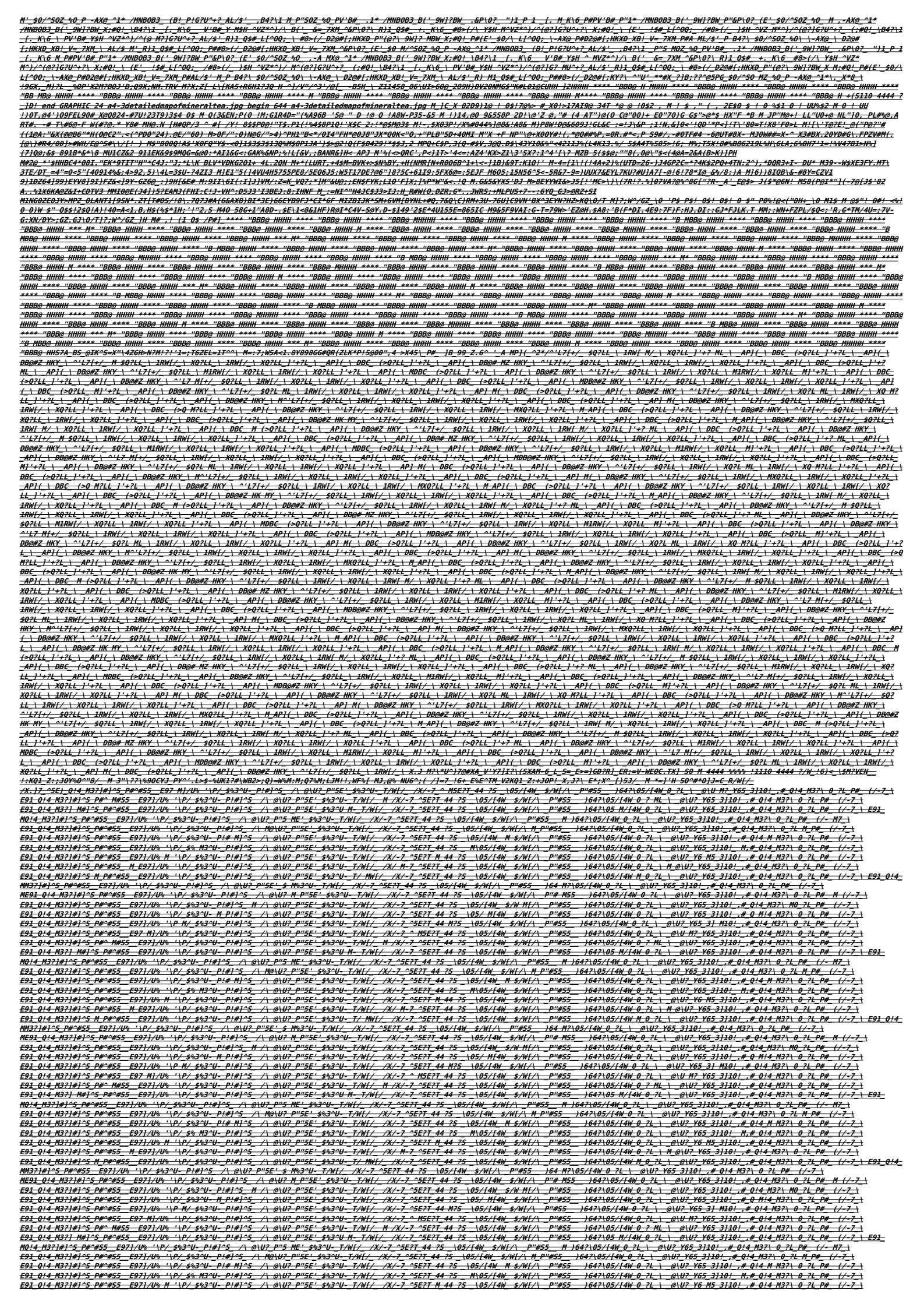

0000771992-25-0000066-K PAN AMERICAN SILVER CORP 2025012220250122145714145715145715 0 0000771992-25-000006 6-K 33 20240630 20250122 20250122 PAN AMERICAN SILVER CORP 0000771992 1040 000000000 1231 6-K 34 001-41683 25545495 2100-733 SEYMOUR STREET VANCOUVER A1 V6B 0S6 604-684-1175 2100-733 SEYMOUR ST VANCOUVER A1 V6B 0S6 PAN AMERICAN MINERALS CORP 19950608 6-K 1 form6ktr2024-elpenon.htm 6-K DocumentUNITED STATESSECURITIES AND EXCHANGE COMMISSIONÂ Washington, D.C. 20549________________FORM 6-KÂ ___________________Â REPORT OF FOREIGN PRIVATE ISSUERÂ PURSUANT TO RULE 13a-16 OR 15d-16UNDER THE SECURITIES EXCHANGE ACT of 1934Â January 21, 2025___________________Â Pan American Silver Corp.(Exact name of registrant as specified in its charter)Â Â 2100-733 Seymour StreetVANCOUVER BC CANADA V6B 0S6 (Address of principal executive offices)Â Â 001-41683(Commission File Number)___________________Â Indicate by check mark whether the registrant files or will file annual reports under cover Form 20-F or Form 40-F.Form 20-FÂ Â Form 40-F Â Â XÂ Â Indicate by check mark if the registrant is submitting the Form 6-K in paper as permitted by Regulation S-T Rule 101(b)(1). _____Â Â Indicate by check mark if the registrant is submitting the Form 6-K in paper as permitted by Regulation S-T Rule 101(b)(7): _____EXHIBIT LISTÂ ExhibitDescription99.1NI 43-101 Technical Report for the El PeÃ±Ã³n Gold-Silver Mine, Antofagasta Region, Chile with an effective date of June 30, 202499.2Consent of Jimmy AvendaÃ±o, Reg. Member CMC99.3Consent of Christopher Emerson, FAusIMM99.4Consent of Americo Delgado, P.Eng.99.5Consent of Carlos Iturralde, P.Eng.99.6Consent of Matthew Andrews, FAusIMMÂ Cautionary Note to U.S. Investors Concerning Estimates ofMeasured, Indicated and Inferred Resources The NI 43-101 Technical Report for the El PeÃ±Ã³n Gold-Silver Mine, Antofagasta Region, Chile, with an effective date of June 30, 2024, included as Exhibit 99.1 hereto (the â€œTechnical Reportâ€), has been prepared and disclosed in accordance with Canadian National Instrument 43-101 â€" Standards of Disclosure for Mineral Projects (â€œNI 43-101â€) and the Canadian Institute of Mining, Metallurgy and Petroleum classification system. NI 43-101 is a rule developed by the Canadian Securities Administrators that establishes standards for all public disclosure an issuer makes of scientific and technical information concerning mineral projects.Canadian public disclosure standards, including NI 43-101, differ significantly from the requirements of the United States Securities and Exchange Commission (the â€œSECâ€), and mineral reserve and mineral resource information included in the Technical Report may not be comparable to similar information disclosed by U.S. companies. In particular, and without limiting the generality of the foregoing, the Technical Report uses the terms â€œmeasured mineral resources,â€ â€œindicated mineral resourcesâ€ and â€œinferred mineral resourcesâ€ as defined under Canadian regulations. The requirements of NI 43-101 for the identification of â€œmineral reservesâ€ are also not the same as those of the SEC, and reserves reported by the Registrant in compliance with NI 43-101 may not qualify as â€œreservesâ€ under SEC standards. While the SEC has adopted amendments to its disclosure rules to modernize the mineral property disclosure requirements for issuers whose securities are registered with the SEC under the U.S. Securities Exchange Act of 1934, as amended, including amendments to certain definitions to be substantially similar to the corresponding standards under NI 43-101, there are still differences in these standards and definitions. U.S. investors are cautioned not to assume that any part of a â€œmeasured mineral resourceâ€ or â€œindicated mineral resourceâ€ will ever be converted into a â€œmineral reserveâ€. U.S. investors should also understand that â€œinferred mineral resourcesâ€ have a great amount of uncertainty as to their existence and as to their economic and legal feasibility. It cannot be assumed that all or any part of â€œinferred mineral resourcesâ€ exist, are economically or legally mineable or will ever be upgraded to a higher category. Under Canadian rules, estimated â€œinferred mineral resourcesâ€ may not form the basis of feasibility or pre-feasibility studies except in rare cases. In addition, disclosure of â€œcontained ouncesâ€ in a mineral resource is permitted disclosure under Canadian regulations. However, the SEC normally only permits issuers to report mineralization that does not constitute â€œreservesâ€ by SEC standards as in place tonnage and grade, without reference to unit measures. Accordingly, information concerning mineral deposits set forth in the Technical Report may not be comparable with information made public by companies that report in accordance with U.S. standards.SignaturesÂ Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.Â Pan American Silver Corp.(Registrant)Â Â Â Date: January 21, 2025By:Â "Delaney Fisher"Delaney FisherSVP Associate General Counsel & Corporate Secretary EX-99.1 2 panamericansilverelpenonni.htm EX-99.1 DocumentPAN AMERICAN SILVER CORP.Pan American Silver Corp.2100 â€" 733 Seymour StreetVancouver, B.C. CanadaV6B 0S6NI 43-101 Technical Reportfor the El PeÃ±Ã³n Gold-Silver Mine,Antofagasta Region, ChileEffective Date:June 30, 2024Signature Date:January 20, 2025Authors:[Signed][Signed]Jimmy AvendaÃ±o, Reg. Member CMCManager, Technical ServicesMinera Meridian LimitadaChristopher Emerson, FAusIMMVice President, Exploration and GeologyPan American Silver Corp.[Signed][Signed]Americo Delgado, P.Eng.Vice President, Mineral Processing, Tailings, and DamsPan American Silver Corp.Carlos Iturralde, P. Eng.Senior Director, Critical FacilitiesPan American Silver Corp.[Signed]Matthew Andrews, FAusIMMVice President, Environment Pan American Silver Corp.Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 2PAN AMERICAN SILVER CORP.TABLE OF CONTENTSList of Abbreviations101Â Â Â Â Summary121.1Â Â Â Â Property Description121.2Â Â Â Â Geology and Mineralization121.3Â Â Â Â Exploration Status131.4Â Â Â Â Mineral Resource and Mineral Reserve Estimates131.5Â Â Â Â Mining and Processing Methods171.6Â Â Â Â Environmental Studies, Permitting, and Social or Community Impact171.7Â Â Â Â Conclusions and Recommendations182Â Â Â Â Introduction 212.1Â Â Â Â Sources of Information223Â Â Â Â Reliance on Other Experts234Â Â Â Â Property Description and Location244.1Â Â Â Â Mineral and Surface Tenure244.2Â Â Â Â Underlying Agreements354.3Â Â Â Â Permits and Authorizations374.4Â Â Â Â Environmental Considerations374.5Â Â Â Â Significant Factors and Risks375Â Â Â Â Accessibility, Climate, Local Resources, Infrastructure, and Physiography385.1Â Â Â Â Accessibility385.2Â Â Â Â Climate385.3Â Â Â Â Local Resources385.4Â Â Â Â Infrastructure385.5Â Â Â Â Physiography396Â Â Â Â History406.1Â Â Â Â Historical Mineral Resource and Mineral Reserve Estimates406.2Â Â Â Â Past Production407Â Â Â Â Geological Setting and Mineralization427.1Â Â Â Â Regional Geology427.2Â Â Â Â Local Geology447.3Â Â Â Â Property Geology467.3.1Â Â Â Â Structure467.4Â Â Â Â Mineralization488Â Â Â Â Deposit Types509Â Â Â Â Exploration519.1Â Â Â Â Exploration Potential5110Â Â Â Â Drilling5211Â Â Â Â Sample Preparation, Analyzes, and Security5611.1Â Â Â Â Sample Preparation and Security5611.1.1Â Â Â Â Sampling of Drill Core5611.1.2Â Â Â Â Underground Channel Sampling5711.1.3Â Â Â Â Preparation and Analytical Procedures5711.2Â Â Â Â Quality Assurance/Quality Control5911.2.1Â Â Â Â Certified Reference Materials6211.2.2Â Â Â Â Blank Samples6311.2.3Â Â Â Â Umpire Laboratory Check Assays65Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 3PAN AMERICAN SILVER CORP.11.3Â Â Â Â Sample Security6612Â Â Â Â Data Verification6712.1Â Â Â Â Mine Engineering Data Verification6712.2Â Â Â Â Geology Data Verification6712.3Â Â Â Â Metallurgy Data Verification6712.4Â Â Â Â Tailings Data Verification6812.5Â Â Â Â Environment, Social, and Permitting Data Verification6813Â Â Â Â Mineral Processing and Metallurgical Testing6913.1Â Â Â Â Processing Plant6913.2Â Â Â Â Metallurgical Testing6914Â Â Â Â Mineral Resource Estimates7214.1Â Â Â Â Mineral Resource Summary7214.2Â Â Â Â Resource Database and Validation7414.3Â Â Â Â Definition and Interpretation of Estimation Domains7414.4Â Â Â Â Compositing Methods7614.5Â Â Â Â Basic Statistics7614.6Â Â Â Â Specific Gravity7714.7Â Â Â Â Variography7814.8Â Â Â Â Block Models7914.9Â Â Â Â Block Model Validation8114.10Â Â Â Â Resource Classification8514.11Â Â Â Â Resource Estimation of Stockpiles and Tailings8514.12Â Â Â Â Mineral Resource Estimate8515Â Â Â Â Mineral Reserve Estimates8915.1Â Â Â Â Mineral Reserve Summary8915.2Â Â Â Â Conversion Methodology9015.3Â Â Â Â NSR Value Calculation9115.4Â Â Â Â NSR Cut-Off Value9115.5Â Â Â Â Mining Shapes Design Parameters9215.6Â Â Â Â Primary Development Design and Economic Evaluation9315.7Â Â Â Â Reconciliation9315.8Â Â Â Â Mineral Reserve Estimate9316Â Â Â Â Mining Methods9616.1Â Â Â Â Underground Mining Methods9616.2Â Â Â Â Underground Mine Design9716.3Â Â Â Â Mining Sequence9816.4Â Â Â Â Geomechanics and Ground Support9916.5Â Â Â Â Mine Equipment10016.6Â Â Â Â Mine Services10116.6.1Â Â Â Â Dewatering10116.6.2Â Â Â Â Ventilation10116.6.3Â Â Â Â Electrical10216.6.4Â Â Â Â Compressed Air10316.7Â Â Â Â Life of Mine Plan10317Â Â Â Â Recovery Methods10417.1Â Â Â Â Primary Crushing10417.2Â Â Â Â Grinding and Pre-Leach Thickening10517.3Â Â Â Â Clarification106Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 4PAN AMERICAN SILVER CORP.17.4Â Â Â Â Leaching10617.5Â Â Â Â CCD Concentrate Solution Recovery10617.6Â Â Â Â Pregnant Solution Precipitation10617.7Â Â Â Â Refining10717.8Â Â Â Â Tailings Filtering and Disposal10717.9Â Â Â Â Metallurgical Reporting10817.10Â Â Â Â Plant Consumption10818Â Â Â Â Project Infrastructure10918.1Â Â Â Â Filtered Tailings Stack Design and Consultation11119Â Â Â Â Market Studies and Contracts11319.1Â Â Â Â Market Studies11319.2Â Â Â Â Contracts11320Â Â Â Â Environmental Studies, Permitting, and Social or Community Impact11420.1Â Â Â Â Project Permitting and Authorizations11420.2Â Â Â Â Environmental Management11520.2.1Â Â Â Â Environmental Management Systems11520.2.2Â Â Â Â Tailings Management11520.2.3Â Â Â Â Water Management11620.2.4Â Â Â Â Waste Rock Management11620.2.5Â Â Â Â Environmental Monitoring11720.3Â Â Â Â Community Relations11820.3.1Â Â Â Â General Social Context11820.3.2Â Â Â Â Social Assessment and Management Systems11820.3.3Â Â Â Â Workplace Health and Safety11820.3.4Â Â Â Â Support for Community Priorities11920.3.5Â Â Â Â Cultural Heritage11920.4Â Â Â Â Mine Closure12020.5Â Â Â Â Expected Material Environmental and Social Issues12021Â Â Â Â Capital and Operating Costs12121.1Â Â Â Â Capital Costs12121.2Â Â Â Â Operating Costs12122Â Â Â Â Economic Analysis12323Â Â Â Â Adjacent Properties12424Â Â Â Â Other Relevant Data and Information12525Â Â Â Â Interpretation and Conclusions12626Â Â Â Â Recommendations12827Â Â Â Â References12928Â Â Â Â Certificates of Qualified Persons131Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 5PAN AMERICAN SILVER CORP.List of FiguresFigure 4-1: General location map24Figure 4-2: Map of mineral tenure26Figure 4-3: Detailed map of mineral tenure35Figure 4-4: Detailed map of mining concessions subject to NSR royalties 36Figure 7-1: Regional geological setting43Figure 7-2: Local and property geology 45Figure 7-3: Schematic geological plan and cross-sections of the El PeÃ±Ã³n deposit 47Figure 7-4: Photographs of mineralization in underground exposures and in drill core 49Figure 8-1: Generalized gold deposit types and environments50Figure 10-1: Plan view of drillholes in El PeÃ±Ã³n core mine area 53Figure 11-1: Z-score for all CRMs for gold analyzed at Geoassay, December 2020 to June 2024 62Figure 11-2: Z-score for all CRMs for silver analyzed at Geoassay, December 2020 to June 202463Figure 11-3: Time series plots: gold and silver assays of select blanks by type and laboratory64Figure 11-4: Comparison between Geoassay and Bureau Veritas umpire checks for gold by fire assay and AAS and for silver by multi-acid AAS finish65Figure 14-1: Plan view of estimation domains coloured mining zone 75Figure 14-2: Gold swath plots for El Valle vein 83Figure 14-3: Gold swath plots for Pampa Campamento vein84Figure 16-1: Schematic cross-section of drift and vein showing extent of split-blasting technique 97Figure 16-2: Schematic example of bench-and-fill mining method98Figure 16-3: Ventilation circuit of the Pampa Campamento underground mine 102Figure 17-1: Mineral processing flowsheet 105Figure 18-1: Plan map of main infrastructure at El PeÃ±Ã³n 110Figure 18-2: Schematic cross-section of western face of filtered tailings stack 111Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 6PAN AMERICAN SILVER CORP.List of TablesTable 1-1: El PeÃ±Ã³n Mineral Resource Statement as of June 30, 2024 14Table 1-2: El PeÃ±Ã³n Mineral Reserve Statement, June 30, 2024 16Table 2-1: Qualified persons and personal inspections22Table 4-1: Mineral tenure list 27Table 6-1: Commercial production at El PeÃ±Ã³n, 2000 to June 30, 2024 41Table 7-1: Description of main lithologies 44Table 10-1: Exploration and infill drilling by year and type, 1993 to June 30, 2024 52Table 11-1: Sample preparation and analytical standard operating procedures 56Table 11-2: Lower detection limits and acceptance limits for blanks 60Table 11-3: Summary of analytical quality control data produced between December 2020 and June 202461Table 13-1: Metallurgical recoveries by zone and grade category 70Table 13-2: Processing plant production for 2023 71Table 13-3: Processing plant production for January to June 2024 71Table 14-1: El PeÃ±Ã³n Mineral Resource Statement as of June 30, 202472Table 14-2: Summary of gold and silver capping values by vein76Table 14-3: Specific gravity density values assigned to each zone78Table 14-4: Typical calculation parameters for experimental correlograms 78Table 14-5: Correlogram model parameters for El Valle and Pampa Campamento veins79Table 14-6: Generalized block model variables 79Table 14-7: Block models per veins and per mining zones 80Table 14-8: Summary of typical estimation and search parameters 81Table 14-9: Statistical validation of the estimated block model - El Valle vein and Pampa Campamento vein82Table 14-10: Resource NSR cut-off value calculation parameters 86Table 14-11: Summary of El PeÃ±Ã³n mineral resources by zone, as of June 30, 2024 87Table 15-1: El PeÃ±Ã³n Mineral Reserve Statement, June 30, 2024 89Table 15-2: NSR calculation parameters91Table 15-3: NSR Cut-off value calculation parameters91Table 15-4: Stope design parameters by zone92Table 15-5: Drift (considering split-blasting) design parameters92Table 15-6: Split-blasting design configurations by vein width 92Table 15-7: Development design parameters and cost 93Table 15-8: Reconciliation, July 2023 to June 2024 93Table 15-9: Summary of El PeÃ±Ã³n mineral reserves by zone, June 30, 2024 94Table 16-1: Underground mobile equipment for development & production 100Table 16-2: Support mobile equipment 100Table 17-1: Consumption of reagents for January to June 2024 108Table 17-2: Consumption of processing supplies for January to June 2024108Table 20-1: Social risk management 118Table 20-2: Estimated LOM closure costs 120Table 21-1: LOM capital costs 121Table 21-2: LOM average unit operating costs 122Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 7PAN AMERICAN SILVER CORP.CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTSThis National Instrument 43-101 Standards of Disclosure for Mineral Projects (NI 43-101) technical report (the Technical Report) contains or incorporates by reference â€œforward-looking statementsâ€ and â€œforward-looking informationâ€ 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 PeÃ±Ã³n (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 Companyâ€™s (as defined herein) strategy, plans or future financial or operating performance. Forward-looking statements are characterized by words such as â€œplanâ€, â€œexpectâ€, â€œbudgetâ€, â€œtargetâ€, â€œprojectâ€, â€œintendâ€, â€œbelieveâ€, â€œanticipateâ€, â€œestimateâ€ and other similar words, or statements that certain events or conditions â€œmayâ€ or â€œwillâ€ 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 Companyâ€™s or El PeÃ±Ã³nâ€™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 PeÃ±Ã³n will meet the Companyâ€™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 Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 8PAN AMERICAN SILVER CORP.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 Companyâ€™s Annual Information Form filed with the securities regulatory authorities in all of the provinces and territories of Canada and available under the Companyâ€™s profile at www.sedarplus.ca, and the Companyâ€™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 managementâ€™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 Companyâ€™s expected financial and operational performance and results as at and for the periods ended on the dates presented in the Companyâ€™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 ResourcesThis 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 â€œMineral Reserveâ€, â€œProven Mineral Reserveâ€, â€œProbable Mineral Reserveâ€, â€œMineral Resourceâ€, â€œMeasured Mineral Resourceâ€, â€œIndicated Mineral Resourceâ€ and â€œInferred Mineral Resourceâ€ 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.Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 9PAN AMERICAN SILVER CORP.List of AbbreviationsUnits of measurement used in this Technical Report conform to the metric system. All currency in this Technical Report is listed in US dollars (US$) unless noted otherwise.Â°degrees>Â greater than<Â less than%percentÂ°Cdegrees CelsiusAgsilverAugoldAASatomic absorption spectrometryB&Fbench and fillC&Fcut and fillcmcentimetrecm3cubic centimetreCADLClosure and Decommissioning LiabilityCCDcounter-current decantationCRMcertified reference materialsddayDDHdiamond drill holedmtdry metric tonneEeastELOSestimated equivalent linear overbreak sloughFAfire assayggramg/lgrams per litreg/tgrams per tonnehhourhahectareHDPEhigh density poly ethilenehphorsepowerILOInternational Labour OrganizationISOInternational Organization for StandardizationICPinductively coupled plasmaID3inverse distance squared or to the power of threekkilo (thousand)kmkilometrekozkilo-ounce (a thousand Troy ounces)ktthousand tonnesktpdthousand tonnes per daykVkilovoltkVAkilovolt-amperekgkilogramkg/tkilograms per tonnekWkilowattkW/dmtkilowatts per dry metric tonnekWh/tkilowatt hours per tonnel/slitres per secondLHDload-haul-dumpLOMlife of minemmetrem2square metrem3cubic metrem3/hcubic metre per hourMmega, millionMamega annum, millions of years agoMACMining Association of Canadamaslmetres above sea levelmmmillimetreMozmillion Troy ouncesMSOmineable shape optimizerMtmillion tonnesMVAmegavolt-ampereMWmegawattMW/hmegawatts per hourNnorthNNnearest-neighbourNSRnet smelter returnNTUNephelometric turbidity unitOKordinary kriging ozTroy ounce (31.1035 g)ppm parts per millionQAquailty assuranceQA/QCquality assurance and quality controlQCquality controlQPqualified personRARreturn air raiseRCAEnvironmental Qualification ResolutionsRMRrock mass ratingRMR891989 rock mass rating modificationROMrun of mineRPEEEreasonable prospect of eventual economic extraction Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 10PAN AMERICAN SILVER CORP.RQDRock Quality DesignationssecondSsouthSAGsemi-autogenous grindingSRCEstandard reclamation cost estimatortmetric tonnetpdtonnes per calendar dayTSFtailings storage facilityTSMTowards Sustainable MiningUS$United States dollarVFDvariable frequency driveVSOVulcan Stope OptimiserWwestEffective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 11PAN AMERICAN SILVER CORP.1SummaryThis Technical Report has been prepared by Pan American Silver Corp. (Pan American or the Company) to disclose relevant information about the El PeÃ±Ã³n mine (El PeÃ±Ã³n). El PeÃ±Ã³n 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 PeÃ±Ã³n 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 PeÃ±Ã³n as of JuneÂ 30, 2024, describes the current operations and summarizes the life of mine (LOM) plan and the capital and operating cost estimates. 1.1Property DescriptionEl PeÃ±Ã³n 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 PeÃ±Ã³n 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 PeÃ±Ã³n 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 PeÃ±Ã³n 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 PeÃ±Ã³n 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 PeÃ±Ã³n 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 PeÃ±Ã³n 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). 1.2Geology and MineralizationThe discovery of the El PeÃ±Ã³n gold-silver deposit was the result of successful grassroots exploration throughout the early 1990s. El PeÃ±Ã³n is classified as a low- to intermediate-sulphidation epithermal gold-silver deposit associated with steeply dipping fault-controlled veins emplaced following rhyolite dome emplacement. Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 12PAN AMERICAN SILVER CORP.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. 1.3Exploration StatusSince 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 PeÃ±Ã³n 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 PeÃ±Ã³n. 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 PeÃ±Ã³n 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 PeÃ±Ã³n 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. 1.4Mineral Resource and Mineral Reserve EstimatesInterpreted 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. Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 13PAN AMERICAN SILVER CORP.El PeÃ±Ã³n 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 PeÃ±Ã³n as of JuneÂ 30, 2024, exclusive of mineral reserves is presented in Table 1-1. Table 1-1: El PeÃ±Ã³n Mineral Resource Statement as of June 30, 2024 Mineral ResourcesCategoryTonnesGradeContained Metal(kt)Au (g/t)Ag (g/t)Au kozAg kozUndergroundMeasured1,554Â 5.25166.32628,307Â Indicated3,828Â 3.4411242313,789Â Measured + Indicated5,382Â 3.96127.768522,096Â Inferred4,677Â 3.8133.857220,115Â Open PitMeasuredâ€”Â â€”Â â€”Â â€”Â â€”Â Indicated20.02362.7â€”Â 25Measured + Indicated20.02362.7â€”Â 25Inferred20.03858.2â€”Â 69TailingsMeasuredâ€”Â â€”Â â€”Â â€”Â â€”Â Indicatedâ€”Â â€”Â â€”Â â€”Â â€”Â Measured + Indicatedâ€”Â â€”Â â€”Â â€”Â â€”Â Inferred13,767Â 0.5518.92458,380Â CombinedMeasured1,554Â 5.25166.32628,307Â Indicated3,830Â 3.44112.242313,813Â Measured + Indicated5,384Â 3.96127.868522,120Â Inferred18,446Â 1.3848.281628,564Â 1.Mineral resources were estimated by the El PeÃ±Ã³n 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/cm3 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. Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 14PAN AMERICAN SILVER CORP.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/cm3 to 2.57 g/cm3 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/cm3 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 PeÃ±Ã³n to convert mineral resources to mineral reserves is summarized as follows: â€¢Verify geometries for the block model and confirm block model depletion with current excavated wireframes up to the effective reporting date. â€¢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. â€¢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. â€¢The metal prices assumptions, processing recoveries and operating costs, excluding primary development costs, are used to determine an operating margin for each shape. â€¢Design primary development, including ramps, ventilation, materials handling, access and other infrastructure. â€¢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. â€¢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. â€¢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. â€¢Mining shapes containing a majority portion of measured or indicated tonnes are converted to proven or probable mineral reserves, respectively. Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 15PAN AMERICAN SILVER CORP.The Mineral Reserve Statement of El PeÃ±Ã³n as of June 30, 2024, is presented in Table 1-2. Table 1-2: El PeÃ±Ã³n Mineral Reserve Statement, June 30, 2024 ReservesCategoryTonnes(kt)GradeContained MetalAu (g/t)Ag (g/t)Au (koz)Ag (koz)Open PitProvenâ€”Â â€”Â â€”Â â€”Â â€”Â Probable210.03412.9â€”Â 272Total Open Pit210.03412.9â€”Â 272UndergroundProven8285.46208.11455,540Â Probable3,132Â 4.72154.747515,574Â Total Underground3,960Â 4.87165.862021,114Â Low-grade StockpileProvenâ€”Â â€”Â â€”Â â€”Â â€”Â Probable7991.263232821Total Low-grade Stockpile7991.263232821CombinedProven8285.46208.11455,540Â Probable3,952Â 3.99131.250716,667Â Grand Total4,779Â 4.25144.565322,207Â 1.Mineral reserves have been estimated by the El PeÃ±Ã³n long-term mine planning team and reviewed by Jimmy AvendaÃ±o, Registered Member of the Chilean Mining Commission, Technical Services Manager of El PeÃ±Ã³n, 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.Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 16PAN AMERICAN SILVER CORP.1.5Mining and Processing MethodsOre from underground mines has recently been -and will continue to be- the main source of feed for the El PeÃ±Ã³n 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 PeÃ±Ã³n 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 PeÃ±Ã³n, range generally between 10 and 20 m. Due to narrow vein widths, a â€œsplit-blastingâ€ technique is regularly used to reduce dilution in secondary development of ore zones. The major assets and facilities associated with El PeÃ±Ã³n are: the mining and processing infrastructure, which includes office buildings, shops, and equipment; a processing plant which produces gold dorÃ© 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 PeÃ±Ã³n is connected to the National Electric Grid through a 66 kV transmission line connected to the Palestina substation. The tailings produced at the El PeÃ±Ã³n 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 PeÃ±Ã³n 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 dorÃ©. 1.6Environmental Studies, Permitting, and Social or Community ImpactPan 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 (ComisiÃ³n Regional de Medio Ambiente de Antofagasta) approved applications for the construction and operation of El PeÃ±Ã³n 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 PeÃ±Ã³n 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 PeÃ±Ã³n 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. Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 17PAN AMERICAN SILVER CORP.El PeÃ±Ã³n 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 PeÃ±Ã³n as part of the management system. El PeÃ±Ã³n also implements Mining Association of Canadaâ€™s (MAC) Towards Sustainable Mining (TSM) framework as well as the World Gold Councilâ€™s Responsible Gold Mining Principles. El PeÃ±Ã³n 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 PeÃ±Ã³n. The water management system at El PeÃ±Ã³n 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 PeÃ±Ã³n, 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 PeÃ±Ã³n 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 RecommendationsMore than 5.9 Moz of gold and 146 Moz of silver has been produced at El PeÃ±Ã³n since commercial production commenced in 2000. El PeÃ±Ã³nâ€™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 PeÃ±Ã³n continue to highlight the expansion potential of the mine and to extend the LOM plan past its current mineral reserves base. El PeÃ±Ã³n 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 PeÃ±Ã³n 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 PeÃ±Ã³nâ€™s track record of replacing depleted mineral reserves. Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 18PAN AMERICAN SILVER CORP.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 PeÃ±Ã³n 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 PeÃ±Ã³n has all the operational licenses required for operation according to national legislation. The approved licenses address the authorityâ€™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: â€¢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) â€¢Unanticipated inflation of capital or operating costs â€¢Significant changes in equipment productivities â€¢Geological continuity of the mineralized structuresâ€¢Geotechnical assumptions in pit and underground designs â€¢Ore dilution and ore loss â€¢Throughput and metallurgical recovery rate assumptions â€¢Changes in political and regulatory requirements that may affect the operation or future closure plans â€¢Changes in closure plan costs â€¢Availability of financing and changes in modelled taxes Pan Americanâ€™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 Americanâ€™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. Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 19PAN AMERICAN SILVER CORP.Based on the information presented in this Technical Report, the qualified persons recommend the following action items. Over the past 24 years, El PeÃ±Ã³n 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: â€¢Infill drilling to replace depletion by upgrading and extending known mineral resources. â€¢Expansion exploration drilling to upgrade mineral resources to measured or indicated categories, or to transform zones of geological potential into inferred mineral resources. â€¢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 PeÃ±Ã³n 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.Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 20PAN AMERICAN SILVER CORP.2Introduction El PeÃ±Ã³n 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 PeÃ±Ã³n 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 PeÃ±Ã³n when it purchased Yamana in March 2023, following the sale by Yamana of its Canadian assets to Agnico Eagle. Pan Americanâ€™s other operations include: â€¢100% ownership in the Jacobina underground gold mine in the state of Bahia of northeastern Brazil. â€¢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. â€¢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. â€¢100% ownership of the Shahuindo open-pit gold mine in Cajamarca, Peru. â€¢100% ownership of the HuarÃ³n underground silver, zinc, copper, and lead mine in Pasco, Peru. â€¢100% ownership of the Cerro Moro underground and open-pit gold-silver mine located in the Santa Cruz Province, Argentina. â€¢100% ownership of the Minera Florida underground gold-silver-zinc mine located south of Santiago, Chile. â€¢95% ownership of the San Vicente underground silver, zinc, copper, and lead mine in PotosÃ, Bolivia. â€¢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 PeÃ±Ã³n; it documents the mineral resource and mineral reserve estimates as of JuneÂ 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.Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 21PAN AMERICAN SILVER CORP.2.1 Sources of InformationThe qualified persons for this Technical Report are Jimmy AvendaÃ±o, 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 inspectionsQualified PersonsJimmy AvendaÃ±o, Registered Member of the Chilean Mining Commission, Manager, Technical ServicesResponsible 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 AnalysisPersonal Inspection: Works at siteChristopher Emerson, FAusIMM, Vice President, Exploration and GeologyResponsible 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 PropertiesPersonal Inspection: Visited El PeÃ±Ã³n on numerous occasions including most recently between June 5th and 8th, 2024.Americo Delgado, P.Eng., Vice President, Mineral Processing, Tailings and DamsResponsible for Sections: 13: Mineral Processing and Metallurgical Testing; 17: Recovery MethodsPersonal Inspection: Visited El PeÃ±Ã³n on numerous occasions including most recently between April 21st and 25th, 2024.Carlos Iturralde, P.Eng., Senior Director, Senior Director, Critical FacilitiesResponsible for Sections: 18.1: Filtered Tailings Stack Design and Construction; 20.2.2: Tailings ManagementPersonal Inspection: Visited El PeÃ±Ã³n on numerous occasions including most recently in 2022.Matthew Andrews, FAusIMM, Vice President, EnvironmentResponsible for Sections: 20: Environmental Studies, Permitting and Social or Community Impact (excluding 20.2.2)Personal Inspection: Visited El PeÃ±Ã³n 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: ReferencesIn preparation of this Technical Report, the qualified persons reviewed technical documents and reports on El PeÃ±Ã³n 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 PeÃ±Ã³n was compiled by Yamana, titled "NI 43-101 Technical Report El PeÃ±Ã³n Gold-Silver Mine Antofagasta Region, Chileâ€, 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 JuneÂ 30, 2024.Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 22PAN AMERICAN SILVER CORP.3Reliance on Other ExpertsThe qualified persons have relied on information derived from Pan Americanâ€™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 PeÃ±Ã³n 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 partyâ€™s sole risk. Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 23PAN AMERICAN SILVER CORP.4Property Description and LocationEl PeÃ±Ã³n is located in north-central Chile, at latitude 24Â°40` S and longitude 69Â°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 map4.1Mineral and Surface TenureThe El PeÃ±Ã³n 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 PeÃ±Ã³n 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. Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 24PAN AMERICAN SILVER CORP.El PeÃ±Ã³n has been in operation since 1999 and the existing surface rights are deemed sufficient for mining and processing operations. As well, El PeÃ±Ã³n 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 PeÃ±Ã³n is also subject to First Category Tax (i.e., income tax) in Chile at a rate of 27%. Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 25PAN AMERICAN SILVER CORP.Figure 4-2: Map of mineral tenureEffective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 26PAN AMERICAN SILVER CORP.Table 4-1: Mineral tenure list Property NameTypeNational IDArea (ha)AGUSTIN 2 1/30EXPLOTACIÃ“N022013041-K300AGUSTIN 2 121/150EXPLOTACIÃ“N022013045-2300AGUSTIN 2 31/60EXPLOTACIÃ“N022013042-8300AGUSTIN 2 61/90EXPLOTACIÃ“N022013043-6300AGUSTIN 2 91/120EXPLOTACIÃ“N022013044-4300AMARILLO 15 DEL 1 AL 2EXPLOTACIÃ“N022016758-510AMARILLO 6 DEL 1 AL 10EXPLOTACIÃ“N022015761-K50AMARILLO 7 DEL 1 AL 20EXPLOTACIÃ“N022015762-8160AMARILLO 8 DEL 1 AL 20EXPLOTACIÃ“N022015795-4200AUGUSTA 1 DEL 1 AL 5EXPLOTACIÃ“N022015639-750AUGUSTA 10 DEL 1 AL 20EXPLOTACIÃ“N022015648-6200AUGUSTA 11 DEL 1 AL 20EXPLOTACIÃ“N022015649-4200AUGUSTA 2 DEL 1 AL 5EXPLOTACIÃ“N022015640-050AUGUSTA 3 DEL 1 AL 30EXPLOTACIÃ“N022015641-9300AUGUSTA 4 DEL 1 AL 5EXPLOTACIÃ“N022015642-750AUGUSTA 46 DEL 1 AL 20EXPLOTACIÃ“N022015967-1200AUGUSTA 47 DEL 1 AL 30EXPLOTACIÃ“N022015968-K300AUGUSTA 48 DEL 1 AL 30EXPLOTACIÃ“N022015969-8300AUGUSTA 49 DEL 1 AL 30EXPLOTACIÃ“N022015970-1300AUGUSTA 5 DEL 1 AL 10EXPLOTACIÃ“N022015643-5100AUGUSTA 50 DEL 1 AL 30EXPLOTACIÃ“N022015971-K300AUGUSTA 54 DEL 1 AL 20EXPLOTACIÃ“N022015975-2200AUGUSTA 6 DEL 1 AL 10EXPLOTACIÃ“N022015644-395AUGUSTA 7 DEL 1 AL 30EXPLOTACIÃ“N022015645-1300AUGUSTA 72 DEL 1 AL 30EXPLOTACIÃ“N022015992-2300AUGUSTA 73 DEL 1 AL 30EXPLOTACIÃ“N022015993-0300AUGUSTA 74 DEL 1 AL 20EXPLOTACIÃ“N022015994-9200AUGUSTA 8 DEL 1 AL 30EXPLOTACIÃ“N022015646-K300Property NameTypeNational IDArea (ha)AUGUSTA 9 DEL 1 AL 20EXPLOTACIÃ“N022015647-8200AV NORTE 1 AL 60EXPLOTACIÃ“N022018293-2300AZUL 01 1/10EXPLOTACIÃ“N022012619-6100AZUL 02 1/10EXPLOTACIÃ“N022012620-K100AZUL 03 1/10EXPLOTACIÃ“N022012621-8100AZUL 04 1/10EXPLOTACIÃ“N022012622-6100AZUL 05 1/10EXPLOTACIÃ“N022012623-4100AZUL 06 1/10EXPLOTACIÃ“N022012624-2100AZUL 07 1/10EXPLOTACIÃ“N022012625-0100AZUL 08 1/10EXPLOTACIÃ“N022012626-9100AZUL 09 1/10EXPLOTACIÃ“N022012627-7100AZUL 10 1/10EXPLOTACIÃ“N022012628-5100AZUL 11 1/10EXPLOTACIÃ“N022012629-3100AZUL 12 1/10EXPLOTACIÃ“N022012630-7100AZUL 13 1/10EXPLOTACIÃ“N022012631-5100AZUL 14 1/10EXPLOTACIÃ“N022012632-3100AZUL 15 1/10EXPLOTACIÃ“N022012633-1100AZUL 16 1/10EXPLOTACIÃ“N022012634-K100AZUL 17 1/10EXPLOTACIÃ“N022012635-8100AZUL 18 1/10EXPLOTACIÃ“N022012636-650AZUL 19 1/10EXPLOTACIÃ“N022012637-4100AZUL 22 1/5EXPLOTACIÃ“N022012640-450AZUL 23 1/10EXPLOTACIÃ“N022012641-2100AZUL 24 1/10EXPLOTACIÃ“N022012642-0100BLANCA 1 1/20EXPLOTACIÃ“N022014370-8100BLANCA 1, 1 AL 30EXPLOTACIÃ“N022015721-0300BLANCA 10, 1 AL 30EXPLOTACIÃ“N022015727-K300BLANCA 11, 1 AL 20EXPLOTACIÃ“N022015728-8200BLANCA 12, 1 AL 20EXPLOTACIÃ“N022015729-6200BLANCA 13, 1 AL 20EXPLOTACIÃ“N022015730-K200BLANCA 14, 1 AL 30EXPLOTACIÃ“N022015731-8300BLANCA 15, 1 AL 30EXPLOTACIÃ“N022015732-6300BLANCA 16, 1 AL 30EXPLOTACIÃ“N022015733-4300BLANCA 17, 1 AL 30EXPLOTACIÃ“N022015734-2300BLANCA 18, 1 AL 30EXPLOTACIÃ“N022015735-0300BLANCA 3, 1 AL 30EXPLOTACIÃ“N022015722-9300BLANCA 5, 1 AL 20EXPLOTACIÃ“N022015723-7200BLANCA 7, 1 AL 30EXPLOTACIÃ“N022015724-5300BLANCA 8, 1 AL 30EXPLOTACIÃ“N022015725-3300BLANCA 9, 1 AL 30EXPLOTACIÃ“N022015726-1300BLANCO CHIQUILLA 2, 1 AL 16EXPLOTACIÃ“N022016498-5147BLANCO NORTE 110, 1 AL 30EXPLOTACIÃ“N022016524-8300BLANCO NORTE 2B, 1 AL 20EXPLOTACIÃ“N022016218-4200Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 27PAN AMERICAN SILVER CORP.Property NameTypeNational IDArea (ha)BLANCO NORTE 3B, 1 AL 20EXPLOTACIÃ“N022016215-K200BLANCO NORTE 4B, 1 AL 10EXPLOTACIÃ“N022016216-8100BLANCO NORTE 5B, 1 AL 10EXPLOTACIÃ“N022016217-6100BLANCO NORTE 8, 1 AL 30EXPLOTACIÃ“N022016351-2300BLANCO NORTE 9, 1 AL 30EXPLOTACIÃ“N022016352-0300BLANCO SUR 1, 1 AL 30EXPLOTACIÃ“N022016499-3300BLANCO SUR 10, 1 AL 30EXPLOTACIÃ“N022016508-6300BLANCO SUR 2, 1 AL 30EXPLOTACIÃ“N022016500-0300BLANCO SUR 3, 1 AL 30EXPLOTACIÃ“N022016501-9300BLANCO SUR 4, 1 AL 30EXPLOTACIÃ“N022016502-7300BLANCO SUR 5, 1 AL 20EXPLOTACIÃ“N022016503-5200BLANCO SUR 6, 1 AL 30EXPLOTACIÃ“N022016504-3300BLANCO SUR 7, 1 AL 30EXPLOTACIÃ“N022016505-1300BLANCO SUR 8, 1 AL 30EXPLOTACIÃ“N022016506-K200BLANCO SUR 9, 1 AL 30EXPLOTACIÃ“N022016507-8300CAMBIAR 131, 1 AL 60EXPLOTACIÃ“N022016373-3300CAMBIAR 132, 1 AL 60EXPLOTACIÃ“N022016413-6300CAMBIAR 133, 1 AL 60EXPLOTACIÃ“N022016374-1300CAMBIAR 134, 1 AL 60EXPLOTACIÃ“N022016375-K300CAMBIAR 135, 1 AL 40EXPLOTACIÃ“N022016376-8200CAMBIAR 136, 1 AL 60EXPLOTACIÃ“N022016377-6300CAMBIAR 137, 1 AL 60EXPLOTACIÃ“N022016378-4300CAMBIAR 138, 1 AL 60EXPLOTACIÃ“N022016379-2300CAMBIAR 139, 1 AL 60EXPLOTACIÃ“N022016380-6300CAMBIAR 140, 1 AL 40EXPLOTACIÃ“N022016381-4200CAMBIAR 141, 1 AL 60EXPLOTACIÃ“N022016382-2300Property NameTypeNational IDArea (ha)CAMBIAR 142, 1 AL 60EXPLOTACIÃ“N022016383-0300CAMBIAR 143, 1 AL 60EXPLOTACIÃ“N022016384-9300CAMBIAR 144, 1 AL 60EXPLOTACIÃ“N022016385-7300CAMBIAR 145, 1 AL 60EXPLOTACIÃ“N022016386-5300CAMBIAR 146, 1 AL 20EXPLOTACIÃ“N022016387-3100CAMBIAR A, 1 AL 40EXPLOTACIÃ“N022018617-2200CAMBIAR B, 1 AL 40EXPLOTACIÃ“N022018612-1200CAMBIAR IV 59, 1 AL 60EXPLOTACIÃ“N022018613-K300CAMBIAR IV 96, 1 AL 60EXPLOTACIÃ“N022018614-8300CAMBIAR IV 97, 1 AL 60EXPLOTACIÃ“N022018615-6300CAMBIAR IV 98, 1 AL 60EXPLOTACIÃ“N022018618-0300CEBADA A 1EXPLORACIÃ“N02201V483-3300CEBADA A 2EXPLORACIÃ“N02201V560-0300CEBADA A 3EXPLORACIÃ“N02201V476-0100CEBADA D 2EXPLORACIÃ“N02201V845-6300CERRO 1 1/20EXPLOTACIÃ“N022014311-2100CERRO 2 1/20EXPLOTACIÃ“N022014312-0100CERRO AZUL 01 1/5EXPLOTACIÃ“N022012704-450CERRO AZUL 02 1/10EXPLOTACIÃ“N022012705-2100CERRO AZUL 03 1/5EXPLOTACIÃ“N022012706-050CERRO AZUL 04 1/10EXPLOTACIÃ“N022012707-9100CERRO AZUL 05 1/10EXPLOTACIÃ“N022012708-7100CERRO AZUL 06 1/10EXPLOTACIÃ“N022012709-5100CERRO AZUL 07 1/5EXPLOTACIÃ“N022012710-950CERRO AZUL 08 1/10EXPLOTACIÃ“N022012711-7100CERRO AZUL 09 1/10EXPLOTACIÃ“N022012712-5100CERRO AZUL 10 1/10EXPLOTACIÃ“N022012713-3100CERRO AZUL 11 1/10EXPLOTACIÃ“N022012714-1100CERRO AZUL 12 1/5EXPLOTACIÃ“N022012715-K50CERRO AZUL 13 1/5EXPLOTACIÃ“N022012716-850CERRO AZUL 14 1/10EXPLOTACIÃ“N022012717-6100CERRO AZUL 15 1/10EXPLOTACIÃ“N022012718-4100CERRO AZUL 16 1/5EXPLOTACIÃ“N022012719-250Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 28PAN AMERICAN SILVER CORP.Property NameTypeNational IDArea (ha)CERRO AZUL 17 1/10EXPLOTACIÃ“N022012720-6100CERRO AZUL 18 1/5EXPLOTACIÃ“N022012721-450CERRO AZUL 19 1/10EXPLOTACIÃ“N022012722-2100CERRO AZUL 20 1/10EXPLOTACIÃ“N022012723-0100CERRO AZUL 21 1/10EXPLOTACIÃ“N022012724-9100CERRO AZUL 22 1/10EXPLOTACIÃ“N022012725-7100CERRO AZUL 23 1/5EXPLOTACIÃ“N022012726-550CERRO AZUL 24 1/10EXPLOTACIÃ“N022012727-3100CERRO AZUL 25 1/10EXPLOTACIÃ“N022012728-1100CERRO AZUL 26 1/10EXPLOTACIÃ“N022012729-K100CERRO AZUL 27 1/10EXPLOTACIÃ“N022012730-3100CERRO AZUL 28 1/10EXPLOTACIÃ“N022012731-1100CERRO AZUL 29 1/5EXPLOTACIÃ“N022012732-K50CERRO AZUL 30 1/10EXPLOTACIÃ“N022012733-8100CERRO AZUL 31 1/10EXPLOTACIÃ“N022012734-6100CERRO AZUL 32 1/10EXPLOTACIÃ“N022012735-4100CERRO AZUL 33 1/10EXPLOTACIÃ“N022012736-2100CERRO AZUL 34 1/10EXPLOTACIÃ“N022012737-0100CERRO AZUL 35 1/5EXPLOTACIÃ“N022012738-950CERRO AZUL 36 1/5EXPLOTACIÃ“N022012739-750CERRO AZUL 37 1/5EXPLOTACIÃ“N022012740-050CERRO AZUL 38 1/5EXPLOTACIÃ“N022012741-950CERRO AZUL 39 1/5EXPLOTACIÃ“N022012742-725CERRO AZUL A 1/10EXPLOTACIÃ“N022012608-0100CERRO AZUL B 1/5EXPLOTACIÃ“N022012609-950CERRO AZUL PONIENTE A 1/5EXPLOTACIÃ“N022012610-250CERRO AZUL PONIENTE B 1/10EXPLOTACIÃ“N022012611-0100CERRO AZUL PONIENTE C 1/10EXPLOTACIÃ“N022012612-9100CERRO AZUL PONIENTE D 1/10EXPLOTACIÃ“N022012613-7100CERRO AZUL PONIENTE E 1/5EXPLOTACIÃ“N022012614-550CERRO AZUL PONIENTE F 1/5EXPLOTACIÃ“N022012615-350Property NameTypeNational IDArea (ha)CERRO AZUL PONIENTE G 1/5EXPLOTACIÃ“N022012616-150CERRO AZUL PONIENTE H 1/10EXPLOTACIÃ“N022012617-K100CERRO AZUL PONIENTE I 1/10EXPLOTACIÃ“N022012618-8100CERRO IMAN 1/30EXPLOTACIÃ“N022011796-0300CERRO IMAN II 1/10EXPLOTACIÃ“N022011845-2100CERRO IMAN III 1/10EXPLOTACIÃ“N022011846-0100CERRO IMAN IV 1/5EXPLOTACIÃ“N022011847-950CERRO IMAN IX 1/10EXPLOTACIÃ“N022012315-4100CERRO IMAN SUR 1/10EXPLOTACIÃ“N022014488-750CERRO IMAN SUR 1/5EXPLOTACIÃ“N022012369-350CERRO IMAN V 1/10EXPLOTACIÃ“N022011848-7100CERRO IMAN VI 1/10EXPLOTACIÃ“N022011849-5100CERRO IMAN VII 1/10EXPLOTACIÃ“N022011850-9100CERRO IMAN VIII 1/10EXPLOTACIÃ“N022012314-6100CERRO IMAN X 1/10EXPLOTACIÃ“N022012316-2100CERRO IMAN XI 1/10EXPLOTACIÃ“N022012317-0100CERRO IMAN XII 1/10EXPLOTACIÃ“N022012318-9100CERRO IMAN XIII 1/10EXPLOTACIÃ“N022012319-7100CERRO IMAN XIV 1/10EXPLOTACIÃ“N022012320-0100CERRO IMAN XV 1/10EXPLOTACIÃ“N022012321-9100CERRO IMAN XVII 1/10EXPLOTACIÃ“N022012450-9100CERRO IMAN XVIII 1/15EXPLOTACIÃ“N022012366-975CHICA 15 1 AL 20EXPLOTACIÃ“N022015443-2200CHICA 28 1 AL 10EXPLOTACIÃ“N022015444-0100CHICA 29 1 AL 20EXPLOTACIÃ“N022015445-9200CHICA 30 1 AL 20EXPLOTACIÃ“N022015446-7200CHICA 31A 1 AL 10EXPLOTACIÃ“N022015447-575CHICA 31B 1 AL 10EXPLOTACIÃ“N022015448-3100CHIQUILLA CHICA II 1 AL 30EXPLOTACIÃ“N022014786-K300CHIQUILLA CHICA III 1 AL 30EXPLOTACIÃ“N022014787-8300CHIQUILLA CHICA IV 1 AL 30EXPLOTACIÃ“N022014788-6300Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 29PAN AMERICAN SILVER CORP.Property NameTypeNational IDArea (ha)CHIQUILLA CHICA IX 1 AL 30EXPLOTACIÃ“N022014792-4300CHIQUILLA CHICA V 1 AL 30EXPLOTACIÃ“N022014789-4300CHIQUILLA CHICA VI 1 AL 30EXPLOTACIÃ“N022014790-8300CHIQUILLA CHICA VII 1 AL 30EXPLOTACIÃ“N022014791-6300CHIQUILLA CHICA VIII 1 AL 30EXPLOTACIÃ“N022014829-7300CHIQUILLA CHICA X 1 AL 30EXPLOTACIÃ“N022014830-0300CHIQUILLA CHICA XI 1 AL 30EXPLOTACIÃ“N022014793-2300CHIQUILLA CHICA XIX 1 AL 30EXPLOTACIÃ“N022014798-3300CHIQUILLA CHICA XVI 1 AL 30EXPLOTACIÃ“N022014832-7300CHIQUILLA CHICA XVII 1 AL 30EXPLOTACIÃ“N022014833-5300CHIQUILLA CHICA XVIII 1 AL 30EXPLOTACIÃ“N022014797-5300CHIQUILLA CHICA XX 1 AL 30EXPLOTACIÃ“N022014799-1300CHIQUILLA CHICA XXIII 1 AL 30EXPLOTACIÃ“N022014801-7300CHIQUILLA CHICA XXIX 1 AL 30EXPLOTACIÃ“N022014804-1300CHIQUILLA CHICA XXVI 1 AL 30EXPLOTACIÃ“N022014834-3300CHIQUILLA CHICA XXVII 1 AL 30EXPLOTACIÃ“N022014802-5300CHIQUILLA CHICA XXVIII 1 AL 30EXPLOTACIÃ“N022014803-3300CHIQUILLA CHICA XXX 1 AL 30EXPLOTACIÃ“N022014805-K300CLARO II 1EXPLORACIÃ“N02201V835-9300CLARO II 2EXPLORACIÃ“N02201V821-9300CLARO II 3EXPLORACIÃ“N02201V826-k300CLARO II 4EXPLORACIÃ“N02201V844-8300CLARO II 5EXPLORACIÃ“N02201V834-0300CLARO II 6EXPLORACIÃ“N02201V820-0100DOMINADOR 1 1/20EXPLOTACIÃ“N022013109-2100DOMINADOR 1 1/5EXPLOTACIÃ“N022012743-550DOMINADOR 2 1/20EXPLOTACIÃ“N022013110-6100DOMINADOR 2 1/5EXPLOTACIÃ“N022012744-350DOMINADOR 3 1/20EXPLOTACIÃ“N022013111-4100DOMINADOR 4 1/10EXPLOTACIÃ“N022013112-250Property NameTypeNational IDArea (ha)DOMINADOR 4 1/15EXPLOTACIÃ“N022012745-1150DON JAIME 77 DEL 1 AL 30EXPLOTACIÃ“N022016152-8300DON JAIME 78 DEL 1 AL 30EXPLOTACIÃ“N022016153-6300DON JAIME 79 DEL 1 AL 25EXPLOTACIÃ“N022016154-4250EL PEÃ‘Ã“N 10 1/20EXPLOTACIÃ“N022013491-1100EL PEÃ‘Ã“N 11 1/20EXPLOTACIÃ“N022013492-K100EL PEÃ‘Ã“N 12 1/20EXPLOTACIÃ“N022013493-8100EL PEÃ‘Ã“N 13 1/30EXPLOTACIÃ“N022013494-6150EL PEÃ‘Ã“N 14 1/50EXPLOTACIÃ“N022013495-4250EL PEÃ‘Ã“N 15 1/40EXPLOTACIÃ“N022013496-2200EL PEÃ‘Ã“N 16 1/40EXPLOTACIÃ“N022013497-0200EL PEÃ‘Ã“N 17 1/10EXPLOTACIÃ“N022013498-950EL PEÃ‘Ã“N 18 1/10EXPLOTACIÃ“N022013650-750EL PEÃ‘Ã“N 18 1/50EXPLOTACIÃ“N022013518-7250EL PEÃ‘Ã“N 19 1/60EXPLOTACIÃ“N022013519-5300EL PEÃ‘Ã“N 20 1/60EXPLOTACIÃ“N022013520-9300EL PEÃ‘Ã“N 21 1/60EXPLOTACIÃ“N022013521-7300EL PEÃ‘Ã“N 22 1/60EXPLOTACIÃ“N022013522-5300EL PEÃ‘Ã“N 23 1/60EXPLOTACIÃ“N022013523-3300EL PEÃ‘Ã“N 24 1/60EXPLOTACIÃ“N022013524-1300EL PEÃ‘Ã“N 25 1/40EXPLOTACIÃ“N022013525-K200EL PEÃ‘Ã“N 26 1/60EXPLOTACIÃ“N022013526-8300EL PEÃ‘Ã“N 27 1/60EXPLOTACIÃ“N022013527-6300EL PEÃ‘Ã“N 28 1/60EXPLOTACIÃ“N022013528-4300EL PEÃ‘Ã“N 29 1/60EXPLOTACIÃ“N022013529-2300EL PEÃ‘Ã“N 3 1/20EXPLOTACIÃ“N022013482-2100EL PEÃ‘Ã“N 30 1/60EXPLOTACIÃ“N022013530-6300EL PEÃ‘Ã“N 31 1/60EXPLOTACIÃ“N022013531-4300EL PEÃ‘Ã“N 32 1/40EXPLOTACIÃ“N022013532-2200EL PEÃ‘Ã“N 33 1/60EXPLOTACIÃ“N022013533-0300EL PEÃ‘Ã“N 34 1/60EXPLOTACIÃ“N022013534-9300EL PEÃ‘Ã“N 35 1/60EXPLOTACIÃ“N022013535-7300EL PEÃ‘Ã“N 36 1/60EXPLOTACIÃ“N022013536-5300EL PEÃ‘Ã“N 37 1/40EXPLOTACIÃ“N022013537-3200EL PEÃ‘Ã“N 38 1/40EXPLOTACIÃ“N022013538-1200EL PEÃ‘Ã“N 39 1/60EXPLOTACIÃ“N022013539-K300EL PEÃ‘Ã“N 4 1/20EXPLOTACIÃ“N022013483-0100EL PEÃ‘Ã“N 40 1/60EXPLOTACIÃ“N022013540-3300EL PEÃ‘Ã“N 41 1/60EXPLOTACIÃ“N022013541-1300EL PEÃ‘Ã“N 42 1/40EXPLOTACIÃ“N022013543-8200EL PEÃ‘Ã“N 42 1/60EXPLOTACIÃ“N022013542-K300EL PEÃ‘Ã“N 43 1/40EXPLOTACIÃ“N022013544-6200EL PEÃ‘Ã“N 44 1/60EXPLOTACIÃ“N022013545-4300EL PEÃ‘Ã“N 45 1/60EXPLOTACIÃ“N022013546-2300EL PEÃ‘Ã“N 46 1/60EXPLOTACIÃ“N022013547-0300Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 30PAN AMERICAN SILVER CORP.Property NameTypeNational IDArea (ha)EL PEÃ‘Ã“N 5 1/10EXPLOTACIÃ“N022013484-950EL PEÃ‘Ã“N 6 1/10EXPLOTACIÃ“N022013485-750EL PEÃ‘Ã“N 7 1/40EXPLOTACIÃ“N022013488-1200EL PEÃ‘Ã“N 8 1/60EXPLOTACIÃ“N022013489-K300EL PEÃ‘Ã“N 9 1/50EXPLOTACIÃ“N022013490-3250ENCANTADA 1 1/60EXPLOTACIÃ“N022013964-6300ENCANTADA 12 1/60EXPLOTACIÃ“N022013968-9300ENCANTADA 13 1/60EXPLOTACIÃ“N022013969-7300ENCANTADA 14 1/60EXPLOTACIÃ“N022013970-0300ENCANTADA 15 1/60EXPLOTACIÃ“N022013971-9300ENCANTADA 16 1/60EXPLOTACIÃ“N022013972-7300ENCANTADA 18 1/40EXPLOTACIÃ“N022014110-1200ENCANTADA 2 1/40EXPLOTACIÃ“N022014109-8200ENCANTADA 21 1/60EXPLOTACIÃ“N022013975-1300ENCANTADA 22 1/20EXPLOTACIÃ“N022013976-K100ENCANTADA 3 1/60EXPLOTACIÃ“N022013965-4300ENCANTADA 44 1/17EXPLOTACIÃ“N022014270-185ENCANTADA 5 1/40EXPLOTACIÃ“N022013967-0200FRANCISCA XIX 1 AL 20EXPLOTACIÃ“N022014780-0200FRANCISCA XXIII 1 AL 30EXPLOTACIÃ“N022014781-9300FRANCISCA XXIV 1 AL 30EXPLOTACIÃ“N022014782-7300GALO A, 1 AL 60EXPLOTACIÃ“N022018665-2270GALO III 10, 1 AL 60EXPLOTACIÃ“N022018672-5300GALO III 11, 1 AL 60EXPLOTACIÃ“N022018673-3300GALO III 2, 1 AL 60EXPLOTACIÃ“N022018668-7300GALO III 3, 1 AL 60EXPLOTACIÃ“N022018669-5300GALO III 4, 1 AL 60EXPLOTACIÃ“N022018662-8300GALO III 5, 1 AL 60EXPLOTACIÃ“N022018670-9300GALO III 6, 1 AL 60EXPLOTACIÃ“N022018671-7300GRILLO I 1/20EXPLOTACIÃ“N022013295-1200GRILLO II 1/20EXPLOTACIÃ“N022013296-K200GRILLO V 1/20EXPLOTACIÃ“N022014961-7200GRILLO VI 1/30EXPLOTACIÃ“N022014962-5300GRILLO VII 1/30EXPLOTACIÃ“N022014963-3300ISABEL 1EXPLORACIÃ“N02201X415-K300ISABEL 2EXPLORACIÃ“N02201X417-6200ISABEL 3EXPLORACIÃ“N02201X416-8200ISABEL 4EXPLORACIÃ“N02201X412-5300LA SUERTE 1 AL 20EXPLOTACIÃ“N022014965-K100Property NameTypeNational IDArea (ha)LACALLE 1 IIIEXPLOTACIÃ“N022018545-13LAGO HUILIPILIN 1/10EXPLOTACIÃ“N022011533-K100LAGUNA 1 1/60EXPLOTACIÃ“N022014099-7300LAGUNA 2 1/60EXPLOTACIÃ“N022014100-4300LAGUNA 3 1/60EXPLOTACIÃ“N022014101-2300LAGUNA 4 1/60EXPLOTACIÃ“N022014102-0300LAGUNA 5 1/60EXPLOTACIÃ“N022014103-9300LAGUNA 6 1/60EXPLOTACIÃ“N022014104-7300LAGUNA 7 1/60EXPLOTACIÃ“N022014105-5300LAS CONDES 1 1/40EXPLOTACIÃ“N022013147-5200LAS CONDES 10 1/10EXPLOTACIÃ“N022013156-450LAS CONDES 11 1/10EXPLOTACIÃ“N022013157-250LAS CONDES 2 1/30EXPLOTACIÃ“N022013148-3150LAS CONDES 3 1/20EXPLOTACIÃ“N022013149-1100LAS CONDES 4 1/60EXPLOTACIÃ“N022013150-5300LAS CONDES 5 1/60EXPLOTACIÃ“N022013151-3300LAS CONDES 6 1/30EXPLOTACIÃ“N022013152-1150LAS CONDES 7 1/30EXPLOTACIÃ“N022013153-K150LAS CONDES 8 1/60EXPLOTACIÃ“N022013154-8300LAS CONDES 9 1/60EXPLOTACIÃ“N022013155-6300LINA 1 1/60EXPLOTACIÃ“N022014251-5300LINA 10 1/10EXPLOTACIÃ“N022014260-450LINA 11 1/40EXPLOTACIÃ“N022014455-0200LINA 12 1/60EXPLOTACIÃ“N022014456-9300LINA 14 1/10-21/40EXPLOTACIÃ“N022014457-7150LINA 2 1/60EXPLOTACIÃ“N022014252-3300LINA 3 1/20EXPLOTACIÃ“N022014253-1100LINA 4 1/60EXPLOTACIÃ“N022014254-K300LINA 5 1/60EXPLOTACIÃ“N022014255-8300LINA 6 1/60EXPLOTACIÃ“N022014256-6300LINA 7 1/20EXPLOTACIÃ“N022014257-4100LINA 8 1/30EXPLOTACIÃ“N022014258-2150LINA 9 1/30EXPLOTACIÃ“N022014259-0150LINEA 1 1/60EXPLOTACIÃ“N022014136-5300LINEA 2 1/60EXPLOTACIÃ“N022014137-3300LINEA 3 1/60EXPLOTACIÃ“N022014138-1300LINEA 4 1/60EXPLOTACIÃ“N022014139-K300LINEA CEXPLORACIÃ“N02201V610-0100LLANO 1 1/20EXPLOTACIÃ“N022014539-5100LLANO 10 1/20EXPLOTACIÃ“N022014548-4100LLANO 2 1/20EXPLOTACIÃ“N022014540-9100LLANO 3 1/20EXPLOTACIÃ“N022014541-7100LLANO 4 1/20EXPLOTACIÃ“N022014542-5100LLANO 5 1/20EXPLOTACIÃ“N022014543-3100LLANO 6 1/20EXPLOTACIÃ“N022014544-1100LLANO 7 1/20EXPLOTACIÃ“N022014545-K100Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 31PAN AMERICAN SILVER CORP.Property NameTypeNational IDArea (ha)LLANO 8 1/20EXPLOTACIÃ“N022014546-8100LLANO 9

1/20EXPLOTACIÃ“N022014547-6100LOBA 1 1/60EXPLOTACIÃ“N022014061-K300LOBA 3 1/60EXPLOTACIÃ“N022014063-6300LOBA 34 1/60EXPLOTACIÃ“N022014520-4300LOBA 35 1/60EXPLOTACIÃ“N022014519-0300LOBA 4 1/60EXPLOTACIÃ“N022014064-4300LOBA 5 1/60EXPLOTACIÃ“N022014065-2300LOBA 6 1/60EXPLOTACIÃ“N022014066-0300LOBA 7 1/40EXPLOTACIÃ“N022014067-9200LOBITA 1 1/40EXPLOTACIÃ“N022014002-4200LOBITA 23 1/40EXPLOTACIÃ“N022014024-5200LOBITA 24 1/60EXPLOTACIÃ“N022014025-3300LOBITA 25 1/60EXPLOTACIÃ“N022014026-1300LOBITA 3 1/60EXPLOTACIÃ“N022014004-0300LOBITA 38 1/60EXPLOTACIÃ“N022014106-3300LOBITA 39 1/60EXPLOTACIÃ“N022014035-0300LOBITA 4 1/60EXPLOTACIÃ“N022014005-9300LOBITA 40 1/60EXPLOTACIÃ“N022014036-9300LOBITA 41 1/60EXPLOTACIÃ“N022014037-7300LOBITA 42 1/60EXPLOTACIÃ“N022014038-5300LOBO 18 DEL 1 AL 30EXPLOTACIÃ“N022016197-8300LOBO 19 DEL 1 AL 30EXPLOTACIÃ“N022016196-K300LOBO 20 DEL 1 AL 30EXPLOTACIÃ“N022016195-1300MAGICA 1, 1 AL 40EXPLOTACIÃ“N022016565-5200MAGICA 2, 1 AL 40EXPLOTACIÃ“N022016566-3200MANCHADO 1 1/30EXPLOTACIÃ“N022012789-3300MANCHADO 2 1/30EXPLOTACIÃ“N022012790-7300MERLIN 40, 1 AL 60EXPLOTACIÃ“N022016656-2300MICHELLE 1EXPLORACIÃ“N02201W434-0100MICHELLE 2EXPLORACIÃ“N02201W439-1200MICHELLE 3EXPLORACIÃ“N02201W437-5200NADIAN 4 A, 1 AL 40EXPLOTACIÃ“N022016169-2200NADIAN 4 B, 1 AL 40EXPLOTACIÃ“N022016170-6200NADIAN 7 A, 1 AL 60EXPLOTACIÃ“N022016171-4300NADIAN 7 B, 1 AL 60EXPLOTACIÃ“N022016172-2300NADIAN 8 A, 1 AL 60EXPLOTACIÃ“N022016173-0300NADIAN 8 B, 1 AL 60EXPLOTACIÃ“N022016174-9300NADIAN 9 A, 1 AL 40EXPLOTACIÃ“N022016175-7200NADO 1, 1 AL 60EXPLOTACIÃ“N022015529-3300Property NameTypeNational IDArea (ha)NADO 10, 1 AL 60EXPLOTACIÃ“N022015538-2300NADO 11, 1 AL 60EXPLOTACIÃ“N022015539-0300NADO 12, 1 AL 60EXPLOTACIÃ“N022015540-4300NADO 13, 1 AL 60EXPLOTACIÃ“N022015541-2300NADO 14, 1 AL 60EXPLOTACIÃ“N022015542-0300NADO 15, 1 AL 60EXPLOTACIÃ“N022015543-9300NADO 16, 1 AL 60EXPLOTACIÃ“N022015544-7300NADO 17, 1 AL 60EXPLOTACIÃ“N022015545-5300NADO 18, 1 AL 60EXPLOTACIÃ“N022015546-3300NADO 19, 1 AL 60EXPLOTACIÃ“N022015547-1300NADO 2, 1 AL 60EXPLOTACIÃ“N022015530-7300NADO 20, 1 AL 60EXPLOTACIÃ“N022015548-K300NADO 21, 1 AL 60EXPLOTACIÃ“N022015549-8300NADO 22, 1 AL 60EXPLOTACIÃ“N022015550-1300NADO 23, 1 AL 20EXPLOTACIÃ“N022015551-K100NADO 24, 1 AL 40EXPLOTACIÃ“N022015552-8200NADO 25, 1 AL 60EXPLOTACIÃ“N022015553-6300NADO 26, 1 AL 60EXPLOTACIÃ“N022015554-4300NADO 27, 1 AL 60EXPLOTACIÃ“N022015555-2300NADO 3, 1 AL 60EXPLOTACIÃ“N022015531-5300NADO 4, 1 AL 60EXPLOTACIÃ“N022015532-3300NADO 5, 1 AL 60EXPLOTACIÃ“N022015533-1300NADO 6, 1 AL 60EXPLOTACIÃ“N022015534-K300NADO 7, 1 AL 60EXPLOTACIÃ“N022015535-8300NADO 8, 1 AL 60EXPLOTACIÃ“N022015536-6300NADO 9, 1 AL 60EXPLOTACIÃ“N022015537-4300NIVA 3 DEL 1 AL 60EXPLOTACIÃ“N022025455-0285NIVA 7, 1 AL 40EXPLOTACIÃ“N022025457-7200NORPE A 1EXPLORACIÃ“N02201V482-5200NORPE A 11EXPLORACIÃ“N02201V473-6200NORPE A 12EXPLORACIÃ“N02201V492-2200NORPE A 13EXPLORACIÃ“N02201V479-5300NORPE A 15EXPLORACIÃ“N02201V472-8300NORPE A 16EXPLORACIÃ“N02201V491-4300NORPE A 18EXPLORACIÃ“N02201X140-1100NORPE A 2EXPLORACIÃ“N02201V559-7300NORPE A 3EXPLORACIÃ“N02201V475-2300NORPE A 4EXPLORACIÃ“N02201V485-k300NORPE A 4EXPLORACIÃ“N02201V485-k300NORPE A 5EXPLORACIÃ“N02201V481-7300NORPE A 6EXPLORACIÃ“N02201W501-0300NORPE A 7EXPLORACIÃ“N02201V474-4300NORPE A 8EXPLORACIÃ“N02201V493-0200NORPE A 9EXPLORACIÃ“N02201V480-9100NORPE B 10EXPLORACIÃ“N02201V608-9200NORPE B 14EXPLORACIÃ“N02201V609-7100NORPE B 17EXPLORACIÃ“N02201W524-K200NORPE D 2EXPLORACIÃ“N02201V830-8300Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 32PAN AMERICAN SILVER CORP.Property NameTypeNational IDArea (ha)PAISAJE 1 1/20EXPLOTACIÃ“N022013208-0100PAISAJE 1 1/40EXPLOTACIÃ“N022013651-5200PAISAJE 11 1/60EXPLOTACIÃ“N022013661-2300PAISAJE 12 1/60EXPLOTACIÃ“N022013662-0300PAISAJE 13 1/20EXPLOTACIÃ“N022013663-9100PAISAJE 14 1/20EXPLOTACIÃ“N022013664-7100PAISAJE 18 1/60EXPLOTACIÃ“N022013668-K300PAISAJE 19 1/60EXPLOTACIÃ“N022013669-8300PAISAJE 2 1/40EXPLOTACIÃ“N022013652-3200PAISAJE 20 1/40EXPLOTACIÃ“N022013670-1200PAISAJE 21 1/40EXPLOTACIÃ“N022013671-K200PAISAJE 22 1/40EXPLOTACIÃ“N022013672-8200PAISAJE 23 1/40EXPLOTACIÃ“N022013962-K200PAISAJE 24 1/40EXPLOTACIÃ“N022013963-8200PAISAJE 3 1/40EXPLOTACIÃ“N022013653-1200PAISAJE 4 1/40EXPLOTACIÃ“N022013654-K200PAISAJE 5 1/40EXPLOTACIÃ“N022013655-8200PAISAJE 6 1/40EXPLOTACIÃ“N022013656-6200PAMPA 4 1/60EXPLOTACIÃ“N022014730-4300PAMPA 5 1/60EXPLOTACIÃ“N022014731-2300PAMPA 6 1/40EXPLOTACIÃ“N022014732-0200PAMPA 7 1/60EXPLOTACIÃ“N022014733-9300PAMPA 8 1/60EXPLOTACIÃ“N022014734-7300PAMPA 9 1/60EXPLOTACIÃ“N022014735-5300PAMPA AUGUSTA I 1/59EXPLOTACIÃ“N022015271-5268PAMPA AUGUSTA I 1/59EXPLOTACIÃ“N022016792-525PANAZ 1, 1 AL 60EXPLOTACIÃ“N022018437-4300PANAZ 2, 1 AL 60EXPLOTACIÃ“N022018438-2300PANAZ 3, 1 AL 40EXPLOTACIÃ“N022018439-0200PANAZ 4, 1 AL 10EXPLOTACIÃ“N022018440-4200PAVE 4, 1 AL 60SOLICITUD DE MENSURA022019767-0300PEÃ‘Ã“N 50 1/10EXPLOTACIÃ“N022013977-850PEÃ‘Ã“N 51 1/20EXPLOTACIÃ“N022013978-6100PEÃ‘Ã“N 53 1/60EXPLOTACIÃ“N022013980-8300PEÃ‘Ã“N 54 1/60EXPLOTACIÃ“N022013981-6300PEÃ‘Ã“N 55 1/60EXPLOTACIÃ“N022013982-4300PEÃ‘Ã“N 56 1/60EXPLOTACIÃ“N022013983-2300PEÃ‘Ã“N 57 1/60EXPLOTACIÃ“N022013984-0300PEÃ‘Ã“N 58 1/60EXPLOTACIÃ“N022013985-9300PEÃ‘Ã“N 59 1/60EXPLOTACIÃ“N022013986-7300PEÃ‘Ã“N 60 1/60EXPLOTACIÃ“N022013987-5300PEÃ‘Ã“N 61 1/40EXPLOTACIÃ“N022013988-3200PEÃ‘Ã“N 62 1/40EXPLOTACIÃ“N022013989-1200PEÃ‘Ã“N 63 1/20EXPLOTACIÃ“N022013990-5100PENUELA XII 1/30EXPLOTACIÃ“N022013279-K300PENUELA XIII 1/30EXPLOTACIÃ“N022013280-3300Property NameTypeNational IDArea (ha)PENUELA XIV 1/30EXPLOTACIÃ“N022013281-1300PLOMO 17 DEL 1 AL 20EXPLOTACIÃ“N022017389-5200PLOMO 18 DEL 1 AL 10EXPLOTACIÃ“N022017390-9100PROVIDENCIA 1 1/40EXPLOTACIÃ“N022013073-8200PROVIDENCIA 1 II 1/30EXPLOTACIÃ“N022013556-K300PROVIDENCIA 1 II 31/60EXPLOTACIÃ“N022013557-8300PROVIDENCIA 1 II 61/90EXPLOTACIÃ“N022013558-6300PROVIDENCIA 1 II 91/120EXPLOTACIÃ“N022013559-4300PROVIDENCIA 10 1/10EXPLOTACIÃ“N022013082-750PROVIDENCIA 11 1/10EXPLOTACIÃ“N022013083-550PROVIDENCIA 2 1/30EXPLOTACIÃ“N022013074-6150PROVIDENCIA 2 II 1/40EXPLOTACIÃ“N022013561-6400PROVIDENCIA 29 DEL 1 AL 20EXPLOTACIÃ“N022015829-2200PROVIDENCIA 3 1/20EXPLOTACIÃ“N022013075-4100PROVIDENCIA 3 II 1/30EXPLOTACIÃ“N022013562-4300PROVIDENCIA 3 II 121/150EXPLOTACIÃ“N022013566-7300PROVIDENCIA 3 II 31/60EXPLOTACIÃ“N022013563-2300PROVIDENCIA 3 II 61/90EXPLOTACIÃ“N022013564-0300PROVIDENCIA 3 II 91/120EXPLOTACIÃ“N022013565-9300PROVIDENCIA 4 1/60EXPLOTACIÃ“N022013076-2300PROVIDENCIA 4 II 1/40EXPLOTACIÃ“N022013567-5400PROVIDENCIA 4 II 41/80EXPLOTACIÃ“N022013568-3400PROVIDENCIA 5 1/60EXPLOTACIÃ“N022013077-0300PROVIDENCIA 5 II 1/10EXPLOTACIÃ“N022013569-1100PROVIDENCIA 5 II 31/40EXPLOTACIÃ“N022013570-5100PROVIDENCIA 5 II 61/70EXPLOTACIÃ“N022013571-3100PROVIDENCIA 6 1/30EXPLOTACIÃ“N022013078-9150Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 33PAN AMERICAN SILVER CORP.Property NameTypeNational IDArea (ha)PROVIDENCIA 7 1/30EXPLOTACIÃ“N022013079-7150PROVIDENCIA 8 1/60EXPLOTACIÃ“N022013080-0300PROVIDENCIA 9 1/60EXPLOTACIÃ“N022013081-9300PUNTA BLANCA 1, 1 AL 30EXPLOTACIÃ“N022015474-2300PUNTA BLANCA 2, 1 AL 30EXPLOTACIÃ“N022015475-0300PUNTA BLANCA 3, 1 AL 30EXPLOTACIÃ“N022015476-9300SERRU 1 AL 10EXPLOTACIÃ“N022018627-K50SERRUCHO 1 1/60EXPLOTACIÃ“N022013591-8300SERRUCHO 2 1/60EXPLOTACIÃ“N022013592-6300SERRUCHO 3 1/60EXPLOTACIÃ“N022013593-4300SERRUCHO 4 1/20EXPLOTACIÃ“N022014600-6100SERRUCHO 5 1/20EXPLOTACIÃ“N022014601-4100SHALA 1, 1 AL 40EXPLOTACIÃ“N022019481-7200SHALA 2, 1 AL 20EXPLOTACIÃ“N022019482-5100SHALA 3, 1 AL 20EXPLOTACIÃ“N022019483-350SHALA 4, 1 AL 40EXPLOTACIÃ“N022019484-1200SHALA 5, 1 AL 40EXPLOTACIÃ“N022019485-k200SHALA A 6, 1 AL 40SOLICITUD DE MENSURA022019768-9200SOBRANTE 4, 1 AL 10EXPLOTACIÃ“N022018664-450SURPE B 5EXPLORACIÃ“N02201V477-9300SURPE B 6EXPLORACIÃ“N02201V558-9200SURPE B 7EXPLORACIÃ“N02201V470-1300SURPE D 6EXPLORACIÃ“N02201V822 -7200TACO 1 1/20EXPLOTACIÃ“N022014154-3100TOSTADO 1 1/60EXPLOTACIÃ“N022013612-4300TOSTADO 1 1/60EXPLOTACIÃ“N022013145-9300TOSTADO 10 1/60EXPLOTACIÃ“N022013621-3300TOSTADO 11 1/20EXPLOTACIÃ“N022013622-1100TOSTADO 12 1/40EXPLOTACIÃ“N022013623-K200TOSTADO 13 1/20EXPLOTACIÃ“N022013624-8100TOSTADO 15 1/40EXPLOTACIÃ“N022013626-4200TOSTADO 16 1/60EXPLOTACIÃ“N022013627-2300TOSTADO 17 1/20EXPLOTACIÃ“N022013628-0100TOSTADO 18 1/40EXPLOTACIÃ“N022013629-9200TOSTADO 19 1/60EXPLOTACIÃ“N022013630-2300TOSTADO 2 1/20EXPLOTACIÃ“N022013146-7100TOSTADO 2 1/60EXPLOTACIÃ“N022013613-2300TOSTADO 20 1/60EXPLOTACIÃ“N022013631-0300TOSTADO 21 1/20EXPLOTACIÃ“N022013632-9100TOSTADO 22 1/60EXPLOTACIÃ“N022013633-7300TOSTADO 23 1/40EXPLOTACIÃ“N022013635-3200Property NameTypeNational IDArea (ha)TOSTADO 24 1/60EXPLOTACIÃ“N022014186-1300TOSTADO 25 1/40EXPLOTACIÃ“N022014187-K200TOSTADO 3 1/60EXPLOTACIÃ“N022013614-0300TOSTADO 4 1/60EXPLOTACIÃ“N022013615-9300TOSTADO 5 1/60EXPLOTACIÃ“N022013616-7300TOSTADO 6 1/60EXPLOTACIÃ“N022013617-5300TOSTADO 7 1/20EXPLOTACIÃ“N022013618-3100TOSTADO 8 1/40EXPLOTACIÃ“N022013619-1200TOSTADO 9 1/60EXPLOTACIÃ“N022013620-5300TOSTADO I 1/30EXPLOTACIÃ“N022013242-0300TOSTADO II 1/30EXPLOTACIÃ“N022013243-9300TOSTADO III 1/30EXPLOTACIÃ“N022013244-7300TOSTADO IV 1/30EXPLOTACIÃ“N022013245-5300TOSTADO V 1/30EXPLOTACIÃ“N022013246-3300VERDE 4 6/10-16/20EXPLOTACIÃ“N022014317-150Total 569 Claims121,473.00Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 34PAN AMERICAN SILVER CORP.Figure 4-3: Detailed map of mineral tenure4.2Underlying AgreementsPart of the mining property of El PeÃ±Ã³n 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. Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 35PAN AMERICAN SILVER CORP.Figure 4-4: Detailed map of mining concessions subject to NSR royalties Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 36PAN AMERICAN SILVER CORP.4.3Permits and AuthorizationsMinera Meridian has all required permits to continue carrying out mining and processing operations at El PeÃ±Ã³n. 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 NÂ° 2658/2019. Updates to the closure plan are required whenever the LOM is extended. 4.4Environmental ConsiderationsThe primary environmental considerations and potential liabilities for El PeÃ±Ã³n 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 PeÃ±Ã³n are provided in Sections 18 and 20 of this Technical Report. 4.5Significant Factors and RisksPan 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 Americanâ€™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. Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 37PAN AMERICAN SILVER CORP.5Accessibility, Climate, Local Resources, Infrastructure, and Physiography5.1AccessibilityEl PeÃ±Ã³n 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. 5.2ClimateThe 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 Â°C to +30 Â°C. Climatic conditions do not hinder mining operations, which can be carried out throughout the whole year. 5.3Local ResourcesThere are no significant population centres or infrastructure in the immediate vicinity of El PeÃ±Ã³n. 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. 5.4InfrastructureThe current major assets and facilities associated with the mining operations at El PeÃ±Ã³n are listed as follows: â€¢Mine and mill infrastructure, including office buildings, shops, laboratories, stockpiles, TSF, and equipment. â€¢Campsite/housing facilities.â€¢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. â€¢Underground infrastructure including portals, access ramps, ventilation raises, maintenance shops, and mobile fleet equipment. â€¢Surface infrastructure including haulage roads. Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 38PAN AMERICAN SILVER CORP.5.5PhysiographyThe 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 landscapeA: Atacama Desert and mineral processing plant B: Orito portal C: Mine site overview at surface and Atacama Desert Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 39PAN AMERICAN SILVER CORP.6HistoryThe history of El PeÃ±Ã³n has been described in Pearson and Rennie (2008) and Collins, Moore and Scott (2010). Information from both reports is summarized below. The El PeÃ±Ã³n 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 PeÃ±Ã³n 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 PeÃ±Ã³n 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 PeÃ±Ã³n 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 PeÃ±Ã³n. Various geological, petrographic, and mineralogical studies occurred during the exploration and operation stages of the project. These include PÃ©rez (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 PeÃ±Ã³n 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 PeÃ±Ã³n property. 6.1Historical Mineral Resource and Mineral Reserve EstimatesAlthough a number of historical mineral resource estimates and mineral reserve estimates have been prepared for El PeÃ±Ã³n throughout its life, none of these estimates are currently regarded as significant.6.2Past ProductionSince 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.Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 40PAN AMERICAN SILVER CORP.Table 6-1: Commercial production at El PeÃ±Ã³n, 2000 to June 30, 2024 YearÂ Tonnes Processed(t)Â Gold Feed Grade(g/t Au)Â Silver Feed Grade(g/t Ag)Metallurgical Recovery(% Au)Â Metallurgical Recovery(% Ag)Â Gold Produced(oz Au)Silver Produced(oz Ag)Â 2000739,450Â 13.18194.493.6Â %89.1Â %282,718Â 4,018,397Â 2001715,413Â 14.87234.494.5Â %89.0Â %318,012Â 4,751,758Â 2002688,876Â 15.33249.595.3Â %90.8Â %328,061Â 5,077,

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 Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 41PAN AMERICAN SILVER CORP.7Geological Setting and MineralizationThe geological setting and mineralization of El PeÃ±Ã³n are described in Robbins (2000) and in former technical reports of El PeÃ±Ã³n (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. 7.1Regional GeologyEl PeÃ±Ã³n 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 PeÃ±Ã³n. 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 PeÃ±Ã³n vein system occurred during this period.Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 42PAN AMERICAN SILVER CORP.Figure 7-1: Regional geological settingEffective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 43PAN AMERICAN SILVER CORP.7.2Local GeologyThe 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 GeologÃa y MinerÃa (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 PeÃ±Ã³n; 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 PeÃ±Ã³n 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 PeÃ±Ã³n property is illustrated in Figure 7-2. Table 7-1: Description of main lithologies AgeFormationDescriptionCretaceous to EoceneN/ADiorite and monzonite intrusionsPaleocene to Lower EoceneChile Alemania FormationBasalt, 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 CretaceousQuebrada Mala FormationAndesitic lavas, breccia, volcaniclastic and epiclastic sandstone, rhyolite and dacite with characteristic quartz phenocrysts.Lower CretaceousEstratos de Paradero del DesiertoFluvial sandstone, volcanic breccia, andesitic lava, with some dacitic tuff.Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 44PAN AMERICAN SILVER CORP.Figure 7-2: Local and property geology Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 45PAN AMERICAN SILVER CORP.7.3Property GeologySurface exposures at El PeÃ±Ã³n 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 PeÃ±Ã³n 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. 7.3.1StructureThe 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 75Â°-85Â° W or 55-80 E). A relatively minor amount of production has also taken place along northeast-striking structures dipping 65Â° NW. Locally, striking shallow-dipping faults dipping 20Â° SE displace the veins. Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 46PAN AMERICAN SILVER CORP.Figure 7-3: Schematic geological plan and cross-sections of the El PeÃ±Ã³n deposit Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 47PAN AMERICAN SILVER CORP.7.4MineralizationThe gold-silver mineralization at El PeÃ±Ã³n is hosted in near-horizontal to gently dipping Paleocene to Eocene basaltic to rhyolitic volcanic rocks. The El PeÃ±Ã³n 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 PeÃ±Ã³n 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: â€¢Abundancia/La Paloma â€¢Angosta â€¢Aleste/Bonanza â€¢Borde Oeste â€¢Cerro Martillo/Dorada â€¢Chiquilla Chica â€¢Dominador â€¢El Valle/Discovery Wash â€¢Esmeralda/Esperanza â€¢Fortuna â€¢Laguna â€¢Martillo Flat â€¢Pampa Augusta Victoria (PAV) â€¢Pampa Campamento/Sorpresa â€¢Playa â€¢Providencia â€¢Quebrada Colorada â€¢Quebrada Orito â€¢Tostado Surâ€¢Ventura â€¢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 PeÃ±Ã³n 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 Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 48PAN AMERICAN SILVER CORP.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 PeÃ±Ã³n 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 Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 49PAN AMERICAN SILVER CORP.8Deposit TypesEl PeÃ±Ã³n 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 Â°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, PeÃ±asquito in Mexico, and Hishikari in Japan (John et al., 2010). Figure 8-1: Generalized gold deposit types and environmentsEffective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 50PAN AMERICAN SILVER CORP.9ExplorationExploration 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 PeÃ±Ã³n 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 PeÃ±Ã³n 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. 9.1Exploration PotentialExploration work conducted at El PeÃ±Ã³n can be divided into three categories: infill, expansion and district. â€¢Infill drilling is designed to upgrade inferred mineral resources to measured or indicated categories.â€¢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).â€¢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 PeÃ±Ã³n 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 PeÃ±Ã³n are provided in Section 11 of this Technical Report.Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 51PAN AMERICAN SILVER CORP.10DrillingSystematic 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 PeÃ±Ã³n 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 PeÃ±Ã³n 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 YearExploration(m)Infill(m)Total(m)YearExploration(m)Infill(m)Total(m)19932,507Â â€"Â 2,507Â 201069,470Â 77,724Â 147,194Â 199416,606Â â€"Â 16,606Â 201178,746Â 49,919Â 128,665Â 19
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 Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 52PAN AMERICAN SILVER CORP.Figure 10-1: Plan view of drillholes in El PeÃ±Ã³n core mine area Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 53PAN AMERICAN SILVER CORP.Exploration work is continually conducted at El PeÃ±Ã³n 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: â€¢The collar locations of all drill holes are surveyed and marked by El PeÃ±Ã³n crews. â€¢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. â€¢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: â—¦Drill typeâ—¦Collar coordinatesâ—¦Core diameterâ—¦Downhole inclinationâ—¦Percent core recovery recordâ—¦Rock Quality Designation (RQD) measurementsâ—¦Lithologic contactsâ—¦Descriptive geologyâ—¦Core anglesâ—¦Intensity of various alteration types â—¦Structural features, such as foliation, fractures, and brecciated zonesâ—¦Recording of mineralization, such as quartz type, sulphide type and content â—¦A photographic record of the core is taken with a digital cameraEffective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 54PAN AMERICAN SILVER CORP.â—¦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. Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 55PAN AMERICAN SILVER CORP.11Sample Preparation, Analyzes, and SecurityAnalytical 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. 11.1Sample Preparation and SecuritySample preparation and analysis of drill core and underground channel samples at El PeÃ±Ã³n 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 NumberDescriptionGE-P06_R02DDH samplingGE-P11_R02Results ValidationGE-P14_R01Quality Control of Exploration SamplesGE-P37_R02Quality Control of Production SamplesGE-P03_R02Sampling and splitting samples in RC Drill HolesGE-I02_R02Creation of Dispatch FormsGE-P04_R03Underground samplingGE-P07_R02QA/QC Monthly ReportGE-P08_R02CRM ControlGE-P09_R02Samples ControlGE-P36_R02Treatment of Non-Conforming Products11.1.1Sampling of Drill CoreSampling 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. Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 56PAN AMERICAN SILVER CORP.Sample Shipments The bagged samples are placed in plastic bins to be sent to the laboratory along with the submittal form (Dispatch Order). 11.1.2Underground Channel SamplingUnderground 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 PeÃ±Ã³n 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 PeÃ±Ã³n conform to industry standards and are adequate for use in mineral resource estimation. 11.1.3Preparation and Analytical ProceduresPrimary Exploration and Infill Drilling Analytical LaboratoriesFrom 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 SamplesSamples from underground channels and some infill drilling samples are assayed at the in-house El PeÃ±Ã³n mine laboratory. This laboratory is owned and operated by Pan American and is certified to ISO/IEC 17025 standards. Umpire LaboratoriesUmpire 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. Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 57PAN AMERICAN SILVER CORP.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 PeÃ±Ã³n laboratories: â€¢A submittal form (or Dispatch Form) is filled out by an El PeÃ±Ã³n geologist or technician and delivered with the samples to the El PeÃ±Ã³n or Geoassay / Bureau Veritas laboratories. â€¢Samples are sorted, logged in the laboratory database (LIMS), weighed, and dried in a furnace at 105 Â°C. â€¢The complete sample is crushed to 85% less than # 10 mesh (passing 2 mm) and split to obtain 1 kg of material. â€¢A 1 kg sample is pulverized at 95% through # 140 mesh (passing 0.105 mm). â€¢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. â€¢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 PeÃ±Ã³n mine laboratory, only a single package of 250 g pulp is prepared and used for analysis. â€¢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 Â°C to 1,170 Â°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 Â°C to 960 Â°C for an hour to oxidize all the lead and make a precious metal bead. â—¦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. â—¦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.â—¦At the El PeÃ±Ã³n mine laboratory, the analysis is finished by gravimetry. â€¢The silver determination is done by AAS at Geoassay, and Bureau Veritas laboratories and by fire assay at the internal El PeÃ±Ã³n mine laboratory. â—¦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. â—¦At the El PeÃ±Ã³n mine laboratory, the silver is determined in a manner similar to gold, using fire assay and finished by gravimetry.Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 58PAN AMERICAN SILVER CORP.â€¢Some samples considered to contain coarse gold are analyzed by metallic screen.â—¦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 PeÃ±Ã³n mine laboratory, analytical batches contain 24 samples, described as follows: â€¢18 client samples â€¢1 preparation blank (quartz) â€¢2 CRMs â€¢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. 11.2Quality Assurance/Quality ControlA comprehensive QA/QC program is employed for the El PeÃ±Ã³n 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: â€¢Insertion of CRMs. â€¢Monitoring of contamination in preparation and analysis by inserting blanks in the preparation and analytical sampling streams. â€¢Control of the precision by taking duplicates during preparation and analysis. â€¢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. Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 59PAN AMERICAN SILVER CORP.Table 11-2: Lower detection limits and acceptance limits for blanks LaboratoryAnalyteMethodDetection Limit (g/t)Blank Acceptance Limit (DL x 10) (g/t)El PeÃ±Ã³nAuFA Grav0.22AgFA Grav110Bureau VeritasAuFA AAS0.020.2FA GravAgMA AAS0.55GravGeoassayAuFA AAS0.020.05FA Grav0.2AgMA AAS0.55Grav10Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 60PAN AMERICAN SILVER CORP.Table 11-3: Summary of analytical quality control data produced between December 2020 and June 2024December 2020 to June 2024SourceProductionExplorationTotalPeÃ±Ã³n LaboratoryGeoassayBureau VeritasAll LaboratoriesSamples(%)Samples(%)Samples(%)Samples(%)Sample Count116,363Â 212,279Â 317Â 328,959Â Blanks4,290Â 3.7Â %6,003Â 2.8Â %21Â 6.6Â %10,314Â 3.1Â %Pulp Blank1,890Â 1,809Â â€”Â 3,699Â CDN LaboratoriesSterile Blank2,400Â 1,975Â 3Â 4,378Â Core from previous drillingQuartz Blankâ€”Â 2,219Â 18Â 2,237Â Winkler milled quartzCRMAu (g/t)Ag (g/t)2,363Â 2.0Â %2,723Â 1.3Â %12Â 3.8Â %5,098Â 1.5Â %EP_STD7 0.5248.6â€”Â 676Â â€”Â Geoassay from El PeÃ±Ã³n materialEP_601b0.7850.12Â 504Â 3Â OREASEP_STD8 1.9186.6â€”Â 191Â â€”Â Geoassay from El PeÃ±Ã³n materialEP_602b2.291195Â 404Â 4Â OREASEP_STD9 3.41173.130Â 520Â â€”Â Geoassay from El PeÃ±Ã³n materialEP_STD10 83414Â 70Â â€”Â Geoassay from El PeÃ±Ã³n materialEP_STD11 13.11501.8170Â 42Â â€”Â Geoassay from El PeÃ±Ã³n materialIN-5513.374292,105Â 240Â 5Â INTEM from El PeÃ±Ã³n materialEP_STD12 25.5492347Â 76Â â€”Â Geoassay from El PeÃ±Ã³n materialUmpire Check Assay Bureau Veritas58Â 1,613Â â€”Â 1,671Â Inter-laboratory checkUmpire Check Assay Geoassay748Â â€”Â â€”Â 748Â Inter-laboratory checkQA/QC Samples7,4596.4Â %10,339Â 4.9Â %6,299Â 4.8Â %5,749Â 4.7Â %Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 61PAN AMERICAN SILVER CORP.11.2.1Certified Reference MaterialsTwo 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 PeÃ±Ã³n. 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 PeÃ±Ã³n staff submitted 5,098 CRMs between December 2020 and June 2024 (Table 11-2); of these, 2,363 to be analyzed at the El PeÃ±Ã³n 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. Figure 11-1: Z-score for all CRMs for gold analyzed at Geoassay, December 2020 to June 2024 Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 62PAN AMERICAN SILVER CORP.Figure 11-2: Z-score for all CRMs for silver analyzed at Geoassay, December 2020 to June 202411.2.2Blank SamplesThree 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 Americanâ€™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 PeÃ±Ã³n staff, submitted 4,290 blank samples with channel samples to the El PeÃ±Ã³n 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 Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 63PAN AMERICAN SILVER CORP.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.Figure 11-3: Time series plots: gold and silver assays of select blanks by type and laboratoryEffective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 64PAN AMERICAN SILVER CORP.11.2.3Umpire Laboratory Check AssaysThe primary laboratories are requested to send pulp samples, as selected by El PeÃ±Ã³n 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.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 finishEffective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 65PAN AMERICAN SILVER CORP.11.3Sample SecuritySamples are handled only by personnel authorized by Pan American. Channel samples from the mining operation are delivered directly to the El PeÃ±Ã³n 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 PeÃ±Ã³n are adequate and consistent with industry standards, and the analytical data is acceptable for use in the estimation of mineral resources and mineral reserves. Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 66PAN AMERICAN SILVER CORP.12Data VerificationThis 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. 12.1Mine Engineering Data VerificationThe qualified person, Jimmy AvendaÃ±o, Registered Member of the Chilean Mining Commission, has worked at El PeÃ±Ã³n 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 PeÃ±Ã³nâ€™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. 12.2Geology Data VerificationThe qualified person, Christopher Emerson, FAusIMM, undertakes regular reviews of El PeÃ±Ã³nâ€™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. 12.3Metallurgy Data VerificationThe qualified person, Americo Delgado, P. Eng., undertakes regular reviews of Pan Americanâ€™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 PeÃ±Ã³n are consistent and adequate for the mineralization of the deposit. Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 67PAN AMERICAN SILVER CORP.12.4Tailings Data VerificationThe qualified person, Carlos Iturralde, P. Eng., undertakes regular reviews of Pan Americanâ€™s TSFs. El PeÃ±Ã³n 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. 12.5Environment, Social, and Permitting Data VerificationThe qualified person, Matthew Andrews, FAusIMM, undertake regular reviews of Pan Americanâ€™s environmental and permitting factors. In the opinion of the qualified person, El PeÃ±Ã³nâ€™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. Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 68PAN AMERICAN SILVER CORP.13Mineral Processing and Metallurgical Testing13.1Processing PlantThe El PeÃ±Ã³n 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: â€¢Crushing â€¢Grinding and pre-leaching thickening â€¢Leaching â€¢Recovery of concentrate solution from counter-current decantation â€¢Pregnant solution clarification â€¢Gold and silver recovery by zinc precipitation (Merrill-Crowe process) â€¢Filtering of precipitate â€¢Refining to dorÃ© Tailings are vacuum filtered to recover water and these are subsequently loaded on trucks and transported to the nearby TSF. 13.2Metallurgical TestingSignificant metallurgical testwork has been carried out at El PeÃ±Ã³n 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: â€¢Leaching tests to address gold and silver recoveries as well as cyanide consumption â€¢Sedimentation and filtration tests â€¢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. Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 69PAN AMERICAN SILVER CORP.Table 13-1: Metallurgical recoveries by zone and grade category Metallurgical Recovery MatrixZoneCharacteristicGrade RangeAmount of Data (NÂ°)Gold Recovery (%)Silver Recovery (%)Chiquilla ChicaLow Sulphide ContentHigh Grade1496.1486.25Medium Grade241094.7786.73Low Grade3,52495.1587.11Marginal4,5990.3776.25LagunaLow Sulphide ContentHigh Grade15494.5085.81Medium Grade66194.5687.11Low Grade53294.3185.93Marginal990.3776.25Tostado SurLow Sulphide ContentHigh Grade2394.6388.89Medium Grade2394.6388.89Low Grade2394.6388.89Marginal990.3776.25FortunaHigh Clay ContentHigh Grade3694.8787.13Medium Grade60594.8787.41Low Grade18584.3979.04Marginal990.3776.25El PeÃ±Ã³n Mina SurLow Sulphide ContentHigh Grade55094.8986.57Medium Grade8,13494.5687.57Low Grade3,39694.6287.34Marginal990.3776.25El PeÃ±Ã³n Mina NorteLow Sulphide ContentHigh Grade5794.7386.92Medium Grade4,73594.5887.86Low Grade1,32594.6487.57Marginal990.3776.25El PeÃ±Ã³n Bloque NorteHigh Sulphide ContentHigh Grade91195.1386.91Medium Grade2,51194.8087.16Low Grade1,83794.8886.90Marginal990.3776.25Pampa Augusta Victoria (PAV)Low Sulphide ContentHigh GradeHistorical92.5775.23Medium GradeHistorical94.4289.27Low GradeHistorical93.1090.02Marginal990.3776.251.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/t3.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. Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 70PAN AMERICAN SILVER CORP.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 PeÃ±Ã³n is shown in Section 6. Table 13-2: Processing plant production for 2023 MonthTonnesGoldSilverGradeProductionRecoveryGradeProductionRecovery(t)(g/t Au)(Au oz)(% Au)(g/t Ag)(Ag oz)(% Ag)January119,448Â 2.599,816Â 94.6278.11268,360Â 88.98February103,677Â 3.4310,283Â 94.8489.65265,411Â 89.36March114,271Â 3.2511,634Â 94.42101.85334,970Â 89.16April102,907Â 3. 20231,363,471Â 3.06127,019Â 94.6696.553,763,457Â 89.05Table 13-3: Processing plant production for January to June 2024 MonthTonnesGoldSilverGradeProductionRecoveryGradeProductionRecovery(t)(g/t Au)(Au oz)(% Au)(g/t Ag)(Ag oz)(% Ag)January109,211Â 3.1010,057Â 94.86104.5336,762Â 89.48February110,730Â 3.5912,594Â 95.1884.22255,457Â 86.33March106,634Â 3.448,818Â 94.7985.65258,395Â 86.74April111,070Â 3.2 H1-2024675,326Â 3.2667,439Â 94.9090.081,700,509Â 86.43Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 71PAN AMERICAN SILVER CORP.14Mineral Resource Estimates14.1Mineral Resource SummaryThe El PeÃ±Ã³n 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$64/t within the current Tostado Sur mineral reserves pit design.The Mineral Resource Statement of El PeÃ±Ã³n as of June 30, 2024, exclusive of mineral reserves is presented in Table 14-1. Table 14-1: El PeÃ±Ã³n Mineral Resource Statement as of June 30, 2024Mineral ResourcesCategoryTonnesGradeContained Metal(kt)Au (g/t)Ag (g/t)Au (koz)Ag (koz)UndergroundMeasured1,554Â 5.25166.32628,307Â Indicated3,828Â 3.44112.042313,789Â Measured + Indicated5,382Â 3.96127.768522,096Â Inferred4,677Â 3.80133.857220,115Â Open PitMeasuredâ€”Â â€”Â â€”Â â€”Â â€”Â Indicated20.02362.7â€”Â 25Measured + Indicated20.02362.7â€”Â 25Inferred20.03858.2â€”Â 69TailingsMeasuredâ€”Â â€”Â â€”Â â€”Â â€”Â Indicatedâ€”Â â€”Â â€”Â â€”Â â€”Â Measured + Indicatedâ€”Â â€”Â â€”Â â€”Â â€”Â Inferred13,767Â 0.5518.92458,380Â CombinedMeasured1,554Â 5.25166.32628,307Â Indicated3,830Â 3.44112.242313,813Â Measured + Indicated5,384Â 3.96127.868522,120Â Inferred18,446Â 1.3848.281628,564Â 1.Mineral resources were estimated by the El PeÃ±Ã³n resource geology team and reviewed by Christopher Emerson, FAusIMM, who is a qualified person as that term is defined by NI 43-101. Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 72PAN AMERICAN SILVER CORP.2.Mineral resources were estimated in accordance with the guidelines laid out in the CIM Guidelines and classified according to the CIM Definition Standards.3.Mineral resources are reported exclusive of mineral reserves. Mineral resources were evaluated using an inverse distance weighing algorithm informed by capped composites and constrained by three-dimensional mineralization wireframes. 4.Mineral resources are not mineral reserves and do not have demonstrated economic viability. Metal price assumptions of US$ 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/cm3 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/cm3 to 2.57 g/cm3 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/cm3 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.Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 73PAN AMERICAN SILVER CORP.14.2Resource Database and ValidationAll 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 PeÃ±Ã³n 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. 14.3Definition and Interpretation of Estimation DomainsResource 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. Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 74PAN AMERICAN SILVER CORP.Figure 14-1: Plan view of estimation domains coloured mining zone Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 75PAN AMERICAN SILVER CORP.14.4Compositing MethodsSince veins at El PeÃ±Ã³n 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.14.5Basic StatisticsDescriptive 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 veinVeinGoldSilverDrill 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)50547.10135.30135.30473.0947.0947.0Abundancia40.0082.00N/A2,000.0Â 2,072.0Â N/AAleste50.00146.00N/A3,300.0Â 4,954.0Â N/AAngelina100.0080.00192.00300.0430.0540.0Angosta30 Oeste70.00N/AN/A1,990.0Â N/AN/ACaracolesN/AN/AN/AN/AN/AN/ACarmin-Escarlata133.00157.00N/A1,732.0Â 2,020.0Â N/ACerro Martillo12.0037.00N/A425.01,385.0Â N/ACerro Martillo Central Sur36.00111.00N/A2,225.0Â 6,155.0Â N/AChiquilla Chica0.683.001.71762.03,500.0Â 1,957.7Â Colorada Sur30.0050.92N/A1,000.0Â 1,448.6Â N/ADiablada40.0070.00N/A300.0360.0N/ADiscovery Wash24.6019.00N/A700.0530.0N/ADominador45.0035.00N/A1,540.0Â 920.0N/ADorada60.0044.96N/A1,200.0Â 2,898.8Â N/AEffective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 76PAN AMERICAN SILVER CORP.Dorada SW27.0026.50N/A2,200.0Â 2,055.0Â N/AEl Valle72.5024.00N/A1,820.0Â 1,105.0Â N/AEl Valle HW72.50N/AN/A1,820.0Â N/AN/AElizabeth15.0064.86110.501,420.0Â 10,927.0Â 11,000.0Â Esmeralda200.00175.00N/A1,000.0Â 5,562.0Â N/AEsmeralda NE100.00130.00N/A3,000.0Â 5,562.0Â N/AEsperanza80.0046.40N/A1,700.0Â 1,949.0Â N/AFortuna18.0054.00N/A1,500.0Â 3,507.0Â N/AFortuna Este20.00N/AN/A1,500.0Â N/AN/ALa Paloma35.00200.00N/A400.02,027.0Â N/ALa Paloma - High GradeN/A465.00N/AN/A569.0N/ALaguna21.0046.00N/A224.0463.0N/ALaguna West43.00120.00N/A386.01,890.0Â N/AMagenta60.0098.59N/A770.01,815.0Â N/AMartillo Flat Main48.0042.50N/A3,150.0Â 2,450.0Â N/AMartillo Flat HW128.5065.00N/A2,675.0Â 4,700.0Â N/AMartillo Flat HW245.0035.42N/A2,600.0Â 1,862.0Â N/AOrito Norte20.0047.0547.05250.0368.0368.0Orito Sur50.0044.00N/A850.0768.0N/AOrito West35.0015.00N/A1,500.0Â 389.0N/APampa Campamento63.00170.00N/A1,569.0Â 2,500.0Â N/APampa Sur16.00N/AN/A696.0N/AN/APampa Providencia35.00N/AN/A600.0N/AN/APlaya21.0055.00N/A404.01,480.0Â N/AProvidencia Main46.0030.00N/A2,275.0Â 1,814.0Â N/AProvidencia FW40.0020.00N/A1,500.0Â 1,383.0Â N/AProvidencia HW30.0018.00N/A1,050.0Â 1,273.0Â N/AProvidencia Nueva30.00N/AN/A700.0N/AN/APurpura20.0060.00N/A2,000.0Â 1,292.0Â N/ARielesN/AN/AN/AN/AN/AN/ASorpresa44.0048.00N/A1,574.0Â 1,848.0Â N/ATostado Sur0.49N/A0.202,750.0Â N/A2,342.7Â Ventura30.0070.85N/A1,500.0Â 3,980.2Â N/AVeta NW (63)11.2721.00N/A862.61,352.0Â N/AVeta NW (64)10.0029.46N/A580.02,638.0Â N/AVeta NW (65)26.0038.84N/A1,600.0Â 2,820.0Â N/AVictoria35.0096.99110.50500.03,012.0Â 11,000.0Â Vista Norte67.0089.00N/A374.01,015.0Â N/A14.6Specific GravitySpecific 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 GeoanalÃtica 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. Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 77PAN AMERICAN SILVER CORP.Table 14-3: Specific gravity density values assigned to each zoneZoneSGZoneSGZoneSG5052.36El Valle2.43Pampa Sur2.43Abundancia2.40El Valle HW2.43Pampa Providencia2.40Aleste2.57Elizabeth2.50Playa2.36Angelina2.44Esmeralda2.40Providencia Main2.40Angosta2.40Esmeralda NE2.40Providencia FW2.40Bermellon2.43Esperanza2.40Providencia HW2.40Bermuda2.40Fortuna2.40Providencia Nueva2.40Bonanza2.57Fortuna Este2.40Purpura2.43Borde Oeste2.40La Paloma2.40Rieles2.40Caracoles2.40La Paloma - High Grade2.40Sorpresa2.43Carmin-Escarlata2.43Laguna2.40Tostado Sur2.40Cerro Martillo2.40Laguna West2.40Ventura2.57Cerro Martillo CS2.40Magenta2.43Veta NW (63)2.40Chiquilla Chica2.40Martillo Flat Main2.40Veta NW (64)2.40Colorada Sur2.43Martillo Flat HW12.40Veta NW (65)2.40Diablada2.44Martillo Flat HW22.40Victoria2.50Discovery Wash2.43Orito Norte2.44Vista Norte2.44Dominador2.40Orito Sur2.36Dorada2.40Orito West2.36Dorada SW2.40Pampa Campamento2.4314.7VariographyDuring 2023 the El PeÃ±Ã³n resource geology team updated variography using the methodology explained below. Grade is highly variable at El PeÃ±Ã³n, 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 â€œdown-the-holeâ€ 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 DirectionAzimuth Tolerance (Â°)Azimuth Band (m)Dip Tolerance (Â°)Dip BandLagLag ToleranceMajor22.512.522.530 mLevel Spacing1/2 LagSemi-major22.512.522.51/2 Level SpacingFace Sample Spacing1/2 LagMinor22.512.522.51/2 Level Spacing1 m1/2 LagEffective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 78PAN AMERICAN SILVER CORP.Table 14-5: Correlogram model parameters for El Valle and Pampa Campamento veins ElementVeinStructureContributionModelRxRyRzAngleAngleAngle(m)(m)(m)1 (Â°)2(Â°)3(Â°)AuEl ValleC00.2Nuggetâ€”Â â€”Â â€”Â â€”Â â€”Â â€”Â C10.66Sph181510168.165.2144.6C20.14Sph404012168.165.2144.6Pampa CampamentoC00.2Nuggetâ€”Â â€”Â â€”Â â€”Â â€”Â â€”Â C10.75Exp9102163-2584C20.05Sph706010163-2584AgEl ValleC00.2Nuggetâ€”Â â€”Â â€”Â â€”Â â€”Â â€”Â C10.66Sph181510168.165.2144.6C20.14Sph404012168.165.2144.6Pampa CampamentoC00.2Nuggetâ€”Â â€”Â â€”Â â€”Â â€”Â â€”Â C10.45Sph12183163-2085C20.35Sph504011163-208514.8Block ModelsA total of 42 independent block models were constructed at El PeÃ±Ã³n. 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 VariableFormatDescriptiondensityFloat (Real * 4)Bulk density assigned per veinshellugInteger (Integer * 4)Vein codeugInteger (Integer * 4)Splay (estimation domain) codeau1Float (Real * 4)Estimated gold grade (g/t)ag1Float (Real * 4)Estimated silver grade (g/t)Categ_30Integer (Integer * 4)Original resource classification Grid 30x30Class_30Integer (Integer * 4)Official smoothed resource classification Grid 30x30aunn1Float (Real * 4)Gold grade estimated by nearest neighbour (g/t)agnn1Float (Real * 4)Silver grade estimated by nearest neighbour (g/t)RedoxInteger (Integer * 4)Mineralization code (oxides / sulfides)LitoInteger (Integer *

4)Lithology codeEffective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 79PAN AMERICAN SILVER CORP.Table 14-7: Block models per veins and per mining zones VeinsZone505, 506Mina SurAbundanciaBloque NorteAlesteBloque NorteAngostaBloque NorteBermellon, Colorada SurMina SurBermudaMina NorteBonanzaBloque NorteBorde OesteBloque NorteCarmin, Carmin Sur, EscarlataMina SurCerro Martillo Central SurMina NorteCerro MartilloMina NorteChiquilla ChicaChiquilla ChicaDiabladaMina SurDiscovery WashMina SurDominador, CaracolesFortunaDoradaMina NorteDorada SWMina NorteEl ValleMina SurEl Valle HWMina SurEsmeralda, Esmeralda NE, EsperanzaBloque NorteFortunaFortunaFortuna EsteFortunaLa Paloma, La Paloma - High GradeBloque NorteLaguna, Laguna WestLagunaMagentaMina SurMartillo Flat Main, HW1, HW2Mina NorteOrito Norte, AngelinaMina SurOrito SurMina SurOrito WestMina SurPampa CampamentoMina SurPampa SurMina SurPampa ProvidenciaMina SurElizabeth, VictoriaPAVPlayaMina SurProvidencia Main, FW, HW, NuevaMina NortePurpuraMina SurRielesBloque NorteSorpresaMina SurTostado SurTostado SurVenturaBloque NorteVeta NW 63, 64, 65Mina NorteVista NorteMina SurGold 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. Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 80PAN AMERICAN SILVER CORP.Table 14-8: Summary of typical estimation and search parameters Estimation Pass11st2nd3rd4th5th6thBlock type2STSTSTLTLTLTSample type3CHCHCHCH+DHCH+DHDHInterpolation MethodID3ID3ID3ID3ID3ID3Search range (m) - Major81015153560Search range (m) - Semi-major5810153560Search range (m) - Minor46851015Minimum number of composites321431Maximum number of composites666666Octant searchNoNoNoNoNoNoMaximum number of composites/DH11132â€"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 14.9Block Model ValidationBlock 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. Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 81PAN AMERICAN SILVER CORP.Table 14-9: Statistical validation of the estimated block model - El Valle vein and Pampa Campamento veinVein: El ValleID3NNNumber of blocks5,685,019Â 5,702,263Â Gold Statistics (g/t Au):Minimum0.0040.004Q10.6530.349Median1.5391.048Q33.3352.908Maximum72.46172.500Mean2.7472.712Standard Deviation3.3714.269Variance11.36418.224Coefficient of Variation1.2271.574Vein: Pampa CampamentoID3NNNumber of blocks6,001,260Â 6,001,260Â Gold Statistics (g/t Au):Minimum0.0100.010Q11.4040.725Median3.2072.298Q37.4276.230Maximum169.684170.000Mean6.3326.372Standard Deviation9.22612.110Variance85.119146.652Coefficient of Variation1.4571.901Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 82PAN AMERICAN SILVER CORP.Figure 14-2: Gold swath plots for El Valle vein Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 83PAN AMERICAN SILVER CORP.Figure 14-3: Gold swath plots for Pampa Campamento vein Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 84PAN AMERICAN SILVER CORP.14.10 Resource ClassificationResource classification was completed using an in-house algorithm which works according to the following workflow: â€¢Blocks located in areas supported by underground channel samples are classified as measured. â€¢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. â€¢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. â€¢The remainder of the blocks estimated within the interpreted vein wireframes are classified as inferred. â€¢Blocks located outside the vein wireframes are not classified and are considered dilution for mineral resources reporting. â€¢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 TailingsIn 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 PeÃ±Ã³n 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 PeÃ±Ã³n mill since 2017. Mineral resources contained in tailings are classified as inferred. 14.12 Mineral Resource EstimateThe mineral resources are reported at El PeÃ±Ã³n 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). Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 85PAN AMERICAN SILVER CORP.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$64/t within the current Tostado Sur mineral reserves pit design. The use of constraining conceptual mining shapes to report underground mineral resources and cut-offs to report mineral resources contained in tailings demonstrate that the â€œreasonable prospects for eventual economic extractionâ€ criteria, as defined in the CIM Definition Standards, is met. Table 14-10: Resource NSR cut-off value calculation parameters ParametersUnitsValueGold PriceUS$/oz1,850Â Silver PriceUS$/oz22.00Gold Selling CostUS$/oz13.20Silver Selling CostUS$/oz0.15Gold Metallurgical Recovery%ModelSilver Metallurgical Recovery%ModelOpen Pit Mining CostUS$/t10.00Underground Mining Cost1US$/t94.39Processing CostUS$/t32.80G&A CostUS$/t15.75Sustaining Capital CostUS$/t5.44Open Pit Mineral Resources NSR Cut-off ValueUS$/t64.00Underground Mineral Resources NSR Cut-off ValueUS$/t148.39The Mineral Resource Statement of El PeÃ±Ã³n 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.Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 86PAN AMERICAN SILVER CORP.Table 14-11: Summary of El PeÃ±Ã³n mineral resources by zone, as of June 30, 2024 Mineral ResourcesCategoryTonnesGradeContained Metal(kt)Au (g/t)Ag (g/t)Au (koz)Ag (koz)Chiquilla ChicaMeasured50.71459.1070Indicated310.32321.90324Measured + Indicated360.37339.90393Inferred940.27345.111,042Â LagunaMeasured124.2535.1214Indicated573.0045.2582Measured + Indicated693.2243.4796Inferred293.0749.8347FortunaMeasured653.93238.68502Indicated2552.72149.1221,222Â Measured + Indicated3202.97167.4311,724Â Inferred2043.75289.5251,898Â Tostado SurMeasured00.000.000Indicated20.02362.7025Measured + Indicated20.02362.7025Inferred20.03858.2069El PeÃ±Ã³n Mina SurMeasured6695.6490.81211,954Â Indicated1,318Â 3.7472.01593,053Â Measured + Indicated1,987Â 4.3878.42805,007Â Inferred1,505Â 4.3086.62084,191Â El PeÃ±Ã³n Mina NorteMeasured5233.99207.8673,495Â Indicated1,191Â 3.01140.71155,389Â Measured + Indicated1,714Â 3.31161.21828,884Â Inferred1,387Â 3.36126.21505,626Â El PeÃ±Ã³n Bloque NorteMeasured2467.50254.5592,011Â Indicated8063.99126.11033,268Â Measured + Indicated1,052Â 4.81156.11635,279Â Inferred1,322Â 4.07154.61736,573Â Pampa Augusta Victoria (PAV)Measured334.30244.25261Indicated1693.2582.718450Measured + Indicated2023.43109.222711Inferred1352.87169.912738TailingsMeasured00.000.000Indicated00.000.000Measured + Indicated00.000.000Inferred13,767Â 0.5518.92458,380Â CombinedMeasured1,554Â 5.25166.32628,307Â Indicated3,830Â 3.44112.242313,813Â Measured + Indicated5,384Â 3.96127.868522,120Â Inferred18,446Â 1.3848.281628,564Â 1.Mineral resources were estimated by the El PeÃ±Ã³n 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.Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 87PAN AMERICAN SILVER CORP.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/cm3 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/cm3 to 2.57 g/cm3 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/cm3 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. Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 88PAN AMERICAN SILVER CORP.15Mineral Reserve Estimates15.1Mineral Reserve SummaryThe Mineral Reserve Statement of El PeÃ±Ã³n as of June 30, 2024, is presented in Table 15-1. Table 15-1: El PeÃ±Ã³n Mineral Reserve Statement, June 30, 2024 ReservesCategoryTonnesGradeContained Metal(kt)Au (g/t)Ag (g/t)Au (koz)Ag (koz)Open PitProvenâ€"Â â€"Â â€"Â â€"Â â€"Â Probable210.03412.9â€"Â 272Total Open Pit210.03412.9â€"Â 272UndergroundProven828Â 5.46208.11455,540Â Probable3,132Â 4.72154.747515,574Â Total Underground3,960Â 4.87165.862021,114Â Low-grade StockpileProvenâ€"Â â€"Â â€"Â â€"Â â€"Â Probable7991.2632.032821Total Low-grade Stockpile7991.2632.032821CombinedProven828Â 5.46208.11455,540Â Probable3,952Â 3.99131.250716,667Â Grand Total4,779Â 4.25144.565322,207Â 1.Mineral reserves have been estimated by the El PeÃ±Ã³n long-term mine planning team and reviewed by Jimmy AvendaÃ±o, Registered Member of the Chilean Mining Commission, Technical Services Manager of El PeÃ±Ã³n, 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 JuneÂ 30, 2024. 8.All figures are rounded to reflect the relative accuracy of the estimate. Numbers may not add up due to rounding.Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 89PAN AMERICAN SILVER CORP.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. 15.2Conversion MethodologyThe methodology used at El PeÃ±Ã³n to convert mineral resources to mineral reserves is summarized as follows: â€¢Verify geometries for the block model and confirm block model depletion with current excavated wireframes up to the effective reporting date. â€¢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. â€¢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. â€¢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. â€¢Design primary development, including ramps, ventilation, materials handling, access and other infrastructure. â€¢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. â€¢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. â€¢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. â€¢Mining shapes containing a majority portion of measured or indicated tonnes are converted to proven or probable mineral reserves, respectively. Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 90PAN AMERICAN SILVER CORP.15.3NSR Value CalculationNSR 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 parametersParametersUnitsValueGold PriceUS$/oz1,700Silver PriceUS$/oz20Gold Selling CostUS$/oz13.2Silver Selling CostUS$/oz0.15Royalties (only Fortuna zone)%2Gold Metallurgical Recovery%VariableSilver Metallurgical Recovery%Variable15.4NSR Cut-Off ValueNSR 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 PeÃ±Ã³n. 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 PeÃ±Ã³n 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 parametersParametersUnitsValueOpen Pit Mining CostUS$/t10.00Underground Mining

Cost1US$/t94.39Underground Incremental Mining CostUS$/t30.21Processing CostUS$/t32.80Incremental Processing CostUS$/t23.29G&A CostUS$/t15.75Sustaining Capital CostUS$/t5.44Open Pit NSR Cut-off ValueUS$/t64.00Underground NSR Cut-off ValueUS$/t148.39Marginal Underground NSR Cut-off ValueUS$/t53.50Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 91PAN AMERICAN SILVER CORP.15.5Mining Shapes Design ParametersKey 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 zoneZoneStope Length (m)Stope Height (m)Minimum Mining Width (m)Minimum Waste Pillar Width (m)Hangingwall + Footwall Overbreak (m)Mining Recovery (%)Chiquilla Chica30121.03.01.097.50Laguna30121.03.01.097.50Fortuna30121.03.00.80 to 1.8097.50Mina Sur30121.03.00.50 to 2.6097.50Mina Norte30121.03.00.45 to 1.2097.50Bloque Norte30121.03.00.44 to 1.2097.50PAV30121.03.00.70 to 1.1097.50Due to the narrow vein width, split-blasting is usually applied at El PeÃ±Ã³n, and drift mining shapes are therefore designed accordingly. Split blasting at El PeÃ±Ã³n 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 parametersParametersUnitsAll ZonesDrift Heightm4.00Minimum Mining Widthm0.60Hangingwall Overbreakm0.25Footwall Overbreakm0.25Mining 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)0.200.600.501.100.400.600.501.100.600.600.501.100.800.600.501.301.000.600.501.501.200.600.501.70Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 92PAN AMERICAN SILVER CORP.15.6Primary Development Design and Economic EvaluationDesigned 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 ItemDimensionsDevelopment Cost (US$/m)CommentRamp Decline4.3 (w) x 4.5 (h)3,182Minimum turning radius of 15m and maximum decline of 15%Ventilation Drifts4.0 (w) x 4.0 (h)3,182To connect exhaust drop raises of raise borersRemucks4.0 (w) x 4.0 (h)3,182For materials handling purposesAccess4.0 (w) x 4.0 (h)3,008To access ore drives, gradient varies depending on layoutVentilation Raise2.4 m diameter3,196Generally exhaust raise borer to surfaceOnce 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. 15.7ReconciliationMine 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 2024TonnesAuAg(kt)(g/t)(g/t)Total mined and reclaimed from stockpiles1,371,2782.6694.6Processed feed reported1,371,2783.1191.76Difference (%)0.0%17.2%-3.0%15.8Mineral Reserve EstimateThe Mineral Reserves Statement for El PeÃ±Ã³n 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.Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 93PAN AMERICAN SILVER CORP.Table 15-9: Summary of El PeÃ±Ã³n mineral reserves by zone, June 30, 2024 ZoneCategoryTonnes(kt)GradeContained MetalAu (g/t)Ag (g/t)Au (koz)Ag (koz)Chiquilla ChicaProven100.59423.9â€”Â 135Probable270.52387.9â€”Â 334Total Chiquilla Chica370.54397.61470LagunaProven116.7765.6223Probable294.7546.6443Total Laguna405.2951.8766FortunaProven325.08244.45250Probable1573.94250.5201,268Â Total Fortuna1894.13249.5251,519Â Tostado SurProvenâ€”Â â€”Â â€”Â â€”Â â€”Â Probable210.03412.9â€”Â 272Total Tostado Sur210.03412.9â€”Â 272El PeÃ±Ã³n Mina SurProven3236.17145.6641,511Â Probable1,347Â 5.23112.32264,864Â Total El PeÃ±Ã³n Mina Sur1,669Â 5.41118.82906,375Â El PeÃ±Ã³n Mina NorteProven3314.03239.8432,553Â Probable8883.90177.81115,077Â Total El PeÃ±Ã³n Mina Norte1,219Â 3.93194.61547,630Â El PeÃ±Ã³n Bloque NorteProven1088.37261.929906Probable6755.131831113,972Â Total El PeÃ±Ã³n Bloque Norte7835.57193.81404,877Â Pampa Augusta Victoria (PAV)Proven144.13359.52162Probable94.5551.4115Total PAV234.30239.53176Low-grade StockpileProvenâ€”Â â€”Â â€”Â â€”Â â€”Â Probable7991.2632.032821Total Low-grade Stockpile7991.2632.032821CombinedProven8285.46208.11455,540Â Probable3,952Â 3.99131.250716,667Â Grand Total4,779Â 4.25144.565322,207Â 1.Mineral reserves have been estimated by the El PeÃ±Ã³n long-term mine planning team and reviewed by Jimmy AvendaÃ±o, Registered Member of the Chilean Mining Commission, Technical Services Manager of El PeÃ±Ã³n, 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 Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 94PAN AMERICAN SILVER CORP.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 JuneÂ 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.Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 95PAN AMERICAN SILVER CORP.16Mining MethodsOre from underground mines is, and will continue to be, the main source of feed for the El PeÃ±Ã³n 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 PeÃ±Ã³n 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. 16.1Underground Mining MethodsThe main underground mining method utilized at El PeÃ±Ã³n 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 PeÃ±Ã³n, range generally between 10 and 20 m. Due to narrow vein widths, a â€œsplit-blastingâ€ 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 PeÃ±Ã³n 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.Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 96PAN AMERICAN SILVER CORP.Figure 16-1: Schematic cross-section of drift and vein showing extent of split-blasting technique 16.2Underground Mine DesignMine 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 Â± 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. Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 97PAN AMERICAN SILVER CORP.Figure 16-2: Schematic example of bench-and-fill mining method 16.3Mining SequenceThe 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. Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 98PAN AMERICAN SILVER CORP.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 panelâ€™s sill pillar. 16.4Geomechanics and Ground SupportThe El PeÃ±Ã³n 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 50Â° and 90Â°. 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.Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 99PAN AMERICAN SILVER CORP.16.5Mine EquipmentAll 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 PeÃ±Ã³n 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 EquipmentModelUnitsDevelopment Jumbo DrillsAtlas Copco Boomer S26Development Jumbo DrillsAtlas Copco Boomer M2C7Development Jumbo DrillsEpiroc Boomer S1D1Long Hole Production DrillsAtlas Copco Simba S7D10Long Hole Production DrillsEpiroc Simba S7C1LHD 6yd3Cat R-1600G4LHD 6yd3Cat R-1600H14Conventional TrucksScania P4002Conventional TrucksScania DAF F4307Conventional TrucksMercedes Benz Arocs 4848K2Conventional TrucksMercedes Benz Axor 33443Ejection Bed TrucksCat AD-304Ejection Bed TrucksMercedes Benz Axor 33442Ejection Bed TrucksScania P41010BoltersBoltec Atlas Apernador H235S3BoltersJumbo Resemin Bolter 991RoboshotsNormet Alpha 208RoboshotsNormet Alpha 301MixersNormet Variomec MF0503MixersNormet Tornado S25Table 16-2: Support mobile equipment Support

EquipmentModelUnitsWheel LoadersVolvo L260H1Wheel LoadersVolvo L120F4Wheel LoadersSDLG LG 9681ScalersCat 416F214Telescope CraneManitou MT1030S1Telescope CraneManitou MT1030ST20Scissor LiftNormet Utilift 14301GraderCat 140H1GraderCat UG20K2Service TrucksVarious4ExcavatorsVarious2Water TrucksVarious7The 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. Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 100PAN AMERICAN SILVER CORP.16.6Mine Services16.6.1DewateringThree dewatering systems are currently operating at El PeÃ±Ã³n. 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. 16.6.2VentilationVentilation of the underground mines at El PeÃ±Ã³n 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. Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 101PAN AMERICAN SILVER CORP.Figure 16-3: Ventilation circuit of the Pampa Campamento underground mine 16.6.3ElectricalEl PeÃ±Ã³n is connected to the National Electric Grid by a 66 kV transmission line to the Palestina substation. From the main substation at El PeÃ±Ã³n, 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. Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 102PAN AMERICAN SILVER CORP.16.6.4Compressed AirCompressed air is supplied through a network of carbon steel pipes of 6â€ diameter on surface and 4â€ 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 PeÃ±Ã³n 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. 16.7Life of Mine PlanThe LOM plan was developed based on the mineral reserves inventory of El PeÃ±Ã³n 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 PeÃ±Ã³n 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. Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 103PAN AMERICAN SILVER CORP.17Recovery MethodsThe El PeÃ±Ã³n processing plant and associated facilities process run-of-mine as well as stockpiled ore, using the main processes listed below: â€¢Crushing â€¢Grinding and pre-leaching thickening â€¢Leaching â€¢CCD concentrate solution recovery â€¢Clarification, zinc precipitation, and precipitate filtering â€¢Refining â€¢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. 17.1Primary CrushingRun-of-mine or stockpiled ore is dumped from a 5.6 m3 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. Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 104PAN AMERICAN SILVER CORP.Figure 17-1: Mineral processing flowsheet 17.2Grinding and Pre-Leach ThickeningCrushed 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 Î¼m. 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 millâ€™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 Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 105PAN AMERICAN SILVER CORP.on standby) with a flow rate of 250 m3/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 â€œunclarified pregnant solutionâ€, is sent by gravity to a storage tank. 17.3ClarificationFrom 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. 17.4LeachingGold 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 m3 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. 17.5CCD Concentrate Solution RecoveryThe 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. 17.6Pregnant Solution PrecipitationIn normal operation conditions, the Merril-Crowe process consists of the following stages: â€¢Deaeration of the clarified solution by circulating the fluid through a vacuum tower. â€¢Precipitation of gold and silver by the addition of zinc to the deaerated solution. â€¢Filtering of gold, silver and zinc precipitates. The clarified pregnant solution (maximum flow of 275 m3/h) is deaerated through a vacuum tower before entering the zinc precipitation stage. The vacuum tower is a 10.4 m3-capacity reactor which achieves a rich deaerated Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 106PAN AMERICAN SILVER CORP.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 m3 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. 17.7RefiningPrecipitates 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 Â°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 Â°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 Â°C, consists of silica (flux) and impurities such as copper, iron, zinc and others. The lower phase which consists of dorÃ© is higher density (15 g/l), melts at 1,000 Â°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 dorÃ© 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 dorÃ© 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. 17.8Tailings Filtering and DisposalThe 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 m2 and one 82 m2 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 m2 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. Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 107PAN AMERICAN SILVER CORP.17.9Metallurgical ReportingThe 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 ConsumptionWater consumption by the processing plant is approximately 0.28 m3/t, while the tailings disposal operations require 0.08 m3/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 ReagentConsumptionUnitsSodium Cyanide2.94kg/tZinc3.44kg/kg(Au+Ag)Lime0.01kg/tDiatomaceous Earth0.49kg/tCelite 5450.183kg/kg(Au+Ag)Celite 7F0.087kg/kg(Au+Ag)Flocculant (CCD)55.50g/tFiltering Aid45.00g/tAntiscalant (CCD)61.95g/tAntiscalant (Precipitation)75.00g/tAntiscalant (Retort)7.90g/tDispersant70.25g/tOxygen0.28m3/tBorax0.50kg/kg(Au+Ag)Soda Ash0.22kg/kg(Au+Ag)Gas2.81l/kg(Au+Ag)Table 17-2: Consumption of processing supplies for January to June 2024ItemConsumptionUnitsBalls (Ball Mill)0.32kg/tBalls (SAG Mill)0.95kg/tRefractories0.33kg/kg(Au+Ag)DorÃ© Packages0.008Boxes/kg(Au+Ag)Clarifying Filter Fabric26.00Fabric/monthPress Filter Fabric10.00Fabric/monthBand Filter Fabric1.00Fabric/28,000tEffective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 108PAN AMERICAN SILVER CORP.18Project InfrastructureEl PeÃ±Ã³n 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 PeÃ±Ã³n has all the required infrastructure for a mining complex, illustrated in Figure 18-1. The main infrastructure includes the following features: â€¢Underground and open pit mines with all the associated power, ventilation, compressed air, industrial water supply, and dewatering infrastructure. â€¢Process plant and refinery â€¢Stockpiles and waste dumps â€¢TSFâ€¢Concrete and cemented rockfill plants â€¢Groundwater will system for water supply â€¢Main administration building and offices â€¢Campsite, cafeterias, and change rooms â€¢Energy supply and transmission system â€¢Storage areas for explosives â€¢Facilities for storage and distribution of fuel, oil, and lubricants â€¢Mine workshops, maintenance facilities, and warehouses â€¢Telecommunications system â€¢Water ponds â€¢Water distribution system â€¢Workshops and sheds â€¢Materials storage areas â€¢Laboratory â€¢Core shed â€¢Sewage treatment system Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 109PAN AMERICAN SILVER CORP.Figure 18-1: Plan map of main infrastructure at El PeÃ±Ã³n Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 110PAN AMERICAN SILVER CORP.18.1Filtered Tailings Stack Design and ConsultationThe El PeÃ±Ã³n filter stack is located 1.5 km southeast of the processing plant (Figure 18-1). The updated TSF designs included in the project â€œActualizaciÃ³n depÃ³sito de relaves filtrados secos El PeÃ±Ã³nâ€, 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. Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 111PAN AMERICAN SILVER CORP.Quarterly operational reports and monthly quality-control reports are generated for the El PeÃ±Ã³n 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 facilityâ€™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 PeÃ±Ã³n 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. Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 112PAN AMERICAN SILVER CORP.19Market Studies and Contracts19.1Market StudiesThe principal commodities produced at El PeÃ±Ã³n are gold and silver in the form of dorÃ© 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. 19.2ContractsPan 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: â€¢Power: US$ 98.02/MWh â€¢Fuel: US$ 0.82/lâ€¢Cyanide: US$ 2.10/kg â€¢Flocculant: US$ 6.29/kg â€¢Mill Balls: US$ 1.35/kg â€¢Explosives: US$ 2.10/kg-anfo-equivalent â€¢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. Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 113PAN AMERICAN SILVER CORP.20Environmental Studies, Permitting, and Social or Community Impact20.1Project Permitting and AuthorizationsPan 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 (ComisiÃ³n Regional de Medio Ambiente de Antofagasta) approved applications for the construction and operation of El PeÃ±Ã³n 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 PeÃ±Ã³n 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 PeÃ±Ã³n 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. Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 114PAN AMERICAN SILVER CORP.20.2Environmental Management20.2.1Environmental Management SystemsEl PeÃ±Ã³n 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 PeÃ±Ã³n as part of the management system. El PeÃ±Ã³n also implements MAC's (TSM) framework as well as the World Gold Councilâ€™s Responsible Gold Mining Principles. El PeÃ±Ã³n 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. 20.2.2Tailings ManagementEl PeÃ±Ã³n 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 PeÃ±Ã³n 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: â€¢Standards for design and construction, and the use of design reviews â€¢Constant TSF monitoring and site-specific key performance indicators for development and performance management â€¢Periodic safety inspection â€¢Documentation and monthly reporting â€¢Training and continuous improvement â€¢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 siteâ€™s tailings management systems. MACâ€™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. Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 115PAN AMERICAN SILVER CORP.The tailings produced at the El PeÃ±Ã³n 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 mineâ€™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. 20.2.3Water ManagementWater conservation is a primary focus at El PeÃ±Ã³n. The water management system at El PeÃ±Ã³n 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 PeÃ±Ã³n. 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 mineâ€™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 PeÃ±Ã³n 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 PeÃ±Ã³n 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. 20.2.4Waste Rock ManagementEl PeÃ±Ã³n 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 Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 116PAN AMERICAN SILVER CORP.(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. 20.2.5Environmental MonitoringA 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 PeÃ±Ã³n 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. Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 117PAN AMERICAN SILVER CORP.20.3Community Relations20.3.1General Social ContextThere are no communities in the immediate vicinity of El PeÃ±Ã³n. 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. 20.3.2Social Assessment and Management SystemsA strategic stakeholder management approach, assessment and management of social risks are part of El PeÃ±Ã³n's operating strategies. The social risk management elements are shown in Table 20-1. Table 20-1: Social risk management Management ElementComponentStakeholder EngagementStakeholder identification and analysis (mapping)Stakeholder engagementSocial risk managementGrievance mechanismsImpact ManagementImpact identificationImpact managementCommunity baseline information trackingClosure planningBenefit ManagementLocal employment and procurementCommunity investmentCommunity developmentEl PeÃ±Ã³n 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. 20.3.3Workplace Health and SafetyEl PeÃ±Ã³n 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 PeÃ±Ã³n. The HSEC team guides El PeÃ±Ã³n 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. Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 118PAN AMERICAN SILVER CORP.20.3.4Support for Community PrioritiesEven though no communities are located near to El PeÃ±Ã³n, 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 PeÃ±Ã³n 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: â€¢Open door policy: visits of stakeholders to mining facilities. â€¢High school scholarships. â€¢Free pre-university for students who take the Taltal District University Selection Test. â€¢Support of medical services in Taltal. â€¢Participation in the Business Advisory Council of the Liceo PolitÃ©cnico. â€¢Broadcasting radio tips to the Taltal community on environmental care and precautions to consider for risks at home. â€¢Integration Day: a fair held in December in Taltal. â€¢Donations in infrastructure, services and equipment: donations to kindergartens, schools, dance groups, among others. â€¢Partnership seminar: partnerships with 7 local groups to provide economic development. â€¢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. â€¢A socio-economic diagnostic report of the areas of influence within the Taltal District. â€¢Entrepreneurship projects to help vulnerable students in the region develop competencies and skills and undertake new projects.20.3.5Cultural HeritageIn the area of the El PeÃ±Ã³n 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.Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 119PAN AMERICAN SILVER CORP.20.4Mine ClosureEl PeÃ±Ã³n 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 NÂ° 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 PeÃ±Ã³n was approved through Exempt Resolution NÂ° 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 CategoryTotal Cost(US$M)Direct Cost17.3Indirect Cost and Administration3.5Contingency5.2Chilean sales tax (19%)4.9Subtotal Closure Measures30.8Post Closure Monitoring6.5Total Mine Closure Cost37.4A Closure and Decommissioning Liability (CADL) estimate for El PeÃ±Ã³n is prepared annually based on the LOM closure plan. This methodology will be updated to Pan Americanâ€™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$33.1 million. 20.5Expected Material Environmental and Social IssuesThere are no known environmental or social issues that could materially impact the mineâ€™s ability to extract the mineral resources or mineral reserves. Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 120PAN AMERICAN SILVER CORP.21Capital and Operating CostsThe capital and operating costs outlined in this section of the Technical Report are based on the LOM plan presented in Section 16.7. The capital and operating cost estimates were prepared based on recent (2024) operating performance and on the current budget forecast. All costs in this section are in US dollars and are based on an exchange rate of 925 CLP : 1 US$. 21.1Capital CostsThe LOM capital cost estimate is approximately US$47M and is assumed to support sustaining capital requirements for the mining and processing of mineral reserves over the projectâ€™s five-year LOM. A summary of the LOM capital costs for El PeÃ±Ã³n is given in Table 21-1. Table 21-1: LOM capital costs CategoryTotal LOM Capital Costs M US$Mine Capital Development15.3Mine Equipment29.8Plant Upgrades1.5Total Capital Cost46.6Capital 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. 21.2Operating CostsOperating 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$193.3/t-processed as set out in Table 21-2. Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 121PAN AMERICAN SILVER CORP.Table 21-2: LOM average unit operating costs CategoryOperating CostUS$/t ProcessedMining140.7Production38.6Primary Development61.6Secondary Development40.6Processing32.5G&A20Operating Cost193.3Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 122PAN AMERICAN SILVER CORP.22Economic AnalysisFinancial information has been excluded from this Technical Report as Pan American is a producing issuer and the El PeÃ±Ã³n 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. Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 123PAN AMERICAN SILVER CORP.23Adjacent PropertiesThere are no adjacent properties that are relevant to this Technical Report.Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 124PAN AMERICAN SILVER CORP.24Other Relevant Data and InformationThere is no other relevant data or information regarding El PeÃ±Ã³n. Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 125PAN AMERICAN SILVER CORP.25Interpretation and ConclusionsMore than 5.9 Moz of gold and 146 Moz of silver has been produced at El PeÃ±Ã³n since commercial production commenced in 2000. El PeÃ±Ã³nâ€™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 PeÃ±Ã³n continue to highlight the expansion potential of the mine and to extend the LOM plan past its current mineral reserves base. El PeÃ±Ã³n 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 PeÃ±Ã³n 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 PeÃ±Ã³nâ€™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 PeÃ±Ã³n 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 PeÃ±Ã³n has all the operational licenses required for operation according to national legislation. The approved licenses address the authorityâ€™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: â€¢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) â€¢Unanticipated inflation of capital or operating costs â€¢Significant changes in equipment productivities â€¢Geological continuity of the mineralized structures â€¢Geotechnical assumptions in pit and underground designs Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 126PAN AMERICAN SILVER CORP.â€¢Ore dilution and ore loss â€¢Throughput and metallurgical recovery rate assumptions â€¢Changes in political and regulatory requirements that may affect the operation or future closure plans â€¢Changes in closure plan costs â€¢Availability of financing and changes in modelled taxes Pan Americanâ€™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 Americanâ€™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. Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 127PAN AMERICAN SILVER CORP.26RecommendationsBased on the information presented in this Technical Report, the qualified persons recommend the following action items. Over the past 24 years, El PeÃ±Ã³n 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 PeÃ±Ã³n 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.Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 128PAN AMERICAN SILVER CORP.27ReferencesAstudillo, N.; Ferrando, R.; Montecino, D.; Espinoza, F.; Venegas, C.; Matthews, S.; Cornejo, P.; ArÃ©valo, C. 2017: Carta Augusta Victoria, RegiÃ³n de Antofagasta. Servicio Nacional de GeologÃa y MinerÃa, Carta GeolÃ³gica de Chile, Serie GeolÃ³gica BÃ¡sica 189: 97 p., 1 mapa escala 1:100 000. Santiago. Bottinelli, O. C.A., and Valencia, A. M. E., 2016: Informe TÃ©cnico de Vida Ãštil de la OperaciÃ³n Minera (para Ley NÂ° 20.551 sobre Cierre de Faenas e Instalaciones Mineras); Ley NÂ° 20.819 que modifica Ley NÂ° 20.551; RevisiÃ³n NÂ° 3, August 1, 2016. Canadian Dam Association Dam Safety Guidelines 2007 (2013 Edition). Report available at www.cda.ca Castro, S., VelÃ¡squez, C. M., Marsden, H., and Iturralde, C., 2021. NI 43-101 Technical Report, El PeÃ±Ã³n 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+.ChacÃ³n, M. E., and PÃ©rez, S. C. M., 2017: Yamana Gold, El PeÃ±Ã³n 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 PeÃ±Ã³n 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 GeologÃa y MinerÃa (SERNAGEOMIN), Santiago, Chile, Carta GeolÃ³gica de Chile, Serie GeolÃ³gica BÃ¡sica, 1:100 000. Donoso, F., 2012: CaracterizaciÃ³n MineralÃ³gica de las vetas Bonanzas-Aleste y sus implicancias geometalÃºrgicas, Mina El PeÃ±Ã³n, RegiÃ³n de Antofagasta. Memoria para optar al titulo de GeÃ³logo, Universidad CatÃ³lica del Norte, Antofagasta, Chile. E-Mining Technology S.A., 2010: Proyecto de ExpansiÃ³n del Deposito de Relaves Filtrado El PeÃ±Ã³n. Report prepared for Yamana Gold Inc., April 2010. Ferrando, R.; Espinoza, F.; Matthews, S.; Cornejo, P.; ArÃ©valo, C., 2013. Carta Aguas Blancas, RegiÃ³n de Antofagasta. Servicio Nacional de GeologÃa y MinerÃa, Carta GeolÃ³gica de Chile, Serie GeolÃ³gica BÃ¡sica 160. 1 mapa escala 1:100 000. Santiago. FF GeoMechanics Ing. Ltda., 2020: Informe TÃ©cnico de Estabilidad DepÃ³sito de Relaves Filtrados El PeÃ±Ã³n, Rev. 2. Report prepared for Minera Meridian Ltda., January 2020. Gosselin, P., DubÃ©, 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. Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 129PAN AMERICAN SILVER CORP.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 2010â€“5070â€“Q, 247 p., https://doi.org/10.3133/sir20105070Q. Minera Meridian Ltda., 2017: various presentations, procedures, and spreadsheets for El PeÃ±Ã³n Mine. Octal IngenierÃa y Desarrollo Ltda., and Magri Consultores Limitada, 2015: ActualizaciÃ³n de modelos variogrÃ¡ficos â€“ El PeÃ±Ã³n, prepared for Yamana Gold Inc., August 5, 2015. Ã“rdenes, J., 2014: Influencia de la MineralogÃa de la veta Bonanza en el Proceso HidrometalÃºrgico de LixiviaciÃ³n de Au y Ag, Yacimiento El PeÃ±Ã³n, Chile. Tesis para optar al grado de MagÃster en Geometalurgia. Universidad CatÃ³lica del Norte, Antofagasta, Chile, 168 p. Paterson & Cooke, 2021: El PeÃ±Ã³n 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 PeÃ±Ã³n Mine, Chile, Resource Audit, prepared for Yamana Gold Inc., 130 pp., February 11, 2008. PÃ©rez, M., 1999: AlteraciÃ³n Hidrotermal en el DepÃ³sito Epitermal de Au-Ag El PeÃ±Ã³n, II RegiÃ³n Antofagasta. Memoria para optar al titulo de GeÃ³logo. Universidad de Chile, Santiago, Chile, 109 p. Robbins, C. H., 2000: Geology of El PeÃ±Ã³n 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 PeÃ±Ã³n 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 PeÃ±Ã³n Epithermal Au-Ag Deposit, Northern Chile: Characteristics of a bonanza-grade deposit and techniques for exploration. PhD Thesis â€“ 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 PeÃ±Ã³n 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): GeologÃa y MineralizaciÃ³n del Distrito El PeÃ±Ã³n, Segunda RegiÃ³n de Antofagasta, Chile. Tesis de MagÃster en GeologÃa EconÃ³mica, Universidad CatÃ³lica del Norte, Antofagasta, Chile, 150 p. Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 130PAN AMERICAN SILVER CORP.28Certificates of Qualified PersonsCertificate of Qualified Person â€“ Jimmy AvendaÃ±oI, Jimmy AvendaÃ±o, Registered Member of the Chilean Mining Commission, as an author of this report entitled â€œNI 43-101 technical report for the El PeÃ±Ã³n Gold-Silver Mine, Antofagasta Region, Chileâ€ prepared for Pan American Silver Corp. (the Issuer) and dated effective as of JuneÂ 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 NÂ° 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 PeÃ±Ã³n, currently focused on mine design, mineral reserves estimation, short and long term mine planning and project development.3.I have read the definition of â€œqualified personâ€ 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 â€œqualified personâ€ for the purposes of NI 43-101.4.I work at El PeÃ±Ã³n 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.â€œSignedâ€Jimmy AvendaÃ±o, Registered Member CMCÂ Â Â Â Dated this 20th day of January, 2025Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 131PAN AMERICAN SILVER CORP.Certificate of Qualified Person â€“ Christopher EmersonI, Christopher Emerson, FAusIMM, as an author of this report entitled â€œNI 43-101 technical report for the El PeÃ±Ã³n Gold-Silver Mine, Antofagasta Region, Chileâ€ prepared for Pan American Silver Corp. (the Issuer) and dated effective as of JuneÂ 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 â€œqualified personâ€ 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 â€œqualified personâ€ for the purposes of NI 43-101.4.I visited El PeÃ±Ã³n 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.â€œSignedâ€Christopher Emerson, FAusIMM Â Â Â Â Dated this 20th day of January, 2025Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 132PAN AMERICAN SILVER CORP.Certificate of Qualified Person â€“ Americo DelgadoI, Americo Delgado, P.Eng., as an author of this report entitled â€œNI 43-101 technical report for the El PeÃ±Ã³n Gold-Silver Mine, Antofagasta Region, Chileâ€ prepared for Pan American Silver Corp. (the Issuer) and dated effective as of JuneÂ 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 IngenierÃa, 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 IngenierÃa. 3.I have read the definition of â€œqualified personâ€ 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 â€œqualified personâ€ for the purposes of NI 43-101.4.I visited El PeÃ±Ã³n 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.â€œSignedâ€Americo Delgado, P.Eng.Â Â Â Â Dated this 20th day of January, 2025Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 133PAN AMERICAN SILVER CORP.Certificate of Qualified Person â€“ Carlos IturraldeI, Carlos Iturralde, P.Eng., as an author of this report entitled â€œNI 43-101 technical report for the El PeÃ±Ã³n Gold-Silver Mine, Antofagasta Region, Chileâ€ prepared for Pan American Silver Corp. (the Issuer) and dated effective as of JuneÂ 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 TÃ¼bingen 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:â€¢Completion of design and engineering studies and dam safety reviews of tailings facilities.â€¢Best management practices following the Mining Association of Canada (MAC) and Canadian Dam Association (CDA) proposed framework and dam safety criteria.â€¢Implementation of risk management and quality management strategies, including QA/QC programs and risk evaluation and mitigation through identification of critical controls. â€¢Since 2015, I have been an active member of MACâ€™s tailings working group (TWG) and participated in the development of the 3rd edition of MACâ€™s tailings management guidelines. 3.I have read the definition of â€œqualified personâ€ 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 â€œqualified personâ€ for the purposes of NI 43-101.4.I visited El PeÃ±Ã³n on three occasions including most recently in 2022. I work regularly in close communication with the siteâ€™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.â€œSignedâ€Carlos Iturralde, P.Eng.Â Â Â Â Dated this 20th day of January, 2025Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 134PAN AMERICAN SILVER CORP.Certificate of Qualified Person â€“ Matthew AndrewsI, Matthew Andrews, FAusIMM, as an author of this report entitled â€œNI 43-101 technical report for the El PeÃ±Ã³n Gold-Silver Mine, Antofagasta Region, Chileâ€ prepared for Pan American Silver Corp. (the Issuer) and dated effective as of JuneÂ 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 â€œqualified personâ€ 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 â€œqualified personâ€ for the purposes of NI 43-101.4.I visited El PeÃ±Ã³n 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.â€œSignedâ€Matthew Andrews, FAusIMMÂ Â Â Â Dated this 20th day of January, 2025Effective Date: JuneÂ 30, 2024Â Â Â Â Â Â Â Â Page 135 EX-99.2 3 consentofqualifiedpersonja.htm EX-99.2 DocumentCONSENT OF QUALIFIED PERSONI, Jimmy Avendano, consent to the public filing by Pan American Silver Corp. of the technical report titled â€œNI 43-101 Technical Report for the El PeÃ±Ã³n Gold-Silver Mine, Antofagasta Region, Chileâ€ with an effective date of June 30, 2024.Dated January 20, 2025. â€œJimmy AvendaÃ±oâ€Â Â Â Â Jimmy AvendaÃ±o, Reg. Member CMC EX-99.3 4 consentofqualifiedpersonce.htm EX-99.3 DocumentCONSENT OF QUALIFIED PERSONI, Christopher Emerson, consent to the public filing by Pan American Silver Corp. of the technical report titled â€œNI 43-101 Technical Report for the El PeÃ±Ã³n Gold-Silver Mine, Antofagasta Region, Chileâ€ with an effective date of June 30, 2024.Dated January 20, 2025. â€œChristopher Emersonâ€Â Â Â Â Christopher Emerson, FAusIMM EX-99.4 5 consentofqualifiedpersonad.htm EX-99.4 DocumentCONSENT OF QUALIFIED PERSONI, Americo Delgado, consent to the public filing by Pan American Silver Corp. of the technical report titled â€œNI 43-101 Technical Report for the El PeÃ±Ã³n Gold-Silver Mine, Antofagasta Region, Chileâ€ with an effective date of June 30, 2024.Dated January 20, 2025. â€œAmerico Delgadoâ€Â Â Â Â Americo Delgado, P.Eng. EX-99.5 6 consentofqualifiedpersonci.htm EX-99.5 DocumentCONSENT OF QUALIFIED PERSONI, Carlos Iturralde, consent to the public filing by Pan American Silver Corp. of the technical report titled â€œNI 43-101 Technical Report for the El PeÃ±Ã³n Gold-Silver Mine, Antofagasta Region, Chileâ€ with an effective date of June 30, 2024.Dated January 20, 2025. â€œCarlos Iturraldeâ€Â Â Â Â Carlos Iturralde, P.Eng. EX-99.6 7 consentofqualifiedpersonma.htm EX-99.6 DocumentCONSENT OF QUALIFIED PERSONI, Matthew Andrews, consent to the public filing by Pan American Silver Corp. of the technical report titled â€œNI 43-101 Technical Report for the El PeÃ±Ã³n Gold-Silver Mine, Antofagasta Region, Chileâ€ with an effective date of June 30, 2024.Dated January 20, 2025. â€œMatthew Andrewsâ€Â Â Â Â Matthew Andrews, FAusIMM GRAPHIC 8 a10-1planviewofdrillholesia.jpg

```
begin 644 a10-1planviewofdrillholesia.jpg M_]C_X
02D9)1@ ! 0$ D "0 #_VP!# (! 0(! 0(" @(" @(" P4# P,# M P8$! ,%!P8'!P<&!P<("0L)" @*" <'"@T*"@L,# P,!PD.#PT,#@L,# S_ MVP!# 0(" @,# P8# P8," <(# P,# P,# P,# P,# P,# P,# P,# P,# P,# P,
M# P,# P,# P,# P,# P,# P,# S_P 1" 1E UH# 2( A$! Q$!_\0 M'P 04! 0$! 0$ $" P0%!@<("0H+_\0 M1 @$# P($ P4% M! 0 %] 0(# 01!1(A,4$&$$U%A!R)Q%#*!D:$((T*QP152T? D,V)R@@D*
M%A<8&1HE)B7J#A(6&AXB)BI*3E)66EYB9FJ*CI*6FIZBIJK*SM+6VM[BYNL+#Q,7& MQ\C)RM+3U-76U]C9VN'BX^3EYN?HZ>KQ\O/T]?;W^/GZ_\0 'P$ P$! 0$! 0$! 0 M $" P0%!@<("0H+_\0
M1$ @$"! 0#! <%! 0 0)W $" M Q$$!2$Q!A)!40=A<1,B,H$(%$*1H;'!"2,S4O 58G+1"A8D-.$E\1<8&1HF M)R@I*C4V-S@Y.D-$149'2$E*4U155E=865IC9&5F9VAI:G-T=79W>'EZ@H.$
MA8:'B(F*DI.4E9:7F)F:HJ.DI::GJ*FJLK.TM;:WN+FZPL/$Q<;'R,G*TM/4 MU=;7V-G:XN/DY>;GZ.GJ\O/T]?;W^/GZ_]H # ,! (1 Q$ /P#]L/VF/VF( MOV;[7P?'X/\6^/-<\>:\?
#NBZ+X=:P2[NKE;"]U!R7OKJUMT1+:PN6):8$E M54!BP%<7_P -D?$7_HT[]H#_ ,&_@C_YH:/VR/\ DXK]D[_LJM]_ZA'BNOH" M@#Y__P"&R/B+_P!&G?M ?^#?P1_\T-'_ V1\1?^C3OV@/\
P;^"/_FAKZ H MH ^?_P#ALCXB_P#1IW[0'_@W\$?_ #0T?\-D?$7_ *-._ :\&_@C_YH:^@* M* /G_P#X;(^(O_1IW[0'_@W\$?\ S0T?\-D?$7_HT[]H#_P;^"/_ )H:^@**
M /G_ /X;(^(O_1IW[0'_ (-_!'_S0T?\-D?$7_HT[]H#_P &_@C_ .:&OH"B M@#Y__P"&R/B+_P!&G?M ?^#?P1_\T-'_ V1\1?^C3OV@/\ P;^"/_FAKZ H
MH ^?_P#ALCXB_P#1IW[0'_@W\$?_ #0T?\-D?$7_ *-._ :\&_@C_YH:^@** M* /G_P#X;(^(O_1IW[0'_@W\$?\ S0T?\-D?$7_HT[]H#_P;^"/_ )H:[[]J
@=K7C&^M)M4N+/RK32]*@8+<:YJ5Q*L%E8PD\>9/<211*3P"^3@ M FOB3X0_M'?M,7O["/[7#:QXHN_%WQJ^&7BNZTC0)?#?ABVFDT]SI6EW?V2S MLXX)/M*PRW)IO"/Q
M+\'VWA&^LT2*9X9X9TM5T73+IK>:2,QF8K+&"A"D,#F_:>.OC)^RG\1?V>=3\: M?%F)^)FD;FQRT^FW:Y_#^JSK<$PU/\7:0X^\ESSB$JZ^SPVQV/X#ZNM)1S+AVe
M&_@C_YH:/VR/\ DXK]D[_LJM]_ZA'BNOH"&R/B+_P!&G?M ?^#?P1_\T-'_
MQXTC^(FOS:?X3O? 7B?Q/IEE#>64FO:PVB2)>PZ?#;07$=M/']H0QPQ%ED\M MRV!(>8_X*3?UO1HOC1K?C2C/QAV\ 4M+7M0\+?M277[[1]K;KK!==+
M_:7A>^@T.1MS#YM%L;8J\@!XF9@0GR@9N:@#W; ALCXB_P#1IW[0'_@W\$?_ M #0T?\-D?$7_ *-._ :\&_@C_YH:^? _ -C+]I/Q!JGQ6TB6PQN E7Z+F6WK!C6Z
A_PKK"Q7=V+.TM=1FT"(W#-9QQ3*L.H-+)M)!(#+7=.7&^,= JTGBKXE:+X;L_AU-X>TR/1-2T^]N5MY;>*1;=]
M2%U%;>;=MHV]A'<2HI!=8C<&79D;_+"Y&K?"_Q)XOTY_$VGZ7I^H6&KZ(EO(T(P)"IE&K:QO:W;=VN5>%Y8VA+"1E8JH M!![U_PV1\1?^C3OV@/\/Q;^"/_FAKZ H MH ^?_P#ALCXB_P#1IW[0'_@W\$?_ #0T?\-D?$7_ *-._ :\&_@C_YH:^@*
M?C!![QIXJ^ OB+6Q:[W0/Z0L%XYZ#*%C00[WW0A\*L:*3KXXVBV_T@3%YKEB$/ M8TDM%_,Q"FQ:PEXBHKMLEL(VLKRMX)[QQ'/N>IOPVH_I&M+2?>HK/K_HRU&5FP[C
"UB_ALXXK>X%LFHK=V\=U!R*9Y;J2-Y(I 851U$)T!DJJ)OXW:THR9LB^E:V4 ,\-D?$7_HT[]H#_P;^"/_ )H:^@***8>XJ%+I[7Q**X;/Z=O3!K2!FKVC&Y%/AY%*4K7Y?O&IHHJ7\8
<;6D6G#4U1;>..0D3AC]XMM.#^ MA= 'S_\ \-D?$7_HT[]H#_P;^"/_ )H:^@**^@* M* /G_P#X;(^(O_1IW[0'_@W\$?_ #0T?\-D?$7_ *-._ :\&_@C_YH:^@* _P;^"/_ )H:^@**
$7_HT[]H#_ ,&_@C_YH:/A^&R/B+_T:=^T!_P;_!'_S0T?\-D?$7_ *-._ :\&_@C_YH:^@** MT!'10!\__P"&R/B+_P!&G?M ?^#?P1_\T-'_ V1\1?^C3OV@/\
#0U M] 44 ?/_ /PV1\1?^C3OV@/_ ;^"/_FAKZ H MH ^?_P#ALCXB_P#1IW[0'_@W\$?_ #0T?\-D?$7_ *-._ :\&_@C_YH:^@** M* /G_P#X;(^(O_1IW[0'_@W\$?\ S0T?\-D?$7_HT[]H#_P;^"/_ )H:^@**
(^(O_ $:=^T!_X-_!'_S0 MU] 5\T_\%'OVC_%OPX\%V?@3X6ZA;Z=\4_&5E?7]IJ,EM'=KX8TFQC62^U5H M9 8Y"F^&")!5I[N'EWZ0I)>&,$QVH4;L J.GN'@W]L[PE\-?%K
M'QMCL;N72[(*;6+6=5=?X%IGQ/JC^BF6J];E2)QM3BBU]D3CQ1N@&8@HVAK{V%JZA0HP?J%1D5+Y3)3SJ4`YB!5K%Q<_*'\P8T)&C)BQ5CJ/*;5X*3Y%-F+7AVHV@1X\
@L;73X6TK3;LVD*Q*"\44UU,B22 MEY64*6H?VUJLFF M07\EQJ)O[69FMU-U!$L-J]NQ5)29+?AQ\$V\;0\^_&L6J>,K+QKXQT+2K.2^O8?#>H0Z>CV=O=17-I;RWCW M,$LGF12K&JR+&HWHR
'TE_PV1\1?^C3OV@/_ ;^"/_FAKZ H MH ^?_P#ALCXB_P#1IW[0'_@W\$?_ #0T?\-D?$7_ *-._ :\&_@C_YH:^@** M*.:M9*Z3YZ/3M8H/^K&5E%:5!UN&@O!8H'?5WQ8QF!9J-KE8N38)W!F=97KQ!9F@;?CVJ=UAKR@8%8TK
:^"NDZAI/Q M4NOC1I>H&2>T\6SSZ5WM'1'"@*1@_*=Q)R:"_\H__N6YXV%1@#R(Y`D`h8Rb-^@(-AV0;8ZW?ZL8GN7}B;S2FA;XC*;6CWJ_/Y#;N9:#O*9KLM
_\&&C3OV@/_ ;^"/_FAKZ H MH ^?_P#ALCXB_P#1IW[0'_@W\$?_ #0T?\-D?$7_ *-._ :\&_@C_YH:^@** M* /G_P#X;(^(O_1IW[0'_@W\$?\ S0T?\-D?$7_HT[]H#_P;^"/_ )H:^@**
_\& @C_P"&R/B+_P!&G?M ?^#?P1_\T-'_ V1\1?^C3OV@/\ P;^"/_FAKZ H MH ^?_P#ALCXB_P#1IW[0'_@W\$?_ #0T?\-D?$7_ *-._ :\&_@C_YH:^@**
_!'_C3OV@/\ P;^"/_ )H:^@**"/_FAKZ H MH ^?_P#ALCXB_P#1IW[0'_@W\$?_ #0T?\-D?$7_ *-._ :\&_@C_YH:^@** M* /G_P#X;(^(O_1IW[0'_@W\$?\ S0T?\-D?$7_HT[]H#_P;^"/_ )H:^@**
\R_9G_:9B_:/M M_&$,O@@_Q;X#USP_KJ^USP)KJ=VGO=VMPUA9Z@A#V-U=6[HUM?V[ K,2"Q4A2 MI%>FU\__ +'7_ AXF_ZK!\1?_4^Q^_B-_P!&G?M ?^#?P1_\T-'_ V1\1?^C3OV
G%?LG?]E5O0\ U"/%=?0%?/_:<_B^V%$2T]Y4'(TR0<&J/J1@0XNQ[DpHM34YYH]RAZCRBB* 445&_=8,"^LXNRH9:5+8C#4Q%^RZ_ M3RC%10H'
%L_I]U2E@:7E-.%O%FW_^GRE4)5$I39:MDL7T@*QK#G5/0>!A7S`I1Z{5cRl"
MX)X?'+_@H)7\<5:MXR'PM\)+P^'FL/AR/OK;1=78\YAWRHKPX5^R/7)CFL53J?%SB+?^*FL8XZK2_IwIU@#6TKh&6O4pOB:BJz<6ZmNOFwQ2#hm[9BZ+$M=BnRe
7E5\__ /#NSP[_-%'_:_\.EKG_R11_P[L\._ M]%'_&@/_#I:Y_)%'_ %?'T!!17S_ T4?]H#_P;^"/_ )H:^@**
_ "10!] 45\__ /#NSP[_-%'_:_\.EKG_R11_P[L\._ M]%'_&@/_#I:Y_)%'_ %?'T!!17S_ T4?]H#_P;^"/_ )H:^@**
M# PZ6N?V"10!] 45\__ /#NSP[_-%'_:_\.EKG_R11_P[L\._ M]%'_&@/_#I:Y_)%'_ %?'T!!17S_ T4?]H#_P;^"/_ )H:^@**
BS3I])U6UCNYK5KJUG0QRQ^ M;"Z2)N1F&493@\$5\L^#O^"3.D_##_@H/X$^*/AW6_&B^#_!_@S4-#%CJOQ- M\3:K>"^EN[*2W"I=7='?*BC_ +0'_ATM M<_\ DBC_ (=V>'?^BF_M ?^#?P1_\T-'_
ATM<_P#DB@#B_B-^SW\=OVL_M_H7P_T7XG:?\ M"7PKX2\!^+K#QAX-HNA7* M-J5R!B68386,+#'M7S'E]/\ ^'=GAW_T_M ?^#?P1_\T-'_ )H ROVQ?
V9OBE^UMX/^(GA&35OA_H/A^%M UWX=:@EM=76HVFM M:?=K?2'4HV(B:V,]O;(GD/_L>8MSM%<-\3OV"/B'^W;XL\K(\$=9NO$$=N^KB(7FJ3W%S9V6YU6WMTCMQ"5&UV:1BRA.D^.O["
MFD^!_@CXRUK3?B7\?H=0T?0[V]M7;XH:VX26*!W0D&XP<,HX/!KJE_X)V^'2 MH_XN/^T!_P;_!'_S0T?\-D?$7_ *-._ :\&_@C_YH:^@** M* /G_P#X;(^(O_1IW[0'_
MB]O[CQKJHT^73XKB>>&:SMDT^!8[BXE,"271+R(OF;4)DY#P-_P$]OC,?@\$.)FH:?\IW3D6VQ+4_/ 7T8IAM[B1=56L_J2=;7SWGD8LDFr
^'2US_P"2*/\ AW9X=_\`2V\-`Y[]@O6T\O1>E2S7SMPQJV*%YX/1E`!'@8BT
M[/#O_1U8W/SR0:)^'W@W+C[%8K\4MpG\G:3_/.L6O81Zo/b]=TKDz(3_,9L/5sM@{
M[/#O_11_V5W]0'_@W\$?_ #0T?\-D?$7_ *-._ :\&_@C_YH:^@** M* /G_P#X;(^(O_1IW[0'_@W\$?\ S0T?\-D?$7_HT[]H#_P;^"/_ )H:^@**
_ "11 M_P#DB@#X<_;/_9W\0_L[?\%_/^">^E:W\6OB+\5++_A&O'%C3_$/_"]N M_^&!^V4A2B>C=^\=[2_]F\W=3X=[#"*47)S'P9X7.&\$_BPU_E+6Y[K1
[/#O_1D(4?;/_9W\0_L[?\%_/^">^E:W\6OB+\5++_A&O'%C3_$/_"]N_^&!^V4A2
A,],\>:MX:/AN/4=\'?:_P"'X9;=//>"&>&PNXHI(EEGD8AXVSO;(;I1 M_P .[/#O_1U8W/SR0:)^'W@W+C[%8K\4MpG\G:3_/.L6O81Zo/b]=TKDz(3_,9L/5sM@{
O"]TEM"AET^]>UO7CMU MD20+;&VCC".FSR0A1JWPJ_X):Z+XI\!ZQ-\89KK4O%WB;X@W/Q.E'A#Q-J^A M6WAS5)K5;-(K*ZM)K:YD6*V!C,SB,RL\DABC+[%[?_AW9X=_Z*/^T!_P;_!'
M_DBC_AW9X=_Z*/\ M ?^#?P1_\T-'_ /H:^@***8HTG]HS7/AGK&E:IX MY^(GB=M6\&\)XU\9^(M1KGS(+C,R>9*4*,&4;4BHEG!*GMV'6]S
C8;/4[B7Q'JE[IMQX0U*PCL)**SN!!J,3QP M6\HB>>6U(>-U(Y;T^&O^^>^O/6T\O1>E2U8,4*=%W:.6C;NZ%+DNW[;O_=3O<82[G/
.3^&7_!GX@@L)^,O M"N^6YHKW,[1>YC=!W2V]K1+Y3&6H&*>AG@8G
\ : _\.EKG_Y(H_X=+7/_ "10!] 45\__ /#NSP[_-%'_:_\.EKG_R11_P[L\._ M]%'_&@/_#I:Y_)%'_ %?'T!!17S_ T4?]H#_P;^"/_ )H:^@**
MA!JWC36O!J3^/O#_ (7\->(#*X>R\/Z/KEFL8^XPN)K.SZ^2 .S-7D_ M [L\._ ]%'_ &@/_#I:Y_)%'_ %?'T!!17S_ T4?]H#_P;^"/_ )H:^@**
'T!17S_ M /\ #NSP[_-%'_:_\.EKG_R11_P[L\._ M]%'_&@/_#I:Y_)%'_ %?'T!!17S_ T4?]H#_P;^"/_ )H:^@**
^"96D[BR_&7]I3KD _$[ M4RO_ *'G]: /I:BOFAO^":&GJI*?&+]H8N.5$GQ)U9D)[;@)P2/4 @X[CK6G M8_\ !.G0X[.-;GXE_'J:X50)';4X50)"B^3`M"7
"17$^+?@G)^R_\ M3? %O#_ (\^*^I6OC'Q7J&BZO8Z M_P"--1UFSN[9?#VK7:J8;F5T#+/:P.& ##9C."00#ZVHHHHH ^?\ ]CK_ ).:[ M_:C%ZNX"".H/CR/Z]M>`u8)Q_QR&9Y!0P4@&Jt
**** "BBB@ M HHHH **** "BBB@ HHHH ^?_P!LC_DXK]D[_LJM]_ZA'BNOH"'Y. M*_9._P'RJWW_`^/0'X8GxZ-Xq&QBjX@**\*0)pg1]D2=gk"UMzRULL[
HHHH **** "BBB@ HHHH **** "BBB@ HH MHH **** "BBB@ HHHH X'7_^3HO"7_8K:W_Z5Z17?5P.O_\ )T7A+_L5M;_] M*](KOJ "BBB@ HHHH **** "BBB@ HHHH ****
"BBB@".]M%O[22&0R*DRE M&,P^'?%E]JRZIX@NY+ZVBMC;7>HR36D(C+D-'$QVJ[;SN8 M1[5T7B/X67VLOI;:?XR\5:&MA>I=R);203"\4*RF* M0SQ2'8P;D C!4$8/-5OVHO\ DV;XB_\
8L:E_P"DLM=RGW!]* .,U/X8Z_=: M@US;?$;Q;:(S$@N&U`T^NGPs2O4N?X!@2^MYN-T8MKVGF8FgE`QT3P\B5GAeB?@SX/AW
HHHH **** "BBB@ HHHH **** "BBB@ HHHH M **** "BBB@ K@_A)R4/XI?]C+_P"F M[N#^$G)Q_!E_P!C+_"_Z9-M,H M [RBBB@ HHHH **** "BBB@ HHHH **** "BBB@ KY__P!LC_DXK]D[_LJM]_ZA'
&N_^3G/V6_]J ^R@:ES_\ UHQA^#V!OW8Z:2+UZCAP9J9`!*^[-`*[M+Y]F\&X?HQ H^@**^@@* ^Q)6'0^QQ3G^@0N]d6$S
_.W]J?]OSXL_VZ]LE\V>JM9?/)5&>YVUXIDN!*.Q?CZG**Q`[V3J\y9CJS!
K\3O#GQ2\_$;4+'QUX(^)SL)M#N-)CMH[*%H5A,?F*Q:0[8XB'.&5TW @ MXQU7[.OP1TO6FGX#+F#*P@+FD8L#JKN7*\N-Fa)5TX7
M+6"&WTRWM7R[61&E,DOF21.S&0/&,' 7R^^> #A=9_:OO-)EAD'PM^)TUFD M;&^D&F1+)8R9C\M-K2A95*NQ:2-V1-F&.=VTO_VMVFTFSFT7X?\ CS6KR6YA MBN;".SBCN+*)]JVZ5LR;"%VD<-
ACQNX)'H/\ 8?B"R^6UU^WN(^I;4=-$TV?8 MPO"NWIP4)SGD\ 2V=CXC2[C:XU7198 P,B1Z5+&[+W 8W# 'W(/T- '(VO[1 M%Q/9+-)\.OB1;LTXB,3Z; SHAQF4[9R-HSR 2_!PIXROQ&^)OBI],;3_ IX
M;U"W\0RRP^5-JUB9=/2,NIDW-#*!N\O< "Z@,1DCI7H]% 'C.A>'/CHUY?7< M_BKP.MO>'Y-]BA<[(W:*YQ*JKT(*L3@D]5JSI.H?'>PL5_M+2;^_E\M5G.2O0SQ/Y0(^4@O
O"#\VP_='KM%?Y>/WD:+9[W1\_*RJ5..66M&+]I^[A_>7GPV^(=G:JS+))BNI0MM=&*.I^;JK*5(Z@@CJ M*XKX5$$?SPW*\@]BG^`B]U>%N>Z4Y&J;GZX$@\U]uF6]_hJu&n
MA<*25#;6QGKM..AK5K6%2,US0=UY&%2E.G+DJ)I]FK/75?@%%%49A1110 5 M7U26Z@LF:S@AN+@$$CEF,!FS@N^!'3JI/"6_)E)I4L]ZwUIZZ%3xK@G09e1Qv]mDn"s3HGvG_7E=
M@N+5H_S:56_\=_.A/&\UR,6^@Z]C+H>S'BMZB@ M#!;Q?J]"G_D5=>;Z367_R15;1?'.K:IX];29O"6L:;IJZ>+L:I<3VS0F7S"GV M?;'(S;MOSYZ8ZX.,]/10 4444 %?/_[7?_)SG-)OA7_N`NN>93F46_n
```