 2 m high cut to the floor is blasted and filled with 10% cemented rockfill, creating a stable sill pillar to separate mining panels. This allows stoping to commence while ramp decline development continues and ensures maximum recovery of the mineralization.

Once the drift reaches the vein edge, to start stoping of the ore between levels, vertical slot raises are excavated at both extremities to generate free faces for production blasting. Once the slot is opened, the stoping sequence retreats towards the crosscut. Typically, open-stope spans measuring 15 to 60 m along strike can be achieved before backfilling.

For dilution control, when the maximum stope span is reached (as determined by geotechnical considerations and laser scan measurements), a cemented barricade is constructed and 3% cemented rockfill is placed in the stope from the upper level until a 2 m-wide solid pillar is generated. Then, the remainder of the stope void is filled with rockfill from waste development and split-blast slashing. Subsequently, a new slot raise is constructed beside the cemented pillar and stoping continues towards the access. Backfilled stopes are also used later as working floors for the mining of the upper levels of the production panel. The sequence is finished when the top level of the panel is mined by undercutting the back, beneath the overlying panel's sill pillar.

16.4 Geomechanics and Ground Support

The El Peñón deposit comprises multiple geomechanical domains within the epithermal deposit. The steeply dipping mineralization is structurally controlled and primarily associated with north-south-trending major faults that intersect the volcanic rock. Vein are typically steeply dipping ranging between 50° and 90°.

The competency of the rock mass is primarily affected by argillic siliceous alteration. Other types of alteration, such as supergene alteration in the shallower zones of the deposit are present but to a lesser extent. The mineralized veins are associated with intense to moderate argillic alteration haloes which typically result in a weakened rock mass on the vein margins. This argillic alteration grades into siliceous alteration further away from the veins. The intense argillic alteration haloes around the mineralized zones vary in thickness (1 to 2 m). The moderate argillic alteration haloes extend up to 10 m away from the veins.

The structural model includes major, intermediate, and minor structures. The major structures are persistent faults when compared to the mine scale and are more than 10 cm thick. The mineralization is hosted within these structures. The major faults are oriented along the primary structural trend but local variations are observed. Intermediate structures are not associated with specific orientations, have a shorter persistence than the major faults, and are less than 10 cm thick. The minor discontinuities consist primarily of joints.

The various combinations of alteration type, alteration intensity, and structures result in highly variable rock mass properties. The mineralized zone is typically associated with strong fracture intensity and intense alteration which results in a weak rock mass (RMR89: 15 to 40). The extent of this weak zone varies from 1 m to 10 m. Further away from the mineralized veins, the rock mass is less fractured and without weakening alteration (RMR89: 45 to 80). The mining operation is in a region where the horizontal stress is slightly higher than the vertical stress. The k-ratio is estimated at between 1.1 and 1.4.

The stope design recommendation is based on the stope height, rock mass quality, vein inclination, and unplanned dilution. The recommendations are generated using the Matthews method to predict the unplanned overbreak. Dilution estimates are based on a specific stope height while considering a range of stope lengths, rock mass quality (RMR89), stope inclination, and stope widths. Dilution calculations are continually calibrated with actual stope reconciliation. These results are integrated into the design parameters applied to the mineral reserves stope optimization process.

Ground support elements include rock bolts (2.4 to 4.0 m-long and 22 mm in diameter), fibre-reinforced shotcrete, and wire mesh to accommodate the varying ground conditions. When ground conditions are poor typical ground support requirements include shotcrete (50mm) and systematic bolting. In competent ground the excavation can be left unsupported, however, any combination of the support elements are used based on local ground conditions.

16.5 Mine Equipment

All underground mining operations are carried out by Pan American while the open pit mining operations, representing only a very small proportion of the production in 2025, and restricted to less than 5,000 t per month, are planned to be carried out by a contractor.

A list of the active mine equipment at El Peñón is shown in Table 16-1 and Table 16-2. Equipment varies in types, models, and ages.

Table 16-1: Underground mobile equipment for development & production

Underground Equipment	Model	Units
Development Jumbo Drills	Atlas Copco Boomer S2	6
Development Jumbo Drills	Atlas Copco Boomer M2C	7
Development Jumbo Drills	Epiroc Boomer S1D	1
Long Hole Production Drills	Atlas Copco Simba S7D	10
Long Hole Production Drills	Epiroc Simba S7C	1
LHD 6yd3	Cat R-1600G	4
LHD 6yd3	Cat R-1600H	14
Conventional Trucks	Scania P400	2
Conventional Trucks	Scania DAF F430	7
Conventional Trucks	Mercedes Benz Arocs 4848K	2
Conventional Trucks	Mercedes Benz Axor 3344	3
Ejection Bed Trucks	Cat AD-30	4
Ejection Bed Trucks	Mercedes Benz Axor 3344	2
Ejection Bed Trucks	Scania P410	10
Bolters	Boltec Atlas Apernador H235S	3
Bolters	Jumbo Resemin Bolter 99	1
Roboshots	Normet Alpha 20	8
Roboshots	Normet Alpha 30	1
Mixers	Normet Variomec MF050	3
Mixers	Normet Tornado S2	5

Table 16-2: Support mobile equipment

Support Equipment	Model	Units
Wheel Loaders	Volvo L260H	1
Wheel Loaders	Volvo L120F	4
Wheel Loaders	SDLG LG 968	1
Scalers	Cat 416F2	14
Telescope Crane	Manitou MT1030S	1
Telescope Crane	Manitou MT1030ST	20
Scissor Lift	Normet Utilift 1430	1
Grader	Cat 140H	1
Grader	Cat UG20K	2
Service Trucks	Various	4
Excavators	Various	2
Water Trucks	Various	7

The equipment fleet size is considered sufficient to execute the LOM plan considering that there are no production expansions currently planned. Equipment replacement costs are included in the sustaining capital cost estimates which are considered in the cut-off calculation used for mineral reserve estimation.

16.6 Mine Services

16.6.1 Dewatering

Three dewatering systems are currently operating at El Peñón. The auxiliary pumping system collects water at the faces and pumps it to the secondary pumping stations using Grindex portable pumps; these have a dewatering capacity of 10 l/s, maximum power of 20 kW, and can handle water columns of up to 40 m. Secondary pumping stations are therefore constructed every 40 vertical meters. These secondary pumping stations consist of a fibre pool and centrifugal multistage 40 hp pumps of 20 l/s capacity. Water is pumped from there towards the main pumping stations.

The main pumping stations decant water and pump it to HDPE-lined ponds on surface. The main pumping stations consist of a pond with multistage centrifugal 220 hp pumps of 30 l/s capacity. These pumps can handle water columns of up to 320 m, which is approximately equivalent to a maximum operating pressure of 30 bars. The equipment uses a variable frequency drive (VFD) which allows the regulation of the speed of the motor and the optimization of the electrical and mechanical operation of the pumps.

16.6.2 Ventilation

Ventilation of the underground mines at El Peñón is provided through the use of primary and secondary ventilation systems. The primary ventilation system is an exhaust/pull system. Fresh air is supplied through portals, intake ventilation raises, and declines. Return air is exhausted through return air raises (RAR) to surface by main exhaust-air axial fans usually positioned on surface. The first section of the vertical RAR, from the surface to the first underground levels, is typically a 2.4 m- or 3.1 m-diameter raise bore. The remaining RAR connections to the different levels are staggered and excavated via drop-raising.

The distribution of airflows is different for each mining zone and depends on the elevation of active production levels and the airflows required by regulations. The sum of the airflow required under maximum expected production rates, plus expected leaking losses, define the required fan capacity. All the main fans are controlled online via telemetry system and are equipped with VFD; this allows for the continuous control of the airflow requirements and for the adjustment of fan power, thereby saving energy.

The secondary ventilation system is used for ventilation of blind development faces and production faces. This system is a push system which forces fresh air from declines to the work faces via auxiliary ventilation fans (of varying power and models depending on the local air flow requirements) through 1,000 mm-diameter flexible ventilation ducts. Ventilation duct ends are located at a maximum distance of 30 m from the face. Air flows back through the drift to the RAR, where it is pulled to surface by the main ventilation system.

An example of the ventilation circuit of the Pampa Campamento mine, located in the Mina Sur zone, is shown in Figure 16-3.

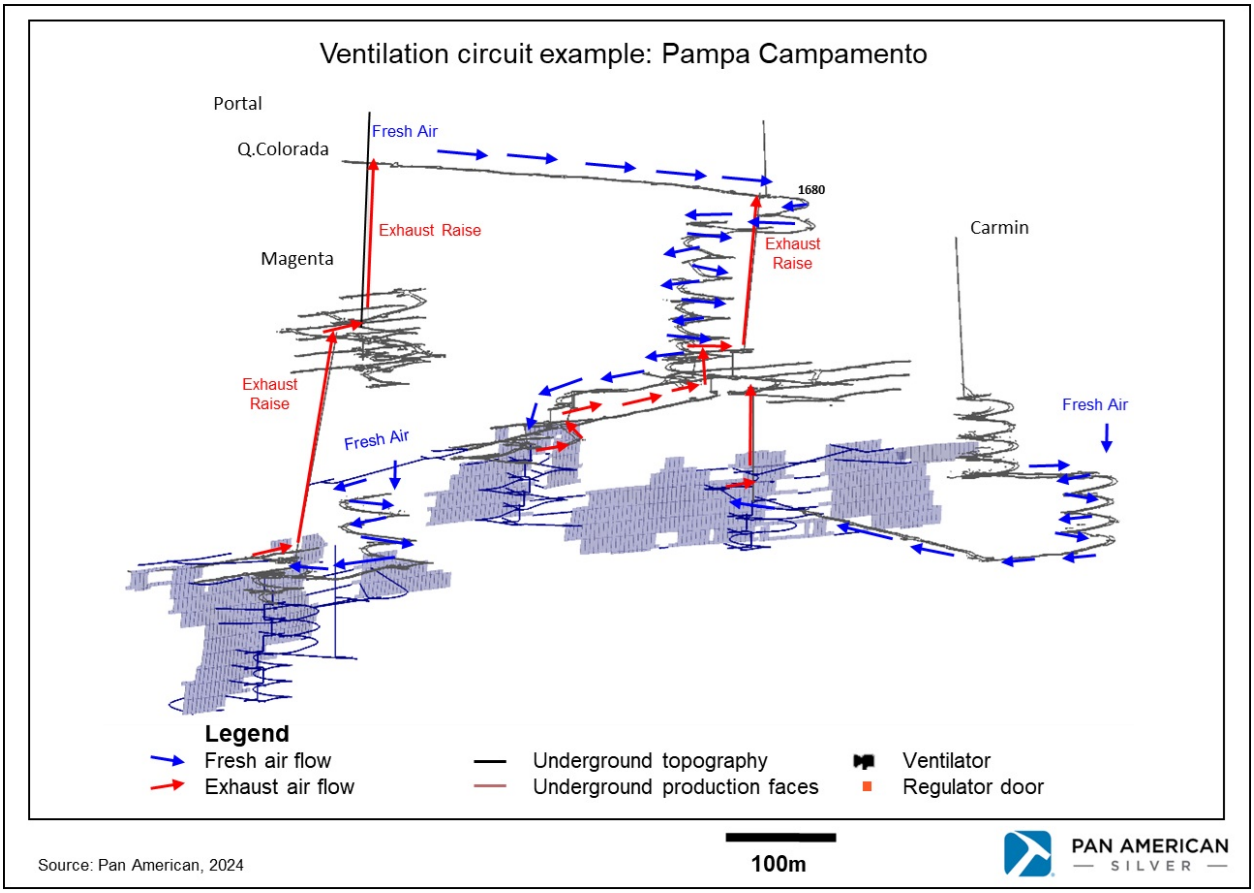

Figure 16-3: Ventilation circuit of the Pampa Campamento underground mine

16.6.3 Electrical

El Peñón is connected to the National Electric Grid by a 66 kV transmission line to the Palestina substation.

From the main substation at El Peñón, at 66 kV / 6.6 kV and 20 MVA, power is distributed to the camp, processing plant and administrative facilities as well as to two mine feeders for distribution to areas southeast of the core mine area. From the main substation, power is also delivered to three distribution substations:

One for the Fortuna-Dominador satellite mining zone located west of the core mine area, at 6.6 kV / 23 kV and 2.5 MVA.

Two for the areas northeast of the core mine area at 6.6 kV / 23 kV and 4 MVA each.

One for the Chiquilla Chica satellite mining zone located south of the core mine area, at 13.2 kV / 23 kV and 2.5 MVA.

Several underground substations, at 23 kV / 400 V and 750 kVA or 6.6 kV / 400 V and 750 kVA, are used to provide 400 V power and distribute energy to all electrical loads.

16.6.4 Compressed Air

Compressed air is supplied through a network of carbon steel pipes of 6” diameter on surface and 4” diameter underground, at a constant pressure of 8 bar. Boosters are installed in remote zones, which are activated when pressure losses occur along the network. Delivered compressed air is dried and cleaned through a system of purifiers.

Two main compressors are currently active at the El Peñón core mine area; they are located near the Orito and Bonanza portals. The compressor located near the Orito portal supplies compressed air to the Mina Sur and southern mines of the Mina Norte zone, while the compressor located near the Bonanza portal supplies the northern mines of the Mina Norte zone and the Bloque Norte zone.

16.7 Life of Mine Plan

The LOM plan was developed based on the mineral reserves inventory of El Peñón as of June 30, 2024, and considers an integrated operation producing mainly from underground mines, with a small proportion of the production until 2026 obtained from the Tostado Sur open pit. The ore produced by the mining operations and reclaimed from stockpiles is fed to the mill. Considering current mineral reserves, the LOM plan indicates a total mine life of five years. The lateral development required to achieve the plan is approximately 163,000 m. The development strategy considers maintaining a lateral development rate of approximately 38,500 m per year to keep operational flexibility and ramp-down rates during the last year of operations.

No additional mineral resources or exploration potential has been considered in this mine plan. El Peñón has a track-record spanning almost 25 years of replacing mineral reserves through discoveries of new deposits. This indicates significant potential of extending the mine life beyond the current LOM by converting part of the inferred mineral resource to measured and indicated confidence classifications with additional infill drilling or through new discoveries by near-mine exploration.

17 Recovery Methods

The El Peñón processing plant and associated facilities process run-of-mine as well as stockpiled ore, using the main processes listed below:

- Crushing
- Grinding and pre-leaching thickening
- Leaching
- CCD concentrate solution recovery
- Clarification, zinc precipitation, and precipitate filtering
- Refining
- Tailings filtering and disposal

The process flowsheet is shown in Figure 17-1. The processing plant has a nominal production capacity of approximately 1.533 Mtpa. The plant processed 3,711 tonnes per calendar day (tpd) during the first six months of 2024.

17.1 Primary Crushing

Run-of-mine or stockpiled ore is dumped from a 5.6 m^3 capacity (VOLVO L260H) front-end loader and screened through a 600 mm square-grid grizzly into a 100 t-capacity hopper. Fine material is collected and transported directly to the conveyor belt that carries primary crushed material. A 1,500 mm-wide apron feeder is used to transfer ore from the dump hopper to the jaw crusher. Coarse material is fed into a 950 mm x 1,250 mm jaw crusher and crushed to a P80 size of 63.5 mm. The crushed ore is transported by a conveyor belt to a 1,500 t-capacity silo. Additionally, an auxiliary stockpile for crushing product is located to the northwest of the silo. The stockpile has a capacity of 10,800 t and covers an area measuring approximately 40 m x 60 m.

The ore stored in the silo is transported by a variable-speed mill-feed conveyor belt, which has a nominal capacity of 250 tonnes per hour (tph), to a transfer chute that discharges onto the conveyor belt that feeds the SAG mill.

The ore from the auxiliary stockpile is fed via a front-end loader to an encapsulated hopper with suppressor system to mitigate dust emissions. The hopper discharges onto a belt which transports the ore to the mill-feeder conveyor belt.

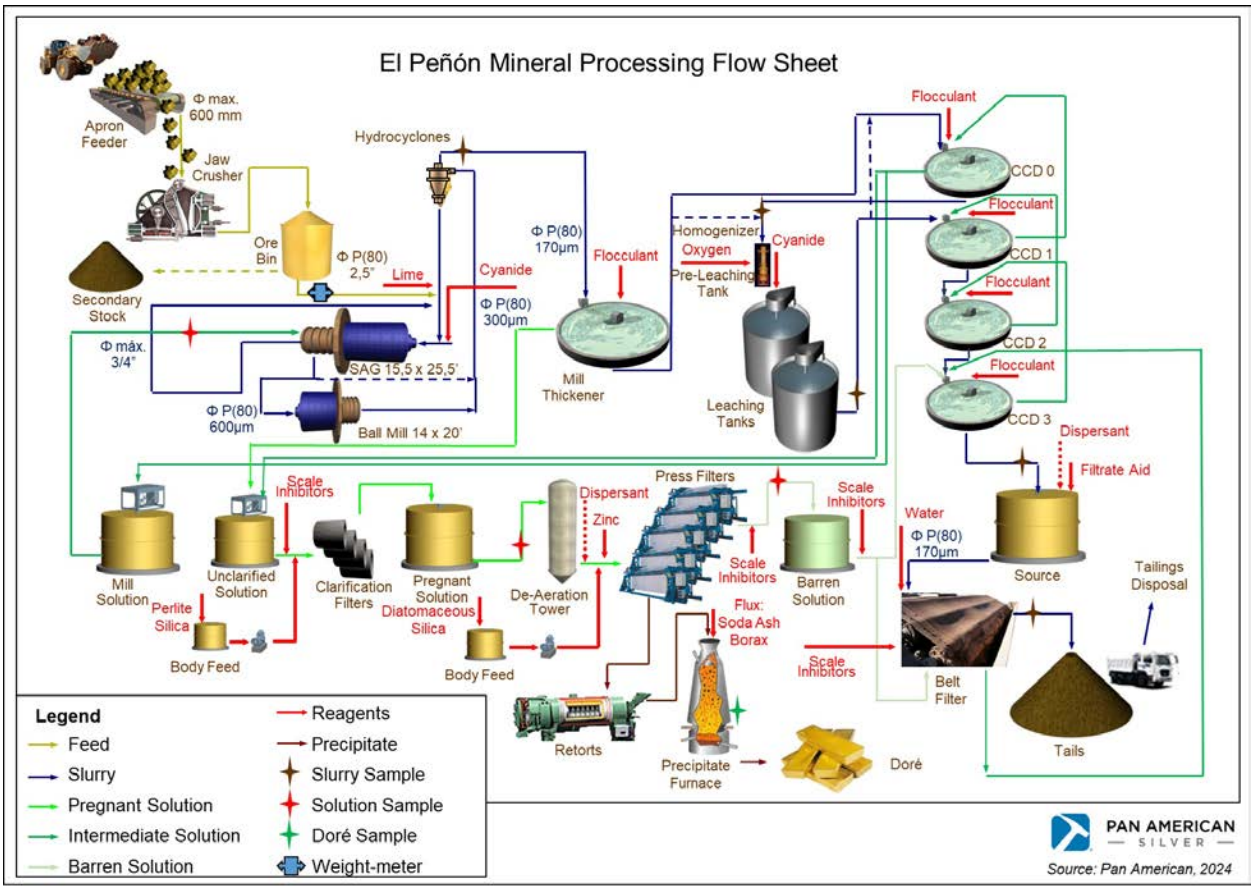

Figure 17-1: Mineral processing flowsheet

17.2 Grinding and Pre-Leach Thickening

Crushed ore and sodium cyanide process solution are fed into the SAG mill; the sodium cyanide solution is used as leaching agent.

The SAG mill operates in series with a ball mill, which feeds a battery of hydrocyclones. The underflow of the hydrocyclones returns to the SAG mill. Pebbles formed in the SAG mill are discharged by a trommel onto a conveyor belt, which transports the pebbles to a chute returning them to the mill-feeder conveyor belt. Alternatively, the pebbles can be mixed with crushed material to be recirculated to the grinding circuit. The density of the pulp fed to the hydrocyclones circuit is controlled online via density measurements using a nuclear densitometer.

The classification circuit consists of six hydrocyclones. Generally four hydrocyclones operate while two remain on standby. The cyclone overflow pulp contains between 42% and 46% solids with a P80 of 170 µm. Particle size is measured online through a PSI 300 particle-size analyzer and is controlled by changing hydrocyclones operating pressures. The hydrocyclones overflow is fed to the grinding thickener and the underflow is recirculated to the SAG mill feed. Spills are pumped to the mill's discharge sump using a floor pump located in the area.

Flocculant is added to the mill thickener to promote solid-liquid separation by settling. The underflow of the thickener, containing 50% solids, is pumped to CCD#0 for a second pre-wash stage, then the underflow is pumped to the first leach tank. The CCD#0 underflow discharge has two variable speed pumps (usually one running and one

on standby) with a flow rate of 250 m^3/h and a discharge head of 31 m. The pumping flow rate is controlled as a function of pump speed. The pumping rate is controlled as a function of slurry density, which is measured on-line by a nuclear densimeter. The overflow of the mill thickener, which is called “unclarified pregnant solution”, is sent by gravity to a storage tank.

17.3 Clarification

From the storage tank, the unclarified pregnant solution is pumped to four clarifying filters which clarify the solution to a maximum turbidity of 1 NTU. The clarified solution is transported into the clarified pregnant solution tank for the subsequent zinc precipitation step.

17.4 Leaching

Gold and silver leaching starts at the SAG mill, where sodium cyanide is added as a leaching agent. An extraction of around 75% is reached in this step.

Six reactors, with a combined capacity of 7,279 m^3 using mechanical agitators, leach the underflow of the grinding thickener.

Oxygen is also added to maximize dissolution kinetics. Oxygen is homogenized with the slurry by recirculation pumps that drive the slurry to an oxygen homogenizer. Oxygen is supplied from a liquid oxygen storage tank.

The leach tanks are arranged in series with cascading heights to facilitate gravity transport of the slurry. The reactors are bottom fed to reduce the possibility of short-circuiting the leach slurry between tanks. Under normal operating conditions the discharge from the last reactor is sent to the second thickener of the CCD concentrate solution recovery circuit.

17.5 CCD Concentrate Solution Recovery

The leached pulp, with a concentration of 48% to 55% solids, is transported by gravity to the CCD circuit, which consists of four high-capacity counter-current thickeners. The objective of this circuit is to wash the pulp and recover pregnant solution. The wash-solution flows counter-current to the solids flow, increasing the precious metals concentration of the solution. The overflow of the first CCD thickener (CCD#0) is transported by gravity to the pregnant solution storage tank, while the discharge of the last CCD thickener (CCD#3) is pumped to the filtration area.

17.6 Pregnant Solution Precipitation

In normal operation conditions, the Merril-Crowe process consists of the following stages:

- Deaeration of the clarified solution by circulating the fluid through a vacuum tower.
- Precipitation of gold and silver by the addition of zinc to the deaerated solution.
- Filtering of gold, silver and zinc precipitates.

The clarified pregnant solution (maximum flow of 275 m^3/h) is deaerated through a vacuum tower before entering the zinc precipitation stage. The vacuum tower is a 10.4 m^3-capacity reactor which achieves a rich deaerated

solution with an oxygen (O2) concentration of less than 1 ppm. The reject solution that exits the tower is fed to the press filters.

The zinc pulp is fed with three peristaltic pumps to the feed line of each of the press filters. The contact of the zinc pulp with the rich deaerated solution occurs in the filter piping feed and causes gold, silver, and impurities to precipitate onto the zinc surface. The zinc dosage is controlled by assays of the rich and barren solutions every two hours.

The filtration stage is carried out in three filter presses. Before feeding a filter press with the solution from the precipitation stage, 2 m^3 of pulp containing 37.5 g/l of diatomaceous earth are recirculated for 45 minutes to form an initial layer on the filter surface. The diatomaceous earth layer prevents blockage by the very fine undissolved zinc. After the initial layer is formed, the precipitate solution is filtered. The solution that exits the filter is transported to the barren solution tank. To unload, a filter press is opened and the material is removed using a spatula and sent to the retort furnaces.

17.7 Refining

Precipitates obtained from the filter presses are deposited in trays with a capacity of approximately 50 kg of precipitate with 30% moisture content. Two retort furnaces eliminate the humidity and the mercury contained in the precipitate. Each furnace is loaded with eight trays and kept at a temperature of 538 °C for about 20 hours under vacuum conditions. The product (calcine) is fed to the melting furnaces.

A reverberation furnace, which uses liquefied gas and air/oxygen to reach 1,220 °C, is used for smelting. Calcine is fed to the furnace through a screw feeder. The melt consists of two phases:

The upper phase, which has a lower density (2.5 g/l) and melts at 850 °C, consists of silica (flux) and impurities such as copper, iron, zinc and others.

The lower phase which consists of doré is higher density (15 g/l), melts at 1,000 °C and is composed mainly of silver and gold, with a small proportion of impurities.

The slag is poured into 50 kg-capacity conical steel containers, while the doré is poured into 165 kg-capacity ingot molds. Emissions from the refining furnace are collected by a hood and pass through a high-temperature bag filter to recover the precious metal particles contained in the gases. The solidified slag is recirculated to the crushing stage of the plant to recover any residual gold and silver. The doré is removed from the ingot mold and loaded with a forklift to the bar cleaner to remove the attached slag. After this process, the bars are removed and stored for weighing and shipping.

17.8 Tailings Filtering and Disposal

The objective of the tailings filtration is to obtain dischargeable tailings containing a moisture content of about 20%. The CCD circuit and filter cake wash step ensure the liquid contained in the filtered tailings has minimum concentration of cyanide and dissolved metals. The pulp is pumped to a filtering system consisting of four 54 m^2 and one 82 m^2 horizontal vacuum belt filters.

The filtered tailings are transported by two conveyor belts (equipped with a sampler) to two stockpiles, one for each belt. The storage area consists of a 220 m^2 concrete slab and a retaining wall (to protect the belts).

The collected tailings are loaded on trucks by a front-end loader and transported to the TSF, located approximately 2 km away.

17.9 Metallurgical Reporting

The processed tonnes are determined by weight-meter reading that are located on the SAG mill-feed conveyor belt. Daily analytical results from feed and tailings solids samples and solutions samples of discharged tailings are used to calculate plant metallurgical performance. Metal sales and inventory contained in the circuit and refinery are determined at the end of each month and appropriate adjustments are made. The mill reports the back-calculated head grades of the mill feed from this information.

17.10 Plant Consumption

Water consumption by the processing plant is approximately 0.28 m^3/t, while the tailings disposal operations require 0.08 m^3/t. The energy consumption by the processing plant is estimated at between 46 and 48 kW/dmt. The average energy consumption during the first six months of 2024 has been of 46.3 kW/dmt, with a peak of 47.9 kW/dmt in January. Other reagents and supplies consumptions for the first six months of 2024 are summarized in Table 17-1 and Table 17-2, respectively.

Table 17-1: Consumption of reagents for January to June 2024

Reagent	Consumption	Units
Sodium Cyanide	2.94	kg/t
Zinc	3.44	kg/kg(Au+Ag)
Lime	0.01	kg/t
Diatomaceous Earth	0.49	kg/t
Celite 545	0.183	kg/kg(Au+Ag)
Celite 7F	0.087	kg/kg(Au+Ag)
Flocculant (CCD)	55.50	g/t
Filtering Aid	45.00	g/t
Antiscalant (CCD)	61.95	g/t
Antiscalant (Precipitation)	75.00	g/t
Antiscalant (Retort)	7.90	g/t
Dispersant	70.25	g/t
Oxygen	0.28	m^3/t
Borax	0.50	kg/kg(Au+Ag)
Soda Ash	0.22	kg/kg(Au+Ag)
Gas	2.81	l/kg(Au+Ag)

Table 17-2: Consumption of processing supplies for January to June 2024

Item	Consumption	Units
Balls (Ball Mill)	0.32	kg/t
Balls (SAG Mill)	0.95	kg/t
Refractories	0.33	kg/kg(Au+Ag)
Doré Packages	0.008	Boxes/kg(Au+Ag)
Clarifying Filter Fabric	26.00	Fabric/month
Press Filter Fabric	10.00	Fabric/month
Band Filter Fabric	1.00	Fabric/28,000t

18 Project Infrastructure

El Peñón is accessed by a paved road approximately 165 km southeast of Antofagasta. Travel time from Antofagasta is approximately 2.5 hours. Antofagasta is the principal source of supplies for the mine. It is a port city with a population 380,000; it is linked by daily air service to Santiago. Power is supplied to the mine site via national power grid. Auxiliary or backup power from generators is also available with 10 MW of power capacity on site.

The mine consists of multiple gold and silver deposits that are currently mined by underground mining methods. Open-pit production was extensive in the past, but now comprises a very small proportion of the LOM. Four main mining blocks are currently in operation at the core mine zone. These are: Quebrada Orito, Quebrada Colorada, Dorada-Cerro Martillo and Bloque Norte. Several satellite deposits are or have been active in the past such as Chiquilla Chica, Laguna, Fortuna-Dominador, located to the southwest of the core mine, Tostado Sur located to the south, and PAV located to the north.

El Peñón has all the required infrastructure for a mining complex, illustrated in Figure 18-1. The main infrastructure includes the following features:

- Underground and open pit mines with all the associated power, ventilation, compressed air, industrial water supply, and dewatering infrastructure.
- Process plant and refinery
- Stockpiles and waste dumps
- TSF
- Concrete and cemented rockfill plants
- Groundwater will system for water supply
- Main administration building and offices
- Campsite, cafeterias, and change rooms
- Energy supply and transmission system
- Storage areas for explosives
- Facilities for storage and distribution of fuel, oil, and lubricants
- Mine workshops, maintenance facilities, and warehouses
- Telecommunications system
- Water ponds
- Water distribution system
- Workshops and sheds
- Materials storage areas
- Laboratory
- Core shed
- Sewage treatment system

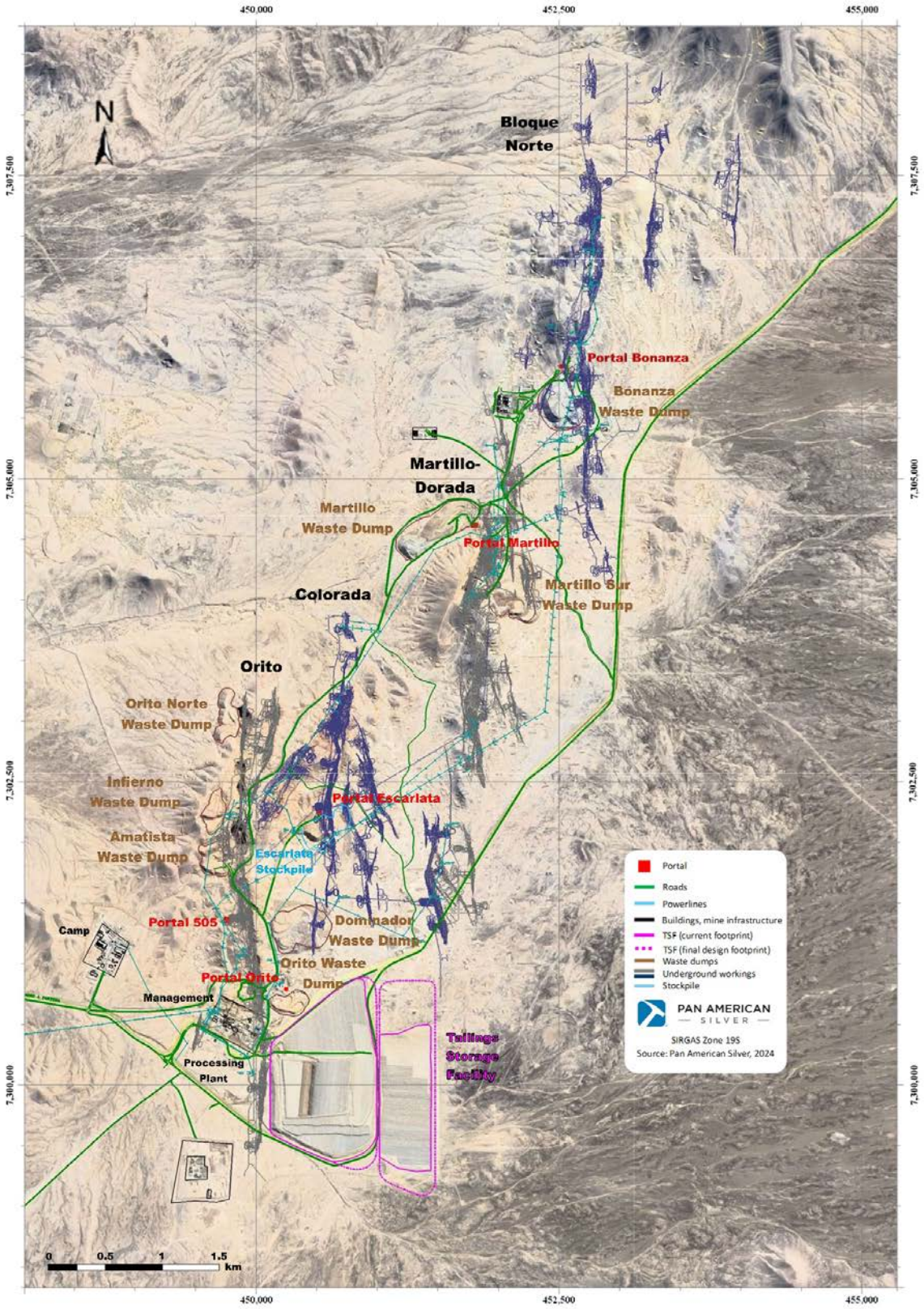

Figure 18-1: Plan map of main infrastructure at El Peñón

18.1 Filtered Tailings Stack Design and Consultation

The El Peñón filter stack is located 1.5 km southeast of the processing plant (Figure 18-1). The updated TSF designs included in the project "Actualización depósito de relaves filtrados secos El Peñón", approved by authorities in March 2024 (RCA 178/2023), consider an ultimate TSF capacity of 49.5 Mt, which is sufficient for current mineral reserves plus significant additional capacity.

The filtered tailings stack is raised in three platforms to an ultimate elevation ranging between 1835 masl to 1850 masl in the northern section of the facility. Each platform is approximately 10 m in height with slopes of approximately 1.25H:1V. A 5 m-bench is left between platforms, forming an overall approximate slope angle for the filtered tailings stack of approximately 2.5H:1V (Figure 18-2).

The eastern portion of the TSF is raised in only two platforms, each with a maximum height of 10 m and slopes of 1.25H:1V. A 5 m-bench between each platform allows for a flatter overall stack slope.

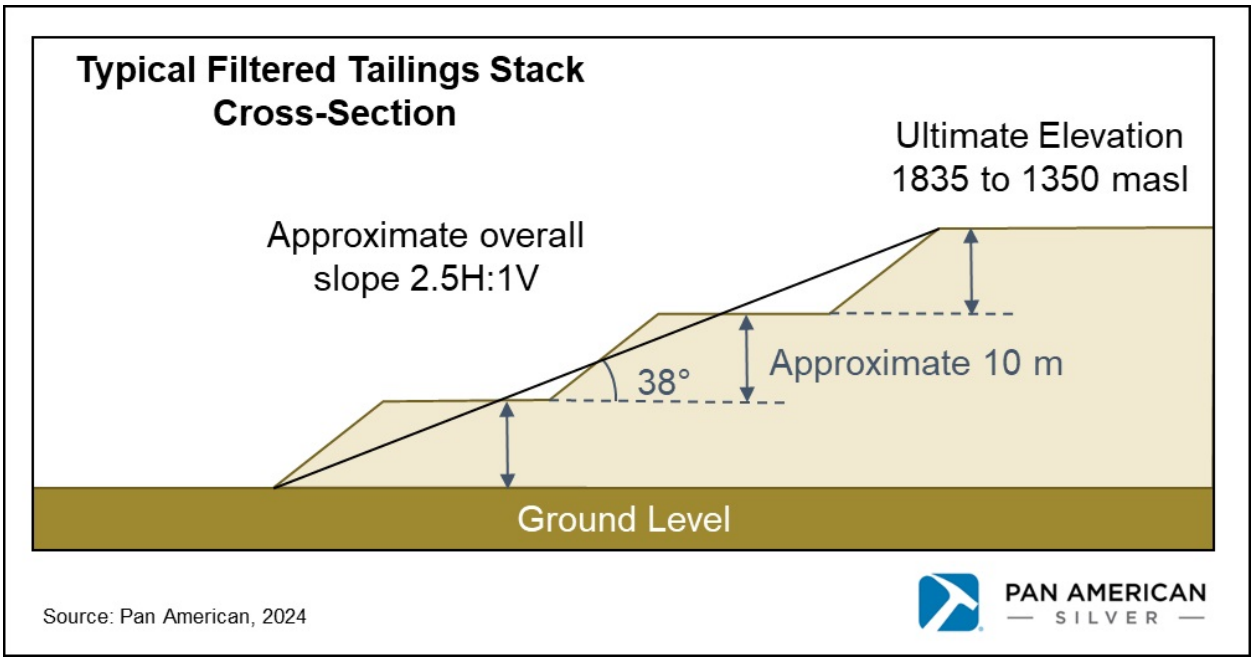

Figure 18-2: Schematic cross-section of western face of filtered tailings stack

The filtered tailings are a non-plastic sandy silt; they consist of about 60% fines with fine- to medium-grained sand particle and have a volumetric moisture content when leaving the filter plant of about 18% (gravimetric moisture content of about 22%) and a specific gravity of about 2.63.

Filtered tailings are transported to two-stockpiles by conveyor belts, one for each stockpile. Stockpiled tailings are loaded into trucks by a front-end loader and transported about 2 km to the TSF. At the TSF, tailings are deposited in mounds and spread into 0.15 to 0.30 m-thick layers with a dozer to promote further aeration and cyanide degradation. Tailings are then turned with a grader and irrigated with process water from the waste water treatment plant to reduce the concentration of cyanide in the solids; this decreases the in-situ moisture content of the tailings. This aeration-and-water process is repeated until the cyanide concentration is less than 2 ppm. The density of the tailings is recorded and measured against a targeted 90% modified proctor. Once compacted, a new layer of tailings is incorporated into the filtered tailings stack and the process is repeated.

Quarterly operational reports and monthly quality-control reports are generated for the El Peñón TSF. These reports include test results from samples from every new lift; these tests include in-situ density testing, particle size analysis, and moisture content. In addition, the cyanide content of the tailings is tested regularly.

A review of the stability of the dry stack facility was conducted by the Designer-of-Record (DoR) in 2023. Results indicate that the facility's slopes are stable under static and seismic conditions. Seismic design criteria assume a peak ground acceleration (PGA) of 0.49 g. The proposed PGA seems adequate for the region. Undrained stability is not a concern in this facility as there is no phreatic surface in the filtered stack.

Previous stability analysis completed by the DoR in 2020 confirmed a maximum runoff of the dry tailings material, in case of a slope failure, to be less than 2 m. The mine infrastructure is located approximately 200 m of the facility. As such, a slope failure of the filtered tailings at El Peñón does not pose a risk to the environment, the people or the infrastructure in the area. Regardless, as a preventive measure, the mine constructed containment berms located 5 m from the toe of the TSF stack to prevent the spread of tailings, should a localized slope failure occur. These berms also divert surface runoff away from the filtered tailings toe, in the unlikely event of a strong precipitation event in the region.

Field inspections by an Engineer-of-Record (EoR) are performed annually to confirm that the current designs align with evolving international best industry practices proposed for this type of structures. In addition, the site reviews and updates its Operations, Maintenance, and Surveillance (OMS) manual and Emergency Response Plan (ERP) annually as a minimum. These documents align with the latest guidelines from the MAC on tailings management. It is recommended for the site to update the closure plan for the TSF area, considering the stack final geometry as per the latest designs included in the most recent DIA, best practices on closure concepts, and requirements for regulatory compliance and closure permitting.

19 Market Studies and Contracts

19.1 Market Studies

The principal commodities produced at El Peñón are gold and silver in the form of doré bars, which are freely traded, at prices that are widely known, so that prospects for sale of any production are virtually assured. Gold prices of US$ 1,700/oz and silver prices of US$ 20/oz were used for mineral reserve estimation as well as for completing the economic analysis outlined in Section 22 of this Technical Report, which ensures the project is cash-flow positive and therefore supports the mineral reserve estimate.

19.2 Contracts

Pan American, indirectly through its subsidiary, Minera Meridian, currently has four collective bargaining agreements in place. The maximum term allowed for collective bargaining agreements by the current legislation is 36 months.

Pan American also has contracts in place for the operation of the Tostado Sur open pit; electrical power supply; personnel transport services; catering and camp services; fuel supply services; exploration drilling; raise borer construction; tailings transport and disposal operations and for mine and plant consumables, including drilling products, explosives and cyanide supply.

Average prices for consumables during the first half of 2024 were as follows:

- Power: US$ 98.02/MWh
- Fuel: US$ 0.82/l
- Cyanide: US$ 2.10/kg
- Flocculant: US$ 6.29/kg
- Mill Balls: US$ 1.35/kg
- Explosives: US$ 2.10/kg-anfo-equivalent
- Cement: US$ 166.60/t

The qualified person responsible for this section of the Technical Report has reviewed the market studies and contracts. The terms, rates or charges for material contracts are within industry norms.

20 Environmental Studies, Permitting, and Social or Community Impact

20.1 Project Permitting and Authorizations

Pan American holds all necessary environmental and operating permits for the development and operation of the mine and is in compliance with Chilean law in all material aspects. The Environmental Commission of the Region of Antofagasta (Comisión Regional de Medio Ambiente de Antofagasta) approved applications for the construction and operation of El Peñón with Exempt Resolution Nr. 043 in 1998. The permit EIA includes a full assessment of the environmental and social impacts of the mine and environmental management plans, which describe the ongoing management and environmental monitoring programs.

Permits for El Peñón have undergone a series of modifications and updates since 1998. Permits have been obtained for additional deposits including Fortuna, PAV, and Chiquilla Chica. Subsequent Environmental Qualification Resolutions (RCAs) were granted through a series of Declaration of Environmental Impacts (DIAs). The most recent RCA (Nr. 0178) updating the mineral resources and mineral reserves of El Peñón was approved in 2022. Other sectoral licences and permits have been obtained and renewed as necessary.

The operation has not been subject to sanctioning for environmental compliance by any of the regulatory agencies.

20.2 Environmental Management

20.2.1 Environmental Management Systems

El Peñón has implemented an integrated management system covering health, safety, environment, and community through internationally accredited systems that include ISO 14001 Environmental Management System and the ISO 45001 Occupational Health and Safety Management System. A risk assessment matrix has been developed for El Peñón as part of the management system.

El Peñón also implements MAC's (TSM) framework as well as the World Gold Council's Responsible Gold Mining Principles. El Peñón completed its self-evaluation of TSM most recently in 2023, achieving Level A or higher for all protocols assessed except Climate Change which was assessed at Level B. The mine has worked to update its systems to the revised TSM Climate Change protocol in 2024 and is expected to achieve Level A on that protocol this year.

Minera Meridian is a signatory to the International Cyanide Management Code and was externally certified most recently in July 2024.

Regular site and corporate audits and reports on environmental management are carried out, and recommendations are made to improve performance based on the audit findings.

20.2.2 Tailings Management

El Peñón prioritizes the management of tailings and is aligned with best practices proposed by MAC, TSM protocol, and CDA guidelines. Pan American currently has a dedicated Senior Corporate Director and Senior Tailings Engineer whose sole responsibility is the governance of the tailings management system and to provide technical guidance and support to ensure compliance.

Since 2017, El Peñón has implemented a tailings management system referred to as SYGBAR. The system is built on a six-point management system that focuses on the following protocols:

- Standards for design and construction, and the use of design reviews
- Constant TSF monitoring and site-specific key performance indicators for development and performance management
- Periodic safety inspection
- Documentation and monthly reporting
- Training and continuous improvement
- Emergency response plans with dam failure analysis

As a member of the MAC, Pan American assesses annually its tailings management systems with respect to the tailings management framework proposed in MAC (2022) and TSM protocol (2022). Previously, MAC (2019) guidelines and TSM protocol (2019) were used for assessing the site's tailings management systems. MAC's tailings management systems and guidelines have been formally adopted by mining associations in Canada, Argentina, and Brazil, Mexico and Guatemala since 2019. The MAC systems include the completion of a Dam Safety Review (DSR) that follows the guidelines and recommendations provided in CDA dam safety guidelines (CDA, 2007) and its corresponding mining bulletin.

The tailings produced at the El Peñón mill are presently stored in a filtered tailings stack in operation since 1998. The TSF is monitored on an ongoing basis for chemical and physical stability conditions by collecting data on cyanide and by conducting visual inspections and regular surveys for potential signs of deformation or other physical instabilities. Volumes of deposited tailings, grain size distribution, and tailings density are recorded on a regular basis. Samples are collected and tested by a registered third-party laboratory. In addition, a network of monitoring wells is used for monitoring any changes in water levels and water quality in the area of the mine, including the TSF area. Section 20.2.3 outlines additional details on water management.

As part of the mine's tailings management system, a geotechnical stability inspection is completed by the EoR. These reports, including the most recent ones from 2022 and 2023, confirmed the filtered tailings stack are stable and safe.

The current closure plan for the TSF area is presently at a conceptual level and will be updated to reflect the most recent TSF designs, corresponding budgets, and implementation schedules.

20.2.3 Water Management

Water conservation is a primary focus at El Peñón. The water management system at El Peñón has been designed as a closed circuit. Process water from the mill is recovered in the tailings filter plant and recirculated back to the processing plant.

The Pampa Buenos Aires aquifer is the main source of make-up fresh water for El Peñón. The aquifer is located 25 km from the mine and eight pumping wells have been installed as well as additional monitoring and backup wells. The mine has been approved by the regional water authority (DGA) for water use of up to 50.4 l/s. Actual water use is less than half of the approved amount with the average monthly flowrate recorded in 2023 and 2024 between 17 and 23 l/s.

Risks of groundwater contamination from the mine operations are negligible due to the sites management of hazardous chemical and waste combined with the lack of shallow groundwater in the mine, process and tailings area.

A detailed hydrogeological model has been developed for the Pampa Buenos Aires aquifer to monitor and assess recharge, specific yield, storability, and other hydrogeological parameters. This model is continually updated to reflect the most recent conditions and ensure impacts are within predictions in the mine's environmental permits. Water levels and water chemistry information collected from the Pampa Buenos Aires aquifer is shared with the regional water authority via its online portal.

El Peñón recycles the water from the underground mines that is produced by mining operations (drilling and dust suppression) and not from a regional aquifer, as the underground mines at El Peñón are at shallower depths than the regional aquifers and do not intersect them.

Water collected in the underground mine is conveyed through a drainage system and pumped into fully lined collection ponds. This water is then recirculated to the mine or process plant as needed by the operation.

20.2.4 Waste Rock Management

El Peñón has several mine waste dumps in the core mine area, as well as at the satellite deposits of Fortuna, PAV, Laguna, and Chiquilla Chica. Several of these dumps are not being operated and are in temporary closure. Although precipitation in the area is low, dumps have a surface water collection and drainage system to collect contact water and a system of contour channels for diversion of non-contact water where necessary. No acid rock drainage

(ARD) and metal leaching (ML) issues associated with the operation and with the waste dumps have been identified in site monitoring. Geochemical testing of waste rock and tailings indicate a low risk of ARD and ML, supporting the monitoring findings.

20.2.5 Environmental Monitoring

A full suite of environmental baseline studies was completed by Minera Meridian as part of the original and subsequent permit applications for the construction of the mine and expansions. Pan American has continued routine environmental monitoring in and around the mine in accordance with the site environmental management plan and corporate standards.

El Peñón carries out environmental monitoring in all areas influenced by the operation in compliance with legislation, standards and environmental permits. Monitoring is performed by internal and external staff who are qualified for execution and evaluation of the monitoring activities. Monitoring is ongoing for climate, water, air, noise, soil, fauna, and cultural resources.

Archeological inspections are completed annually by third-party experts. There is no permanent wildlife in the area, but the site has implemented a visual inspection protocol. Fauna that are rescued are taken to the Wild Fauna Rescue Centre at the University of Antofagasta.

20.3 Community Relations

20.3.1 General Social Context

There are no communities in the immediate vicinity of El Peñón. The city of Antofagasta, located approximately 160 km northwest of the mine, is the main source of labour supply. It is a port city with a population of approximately 380,000 inhabitants and hosts a large number of manufacturers and suppliers that serve the mining industry. The mine also engages voluntarily with the Taltal community located on the coast south of Antofagasta.

20.3.2 Social Assessment and Management Systems

A strategic stakeholder management approach, assessment and management of social risks are part of El Peñón's operating strategies. The social risk management elements are shown in Table 20-1.

Table 20-1: Social risk management

Management Element	Component
Stakeholder Engagement	Stakeholder identification and analysis (mapping)
	Stakeholder engagement
	Social risk management
	Grievance mechanisms
Impact Management	Impact identification
	Impact management
	Community baseline information tracking
	Closure planning
Benefit Management	Local employment and procurement
	Community investment
	Community development

El Peñón tracks stakeholder issues and communicates project activities and other programs with stakeholders as necessary. The mine continues to engage with communities located a distance from the mine, including Taltal, and to support community initiatives such as education and cultural projects.

20.3.3 Workplace Health and Safety

El Peñón prioritizes providing a safe and healthy workplace and building an exceptional safety culture. A number of corporate guidance documents provide the framework for health and safety measures at El Peñón. The HSEC team guides El Peñón and its operations to inform the development of site-specific health and safety procedures and how to improve operations based on health and safety monitoring performance. Regular site and corporate audits and reports on worker health and safety are carried out, and recommendations are made to improve performance based on the audit findings.

20.3.4 Support for Community Priorities

Even though no communities are located near to El Peñón, the site has made a number of commitments to the well-being, health, safety, and development of the Taltal community. As such, the social and community activities conducted by El Peñón are concentrated in the Taltal District and support educational, health-related and cultural priorities. A summary of activities completed in a typical year include the following:

- Open door policy: visits of stakeholders to mining facilities.
- High school scholarships.
- Free pre-university for students who take the Taltal District University Selection Test.
- Support of medical services in Taltal.
- Participation in the Business Advisory Council of the Liceo Politécnico.
- Broadcasting radio tips to the Taltal community on environmental care and precautions to consider for risks at home.
- Integration Day: a fair held in December in Taltal.
- Donations in infrastructure, services and equipment: donations to kindergartens, schools, dance groups, among others.
- Partnership seminar: partnerships with 7 local groups to provide economic development.
- Meetings with communities: the main activities developed in support of the commune of Taltal are presented to the community and stakeholders. The following list enumerates some of the topics agreed upon: the application for Partnership Seminar projects, scholarships, free pre-university, medical operation campaigns, and others.
- A socio-economic diagnostic report of the areas of influence within the Taltal District.
- Entrepreneurship projects to help vulnerable students in the region develop competencies and skills and undertake new projects.

20.3.5 Cultural Heritage

In the area of the El Peñón operation and its surroundings, 15 archeological sites have been identified. They are protected by fencing and are monitored twice annually to verify their state of conservation by a professional archeologist recognized by the local cultural agency in compliance with environmental permits.

20.4 Mine Closure

El Peñón has developed a closure plan and cost estimate covering all current and approved facilities; this plan is in accordance with applicable legal requirements, specifically Law 20.551/2011 and Supreme Decree N° 41/2012, and is updated regularly as the life of the mine is extended. Under current law, mining projects with an extraction capacity of over 10,000 tonnes per month (tpm) must provide a financial guarantee, the amount of which is to be determined based on a periodic re-evaluation of the closure plan implementation and management costs. The amount of the guarantee must be determined in UF currency (Chilean Unit of Account) from the present-value estimated cost of implementing all measures covered by the closure plan. The latest closure plan for El Peñón was approved through Exempt Resolution N° 2658/2019. Updates to the closure plan are required whenever the LOM is extended.

The 2019 closure plan is subdivided by area and includes consideration for the underground operations, waste dumps, TSF, infrastructure, and ancillary facilities. It also considers post-closure monitoring and maintenance activities. The 2019 closure plan costs are summarized in Table 20-2.

Table 20-2: Estimated LOM closure costs

Category	Total Cost (US$M)
Direct Cost	17.3
Indirect Cost and Administration	3.5
Contingency	5.2
Chilean sales tax (19%)	4.9
Subtotal Closure Measures	**30.8**
Post Closure Monitoring	6.5
Total Mine Closure Cost	**37.4**

A Closure and Decommissioning Liability (CADL) estimate for El Peñón is prepared annually based on the LOM closure plan. This methodology will be updated to Pan American's standard methodology, which employs the State of Nevada approved Standardized Reclamation Cost Estimator (SRCE) model, in 2024. The current CADL estimate includes consideration of all surface disturbance and reclamation liability at the site at the time of calculation. The current estimate of the undiscounted value of reclamation costs or environmental liability for the property is approximately US$33.1 million.

20.5 Expected Material Environmental and Social 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

The capital and operating costs outlined in this section of the Technical Report are based on the LOM plan presented in Section 16.7. The capital and operating cost estimates were prepared based on recent (2024) operating performance and on the current budget forecast. All costs in this section are in US dollars and are based on an exchange rate of 925 CLP : 1 US$.

21.1 Capital Costs

The LOM capital cost estimate is approximately US$47M and is assumed to support sustaining capital requirements for the mining and processing of mineral reserves over the project's five-year LOM. A summary of the LOM capital costs for El Peñón is given in Table 21-1.

Table 21-1: LOM capital costs

Category	Total LOM Capital Costs M US$
Mine Capital Development	15.3
Mine Equipment	29.8
Plant Upgrades	1.5
Total Capital Cost	**46.6**

Capital costs do not include project financing and interest charges, working capital, sunk costs and closure costs. Mine closure costs are summarized in Section 20 of this Technical Report. No exploration capital has been considered, since the LOM plan is based on mineral reserves only. The amount of diamond drilling required to extend the mineral resources and mineral reserves beyond the basis of the current inventories will be at discretion of Pan American and may depend on the success of exploration programs and market conditions.

21.2 Operating Costs

Operating costs are defined as the direct operating costs and include mining, processing as well as general and administrative costs.

The production plan drove the calculation of the mining and processing costs, as the mining mobile equipment fleet, manpower and consumables requirements were calculated based on specific consumption rates. Consumable prices and labour rates are based on current contracts and agreements.

Mining operating costs are forecasted to average US$169.0/t-mined over the LOM period or US$140.7/t-processed, when including the 799,000 tonnes of low-grade stockpile planned to be reclaimed over the LOM period. Total operating costs, including primary lateral development, are forecasted to average US$193.3/t-processed as set out in Table 21-2.

Table 21-2: LOM average unit operating costs

Category	Operating Cost US$/t Processed
Mining	140.7
Production	38.6
Primary Development	61.6
Secondary Development	40.6
Processing	32.5
G&A	20
Operating Cost	**193.3**

22 Economic Analysis

Financial information has been excluded from this Technical Report as Pan American is a producing issuer and the El Peñón Mine is currently in production. Pan American has performed an economic analysis of the current project using a gold price of US$1,700/oz and a silver price of US$20/oz, at the planned production rates, metal recoveries, and capital and operating cost estimated in this Technical Report. Pan American confirms that the outcome is a positive cash flow that supports the mineral reserve estimate. Due to the nature of the mining business, these conditions can change significantly over relatively short periods of time. Consequently, actual results may be significantly more or less favourable.

23 Adjacent Properties

There are no adjacent properties that are relevant to this Technical Report.

24 Other Relevant Data and Information

There is no other relevant data or information regarding El Peñón.

25 Interpretation and Conclusions

More than 5.9 Moz of gold and 146 Moz of silver has been produced at El Peñón since commercial production commenced in 2000. El Peñón's current production rate, is a result of an operation rightsizing initiated in late 2016 to increase free cash flow generation, reduce capital expenditures and ensure the long-term sustainability of the mine through replacement of mineral reserves and mineral resources through infill and exploration drilling. Exploration results at El Peñón continue to highlight the expansion potential of the mine and to extend the LOM plan past its current mineral reserves base.

El Peñón mineral resources and mineral reserves have been estimated in conformity with generally accepted CIM Guidelines and classified in accordance with CIM Definition Standards. The total proven and probable mineral reserves at El Peñón as of June 30, 2024 is 4.8 Mt averaging 4.25 g/t gold and 144.5 g/t silver, with a metal content of approximately 653 koz gold and 22,207 koz silver. In addition, measured and indicated mineral resources are estimated at 5.4 Mt grading 3.96 g/t gold (685 koz gold) and 127.8 g/t silver (22,120 koz silver), and inferred mineral resources are estimated at 18.4 Mt grading 1.38 g/t gold (816 koz gold) and 48.2 g/t silver (28,564 koz silver).

The LOM plan supported by mineral reserves only consists of an integrated operation, mining mainly underground ore and a small amount of ore from the Tostado Sur open pit. The ore produced by the mining operations and reclaimed from stockpiles is fed to the mill to sustain a five-year mine life. LOM production is estimated at 617 koz gold and 19,320 koz silver. The LOM plan does not include any inferred mineral resources or exploration potential that could be upgraded to indicated and measured mineral resources with the necessary infill drilling, which could extend the mine life beyond the current LOM plan given El Peñón's track record of replacing depleted mineral reserves.

The capital and operating cost estimates are based on mine budget data and recent operating performance and are appropriate for the known mining methods and production schedule. Under the assumptions in this Technical Report, El Peñón has positive project economics until the end of mine life, which supports the mineral reserve estimate. Capital costs over the LOM period are estimated at approximately US$47M consisting mainly of capital required for equipment replacement (64%) and capital mine development (33%). An additional US$37M are estimated for mine closure purposes.

No environmental or social issues were identified that could materially impact the ability to extract the mineral resources and mineral reserves. El Peñón has all the operational licenses required for operation according to national legislation. The approved licenses address the authority's requirements for mining extraction and operation activities.

The results of this Technical Report are subject to variations in operational conditions including but not limited to the following:

- Assumptions related to commodity prices and foreign exchange rates (in particular, the relative movement of gold and silver prices and the Chilean peso/US dollar exchange rate)
- Unanticipated inflation of capital or operating costs
- Significant changes in equipment productivities
- Geological continuity of the mineralized structures
- Geotechnical assumptions in pit and underground designs

- Ore dilution and ore loss
- Throughput and metallurgical recovery rate assumptions
- Changes in political and regulatory requirements that may affect the operation or future closure plans
- Changes in closure plan costs
- Availability of financing and changes in modelled taxes

Pan American's business involves many risks and uncertainties, both known and unknown, that affect its ability to operate successfully and accurately estimate mineral reserves and mineral resources. The qualified persons and Pan American do not expect any significant negative impact from external factor such as environmental, permitting, title, access, legal, taxation, availability of resources, and other similar factors, but these factors may change and are unpredictable in the mining industry and may have a material impact on Pan American's business and performance. The political, economic, regulatory, judicial and social risks of doing business in foreign jurisdictions, and changes in metal and commodity prices, are especially challenging and uncertain for Pan American. In addition to external factors and risks, the accuracy of any mineral reserve and mineral resource estimate is, among other things, the function of quality and quantity of available data and of engineering and geological interpretation and judgement. Drilling, testing, production, metal prices, mining method, or operating factors may change after the date of the estimate and may require revision of the estimate and may differ significantly from what is currently expected. Readers are cautioned against attributing undue certainty to estimates of mineral reserves and mineral resources.

26 Recommendations

Based on the information presented in this Technical Report, the qualified persons recommend the following action items.

Over the past 24 years, El Peñón has established an exploration strategy to continually add mineral reserves to the inventory and extend the mine life. The strategy involves maintaining a pipeline of mineral resources and exploration targets. To continue this trend, drilling programs should continue to be carried out with the following objectives:

Infill drilling to replace depletion by upgrading and extending known mineral resources.

Expansion exploration drilling to upgrade mineral resources to measured or indicated categories, or to transform zones of geological potential into inferred mineral resources.

District exploration to test the extension of little-known areas of mineralization or to discovery new primary structures by testing targets identified in mapping, geochemistry, geophysics, or machine learning programs.

Ongoing exploration success could also unlock the opportunity to leverage the available mineral processing capacity at the mill, which could increase annual gold and silver production and reduce unit costs.

In the underground mine, El Peñón should maintain a lateral development rate of approximately 38,500 m per year to keep operational flexibility and several mining zones available at any given time. Optimization of development cycle times, dilution and over-excavation are key to control unit costs. Recent mining initiatives include optimization of stoping and development face drill patterns and the possible implementation of fleet management and short-interval control systems to improve productivity. Pan American is currently reviewing ground support standards, which could potentially increase the operating cost by approximately US$ 5/t-mined.

27 References

Astudillo, N.; Ferrando, R.; Montecino, D.; Espinoza, F.; Venegas, C.; Matthews, S.; Cornejo, P.; Arévalo, C. 2017: Carta Augusta Victoria, Región de Antofagasta. Servicio Nacional de Geología y Minería, Carta Geológica de Chile, Serie Geológica Básica 189: 97 p., 1 mapa escala 1:100 000. Santiago.

Bottinelli, O. C.A., and Valencia, A. M. E., 2016: Informe Técnico de Vida Útil de la Operación Minera (para Ley N° 20.551 sobre Cierre de Faenas e Instalaciones Mineras); Ley N° 20.819 que modifica Ley N° 20.551; Revisión N° 3, August 1, 2016.

Canadian Dam Association Dam Safety Guidelines 2007 (2013 Edition). Report available at www.cda.ca

Castro, S., Velásquez, C. M., Marsden, H., and Iturralde, C., 2021. NI 43-101 Technical Report, El Peñón Gold-Silver Mine, Antofagasta Region, Chile. Report prepared for Yamana Gold Inc. Effective date December 31, 2020. Signature date March 25, 2021. Report available on SEDAR+.

Chacón, M. E., and Pérez, S. C. M., 2017: Yamana Gold, El Peñón Mine, Region of Antofagasta, Chile, Internal Technical Report, 144 pp., May 23, 2017.

Collins, S. E., Moore, C. M., and Scott, K. C., 2010: Technical Report on the El Peñón Mine, Northern Chile, prepared for Yamana Gold Inc., 132 pp., December 7, 2010.

Commission for the Geological Map of the World (CGMW), 2019: Tectonic Map of South America. Second edition, scale 1:5 000 000. ISBN 978-2-917310-26-7.

Cornejo, P.; Mpodozis, C.; Rivera, O.; & Matthews, S. J., 2006: Carta Exploradora, Regiones de Antofagasta y Atacama. Servicio Nacional de Geología y Minería (SERNAGEOMIN), Santiago, Chile, Carta Geológica de Chile, Serie Geológica Básica, 1:100 000.

Donoso, F., 2012: Caracterización Mineralógica de las vetas Bonanzas-Aleste y sus implicancias geometalúrgicas, Mina El Peñón, Región de Antofagasta. Memoria para optar al titulo de Geólogo, Universidad Católica del Norte, Antofagasta, Chile.

E-Mining Technology S.A., 2010: Proyecto de Expansión del Deposito de Relaves Filtrado El Peñón. Report prepared for Yamana Gold Inc., April 2010.

Ferrando, R.; Espinoza, F.; Matthews, S.; Cornejo, P.; Arévalo, C., 2013. Carta Aguas Blancas, Región de Antofagasta. Servicio Nacional de Geología y Minería, Carta Geológica de Chile, Serie Geológica Básica 160. 1 mapa escala 1:100 000. Santiago.

FF GeoMechanics Ing. Ltda., 2020: Informe Técnico de Estabilidad Depósito de Relaves Filtrados El Peñón, Rev. 2. Report prepared for Minera Meridian Ltda., January 2020.

Gosselin, P., Dubé, B., 2005: Gold deposits of the world: distribution, geological parameters and gold content. Geological Survey of Canada, Open File 4895, 1 CD-ROM.

Jorquera, H., 2016: QAQC Annual Report 2016, prepared for Minera Meridian Ltda., 36 pp., December 15, 2016.

John, D.A., Vikre, P.G., du Bray, E.A., Blakely, R.J., Fey, D.L., Rockwell, B.W., Mauk, J.L., Anderson, E.D., and Graybeal, F.T., 2018: Descriptive models for epithermal gold-silver deposits: U.S. Geological Survey Scientific Investigations Report 2010–5070–Q, 247 p., https://doi.org/10.3133/sir20105070Q.

Minera Meridian Ltda., 2017: various presentations, procedures, and spreadsheets for El Peñón Mine.

Octal Ingeniería y Desarrollo Ltda., and Magri Consultores Limitada, 2015: Actualización de modelos variográficos – El Peñón, prepared for Yamana Gold Inc., August 5, 2015.

Órdenes, J., 2014: Influencia de la Mineralogía de la veta Bonanza en el Proceso Hidrometalúrgico de Lixiviación de Au y Ag, Yacimiento El Peñón, Chile. Tesis para optar al grado de Magíster en Geometalurgia. Universidad Católica del Norte, Antofagasta, Chile, 168 p.

Paterson & Cooke, 2021: El Peñón Process Audits. Report prepared for Yamana Gold Inc. Dated February 22, 2021. P&C Project No.: YMA-31-1256. 14p.

Pearson, J. L., and Rennie, D. W., 2008: Technical Report on the El Peñón Mine, Chile, Resource Audit, prepared for Yamana Gold Inc., 130 pp., February 11, 2008.

Pérez, M., 1999: Alteración Hidrotermal en el Depósito Epitermal de Au-Ag El Peñón, II Región Antofagasta. Memoria para optar al titulo de Geólogo. Universidad de Chile, Santiago, Chile, 109 p.

Robbins, C. H., 2000: Geology of El Peñón Gold-silver Deposit, Northern Chile: The Great Basin and beyond, Geological Society of Nevada, Symposium, Reno 2000, Proceedings, pp. 249-264.

RPA, 2018: Technical Report on the El Peñón Mine, Antofagasta Region (II), Chile. NI 43-101 Technical Report prepared by H. Krutzelmann, N. Lecuyer, C. M. Moore, for Yamana Gold Inc. 170 p. March 2, 2018. Available at www.sedarplus.ca.

Warren, I., 2005: Geology, Geochemistry and Ore of the El Peñón Epithermal Au-Ag Deposit, Northern Chile: Characteristics of a bonanza-grade deposit and techniques for exploration. PhD Thesis – Geology, University of Auckland.

Warren, I., Zuluaga, J. I., Robbins, C. H., Wulftange, W. H., and Simmons, S. F., 2004: Geology and Geochemistry of Epithermal Au-Ag Mineralization in the El Peñón District, Northern Chile; Society of Economic Geologists, Special Publication 11, pp. 113-139.

Vega, A. M., 2015: QAQC Annual Report 2015, prepared for Minera Meridian Ltda., 46 pp., December 15, 2015.

Vega, A. M., 2014: QAQC Annual Report 2014, prepared for Minera Meridian Ltda., 34 pp., November 2014.

Zuluaga, J. I. (2004): Geología y Mineralización del Distrito El Peñón, Segunda Región de Antofagasta, Chile. Tesis de Magíster en Geología Económica, Universidad Católica del Norte, Antofagasta, Chile, 150 p.

28 Certificates of Qualified Persons

Certificate of Qualified Person – Jimmy Avendaño

I, Jimmy Avendaño, Registered Member of the Chilean Mining Commission, as an author of this report entitled "NI 43-101 technical report for the El Peñón Gold-Silver Mine, Antofagasta Region, Chile" prepared for Pan American Silver Corp. (the Issuer) and dated effective as of June 30, 2024 (the technical report), do hereby certify the following:

1. I am Technical Services Manager at Minera Meridian Limitada (Minera Meridian), a subsidiary of the Issuer, with an office at Balmaceda 2472, 5th Floor, Antofagasta, Chile.

2. I graduated from the Universidad de Santiago de Chile in 2010 with a degree in Civil Mining Engineering and received a Master of Business Administration degree from Universidad de Chile in 2024. I am a member of the Chilean Mining Commission N° 0391. I have worked as a mining engineer for approximately 14 years since my graduation. I have worked over the last 8 years as Chief of Long Term Mine Planning and as Technical Services Manager at El Peñón, currently focused on mine design, mineral reserves estimation, short and long term mine planning and project development.

3. I have read the definition of "qualified person" set out in National Instrument 43-101 Standards of Disclosure for Mineral Projects (NI 43-101) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.

4. I work at El Peñón on a weekly basis.

5. I am responsible for Sections 4, 5, 15, 16, 18 (excluding 18.1), 19, 21 and 22 and share responsibility for related disclosure in Sections 1, 2, 3, 12, 24, 25, 26, and 27 of the Technical Report.

6. I am not independent of the Issuer. I am a full-time employee of Minera Meridian, a subsidiary of the Issuer.

7. I have had prior involvement with the property that is the subject of the Technical Report in my role at Minera Meridian since 2016.

8. I have read NI 43-101, and the sections of the Technical Report for which I am responsible have been prepared in compliance with NI 43-101 and Form 43-101F1.

9. At the effective date of the Technical Report, to the best of my knowledge, information, and belief, Sections 4, 5, 15, 16, 18 (excluding 18.1), 19, 21 and 22 and related disclosure in Sections 1, 2, 3, 12, 24, 25, 26, and 27 in the Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

"Signed"

Jimmy Avendaño, Registered Member CMC — Dated this 20th day of January, 2025

Certificate of Qualified Person – Christopher Emerson

I, Christopher Emerson, FAusIMM, as an author of this report entitled "NI 43-101 technical report for the El Peñón Gold-Silver Mine, Antofagasta Region, Chile" prepared for Pan American Silver Corp. (the Issuer) and dated effective as of June 30, 2024 (the technical report), do hereby certify the following:

1. I am Vice President, Exploration and Geology at the Issuer, with an office at 2100 - 733 Seymour Street, Vancouver, BC, V6B 0S6, Canada.

2. I graduated with a Bachelor of Engineering in Industrial Geology degree from Camborne School of Mines, England, in 1998 and received a Master of Science in Mineral Exploration degree from Leicester University, England, in 2000. I am a Fellow of the Australasian Institute of Mining and Metallurgy. I have worked as a geologist in the mining industry since my graduation from Leicester University.

3. I have read the definition of "qualified person" set out in National Instrument 43-101 Standards of Disclosure for Mineral Projects (NI 43-101) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.

4. I visited El Peñón on numerous occasions, including most recently between June 5 and 8, 2024.

5. I am responsible for Sections 6 to 11, 14, and 23, and share responsibility for related disclosure in Sections 1, 2, 3, 12, 24, 25, 26, and 27 of the Technical Report.

6. I am not independent of the Issuer. I am a full-time employee of the Issuer.

7. I have had prior involvement with the property that is the subject of the Technical Report in my role as Vice President, Exploration and Geology.

8. I have read NI 43-101, and the sections of Technical Report for which I am responsible have been prepared in compliance with NI 43-101 and Form 43-101F1.

9. At the effective date of the Technical Report, to the best of my knowledge, information, and belief, Sections 6 to 11, 14, and 23, and related disclosure in Sections 1, 2, 3, 12, 24, 25, 26, and 27 in the Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

"Signed"

Christopher Emerson, FAusIMM

Dated this 20th day of January, 2025

Certificate of Qualified Person – Americo Delgado

I, Americo Delgado, P.Eng., as an author of this report entitled "NI 43-101 technical report for the El Peñón Gold-Silver Mine, Antofagasta Region, Chile" prepared for Pan American Silver Corp. (the Issuer) and dated effective as of June 30, 2024 (the technical report), do hereby certify the following:

1. I am Vice President, Mineral Processing, Tailings, and Dams at the Issuer, with an office at 2100-733 Seymour Street, Vancouver, BC, V6B 0S6, Canada.

2. I graduated with a Master of Science in Metallurgical and Material Engineering from the Colorado School of Mines in Golden, Colorado, in 2007, and received a Bachelor of Science in Metallurgical Engineering degree from the Universidad Nacional de Ingeniería, 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. I have worked as a metallurgist and in mineral processing management in the mining industry since my graduation from the Universidad Nacional de Ingeniería.

3. I have read the definition of "qualified person" set out in National Instrument 43-101 Standards of Disclosure for Mineral Projects (NI 43-101) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.

4. I visited El Peñón on numerous occasions, including most recently between April 21 and 25, 2024.

5. I am responsible for Sections 13 and 17, and share responsibility for related disclosure in Sections 1, 2, 3, 12, 24, 25, 26, and 27 of the Technical Report.

6. I am not independent of the Issuer. I am a full-time employee of the Issuer.

7. I have had prior involvement with the property in my role with the Issuer.

8. I have read NI 43-101, and the sections of Technical Report for which I am responsible have been prepared in compliance with NI 43-101 and Form 43-101F1.

9. At the effective date of the Technical Report, to the best of my knowledge, information, and belief, Sections 13 and 17, and related disclosure in Sections 1, 2, 3, 12, 24, 25, 26, and 27 in the Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

"Signed"

Americo Delgado, P.Eng. Dated this 20th day of January, 2025

Certificate of Qualified Person – Carlos Iturralde

I, Carlos Iturralde, P.Eng., as an author of this report entitled "NI 43-101 technical report for the El Peñón Gold-Silver Mine, Antofagasta Region, Chile" prepared for Pan American Silver Corp. (the Issuer) and dated effective as of June 30, 2024 (the technical report), do hereby certify the following:

1. I am Senior Director, Critical Facilities at the Issuer, with an office at 2100-733 Seymour Street, Vancouver, BC, V6B 0S6, Canada.

2. I graduated from the University of Kansas with a dual major in Civil Engineering and Mathematics in 2002. I received a MSc. from the University of Tübingen in Applied Environmental Geosciences in 2007. I am a professional engineer registered with Engineers and Geoscientist British Columbia since 2010 (License #40153). I have over 20 years of professional experience in the mining industry focused on tailings management and related infrastructure. The following aspects of my experience are relevant for the purpose of the Technical Report:
    - Completion of design and engineering studies and dam safety reviews of tailings facilities.
    - Best management practices following the Mining Association of Canada (MAC) and Canadian Dam Association (CDA) proposed framework and dam safety criteria.
    - Implementation of risk management and quality management strategies, including QA/QC programs and risk evaluation and mitigation through identification of critical controls.
    - Since 2015, I have been an active member of MAC's tailings working group (TWG) and participated in the development of the 3rd edition of MAC's tailings management guidelines.

3. I have read the definition of "qualified person" set out in National Instrument 43-101 Standards of Disclosure for Mineral Projects (NI 43-101) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.

4. I visited El Peñón on three occasions including most recently in 2022. I work regularly in close communication with the site's tailings management systems team.

5. I am responsible for Sections 18.1 and 20.2.2, and share responsibility for related disclosure in Sections 1, 2, 3, 12, 24, 25, 26, and 27 of the Technical Report.

6. I am not independent of the Issuer. I am a full-time employee of the Issuer.

7. I have had prior involvement with the property that is the subject of the Technical Report in my role as Director, Tailings at the Issuer.

8. I have read NI 43-101, and the sections of Technical Report for which I am responsible have been prepared in compliance with NI 43-101 and Form 43-101F1.

9. At the effective date of the Technical Report, to the best of my knowledge, information, and belief, Sections 18.1 and 20.2.2, and related disclosure in Sections 1, 2, 3, 12, 24, 25, 26, and 27 in the Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

"Signed"

Carlos Iturralde, P.Eng. Dated this 20th day of January, 2025

Certificate of Qualified Person – Matthew Andrews

I, Matthew Andrews, FAusIMM, as an author of this report entitled "NI 43-101 technical report for the El Peñón Gold-Silver Mine, Antofagasta Region, Chile" prepared for Pan American Silver Corp. (the Issuer) and dated effective as of June 30, 2024 (the technical report), do hereby certify the following:

1. I am Vice President, Environment at the Issuer, with an office at 2100-733 Seymour Street, Vancouver, BC, V6B 0S6, Canada.

2. I graduated with a Bachelor of Chemical Engineering (Hons) from the University of New South Wales, Sydney, Australia, in 1993. I received a Master of Environmental Management from the University of New South Wales in 2005. I am a Fellow in good standing with the Australasian Institute of Mining and Metallurgy (AusIMM). I have 26 years of experience in environmental management in the mining and resource industry.

3. I have read the definition of "qualified person" set out in National Instrument 43-101 Standards of Disclosure for Mineral Projects (NI 43-101) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.

4. I visited El Peñón on numerous occasions, including most recently between August 19 and 21, 2024.

5. I am responsible for Section 20 (excluding 20.2.2) and share responsibility for related disclosure in Sections 1, 2, 3, 12, 24, 25, 26, and 27 of the Technical Report.

6. I am not independent of the Issuer. I am a full-time employee of the Issuer.

7. I have had prior involvement with the property that is the subject of the Technical Report in my role as Vice President, Environment at the Issuer.

8. I have read NI 43-101, and the sections of Technical Report for which I am responsible have been prepared in compliance with NI 43-101 and Form 43-101F1.

9. At the effective date of the Technical Report, to the best of my knowledge, information, and belief, Section 20 (excluding 20.2.2) and related disclosure in Sections 1, 2, 3, 12, 24, 25, 26, and 27 in the Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

"Signed"

Matthew Andrews, FAusIMM

Dated this 20th day of January, 2025