S-K 1300 Technical Report Summary

El Brocal Property, District of Colquijirca, Province of Pasco, Peru

Compañía de Minas Buenaventura S.A.A.

SLR Project No.: 233.04029.R0000

Effective Date:

December 31, 2024

Signature Date:

February 24, 2025

Revision: 0

Prepared by:

SLR Consulting (Canada) Ltd.

S-K 1300 Technical Report Summary
El Brocal Property, District of Colquijirca, Province of Pasco, Peru

SLR Project No.: 233.04029.R0000

Prepared by

SLR Consulting (Canada) Ltd.

55 University Ave., Suite 501

Toronto, ON M5J 2H7

for

Compañía de Minas Buenaventura S.A.A.

Cal. Las Begonias Nro. 415

Piso 19 (Reception Floor 19), San Isidro

Lima 27, Perú

Effective Date - December 31, 2024

Signature Date - February 24, 2025

FINAL

SLR Consulting (Canada) Ltd.
55 University Ave., Suite 501, Toronto, ON M5J 2H7

April 23, 2025

Consent of Qualified Person

Re: Form 20-F of Compañia de Minas Buenaventura S.A.A. (the "Company")

SLR Consulting (Canada) Ltd. ("**SLR**"), in connection with the Company's Annual Report on Form 20-F for the year ended December 31, 2024 (the "**Form 20-F**"), consents to:

- the public filing by the Company and use of the technical report titled "S-K 1300 Technical Report Summary, El Brocal Property, District of Colquijirca, Province of Pasco, Peru" (the "**Technical Report Summary**"), with an effective date of December 31, 2024 and issue date of February 24, 2025, that was prepared in accordance with Subpart 1300 of Regulation S-K promulgated by the U.S. Securities and Exchange Commission, as an exhibit to and referenced in the Company's Form 20-F;
- the use of and references to our name, including our status as an expert or "qualified person" (as defined in Subpart 1300 of Regulation S-K promulgated by the U.S. Securities and Exchange Commission), in connection with the Form 20-F and any such Technical Report Summary; and
- any extracts from or a summary of the Technical Report Summary in the Form 20-F and the use of any information derived, summarized, quoted, or referenced from the Technical Report Summary, or portions thereof, that was prepared by us, that we supervised the preparation of, and/or that was reviewed and approved by us, that is included or incorporated by reference in the Form 20-F.

SLR is responsible for authoring, and this consent pertains to, the Technical Report Summary. SLR certifies that it has read the Form 20-F and that it fairly and accurately represents the information in the Technical Report Summary for which it is responsible.

SLR Consulting (Canada) Ltd.

Per:

Jason J. Cox, P.Eng.
Global Technical Director

Table of Contents

Tables

Figures

1.0 Executive Summary

1.1 Summary

SLR Consulting (Canada) Ltd. (SLR) was retained by Compañía de Minas Buenaventura S.A.A. (Buenaventura) to prepare an independent Technical Report Summary (TRS) on the El Brocal Property (the Property or El Brocal), located in the District of Colquijirca, Province of Pasco, Peru. The purpose of this TRS is to support the disclosure of Mineral Resource and Mineral Reserve estimates on El Brocal effective December 31, 2024. This TRS conforms to United States Securities and Exchange Commission's (SEC) Modernized Property Disclosure Requirements for Mining Registrants as described in Subpart 229.1300 of Regulation S-K, Disclosure by Registrants Engaged in Mining Operations (S-K 1300) and Item 601 (b)(96) Technical Report Summary. SLR's Qualified Persons (QP) visited the Property from August 13, 2023 to August 18, 2023 and from July 02, 2024 and July 05, 2024.

Buenaventura is a Peruvian precious metals producer and is listed on the New York Stock Exchange (NYSE: BVN). El Brocal comprises an underground copper operation, an open pit zinc-lead-silver and copper operation, and El Brocal processing plant (the Plant). Historically, the El Brocal open pit and underground operations have been referred to as the Colquijirca-Marcapunta Mining Unit, including the Tajo Norte open pits and Marcapunta underground mine.

The Colquijirca-Marcapunta Mining Unit is owned by Sociedad Minera El Brocal S.A.A. (SMEB), a subsidiary of Buenaventura, with Buenaventura holding a 61.43% ownership stake.

The report is an update of Buenaventura's prior Technical Report Summary for the Property, dated as of May 4, 2022.

1.1.1 Conclusions

The SLR QPs offer the following conclusions by area.

1.1.1.1 Geology and Mineral Resources

- The copper, zinc, lead, silver, and gold deposits at El Brocal are best classified as polymetallic deposits with strong lithological controls. Mineralizing fluids were primarily influenced by lithology and exerted by folding features.
- The Property has been the site of extensive mining and exploration activities, including a gravimetric survey on behalf of SMEB over the Marcapunta property in 2003 and drilling and logging of 4,796 drill holes, totaling approximately 590,107 m drilled.
- The estimates of Mineral Resources were prepared using a domain-controlled, Ordinary Kriging (OK) and Inverse Distance Squared (ID^2) technique with verified drill hole sample data derived from exploration activities conducted mainly by Buenaventura (2004-2024) but including historical drill holes (prior to 2004).
- The drilling and sampling procedures adopted at El Brocal are consistent with generally recognized industry best practices. The resultant drilling pattern is sufficiently dense to interpret the geometry and boundaries of mineralization with confidence. The core samples were collected by competent personnel using procedures that meet generally accepted industry best practices. The process was conducted or supervised by qualified geologists.

- The SLR QP was provided unrestricted access for data verification purposes by Buenaventura during this Mineral Resource estimate audit. The SLR QP is of the opinion that the samples are representative of the source materials and that there is no evidence suggesting the sampling process introduced any bias. Accordingly, there are no known sampling or recovery factors that could materially impact the accuracy and reliability of drilling results.
- The sample preparation, security, and analytical procedures meet industry standards. Additionally, the quality assurance and quality control (QA/QC) program, as designed and implemented at El Brocal, is adequate; therefore, the assay results within the drill hole database are suitable for Mineral Resource estimation purposes. Buenaventura addressed a few QC issues including lack of QA/QC support and some poor results in specific drill campaigns by adequately downgrading Measured and Indicated blocks to Indicated and Inferred blocks.
- Based on data validation and the results of standard, blank, and duplicate analyses, the SLR QP is of the opinion that the sampling methods, chain of custody procedures, and analytical techniques are appropriate and meet acceptable industry standards. The assay and bulk density databases are of sufficient quality for Mineral Resource estimation at the El Brocal deposits.
- The SLR QP reviewed the assumptions, parameters, and methods used to prepare the Mineral Resources estimate and is of the opinion that the Mineral Resources are estimated and prepared in accordance with the definitions in S-K 1300.
- The SLR QP considers the knowledge of the deposit setting, lithologies, structural controls on mineralization, and the mineralization style and setting sufficient to support the Mineral Resource estimate to the level of classification assigned.
- The estimate of Mineral Resources presented was prepared for El Brocal with an effective date of March 31, 2024 for the drilling data and December 31, 2024 for the depletion.
- The Mineral Resource estimate meets the requirement of reasonable prospects for economic extraction, using appropriate metal price assumptions and cut-off grade values.
- At the effective date of December 31, 2024, open pit Mineral Resource estimates, exclusive of Mineral Reserves, are estimated to be:
    - 586 thousand tonnes (kt) of Measured and Indicated Mineral Resources at 0.36% Pb, 0.43% Zn, 1.29% Cu, and 54.4 g/t Ag containing 2.1 kt Pb, 2.5 kt Zn, 7.6 kt Cu, and 1,024 thousand ounces (koz) Ag, and 945 kt of Inferred Resources at 0.08% Pb, 0.08% Zn, 1.37% Cu, and 17.3 g/t Ag containing 0.8 kt Pb, 0.8 kt Zn, 13.0 kt Cu, and 527 koz Ag on a 61.43% Buenaventura attributable ownership basis (BAOB).
    - 954 kt of Measured and Indicated Mineral Resources at 0.36% Pb, 0.43% Zn, 1.29% Cu, and 54.4 g/t Ag containing 3.5 kt Pb, 4.1 kt Zn, 12.3 kt Cu, and 1,688 koz Ag, and 1,539 kt of Inferred Resources at 0.08% Pb, 0.08% Zn, 1.37% Cu, and 17.3 g/t Ag containing 1.2 kt Pb, 1.3 kt Zn, 21.1 kt Cu, and 857 koz Ag on a 100% ownership basis.
- At the effective date of December 31, 2024, underground Mineral Resource estimates, exclusive of Mineral Reserves, are estimated to be:

  - 20,216 kt of Measured and Indicated Mineral Resources at 0.88% Cu, 15.7 g/t Ag, and 0.44 g/t Au containing 178 kt Cu, 10,188 koz Ag, and 285 koz Au, and 15,300 kt of Inferred Resources at 1.34% Cu, 24.4 g/t Ag, and 0.58 g/t Au containing 205 kt Cu, 12,005 koz Ag, and 285 koz Au on a 61.43% BAOB.
  - 32,909 kt of Measured and Indicated Mineral Resources at 0.88% Cu, 15.7 g/t Ag, and 0.44 g/t Au containing 290 kt Cu, 16,584 koz Ag, and 464 koz Au, and 24,907 kt of Inferred Resources at 1.34% Cu, 24.4 g/t Ag, and 0.58 g/t Au containing 334 kt Cu, 19,543 koz Ag, and 463 koz Au on a 100% ownership basis.
- The classification of Mineral Resources at El Brocal appropriately accounts for the inherent level of uncertainty. Potential sources of uncertainty in the estimates include the use of combined medium and high grade domains to generate variograms, which may overstate high-grade continuity, and the slightly higher local error resulting from the absence of soft boundaries in grade estimation. While some uncertainties are linked to resource classification, the SLR QP has not identified any significant technical or economic factors requiring immediate attention.
- The SLR QP is of the opinion that, with consideration of the recommendations summarized in Sections 1 and 23 of this TRS, any issues related to relevant technical and economic factors influencing the prospect of economic extraction can be resolved with further work.

1.1.1.2 Mining and Mineral Reserves

Geotechnical Studies

- The slope design recommendations provided by the SLR QP for the Phase 1 and Phase 2 pit extensions are suitable for incorporation into mine planning and design.
- An improved understanding of the strength of weak rock and structure along the footwall and end walls, and the impact of high rainfall events on slope stability may result in slope design optimization as well as increased design confidence.
- In the opinion of the SLR QP, the recommendations of the pillar recovery study can be used for mine design and estimation of reserves. There is some uncertainty however concerning the plasticity observed in the FLAC3D models that may be related to the rock mass strength.

Open Pit

- At the effective date of December 31, 2024, total open pit El Brocal Proven and Probable Mineral Reserves are estimated to be:
  - 4.1 Mt at 0.52% Pb, 1.07% Zn, 1.57% Cu, 75.87 g/t Ag, and 0.02 g/t Au containing 21.2 kt Pb, 44.1 kt Zn, 64.7 kt Cu, 10,042 koz Ag, and 2.2 koz Au on a 61.43% BAOB.
  - 6.7 Mt at 0.52% Pb, 1.07% Zn, 1.57% Cu, 75.87 g/t Ag, and 0.02 g/t Au, containing 34.5 kt Pb, 71.8 kt Zn, 105 kt Cu, 16,348 koz Ag, and 3.6 koz Au on a 100% ownership basis.
- The El Brocal open pit is regarded as a conventional open pit mine utilizing selective mining methods, with truck haulage to the crusher/ run-of-mine (ROM) stockpile site and waste rock dump. The open pit mining operations will be carried out by a contractor’s workforce and equipment, under the supervision of El Brocal’s technical staff.

- The SLR QP considers that the Mineral Reserve estimation methodology and procedures used at El Brocal are comprehensive and properly documented.
- SLR verified the net smelter return (NSR) block values in the open pit block model using the inputs provided in the NSR calculator spreadsheet, which included figures for metal prices, payabilities and recoveries, costs for transport, treatment, refining, marketing, and royalties for elements Pb, Zn, Cu, Au, and Ag. NSR block values have been applied correctly.
- SLR has reviewed the optimization input parameters and considers the overall pit optimization methodology to align with industry standards.
- The mine plan incorporates modifying factors of 2% dilution and 2% ore loss overall. However, the SLR QP estimates that a 4.5% allowance for external dilution would be more suitable, given the narrow nature and discontinuity of the mineralization.
- SLR observes that the El Brocal Mineral Reserves (100% ownership) decreased significantly by 17.6 Mt from 2023 to 2024, primarily as a result of substantial adjustments to pit slope angles resulting from a reduction of footwall and end wall slope angles following slope instability experienced between 2022 and 2024 and the completion of a geotechnical study by SLR in 2024. Focus is now on the underground Mineral Reserves in the short to long term life of mine (LOM) with the open pit restarting in 2035.
- Mining at the proposed El Brocal open pit will be accomplished with three phases to achieve the final pit limits.
- The SLR QP considers the proposed LOM open pit production schedule to be achievable, however, the annual bench advance rate of 120 m vertically in Phase 1 for the year 2037, equivalent to 20 six metre benches, is considered optimistic. This may affect the planned production targets and possibly extend the life of mine. Close supervision and coordination of mining activities will be required.
- The proposed mine plan will generate 109.5 Mt of waste rock. The adjacent mined out pit will be backfilled, receiving all of waste rock from the new pit.
- The open pit production life is seven years including two years of pre-stripping.
- The SLR QP deems the equipment proposed for the open pit mining operation suitable for the scale of operations, effectively balancing productivity with selectivity.
- It is planned to use a mining contractor for open pit operation. A mining contractor would be responsible, with the guidance of the El Brocal technical staff, for providing suitable equipment including maintenance, manpower, and operational procedures to meet the target production.
- Mining through the underground workings is a manageable risk but may result in unplanned delays and additional costs. Anticipated interaction of the pit with the UG workings must be closely evaluated to maintain a safe working environment. Special criteria and procedures must be developed and implemented to keep personnel and machinery from being exposed to unsafe ground.
- Mining operations in the open pit has been delayed until 2025 while awaiting permitting. While mining can potentially commence in 2025 with permitting, the LOM is currently planned between 2035 (Year 1) and 2041 (Year 7).

Underground

- At the effective date of December 31, 2024, total underground El Brocal Proven and Probable Mineral Reserves are estimated to be:
  - 45.9 Mt at average grades of 1.22% Cu, 19.60 g/t Ag, and 0.59 g/t Au, containing 560 t of Cu, 29 Moz of Ag, and 875 koz of Au on a 61.43% BAOB.
  - 74.7 Mt at average grades of 1.22% Cu, 19.60 g/t Ag, and 0.59 g/t Au, containing 912 t of Cu, 47 Moz of Ag, and 1.4 Moz of Au on a 100% ownership basis.
- The underground Mineral Reserves have increased significantly compared to the previous December 31, 2023 estimate. This is mostly due to Buenaventura incorporating the use of cemented fill in its mining operations to mine pillars as secondary and tertiary stopes.
- The underground mine will be mined using long hole sub-level stoping (SLS) mining methods and cemented backfill will be used to allow mining of secondary and tertiary stopes.
- A cemented hydraulic fill plant is currently operational on site and a paste fill plant is planned to start operations in 2028. A feasibility study on the paste backfill system is currently underway.
- Preliminary uniaxial compressive strength (UCS) testing shows that the required backfill strength for the various stope sizes should be attainable by using copper ore tailings in the paste fill.
- The future paste fill quality must be assured with ongoing test to enable meeting the design backfill strength. The rheology of the paste product is the most important specification and must be controlled rigorously to achieve the desired backfill strength.
- Mineral Reserves were estimated within stope and development designs. The SLR QP has reviewed the Mineral Reserve estimation methodology and is of the opinion that the estimates have been prepared to industry standards.
- The Mineral Reserve estimates include modifying factors of 0.60 m of dilution applied as equivalent linear overbreak slough (ELOS) on secondary and tertiary stopes as well as a 4% dilution factor applied to all stopes to account for backfill dilution, and a mining recovery of 90% applied to all stopes. The SLR QP is of the opinion that the mining recovery for secondary and tertiary is optimistic, particularly since there are currently no supporting data for secondary and tertiary stope mining.
- The underground Mineral Reserve estimate supports a LOM production plan of seventeen years.
- All underground operations, including material haulage, will be undertaken using contractors. Buenaventura will be in charge of providing all technical support and general strategy.
- The SLR QP is of the opinion that the underground LOM plan is achievable based on 2024 equipment key performance indices (KPI) and availability.

1.1.1.3 Mineral Processing

- Ore characteristics from the underground mine changed as the mine was extended into new zones where the copper mineralization is characterized by finer grains. This change negatively affected copper recovery.

- Buenaventura conducted test work on samples of ore from the new zones with the objective of improving copper recovery and was able to show that with a finer grind size and minor modifications to the flowsheet, copper recovery could be significantly improved.
- Buenaventura implemented the changes indicated by the test work in Plant No. 1 and achieved copper recoveries similar to the test work results.
- Buenaventura plans to modify Plant No. 2 similarly.
- The total throughput for Plants No. 1 and No. 2 is reduced from 17,000 tonnes per day (tpd) to 13,500 tpd due to the need for a finer grind. Plant modifications will be implemented by Buenaventura to reach 17,000 tpd capacity.

1.1.1.4 Infrastructure

- The mine site is accessed via a national highway which is a two lane, paved, and well-maintained road. The highway connects the Property to Lima which is located approximately 298 km away.
- The power supply for the Property is obtained from two hydroelectric power stations owned by SMEB and Statkraft. Power is also purchased from Conenhua.
- Freshwater for operations comes from the Pun Run lagoon and the Blanco River. Supernatant water from the tailings deposit is recirculated to the metallurgical process.

1.1.1.5 Environmental, Permitting and Social Considerations

- No known environmental issues that could materially impact the ability to extract the Mineral Reserves were identified by SLR from the documentation available for review.
- Buenaventura has the permits required to continue the mining operations at El Brocal in the short term, which comply with applicable Peruvian permitting requirements associated with the protection of the environment. However, a new permit is required for expansion of production capacity and tailings storage in the long term.
- A new modification to the Environmental Impact Assessment (EIA) for production capacity expansion to 25,000 tpd was submitted to the National Service of Environmental Certification for Sustainable Investments (SENACE for its acronym in Spanish) and is currently under the approval process. Buenaventura informed SLR that approval is anticipated to occur in Q1 2025.
- Environmental approval has already been granted to raise the dam crest of the Huachuacaja Tailings Storage Facility (TSF) to elevation 4,225 MASL, which provides tailings storage capacity until 2039 according to the current mine plan and tailings deposition plan developed by Buenaventura for El Brocal.
- Buenaventura has an Environmental Policy in place that establishes the environmental management guidelines and standards for its projects and operations (last reviewed in 2022).
- There is an Environmental Management Plan (EMP) in place, applicable to operations and construction activities. It includes an environmental monitoring program encompassing water quality (surface water, groundwater, and effluent discharge), air quality, ambient noise, biology, and hydrobiology. Although the EMP includes quarterly

monitoring of groundwater at eight locations, no groundwater quality monitoring results were included within the documentation made available to SLR for review.

- An annual report documenting compliance with the environmental management strategy implemented for the El Brocal operation is submitted to the Peruvian authorities.
- The SLR QP is not aware of any non-compliance environmental issues raised by the Peruvian authorities. Buenaventura stated in the conclusions of the quarterly monitoring reports for 2023 provided to SLR that the monitoring results are in compliance with the environmental regulations in force.
- The SLR QP identified evidence of proper governance of the Huachuacaja TSF, including an Operation, Maintenance and Surveillance (OMS) Manual, water balance modelling, a dam breach study, annual dam safety inspections, geotechnical dam instrumentation, and the appointment of an Engineer of Record (EoR). However, SLR identified lack of independent review carried out for the TSF.
- According to the information reviewed, the site water management system meets the typical objectives applicable to mine operations (i.e., implementation of infrastructure for management of contact and non-contact water protective of the receiving environment).
- A Community Relations Plan is in place and was developed as part of the EMP.
- The key social issues associated with El Brocal operations are high expectations from surrounding communities in terms of support to be provided by El Brocal, and the potential in the future for communities to lose economic benefits associated with the mine operations as the mine approaches the end of its lifecycle.
- Based on the information provided in the reports accessible through the company's website, Buenaventura appears to maintain positive relations with the communities located within the area of influence of its mine operations. Based on the documents provided by Buenaventura and a teleconference held with the El Brocal Social team on January 2, 2024, the company appears to maintain positive working and commercial relationships with the communities within the area of influence of its mine operations. El Brocal has been implementing measures to maximize economic benefits through local contracting, hiring, and community investment initiatives.
- Buenaventura publicly discloses its sustainability performance through integrated annual reports accessible through the company's website.
- The negotiations or agreements with local individuals or groups for El Brocal involve negotiations for land acquisition, required to expand facilities as part of the ongoing and future operation.
- Although there is no formal written commitment to ensure local procurement and hiring, El Brocal pursues maximization of economic opportunities in the communities of its social area of influence through local and regional employment and contracting. El Brocal prioritizes hiring and buying locally, and provides training opportunities to help the local workforce and businesses meet the qualifications requirements.
- A conceptual Mine Closure Plan (MCP) has been developed for all the mine components within the context of Peruvian legislation. The company prepares biannual progress reports documenting the level of progress towards progressive rehabilitation.

1.1.1.6 Capital and Operating Costs and Economics

- The capital and operating cost estimates have been prepared based on recent operating performance and the current operating budget for 2025. The SLR QP has reviewed the capital and operating costs and considers them to be appropriate for the remaining mine life.
- The LOM production schedule in the cash flow model is based on the December 31, 2024, Mineral Reserves.
- The economic analysis using the production, revenue, and costs estimates presented in this TRS confirms that the outcome is a positive cash flow that supports the statement of Mineral Reserves for a 17-year mine life. At LOM long term metal prices of US$4.90/lb Cu, US$2,172/oz Au, US$29.00/oz Ag, US$1.02/lb Pb, and US$1.22/lb Zn, the Mine's Base Case undiscounted pre-tax net cash flow is approximately US$2,390 million, and the undiscounted after-tax net cash flow is approximately US$1,584 million. The pre-tax Net Present Value (NPV) at an 10.18% discount rate is approximately US$942 million and the after-tax NPV at an 10.18% discount rate is approximately US$619 million.

1.1.2 Recommendations

The SLR QPs provide the following recommendations by area.

1.1.2.1 Geology and Mineral Resources

1. Continue drilling at El Brocal areas with opportunities to enhance deposit knowledge and improve confidence in Mineral Resource estimates. This program will aim to refine geological understanding and support future resource classification.
2. Review and update the geological modelling to achieve greater geological continuity in the direction of stratification, and smooth out fragmented bodies.
3. Consider remodelling the grade shells using combined lithology domains where mineralization appears to cross boundaries. Currently, the grade shells have been modelled within separate lithologies, leading to localized discontinuous artifacts.
4. Update the copper oxide and arsenical models if any new drill holes intercept the area.
5. Review the QA/QC charts to remove data erroneously incorporated in some charts; upgrade Mineral Resource classes where appropriate.
6. Manage the lack of QA/QC for historical drilling using a different approach than dealing with poor QC results. Carry out regular (e.g., weekly) QA/QC monitoring, reporting, and signoffs to address QA/QC issues as they arise during drill campaigns.
7. Improve grade estimation by using separate variograms for each estimation domain, using soft contacts where appropriate, and preferably employing the OK technique on the 4x4x3 m block size and reblock to 4x4x6 m.
8. Review the classification downgrading process using the surrounding data for any classification areas with poor QA/QC results.
9. Develop a core storage facility and drill core cataloguing workflow.
10. Improve reconciliation processes by implementing a formal procedure and by forming a multi-disciplinary team to organize and analyze reconciliation results so that production data can be used to calibrate future resource and reserve models.

1.1.2.2 Mining and Mineral Reserves

Geotechnical Studies

1. Implement a geotechnical investigation focused on confirming the strength of the weak footwall, end wall rock, and bedding structures.
2. Develop a weathering profile model.
3. Complete a hydrogeological study focused on the slope scale and the impact of high rainfall events.
4. A thorough review of historical geotechnical data and onsite validation by a geotechnical specialist should be completed to confirm the rock mass strength parameters. This can then feed into an updated underground geotechnical study.
5. SLR recommends initially limiting the number of recoverable secondary stopes to three in all mining zones and rock units. Monitoring of the rock mass response to pillar recovery would be required prior to mining additional secondary stopes up to a maximum of four, the results of which can be used in future geotechnical studies to explore the opportunity to recover additional pillars.

Open Pit

1. Perform pit shell sensitivities for mining, processing, metal price, and discount rate at the next stage of optimization. Running sensitivities at the pit optimization stage can provide insight into the risk factors associated with the open pit mine at an early stage.
2. Given the high vertical advance rate of 120 m in Phase 2 for the year 2037 in the open pit, equivalent to 20 consecutive six-metre benches, the SLR QP recommends spreading the 20 benches over two years to limit the vertical advance rate to a maximum of 80 m per year. In the SLR QP's opinion, the proposed bench advance rates are high and pose a risk to achieve the planned production targets.
3. The accelerated pit development planned for years 2036 and 2037 will demand close supervision and co-ordination of mining activities. The higher mining rate during these years will necessitate additional equipment and manpower, leading to increased mining costs.
4. SLR performed an independent estimate for dilution in the open pit that revealed that approximately 4.5% for external dilution would be more suitable. The SLR estimate of 4.5% dilution corresponds to a dilution skin of 0.5 m. The SLR QP recommends that the estimation of Mineral Reserves should involve a more thorough evaluation of appropriate dilution factors along with reconciliation with the grade control models and monthly reporting. To minimize dilution at waste rock contacts during excavation and material mixing during blasting, adherence to a comprehensive grade control program will be necessary.
5. Add two reverse circulation (RC) drill rigs for grade control.

Underground

1. Diligently collect survey data from secondary stopes, mined in the underground mine to better define the dilution and mining recovery factors and re-evaluate the factors for future Mineral Reserve estimates.

2 Continue ongoing test work using available software (i.e., BackfillPro) which is essential to enable meeting the design backfill strength when backfilling stopes in the underground mine. This can produce cost savings with optimized binder quantities and improve overall mine safety by achieving the design backfill strengths.

3 Scrutiny of the underground backfill system redundancies and contingencies are also important to avoid interruptions in the backfill delivery that can impact the mining cycle. This would include factors such as availability of critical spares for the paste plant and backfill distribution system.

4 Consider use of a semi-portable paste plant which can be custom designed for underground areas that are difficult to access or satellite in nature where paste fill infrastructure might not be justified.

1.1.2.3 Mineral Processing

1 In 2024, the zinc content in the lead concentrate ranged from 10% to 16%. This could incur penalties and it would be better if this zinc was recovered in the zinc concentrate. Investigate methods for improving zinc and lead separation during flotation.

2 Investigate a longer rougher flotation residence time which may be a better solution than having several scavenger stages. Scavenger flotation is usually a final step before tailings and not meant to be a significant part of the process.

1.1.2.4 Environmental, Permitting and Social Considerations

1 Buenaventura's Environmental Policy procedures and protocols to be reviewed and updated at regular intervals to allow for their proper and timely implementation.

2 Include the results of the groundwater monitoring program in the annual environmental compliance reports. If groundwater monitoring is not in effect, develop a plan to review the monitoring program included in the most recent EMP, upgrade it if necessary, and implement the program in 2025. Groundwater monitoring is an integral part of the measures required to protect the natural water resources in the El Brocal area.

3 Conduct additional geochemistry sampling, testing, and characterization of waste rock and tailings prior to mine closure to better understand the potential for acid rock drainage (ARD) and metal leaching (ML) in the long term, and inform the implementation of appropriate closure measures to achieve geochemical stability. The additional testing and characterization would also inform the potential to generate poor quality contact water during operations and the measures to manage it. Using these results, determine if changes are needed to manage water from the El Brocal facilities during operations and in the longer term.

4 The following recommendations are made regarding the TSF:

a. Implement independent review for the TSF to improve transparency, reduce risk, and to meet conformance with the Global Industry Standard on Tailings Management (GISTM). This would include appointing a qualified Independent Technical Reviewer; and also carrying out an independent Dam Safety Review (DSR).

b. Consider developing and implementing a plan to address the recommendations from the annual dam safety inspections, including a register to track its resolution and define the timeline to complete the proposed actions.

c. Conduct a risk assessment for the Huachuacaja TSF including all retaining structures and supporting infrastructure. As part of the risk assessment, consider the need to install and monitor instrumentation in the R4 and R5 auxiliary dams for performance monitoring informed by the risk profiles of these structures. The risk assessment should be updated at least every three years or if there are any significant changes to the facility operations or infrastructure.

d. Address the two main deficiencies noted in the latest DSR by Lara Consulting & Engineering in 2024, namely:

- Absence of geotechnical instrumentation installed to monitor dam performance.
- Absence of appropriate drainage to manage seepage at downstream toe of dam.

5 Historically, closure of mine sites has the potential to result in significant economic impacts. To avoid these impacts, develop a detailed social management plan with a focus on mine closure, which includes ongoing consultation and planning as well as training programs and economic diversification initiatives for community-owned businesses, aiming to mitigate the economic and social effects of mine closure.

6 The El Brocal Social team should continue working and communicating regularly with the other internal departments, such as operations, procurement, communications, and institutional relations, on community-related matters, as their sphere of influence could impact community relationships. For example, the contracting or not of a local business for a specific scope of work or the delay in paying invoices to a local business by supply chain can impact the relationships with communities within the social area of influence.

7 The community engagement plan should be revisited and updated regularly as social risks requiring mitigations also change and evolve constantly.

1.1.2.5 Capital and Operating Costs and Economics

1 Update the metal market overview analysis every two to three years as the most recent available study is from CRU Group in Q2 2021.

1.2 Economic Analysis

The economic analysis contained in this TRS is based on the El Brocal Mineral Reserves on a 100% basis, economic assumptions, and capital and operating costs provided by Buenaventura corporate finance and technical teams and reviewed by SLR. All costs are expressed in Q4 2024 US dollars. Unless otherwise indicated, all costs in this section are expressed without allowance for escalation, currency fluctuation, or interest.

A summary of the key criteria is provided below.

1.2.1 Economic Criteria

1.2.1.1 Physicals

- Mine life: 17 years LOM (between 2025 and 2041)
- El Brocal LOM ore tonnes mined at a 100% basis:
  - o El Brocal Underground
    - Ore tonnes mined: 74,651 kt

        - Cu grade: 1.22%
        - Ag grade: 19.60 g/t
        - Au grade: 0.59 g/t
    - El Brocal Open Pit
        - Ore tonnes mined: 6,702 kt
        - Waste tonnes mined: 109,471 kt
        - Stripping ratio: 16.3 W:O
        - Cu grade: 1.70%
        - Ag grade: 75.87 g/t
        - Au grade: 0.02 g/t
        - Pb grade: 0.52%
        - Zn grade: 1.07%
- Total LOM Processing mill feed: 81,353 kt
    - Au grade: 0.55 g/t
    - Ag grade: 24.23 g/t
    - Cu grade: 1.26%
    - Pb grade: 0.04%
    - Zn grade: 0.09%
    - Plant 1 Cu Concentrate – Mill Feed: 74,651 kt
    - Plant 2 Cu Concentrate – Mill Feed: 4,935 kt
    - Plant 2 Pb-Zn Concentrates – Mill Feed: 1,766 kt
- Contained metal:
    - Au: 1,427 koz
    - Ag: 63,386 koz
    - Cu: 1,026 kt
    - Pb: 34.5 kt
    - Zn: 71.8 kt
- Concentrate production:
    - Plant 1 Cu Concentrate: 3,542 kdmt Cu concentrate at 22.5% Cu grade
    - Plant 2 Cu Concentrate: 395 kdmt Cu concentrate at 20.0% Cu grade
    - Plant 2 Pb Concentrate: 24,476 dmt Pb concentrate at 39.9%% Pb grade
    - Plant 2 Zn Concentrate: 86,359 dmt Zn concentrate at 44.4% Pb grade
- Average LOM Net Recoveries:
    - Au recovery: 27.0%

  - Ag recovery: 51.6%
  - Cu recovery: 85.4%
  - Pb recovery: 28.3%
  - Zn recovery: 53.4%
- Recovered metals:
  - Au: 385 koz
  - Ag: 32,711 koz
  - Cu: 877 kt
  - Pb: 10 kt
  - Zn: 38 kt
- Payable metals:
  - Au: 94 koz
  - Ag: 23,712 koz
  - Cu: 834 kt
  - Pb: 9 kt
  - Zn: 31 kt

1.2.1.2 Revenue

- Revenue is estimated based on metal prices provided to SLR by Buenaventura, which sourced them from Bloomberg Street Consensus Commodity Price Forecasts from January 2025. The Bloomberg metal price forecast is presented in Table 1-1.

Table 1-1: El Brocal Cash Flow Metal Prices

Metal Prices	2025	2026	2027	2028	2029- LT
Gold (US$/oz)	2,000	2,539	2,200	2,172	2,172
Silver (US$/oz)	26.00	32.50	27.50	29.00	29.00
Copper (US$/lb)	4.04	4.43	4.52	4.90	4.90
Lead (US$/lb)	0.86	0.95	1.00	1.02	1.02
Zinc (US$/lb)	1.13	1.25	1.22	1.22	1.22

- Logistics, treatment, and refining charges:
  - Cu concentrate treatment charges: $440.21/t concentrate
  - Pb concentrate treatment charges: $316.12/t concentrate
  - Zn concentrate treatment charges: $317.96/t concentrate
- Third-party royalties: There are no third party royalties applicable to El Brocal operations.

The LOM Net Revenue for this scenario, after treatment and refining charges and third-party royalties, is $8,041 million.

1.2.1.3 Capital Costs

- Total LOM sustaining capital costs of US$382 million.
- Concurrent reclamation between 2025 and 2041 of US$48.83 million.
- Mine closure and water treatment costs between 2042 and 2044 of US$18.47 million.
- Post-closure and water treatment and monitoring costs between 2045 and 2049 of US$0.56 million.

1.2.1.4 Operating Costs

- LOM site unit operating costs average of:
    - Mining (Blended Open Pit & Underground): $32.82/t processed.
    - Processing: $18.33/t processed.
    - Support Services/Site General and Administrative(G&A): $7.47/t processed.
- Total site unit operating costs: $58.62/t processed.
- LOM site operating costs of $4,769 million.
- Other offsite operating expenses:
    - Concentrate selling expenses of 3.63% of Net Revenue
    - Offsite G&A (Corporate allocation): $1.72/t processed.
- Total LOM Unit Operating Costs (site and offsite): $63.93/t processed.

1.2.1.5 Taxation and Royalties

- Corporate income tax rate in Peru is 29.50%.
- Special Mining Tax Contribution (IEM) LOM average rate: 2.5%.
- Mining Tax Royalty LOM average rate: 4.6%.
- Employees' profit sharing participation: 8%.
- There are no third-party royalties applicable to El Brocal operation.
- SLR has relied on a Buenaventura taxation model for calculation of income taxes applicable to the cash flow.

1.2.2 Cash Flow Analysis

SLR prepared a LOM unlevered after-tax cash flow model to confirm the economics of the Property over the LOM (between 2025 and 2041). Economics have been evaluated using the discounted cash flow (DCF) method by considering LOM production on a 100% basis, annual processed tonnages, and copper, gold, silver, lead, and zinc grades. The associated copper, lead, and zinc concentrates grades and metal recoveries, metal prices, operating costs, concentrate transportation, treatment and refining charges, sustaining capital costs, and reclamation and closure costs, and income tax and special mining tax were also considered in the DCF.

The economic analysis prepared by SLR considers a base discount date as at January 1, 2025, using end of year convention discounting.

The base discount rate for the DCF analysis of El Brocal was set by Buenaventura's senior management at 10.18% based on their Weighted Average Cost of Capital (WACC) analysis. Discounted present values of annual cash flows are summed to arrive at the El Brocal Mine Base Case NPV. For this cash flow analysis, the Internal Rate of Return (IRR) and payback are not applicable as there is no negative initial cash flow (no initial investment to be recovered).

To support the disclosure of Mineral Reserves, the economic analysis demonstrates that El Brocal's Mineral Reserves are economically viable at LOM long term metal prices for copper at US$4.90/lb, gold at US$2,172/oz, silver at US$29.00/oz, lead at US$1.02/lb, and zinc at US$1.22/lb. El Brocal's Base Case undiscounted pre-tax net cash flow is approximately US$2,390 million, and the undiscounted after-tax net cash flow is approximately US$1,584 million. The pre-tax NPV at an 10.18% discount rate is approximately US$942 million and the after-tax NPV at an 10.18% discount rate is approximately US$619 million.

The SLR QP confirms that it has also run the economic analysis using flat reserve metal prices, and the analysis demonstrates that the Mine's Mineral Reserves are also economically viable at these prices.

A summary of the LOM after-tax cash flow prepared by SLR is presented in Table 1-2.

Table 1-2: After-Tax Cash Flow Summary

Description	Units	Total LOM
Production		
LOM	years	17
OP Production	'000 tonnes	6,702
Au grade	gr/t	0.02
Ag Grade	gr/t	75.87
Cu Grade	%	1.70%
Pb Grade	%	0.52%
Zn Grade	%	1.07%
UG Production	'000 tonnes	74,651
Au grade	gr/t	0.59
Ag Grade	gr/t	19.60
Cu Grade	%	1.22%
Pb Grade	%	-
Zn Grade	%	-
Concentrate Production		
Cu Concentrate - Plant 1	dmt	3,541,573
Cu Concentrate - Plant 2	dmt	394,807
Pb Concentrate - Plant 2	dmt	24,476
Zn Concentrate - Plant 2	dmt	86,359
Recovered Metal		
Au	oz	385,223

Description	Units	Total LOM
Ag	oz	32,711,263
Cu	tonnes	876,960
Pb	tonnes	9,775
Zn	tonnes	38,333
Metal Prices		
LOM LT price - Au	US$/oz	$2,172
LOM LT price - Ag	US$/oz	$29.00
LOM LT price - Cu	US$/lb	$4.90
LOM LT price - Pb	US$/lb	$1.02
LOM LT price - Zn	US$/lb	$1.22
Cash Flow		
Gross Revenue	**US$ million**	**$9,823**
Transport / TC-RC Charges	US$ million	$(1,782)
Royalties	US$ million	$-
Net Revenue	**US$ million**	**$8,041**
Operating Costs		
Mining (Open Pit + Underground)	US$ million	$(2,670)
Processing Plant	US$ million	$(1,491)
Support Services/Site G&A	US$ million	$(608)
Selling Expenses	US$ million	$(292)
Off-site G&A (Corporate allocation)	US$ million	$(140)
Operating Cash Flow	**US$ million**	**$2,840**
Capital Costs		
Sustaining Capital Costs - El Brocal	US$ million	$(382)
Reclamation & Closure - El Brocal	US$ million	$(68)
Change Working Capital	US$ million	
Pre-Tax Net Cash Flow	**US$ million**	**$2,390**
Taxes - Income Tax	US$ million	$(514)
Taxes - Workers' Participation	US$ million	$(152)
Taxes - IEM/GEM	US$ million	$(140)
After-Tax Cash Flow	**US$ million**	**$1,584**
Project Economics		
Pre-Tax		
Pre-tax NPV at 10.18%	**US$ million**	**$942**
After-Tax		
After-Tax NPV at 10.18%	**US$ million**	**$619**

1.2.3 Sensitivity Analysis

Project risks can be identified in both economic and non-economic terms. Key economic risks were examined by running cash flow sensitivities:

- Copper, gold, silver, lead, and zinc prices
- Copper, gold, silver, lead, and zinc head grades
- Copper, gold, silver, lead, and zinc metallurgical recoveries
- Operating costs
- Capital costs (sustaining and closure)

After-tax NPV at 10.18% sensitivities over the El Brocal Base Case have been calculated for -20% to +20% (for head grade), -5% to +5% (for metallurgical recovery), -20% to +20% (for metal prices), and -10% to +15% (for operating costs and capital costs) variations, to determine the most sensitive parameter for the Property.

The sensitivity analysis at El Brocal shows that the after-tax NPV at an 10.18% base discount rate is most sensitive to metal prices, then head grades and metallurgical recoveries, followed by operating costs and capital costs. The SLR QP notes that a 10% reduction in metal prices reduces the after-tax NPV at 10.18% by 42% for the El Brocal Base Case.

1.3 Technical Summary

1.3.1 Property Description

El Brocal operations are conducted at the Colquijirca Mining Unit and the Huaraucaca Concentrator Plant, located in the district of Tinyahuarco, province of Pasco, department of Pasco, Peru.

The site is geographically positioned at coordinates 10°45'8.9'' S and 76°16'21.8'' W, approximately 289 km northeast of Lima and 10 km from the city of Cerro de Pasco, situated at an altitude of approximately 4,300 metres above sea level (MASL).

El Brocal operates two adjacent mines: Tajo Norte, an open-pit mine producing silver, lead, zinc, and copper ores; and Marcapunta, an underground mine producing copper ore. Ore extracted from these mines is processed in two concentrator plants with a combined treatment capacity of 18,000 tpd.

The Property is accessible via the Carretera Central highway from Lima to Cerro de Pasco and Colquijirca, covering a distance of 298 km. Alternatively, access is available by air from Jorge Chávez International Airport in Lima to the Alférez FAP David Figueroa Fernandini Airport in Huánuco, followed by an 81 km paved road to the site.

1.3.2 Land Tenure

The Colquijirca property comprises a mineral concession grouping known as "Acumulación Brocal," which spans an area of 34,386 ha, along with a beneficiation concession covering 976 ha. These concessions are located in the district of Tinyahuarco, within the Province of Cerro de Pasco, Department of Pasco, Peru. The Colquijirca-Marcapunta production unit is owned by SMEB, a subsidiary of Buenaventura, which holds a 61.43% stake in the company.

1.3.3 History

Colquijirca has a rich mining history, dating back to pre-Inca times when silver and gold ores were exploited. During the Inca and colonial periods, the region became an important source of silver. In the first half of the 20th century, the area was a significant producer of silver and bismuth.

In 1956, the operation was officially registered as Sociedad Minera El Brocal S.A. By 1994, an aggressive exploration program involving diamond drilling led to the identification and quantification of the San Gregorio and Marcapunta Projects. In 2004, Buenaventura increased its ownership stake, becoming the majority shareholder. This acquisition marked a turning point, as Buenaventura's investment provided the resources needed to modernize operations and expand production capacity. In 2008, production capacity was increased to 18,000 tpd. Today, Colquijirca is recognized as one of the largest producers of silver, and copper (with gold as a byproduct) in Peru.

1.3.4 Geological Setting, Mineralization, and Deposit

The Colquijirca Mining District is characterized by a sequence of geological formations, including the Excelsior Group (phyllites), sandstones and red conglomerates of the Mitu Group, marine limestones of the Pucara Group, and the continental facies of the Calera Formation (carbonates and breccias). These units are intruded by the middle Miocene Marcapunta Volcanic Complex.

The Colquijirca Mining District hosts two key types of epithermal mineralization. The first, high-sulphidation Au-Ag mineralization, is found in volcanic rocks of the Marcapunta Complex. It occurs as oxide veinlets and disseminations within vuggy silica, with gold grades between 0.2 g/t and 3 g/t and silver ranging from 10 g/t to 70 g/t. Deeper zones exhibit unoxidized mineralization in sulphide-rich veins containing pyrite, enargite, and other sulphides, with quartz-alunite zones indicating that precious metals precipitated during veinlet formation.

The second type, Cordilleran polymetallic mineralization, occurs in carbonate rocks of the Pucará Group and Pocobamba Formation. These deposits are sulphide-rich, with pyrite, enargite, and chalcocite forming distinct mineralogical zones: a Cu-Au-Ag-rich core, an intermediate Cu-Zn-Pb zone, and an outer Zn-Pb-Ag envelope. Cordilleran veins often intersect earlier high-sulphidation veins, with enargite filling voids and altering earlier quartz-alunite mineralization. These deposits generally show higher silver-to-gold ratios and more pronounced mineralogical zoning compared to high-sulphidation systems.

The mineral deposits of the Colquijirca Mining District, categorized as Cordilleran deposits, are a sub-set of porphyry copper (Cu)-related systems. These deposits typically form in the upper regions of porphyry Cu systems and exhibit distinct zoning. The innermost zones are Cu-dominated, transitioning to intermediate zones rich in chalcopyrite, and outer zones where Zn, Pb, and Ag are the primary economic components. Specifically, in the area between Marcapunta Norte and Colquijirca, the inner zone consists of enargite, the intermediate zone contains chalcopyrite, and the outer zone is characterized by sphalerite and galena.

Cordilleran deposits, also known as Butte-type veins, polymetallic veins, or zoned base metal veins. These deposits are closely associated with calc-alkaline igneous activity, often forming after high-sulphidation epithermal, skarn, or porphyry Cu deposits. They are deposited under epithermal conditions at shallow crustal levels and typically exhibit high sulphide content, often exceeding 50% by weight.

Cordilleran systems feature strong mineralogical zoning, with core zones displaying high-sulphidation characteristics and advanced argillic alteration. These zones often transition into peripheral areas with low-sulphidation assemblages rich in Zn and Pb. The deposits primarily occur as veins or breccia bodies in silicate rocks or as replacement zones in carbonate host rocks, highlighting their distinct and economically significant mineralization patterns.

1.3.5 Exploration

Modern exploration at El Brocal began in 1994–1995 with geophysical surveys by Geoterrex, including electromagnetic (Time Domain EM), gravimetric, and induced polarization (IP) studies in Colquijirca, Marcapunta, and San Gregorio. These surveys identified anomalies in Marcapunta and San Gregorio, which were later confirmed through diamond drilling, helping to define resources at the San Gregorio and Marcapunta projects. Between 2005 and 2007, a 30,000 m diamond drilling campaign targeted anomalies at Marcapunta Norte, successfully increasing Mineral Resources. In 2003, VDG del Perú S.A.C. conducted a gravimetric survey for SMEB to delineate massive sulphide mineralization. This survey built upon a 2002 study, which had identified a strong gravity anomaly linked to enargite and chalcopyrite mineralization. The 2003 survey included 794 gravity readings along 37 lines, refining the southeastern boundary of the anomaly. Results confirmed a C-shaped Bouguer anomaly with a central dip, further supporting the presence of economic mineralization at depth. The Colquijirca area has been extensively explored through mapping, sampling, and drilling. The SLR QP notes that active mining and exploration drilling provide the most relevant and robust data for the current Mineral Resources estimate. The Property benefits from significant in-pit and underground exposure of the orebody, providing reliable geological and structural information.

1.3.6 Mineral Resource Estimates

The Mineral Resource model, updated by Buenaventura in 2024, is based on verified drill hole data and the application of industry standard modelling and grade estimation techniques. Lithology and grade envelopes were modelled using implicit modelling in Leapfrog Geo software. Lithological models combined with mineralized zones were used as estimation domains. These domains were utilized for geostatistical analysis, block modelling, and grade interpolation using OK and ID^2.Key considerations for resource estimation include:

- NSR values derived from metallurgical recoveries, projected long-term metal prices, and operating costs.
- Resource classification into Measured, Indicated, or Inferred categories, based on drilling spacing derived from grade continuity and estimation accuracy and finally adjusted with data quality.

Mineral Resources (excluding Mineral Reserves) for El Brocal Mine with an effective date of December 31, 2024, are summarized in

Table 1-3 to Table 1-6, providing details on tonnage, grades, and contained metal values.

Table 1-3: El Brocal Open Pit Mineral Resource Statement on a 61.43% BAOB – December 31, 2024

Mineral Type	Category	Tonnage (kt)	Grade				Contained Metal			
			(% Pb)	(% Zn)	(% Cu)	(g/t Ag)	Pb (kt)	Zn (kt)	Cu (kt)	Ag (koz)
Lead - Zinc	Measured	42	2.56	2.71	0.29	105.2	1.1	1.1	0.1	142
	Indicated	29	0.68	1.81	0.13	131.5	0.2	0.5	0.0	122
	Measured + Indicated	**71**	**1.79**	**2.34**	**0.23**	**115.9**	**1.3**	**1.7**	**0.2**	**264**
	Inferred	29	0.37	1.26	0.06	143.1	0.1	0.4	0.0	132
Copper	Measured	151	0.18	0.21	1.56	39.4	0.3	0.3	2.4	191
	Indicated	364	0.16	0.14	1.39	48.6	0.6	0.5	5.1	569
	Measured + Indicated	**515**	**0.17**	**0.16**	**1.44**	**45.9**	**0.9**	**0.8**	**7.4**	**760**
	Inferred	917	0.07	0.05	1.41	13.4	0.6	0.4	12.9	394
Total	Measured	193	0.70	0.75	1.28	53.7	1.3	1.5	2.5	333
	Indicated	393	0.20	0.26	1.30	54.7	0.8	1.0	5.1	691
	Measured + Indicated	**586**	**0.36**	**0.43**	**1.29**	**54.4**	**2.1**	**2.5**	**7.6**	**1,024**
	Inferred	945	0.08	0.08	1.37	17.3	0.8	0.8	13.0	527

Notes:
1. The definitions for Mineral Resources in S-K 1300 were followed for Mineral Resources.
2. The Mineral Resource estimate is reported on a 61.43% Buenaventura attributable ownership basis.
3. Mineral Resources were estimated using a topography with an effective date of September 31, 2023, when open pit mining operations stopped.
4. Mineral Resources are reported at an effective date of December 31, 2024, and on an in-situ basis, without application of mining dilution, mining losses, or process losses.
5. The open pit Mineral Resources are contained within a pit shell generated using an NSR internal cut-off value of $32.28/t for Pb-Zn mineralization and $29.71/t for Cu mineralization.
6. The Mineral Resource estimates are based on metal price assumptions of $2,090/oz gold, $26.40/oz silver, $8,800/t copper, $2,090/t lead, and $2,640/t zinc.
7. Metallurgical recoveries are accounted for in the NSR calculations based on historical processing data and are variable as a function of head grade. Metallurgical recoveries at the LOM average head grades are 53% for Zn, 28% for Pb, and 45% for Ag for Plant 2 (Pb-Zn) and 75% for Cu, 60% for Ag, and 20% for Au for Plant 1 (Cu).
8. Bulk density is assigned by both lithology and oxidation state, and ranges from a minimum of 1.8 t/m^3 in oxide material to 3.54 t/m^3 in high sulphide ore, and generally averages from 2.5 t/m^3 to 2.6 t/m^3.
9. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.
10. Mineral Resources are reported exclusive of Mineral Reserves.
11. Numbers may not add due to rounding.

Table 1-4: El Brocal Open Pit Mineral Resource Statement on a 100% Ownership Basis - December 31, 2024

Mineral Type	Category	Tonnage (kt)	Grade				Contained Metal			
			(% Pb)	(% Zn)	(% Cu)	(g/t Ag)	Pb (kt)	Zn (kt)	Cu (kt)	Ag (koz)
Lead - Zinc	Measured	68	2.56	2.71	0.29	105.2	1.7	1.8	0.2	231
	Indicated	47	0.68	1.81	0.13	131.5	0.3	0.9	0.1	199
	Measured + Indicated	**115**	**1.79**	**2.34**	**0.23**	**115.9**	**2.1**	**2.7**	**0.3**	**430**
	Inferred	47	0.37	1.26	0.06	143.1	0.2	0.6	0.0	215
Copper	Measured	246	0.18	0.21	1.56	39.4	0.4	0.5	3.8	312
	Indicated	593	0.16	0.14	1.39	48.6	1.0	0.8	8.2	926
	Measured + Indicated	**839**	**0.17**	**0.16**	**1.44**	**45.9**	**1.4**	**1.4**	**12.1**	**1,237**
	Inferred	1,492	0.07	0.05	1.41	13.4	1.0	0.7	21.1	642
Total	Measured	315	0.70	0.75	1.28	53.7	2.2	2.4	4.0	543
	Indicated	640	0.20	0.26	1.30	54.7	1.3	1.7	8.3	1,125
	Measured + Indicated	**954**	**0.36**	**0.43**	**1.29**	**54.4**	**3.5**	**4.1**	**12.3**	**1,668**
	Inferred	1,539	0.08	0.08	1.37	17.3	1.2	1.3	21.1	857

Notes:

1. The definitions for Mineral Resources in S-K 1300 were followed for Mineral Resources.
2. The Mineral Resource estimate is reported on a 100.0% ownership basis.
3. Mineral Resources were estimated using a topography with an effective date of September 31, 2023, when open pit mining operations stopped.
4. Mineral Resources are reported at an effective date of December 31, 2024, and on an in-situ basis, without application of mining dilution, mining losses, or process losses.
5. The open pit Mineral Resources are contained within a pit shell generated using an NSR internal cut-off value of $32.28/t for Pb-Zn mineralization and $29.71/t for Cu mineralization.
6. The Mineral Resource estimates are based on metal price assumptions of $2,090/oz gold, $26.40/oz silver, $8,800/t copper, $2,090/t lead, and $2,640/t zinc.
7. Metallurgical recoveries are accounted for in the NSR calculations based on historical processing data and are variable as a function of head grade. Metallurgical recoveries at the LOM average head grades are 53% for Zn, 28% for Pb, and 45% for Ag for Plant 2 (Pb-Zn) and 75% for Cu, 60% for Ag, and 20% for Au for Plant 1 (Cu).
8. Bulk density is assigned by both lithology and oxidation state, and ranges from a minimum of 1.8 t/m^3 in oxide material to 3.54 t/m^3 in high sulphide ore, and generally averages from 2.5 t/m^3 to 2.6 t/m^3.
9. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.
10. Mineral Resources are reported exclusive of Mineral Reserves.
11. Numbers may not add due to rounding.

Table 1-5: El Brocal Underground Mineral Resource Statement on a 61.43% BAOB – December 31, 2024

Mineral Type	Category	Tonnage (kt)	Grade			Contained Metal		
			(% Cu)	(g/t Ag)	(g/t Au)	Cu (kt)	Ag (koz)	Au (koz)
Copper	Measured	8,783	0.88	16.6	0.48	77	4,698	136
	Indicated	11,433	0.88	14.9	0.40	101	5,490	149
	Measured + Indicated	**20,216**	**0.88**	**15.7**	**0.44**	**178**	10,188	**285**
	Inferred	15,300	1.34	24.4	0.58	205	12,005	285

Notes:

1. The definitions for Mineral Resources in S-K 1300 were followed for Mineral Resources.
2. The Mineral Resource estimate is reported on a 61.43% Buenaventura attributable ownership basis.
3. Mineral Resources were depleted for production with mined out wireframes to August 31, 2024 and planned production to December 31, 2024, and on an in-situ basis, without application of mining dilution, mining losses, or process losses.
4. The underground Mineral Resources were constrained within optimized shapes using an NSR cut-off value of \$36.03/t to \$47.44/t for the mineralization depending on the mining method and area.
5. The Mineral Resource estimates are based on metal price assumptions of \$1,900/oz gold, \$24/oz silver, and \$8,800/t copper.
6. Metallurgical recoveries are accounted for in the NSR calculations based on historical processing data and are variable as a function of head grade. LOM average recoveries are 88% for Cu, 51% for Ag, and 27% for Au.
7. Bulk density is assigned by both lithology and oxidation state, and ranges from a minimum of 1.8 t/m^3 in oxide material to 3.54 t/m^3 in high sulphide ore, and generally averages from 2.5 t/m^3 to 2.6 t/m^3.
8. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.
9. Mineral Resources are reported exclusive of Mineral Reserves.
10. Numbers may not add due to rounding.

Table 1-6: El Brocal Underground Mineral Resource Statement on a 100% Ownership Basis – December 31, 2024

Mineral Type	Category	Tonnage (kt)	Grade			Contained Metal		
			(% Cu)	(g/t Ag	(g/t Au)	Cu (kt)	Ag (koz)	Au (koz)
Copper	Measured	14,298	0.88	16.6	0.48	126	7,648	222
	Indicated	18,611	0.88	14.9	0.40	164	8,937	242
	Measured + Indicated	**32,909**	**0.88**	**15.7**	**0.44**	**290**	**16,584**	**464**
	Inferred	24,907	1.34	24.4	0.58	334	19,543	463

Notes:

1. The definitions for Mineral Resources in S-K 1300 were followed for Mineral Resources.
2. The Mineral Resource estimate is reported on a 100% ownership basis.
3. Mineral Resources were depleted for production with mined out wireframes to August 31, 2024 and planned production to December 31, 2024, and on an in-situ basis, without application of mining dilution, mining losses, or process losses.
4. The underground Mineral Resources were constrained within optimized shapes using an NSR cut-off value of \$36.03/t to \$47.44/t for the mineralization depending on the mining method and area.
5. The Mineral Resource estimates are based on metal price assumptions of \$1,900/oz gold, \$24/oz silver, and \$8,800/t copper.
6. Metallurgical recoveries are accounted for in the NSR calculations based on historical processing data and are variable as a function of head grade. LOM average recoveries are 88% for Cu, 51% for Ag, and 27% for Au.
7. Bulk density is assigned by both lithology and oxidation state, and ranges from a minimum of 1.8 t/m^3 in oxide material to 3.54 t/m^3 in high sulphide ore, and generally averages from 2.5 t/m^3 to 2.6 t/m^3.

8. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.
9. Mineral Resources are reported exclusive of Mineral Reserves.
10. Numbers may not add due to rounding.

1.3.7 Mineral Reserve Estimates

Table 1-7 and Table 1-8 summarize the El Brocal open pit Mineral Reserve estimate effective December 31, 2024, on a 61.43% BAOB and 100% ownership basis, respectively.

Table 1-7: El Brocal Open Pit Mineral Reserve Statement on a 61.43% Buenaventura Attributable Ownership Basis - December 31, 2024

Mineral Type	Category	Tonnage (000 t)	Grade					Contained Metal				
			Pb (%)	Zn (%)	Cu (%)	Ag (g/t)	Au (g/t)	Pb (kt)	Zn (kt)	Cu (kt)	Ag (koz)	Au (koz)
Copper	Proven	1,640	0	0	2.35	74.75	0.01	0	0	38.5	3,942	0.7
	Probable	1,392	0	0	1.88	38.27	0.03	0	0	26.2	1,712	1.5
	Proven + Probable	**3,032**	**0**	**0**	**2.13**	**58.00**	**0.02**	**0**	**0**	**64.7**	**5,654**	**2.2**
Lead-Zinc	Proven	1,010	2.03	4.08	0	128.77	0.01	20.6	41.3	0	4,183	0
	Probable	75	0.89	3.81	0	85.59	0.02	0.7	2.8	0	205	0
	Proven + Probable	**1,085**	**1.96**	**4.06**	**0**	**125.80**	**0.01**	**21.2**	**44.1**	**0**	**4,388**	**0**
Total	Proven	2,651	0.78	1.56	1.45	95.34	0.01	20.6	41.3	38.5	8,125	0.7
	Probable	1,466	0.05	0.19	1.79	40.68	0.03	0.7	2.8	26.2	1,918	1.5
	Proven + Probable	**4,117**	**0.52**	**1.07**	**1.57**	**75.87**	**0.02**	**21.2**	**44.1**	**64.7**	**10,042**	**2.2**

Notes:
1. The definitions for Mineral Reserves in S-K 1300 were followed for Mineral Reserves.
2. The Mineral Reserve estimate is reported on a 61.43% BAOB, a factor applied to tonnes and contained metal.
3. Mineral Reserves are reported at an effective date of December 31, 2024.
4. Mineral Reserves are estimated at an NSR cut-off value of US$29.71/t for open pit ore sent to Plant 1 (Cu) and US$32.28/t for open pit ore sent to Plant 2 (Pb-Zn).
5. Mineral Reserves were estimated using a topography with an effective date of September 31, 2023, when open pit mining operations stopped.
6. Mineral Reserves are estimated using average long term metal prices of Zn: US$2,400/t, Pb: US$1,900/t, Ag: US$24/oz, Cu: US$8,800/t, and Au: US$1,900/oz.
7. The Mineral Reserve represents feed mill material after dilution and mining recovery.
8. Metallurgical recoveries are accounted for in the NSR calculations based on historical processing data and are variable as a function of head grade. Metallurgical recoveries at the LOM average head grades are 53% for Zn, 28% for Pb, and 45% for Ag for Plant 2 (Pb-Zn) and 75% for Cu, 60% for Ag, and 20% for Au for Plant 1 (Cu).
9. Mineral Reserves incorporate estimates of dilution (2%) and mining recovery (98%) based on a dilution skin of 0.2 m.
10. Bulk density is assigned by both lithology and oxidation state, and ranges from a minimum of 1.8 t/m3 in oxide material to 3.54 t/m3 in high sulphide ore, and generally averages from 2.5 t/m3 to 2.6 t/m3.
11. Numbers may not add due to rounding.

Table 1-8: El Brocal Open Pit Mineral Reserve Statement on a 100% Buenaventura Attributable Ownership Basis - December 31, 2024

Mineral Type	Category	Tonnage (000 t)	Grade					Contained Metal				
			Pb (%)	Zn (%)	Cu (%)	Ag (g/t)	Au (g/t)	Pb (kt)	Zn (kt)	Cu (kt)	Ag (koz)	Au (koz)
Copper	Proven	2,670	0	0	2.35	74.75	0.01	0	0	62.6	6,417	1.1
	Probable	2,265	0	0	1.88	38.27	0.03	0	0	42.7	2,787	2.5
	Total P&P	**4,935**	**0**	**0**	**2.13**	**58.00**	**0.02**	**0**	**0**	**105**	**9,204**	**3.6**
Lead-Zinc	Proven	1,645	2.03	4.08	0	128.77	0.01	33.5	67.2	0	6,809	0
	Probable	122	0.89	3.81	0	85.59	0.02	1.1	4.6	0	334	0
	Total P&P	**1,766**	**1.96**	**4.06**	**0**	**125.80**	**0.01**	**34.5**	**71.8**	**0**	**7,144**	**0**
Total	Proven	4,315	0.78	1.56	1.45	95.34	0.01	33.5	67.2	62.6	13,226	1.1
	Probable	2,387	0.05	0.19	1.79	40.68	0.03	1.1	4.6	42.7	3,122	2.5
	Total P&P	**6,702**	**0.52**	**1.07**	**1.57**	**75.87**	**0.02**	**34.5**	**71.8**	**105**	**16,348**	**3.6**

Notes:

1. The definitions for Mineral Reserves in S-K 1300 were followed for Mineral Reserves.
2. The Mineral Reserve estimate is reported on a 100% ownership basis.
3. Mineral Reserves are reported at an effective date of December 31, 2024.
4. Mineral Reserves are estimated at an NSR cut-off value of US$29.71/t for open pit ore sent to Plant 1 (Cu) and US$32.28/t for open pit ore sent to Plant 2 (Pb-Zn).
5. Mineral Reserves were estimated using a topography with an effective date of September 31, 2023, when open pit mining operations stopped.
6. Mineral Reserves are estimated using average long term metal prices of Zn: US$2,400/t, Pb: US$1,900/t, Ag: US$24/oz, Cu: US$8,800/t, and Au: US$1,900/oz.
7. The Mineral Reserve represents feed mill material after dilution and mining recovery.
8. Metallurgical recoveries are accounted for in the NSR calculations based on historical processing data and are variable as a function of head grade. Metallurgical recoveries at the LOM average head grades are 53% for Zn, 28% for Pb, and 45% for Ag for Plant 2 (Pb-Zn) and 75% for Cu, 60% for Ag, and 20% for Au for Plant 1 (Cu).
9. Mineral Reserves incorporate estimates of dilution (2%) and mining recovery (98%) based on a dilution skin of 0.2 m.
10. Bulk density is assigned by both lithology and oxidation state, and ranges from a minimum of 1.8 t/m^3 in oxide material to 3.54 t/m^3 in high sulphide ore, and generally averages from 2.5 t/m^3 to 2.6 t/m^3.
11. Numbers may not add due to rounding.

The SLR QP is not aware of any risk factors associated with, or changes to, any aspects of the modifying factors such as mining, metallurgical, infrastructure, permitting, or other relevant factors that could materially affect the Mineral Reserve estimate.

The El Brocal underground mine, also known as the Marcapunta mine, is a massive type polymetallic deposit, producing a copper ore containing copper, gold, and silver. Table 1-9 and Table 1-10 summarize the El Brocal underground Mineral Reserve estimate effective December 31, 2024, on a 61.43% BAOB and 100% ownership basis, respectively.

Table 1-9: El Brocal Underground Mineral Reserve Statement on a 61.43% BAOB - December 31, 2024

Category	Tonnage (kt)	Grade			Contained Metal		
		(% Cu)	(g/t Ag)	(g/t Au)	Cu (kt)	Ag (koz)	Au (koz)
Proven	19,702	1.24	21.94	0.69	245	13,900	439
Probable	26,156	1.21	17.84	0.52	315	14,995	436
Proven + Probable	**45,858**	**1.22**	**19.60**	**0.59**	**560**	**28,896**	**875**

Notes:

1. The definitions for Mineral Reserves in S-K 1300 were followed for Mineral Reserves.
2. The Mineral Reserve estimate is reported on a 61.43% BAOB, a factor applied to tonnes and contained metal.
3. Mineral Reserves are reported within mining shapes above marginal cut-off values depending on mining method: SLS with unconsolidated rockfill: US$36.03/t, SLS with hydraulic cemented fill: US$47.44/t, SLS-Primary with paste fill: US$36.36, and SLS-Secondary and Tertiary with paste fill: US$40.32/t.
4. Mineral Reserves are estimated using average long term metal prices of Cu: US$8,800/t, Au: US$1,900/oz, and Ag: US$24.00/oz.
5. Mineral Reserves were depleted for production with mined out wireframes to August 31, 2024 and planned production to December 31, 2024.
6. The Mineral Reserve represents feed mill material after dilution and mining recovery.
7. Metallurgical recoveries are accounted for in the NSR calculations based on historical processing data and are variable as a function of head grade. LOM average recoveries are 88% for Cu, 51% for Ag, and 27% for Au.
8. A dilution equivalent linear overbreak slough (ELOS) of 0.60 m was applied to secondary stopes and an additional factor of 4% was applied to all stopes to account for backfill dilution.
9. A mining recovery factor of 90% was applied to stopes and 100% to development.
10. Numbers may not add due to rounding.

Table 1-10: El Brocal Underground Mineral Reserve Statement on a 100% BAOB - December 31, 2024

Category	Tonnage (kt)	Grade			Contained Metal		
		(% Cu)	(g/t Ag)	(g/t Au)	Cu (kt)	Ag (koz)	Au (koz)
Proven	32,072	1.24	21.94	0.69	399	22,628	715
Probable	42,579	1.21	17.83	0.52	513	24,410	709
Proven + Probable	**74,651**	**1.22**	**19.60**	**0.59**	**912**	**47,038**	**1,424**

Notes:

1. The definitions for Mineral Reserves in S-K 1300 were followed for Mineral Reserves.
2. The Mineral Reserve estimate is reported on a 100% ownership basis.
3. Mineral Reserves are reported within mining shapes above marginal cut-off values depending on mining method: SLS with unconsolidated rockfill: US$36.03/t, SLS with hydraulic cemented fill: US$47.44/t, SLS-Primary with paste fill: US$36.36, and SLS-Secondary and Tertiary with paste fill: US$40.32/t.
4. Mineral Reserves are estimated using average long term metal prices of Cu: US$8,800/t, Au: US$1,900/oz, and Ag: US$24.00/oz.
5. Mineral Reserves were depleted for production with mined out wireframes to August 31, 2024 and planned production to December 31, 2024.

6. Metallurgical recoveries are accounted for in the NSR calculations based on historical processing data and are variable as a function of head grade. LOM average recoveries are 88% for Cu, 51% for Ag, and 27% for Au.
7. A dilution ELOS of 0.60 m was applied to secondary stopes and an additional factor of 4% was applied to all stopes to account for backfill dilution.
8. A mining recovery factor of 90% was applied to stopes and 100% to development.

Underground Mineral Reserves were estimated within stope and development designs. Stopes were designed using Deswik Stope Optimizer (DSO) and were run on Measured and Indicated Mineral Resources only. Stope dimensions used for the optimizations were primarily based on the existing stope dimensions for each zone. The hanging wall and footwall dilution and marginal cut-off values described above were used for the respective mining methods. Mineral Reserves were estimated by calculating the in-situ tonnages and grades within stope and development designs and applying dilution and mining recovery factors to designs above cut-off grade.

The SLR QP is not aware of any other risk factors associated with any aspects of the modifying factors such as mining, metallurgical, infrastructure, or other relevant factors that could materially affect the Mineral Reserve estimate.

1.3.8 Mining Methods

The El Brocal open pit mine is designed to be a conventional open pit mining operation that will use conventional earthmoving equipment in a drill/blast/load/haul operation. The mined ore will be blasted in 6 m benches and loaded with 5.6 m^3 excavators into 25 m^3 dump trucks. Mined ore will be either temporarily stockpiled or fed directly to the crusher. The El Brocal pit will be mined in three phases before reaching its final limits.

The mining production schedule outlines a seven year open pit mine life, from 2035 to 2041, complementing the underground production. This includes two years of pre-stripping, followed by five years of mill feed supply.

Total annual material movement is in the range from 7.8 Mt to 24.6 Mt with the maximum achieved in Year 2 (2036) and Year 3 (2037). Total material movement for the LOM open pit is 116 Mt with an average stripping ratio of 16.3. Total ore production for both Pb-Zn and Cu ores for the LOM is estimated at 6.7 Mt containing 35 kt Pb, 72 kt Zn, 105 kt Cu, 16,348 koz Ag, and 3.6 koz Au metal.

The open pit mining operations will be carried out by a contractor's workforce and equipment, under the supervision of El Brocal's technical staff.

Mining operations in the open pit have been delayed until 2025 while awaiting permitting. While mining can potentially commence in 2025 with permitting, the LOM is currently planned between 2035 (Year 1) and 2041 (Year 7).

The Marcapunta underground mine, referred to as El Brocal Underground, is located in an area dominated by copper ore and all ore material mined from the mine is sent to the copper processing plants. The underground mine has previously been mined using long hole sub-level open stoping mining method where stopes are accessed in a transverse manner from a sub-level drift and mined in retreat. Mined stopes are generally not backfilled, however, pillars are left between stopes for stability. Buenaventura has reviewed the underground deposit and in an effort to recover more ore, is implementing cemented backfill procedures. Using cemented backfill will allow the extraction of pillars as secondary and tertiary stopes.

Stopes are accessed via crosscuts which are connected to a sub-level drift where ore is loaded onto trucks. Top and bottom crosscuts are driven to the extents of the targeted stope package. Stopes are mined starting from the end and progressing in retreat towards the sub-level drift.

Production drilling is undertaken from both the top and bottom accesses via a combination of downholes and uppers. Once mined out the stope will be backfilled using the top crosscut access.

Blasted ore material is mined from the bottom access using 10 tonne scoop trams and transported to a truck loading bay on the level access where it is loaded onto 30 tonne trucks. The ore is then hauled to a surface primary crusher and sent to one of the two processing plants via conveyor belts.

1.3.9 Processing and Recovery Methods

El Brocal operates two independent conventional flotation lines referred to as Plant 1 and Plant 2. Plant 1, with a processing capacity of approximately 9,000 tpd, processes ore from the underground mine and occasionally processed mixed ore from the open pit mine containing Pb, Zn, and Cu to recover copper minerals to a copper concentrate. Plant 2, with a processing capacity of approximately 14,000 tpd, historically processed lead and zinc ores from the open pit mine through coarse and fine flotation circuits to recover lead and zinc minerals to separate lead and zinc concentrates. Test work in 2023 lead to the modification of both plants to optimize copper recovery from underground ore. The modifications included a finer primary grind size, which reduced the overall throughput capacity of the two plants to 13,500 tpd (4,000 tpd for Plant 1 and 9,500 tpd for plant 2)

Copper mineralogy from the underground mine is predominantly enargite, a copper-arsenic sulphide in a ratio of approximately 2.5:1 copper to arsenic, which means that arsenic cannot be separated from the copper. Thus, arsenic recovery to the copper concentrate is similar to the copper recovery and the copper concentrate typically contains 8% to 9% arsenic. Buenaventura did not provide details of penalties charged for arsenic in the copper concentrate.

Additionally, mineralization from the underground mine has become finer grained in recent years, reflecting a move into new zones in the mine. This has been accompanied by lower copper recoveries. For Plant 1, copper recovery to concentrate in the latter half of 2023 and early 2024 (prior to the process modifications) typically ranged from 70% to 80% compared to historical recoveries ranging from 90% to 95%.

As a result of the modifications to the plants to optimize copper recovery from underground ore, copper recoveries improved significantly during the second half of 2024 to range between 81% and 87%. The recovery can be expected to stabilize between 86% and 89% based on test work results, as the operation gains experience with the modified circuits.

Lead and zinc mineralization from the open pit mine consists mainly of galena and sphalerite. There is some high copper mineralization in areas of the open pit mine, but these areas are minor contributors of ore to the plants. Historically, recovery of lead and silver to lead concentrate averaged approximately 35% and 30%, and recovery of zinc to the zinc concentrate averaged approximately 49%. Concentrate grades were poor, with the average grade of the lead concentrate being 26% lead and 8% copper with up to 29% zinc, and the average grade of the zinc concentrate being approximately 45% zinc and 4% lead. The silver grade of the lead concentrate ranged from approximately 400 g/t to 2,500 g/t. According to Buenaventura, silver is 95% payable in the lead concentrate and 62.9% payable in any lead-zinc bulk concentrate produced.

The mineralogy of the ore supplied from the open pit mine is predominantly lead and zinc minerals, galena and sphalerite, with small amounts of copper mineralization. Several ore zones have been identified, all of which have different metallurgical responses. Lead and zinc concentrates are generally of low quality with significant amounts of zinc in the lead concentrate and lead in the zinc concentrate.

Silver in the open pit material is partly recovered to both the lead and zinc concentrates (more so to the lead concentrate), although overall silver recovery (typically 30% to 40%) is not high.

1.3.10 Infrastructure

The El Brocal mine site can be accessed via the Carretera Central highway which is a double laned paved road. The highway connects the mine site to Lima, which is approximately 298 km away. The highway is used to transport personnel and supplies.

The power supply for El Brocal is obtained from three hydroelectric power stations two owned by SMEB and Statkraft and power from Conenhua. Power is transmitted via 138 kV transmission lines. The mine site has five sub-stations which distribute power to the open pit and underground operations, the two concentrators, and various buildings on site.

The source of fresh water for operations (metallurgical) comes from the Pun Run lagoon and the Blanco River. Fresh water is pumped to a reservoir with a capacity of 2,300 m^3, located in the concentrator zone of Huaraucaca, where it distributed for metallurgical and mining operations. The process water recirculation system from the tailings deposit Huachuacaja consists of three pumps that drive the water through three lines of 16", 14", and 12" high density polyethylene (HDPE) piping to the reservoirs of Plant No. 2, Plant No. 1 (1,600 m^3 capacity each), and washing plant respectively, from where the water is distributed to the metallurgical processes.

The mine site is surrounded by communities where operators and mine workers live. The site has three camps which provide accommodation for technical personnel and contractors. The central explosive storage is located near the west limit of the pit. This magazine has a storage capacity of 150 tonnes of ammonium nitrate, 90 tonnes of dynamite, and 130 tonnes of emulsion. The underground magazine is located adjacent to the ventilation raise 04.

The tailings generated by processing the ore are discharged and deposited within the Huachuacaja TSF. The deposit has been operating since 2012, and is currently storing in excess of 35 Mm^3.

1.3.11 Market Studies

The principal commodities that are produced at the El Brocal mine – copper, silver, gold, zinc, and lead – are freely traded at prices and terms that are widely known so that prospects for sale of any production are virtually assured. Copper represents 90% of El Brocal's gross revenue, while silver, gold, zinc, and lead combined contribute 10% of the revenue.

Market information for this section comes from the industry scenario analysis prepared by CRU Group in Q2-2021 for Buenaventura and S&P Global Market Intelligence's Commodity Briefing Reports from January 2025.

The SLR QP has reviewed the market studies and analyses and the results support the assumptions in the TRS.

El Brocal currently has contracts with 316 suppliers for different operating and service activities at the mine site. The SLR QP has not reviewed the various support service contract details at El Brocal, however, Buenaventura has used these contractors in the past and continues to do so.

1.3.12 Environmental Studies, Permitting and Plans, Negotiations, or Agreements with Local Individuals or Groups

Various EIAs and supporting technical reports have been submitted and approved between 2001 and 2023 to identify potential environmental effects resulting from project activities for the construction, operation, and closure stages. The most recent modification of the EIA was submitted for review and approval by the Peruvian authorities in 2023 to grant authorization for production capacity expansion to 25,000 tpd. Government staffing issues have been continuously delaying the review and approval. The SLR QP understands that approval of the EIA modification by SENACE is anticipated to occur in Q1 2025.

The monitoring program implemented at the El Brocal site includes treated effluent discharges, surface water quality, air quality, ambient noise, flora, and fauna. The results of the monitoring program are reported to the Peruvian authorities. A report documenting compliance with the environmental management strategy implemented for the El Brocal operation is prepared annually. Buenaventura stated in the conclusions of the quarterly monitoring reports for 2023 provided to SLR that the monitoring results are in compliance with the environmental regulations in force. SLR was unable to verify if groundwater monitoring is in effect although a groundwater monitoring program is included in the EMP.

El Brocal holds a number of permits in support of the current operations. The permits are Directorial Resolutions issued by the Peruvian authorities upon approval of mining environmental management instruments filed by the mining companies. Buenaventura maintains an up-to-date record of the legal permits obtained to date.

According to available geochemistry results, the majority of waste rock is non-potentially acid generating, although in contrast the majority of the tailings is classified as potentially acid generating. The nature of the geology and mine waste materials at El Brocal indicate that ARD/ML could be an issue at post-closure. However, the geochemical sampling and testing completed to date is limited, and additional geochemistry characterization should be carried out to develop a better understanding and long-term predictions associated with water quality.

The tailings from ore processing are discharged and deposited within the Huachuacaja TSF. Environmental approval has already been granted to raise the dam crest of the Huachuacaja TSF to elevation 4,225 MASL, which provides tailings storage capacity until 2039 according to the current mine plan and tailings deposition plan developed by Buenaventura for El Brocal. El Brocal staff stated that the currently permitted capacity of the TSF is in excess of the stated Mineral Reserve tonnages, and this was confirmed during the review process.

Independent review of the Huachuacaja TSF is necessary to maintain transparency, reduce risk, and to meet conformance with the GISTM. Lack of independent review was identified by SLR as part of the review conducted to prepare this TRS. DSRs should be performed by a third party instead of the EoR.

The site-wide water management system involves separation of contact and non-contact water (i.e., fresh water diversions). Excess contact water that is not used in support of operation activities is discharged to the receiving environment following water quality treatment as applicable depending on the chemistry of the water.

According to the Integrated Annual Report for 2023 published by Buenaventura on its website, the company has an integrated management system covering Quality, Environment, Safety and Occupational Health that allows Buenaventura to manage both operational and support processes. One of the focuses of this approach is supervising activities to prevent environmental impacts and risks to the health and safety of the company's employees.

The direct social area of influence involves five rural communities, namely, Huaraucaca Villa de Pasco, Santa Rosa de Colquijirca, Smelter, Vicco, and Colquijirca. The indirect social area of influence involves two rural communities, namely, Ucrucancha and Sacra Familia. The EMP includes a program for the mitigation of social impacts. The Community Relations Plan, which is included in the EMP, integrates the social mitigation program and the management of social impacts related to the El Brocal operations. The SLR QP found evidence of a community engagement plan and a community relations protocol in the documentation provided to SLR as part of this review.

El Brocal has Permanent Information Offices in Colquijirca and Huaraucaca where communities from the social area of influence can learn about the mine operations and raise questions and concerns. It is noted that discontent among members of the communities has the potential to result in blockades and shutdowns depending on the duration of the blockades.

A conceptual MCP was approved in 2009 for the El Brocal components within the context of the Peruvian legislation and has subsequently been amended or updated four times. The MCP addresses temporary, progressive, and final closure actions, and post closure monitoring. A closure cost estimate was developed and included in the MCP. The total financial assurance for progressive closure, final closure, and post closure is calculated by Buenaventura according to the Peruvian regulations (Supreme Decree D.S. N° 262-2012-MEM/DM).

1.3.13 Capital and Operating Cost Estimates

The El Brocal Mine is an operating mine; therefore, capital and operating cost estimates have been prepared based on recent operating performance and the current operating budget for 2025. The SLR QP considers these cost estimates to be reasonable, as long as the production targets are realized. All costs are expressed in Q4 2024 US dollars and are based on an exchange rate of PEN$3.75 per US$1.00.

Since El Brocal is an operating mine, all capital costs are categorized as sustaining. Based on the SLR QP's review, the sustaining capital costs are estimated to the equivalent of an Association for the Advancement of Cost Engineering (AACE) Class 3 estimate with an accuracy range of -15% to +20%.

Total LOM sustaining capital costs are estimated to be US$381.7 million between years 2025 and 2041. The summary breakdown of the estimated sustaining capital costs required to achieve the Mineral Reserve LOM production are presented in Table 1-11.

Table 1-11: Sustaining Capital Costs Summary

Cost Component	Value (US$ millions)
Open Pit Mining	17.6
Tailings Dam	113.1
Processing Plant	30.6
Other Sustaining	8.4
Underground Mining	101.7
Water Management	5.5
Infrastructure	9.4
Other Assets Sustaining Capital	95.5

Cost Component	Value (US$ millions)
Total Sustaining Capital Cost	**381.7**

Notes:
1. Sum of individual values may not match total due to rounding.

The open pit mining cost includes remedial work on a collapsed wall, moving of a railway line in 2036 and 2037 to allow expansion of the pit, and moving of electrical lines. The tailings dam costs consist of two additional tailings dam expansions which are planned for 2025/2026 and 2031/2032, and moving the water treatment plant in 2028. The construction of a paste plant is included in the Underground Mining costs and all new equipment purchase and overhauls were accounted for in Other Assets Sustaining Capital.

Mine closure and concurrent reclamation costs for the LOM scenario presented in this TRS are based on Buenaventura's environmental reclamation estimate for the El Brocal Mine provided to SLR in Q4 2024, totalling US$67.9 million, which is based on a concurrent reclamation and closure plan described in section 17.6 of this TRS.

The operating costs were estimated based on the actual operating expenditures at the El Brocal Mine and the current operating budget 2025. As El Brocal has been in operation for a number of years, the level of project definition for the operating cost estimates is very high. The operating costs are estimated to the equivalent of an AACE Class 1 estimate with an accuracy range of -5% to +10%, although it is noted that AACE does not typically apply to operating costs.

The LOM site operating costs for mining, processing, and G&A activities are summarized in Table 1-12. Operating costs total US$4,769 million over the LOM, averaging US$281 million per year between years 2025 and 2041, all years at full production.

Operating costs for mining, processing, and G&A activities were categorized into fixed and variable costs.

The mining costs include all labour, supplies, consumables, and equipment maintenance to complete underground and open pit mining related activities, such as drilling, blasting, loading, and hauling. Fixed costs include workers' salaries, protective equipment, and supplies while variable costs include contractor costs, equipment rentals, and consumables such as diesel, explosives, and drill bits and steel. Variable costs were applied to tonnages mined over the LOM.

The processing costs include all labour, supplies, and consumables to complete all processing related activities, such as crushing, grinding, flotation, and thickening at the two flotation concentrator plants. Fixed costs consist primarily of labour costs while variable costs account for consumables.

The administrative expense includes all labour, supplies, consumables, and equipment maintenance to complete administrative, finance, human resources, environmental, safety, supply chain, security, site services, camp and kitchen, and travel related activities. These costs were applied as fixed costs over the LOM.

Table 1-12: LOM Operating Costs Summary

Cost Component	LOM Total (US$ millions)	Average Annual[1] (US$ millions)	LOM Average (US$/t milled)
Mining	2,670	157	32.82
Processing	1,491	88	18.33
G&A / Site Services	608	36	7.47
Total Site Operating Cost	**4,769**	**281**	**58.62**

Notes:

1. For fully operational years (2025 – 2028)
2. Sum of individual values may not match total due to rounding.

2.0 Introduction

SLR Consulting (Canada) Ltd. (SLR) was retained by Compañía de Minas Buenaventura S.A.A. (Buenaventura) to prepare an independent Technical Report Summary (TRS) on the El Brocal Property (the Property or El Brocal), located in the District of Colquijirca, Province of Pasco, Peru. The purpose of this TRS is to support the disclosure of Mineral Resource and Mineral Reserve estimates at El Brocal effective December 31, 2024. This TRS conforms to United States Securities and Exchange Commission's (SEC) Modernized Property Disclosure Requirements for Mining Registrants as described in Subpart 229.1300 of Regulation S-K, Disclosure by Registrants Engaged in Mining Operations (S-K 1300) and Item 601 (b)(96) Technical Report Summary.

Buenaventura is a Peruvian precious metals producer and is listed on the New York Stock Exchange (NYSE: BVN). El Brocal comprises an underground copper operation, an open pit zinc-lead-silver operation, and El Brocal processing plant (the Plant). Historically, the El Brocal open pit and underground operations have been referred to as the Colquijirca-Marcapunta Mining Unit, including the Tajo Norte open pits and Marcapunta underground mine.

The Colquijirca-Marcapunta Mining Unit is owned by Sociedad Minera El Brocal S.A.A. (SMEB), a subsidiary of Buenaventura, with Buenaventura holding a 61.43% ownership stake.

2.1 Site Visits

The SLR Qualified Persons (QP) responsible for preparation of this TRS visited the site from August 13, 2023 to August 18, 2023 and from July 02, 2024 and July 05, 2024. During the site visits, SLR QPs inspected the open pit mining operations, the underground mining operations, the processing plant, the chemical laboratory, concentrator facilities, tailings storage facilities (TSF), and the surface infrastructure and held discussions with Buenaventura personnel.

The SLR geology QP examined drill holes and mineralized open pit exposures, reviewed core logging, sampling protocols, and grade control procedures. In addition, discussions were held with the Buenaventura mine geologist staff on the geological setting of the deposit as well as the geological interpretations and mineralization control. The SLR geology QP also visited the Buenaventura metallurgical laboratory and reviewed the sample preparation and assaying procedures.

The SLR mining engineer QPs visited the open pit and underground mining areas, mine fleet operations centre, the TSF, the equipment workshops, and the cemented hydraulic plant. The SLR mining engineer QPs had discussions with Buenaventura mining technical staff to review the Mineral Reserve estimation procedures including selection and basis of inputs, life of mine (LOM) production schedule methodology, operating costs budgeting, and the general state of operations.

The SLR metallurgical QP visited the processing facilities, TSFs and surface infrastructure, and assay and metallurgical laboratory, and discussed the process flow sheet and historical production figures with Buenaventura metallurgical staff, and reviewed metallurgical test work and metallurgical testing procedures, as well as forecasting methods based on metallurgical test work.

2.2 Sources of Information

During the preparation of this TRS, discussions were held with personnel from Buenaventura:

- Marco Antonio Chavez, Long term Mine Planner, Buenaventura.

- Dante Gavidia, Director of Strategic Planning, Buenaventura.
- Mercedes Paiva Coronado, Planning Engineer, Buenaventura.
- Cosme Soto, Resource Modelling Superintendent, Buenaventura.

The documentation reviewed, and other sources of information, are listed at the end of this TRS in Section 24.0 References.

This current TRS updates a TRS on the Pre-Feasibility Study (PFS) for the Property by SRK Consulting (Peru) S.A.'s (SRK) dated on the May 4, 2022 (SRK 2022).

2.3 List of Abbreviations

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

μ	micron
μg	microgram
a	annum
A	ampere
bbl	barrels
Btu	British thermal units
°C	degree Celsius
C$	Canadian dollars
cal	calorie
cfm	cubic feet per minute
cm	centimetre
cm^2	square centimetre
d	day
dia	diameter
dmt	dry metric tonne
dwt	dead-weight ton
°F	degree Fahrenheit
ft, ‘	foot
ft^2	square foot
ft^3	cubic foot
ft/s	foot per second
g	gram
G	giga (billion)
Gal	Imperial gallon
g/L	gram per litre
Gpm	Imperial gallons per minute
g/t	gram per tonne
gr/ft^3	grain per cubic foot
gr/m^3	grain per cubic metre
ha	hectare
hp	horsepower
hr	hour
Hz	hertz
in., “	inch
in^2	square inch
J	joule
k	kilo (thousand)
kcal	kilocalorie
Kg	kilogram
Km	kilometre
km^2	square kilometre
km/h	kilometre per hour
kPa	kilopascal
kVA	kilovolt-amperes
kW	kilowatt
kWh	kilowatt-hour
L	litre
lb	pound
L/s	litres per second
m	metre
M	mega (million); molar
m^2	square metre
m^3	cubic metre
MASL	metres above sea level
m^3/h	cubic metres per hour
mi	mile
min	minute
μm	micrometre
mm	millimetre
mph	miles per hour
Mtpa	million tonnes per annum
MVA	megavolt-amperes
MW	megawatt
MWh	megawatt-hour
oz	Troy ounce (31.1035g)
oz/st, opt	ounce per short ton
ppb	part per billion
ppm	part per million
psi	pound per square inch
psig	pound per square inch gauge
RL	relative elevation
s	second
S./	Peruvian Sol
st	short ton
stpa	short ton per year
stpd	short ton per day
t	metric tonne
tpa	metric tonne per year
tpd	metric tonne per day
US$	United States dollar
USg	United States gallon
USgpm	US gallon per minute
V	volt
W	watt
wmt	wet metric tonne
wt%	weight percent
yd^3	cubic yard
yr	year

3.0 Property Description

3.1 Location

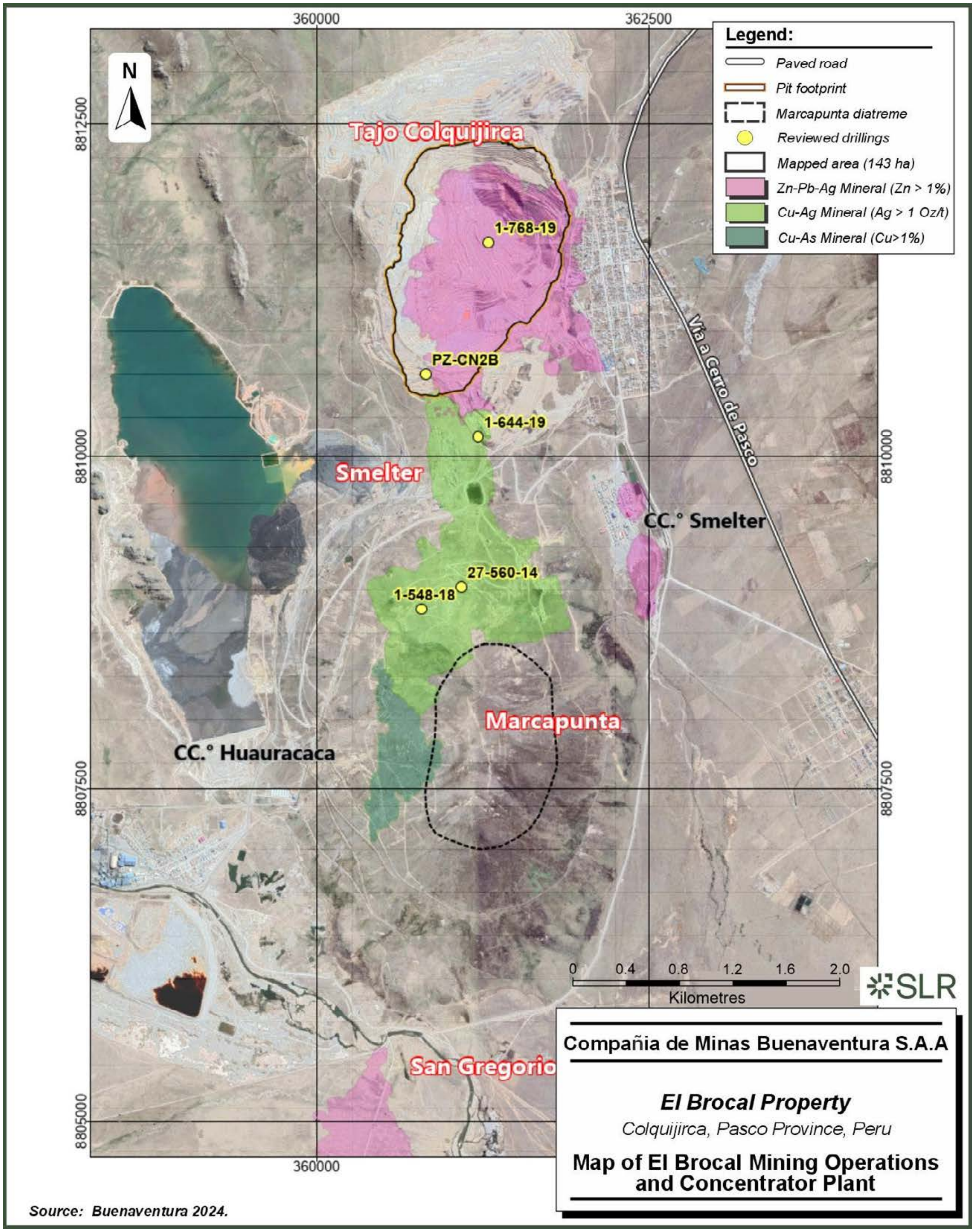
The El Brocal production unit is located in the district of Tinyahuarco, province of Cerro de Pasco, department of Pasco, Peru. It is situated at coordinates latitude 10°45'8.9'' S and longitude 76°16'21.8'' W, (360,837.5 m E – 8811101.21 m S using Universal Transverse Mercator (UTM) WGS84 datum Zone 18L) approximately 289 km from Lima and 10 km from the city of Cerro de Pasco, at an altitude of approximately 4,300 MASL (Figure 3-1)..

SMEB conducts its mining operations using the open pit method at the Tajo Norte mine (Colquijirca) (silver, lead, zinc and copper ores) and the underground method at the Marcapunta Norte mine (copper ores). The Marcapunta Sur and San Gregorio are the company's most important exploration projects (SMEB 2024). Figure 3-2 shows the mining unit's map and its main mining operations.

Figure 3-1: Location Map

Source: SLR 2024.

Figure 3-2: Map of El Brocal Mining Operations and Concentrator Plant



3.2 Peruvian Mining Law

3.2.1 Mineral Rights

The term "mineral rights" refers to mineral concessions and mineral claims. Other rights under the General Mining Law, such as beneficiation concessions, mineral transportation concessions, and general labour concessions are not considered under said term.

According to Peruvian General Mining Law (the Law):

1 Mineral concessions grant their holder the right to explore, develop, and mine metallic or non-metallic minerals located within their internal boundaries.

2 A mineral claim is an application to obtain a mineral concession. Exploration, development, and exploitation rights are obtained once the title to the concession has been granted, except in those areas that overlap with priority claims or priority mining concessions. Upon completion of the title procedure, resolutions awarding title must be recorded with the Public Registry to create enforceability against third parties and the Peruvian State.

3 The beneficiation concession grants the right to use physical, chemical, and physical-chemical processes to concentrate minerals or purify, smelt, or refine metals.

4 Mineral rights are separate from surface rights. They are freely transferable.

5 A mineral concession by itself does not authorize the titleholder to carry out exploration or exploitation activities, but rather the titleholder must first:

   a) Obtain approval from the Culture Ministry of the applicable archaeological declarations, authorizations, or certificates.

   b) Obtain the environmental certification issued by the competent environmental authority, subject to the rules of public participation.

   c) Obtain permission for the use of land (i.e., obtain surface rights) by agreement with the owner of the land or the completion of the administrative easement procedure, in accordance with the applicable regulation.

   d) Obtain the applicable governmental licences, permits, and authorizations, according to the nature and location of the activities to be undertaken.

   e) Carry out consultations with Indigenous Peoples under the Culture Ministry, should there be any communities affected by potential exploitation of the mineral concession, as per International Labour Organization (ILO) Convention 169.

6 Mineral rights holders must comply with the payment of an annual fee equal to $3.00/ha, on or before June 30 of each year.

7 Holders of mineral concessions must meet a Minimum Annual Production Target or a Minimum Annual Investment before a statutory deadline. When such deadline is not met, a penalty must be paid as described below:

   a) Mineral concessions must meet a statutory Minimum Annual Production Target of 1 Tax Unit (Unidad Impositiva Tributaria, or UIT) per hectare per year for metallic concessions, within a statutory term of ten years from the title date. The applicable penalty is 2% of the Minimum Annual Production Target per hectare per year as of the 11th year until the 15th year. Starting in the 16th year and until the 20th year, the applicable penalty is 5% of the Minimum Annual Production Target per year and starting in the 21st year until the 30th year, the applicable penalty is 10% of the Minimum Annual Production Target per year. After the 30th year, if the Minimum Annual Production Target is not met, the mining concession will lapse automatically.

8 Mineral concessions may not be revoked as long as the titleholder complies with the Good Standing Obligations according to which mineral concessions will lapse automatically if any of the following events take place.

a) The annual fee is not paid for two consecutive years.

b) The applicable penalty is not paid for two consecutive years.

c) A concession expires if it does not reach the minimum production in Year 30 and cannot justify the non-compliance up to five additional years due to reasons of force majeure described in the current legislation.

9 Agreements involving mineral rights (such as an option to acquire a mining lease or the transfer of a mineral concession) must be formalized through a deed issued by a public notary and must be recorded with the Public Registry to create enforceability against third parties and the Peruvian State.

3.2.2 Beneficiation Concessions

According to the Law:

1 The beneficiation concession grants the right to use physical, chemical, and physical-chemical processes to concentrate minerals or purify, smelt, or refine metals.

2 As from the year in which the beneficiation concession was requested, the holder shall be obliged to pay the Mineral concession Fee in an annual amount according to its installed capacity, as follows:

i. 350 tpd or less: 0.0014 of one UIT per tpd.

ii. from more than 350 tpd to 1,000 tpd: 1.00 UIT

iii. from 1,000 tpd to 5,000 tpd: 1.5 UIT

iv. for every 5,000 tpd in excess: 2.00 UIT

v. “tpd” refers to the installed treatment capacity. In the case of expansions, the payment that accompanies the application is based on the increase in capacity.

3.2.3 Surface Rights and Easements

According to the General Mining Law and related legislation, surface rights are independent of mineral rights.

The Law requires that the holder of a mineral concession either reach an agreement with the landowner before starting relevant mining activities (i.e., exploration, exploitation, etc.) or complete the administrative easement procedure, in accordance with the applicable regulation.

Surface property is acquired through

1 The transfer of ownership by agreement of the parties (derivative title), or

2 Acquisitive prescription of domain (original title).

Temporary rights to use and/or enjoy derived powers from a surface property right may be obtained through usufruct (a right to temporarily use and derive revenue) and easements.

3.3 Land Tenure

El Brocal comprises a group of mining concessions collectively referred to as "Acumulación Brocal" and a beneficiation concession (concentrator). These concessions cover the area of the mines and exploration projects. El Brocal's concessions have an area of approximately 34,386.8 ha.

Information on the Property concessions is summarized in Table 3-1 and illustrated in Figure 3-3.

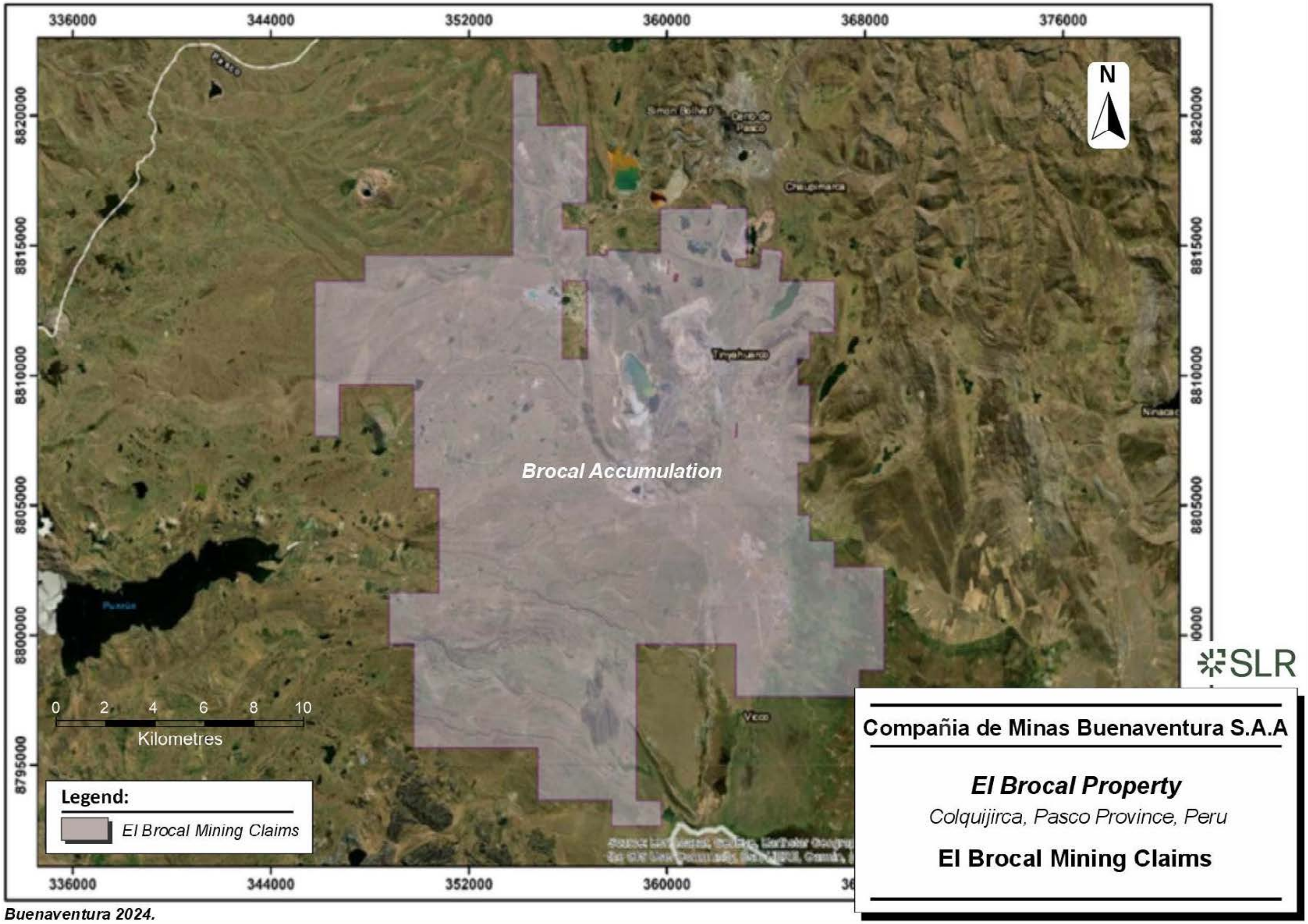
The SLR QP confirms that all Mineral Resources and Mineral Reserves presented in this TRS are contained within the concessions controlled by SMEB.

Buenaventura has provided SLR with backup documentation that demonstrates that all required fees and penalties for 2024 have been paid and all concessions are in good standing.

Table 3-1: Summary of Mineral Property

Claim ID	Name	Owner	As Reported Type	Status	Date Granted	Expiry Date	Area (ha)
010000121L	Acumulación Brocal	Sociedad Minera El Brocal S.A.A.	Mineral Right	Accumulation M.T. Title	3/8/2021	Does not expire as long as statutory duties are paid	34,386.84
P0100403	Hda. de Benef. Huaraucaca	Sociedad Minera El Brocal S.A.A.	Mineral Right	Concentrator	6/24/1981		976.68
Source: Buenaventura							

Figure 3-3: El Brocal Mining Claims



Source: Buenaventura 2024.

3.4 Surface Rights

Buenaventura controls surface rights totalling 1,895 ha in the Brocal property.

3.5 Royalties and Encumbrances

SLR is not aware of any material encumbrances that could impact the current Mineral Resources or Mineral Reserves presented in this TRS. For detailed information on infrastructure modifications associated with the expansion or development of the current Mineral Resource or Mineral Reserve, please refer to Section 15 of this report.

SLR is not aware of any royalty payments or similar obligations other than those mandated by Peruvian law for resource exploitation.

3.6 Other Significant Factors and Risks

SLR is not aware of any environmental liabilities on the Property. SMEB has all required permits to conduct the proposed work on the Property. SLR is not aware of any other significant factors and risks that may affect access, title, or the right or ability to perform the proposed work program on the Property. The main risk that could affect access to the Property is illegal blockages by nearby communities.

4.0 Accessibility, Climate, Local Resources, Infrastructure and Physiography

4.1 Accessibility

The Property can be accessed by road from Lima via the following routes:

- Lima – Casapalca – La Oroya – Cerro de Pasco – Colquijirca: 298 km (paved road)
- Lima – La Viuda – Canta – Huayllay – Colquijirca: 266 km

On both routes, travel takes approximately six hours.

The Property can also be accessed by air from Lima to Huanuco and then by land via the Huanuco - Chicrin paved road (approximately 81 km to the site).

4.2 Climate

Typical regional climatic conditions in the Colquijirca area, at altitudes ranging from 4,180 MASL to 4,435 MASL, are characterized by a very rainy and semi-frigid climate. The area experiences an average annual rainfall of 1,207.7 mm and an average annual temperature ranging from 4.2°C to 6.0°C.

The rainiest season occurs between January and March, corresponding to the summer (wet season). The dry season, with significantly less precipitation, spans from June to August. The average annual temperature for the Property is 5.3°C, while the average relative humidity varies between 81.5% in August and 84.5% in March (Territorio y Medio Ambiente S.A.C. 2019).

Mining operations are not affected by seasonal weather patterns and can be conducted year-round.

4.3 Local Resources

Supplies are readily available from established vendors and service providers within the local and regional communities, as well as from Lima.

Local suppliers are based in the Pasco Region, including businesses owned by community members within the immediate Property area.

In the event of supply chain disruptions caused by blockages on the Carretera Central Highway, a contingency plan is in place to ensure continuity. This plan includes alternative routes such as the Lima-Canta-Huallay Highway and the Cañete-Lunahuaná-Huancayo Highway.

4.4 Infrastructure

Natural water for El Brocal and the local population is sourced from the Angascancha and Pun Run lagoons. Ownership of this water lies with the Peruvian State, which has authorized its use through the following resolutions issued by the National Water Authority (*Agência Nacional de Águas*, or ANA):

- **Administrative Resolution No. 143-2011-ANA-ALA PASCO:** Grants water use licences for energy purposes.
- **Administrative Resolution No. 001-2011-ANA-ALA PASCO:** Grants water use licences for population purposes.

- **Administrative Resolution No. 002-2011-ANA-ALA PASCO:** Grants water use licences for metallurgical mining purposes.

Electricity for El Brocal operations is supplied by Central Hidroeléctrica Jupayragra and Central Hidroeléctrica Río Blanco as primary sources, with backup supply provided by Empresa de Generación Eléctrica Huanza.

Further details regarding El Brocal's infrastructure can be found in Section 15.

4.5 Physiography

The Property is situated at an average altitude of 4,300 MASL and forms part of the altiplano (high-plains) region. The topography is relatively gentle compared to the more rugged terrain of the western and eastern mountain ranges. The mine is bordered by two sub-parallel valleys: the Ocshopampa Valley to the east and the Andacancha Valley to the west of Marcapunta Hill. Additional geomorphological features include pampas, creeks, summits, hills, and glacial cirques (depressions formed by glacial activity).

Vegetation in the area is sparse, with two primary types identified based on the vegetation cover map: wetlands and scrublands. The region is characterized by sporadic natural grasses such as ichu and tuber crops. Around lagoons and wetlands, vegetation such as totora reeds is also present (Territorio y Medio Ambiente S.A.C. 2019).

.

5.0 History

5.1 Ownership, Exploration and Development History

The origins of the Colquijirca mining site trace back to pre-Inca times, when the Tinyahuarcos tribe extracted silver from the base of a hill opposite Puntac-Marca. Because of the abundance and quality of its silver, the hill was named GOLGUE (silver) and JIRCA (hill), which today translates into “Colquijirca” or “silver hill.”

A summary of the Property history was excerpted from SMEB’s website (access on December 01, 2024), highlights several key milestones:

- 1549: The Spaniards arrived in the area and began mining the Golguejirca deposits.
- 1880: Ownership of the Colquijirca mine, held by Spanish citizen Manuel Clotet, was transferred to his son-in-law, Eulogio Fernandini. In 1886, Fernandini initiated the excavation of the main Colquijirca tunnel, later called the "Socavón Fernandini." This 900 m long tunnel, completed over 13 years, led to the discovery of silver, lead, and zinc veins.
- 1889: The Huaraucaca Smelter was established to produce silver bars. Under the oversight of engineer Antenor Rizo Patrón, the smelter was later replaced by a flotation plant in 1921.
- May 7, 1956: The mining operation was officially registered as "Sociedad Minera El Brocal S.A."
- 1973: Open-pit mining began at the Mercedes-Chocayoc Pit, while underground mining was carried out in the Marcapunta area. In 1974, conventional underground mining ceased, and open pit stripping intensified, boosting production to 580 tpd, which later increased to 1,000 tpd.
- 1979: Compañía de Minas Buenaventura S.A.A., one of Peru’s leading mining companies, first acquired a stake in Sociedad Minera El Brocal S.A.A.
- 1980–1981: Open pit operations expanded to 1,500 tpd, increasing further to 1,750 tpd (1990), and 2,000 tpd (1991) from the Principal and Mercedes-Chocayoc pits.
- 1994: An aggressive exploration program began using diamond drilling, which helped identify and quantify the San Gregorio and Marcapunta Projects. Ownership remained under local and private Peruvian stakeholders.
- 1996: The Huaraucaca concentrator plant launched selective flotation processes for zinc, silver, and lead, achieving a production of 2,200 tpd that year.
- 1998-2004: In this period Compañía de Minas Buenaventura S.A.A., increased its ownership stake, becoming the majority shareholder with 32.78% interest in Colquijirca. This acquisition marked a turning point, as Buenaventura’s investment provided the resources needed to modernize operations and expand production capacity.
- 2007: The Huaraucaca concentrator plant's capacity increased to 5,500 tpd.
- 2009: Buenaventura announced an agreement to purchase a 19.8% interest in Inversiones Colquijirca from Teck Cominco Metals Limited. This transaction increased Buenaventura's economic interest in Sociedad Minera El Brocal from 35.83% to 45.94%.

- 2009-2014: Following the Board of Directors' approval of an expansion program in 2008, ore production capacity was increased to 18,000 tpd. By 2014, Plant 1 produced 7,000 tpd, while Plant 2 reached 11,000 tpd, achieving the full installed capacity of 18,000 tpd.
- As of 2024, Sociedad Minera El Brocal S.A.A. is a majority-owned subsidiary of Compañía de Minas Buenaventura S.A.A., which holds a 61.43% controlling interest.

The Colquijirca Mining District has been studied extensively by both national and international geologists. As more geological data became available, various genetic models were proposed to estimate its economic potential. The district has a long history of production—from providing Ag (Au) ores during pre-Inca, Inca, and colonial times, to being a significant producer of silver (Ag) and bismuth (Bi) in the early 20th century, and now as one of the largest producers of zinc (Zn), lead (Pb), silver (Ag), and copper (Cu) (Au).

Additional exploration and development highlights include:

- 1994: Geoterrex conducted a geophysical survey in the Colquijirca, Marcapunta, and San Gregorio areas, identifying two geophysical anomalies in Marcapunta and two in San Gregorio. The methods included electromagnetism (Time Domain EM), gravimetry, and induced polarization (IP).
- 1995: A second geophysical campaign by Geoterrex corrected a false anomaly in the northern sector of San Gregorio and confirmed anomalies in Marcapunta Norte and Marcapunta Oeste.
- 2005–2007: An aggressive diamond drilling campaign focused on Marcapunta Norte, targeting the geophysical anomalies identified in 1994 and 1995. Approximately 30,000 m of diamond drilling (110 drill holes) were completed to increase Mineral Resources and improve certainty.
- 2008: Underground mining operations resumed at the Marcapunta Norte mine, producing 1,000 tpd of copper ore using the room and pillar mining method.
- Today, mining operations at the Marcapunta mine have significantly expanded. The mine now produces 8,000 tpd of copper ore, extracted through the sub-level stoping method.

This comprehensive history reflects Colquijirca's evolution—from ancient mining endeavors to a modern, technologically advanced operation.

5.2 Past Production

El Brocal produces copper (Cu), zinc (Zn), lead (Pb), and silver (Ag) concentrates from El Tajo Norte (Colquijirca) Mine and copper concentrates from the Marcapunta mine.

The tonnes, grade, and recovered metal from 1998 to 2024 including both open pit and underground operations is provided in Table 5-1.

Table 5-1: El Brocal Historical Production from 1998 to 2024

Year	Ore Feed (kt)	Ag (koz)	Pb (kt)	Zn (kt)	Cu (kt)
1998	830.7	2,040.3	15.2	41.0	
1999	873.8	1,498.8	14.7	44.5	
2000	960.8	1,833.4	15.6	42.2	
2001	1,218.7	3,453.8	16.9	50.0	
2002	1,322.9	2,420.0	19.5	61.0	
2003	1,409.1	2,895.7	21.8	61.7	
2004	1,492.6	3,399.1	27.1	63.4	
2005	1,514.0	4,394.9	26.2	63.0	
2006	1,631.7	10,269.5	33.4	72.4	
2007	2,125.3	7,099.1	34.9	96.1	1.4
2008	2,383.6	4,641.9	27.5	90.0	8.3
2009	2,324.5	3,820.7	22.2	74.6	9.1
2010	2,097.2	2,509.5	12.8	39.0	18.7
2010	1,929.0	2,519.8	11.7	35.4	17.0
2011	2,890.8	2,917.6	10.4	26.0	26.2
2012	4,219.9	3,077.6	13.6	38.5	26.7
2013	3,244.7	1,955.5	9.0	24.2	27.5
2014	3,445.1	2,501.8	4.3	10.2	43.3
2015	5,064.5	3,669.5	18.9	53.3	32.1
2016	6,111.9	2,634.7	12.9	57.4	49.2
2017	4,220.9	4,084.2	20.3	51.5	45.1
2018	6,633.9	3,901.9	20.6	45.6	46.2
2019	6,334.0	4,366.4	23.6	43.6	43.4
2020	4,533.5	3,508.6	20.1	54.9	30.6
2021	5,282.2	6,159.0	10.1	36.0	37.9
2022	4,856.2	3,556.8	6.8	23.4	47.4
2023	4,894.4	3,264.9	5.0	17.2	57.7
2024	4,856.2	2,775.4	6.8	23.4	47.4
Total	**88,702.2**	**101,170.8**	**475.0**	**1,339.3**	**615.1**

6.0 Geological Setting, Mineralization, and Deposit

Regional and local geology has been broadly studied for several decades and the SLR QP is of the opinion that the cumulated geologic knowledge is comprehensive and supports development of the deposit geological model and estimation of Mineral Resources.

This section, and all references herein, is largely summarized from the TRS on the Pre-Feasibility Study (PFS) for the Property (SRK 2022) and a geological update for the the Colquijirca Mining District by Aquino at al. (2023). 2021, and Memorandum - Revisión Geológica del Tajo Colquijirca y Sondajes. Buenaventura (Ventura, M., 2020).

6.1 Regional Geology

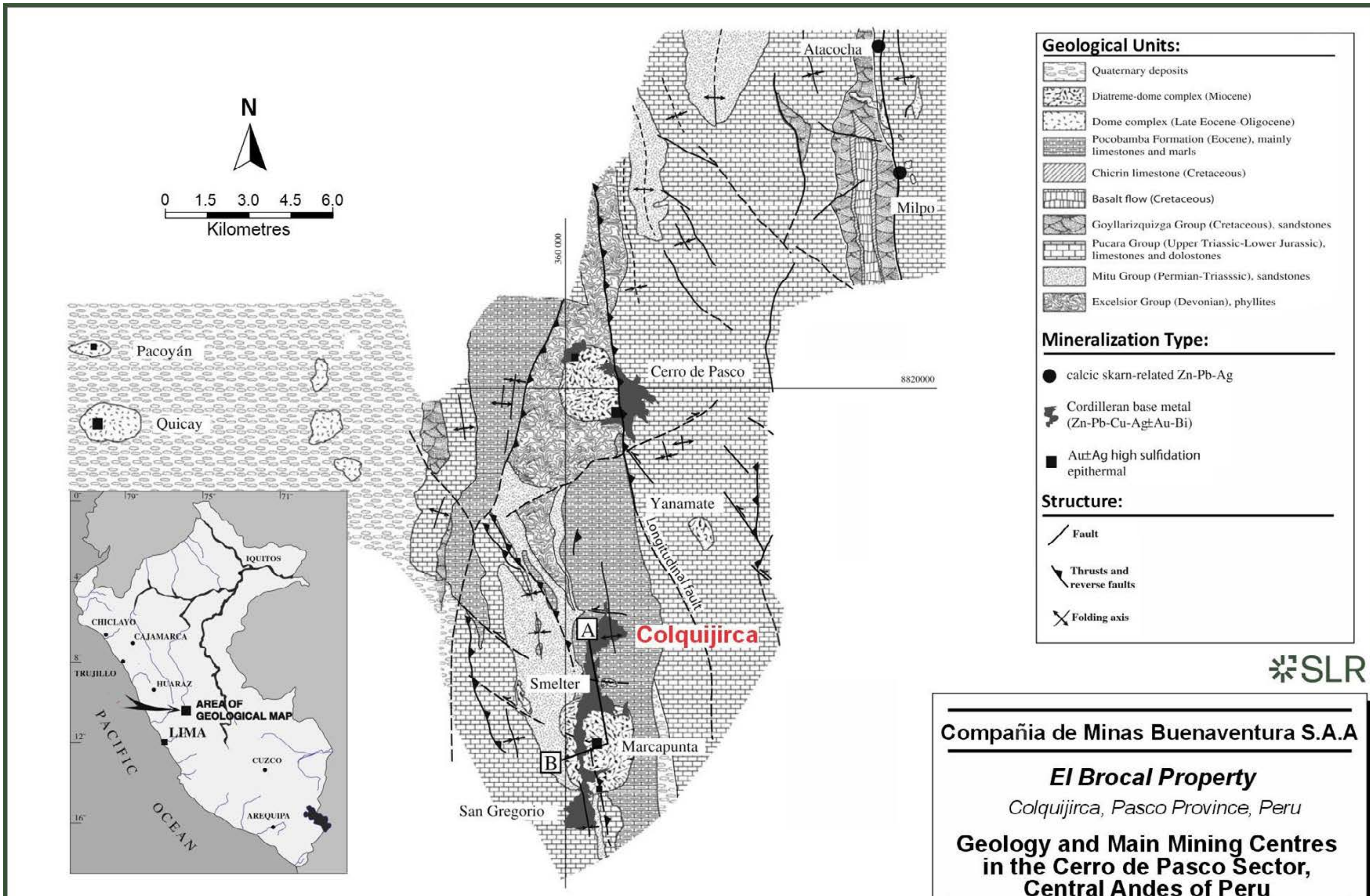
The regional geology of Colquijirca Mining District (Cerro de Pasco (22-k) quadrangle) is illustrated in Figure 6-1 and consists predominantly of lithostratigraphic units, including the Excelsior Group, Mitu Group, Pucará Group, Chambará Formation, Pocobamba Formation, and Calera Formation. Igneous rocks in the region occur as batholiths, subvolcanic stocks, domes, and diatremes. These igneous bodies were emplaced at various geological distinct events: Carboniferous, Upper Permian–Lower Triassic, Eocene, Oligocene, Lower Miocene, and Upper Miocene (Figure 6-2). The sedimentary, volcanic, and intrusive rocks are overlain by Quaternary deposits of varying origin, nature, thickness, and distribution (Figure 6-3).

According to Cobbing's geotechnical schematization, the Colquijirca mine lies within the "Western Peruvian Basin," which has undergone several tectonic phases.

Volcanic activity in the area commenced approximately 14.13 million years ago (Ma) (Bissig et al. 2008). Between 12.4 and 12.7 Ma (Bendezú & Fontboté 2002 in INGEMMET 2011), the Marcapunta region experienced the most intense volcanic activity, marked by the emplacement of dacitic domes. This was followed by polymetallic mineralization events between 11.6 and 10.5 Ma, culminating in the resurgent Montura dome after 10.5 Ma (INGEMMET 2011).

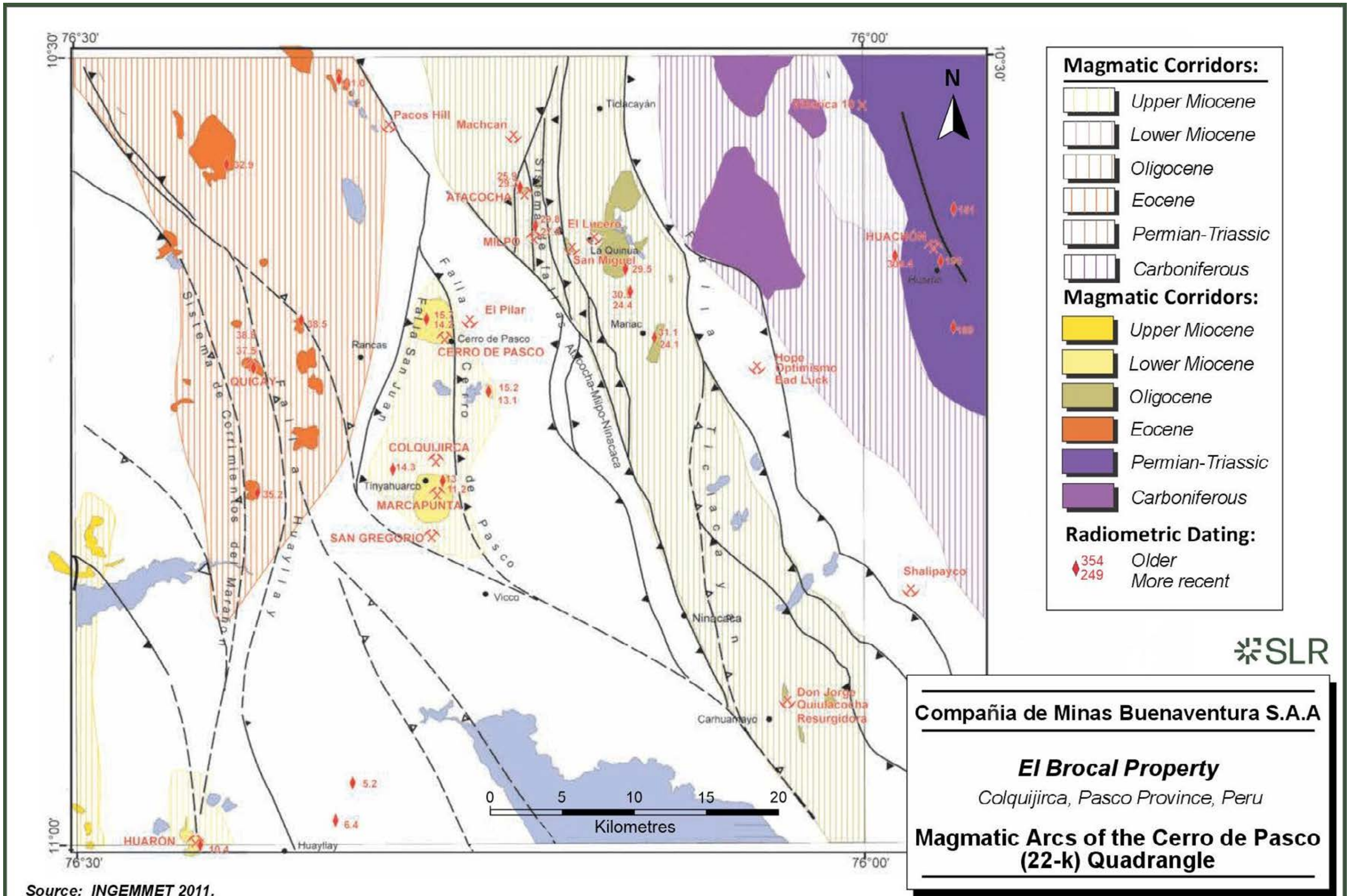
The Marcapunta Volcanic Complex is bounded by two major faults: the San Juan fault and the Cerro de Pasco fault, both trending in a north-south direction. These faults controlled the emplacement of the Cerro de Pasco and Yanamate domes. The northern edge of the Marcapunta Volcanic Complex is in contact with the Calera Formation (Eocene-Oligocene), which serves as the host rock for mineralization in the Colquijirca mine. The southern edge is in contact with the western facies of the Pucará Group (Bendezú & Fontboté 2002; Bendezú et al. 2008; Sarmiento 2004), while the eastern and western margins are covered by Quaternary deposits (INGEMMET 2011).

Figure 6-1: Geology and Main Mining Centres in the Cerro de Pasco Sector, Central Andes of Peru



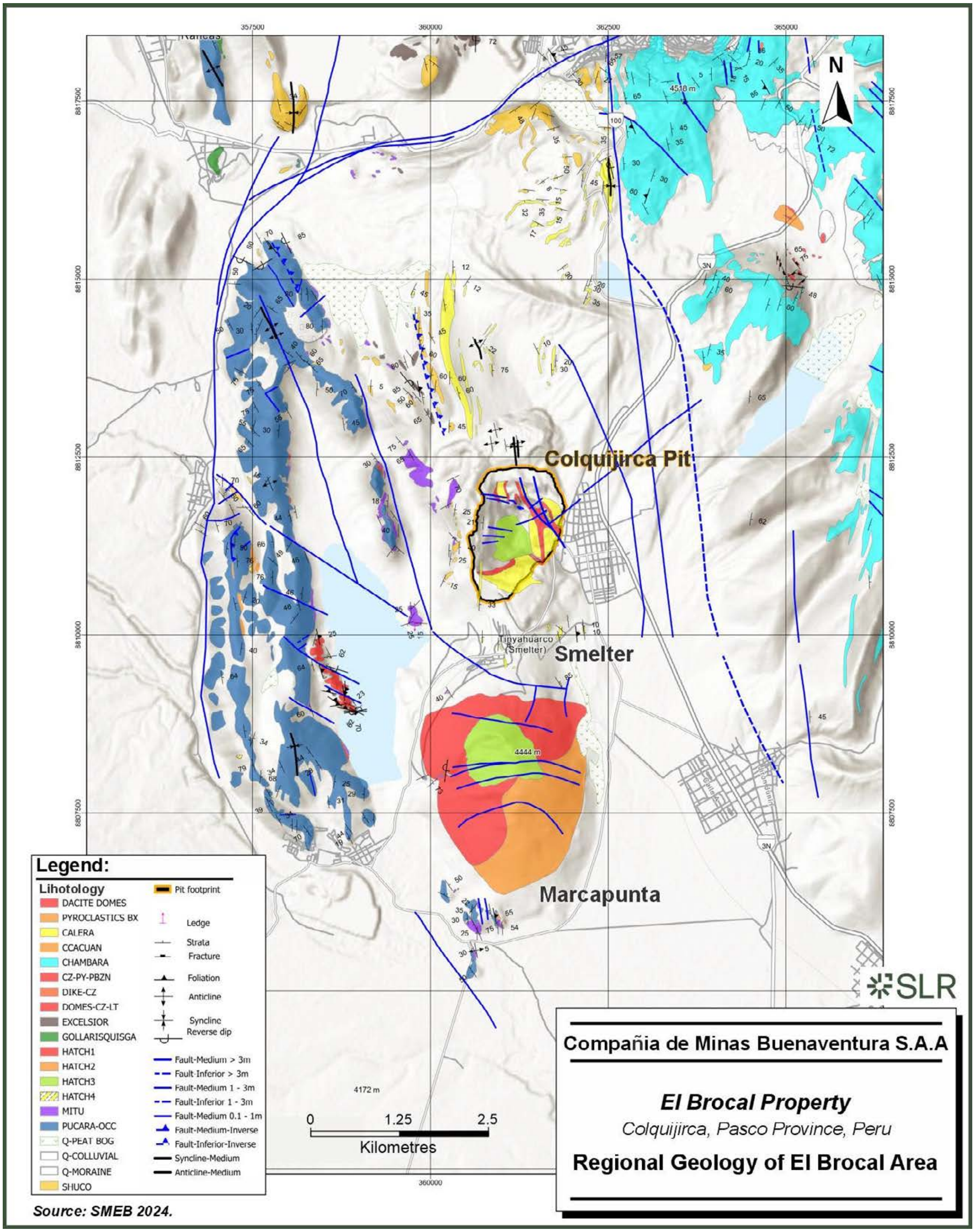
Source: Geology compiled from Johnson et al. (1995), Angeles (1993), Sociedad Minera El Brocal S.A.A staff, Bendezú et al. 2008.

Figure 6-2: Magmatic Arcs of the Cerro de Pasco (22-k) Quadrangle



Source: INGEMMET 2011.

Figure 6-3: Regional Geology of El Brocal Area



Source: SMEB 2024.

6.2 Local Geology

The Colquijirca Mining District is situated on a stratigraphic sequence comprising rocks from the Excelsior Group phyllites, sandstones, and red conglomerates of the Mitu Group. This sequence is followed by marine limestones of the Pucará Group and, toward the top, conglomerates and continental facies of carbonate breccias of the Calera Formation, which are of Eocene-Oligocene age. These units are intruded by the middle Miocene (11.5 ± 0.4 Ma) Marcapunta Volcanic Complex. Figure 6-4 shows the local geology of El Brocal.

6.2.1 Metamorphic Rocks

6.2.1.1 Excelsior Group (SD-e)

The Excelsior Group represents the oldest rocks in the vicinity of the mine area. These rocks, referred to as the "Excelsior Series" by McLaughlin (1924), date back to the Lower to Middle Devonian. They consist of grey to greenish-grey shales and phyllites with abundant intercalations of quartzites in thin beds. Some levels exhibit oblique lamination on a decimetric scale and pluri-centimetric slump folds.

These rocks are confined to the core of the Cerro de Pasco anticline and exceed a thickness of 300 m.

6.2.2 Sedimentary Rocks

Figure 6-5 shows the stratigraphic column of El Brocal.

6.2.2.1 Mitu Group (Ps-m)

The Mitu Group outcrops locally and discontinuously to the west of the mine, mainly along both margins of Andacancha Creek and south of Marcapunta Hill. Near Andacancha Creek, the rocks of this group consist of two sequences.

The first sequence comprises polymictic conglomerates with sub-angular fragments cemented by a fine-grained, brick-red sandstone matrix. These are observed in medium to thick strata with cross bedding and levels of fine sandstones. The thickness of this sequence remains undefined.

The volcanic sequence is absent in this area. According to the reviewed bibliography, such sequences are scarce in the western part of Cerro de Pasco.

The Mitu Group likely rests unconformably on the Excelsior Group rocks and is also unconformably overlain by the Pucará Group. Its thickness in the area exceeds 10 m.

6.2.2.2 Pucará Group (TrJ-p)

This unit corresponds to undivided limestone rocks, which in the Property area are observed with certain continuity along the hills west of the Colquijirca mine. Outcrops are visible along both margins of the San Juan River valley, from Sacrafamilia to Huaraucaca.

The rocks of this group are greyish limestones, displaying a smooth to undulating morphology, with some karsts and occasional dolines.

6.2.2.3 Chambará Formation (Tr-ch)

The Chambará Formation is part of the Pucará Group, mainly located in Alma Huanusha Hill. The limestones outcrop in a monotonous, massive form, appearing bluish grey when fresh and creamy grey when weathered. The formation includes irregularly shaped chert.

The contact between the Chambará limestones and the Mitu Group rocks is unconformable.

6.2.2.4 Pocobamba Formation (KT-po)

The Pocobamba Formation comprises three members:

- Caucan: Silt-claystones grading into limonites, with sandstone and breccias cemented by calcareous material.
- Shuco: Limestone breccias with subrounded to subangular clasts and sparse sandstone lenses.
- Calera Formation: Discussed in detail below.

6.2.2.5 Calera Formation (P-ca)

The Calera Formation consists of marly dolomites, claystones interbedded with marls and limestones, and abundant chert. It also includes thin intercalations of silty clay strata and occasional tuffs. This unit is approximately 220 m thick in the Colquijirca North Pit and contains mineralization mantles currently being exploited.

The Calera Formation corresponds to the Eocene period and is subdivided into three stratigraphic units (Ángeles 1992):

- Lower Calera: This unit concordantly overlies the Shuco Formation and, in some places, their separation is indistinguishable. It consists of detrital sediments, pebble conglomerates with a calcareous matrix, intercalated rhyolitic tuffs, and grey mudstone limestones. These facies suggest a playa lake environment with significant detrital contributions (fluvial-volcanic). Thickness ranges from 64 m to 80 m.
- Middle Calera: Characterized by mudstone, wackestone, and grainstone limestones with concretionary structures, bioturbation, and rhizomorphs. It also includes thin intercalations of marls, silty clays, and grey tuffs. This unit represents a shallow, likely holomictic lake environment. Thickness ranges from 55 m (La Calera) to 106 m (Tajo Principal).
- Upper Calera: Composed of limestones, grey marls, silty clays, and a significant level of grey tuff, this unit represents lacustrine sedimentation with isolated pyroclastic events. The thickness is estimated at 44 m.

6.2.3 Volcanic Rocks

6.2.3.1 Marcapunta Volcanic Centre (Mi)

The volcanic centre comprises two lithological units (Vidal 1984):

- Unish Tuffs: Pyroclastics and lavas.
- Marcapunta Intrusive: Dacitic to quartz-latite lava domes.

The lava domes are dated to 11.5 ± 0.4 Ma, with associated hydrothermal activity at 10.8 ± 0.3 Ma.

6.2.4 Intrusive Rocks

Intrusive rocks in the mine area belong to a stock-type intrusive body of dacitic composition. This hypabyssal intrusive body is linked to the formation of hydrothermal deposits.

In Marcapunta Hill, pyroclastic rocks and lavas are intruded by dacitic and quartz-latite domes, creating marginal breccias at the north and south ends (Marcapunta and San Gregorio).

6.2.5 Quaternary Deposits (Q)

6.2.5.1 Glacial Deposits (Q-gl)

Comprising poorly graded mixtures of silts, sandy clays, and rock fragments, these deposits vary in thickness and are found as covers over rock units or in the form of moraines outside the mine area.

6.2.5.2 Fluvio-glacial Deposits (Q-fg)

Modified by rainfall and erosion, these deposits consist of sands, gravels, and silts. They are concentrated near creeks, including the Andacancha and Buena Vista Creeks.

6.2.5.3 Alluvial Deposits (Q-al)

Transported by river systems such as the San Juan and Colquijirca Rivers, these deposits include poorly graded sands, gravels, and boulders. They are saturated in some areas and can be used as aggregate quarries.

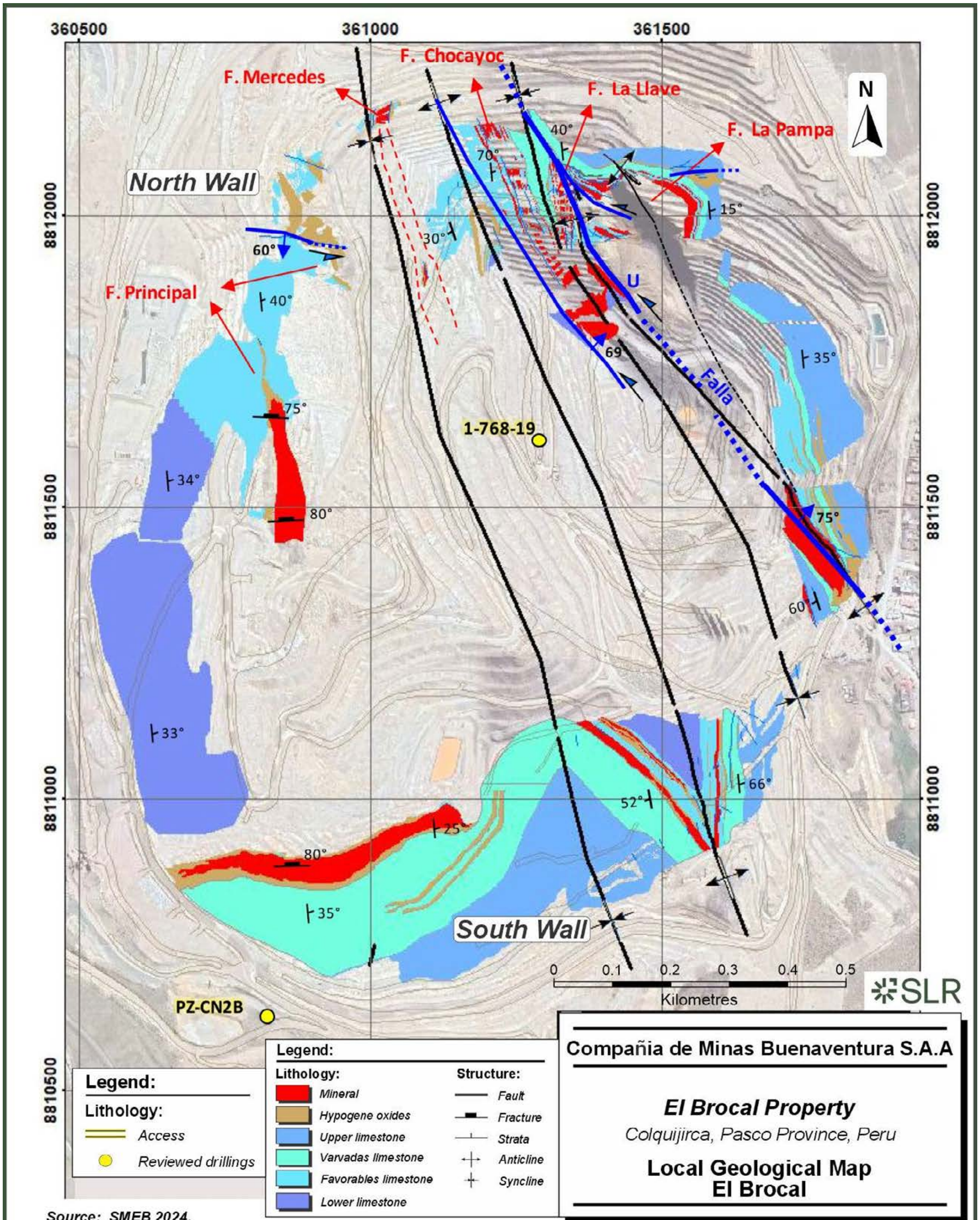
6.2.5.4 Wetland Deposits (Q-bo)

Located near creeks and lakes, these deposits are sandy-gravelly-silty soils with high organic matter content, supporting hydrophytic vegetation.

6.2.5.5 Colluvial Deposits (Q-co)

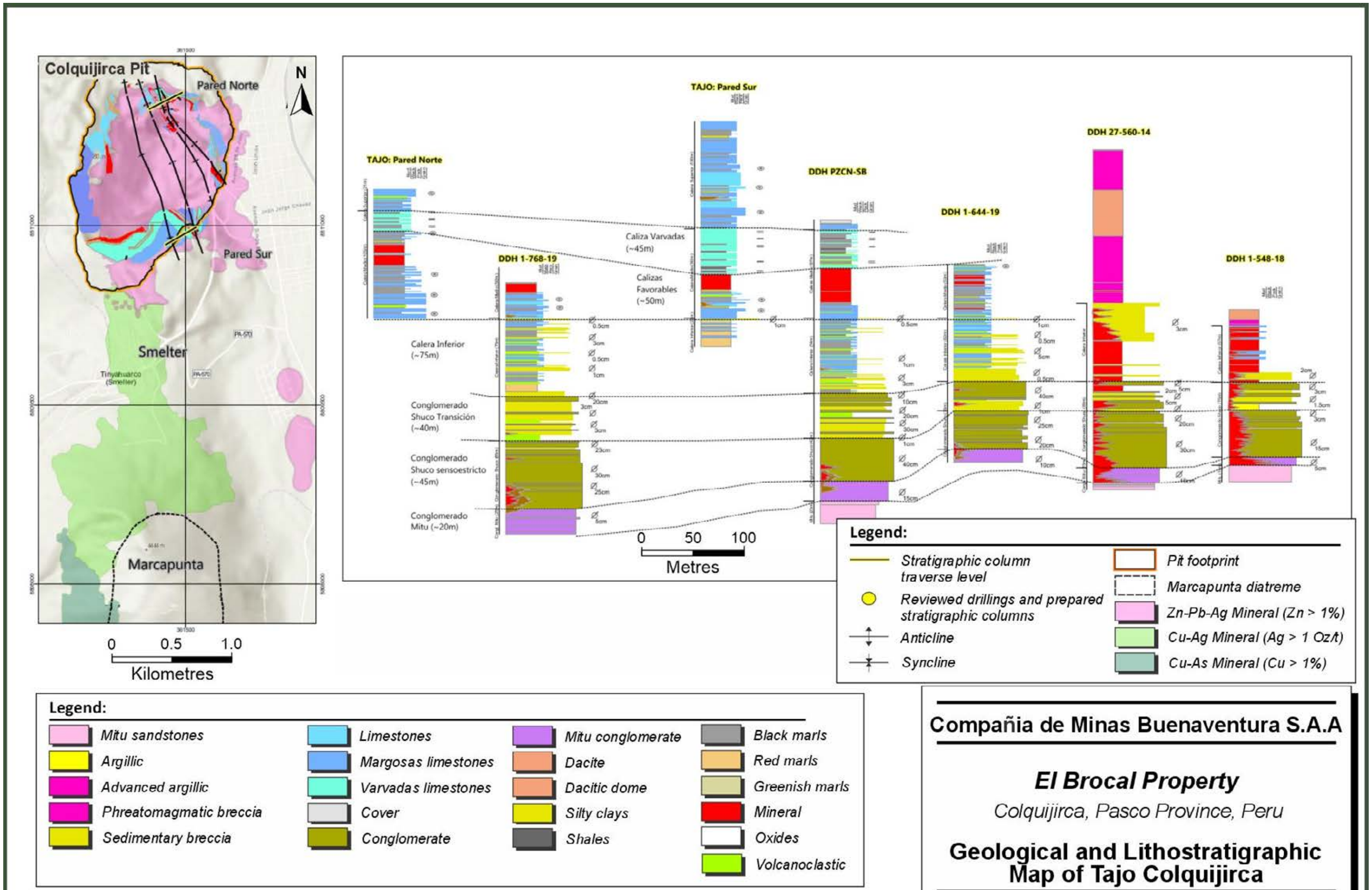
Formed by slope debris, these deposits consist of rock fragments and fine matrixes, ranging from dense to loose. They are prominent on the flanks and upper ranges of Cerro Marcapunta.

Figure 6-4: Local Geological Map of El Brocal



Source: SMEB 2024.

Figure 6-5: Geological and Lithostratigraphic Map of Tajo Colquijirca



Source: Ventura 2020.

6.2.6 Structural Context

In the Colquijirca area, three primary longitudinal faults are observed: the Huachuacaja fault, which exhibits apparent strike-slip displacement; the Cerro de Pasco fault, a north-south striking reverse fault; and a third fault that follows the axial plane of the Mercedes-Chocáyoc anticline, characterized by an apparent southward displacement of the eastern block (Figure 6-3). The sedimentary strata in the region are strongly folded, resulting in prominent anticlines and synclines. The fold axes trend north-northwest and exhibit a gentle dip to the south.

The district's most prominent structural features include two major regional north-south reverse faults, north-south fold trends, and a slip fault system. These features comprise a major north-trending longitudinal fault; a reverse fault that passes through or near the Cerro de Pasco and Marcapunta volcanic centres; and basin morphology that influenced sedimentation of the Pucará and Calera Formations.

A second reverse fault of pre-Marcapunta Volcanic Complex age (14.1 Ma), with a north-northwest to south-southeast to north-south orientation, is located west of the Colquijirca-Smelter deposits and extends southward beyond the volcanic complex. Most of these structural elements are associated with Neogene compression events that affected extensive areas of the central and northern Peruvian Andes (Ángeles 1999).

6.3 Property Geology

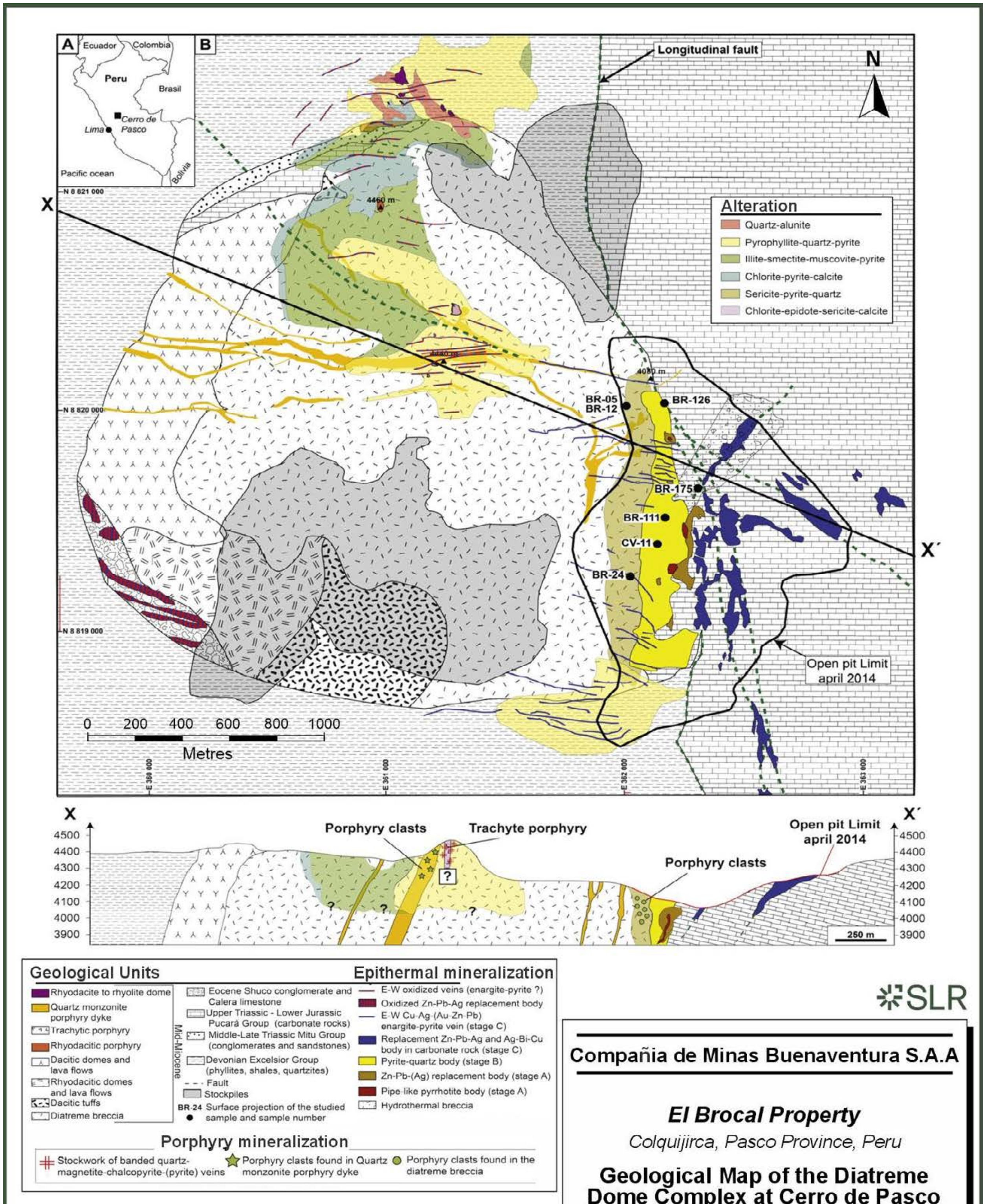
Over the years, the progression of mining has exposed the Colquijirca deposit, facilitating geological identification of the Tertiary basin. The area is characterized by asymmetric anticlines and synclines composed of carbonate and detrital rocks, attributed to the Eocene-Oligocene Calera Formation, which serves as the primary host of mineralization. The deposit also features volcano-clastic intercalations, such as ash tuffs, providing evidence of volcanic activity contemporaneous with sedimentation.

A review of five drill holes has identified the Shuco Conglomerate sequence of Upper Eocene at depth. This sequence underlies the Lower Calera Formation and is in depositional contact with the Mitu sandstones of Permian-Triassic age (Megard 1978). To the south, in the Smelter and Marcapunta areas, the sequence is uplifted and intruded by dacitic domes and dykes associated with the diatreme. This zone exhibits strong advanced argillic alteration and is recognized as the focal point of mineralization within the mining district.

The Marcapunta diatreme-dome complex, located at the centre of the Colquijirca Mining District (Sillitoe 2000; Bendezú et al. 2003; Sarmiento 2004), is one of several Miocene volcanic edifices, including Cerro de Pasco and Yanamate (Figure 6-6). This complex consists of multiple dacitic lava-dome intrusions, accompanied by injections and explosion breccias and pyroclastic layers typical of diatreme conduits. These features are widely observed at depth.

Peripheral areas are marked by inward-dipping normal faults, suggesting that the entire volcanic edifice collapsed, likely before the main mineralization episodes (Bendezú et al. 2003).

Figure 6-6: Geological Map of the Diatreme Dome Complex at Cerro de Pasco



Source: Rottier et al. 2021.

6.3.1 Structural Geology

Excerpted from Ventura (2020)

Structurally, the Tertiary basin, comprising the Shuco Conglomerate and the Calera Formation, has been influenced by the Major Longitudinal Fault located east of the current open pit. Ángeles (1993) suggested the presence of a thick, active trans-tensional thrust sheet that controlled marine and continental sedimentary deposition since the Triassic (Pucará Group). This tectonic regime resulted in the formation of thrusts, grabens, and horsts over time. It is inferred that during one of these tectonic events, the Pucará Group was uplifted and eroded, and during the Eocene, the basin was filled with deposits from alluvial and fluvial fans, along with calcareous-detrital lacustrine sediments of the Pocobamba and Calera Formations. These deposits unconformably overlie the Mitu Group.

This sedimentary sequence was subsequently affected by tectonic activity during the Upper Oligocene and Lower Miocene (22.5 Ma), resulting in folding. This tectonism originated asymmetric anticlines and synclines observed in the open pit area, with a north-northwest trend and stronger compression in the northern sections. In addition to these features, inverse faults subparallel to bedding, low-angle thrust faults, and small asymmetric overturned folds were identified, particularly in the Middle Calera limestones at Flanco la Pampa. Figure 6-6 provides a geologic and structural map of the North Pit and Marcapunta areas.

Localized trans-Andean faults, infilled with calcite crystals, exhibit dextral movement striations but show minimal displacement. Reactivated east-west faults, infilled with gouge, display sinistral movement striations with stepwise displacements of less than one metre.

The Major Longitudinal Fault, located near Cerro de Pasco, exhibits a N165° strike with a 65°E dip and contacts the Eastern Pucará Group with the Pocobamba Formation (Ángeles 1993).

In the mine area, the principal longitudinal faults generally align closely with the axes of the folds. Additionally, overthrust faults and localized normal faults are present (SMEB 2021). Structurally, the El Brocal mining unit displays two primary systems:

- Andean Trend System: Exhibiting orientations of N15º-45ºW.
- Secondary System: Oriented N45º-60ºE, representing late tectonic manifestations.

These systems reveal structural dislocations in blocks, forming horsts and grabens that expose contrasting stratigraphic levels in adjacent blocks.

Figure 6-4 above illustrates the main structures in the pit.

6.4 Alteration

Excerpted from Bendezú et al. (2008)

The generalized alteration of the diatreme-dome complex consists of quartz-alunite-dickite-kaolinite ± pyrophyllite-zunyite-illite assemblages in mineralized areas, transitioning to kaolinite-illite ± (smectite)-sericite-chlorite-calcite assemblages outside of mineralized zones.

In the Marcapunta Volcanic Complex, advanced alteration has resulted in the formation of residual quartz cores, which are locally vuggy, surrounded by advanced argillic alteration halos dominated by quartz-alunite and kaolinite assemblages. Gold and silver, present mainly in veins and as oxide coatings, are predominantly contained within these vuggy quartz cores, which extend into the surrounding country rock.

The vuggy silica can be subdivided into quartz-alunite and argillic alteration zones that affect much of the Marcapunta area volcanic rocks. Quartz-alunite alteration is observed to post-date Au-(Ag)-bearing veins in several areas, suggesting that repeated episodes of silica-quartz-alunite vuggy alteration and Au-(Ag) deposition occurred at Marcapunta.

6.5 Mineralization

The Colquijirca Mining District hosts two primary types of epithermal mineralization:

- **Disseminated high-sulphidation Au-(Ag) mineralization** hosted in volcanic rocks of the Marcapunta Complex.
- **Sulphide-rich Cordilleran type polymetallic mineralization** hosted in the carbonate rocks of the Pucará Group and Pocobamba Formation (Figure 6-8).

6.5.1 High Sulphidation Au-(Ag) Epithermal

High-sulphidation mineralization consists of oxide veinlets and disseminations hosted in vuggy silica. Typical gold and silver concentrations within vuggy silica range from 0.2 g/t to 3.0 g/t and 10 g/t to 70 g/t, respectively, with Ag/Au ratios varying from 10 to 30 (Vidal et al. 1997).

In the deeper portions of the vuggy silica, unoxidized Au-(Ag) mineralization is associated with less than 5% disseminated sulphides by volume. These sulphides form veins predominantly composed of pyrite-enargite, chalcocite, covellite, and sphalerite, accompanied by clays such as kaolinite, smectite, and/or illite.

Vuggy silica and surrounding quartz-alunite zones (Figure 6-7) without veinlets contain minor amounts of Au-(Ag), indicating that most of the precious metals precipitated during veinlet formation.

6.5.2 Cordilleran Epithermal

Cordilleran epithermal deposits (Figure 6-7) are characterized by high total sulphide content, comprising 30% to 50% of the volume on average. Pyrite is the most abundant mineral, forming during an early silica-pyrite stage, followed by enargite-pyrite, and concluding with late-stage chalcocite (Bendezú 2007).

Strongly oxidized zones, initially composed of enargite-pyrite, exhibit Ag/Au ratios ranging from 80 to 120, significantly higher than the 10 to 20 ratios observed in the disseminated Au-(Ag) minerals at Marcapunta.

Cordilleran-type mineralization in the Colquijirca Mining District exhibits distinct mineralogical zoning:

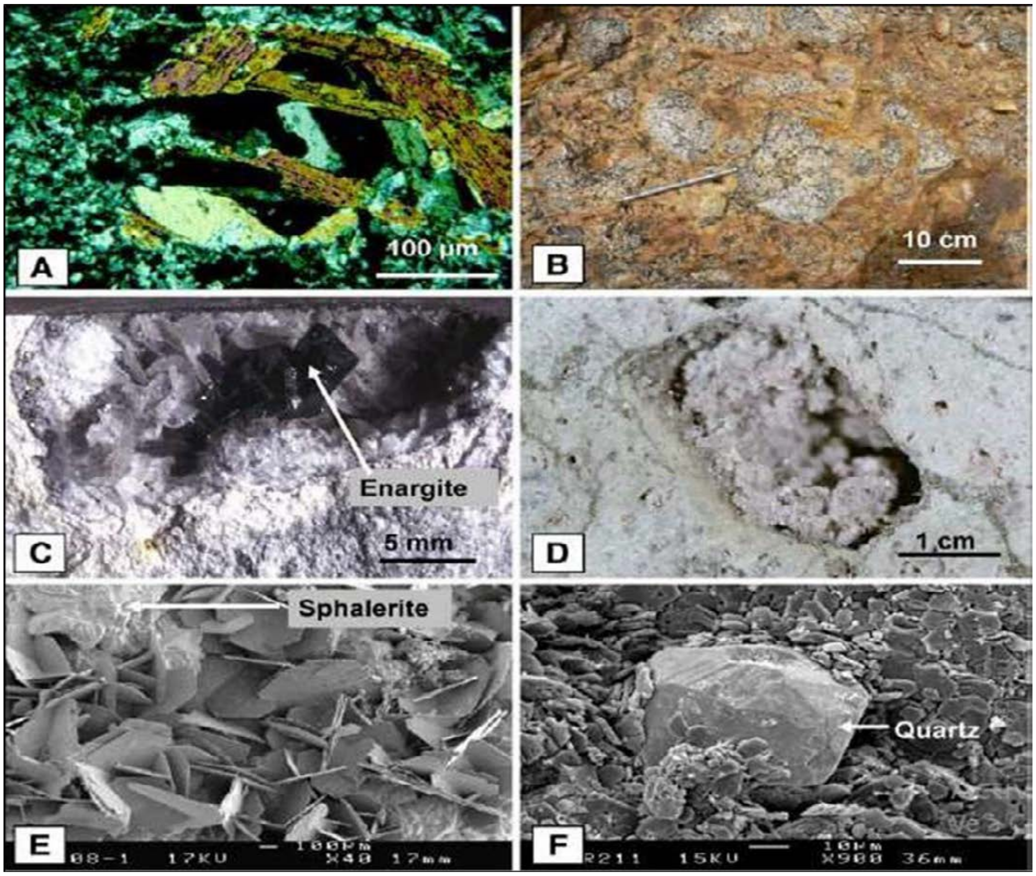
- **Core zone:** Cu-(Au-Ag), dominated by enargite, often associated with alunite assemblages.
- **Intermediate zone:** Cu-(Zn-Pb-Ag-Bi), dominated by chalcopyrite, sphalerite, and galena.
- **External envelope:** Zn-Pb-(Ag), composed primarily of sphalerite and galena.

Cordilleran type veins systematically cut the precious metal veins in the easternmost part of the Marcapunta Oeste project. Quartz-alunite zones formed during the high-sulphidation epithermal event contain Au-(Ag) veins, which were subsequently intersected by pyrite-rich veinlets (enargite) generated during the Cordilleran event.

Additionally, most cavities within vuggy silica contain intergranular enargite fillings from the Cordilleran stage, partially obliterating earlier Au-(Ag) quartz-alunite veinlets (Figure 6-8).

Cordilleran-type mineralization in the Colquijirca Mining District exhibits notably higher Ag/Au ratios compared to high-sulphidation epithermal Au-(Ag) mineralization.

Figure 6-7: Alunite Samples from the Colquijirca Zone

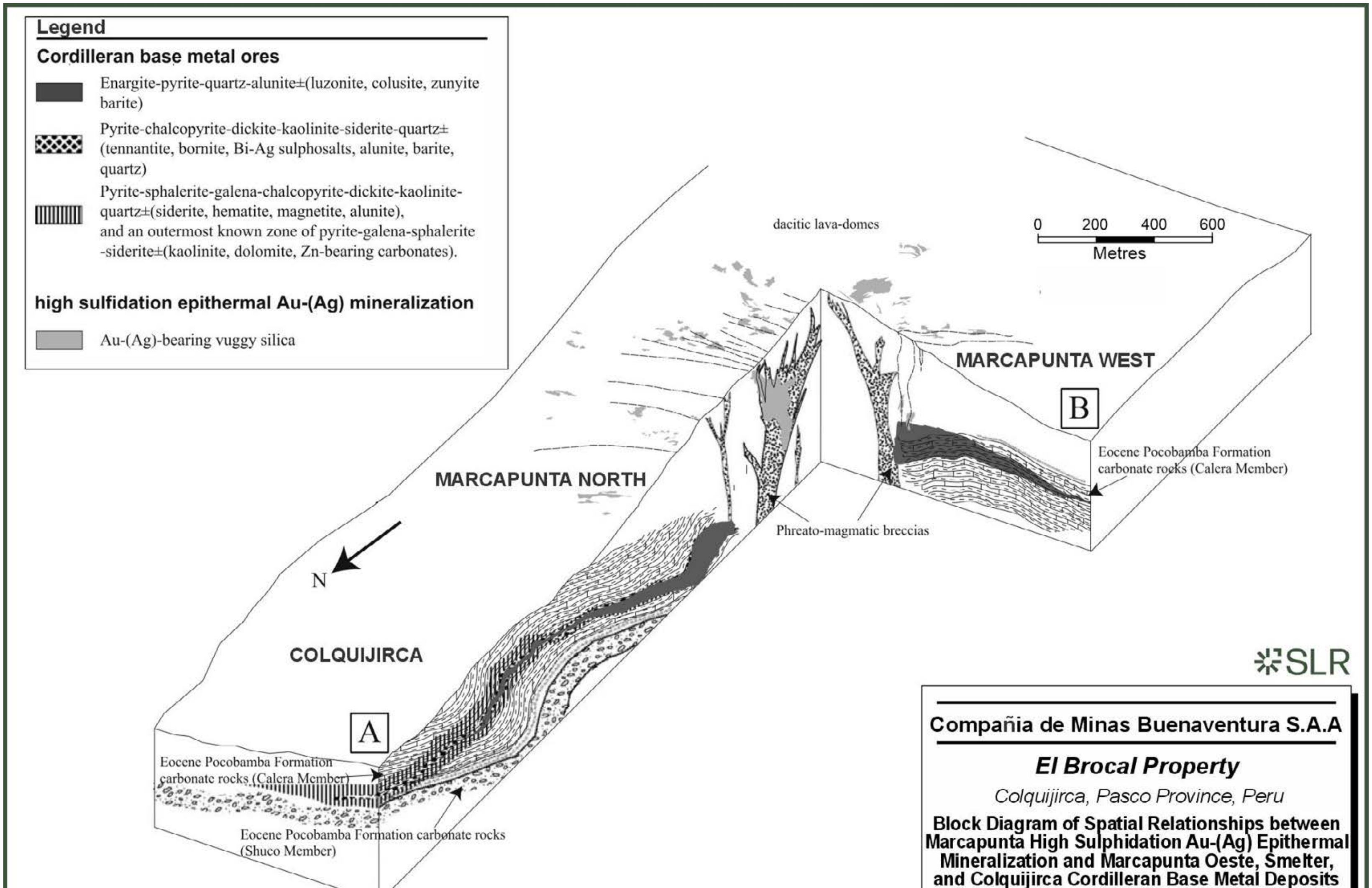


Source: Bendezú, Page, Spikings, Pecskay, & Fonboté 2008

Notes:

A. Transmitted light micro-photograph of sample PBR-336 showing alunite in the Marcapunta high sulphidation epithermal gold mineralization.
B. Photograph of an outcrop in southern Marcapunta where plumose alunite (sample PBR-273) cements Au-(Ag) with rounded clasts (up to 2 ppm Au) of vuggy silica formed from the epithermal system.
C. Small geode showing euhedral alunite intergrown with enargite and small amounts of pyrophyllite and pyrite, Cordilleran ore from Smelter (sample PBR-322).
D. Photograph showing the effect of Cordilleran mineralization on volcanic rocks. A void left by former sanidine is filled by laminated euhedral alunite intergrown with quartz, pyrite, and enargite; the latter two are also found as veinlets and as coatings in cavities.
E. Intimate intergrowth between alunite and sphalerite revealed by backscattered electron imaging of sample PBR- 298 from the Cordilleran Colquijirca deposit.
F. Backscattered electron imaging of PBR-208 sample showing the typical extremely fine-grained habit of alunite from the large Cordilleran San Gregorio deposit.

Figure 6-8: Block Diagram of Spatial Relationships between Marcapunta High Sulphidation Au-(Ag) Epithermal Mineralization and Marcapunta Oeste, Smelter, and Colquijirca Cordilleran Base Metal Deposits



Source: Bendezú et al. 2008.

The Colquijirca deposit comprises three distinct mineralized zones.

- The deepest part of the southwest sector of the North Pit exhibits a core with a tubular shape, primarily composed of enargite, along with varying amounts of pyrite and quartz.
- Surrounding the core is an envelope containing chalcopyrite and variable amounts of tennantite, as well as sphalerite and galena.
- This envelope is, in turn, surrounded by an extensive zone predominantly composed of sphalerite and galena. The latter zone, which extends predominantly to the north of the district, constitutes the bulk of the Colquijirca deposit (North Pit) currently under exploitation (Figure 6-9).

To the south of the North Pit, the enargite core extends for over 2 km, thickening and widening as it approaches the Marcapunta Volcanic Complex.

The Marcapunta Norte sector, located immediately south of the North Pit, represents an extension of the Colquijirca deposit. This sector is characterized by two internal zones:

- An enargite-dominated zone.
- A polymetallic zone, consisting of chalcopyrite, tennantite, sphalerite, and galena.

Unlike areas further south, the Marcapunta Norte sector has undergone supergene enrichment. This process has led to the formation of chalcocite bodies that have been superimposed on the enargite zone and, to a lesser extent, on the polymetallic zone. This enrichment has created a sector of relative mineralogical complexity, particularly in terms of intergrowth.

The Central Upper stratabound mineralized structure is hosted within the carbonate rocks of the Middle Member of the Calera Formation. Main features of this unit are:

- A sub-horizontal stratiform geometry with a strike of N160° and a dip of 6°N. It has an approximate length of 520 m, a width of 270 m, and an average thickness of 21 m. Breccia bodies and veins that intersect bedding are uncommon.
- Primarily consists of enargite with variable amounts of pyrite. Minor phases include luzonite, colusite, and small occurrences of chalcocite, tennantite, ferberite, and bismuthinite. The enargite-luzonite (Cu_3AsS_4) grades range between 1% and 3% Cu and 0.3% and 1% As. Silver grades range from 15 g/t to 30 g/t, while some internal sectors contain gold values between 0.3 g/t and 0.7 g/t. Gangue minerals include quartz, alunite, zunyite, and clays such as kaolinite, dickite, illite, and smectite.

6.5.3 Temporal Evolution of Mineralization at Colquijirca

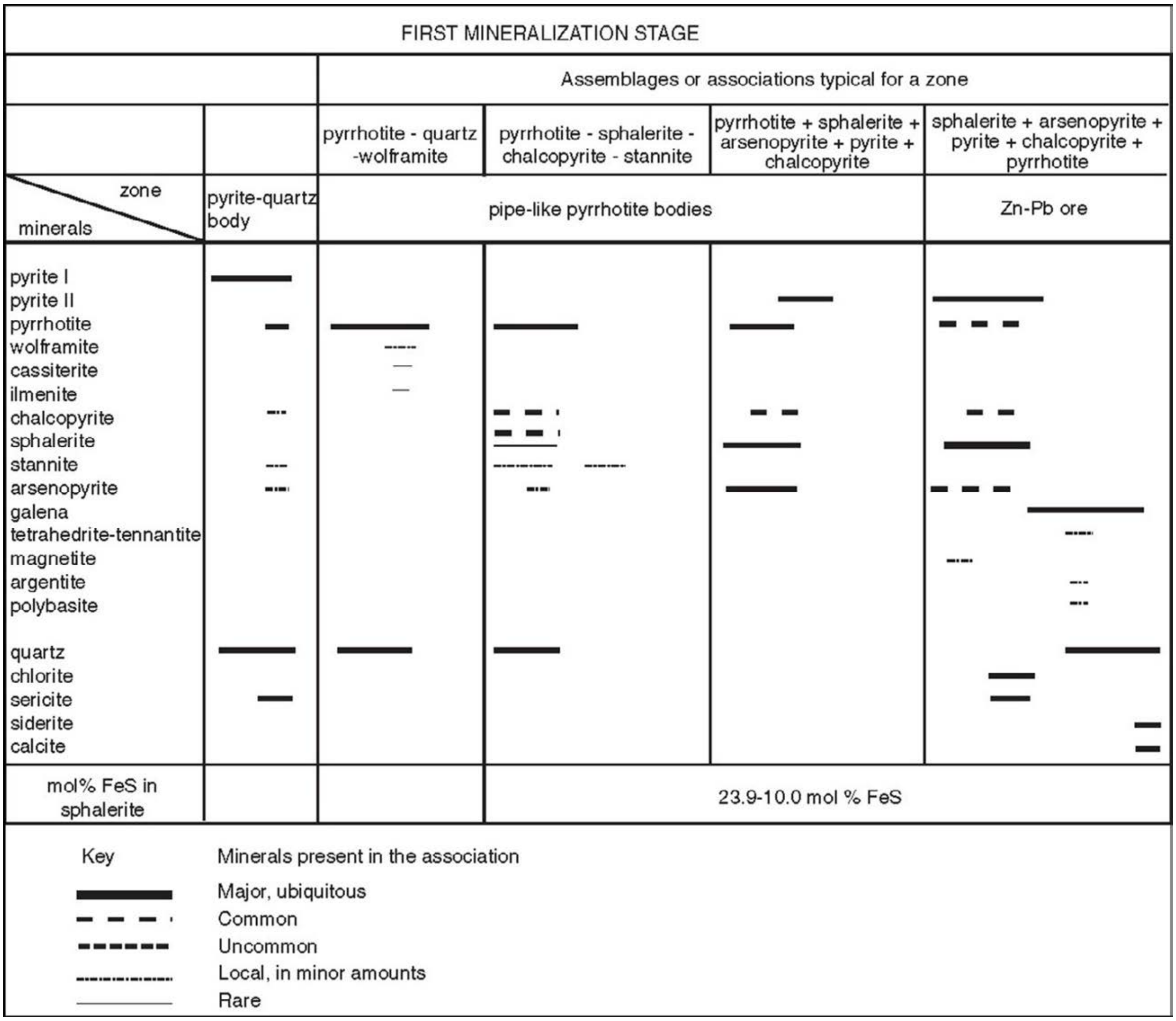
Magmatic activity in the Cerro de Pasco area, occurring between 15.4 and 15.1 Ma, was marked by successive intrusions of diatremes, dacitic domes, and quartz-monzonite dykes (Baumgartner, Fontboté, & Vennemann 2007).

The temporal evolution of mineralization at Colquijirca can be divided into two main stages:

- First Stage Mineralization was formed by a moderate salinity fluid resulting from the mixing of magmatic water (end-member salinity ~10% wt NaCl) with meteoric water. According to Lacy (1949), the paragenetic sequence of this stage includes multiple generations of pyrite, as illustrated in Figure 6-9.
- Second Stage Mineralization, occurring between 15.5 and 14.4 Ma (Baumgartner et al. 2007), is associated with Cordilleran base metal replacement mineralization and diatreme

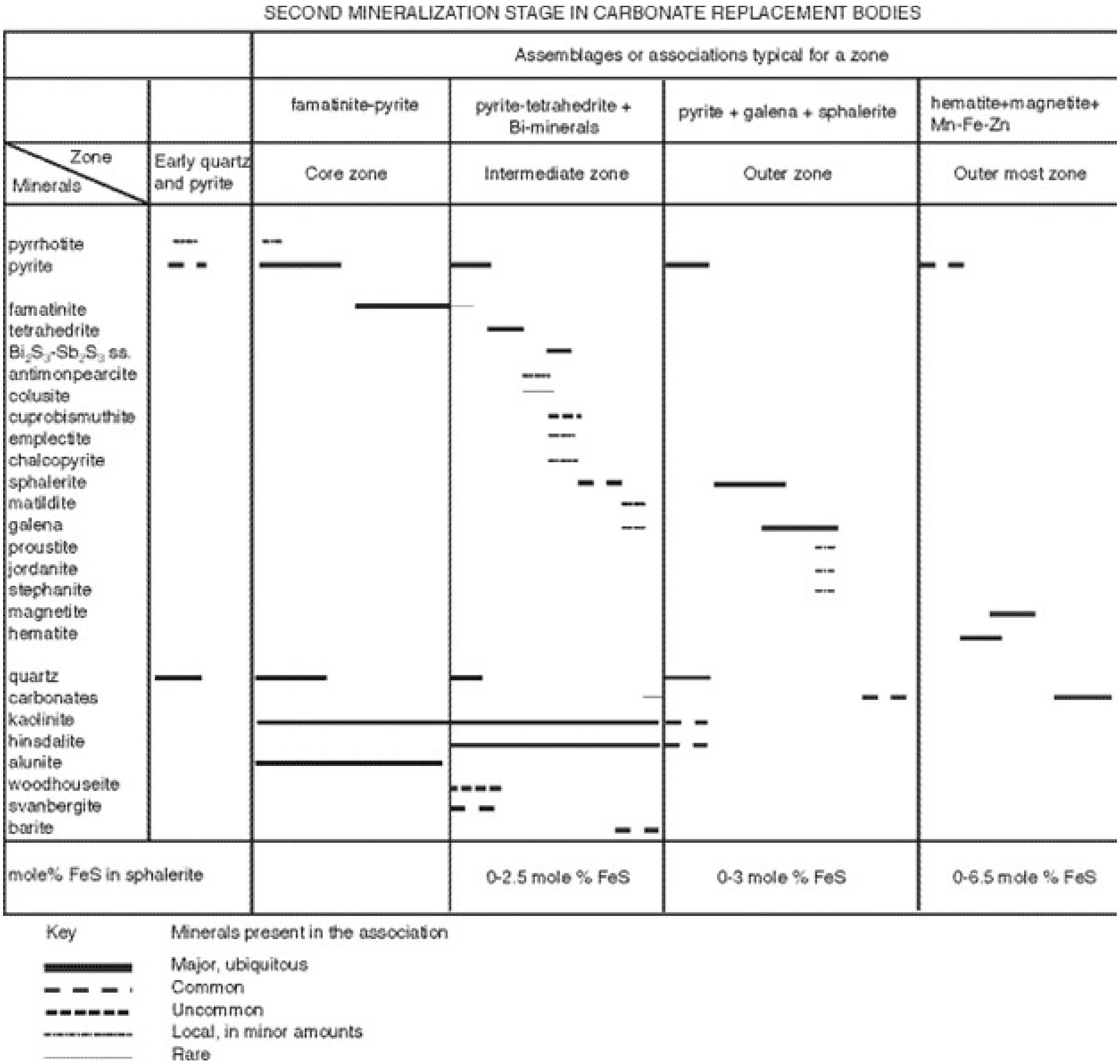
breccia-hosted veins. The paragenetic sequence of Cordilleran base metal replacement mineralization is presented in Figure 6-10, while the sequence for diatreme breccia-hosted veins is shown in Figure 6-11.

Figure 6-9: Paragenetic Sequence for First Stage Mineralization



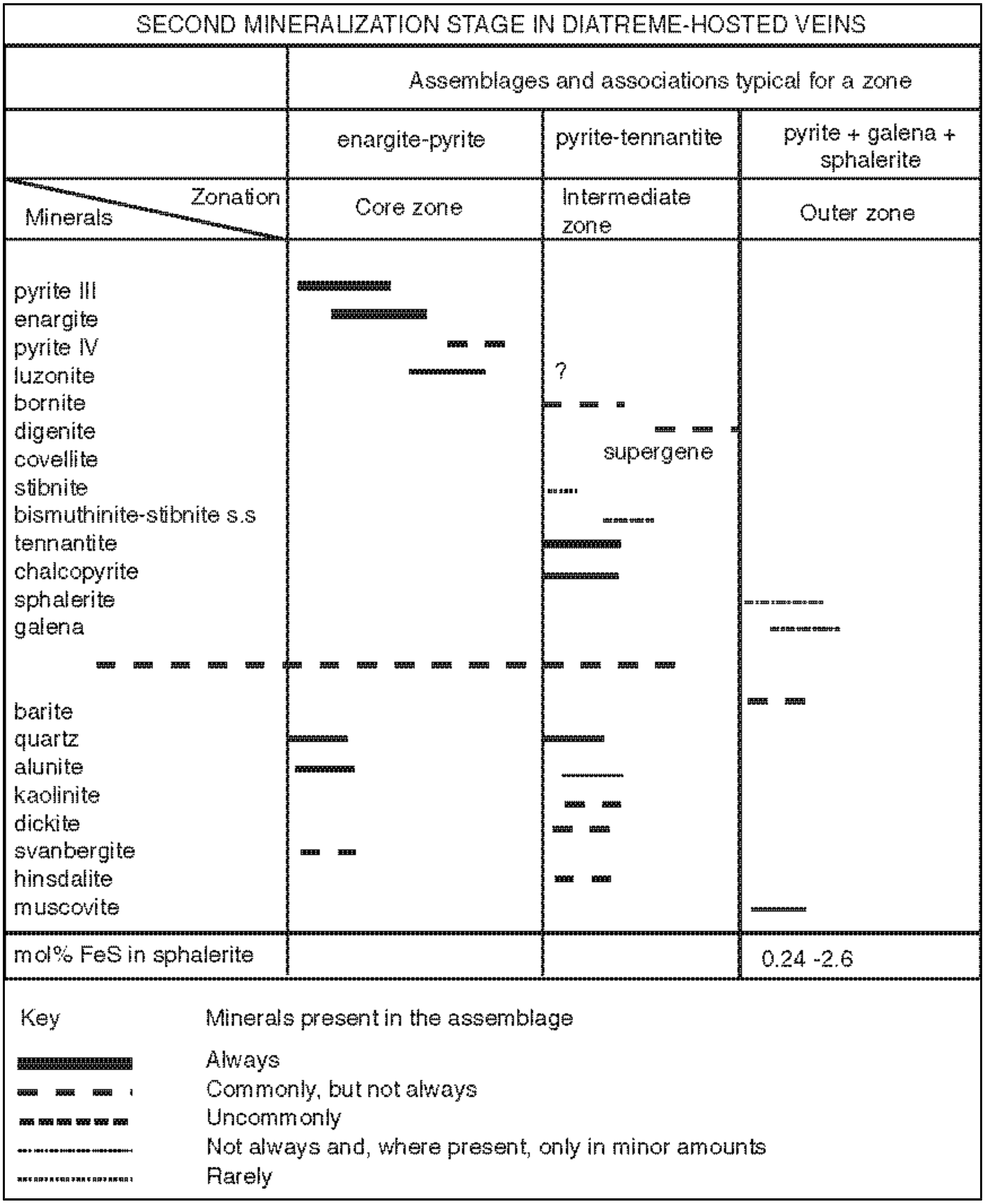
Source: Baumgartner, Fontboté, & Vennemann 2007, (including observations by Bowditch 1935, Lacy 1949, and Einaudi 1968, 1977)

Figure 6-10: Paragenetic Sequence of Cordilleran Base Metal Replacement Mineralization



Source: Baumgartner, Fontboté, & Vennemann 2007

Figure 6-11: Paragenetic Sequence of Second Stage Vein Mineralization in Diatreme Breccia



Source: Baumgartner, Fontboté, & Vennemann 2007.

6.6 Deposit Types

The mineral deposits of the Colquijirca Mining District, known as Cordilleran deposits, are porphyry copper related deposits. These types of deposits, which are generally formed in the upper parts of a porphyry Cu, are characterized by distinct zoning with inner zones dominated by Cu and outer zones dominated by Zn, Pb, and Ag. In the case of the Colquijirca Mining District, and specifically the area between the Marcapunta Norte and Colquijirca sectors, there are three zones, with mineralogy consisting mainly of enargite in the innermost zone, chalcopyrite in the intermediate zone; and sphalerite and galena in the outer zone.

The following is excerpted from Baumgartner et al. (2007):

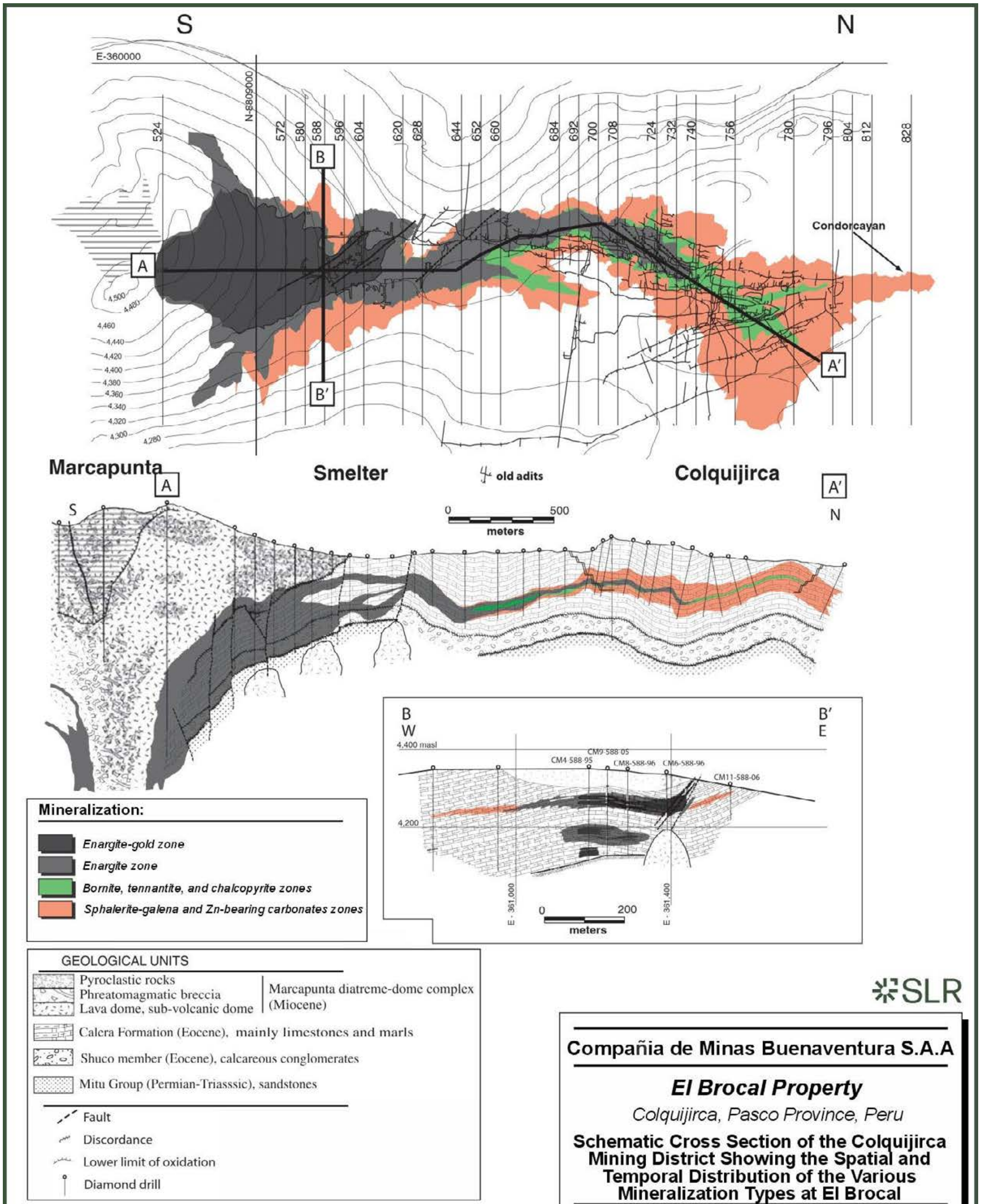
Cordilleran deposits are also referred to by various other names, including Butte-type vein deposits (Meyer et al., 1968), polymetallic veins, and zoned base metal veins (Einaudi et al., 2003). The term "Cordilleran deposit" was first introduced by Sawkins (1972) and has since been used extensively in literature, including works by Einaudi (1982), Guilbert and Park (1985), Bartos (1987), Macfarlane and Petersen (1990), Hemley and Hunt (1992), Bendezú and Fontboté (2002), Bendezú (2007), and Baumgartner (2007).

The primary characteristics of Cordilleran base metal deposits can be summarized as follows (adapted from Sawkins, 1972, and Einaudi, 1982):

- Closely related in time and space to calc-alkaline igneous processes, similar to those forming porphyry Cu and high-sulphidation Au-Ag epithermal deposits.
- Typically form after the development of high-sulphidation Au-(Ag), skarn, and porphyry Cu deposits, as evidenced by cross-cutting relationships and sparse geochronological data.
- Deposited at shallow crustal levels below the paleosurface, under epithermal conditions.
- Typically Cu-Zn-Pb-(Ag-Au-Bi) with very high sulphide contents, sometimes exceeding 50% by weight of total sulphides.
- Ore and alteration minerals often exhibit clear zoning. Cores may exhibit high-sulphidation characteristics with advanced argillic alteration assemblages, though this is not always the case.
- Frequently contain low-sulphidation assemblages with pyrrhotite and, in some cases, arsenopyrite. These assemblages can be extensive and transition to Zn-Pb-rich zones.
- Found mainly as veins or breccia bodies in silicate host rocks or as replacement zones in carbonate rocks.

The characteristics of Cordilleran base metal deposits are illustrated in Figure 6-12.

Figure 6-12: Schematic Cross Section of the Colquijirca Mining District Showing the Spatial and Temporal Distribution of the Various Mineralization Types at El Brocal



Source: Bendezú et al. 2009.

The following is excerpted from Bendezú, Fontboté, & Cosca 2003:

In the Colquijirca district, the relative sequence of geological events and absolute age determinations indicate that the Cordilleran base metal lode and replacement ores—primarily epithermal in origin and formed under high-sulfidation and oxidation states—were emplaced significantly later than the Au–(Ag) high-sulfidation epithermal mineralization, with a time difference of approximately 460,000 years. Many classic mining districts known for their epithermal porphyry copper and/or Au-(Ag) deposits also host concentrations of Cordilleran base metal veins. These veins can occur at various spatial positions above the porphyry environment, extending to levels as shallow as the epithermal environment. In carbonate rocks, such veins are often associated with fine-grained Zn-Pb mineralization.

SLR notes that the current property is at an advanced stage of exploration, and that the geology interpretation and Mineral Resource estimation are supported by extensive drilling and open pit and underground mining experience. There currently are no exploration targets within the district that are part of El Brocal's operations. However, Buenaventura's drilling program is partially designed to explore areas with geological potential surrounding Mineral Resources during each drilling campaign.

.

7.0 Exploration

7.1.1 Geophysical Exploration

As mentioned in Section 5, mining activities in Colquijirca started in pre-Hispanic times. In the modern era, exploration activities in the immediate El Brocal area started in 1994-1995. In 1994, Geoterrex conducted electromagnetic (Time Domain EM), gravimetry, and IP geophysical surveys in the Colquijirca, Marcapunta, and San Gregorio areas (see Figure 3-2), identifying two geophysical anomalies in Marcapunta and two in San Gregorio.

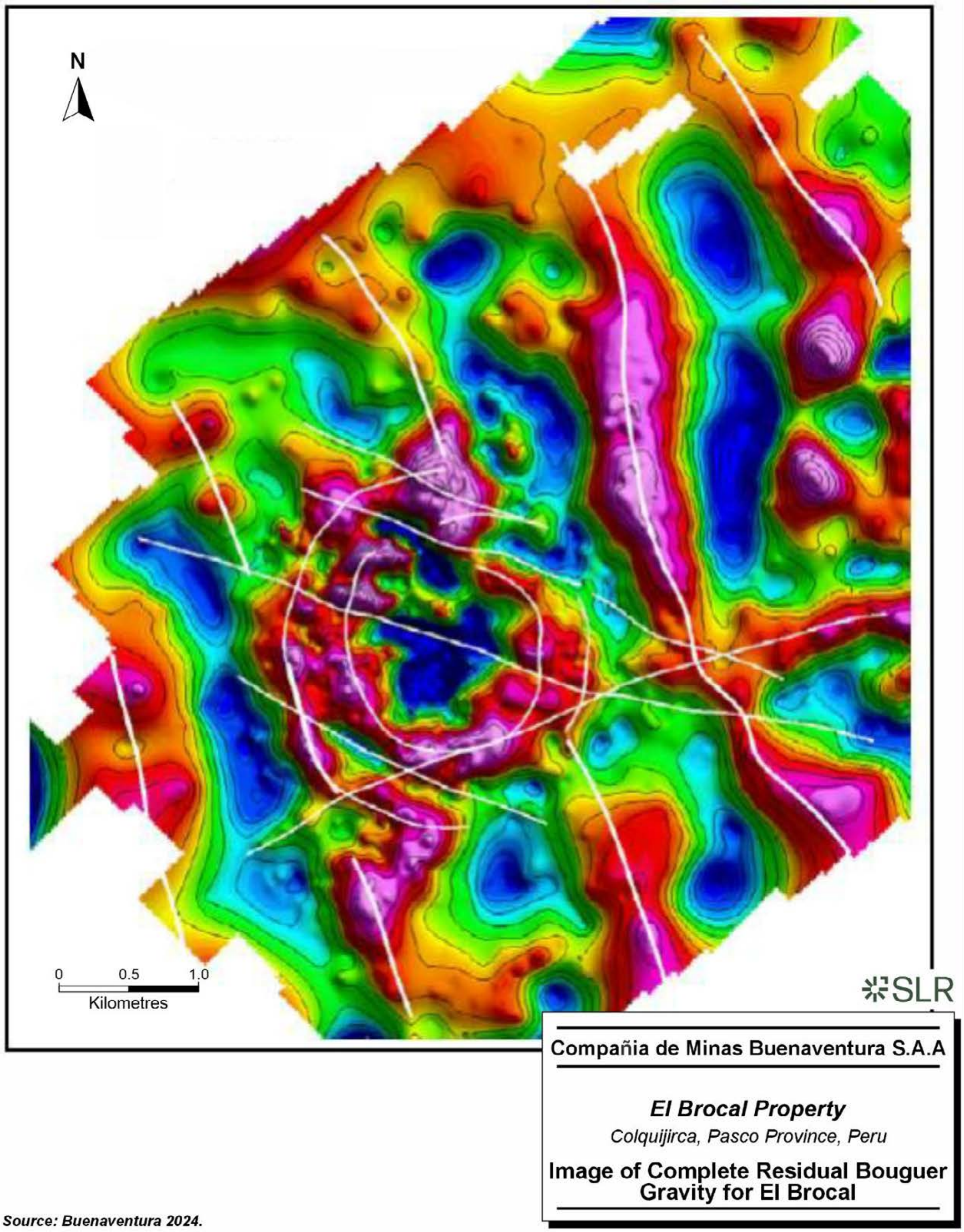
A second geophysical campaign by Geoterrex in 1995 corrected a false anomaly in the northern sector of San Gregorio and confirmed the anomalies in Marcapunta Norte and Marcapunta Oeste.

In 2003, VDG del Perú S.A.C. conducted a gravimetric survey on behalf of SMEB over the Marcapunta property, including the Colquijirca mine area. This geophysical campaign aimed to delineate the presence of semi-massive to massive sulphides using gravity measurements. A description of this study is provided below (Ellis Geophysical Consulting Inc. 2003).

Earlier diamond drilling campaigns had confirmed the presence of economic sulphide mineralization, with primarily enargite and chalcopyrite, which exhibit significant density contrasts with the host rock. The gravimetric method proved effective during the initial survey in 2002, identifying a ring-shaped gravity anomaly with a strong correlation between gravity maxima and sulphide mineralization at depth. The 2003 survey aimed to complete the delineation of this anomaly's southeastern boundary (Figure 7-1).

The 2002 gravimetric survey identified gravity anomalies over the stratabound mineralization, extending southward and indicating areas of potential mineralization. The strongest anomalies, based on SMEB's experience, were associated with economic mineralization at depth. Filtered data from 2002 defined a crescent-shaped anomaly in Marcapunta, open to the east. The 2003 survey completed the interpretation of this zone, revealing a Bouguer anomaly in the form of a C-shaped zone with a slight dip in its centre.

Figure 7-1: Image of Complete Residual Bouguer Gravity for El Brocal



Source: Buenaventura 2024.

7.1.2 Geological Review

In 2020, a geological review of the Colquijirca area was completed by Buenaventura. Results of this study are summarized below (Ventura 2020).

A geological review of an area of 143 ha at a scale of 1:1,000 was completed in 2020 including the re-logging of five diamond drill holes located in the Colquijirca, Smelter, and Marcapunta pits, which resulted in creating the deposit's stratigraphic column (Figure 6-5). In summary, the lithostratigraphic analysis based on mapping and drilling identified seven major units. For detailed lithological descriptions, refer to Section 6 (Geology & Mineralization).

7.2 Drilling

Drilling at El Brocal started in 1969, and to date 4,796 holes totaling 590,108 m have been drilled in the deposit (Table 7-1). In the past decades, most of the drilling has been diamond drilling (DD) for Mineral Resources definition and estimation purposes. In addition, Buenaventura has been conducting drilling programs to explore areas with geological potential surrounding the known Mineral Resources.

In 2005–2007, a 30,000 m DD (110 drill holes) campaign focused on Marcapunta Norte, targeting the geophysical anomalies identified in 1994 and 1995. As a result of this drilling campaign, Mineral Resources were increased.

In 2023-2024 drilling, 14,609 m were exploration drilling, targeting definition of new resources in areas with geological potential such as Marcapunta SW, Marcapunta SE, and Marcapunta SE. At the Colquijirca Pit, 4,884 m were drilled in phases 13 and 15 to upgrade classification. Additionally, 2,225 m of drilling were conducted for metallurgical purposes, focusing on the area of geological potential in the Condorcayán anomaly and in Phase 6 of the southern expansion plan for the Colquijirca Pit.

Figure 7-2 shows the 2020-2024 drilling campaigns across the deposit.

Table 7-1: Summary of Drilling at El Brocal

Period	# Holes	Depth (m)
1969-2000	437	70,752
2002-2006	204	50,800
2007-2010	575	130,312
2011	61	4,609
2012	54	5,743
2013	40	3,735
2014	51	16,915
2016	67	9,998
2017	363	14,297
2018	592	44,211
2019	422	27,531
2020	329	23,841

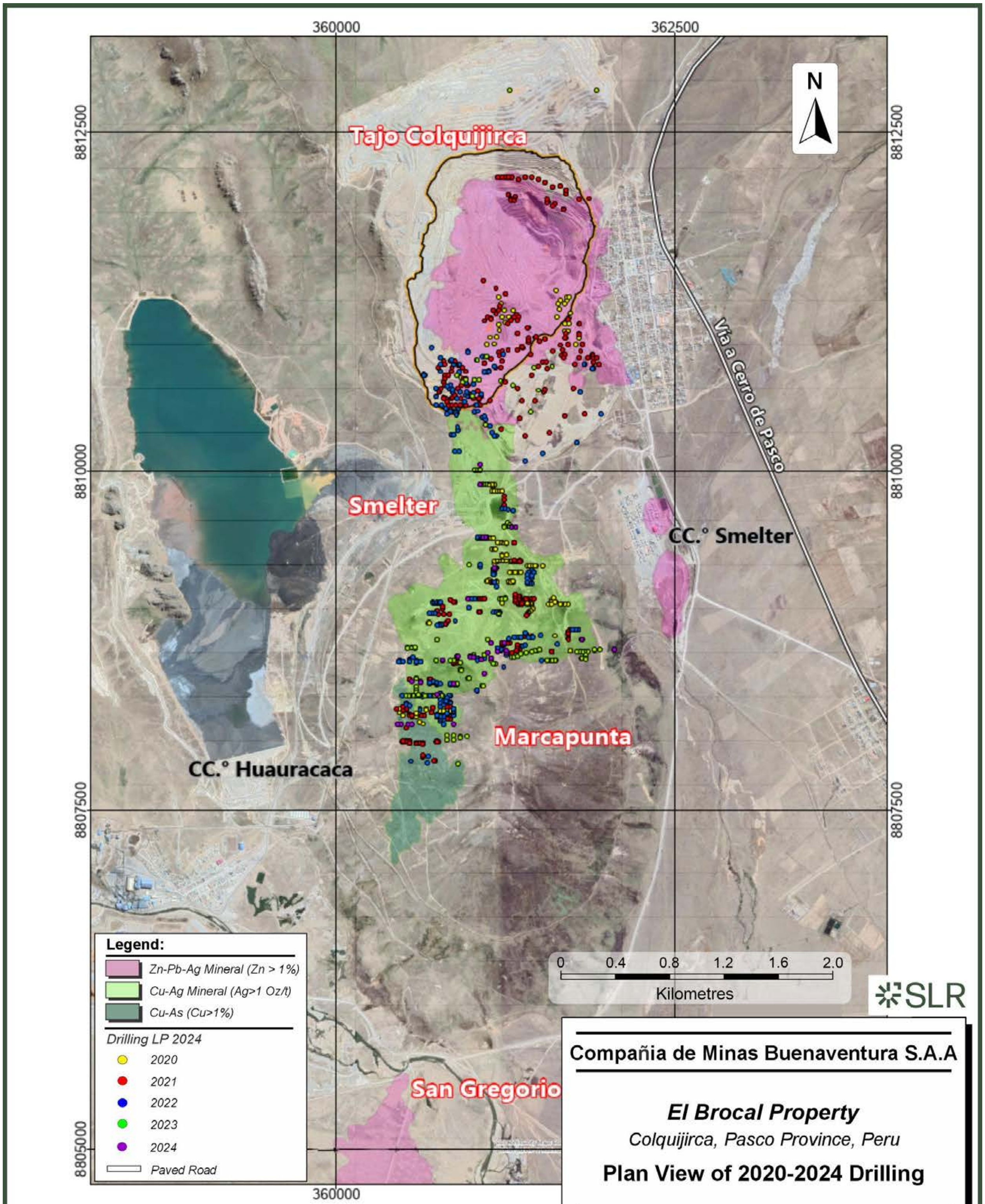
Period	# Holes	Depth (m)
2021	661	77,261
2022	511	55,331
2023	355	46,227
2024	74	8,545
Total	**4,796**	**590,107**

The SLR QP notes that DD is the primary and almost exclusive method of sampling at El Brocal. Drill patterns, collar spacing, and hole diameters are designed based on geological and geostatistical requirements to ensure reliable geological interpretation and confidence in the grade estimation. Drill core provides essential data on geological contacts, mineralogy, and structural conditions.

The SLR QP reviewed the following:

- Downhole Surveying: Inclined drill holes (≠-90°) are surveyed using mechanical devices, such as Reflex or gyroscopic tools, for spatial orientation. Certified calibration data ensures accuracy. Buenaventura considered that vertical holes (-90°) and those shallower than 50 m do not require survey measurements.
- Geological Logging: All core is logged by Buenaventura geologists using industry standard protocols. Data is collected using GVMapper software, which incorporates customized geological codes, enabling efficient and standardized logging.
- Sampling and Recovery Factors: The SLR QP reviewed the drilling and sampling practices and found them suitable for Mineral Resource estimation. Recovery rates exceed 95%, with sampling intervals ranging from 0.3 m to 1.5 m, depending on geological contacts and mineralogical variations.
- Laboratory assays were validated by standard QA/QC verification, including the insertion of certified standards and blanks. No material discrepancies were observed.
- Drilling Type and Extent: Drilling at El Brocal is primarily DD. Campaigns have included various orientations and inclinations to optimize data collection.

Figure 7-2: Plan View of 2020-2024 Drilling



Source: Buenaventura 2024.

7.3 Hydrogeology Data

Amphos21 completed a hydrogeological study, including a three-dimensional (3D) hydrogeological model (Amphos21 2024) to support the El Brocal mine design. This was reviewed by SLR (2025), a summary of which is provided here.

Groundwater levels in the mining area have been determined from a network of 21 Casagrande piezometers and one pumping well. Four of these were initially DD holes totalling 565 m drilled by El Brocal in the expansion area during 2024 which were converted to piezometer holes. Two piezometer holes were noted to be blocked during the hydrocensus. The locations of hydrogeology holes are presented in Figure 7-3.

Hydraulic testing has been completed on four DD holes drilled in 2024 to complement historical data from earlier studies including:

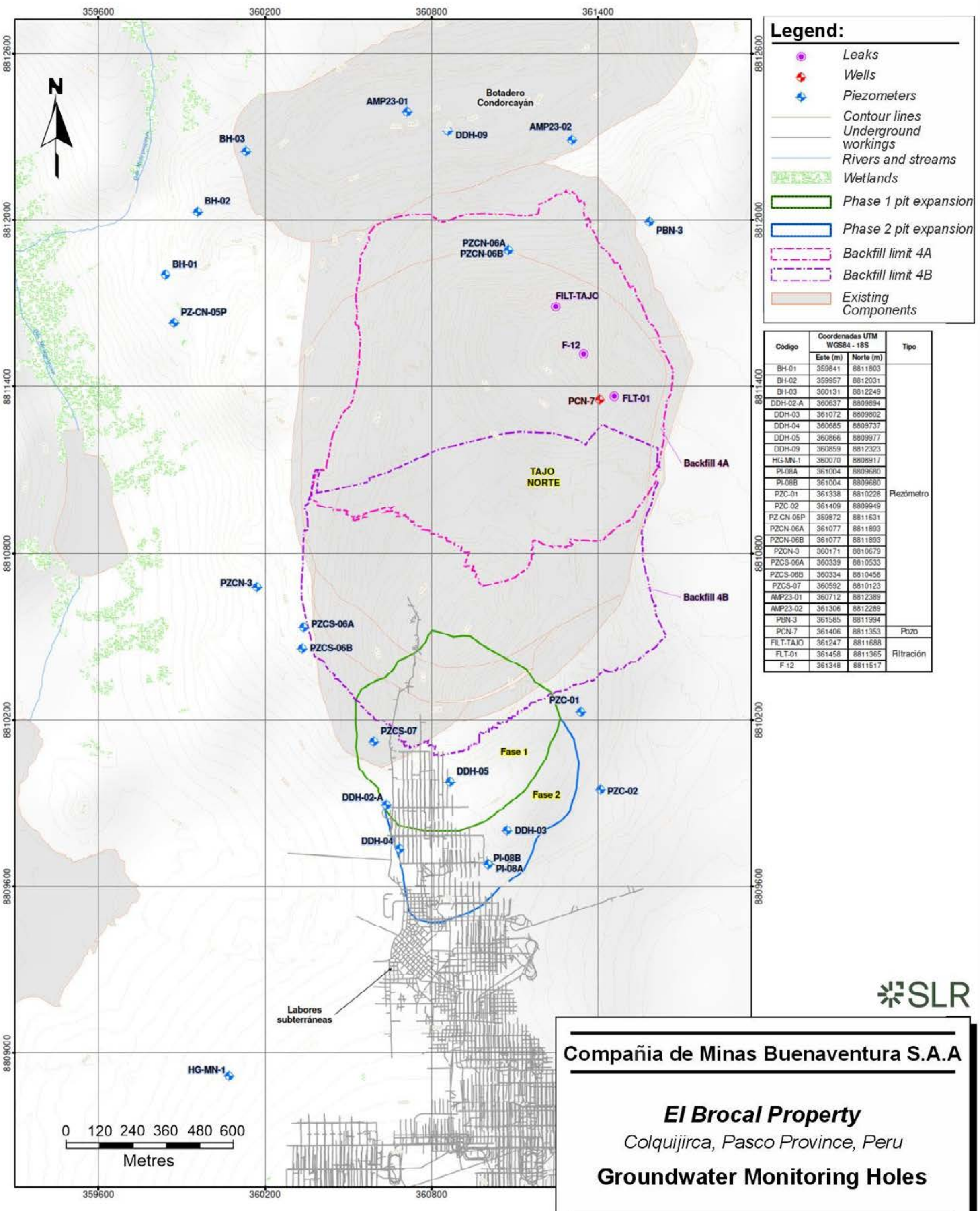
- Falling, rising, and constant head tests
- Packer (Lugeon) tests
- Slug tests
- Pumping tests

Hydraulic conductivities (K) derived from testing are presented in Table 7-2 and the box and whisker plot in Figure 7-4.

Table 7-2: Hydraulic Conductivities by Hydrogeological Unit

Hydro-geological Unit	Lithologies	Rock Unit	Hydraulic Conductivity, K (m/day)		
			Average	Minimum	Maximum
A1	Silty gravels and sands	Alluvial, colluvial and moraines	2.7E-02	6.2E-02	3.0E+00
A2	Rock blocks in a clay matrix	Moraine and glacial-alluvial	9.8E-02	1.5E-02	4.3E-01
B1	Limestone	Pucará Group and Calera Formation	3.6E-02	6.2E-03	2.7E-01
B2	Sandstone, shales and siltstones	Mitu Group	2.9E-02	5.9E-03	1.9E-01
C1	Volcanic lava, breccias and tuff	Dacite Intrusives	1.9E-03	5.1E-04	9.1E-03

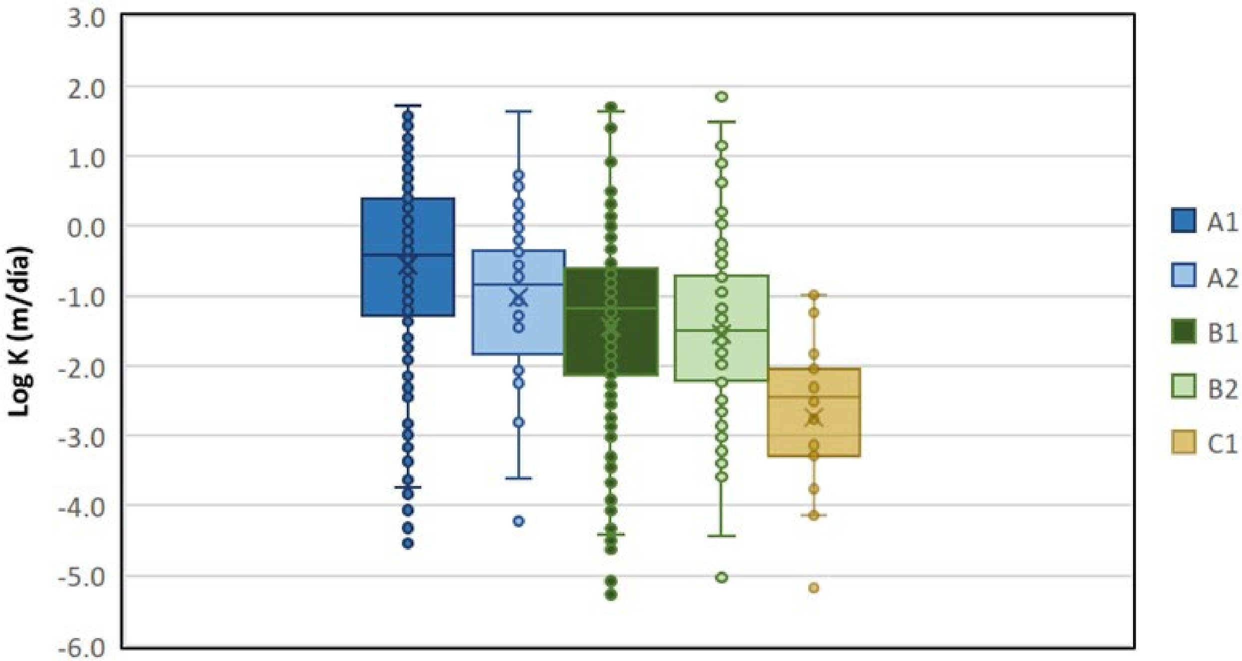
Figure 7-3: Groundwater Monitoring Holes



Código	Coordenadas UTM WGS84 - 18S		Tipo
	Este (m)	Norte (m)	
BH-01	359841	8811803	Piezómetro
BH-02	359957	8812031	
BH-03	360131	8812249	
DDH-02-A	360637	8809694	
DDH-03	361072	8809802	
DDH-04	360685	8809737	
DDH-05	360866	8809977	
DDH-09	360859	8812323	
HG-MN-1	360070	8808917	
PI-08A	361004	8809680	
PI-08B	361004	8809680	
PZC-01	361338	8810228	
PZC-02	361409	8809949	
PZ-CN-05P	359872	8811631	
PZCN-06A	361077	8811893	
PZCN-06B	361077	8811893	
PZCN-3	360171	8810679	
PZCS-06A	360339	8810533	
PZCS-06B	360334	8810458	
PZCS-07	360592	8810123	
AMP23-01	360712	8812389	
AMP23-02	361306	8812289	
PBN-3	361585	8811994	
PCN-7	361406	8811353	Pozo
FILT-TAJO	361247	8811688	Filtración
FLT-01	361458	8811365	
F-12	361348	8811517	

Source: Amphos21 2024.

Figure 7-4: Hydraulic Conductivities by Hydrogeological Unit



Storage coefficient (Ss) and transmissivity (T) for El Brocal have been derived from pumping tests completed on two wells by Aphmos21 in 2020 including a constant flow test completed on boreholes PCN-01 and a constant flow and step test completed on hole PCN-03, the results of which are presented in Table 7-3. The tests were performed in Tajo Norte with wells completed in dolomite and limestone lithologies.

Table 7-3: Pump Testing Summary

Borehole	Test Type	T (m^2/day)	K (cm/s)	K (m/day)	Ss (m^{-1})	Analysis Method
PCN-01	Constant Flow	4.34E+02	3.35E-03	2.89E+00	1.17E-05	Barker fractured aquifer
		1.59E+02	1.23E-03	1.06E+00	1.05E-05	Moench
PCN-03	Constant Flow	5.22E+01	4.03E-04	3.48E-01	-	Theis confined aquifer
		7.08E+01	5.46E-04	4.72E-01	-	Theis unconfined
		1.34E+02	6.55E-04	5.66E-01	4.04E-04	Barker fractured aquifer
		8.42E+01	6.50E-04	5.61E-01	2.23E-05	Moench
	Step Test	8.21E+01	6.33E-04	5.47E-01	-	Theis Step test
		9.00E+01	6.94E-04	6.00E-01	1.91E-03	Dougherty-Babu
		6.44E+01	4.97E-04	4.29E-01	7.38E-04	Barker fractured aquifer

Source: Amphos21, 2024.

Piezometric levels in the mining area have been provided by Amphos21 and are presented in Figure 7-5. Two groundwater sinks have been identified, the first related to the development of the pit and the interaction between the Calera Formation and faulting and the second related to the underground mine workings. Pumping borehole PCN-07, located at the northern end of the pit, contributes to the drawdown in this area.

Groundwater recharge is from precipitation, estimated at 845 mm/year, with flow from the high mountain areas. Groundwater discharge is driven by a combination of base flow and extraction from Tajo Norte and the underground workings. This results in a depression of the regional groundwater levels in the vicinity of the mine.

A numerical groundwater model has been developed by Amphos21 using FEFLOW 8.0 software for the current conditions.

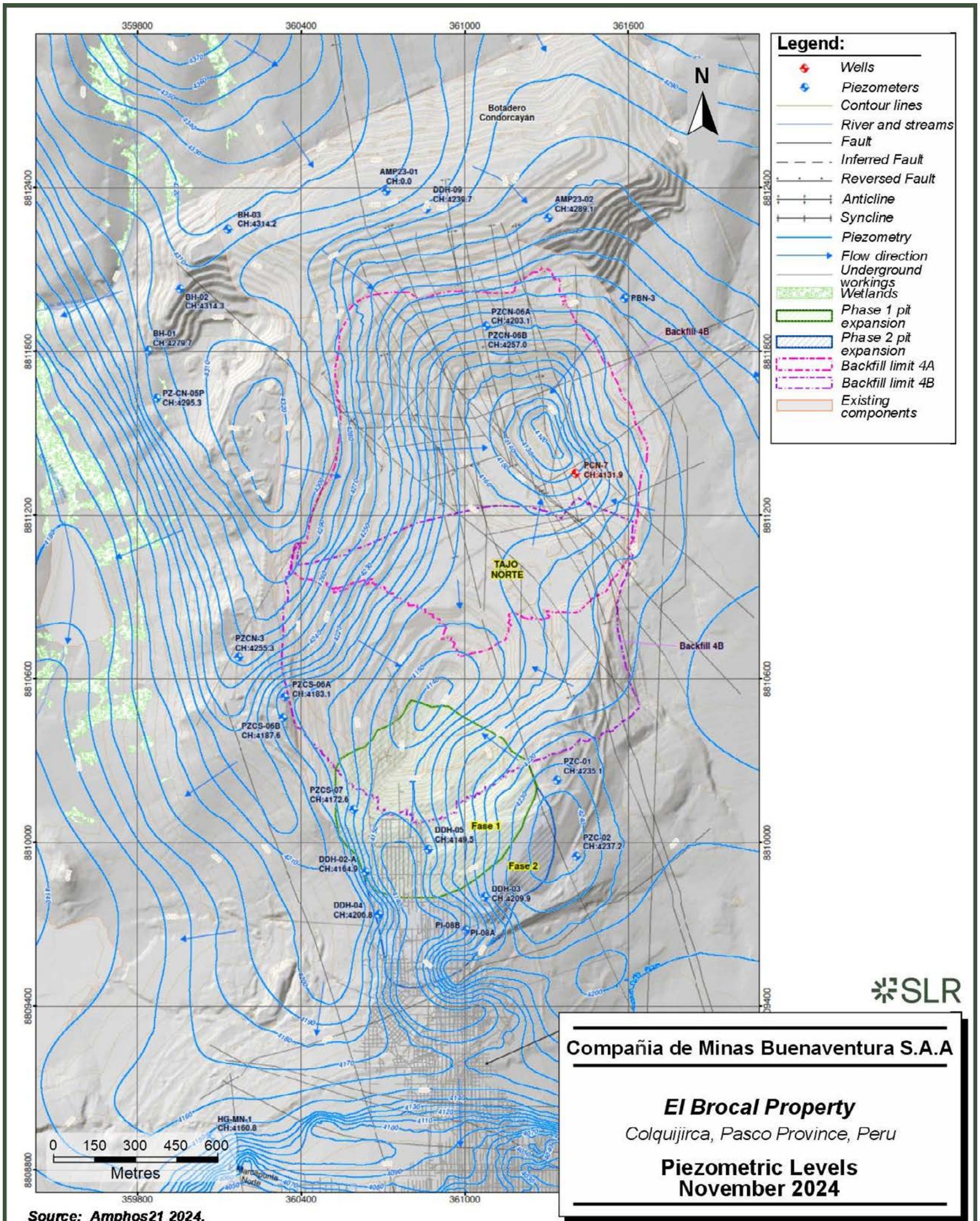
- Triangular prism mesh elements.
- Mesh size decreases in the area of interest around the mine area.
- Approximate size of the model is 11.5 km (east-west) x 11.6 km (north-south).
- Boundaries are defined using surface water divides and water courses.

When applying the hydraulic properties, hydraulic conductivity has been factored with consideration of weathering, with higher permeabilities near surface where weathering is greatest, and then decreasing with depth. Fault surfaces provided by Buenaventura were incorporated into the model as discrete features. An average of 25% of the annual rainfall was included as recharge, with values varying according to landform type.

The model has been developed assuming steady state conditions and calibrated with data from the piezometer network. Statistical analysis has been completed as a check on model accuracy and the results indicate a reasonable fit.

The resulting piezometric surface has been provided to SLR for incorporation into stability analysis. The surface reflects current conditions and does not predict expected conditions for the development of the F1 and F2 open pits. Based on feedback from Buenaventura, the SLR QP understands that the F1 and F2 pit development will be incorporated into the next iteration of the model.

Figure 7-5: Piezometric Levels, November 2024



Source: Amphos21 2024.

7.4 Geotechnical Data

There is extensive geotechnical data collected from resource and geotechnical holes at El Brocal, including open pit and underground mining areas (Table 7-4). The resource holes drilled between 2016 and 2020 were re-logged geotechnically in 2020 to complement new data from purpose designed holes drilled from 2021 onwards. Additional data was also collected from cell mapping of rock exposures from the underground and open pit mining areas. This data was used by SRK for a geotechnical PFS that provided the basis for open pit and underground geotechnical design prior to 2024 (SRK 2022b).

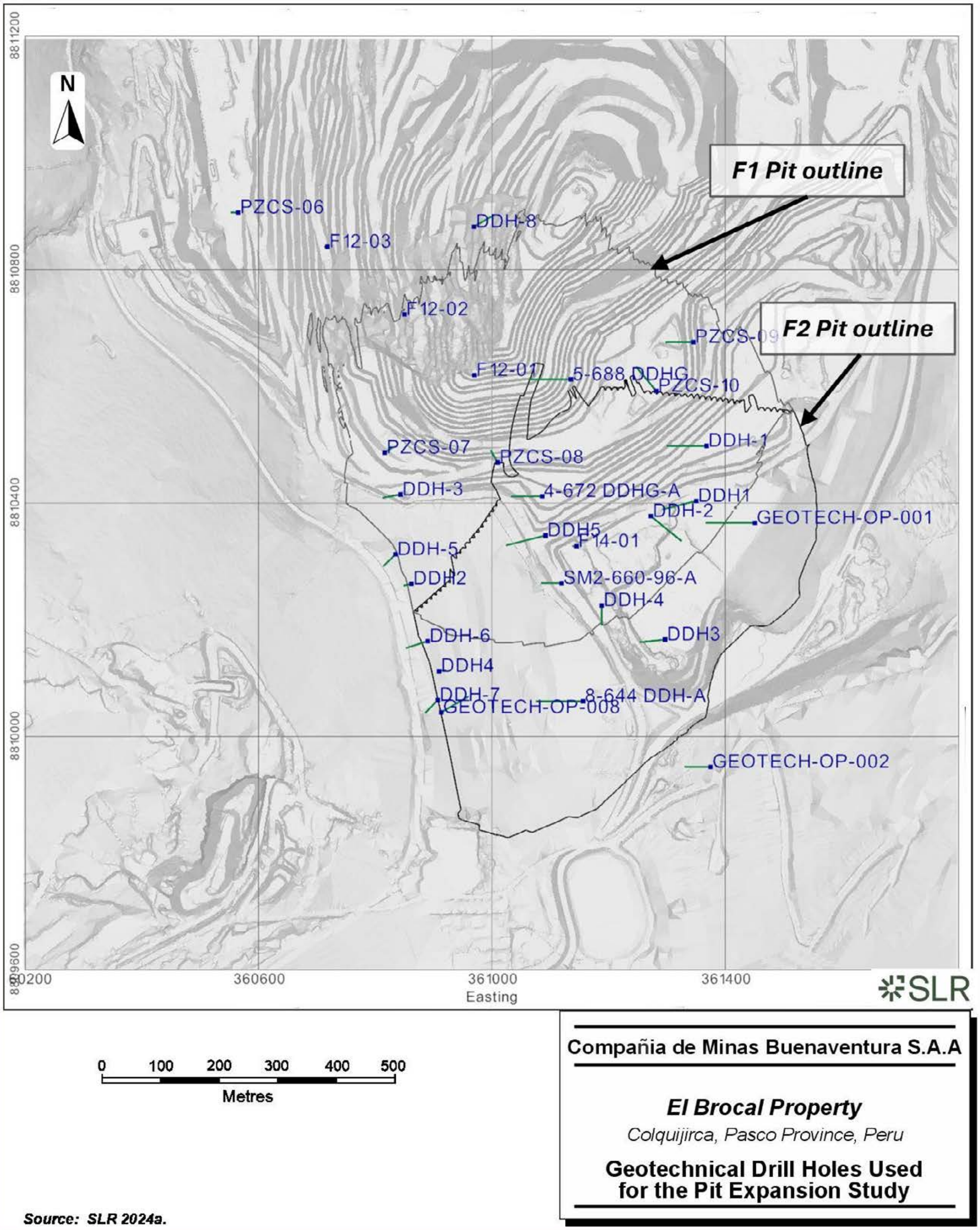
Table 7-4: Geotechnically Logged Diamond Drill Holes

Year	Number of Holes	Total Metres
2016 – 2020	37	5,430
2021	8	1,620
2022	19	2,160
2023	12	1,541
2024	13	1,320
Total	89	12,071

SLR completed a validation of geotechnical data as part of an open pit geotechnical study for the F1 and F2 pit expansion (SLR 2024a) where core was inspected on site and compared with logging data.

The holes used for the open pit geotechnical study completed by SLR are presented in Figure 7-6.

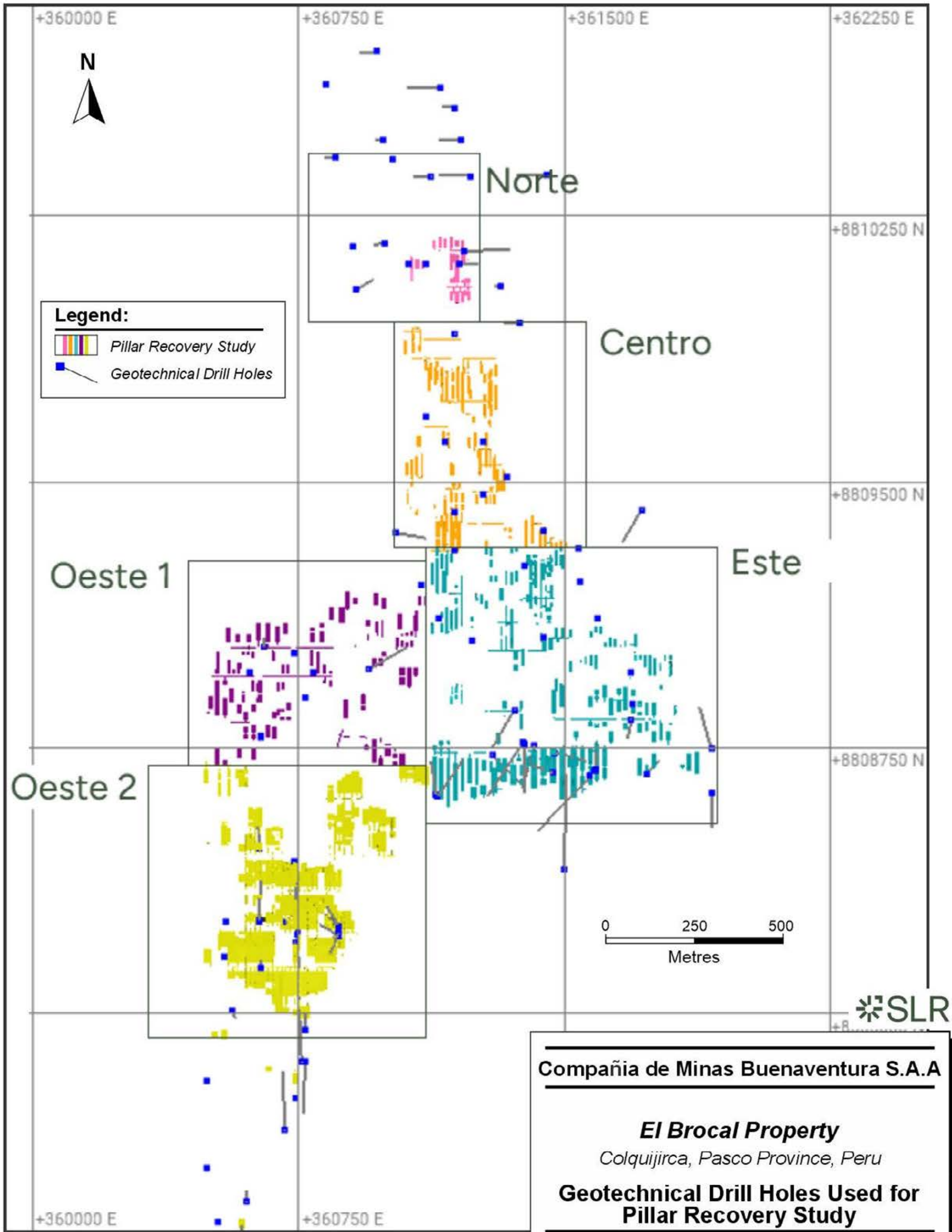
Figure 7-6: Geotechnical Drill Holes Used for the Pit Expansion Study



Source: SLR 2024a.

SLR also completed a study for pillar recovery for the underground mining area (SLR 2024b) and used geotechnical data collected from drill holes, presented in Figure 7-7, to characterize the rock mass.

Figure 7-7: Geotechnical Drill Holes (Blue) Used for Pillar Recovery Study



Source: SLR 2024.

Note. Holes with no drill hole trace line are vertical.

There is a significant amount of geotechnical laboratory testing that has been completed on samples collected from rock core since 2008, covering the entire mining area and each of the different lithologies, including:

- Uniaxial compressive strength (UCS)
- Triaxial compressive strength (TXT)
- Indirect tensile strength (TI)
- Elastic constant (EC)
- Direct shear strength of joints (CD)
- Point load test (CP)
- Physical properties (PF) (unit weight, porosity, moisture content)

The number and types of tests completed are presented in Table 7-5.

Table 7-5: Number and Type of Geotechnical Tests by Year

Year	UCS	TXT*	TI	EC	CD*	CP	PF
2008	4	12	7	2	9	-	6
2011	-	63	5	-	45	23	9
2016	5	25	18	-	35	-	-
2018	6	15	12	2	30	20	12
2019	36	30	54	17	56	-	148
2020	16	29	24	8	40	24	24
2021	58	111	119	30	183	299	127
2022	28	65	54	15	88	233	27
2023	27	57	9	14	36	50	4
2024	26	58	-	26	-	-	-
Total	206	465	302	114	522	649	357

Note. * Numbers include each test conducted at different confining pressures (triaxial test) or normal stress (direct shear test) upon a single sample

While there is a considerable amount of geotechnical data available, the SLR QP notes the following:

- There is a lack of undisturbed sampling and testing of soil and weak rock units leading to uncertainty in the strength of these units.
- Some limitations have been identified in the logging and testing databases including:
  - Overestimation of RQD measurements.
  - Underestimation of fracture frequency.
  - Misinterpretation of intact rock strength estimations.
  - Structures in orientated core not always recorded.

- These limitations have been considered when calculating the Rock Mass Rating for the open pit geotechnical study (SLR, 2024a)

7.5 QP Opinion

The SLR QP is of the opinion that the drilling and sampling procedures adopted at El Brocal are consistent with generally recognized industry best practices. The resultant drilling pattern is sufficiently dense to interpret the geometry and the boundaries of mineralization with confidence. The core samples were collected by trained personnel using procedures meeting generally accepted industry best practices. The process was conducted or supervised by suitably qualified geologists.

The SLR QP is of the opinion that the samples are representative of the source materials, and there is no evidence that the sampling process introduced a bias. Accordingly, there are no known sampling or recovery factors that could materially impact the accuracy and reliability of drilling results.

8.0 Sample Preparation, Analyses, and Security

8.1 Sample Preparation and Analysis

At El Brocal mine, sampling activities are conducted under the supervision of a Buenaventura field or ore control geologist.

The process begins with the core being extracted from barrels at the rig and placed into core trays. These trays are then transported to the logging facility at the end of each drilling shift by El Brocal staff. At the core storage facility, the core is cut lengthwise into two halves using an automatic core saw along a geologist-marked line. The cut core is returned to the core box and organized work benches. Sampling intervals are a minimum of 0.3 m.

Each sample is labelled using a sample ticket that includes three tags containing the sample interval or quality control sample codes. Two of the tags, along with one half of the core, are placed in a polyethylene bag, while the third tag is stapled to the exterior of the bag. The remaining half of the core is kept in the core box. Once sampling for each drill hole is complete, the samples are packed into large sacks and transported to either an internal or external laboratory for analysis. These laboratories have primarily focused on analyzing copper, lead, and zinc.

From the early stages of the El Brocal project through May 2024, Buenaventura has utilized five laboratories for sample preparation and analytical services: the Brocal Internal Laboratory (EBR-SMEB or EBR) and four external laboratories (Actlabs, ALS Chemex, SGS, and Certimin), as outlined in Table 8-1. Since 2021, only EBR-SMEB and Certimin have been used as primary laboratories.

Table 8-1: Distribution of Samples Analyzed According to the Laboratory and Sampling Period

Laboratory	1969 - 2000	2002-2010	2011-2016	2017	2018	2019	2020	2021	2022	2023	2024	Total Samples
Actlabs		23,559	2,717	1,258	5,978							33,512
ALS Chemex			1,172		12,089	6,201	6,614					26,076
Certimin		8,366	2,900				2,784	35,149	220,013	4,888	8,168	282,268
EBR-SMEB	46,704	30,504	7,588	6,844	11,163	11,909	2,147	13,058	24,572	23,875	9,225	187,589
SGS	47	511										558
UNK		181										181
Grand Total	**46,751**	**63,121**	**14,377**	**8,102**	**29,230**	**18,110**	**11,545**	**48,207**	**46,585**	**28,763**	**17,393**	**332,184**

EBR-SMEB, located within the El Brocal Mining Unit, has been operational since 1985 and is certified to ISO 9001:2015 standards, providing onsite sample preparation and analysis. External laboratories supporting operations, including Actlabs, SGS, Certimin (Lima), and ALS (Lima), are all independent and highly accredited. Certimin holds ISO 9001, ISO/IEC 17025, ISO 14001, and ISO 45001 certifications. Actlabs is certified to ISO/IEC 17025:2017 and ISO 9001:2015. SGS is extensively accredited, including ISO 9001 and ISO 14001 certifications, and ALS Chemex is recognized internationally with ISO/IEC 17025:2017 certification. These certifications ensure all laboratories maintain high analytical and quality standards.

8.1.1 EBR - SMEB

Sample preparation and analysis at the onsite laboratory EBR - SMEB consisted of:

- Samples were dried at 100°C, coarsely crushed to achieve 90% passing through a 2.0 mm screen (10 mesh). Samples were homogenized using a Jones riffle splitter, reduced to approximately 400 g through successive splits, and pulverized to achieve 95% passing -140 mesh (106 µm). The pulverized sample was split into two sub-samples (200 g each), one sent for chemical analysis and the other kept as a backup for future use by the geology department.
- For gold analysis, samples were assayed using fire assay with an atomic absorption spectrometry (FAAAS). This involved melting the samples, followed by cupellation, and concluding with gravimetric analysis.
- Assays were conducted using atomic absorption spectroscopy (AASP-Min) with wet digestion and instrumental analysis for silver, copper, lead, zinc, arsenic, bismuth, and iron.
- Overlimit samples were re-assayed using the volumetric method, primarily for copper, lead and zinc, and the gravimetric method for silver.

8.1.2 Certimin

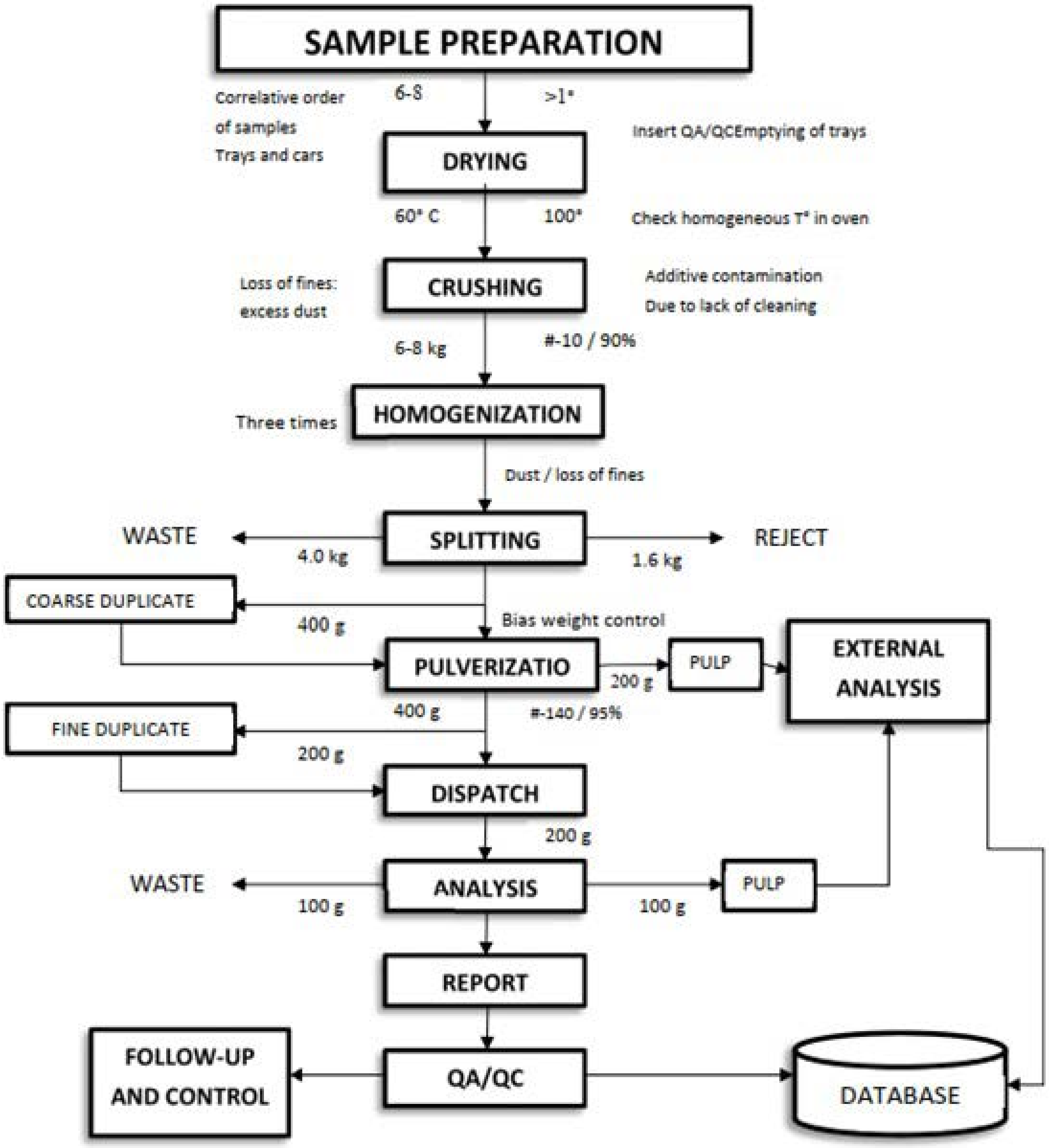
Sample preparation and analysis at Certimin consisted of:

- Samples were dried at 100ºC and coarse crushed to 90% passing 2.0 mm screen (10 mesh screen), riffle split (200-300 g), and pulverized (mild steel) to 85% passing -200 mesh screen (–75 µm).
- Gold analysis samples were analyzed using FAAAS (method IC-EF-01 | G0107).
- A total of 50 elements were assayed using the inductively coupled plasma optical emission spectrometry/mass spectrometry (ICP-OES/MS) multi-element method with four-acid digestion (method code IC-VH-59 | G0176R+).
- Overlimit samples were re-assayed using the volumetric method, primarily for copper, lead and zinc, and the gravimetric method for silver.

At present, the drilling core samples are shipped in rice bags either to EBR-SMEB or to the independent Certimin sample preparation facility in Lima, Peru. Once the analysis is complete, pulps and coarse rejects are returned to the onsite storage facility, typically within three months, and are stored in rice bags and boxes.

The laboratory sends the results in a digital format, and they are received and validated by the database administrator of the mining unit. Figure 8-1 summarizes the sample preparation process used at El Brocal.

Figure 8-1: Sample Preparation Diagram



Source: Buenaventura – Sampling Manual 2020.

The SLR QP considers the sampling methods acceptable, consistent with industry standards, and suitable for Mineral Resource and Mineral Reserve estimation.

8.2 Sample Security

Buenaventura mine geologists manage the chain of custody process, which includes arranging samples in a sequential order into bags. These are then transported to EBR-SMEB where a dispatch order is created. This order outlines the analysis methods, sample volume, and other relevant details, and the arrival of samples is recorded in the system.

For shipments that depart from the mine, ongoing communication with the carrier is crucial to oversee the samples' transit, with custody staff present on the transport vehicle. When the samples arrive at the external laboratory, submission forms and chain of custody documents are provided and signed by the laboratory's receiving official. The laboratory issues the results through electronic reports to the mining unit's database manager, who then verifies the data for accuracy.

In the SLR QP's opinion, samples were securely stored or monitored prior to dispatch, with chain-of-custody forms ensuring proper tracking and receipt at the laboratory.

8.3 Density Determinations

Density sampling begins with the selection of representative samples based on geological and mineralization units to ensure accurate data. Core samples, typically 15 cm to 20 cm in length, are collected at regular 5 m intervals along the drill hole, irrespective of mineralization. Once selected, samples are wrapped in plastic film, tagged, and photographed outside the core box by the density technician. The geologist compiles a list of all tagged samples, creating a database that is shared with the geology database manager and recorded on the density sample form. The samples are then sent to either internal or external laboratories for density determination.

Density determination involves precise preparation steps. The electronic balance is first calibrated, and the original weight of the sample is recorded. Samples are dried in an oven at 105°C, with weights measured every 30 minutes until a constant weight is reached to establish the drying time. The wax-coated water immersion method (paraffin method) is primarily used to calculate density for geological units. However, in argillic zones with friable or highly fractured materials, density is measured using a pycnometer to account for the specific characteristics of the material.

After the results are obtained, the data is uploaded to the database, reports are archived, and the physical samples are stored in their designated locations.

The SLR QP is of the opinion that density determinations followed established methods, providing sufficient data to support tonnage interpolations for both mineralized zones and waste.

8.4 Quality Assurance and Quality Control

El Brocal mine samples have been analyzed at the onsite Brocal Internal Laboratory, as well as at the external laboratories Actlabs, Certimin, and ALS, as summarized in Table 8-2. For the current Mineral Resource estimate, SLR reviewed quality assurance and quality control (QA/QC) data from the initial phases of the El Brocal project up to May 2024, the cut-off date for the resource database, using the BRO_SD_assay_20240524 database provided by Buenaventura.

The insertion rates for quality control samples were as follows: blank samples were included in the sample stream at an insertion rate of approximately 6%; duplicates, including pulp, coarse, and field duplicates, each had an insertion rate of 3%; and the certified reference material (CRM) samples had an insertion rate of 5%. External checks had a 3% insertion rate. It is observed that there is an increase in the insertion rate of QA/QC samples from 15% in the historical data to 19% in the current data (2021 to 2024).

El Brocal conducted a quality risk scoring for Mineral Resource Classification. This scoring process applied only to drill holes greater than 116 m, where a minimum number of controls samples were inserted (two blanks, three duplicates, and three CRMs). If drill holes had less than 50% quality scoring due to non-inserted controls or multiple questionable controls, it could result in downgrading Measured or Indicated blocks.

In 2022, SLR reviewed 99 drill holes assigned poor QA/QC score and noted that some of the low performance results were justified. The SLR QP recommends investigating whether QA/QC results are justified before final quality scoring to avoid condemning entire drill holes based on this criterion. Additionally, alternative measures can be implemented, such as validating non-inserted control drill holes with surrounding drill holes and verifying their controls. The SLR QP also recommends reviewing if failures have justified reasons for questionable results, including mislabelling, database errors, or low CRM concentrations.

For future assessments, it is recommended that failure samples be re-assayed along with a shoulder quantity of samples to address poor performance and prevent isolated issues from impacting the overall drill hole performance.

The SLR QP observed that the data quality risk assessment does not significantly affect the classification results.

Table 8-2: QA/QC Sample Insertions Summary

Laboratory	Year	Primary	Fine Blank	Coarse Blank	Pulp Duplicate	Coarse Duplicate	Field Duplicate	CRM	Check Assay	Control Sample	Total Sample	Insertion Rate (%)
ALS	Historic 1969-2020	26,076	736	736	735	735	734	784		4,460	30,536	15%
Actlabs		33,534	275	274	277	276	277	341	-	1,720	35,254	5%
Certimin		14,050	83	83	83	83	83	121	-	536	14,586	4%
Unknow		181	-	-	-	-	-	-	-	-	181	0%
SGS		558	-	-	-	-	-	-	-	-	558	0%
SMEB		116,837	1,495	1,670	1,370	1,371	1,380	1,879	-	9,165	126,002	7%
ALS	2021	-	-	-	-	-	-	-	176	-	176	-
Certimin	2021	35,423	1,110	1,112	1,111	1,106	1,063	1,748	494	7,744	43,167	18%
	2022	21,739	654	654	651	652	650	1,305	1,639	6,205	27,944	22%
	2023	4,888	148	148	148	148	148	297	123	1,160	6,048	19%
	2024	8,168	177	177	178	178	178	491	179	1,558	9,726	16%
Internal Laboratory (EBR-SMEB)	2021	13,262	395	395	394	398	397	596	-	2,575	15,837	16%
	2022	24,368	739	741	735	736	737	1,468	1,152	6,308	30,676	21%
	2023	23,875	724	725	723	723	723	1,447	538	5,603	29,478	19%
	2024	9,225	216	217	218	217	217	557	615	2,257	11,482	20%

Certified Reference Materials (CRM)

Results from the regular submission of CRMs (standards) are used to identify potential issues with specific sample batches and long-term biases associated with the primary assay laboratory. SLR reviewed the results from 36 different standards used from initial project work stages to 2024.

A total of 11,034 CRMs, sourced from Geostats Pty Ltd, ORE Research & Exploration Pty Ltd (OREAS), or Target Rocks, were inserted into drilling sample streams and submitted to ALS, Actlabs, Certimin, and EBR-SMEB. The upper and lower control limits were established using three standard deviations (SD) above and below the expected value.

As part of SLR's evaluation, the results indicate that the accuracy for copper, lead, and zinc is generally acceptable and within limits, consistently displaying biases of less than 5% as presented in Table 8-3 and Table 8-4.

Some of the biases noted that exceeded acceptable limits were due to the following reasons:

- CRMs with low lead nominal value that are near the detection limits (<0.2% Pb) that were analyzed by the internal laboratory, such as CRMs STRT1, STRT5 to STRT7. Subsequently, STRT-08, STR-09, and STR-10, were introduced as replacements, demonstrating improved lead performances.
- Database errors in 2008, with systematic 0.005% Zn-Cu-Pb values found in CRMs GBM301-5 and GBM997-8.

The SLR QP is of the opinion that these observations are not material, as they do not indicate an accuracy issue but rather relate to CRM nominal values for lead or database errors found in 2008.

Table 8-3: Summary of CRM Biases

CRM	Actlabs			ALS			Certimin			EBR-SMEB		
	Cu%	Pb%	Zn%	Cu%	Pb%	Zn%	Cu%	Pb%	Zn%	Cu%	Pb%	Zn%
AGM-04	2%	0%	0%									
CPB-06							1%	-10	1%	-2%	-0%	-1%
GBM301-5										13%[2]	-19%[2]	-19%[2]
GBM301-6										8%	6%	-4%
GBM902-5										-8%	-2%	-2%
GBM906-13										-4%		-1%
GBM996-3										-55%[2]	-8%	-16%
GBM997-8										-33%[2]		
MAT-1	2%	0%	7%							-4%	-5%	-1%
MAT-3	5%	4%	-7%							1%	2%	-2%
MCL-01	22%	-8%	1%									
MCL-02	1%	-8%	0%									
MCL-03	-1%	-7%	-1%	-6%	-21%	-4%				-3%	-7%	-9%
OREAS 111										2%		1%
OREAS 161										-7%		
OREAS 164										-6%		
OREAS 94										-2%		
OREAS 96										-4%		
OXHYO-03	4%	0%	4%	-2%	-3%	3%				0%	-5%	4%
PLSUL-11	1%	-1%	-2%	-1%	-3%	1%	3%	1%	0%	1%	5%	-3%
PLSUL22				3%	-2%	-2%						
PLSUL26							-2%	5%	1%	2%	-0%	0%
PLSUL27	1%	2%	2%	1%	-2%	1%						
PLSUL36							-1%	3%	2%	7%	4%	4%
PLSUL39					0%	2%	-3%	-1%	2%	1	0%	2%
ST1700001											3%	0%
STRT-01				2%	-1%	5%	1%	-1%	1%	0%	-77%[1]	-5%
STRT-02				1%			2%		3%	0%		2%
STRT-03				1%			4%		1%	15%		0%
STRT-04				2%		3%	1%		2%	1%		-1%
STRT-5							-2%	7%	0%	-2%	-35%[1]	0%
STRT-6							1%	7%	0%	-0%	-22%[1]	12%
STRT-7							1%	10%	0%	-1%	-17%[1]	12%
STRT-8							1%	-3%	-4%	9%	-2%	-5%
STRT-9							-1%	2%	1%	8%	0%	2%
STRT-10							-1%	3%	0%	0%	-3%	-1%

Table 8-4: Summary of Copper CRM parameters

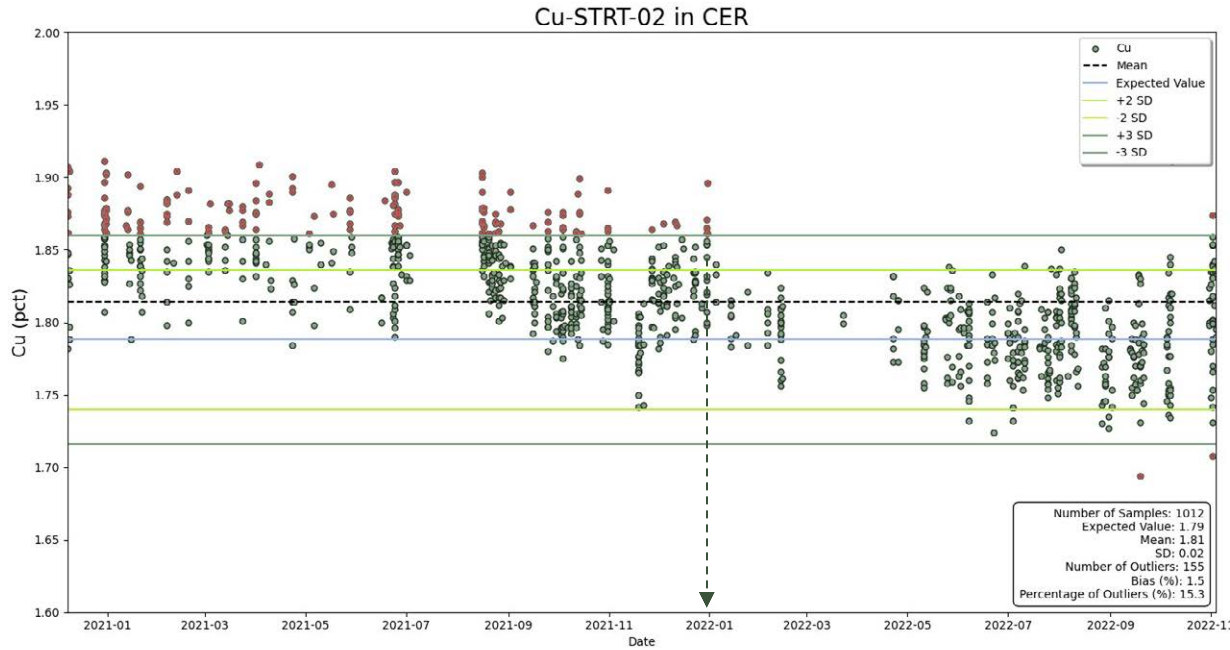
Lab	CRM	Period Range	Num Samples	Std Dev	Mean	Expected Value	Num Outliers	Bias (%)	Percentage Outliers (%)	Element
EBR-S|MEB	GBM301-6	(2007, 2008)	61	0.273	0.43	0.3927	1	8.3	2	Cu
	GBM902-5	(2007, 2008)	70	0.429	2.43	2.6295	3	-7.6	4	Cu
	GBM997-8	(2007, 2020)	99	0.531	0.79	1.205	0	-34.2	0	Cu
	GBM301-5	(2007, 2020)	133	0.464	0.13	0.1113	1	13.0	1	Cu
	GBM996-3	(2007, 2020)	53	1.081	1.02	2.2599	0	-54.7	0	Cu
	GBM906-13	(2009, 2011)	29	0.022	2.10	2.1862	27	-4.1	93	Cu
	OREAS 94	(2011, 2013)	46	0.025	1.11	1.14	0	-2.5	0	Cu
	OREAS 164	(2011, 2014)	120	0.186	2.12	2.25	1	-5.8	1	Cu
	OREAS 161	(2011, 2014)	112	0.035	0.38	0.409	1	-7.4	1	Cu
	OREAS 96	(2013, 2013)	6	0.044	3.75	3.91	4	-4.0	67	Cu
	OREAS 111	(2014, 2017)	57	0.035	2.41	2.37	3	1.6	5	Cu
	MAT-1	(2014, 2014)	30	0.009	0.32	0.333	0	-3.9	0	Cu
	OXHYO-03	(2017, 2018)	160	0.057	1.02	1.025	2	-0.2	1	Cu
	MCL-03	(2017, 2018)	100	0.039	0.77	0.794	1	-2.6	1	Cu
	MAT-3	(2017, 2018)	97	0.193	2.41	2.39	2	0.9	2	Cu
	STRT-01	(2018, 2022)	271	0.059	0.85	0.849	1	0.5	0	Cu
	PLSUL-11	(2018, 2020)	197	0.087	1.06	1.05	2	0.9	1	Cu
	STRT-02	(2019, 2022)	837	0.124	1.79	1.788	5	0.0	1	Cu
	STRT-03	(2019, 2021)	87	0.053	2.14	2.124	3	0.8	3	Cu
	STRT-04	(2019, 2022)	515	0.072	2.49	2.474	5	0.5	1	Cu
	ST1700001	(2019, 2019)	10	0.005	0.08	0.088	0	-5.7	0	Cu
	PLSUL39	(2021, 2022)	334	0.009	0.09	0.0905	5	0.9	1	Cu
	PLSUL26	(2021, 2022)	120	1.025	0.16	0.0698	1	134.2	1	Cu
	CPB-06	(2021, 2021)	28	0.099	2.15	2.19	1	-1.7	4	Cu
	PLSUL36	(2022, 2022)	151	0.004	0.03	0.0254	2	7.7	1	Cu
	STRT-6	(2022, 2024)	668	0.038	1.93	1.93	10	-0.1	1	Cu
	STRT-5	(2022, 2024)	677	0.044	0.97	0.988	1	-1.7	0	Cu
	STRT-7	(2022, 2024)	671	0.045	2.96	2.97	20	-0.4	3	Cu
	STRT-10	(2023, 2023)	25	0.003	0.06	0.056	1	0.7	4	Cu
	STRT-8	(2023, 2023)	27	0.002	0.02	0.0153	2	8.7	7	Cu
	STRT-9	(2023, 2023)	26	0.002	0.02	0.0192	1	6.9	4	Cu
Actlabs	MCL-01	(2016, 2016)	53	1.299	1.10	0.896	1	22.8	2	Cu
	MCL-02	(2016, 2016)	50	0.236	1.54	1.581	1	-2.7	2	Cu
	AGM-04	(2016, 2016)	14	0.005	0.22	0.217	0	1.7	0	Cu
	MAT-1	(2016, 2016)	5	0.004	0.34	0.333	0	1.5	0	Cu
	OXHYO-03	(2017, 2018)	44	0.385	0.98	1.025	1	-4.4	2	Cu

Lab	CRM	Period Range	Num Samples	Std Dev	Mean	Expected Value	Num Outliers	Bias (%)	Percentage Outliers (%)	Element
	MCL-03	(2017, 2018)	110	0.162	0.80	0.794	1	0.5	1	Cu
	MAT-3	(2017, 2018)	18	0.876	2.12	2.39	0	-11.2	0	Cu
	PLSUL-11	(2018, 2018)	15	0.009	1.06	1.05	1	1.1	7	Cu
	PLSUL27	(2018, 2018)	14	0.005	0.18	0.183	0	0.7	0	Cu
ALS	MCL-03	(2018, 2018)	26	0.050	0.75	0.794	1	-6.0	4	Cu
	OXHYO-03	(2018, 2018)	22	0.015	1.00	1.025	2	-2.5	9	Cu
	STRT-01	(2018, 2020)	161	0.021	0.86	0.849	2	1.6	1	Cu
	PLSUL27	(2018, 2018)	124	0.004	0.19	0.183	0	1.4	0	Cu
	PLSUL-11	(2018, 2020)	134	0.025	1.04	1.05	2	-0.5	1	Cu
	STRT-02	(2019, 2020)	125	0.032	1.80	1.788	0	0.6	0	Cu
	STRT-04	(2019, 2020)	66	0.053	2.51	2.474	2	1.5	3	Cu
	STRT-03	(2019, 2020)	57	0.039	2.14	2.124	0	0.6	0	Cu
	PLSUL39	(2020, 2020)	34	0.003	0.09	0.0905	0	1.3	0	Cu
	PLSUL22	(2020, 2020)	20	0.004	0.15	0.147	0	2.7	0	Cu
Certimin	STRT-02	(2020, 2022)	1012	0.104	1.81	1.788	3	1.5	0	Cu
	STRT-03	(2020, 2021)	92	0.031	2.21	2.124	31	3.9	34	Cu
	STRT-04	(2020, 2022)	542	0.114	2.50	2.474	1	1.2	0	Cu
	PLSUL26	(2020, 2022)	230	0.001	0.07	0.0698	28	-2.1	12	Cu
	PLSUL39	(2020, 2022)	544	0.002	0.09	0.0905	13	-2.5	2	Cu
	STRT-01	(2020, 2022)	361	0.065	0.86	0.849	2	0.9	1	Cu
	CPB-06	(2021, 2021)	203	0.257	2.18	2.19	3	-0.3	1	Cu
	PLSUL36	(2022, 2022)	186	0.001	0.03	0.0254	0	-0.8	0	Cu
	STRT-8	(2023, 2024)	31	0.000	0.02	0.0153	0	1.7	0	Cu
	STRT-10	(2023, 2024)	32	0.002	0.06	0.056	1	0.4	3	Cu
	STRT-9	(2023, 2024)	31	0.001	0.02	0.0192	0	0.1	0	Cu
	STRT-7	(2023, 2024)	232	0.202	2.98	2.97	2	0.3	1	Cu
	STRT-5	(2023, 2024)	231	0.065	0.98	0.988	1	-0.8	0	Cu
	STRT-6	(2023, 2024)	231	0.131	1.94	1.93	1	0.4	0	Cu

SLR selected two CRMs and generated a general z-score plot for an in-depth review. These CRMs were chosen based on their grade range, sample size, and extended periods of use.

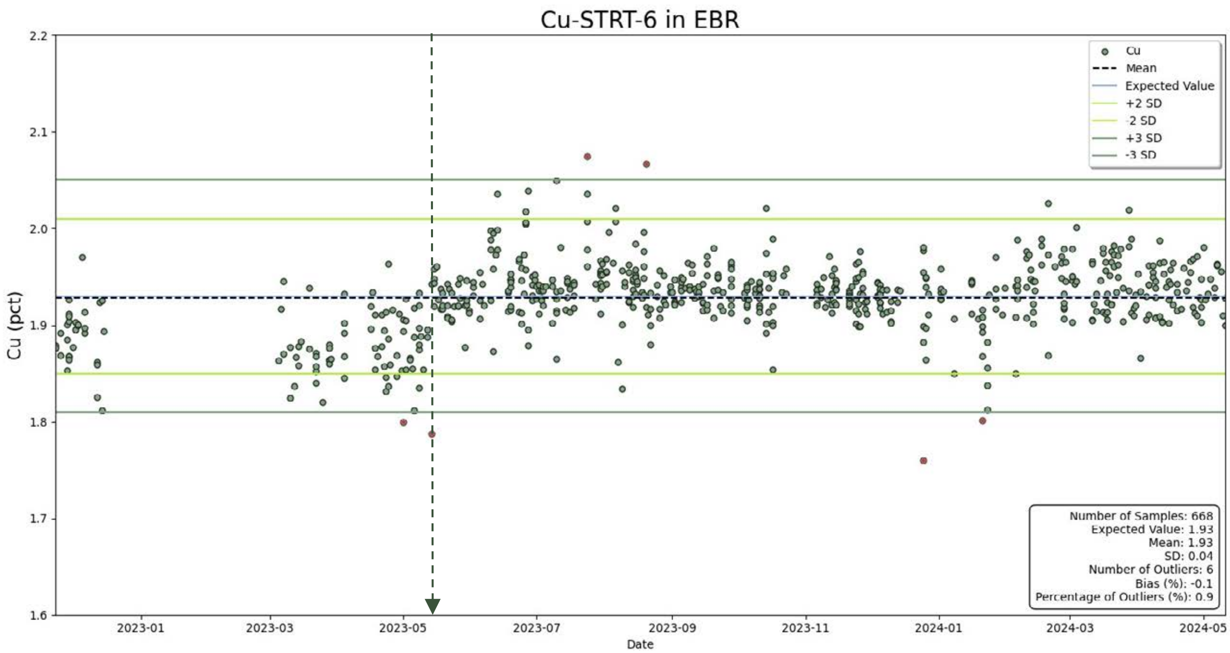
The CRM STRT-02 for copper shows a fluctuation in bias from positive to negative between August 2020 and December 2021, as observed in Figure 8-2. During this period, a low positive copper bias of 1.8% was obtained when comparing the expected value to Certimin's mean results, with significant outliers indicating a lack of monitoring of laboratory results. However, from January 2022 to December 2022, this bias turned negative, with fewer and more within-limit outliers. The SLR QP recommends continued monitoring to prevent new biases from emerging.

Figure 8-2: Control Chart of CRM STRT-02 for Copper in CERTIMIN: 2020 - 2022



Similarly, the CRM STRT-06 analyzed for copper by EBR between January 2022 and May 2024, displayed in Figure 8-3, shows a slightly negative bias of -0.1%. Six failures were identified, exceeding the ±3SD limit, accounting for 0.9% of the total 668 samples. Bias fluctuations may be observed throughout the timeframe, but they remain within acceptable limits. Until May 2023, a negative bias can be observed in the data. However, from that point onwards, there is a noticeable normalization in the data.

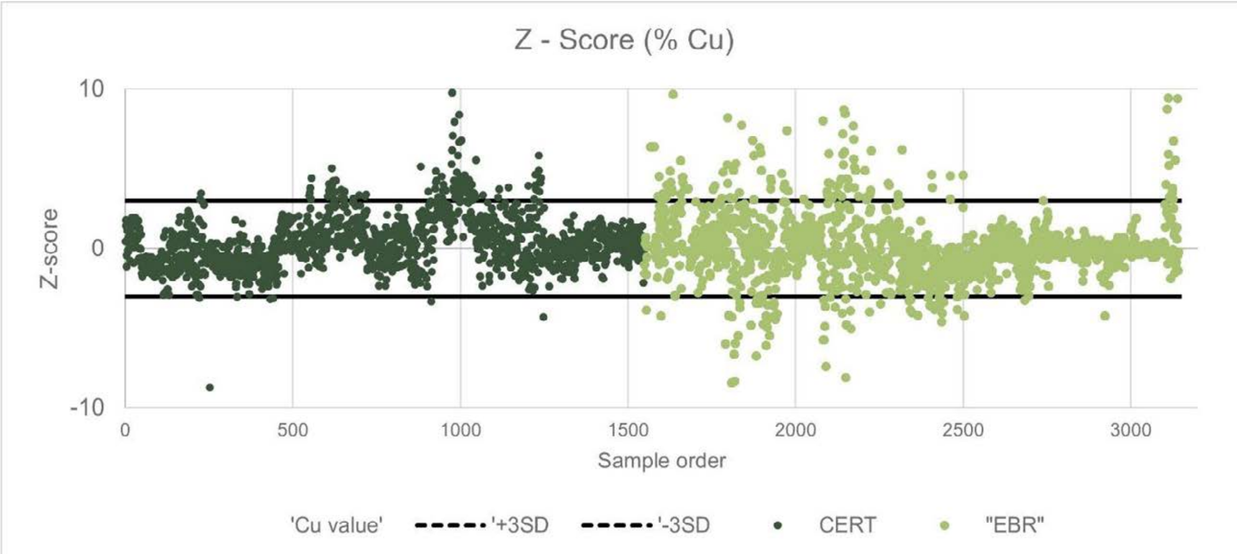
Figure 8-3: Control Chart of CRM STRT-06 for Copper in EBR: 2023 – 2024



Buenaventura customizes copper and zinc CRMs for distinct drilling areas. In early 2023, they introduced new CRMs STRT-8, STRT-9, and STRT-10 primarily to manage the northern zinc regions of El Brocal. Consequently, the copper concentrations in these CRMs were low and near the minimum detection limits, leading to slightly higher copper biases. However, these measurements are not material because they do not indicate accuracy issues from the laboratory.

Figure 8-4 demonstrates that EBR-SMEB experienced more failures compared to Certimin until May 2023.The CRMs analyzed by EBR-SMEB performed better after more rigorous data monitoring protocols were implemented from May 2023 onwards. A small set of outliers observed recently, however, is associated to CRMs having nominal values less than 0.05% Cu (STRT-8, STRT-9, and STRT-10).

Figure 8-4: Z-Score Scatter Plot: 2021 - 2024



Blank Material

The regular submission of blank material is used to assess contamination whether during sample preparation or analyses, and to identify sample numbering errors. The failure criteria used in the El Brocal was 5xDL (detection limit) for fine blanks and 10xDL for coarse blanks. The DL values considered are detailed in Table 8-5.

Table 8-5: Limits of Detection Applied

Laboratory	Au_ppm	Ag_ppm	Cu_pct	Pb_pct	Zn_pct
Actlabs	0.005	10	0.01	0.01	0.01
ALS	0.005	1	(*)0.0005	(*)0.0005	(*)0.0005
Certimin	0.005	(*)0.3	(*)0.0005	(*)0.0005	(*)0.0005
SGS	0.005	(*)0.3	(*)0.0005	(*)0.0005	(*)0.0005
EBR-SMEB	0.01	0.311	0.01	0.01	0.01
Note. (*)For the elements analyzed by ALS and Certimin, the DLs were raised to 5 ppm for Cu, Pb, and Zn, and to 0.3 ppm for Ag due to higher blank content inserted, ensuring the number of failures was not affected by lower commercial DLs.					

A total of 13,684 blank samples, including 6,932 coarse blanks and 6,752 fine blanks, were assayed. The SLR QP's review found no significant contamination in any of the materials used for blank analysis. Table 8-6 summarizes the blank sample performances for all the participant laboratories throughout the drilling campaigns.

Between 2005 and 2014, the coarse blank material named BLANKG, sourced from a local quarry, showed a low contamination rate. However, several outliers for zinc and lead were observed between 2007 and 2008 (Figure 8-5), which were analyzed by EBR-SMEB. In 2014, new blank materials were introduced, sourced from target rocks with lower concentrations of copper, lead, and zinc, resulting in fewer failures. However, some potential mislabels or mix-up cases, such as sample SD147337 with high values for Pb and Zn, were observed.

The fine blanks generally showed results remaining within the acceptable limit of 5xDL, indicating no significant contamination occurrences. However, a few mislabelled samples were detected, such as SD118823 and OCM-0265499, which were analyzed by Certimin in 2021 and marked as failures in Figure 8-6. It appears these samples may have been incorrectly labelled, as their grades suggest they might be CRM STRT-2.

Table 8-6: Summary of Blank Failures Rates

Lab	Period	Blank	Description	Au_ppm	Ag_ppm	Cu_pct	Pb_pct	Zn_pct
ACT	2016 - 2018	Coarse	Contamination rate	0.00%	0.00%	0.00%	0.00%	0.00%
			Failure samples	0	0	0	0	0
			Total samples	274	274	274	274	274
		Fine	Contamination rate	0.00%	0.36%	0.36%	0.36%	0.36%
			Failure samples	0	1	1	1	1
			Total samples	275	275	275	275	275
ALS	2018 - 2020	Coarse	Contamination rate	0.00%	0.14%	19.16%	0.54%	1.90%
			Failure samples	0	1	141	4	14
			Total samples	716	736	736	736	736
		Fine	Contamination rate	0.00%	0.00%	3.67%	1.22%	3.12%
			Failure samples	0	0	27	9	23
			Total samples	716	736	736	736	736
CER	2020 - 2024	Coarse	Contamination rate	0.09%	0.14%	0.18%	0.14%	0.09%
			Failure samples	2	3	4	3	2
			Total samples	2,174	2,174	2,174	2,174	2,174
		Fine	Contamination rate	0.14%	0.23%	0.28%	0.23%	0.18%
			Failure samples	3	5	6	5	4
			Total samples	2,172	2,172	2,172	2,172	2,172
EBR-SMEB	2005 - 2024	Coarse	Contamination rate	0.90%	9.48%	0.59%	1.61%	3.60%
			Failure samples	26	355	22	60	134
			Total samples	2,883	3,745	3,744	3,724	3,724
		Fine	Contamination rate	0.87%	2.63%	0.34%	0.28%	1.33%
			Failure samples	25	94	12	10	47
			Total samples	2,877	3,568	3,567	3,538	3,544

Figure 8-5: 2005 – 2024 Results of Cu-Pb-Zn Coarse Blank Samples in the Onsite Laboratory (EBR)

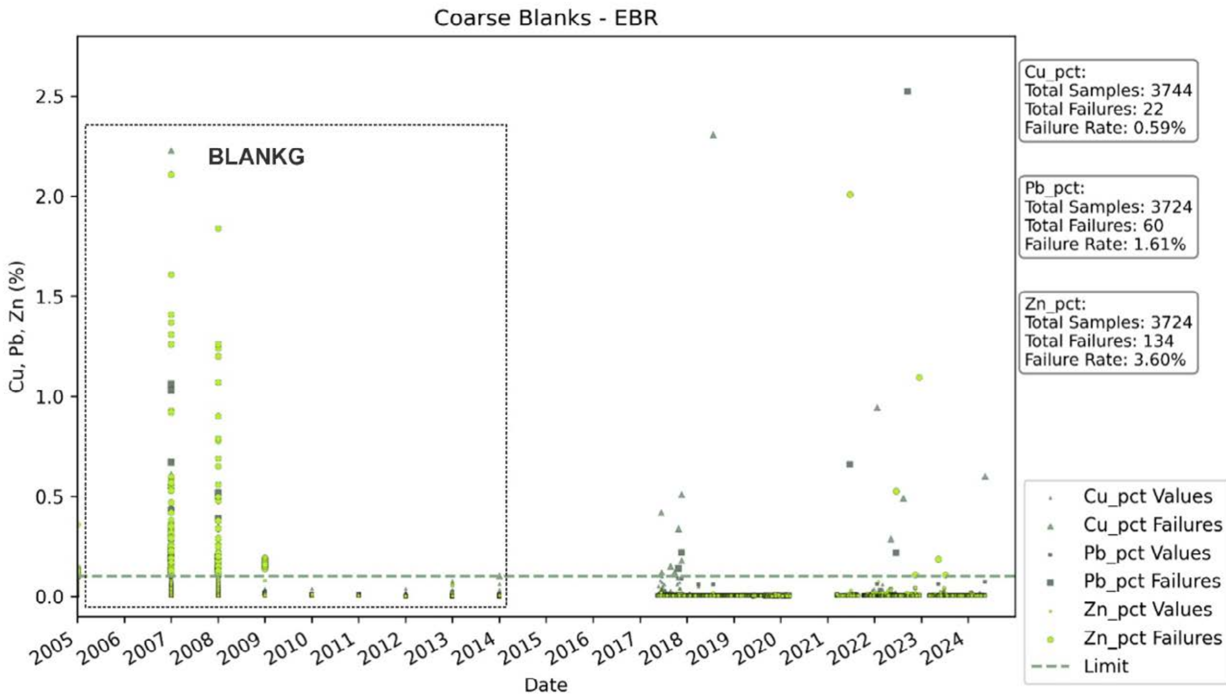
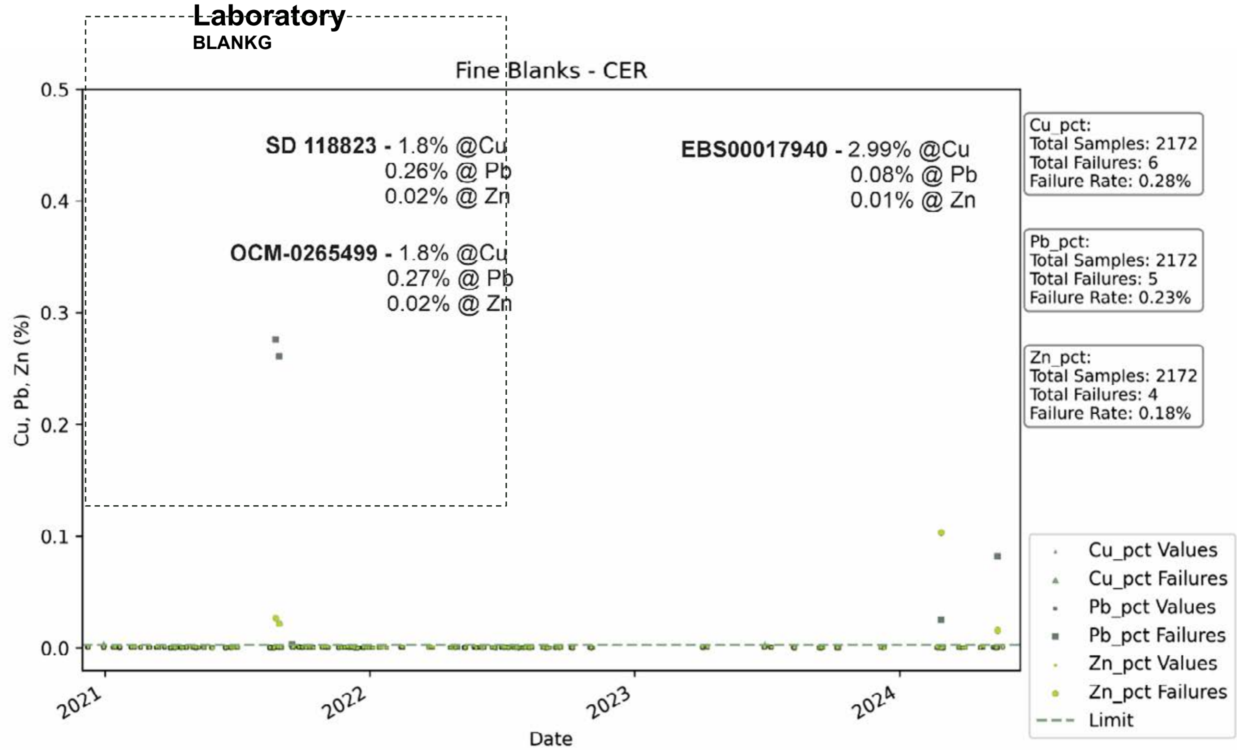


Figure 8-6: 2021 – 2024 Results of Cu-Pb-Zn Fine Blank Samples in the Certimin Laboratory



Duplicates

Duplicate samples help monitor preparation, assay precision, and grade variability as a function of sample homogeneity and laboratory error. The field duplicate samples are used to evaluate the natural variability of the original core sample, as well as detect errors at all levels of preparation and analysis including core splitting, sample size reduction in the preparation laboratory, sub-sampling of the pulverized sample, and analytical error. Coarse reject and pulp duplicates provide a measure of the sample homogeneity at different stages of the preparation process (crushing and pulverizing).

Buenaventura established a failure criterion for each duplicate type, expecting that the 90th percentile of the samples should fall below 10% HARD for pulp samples, 20% for coarse samples, and 30% for field samples.

A total of 19,833 sample pairs for copper, lead, zinc, gold, and silver were analyzed by Actlabs, ALS, Certimin, and EBR-SMEB from historical stages to 2024. This dataset includes 6,623 pulp duplicates, 6,623 coarse duplicates, and 6,587 field duplicates.

SLR reviewed the duplicate data provided by Buenaventura using scatter plots and Half Absolute Relative Difference (HARD) plots. Table 8-7 summarizes the HARD rates. Overall, precision rates within acceptable limits were obtained across all duplicate types. Figure 8-7 through Figure 8-9 show selected duplicate results.

Pulp duplicated resulted in acceptable overall HARD rates. The high-HARD rate case detected at ALS showed that 27% (73rd percentile) of the samples fell below 10% of the HARD limit, however, these failures were associated with low-zinc-grade samples, where poor precision is expected near the detection limit. Conversely, in Figure 8-7, good correlation is exhibited for lead pulp duplicates in the internal laboratory.

Coarse duplicates analyzed by Certimin displayed good precision levels, with 3% (93rd percentile) of the zinc coarse duplicates samples falling below the 20% HARD limit, as illustrated in Figure 8-8.

Field duplicates presented acceptable HARD rates, with few instances slightly exceeding the 10% of pairs rejected. However, this did not significantly affect the overall precision of the controls evaluated, see Figure 8-9.

Table 8-7: Summary of Duplicate Rates

Lab	Dup.	Period	Number of Samples					Number of Failures					HARD % Failure Rate				
			Ag (ppm)	Au (ppm)	Cu (%)	Pb (%)	Zn (%)	Ag (ppm)	Au (ppm)	Cu (%)	Pb (%)	Zn (%)	Ag (ppm)	Au (ppm)	Cu (%)	Pb (%)	Zn (%)
ACT	Pulp	2016 - 2018	277	277	277	277	277	3	2	2	46	15	1%	1%	1%	17%	5%
	Coarse		276	276	276	276	276	2	5	1	9	16	1%	2%	0%	3%	6%
	Field		277	277	277	277	277	13	13	20	21	34	5%	5%	7%	8%	12%
ALS	Pulp	2018 - 2020	735	715	735	735	735	70	21	13	14	196	10%	3%	2%	2%	27%
	Coarse		735	715	735	735	735	23	4	5	3	109	3%	1%	1%	0%	15%
	Field		734	714	734	734	734	42	7	30	16	119	6%	1%	4%	2%	16%
CER	Pulp	2020 - 2024	2116	2116	2116	2116	2116	170	69	64	61	153	8%	3%	3%	3%	7%
	Coarse		2114	2114	2114	2114	2114	89	37	15	17	54	4%	2%	1%	1%	3%
	Field		2122	2122	2122	2122	2122	284	115	163	79	136	13%	5%	8%	4%	6%

Lab	Dup.	Period	Number of Samples					Number of Failures					HARD % Failure Rate				
			Ag (ppm)	Au (ppm)	Cu (%)	Pb (%)	Zn (%)	Ag (ppm)	Au (ppm)	Cu (%)	Pb (%)	Zn (%)	Ag (ppm)	Au (ppm)	Cu (%)	Pb (%)	Zn (%)
EBR	Pulp	2007 - 2024	3440	2843	3439	3423	3423	269	174	66	316	166	8%	6%	2%	9%	5%
	Coarse		3445	2839	3444	3426	3426	79	78	35	108	97	2%	3%	1%	3%	3%
	Field		3454	2850	3454	3436	3436	379	160	444	191	386	11%	6%	13%	6%	11%

Figure 8-7: 2007 – 2024 Pb Pulp Duplicates Analyzed by EBR

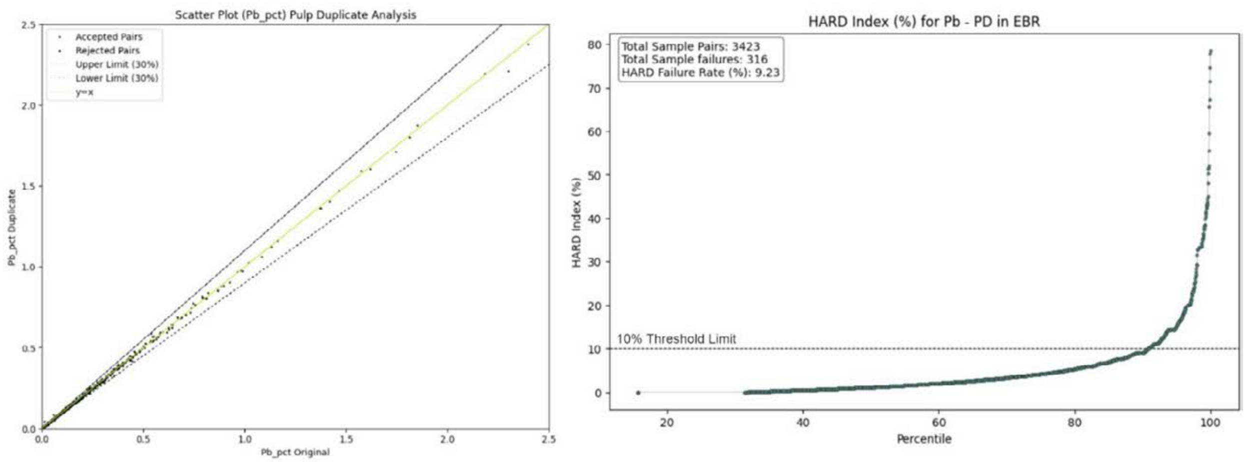


Figure 8-8: 2020 – 2024 Zn Coarse Duplicates Analyzed by CER

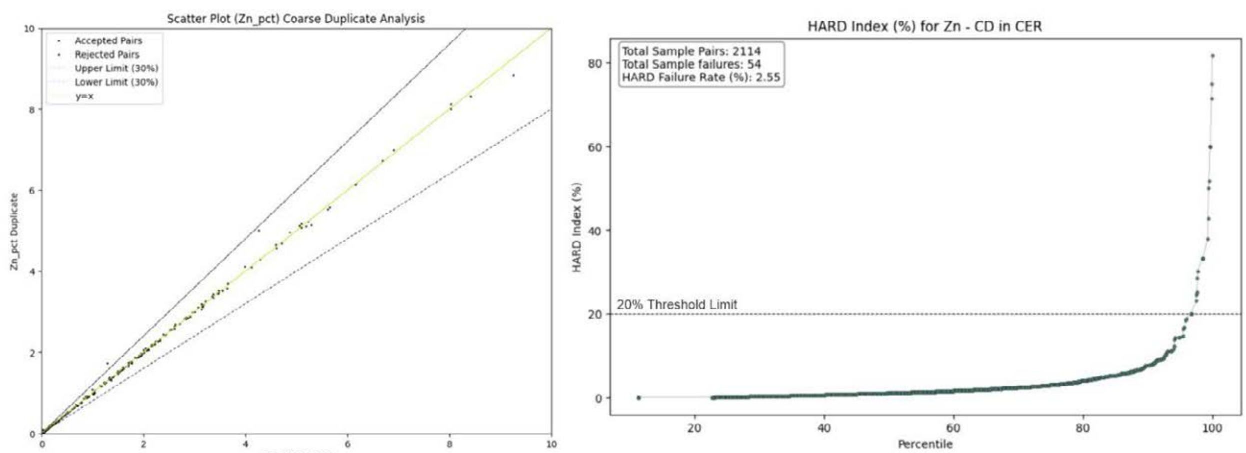
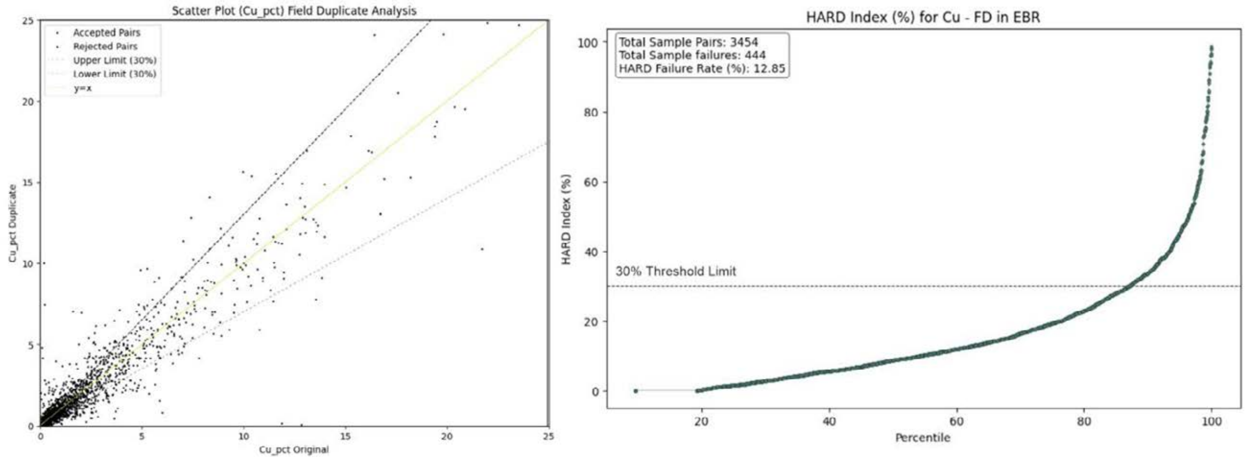


Figure 8-9: 2007 – 2024 Cu Field Duplicates Analyzed by EBR-SMEB



Umpire Check Assays

External laboratory check assays consist of submitting samples that were assayed at the primary laboratory to third-party laboratory and re-analyzing them by using the same analytical procedures to verify the accuracy and precision of primary assay results.

Between 2021 and 2024, a total of 4,916 pulp check samples were collected from drill holes and submitted to SGS, a third-party laboratory. This primary laboratory dataset includes 176 samples from ALS, 2,435 from Certimin, and 2,305 from EBR-SMEB.

Each batch of external check samples includes a blank and a CRM, with sieve analysis performed on one of the pulps to determine the percentage passing through a ±140 mesh. The results from SGS are then compared to the original analyses and incorporated into a monthly report.

The review of Cu check assays between the primary laboratories (EBR-SMEB and Certimin) and SGS indicates strong correlations, with coefficients of 0.965 for EBR-SMEB and 0.994 for Certimin. The percentage difference of means was -3.0% and -3.4% respectively, with SGS reporting slightly lower results than the primary laboratories as grades increased, as observed in Figure 8-10. The SLR QP noted that SGS did not conducted upper-limit analysis above 20%.

The Pb check assays indicated strong correlations for EBR-SMEB when compared to SGS, with a coefficient of 0.98 and a means difference of 10.4%, mainly affected by the difference in laboratory detection limits. The onsite laboratory has higher detection limits. For the samples analyzed in Certimin Pb check assays, a correlation of 0.99 was obtained when compared to SGS, resulting in a mean difference of -6.3% (Figure 8-11).

Regarding Zn, data comparison between the primary laboratories and SGS shows strong correlations, with coefficients of 0.965 for EBR-SMEB and 0.998 for Certimin, indicating high agreement across the datasets. However, EBR-SMEB and Certimin tend to report slightly higher Zn values compared to SGS, particularly at high concentrations, which is reflected by a percentage mean difference of -10.9% (EBR-SMEB) and -4.7% (Certimin) as illustrated in Figure 8-12.

Figure 8-10: 2021 – 2024 Scatter Plots for Cu Checks Assays

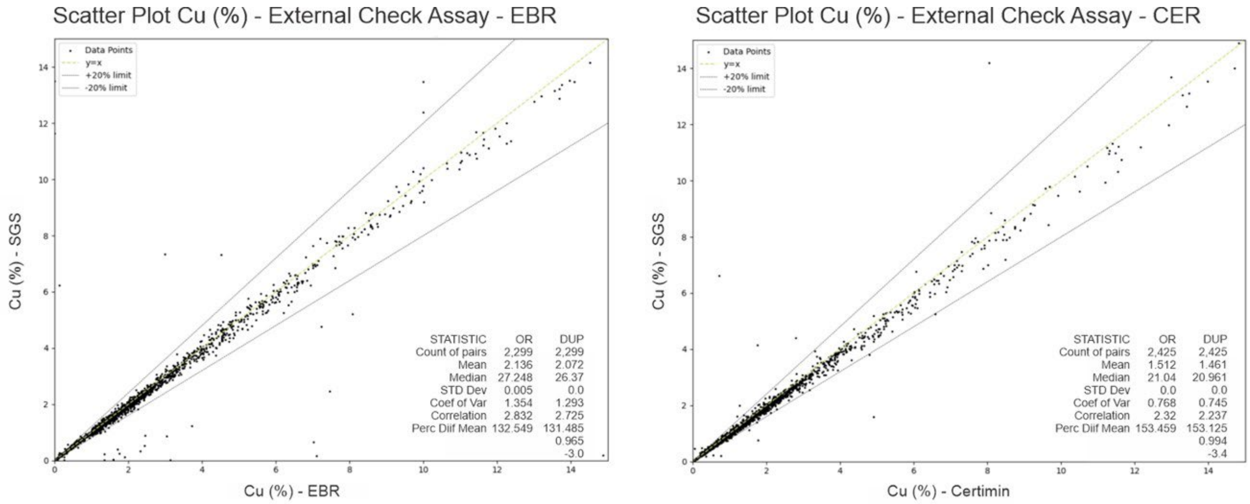


Figure 8-11: 2021 – 2024 Scatter Plots for Pb Checks Assays

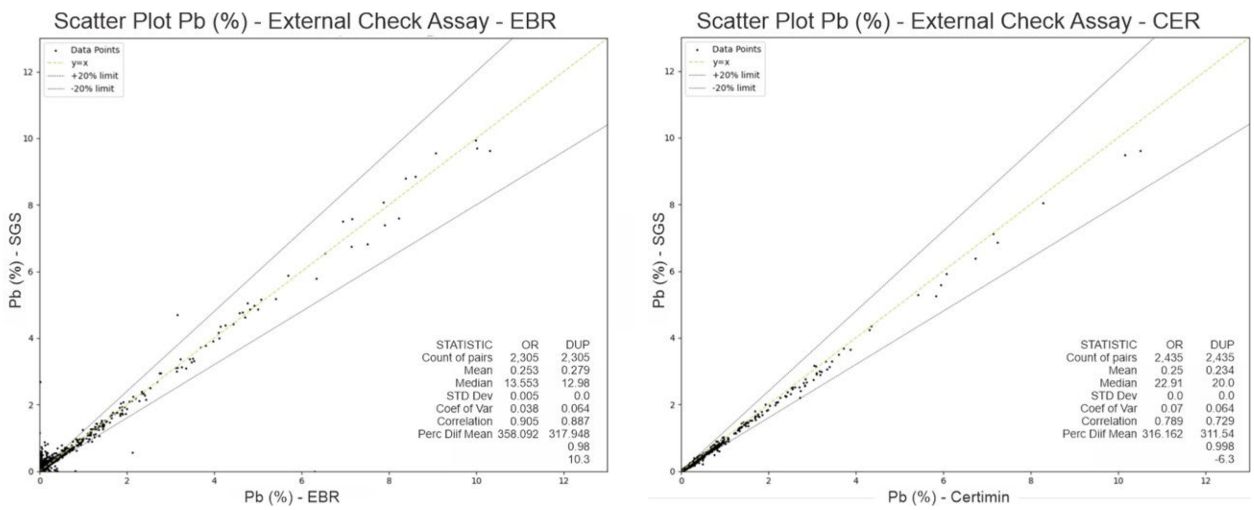
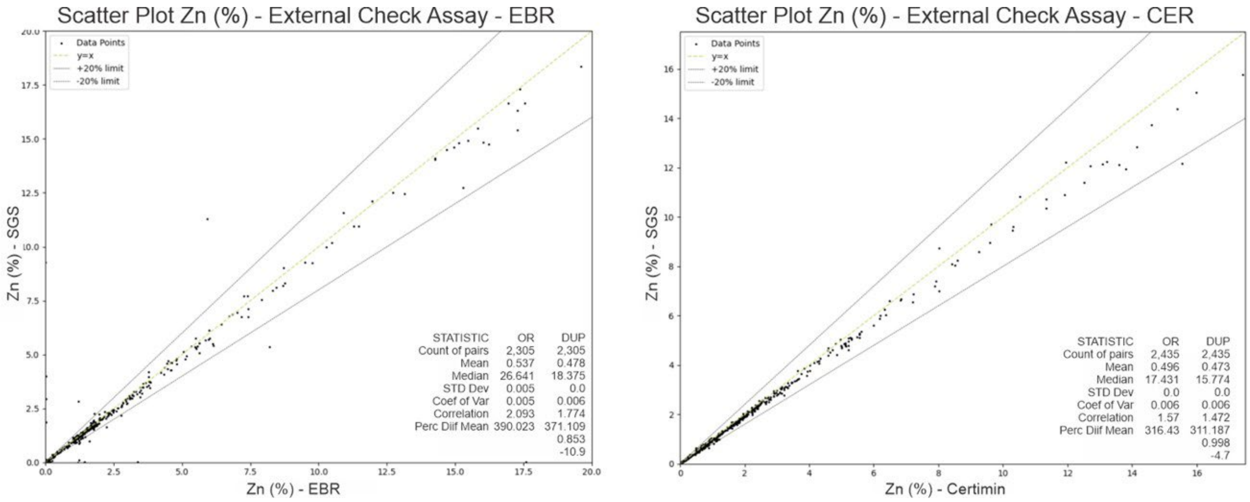


Figure 8-12: 2021 – 2024 Scatter Plots for Zn Checks Assays



8.5 QP Opinion

QA/QC Conclusions and Recommendations

Based on the review and analysis of QA/QC data collected for El Brocal from the early stages to 2024, the SLR QP's opinion is as follows:

- **QA/QC Program Conformance**: QA/QC protocols are in place and aligned to standard mining industry practices. The SLR QP is of the opinion that the QC program results are sufficient to support the Mineral Resource estimate and Buenaventura's data quality risk assessment considered in the classification scheme is good practice. However, condemning entire drill holes that have some control samples showing poor or lack of QC results is conservative.
- **Contamination Monitoring**: Recent blank results indicate no significant contamination events. Fine and coarse blanks provided by Target Rocks effectively monitor potential contamination during analysis and preparation.
- **Correction of Mislabelled Samples:** Verify identified mislabelled samples and correct the database as needed. Maintain a detailed, auditable record of all changes.
- **Performance of CRMs**: CRMs indicate overall acceptable performances across all the participant laboratories involved in drilling campaigns. However, EBR-SMEB exhibits the most incidences of failures, potential sample swaps, and inaccurate Pb results below 0.2%. More continuous monitoring of the CRM results is recommended, to prevent from future emerging biases or high incidence of failures.
- **Duplicate Sample Accuracy**: In general, for each type of duplicate, 90th percentile of the controls fall below the relative error thresholds of 10%HARD for pulps, 20%HARD for coarse duplicates, and 30%HARD for field duplicates. However, for field duplicates, 85% meet the acceptable error, with many field duplicates identified as having a relative error exceeding 30% for copper. The SLR QP considers the 85% compliance rate for field duplicates to be acceptable, given the impact of low grade assays across all the drilling campaigns.

- **Umpire Pulp Data Analysis**: Umpire pulp data (2021–2024) for zinc, lead, and copper show strong correlations and minimal percentage differences between primary laboratories (EBR-SMEB and Certimin) and SGS. The SLR QP recommends that outliers be reviewed, and discrepancies minimized by standardizing analytical methods across laboratories. Additionally, it is advised to maintain monitoring accuracy through regular pulp checks at third-party laboratories.

9.0 Data Verification

Buenaventura employs a systematic database program (acQuire) designed to maintain data integrity and reduce data entry errors by enforcing specific requirements and procedures for recording data using their internal database software, SIGEO, and GVMapper. Before entering data, Buenaventura's geologists visually validate it. However, Buenaventura lacks a formal procedure for internal database verification. The SLR QP recommends including validation steps within the existing Database Management protocol to prevent data-entry errors and identify inconsistencies in the database.

9.1 Previous Work

9.1.1 SRK, 2021

SRK performed an external validation in early 2021, which consisted of reviewing drill hole locations; downhole surveys; and comparing the grades versus the original assay certificates from the internal and external laboratories. SRK used data check routines to validate overlapping intervals, negative (inverted) intervals; drill holes lacking important information such as lithology, recovery, or sampling; and lengths in logging or assays that are greater than the total depth of the drill hole. No observations were noted during the SRK review. Additionally, the assay validation conducted by SRK, when comparing the assay table to the original certificates from EBR-SMEB, ActLabs, ALS, and Certimin, revealed only minor discrepancies at detection limit levels that were deemed immaterial.

9.1.2 SLR, 2023

In 2023, SLR carried out a data validation program on the assay table within the drill hole database by cross-referencing selected drill holes used in the Mineral Resource estimate. The review process covered assay data from 2008 to the database closure date of June 2023, comparing it against original laboratory assay certificates.

Of the total 333,518 samples in the El Brocal assay database, 130,682 samples (40%) were reviewed and verified, with 58 samples (0.05% of the compared data) showing minor differences, as detailed in Table 9-1. Most of these inconsistencies were related to copper (48 cases), with fewer issues involving lead (four cases) and zinc (six cases). Additionally, 1,701 samples with re-assay values were confirmed during this verification, where Buenaventura has maintained the original values in the database.

The SLR QP concluded that the El Brocal drilling and assay database meets industry standards and that the assay data is suitable for use in Mineral Resource estimation.

Table 9-1: Summary of Data Verification

Laboratory Name	Year	No. Samples Compared	No. Discrepancies	Ag_ozt	Cu_pct	Pb_pct	Zn_pct
Actlabs	2008	202	-	-	-	-	-
	2009	32	-	-	-	-	-
	2017	201	-	-	-	-	-
ALS	2018	279	-	-	-	-	-
	2019	866	-	-	-	-	-
	2020	160	-	-	-	-	-
Certimin	2021	40,516	37	-	37	-	-
	2022	26,626	1	-	1	-	-
	2023	1,523	-	-	-	-	-
EBR-SMEB	2012	120	-	-	-	-	-
	2017	240	-	-	-	-	-
	2019	1,104	1	-	1	-	-
	2020	2,760	-	-	-	-	-
	2021	14,216	10		1	4	5
	2022	31,128	9	-	8	-	1
	2023	10,709	-	-	-	-	-
Grand Total		**130,682**	**58**	**0**	**48**	**4**	**6**

9.2 Current Work

9.2.1 SLR, 2024

SLR performed an independent validation of the assay tables within the drill hole database for the current Mineral Resource estimate. This evaluation, with a cut-off date of May 24, 2024, involved comparing the assay results to the original certificates. A total of 133,074 samples, accounting for 78% of the 168,411 samples collected between 2021 and 2024 in the El Brocal database, were reviewed for accuracy.

Slight variations were identified, with discrepancies found in just nine samples (0.01% of the compared data), as shown in Table 9-2. Most of the inconsistencies were observed in copper (four cases), followed by lead (three cases), and zinc (two cases).

Additionally, 140 samples were re-assayed, though Buenaventura retained the original readings in the database.

Table 9-2: Summary of Cross-check Verification

Laboratory	Years	No. Samples Compiled	No. Discrepancies	Au (ppm)	Ag (ppm)	Cu (%)	Pb (%)	Zn (%)
Certimin	2021	22,475						
	2022	16,563						
	2023	3,569						
	2024	4,290						
EBR-SMEB	2021	16,089	9	4			3	2
	2022	29,804						
	2023	28,940						
	2024	11,344						
Total		**133,074**	**9**	**4**			**3**	**2**

9.3 QP Opinion

The SLR QP is of the opinion that the data collection, entry, and database verification procedures for El Brocal meet industry standards, ensuring that the assay data from early stages to 2024 is reliable and suitable for use in Mineral Resource estimation.

10.0 Mineral Processing and Metallurgical Testing

10.1 Test Work and Flowsheet Development

At the end of Q1 in 2020, El Brocal experienced an ore change as the mine plan moved deeper into the underground mine and mining of the open pit was stopped. The copper mineralogy became finer grained and led to lower recoveries (approximately 80% Cu). This section describes a series of test work programs conducted to improve Cu recoveries by adjusting grind size, reagent schemes, and flowsheet design at the two concentrators located at El Brocal.

10.1.1 Metallurgical Analysis

Starting in 2019, Buenaventura undertook a metallurgical test program at its El Brocal metallurgical laboratory. Buenaventura was working on the hypothesis that recovery was negatively impacted by the increase in pyrite from the Marcapunta Southeast and Southwest zones of the ore body. It was suggested that the pyrite was decreasing the pH of the pulp resulting in degradation of the collector. The study found that the pyrite depression could not take place because the enargite in the ore from the mine zone was strongly associated with pyrite. This, as well as the finer particle size, resulted in a low concentrate grade for Cu.

As part of its study in 2019, Buenaventura conducted mineralogical analyses of the ore. In 2020 and 2021, mineral evaluation of Marcapunta Southeast and Marcapunta Southwest included mineralogical characterization by zone and flotation test work by mineralogical characterization. This work resulted in improvements in quality of the concentrate, but lower recoveries. Starting in 2022, Buenaventura evaluated several flowsheet changes for the Marcapunta Southeast and Southwest deposits to improve the copper concentrate grade and recovery; this work included a study of copper-iron association, grind size test work, and the use of cyanide for enargitic copper.

10.1.2 Concentrator Flotation Circuit Modification Tests

As part of the Cu recovery improvement project, Buenaventura evaluated two major changes to the circuits at its two concentrators. The first change was to stop the use of cyanide, which Buenaventura believed was negatively impacting the copper recovery due to degradation of the collector. The second change was to remove the regrind stage as it was suggested that the fine particles were difficult to float because of the changes to the particle surface and the historical reagent scheme. The evaluation also included configuration changes to the flotation circuit.

10.1.2.1 Baseline Plant Test

A baseline study was conducted in August 2023 for Plant No. 1 and Plant No. 2 implementing the changes described above and resulted in a Cu grade of 27.75% and 26.90% respectively and a Cu recovery of 86.6% and 88.5% respectively.

Plant No. 1 (Figure 10-1) configuration includes primary grinding, rougher flotation stage 1, regrind of rougher tails 1, followed by two stages of roughers on regrind tails. Rougher concentrate combines to feed three stages of cleaning. Rougher tails feed one stage of scavengers.

Plant No. 2 (Figure 10-2) configuration includes primary grinding, rougher flotation stage 1, regrind of rougher tails 1, followed by additional roughers cells followed by scavenger cells. Scavenger concentrate is recycled to the regrind mill and scavenger tails feed a second rougher circuit. Rougher concentrate feeds three stages of cleaning and rougher tails feed a scavenger cell. Scavenger concentrate is reground and recycled to the rougher.

Cyanide (NaCN) was added to both circuits during primary grinding and to the 1st cleaner feed.

Figure 10-1: Block Flow Diagram of Plant No. 1

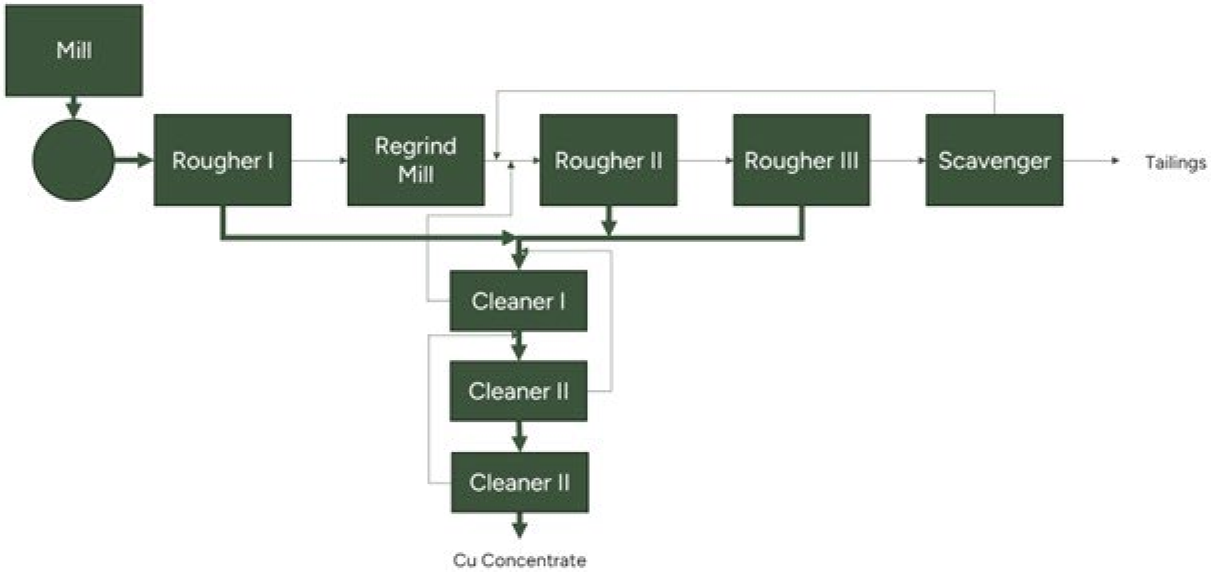


Table 10-1 summarizes the results from the benchmark flotation tests for the two concentrators.

Table 10-1: Plant No. 1 and No. 2 Benchmark Flotation Test

Test	Residence Time (min)	Cu Grade (%)	Cu Recovery (%)
Standard Scheme Plant 1	28	27.8	86.6
Standard Scheme Plant 2	43	26.9	88.5

10.1.3 Plant No. 2 Trials

The following series of trials took place at Plant No. 2 during the third quarter of 2023.

In August 2023, two different circuit configurations were evaluated at Plant 2, Scheme 1 (Figure 10-2) and Scheme 2 Version 1 (Figure 10-3). A residence time of 25 minutes for the flotation circuit was established in the laboratory. For both trials, no cyanide was added to the circuit and no regrind was included. The primary grind was reduced to 90 µm and lime was used for pH management. Test 1 Scheme 1 comprised selective flotation of two concentrates (Cu and Cu/Fe/Au), while in Test 2 Scheme 2 Version 1 (v1), the circuit was opened up to attempt to maximize the Cu/Fe recovery. The total recovery for Test 1 and Test 2 were 98.57% Cu and 99.79% Cu respectively, but the Cu concentrate grade was in the single digits (2.4% Cu in Test 1 and 3.05% Cu in Test 2).

Figure 10-2: Block Flow Diagram Plant No. 2 Scheme 1

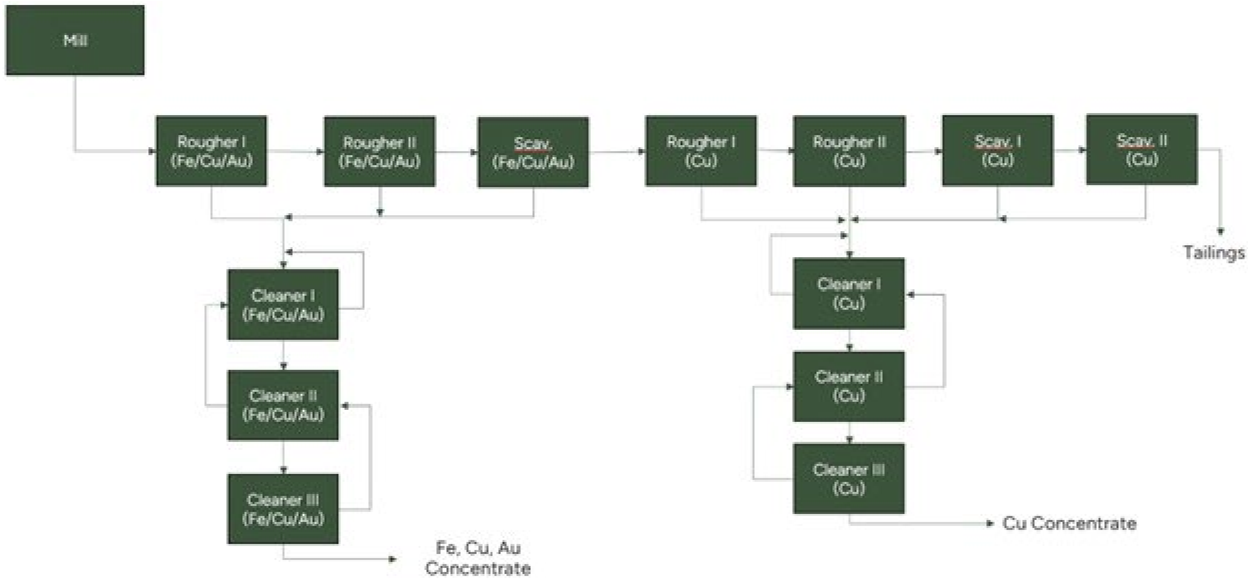
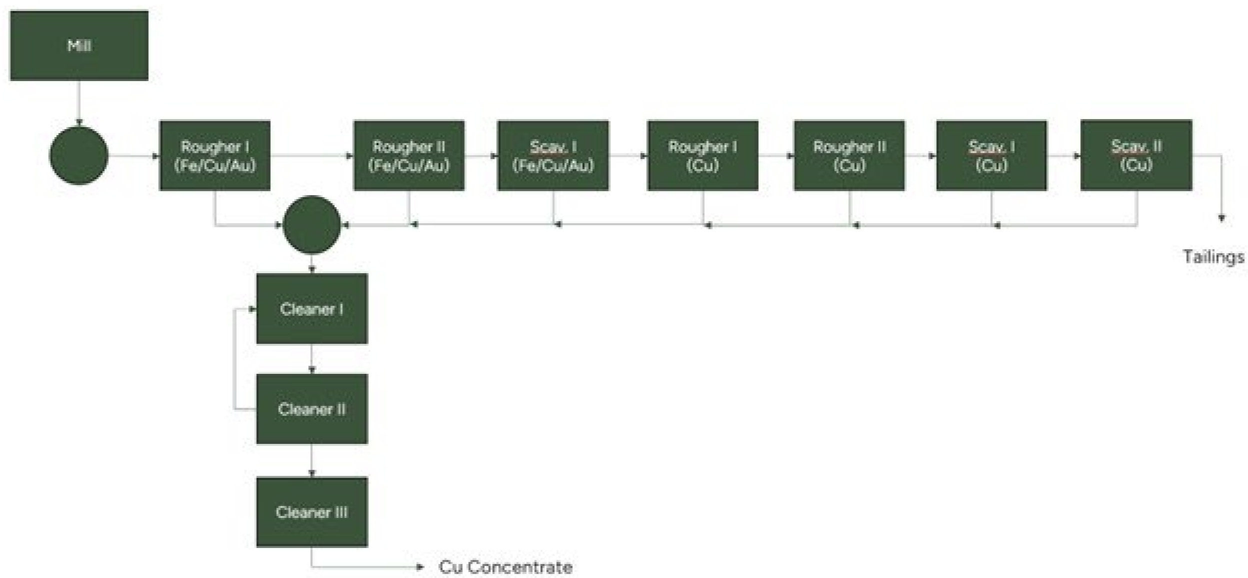


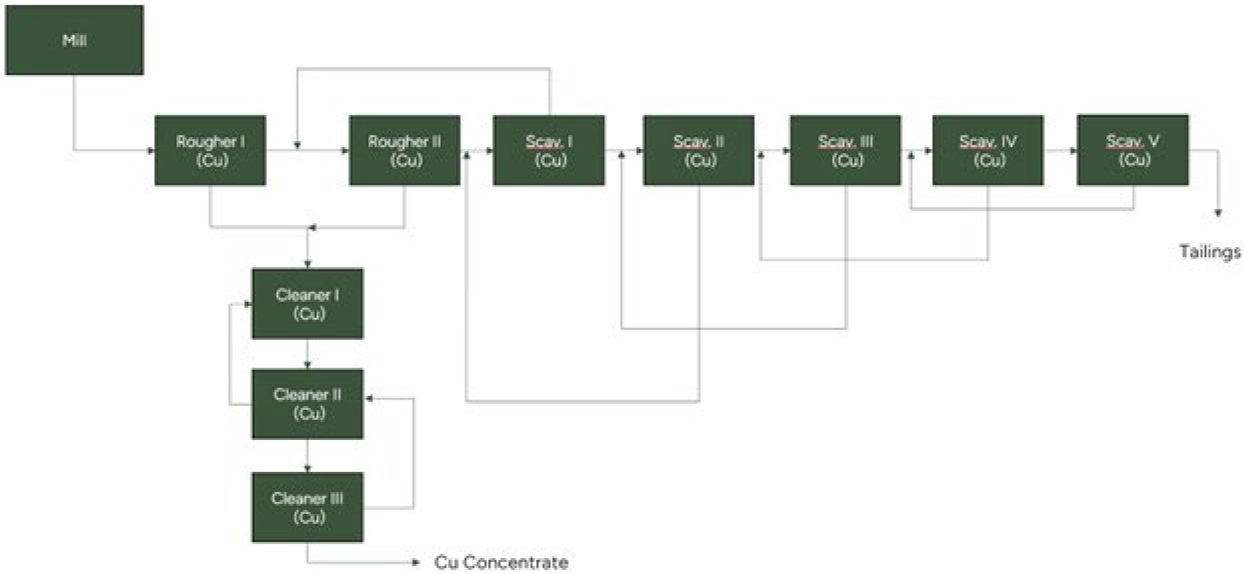
Figure 10-3: Block Flow Diagram Plant No. 2 Scheme 2 Version 1



In a third test completed in late August 2023, Scheme 1 was utilized and the selective flotation of two Cu concentrates was carried out varying dosages of NaCN being added to the feed of the cleaner circuits. The optimal dosage of NaCN was found to be 50 g/t in the Fe/Cu/Au stage, which resulted in a Cu concentrate grade of 2.27% at 34.8% recovery. The Cu first cleaner feed was dosed with NaCN up to 100 g/t, which resulted in a Cu concentrate grade of 24.64% at 63.5% recovery.

Testing of Scheme 2 Version 2 (Figure 10-4) in early September 2023 included varying the recirculation points of the scavenger circuit concentrate to obtain Cu concentrate grade that met specifications. This test was able to achieve a Cu concentrate grade of 23.15% at 94.93% recovery.

Figure 10-4: Block Flow Diagram Plant No. 2 Scheme 2 Version 2



Subsequently in September 2023, Scheme 2 Version 2 was tested again to optimize grind size. Table 10-2 shows the results for a grind size of 80% passing (P_{80}) 90 µm, 120 µm, and 150 µm. A P_{80} of 120 µm had the best results with a Cu concentrate grade of 26.67% at a 94.64% recovery.

Table 10-2: Scheme 2 Version 2 Grind Size Evaluation

Test	Grind Size (µm)	Cu Grade (%)	Cu Recovery (%)
Scheme 2 v2	90	23.2	94.9
Scheme 2 v2	120	26.7	94.6
Scheme 2 v2	250	25.6	94.4

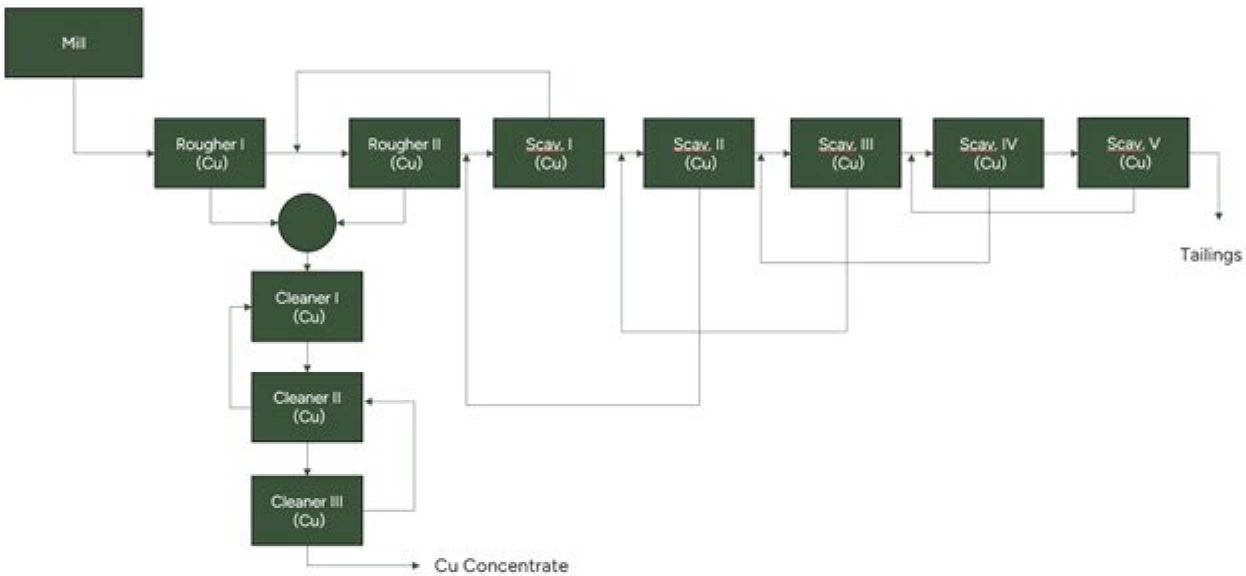
The next series of tests maintained a P_{80} of 120 µm but varied the number of scavenger stages. Table 10-3 shows the results for Standard Plant No. 1 and Scheme 2 Version 2, with two, three, and five scavenger stages. Scheme 2 Version 2 with five scavenger stages produced the best quality with a Cu concentrate grade of 29.55% at 95.49% recovery.

Table 10-3: Scheme 2 Version 2 Scavenger Stage Evaluation

Test	Scavenger Stages	Cu Grade (%)	Cu Recovery (%)
Standard Plant No. 1	1	29.5	81.8
Scheme 2 v2	2	26.2	92.3
Scheme 2 v2	3	25.2	93.4
Scheme 2 v2	5	29.6	95.5

In early October 2023, Plant No. 2 Scheme 2 Version 2 circuit continued to be optimized with a NaCN conditioning tank added before the 1st stage cleaner cells (Figure 10-5). This test showed that adding 30 g/t of NaCN with a conditioning residence time of 10 minutes increased the Cu concentrate grade from 8.13% to 22.32%.

Figure 10-5: Block Flow Diagram of Plant No. 2 Scheme 2 Version 2



Subsequently, Scheme 2 Version 2 scavenger residence time was evaluated. The cleaner 1 conditioning tank remained in place. The number of scavenger stages was reduced from five to two. This change decreased the residence time of the scavenger stage from 25 minutes to 13 minutes. The test found a reduction of Cu grade from 29.55% Cu (five scavenger stages) to 26.24% Cu (two scavenger stages) and a reduction in recovery from 95.49% Cu to 92.28% Cu respectively (Table 10-4). The overall residence time for the rougher and five stages of scavengers was found to be 50 minutes during test work conducted in late October.

Table 10-4: Scheme 2 Version 2 Scavenger Comparison - Two Stages versus Five Stages

Scavenger Stages	Residence Time (min)	Cu Grade (%)	Cu Recovery (%)
2	13	29.6	95.5
5	25	26.4	92.3

In early November 2023, Scheme 2 Version 2 continued to advance with tests conducted to compare use of process water versus fresh waster and benchmarking against the process design of Plant No. 1 and Scheme 2 Version 2 with three scavenger stages. The test results showed that the process water tests in Scheme 2 Version 2 had the highest Cu recovery at 93.43%. The Scheme 2 Version 2 fresh water test showed a slightly higher Cu recovery of 93.68%. Table 10-5 summarizes the test results.

Table 10-5: Scheme 2 Version 2 - Water

Test	Water	Cu Grade (%)	Cu Recovery (%)
Standard Scheme Plant 1	Process Water	24.1	86.6
Scheme 2 v2, three scavenger stages	Process Water	22.9	90.9
Scheme 2 v2	Process Water	23.7	93.4
Scheme 2 v2	Fresh Water	23.9	93.7

The impact of copper oxide ore on recoveries was investigated in late November 2023. Test results indicated that high recoveries were achievable with proper reagent (NaCN) dosages. Further testing was planned with samples that had a copper oxide copper content more typically seen at the concentrators (<0.6%).

In late January 2024, samples containing 0.05% copper oxide were sent for locked cycle tests. The Scheme 2 Version 2 tests at five cycles showed the highest recoveries averaging 93.6% and the highest copper concentrate grade 28.9%. Table 10-6 summarizes the test results.

Table 10-6: Copper Oxide Ore Locked Cycle Test by External Laboratories

Test	No. Cycles	Cu Grade (%)	Cu Recovery (%)
Standard Scheme Plant 1	5	26.3	85.7
Scheme 2 v2	5	28.9	93.6
Scheme 2 v2	9	24.5	93.4

In April 2024, batch tests were conducted at the Plenge laboratory using the Scheme 2 Version 2 flowsheet. The ore sample used for the batch tests had a copper oxide content of 0.08%. The test results showed a copper tail grade of 0.04%. The concentrate quality could be maintained with proper dosing of NaCN. Another observation during the test was that 1st cleaner tails represented 39% of the mass flow and, if not managed, could result in overloading and instability in the scavenger circuit (cleaner 1 tails are fed to the scavenger).

The batch test results were used to develop the pilot plant test at the Plenge laboratory. The pilot test lasted 21 hours at a feed rate of 30 kg/h. Stabilization of the circuit was challenging because of flotation cell overflows. There was a decrease in mass flow in the first stage of the scavenger cells compared to the locked cycle tests. This is possibly due to the recirculation of the 1st cleaner tails and its cyanide concentration. The laboratory recommended the following when starting up Plant No. 1. Pyrite in the rougher and scavenger cells will have an impact. Froth management will be key to avoiding overflow of the cells. To mitigate, the collector should be increased in the 1st stage scavengers to compensate for the NaCN recirculating from 1st cleaner tails. The intermediate stages should be evaluated more to identify areas of improvement.

10.1.4 Plant No. 1 Trials

A plant trial was started in Plant No. 1 using Scheme 2 Version 2 on April 17, 2024. Prior to the start of the test, Cu recoveries were averaging 81.39%. During the ramp-up period of the plant trial between April 17 and 23, it was determined that the speed of several pumps needed to be increased, water addition was needed in some launders, and the plant feed tonnage had to be maintained between 4,000 tpd and 4,500 tpd. These changes helped address spillage from flotation cells and pulp control. From April 24 to May 7, additional changes were made that brought more stability to the plant. These changes included froth bed stabilization by lime addition to adjust the low pH from acidic water. Improvements to the xanthate dosing system corrected problems with the pressure setting on the solenoid valves. New addition points were added for reagents AP404 and 3894 that improved flotation kinetics. From May 8 to May 21 (end of reported data), the concentrator maintained a Cu recovery of approximately 90% and a copper grade on average of above approximately 22%.

10.2 Historical Production

El Brocal's mineral processing facility includes two process plants; Plant No. 1 and Plant No. 2 copper flotation plants. Plant No. 2 has historically processed mainly lead and zinc ores. Due to the suspension of open pit mining (the source of lead-zinc ore) and a change in the underground copper ore characteristics, the flotation circuit in Plant No. 2 was modified in 2024 to process copper ore. Modifications to the flowsheet of Plant No. 1 to account for the change in the underground ore were completed in April 2024 (these are described in the summary of test work and flowsheet development). The concentrators' combined nominal capacity following the 2024 flotation circuit modification of Plants No. 1 and No. 2 is 13,500 tpd. Plant No. 1 is capable of processing 4,000 tpd and Plant No. 2 is capable of processing 9,500 tpd of ore from the Marcapunta underground mine.

The Marcapunta underground mine historically provided more than 90% of its ore to Plant No. 1 for copper recovery. Marcapunta's remaining ore was sent as feed to Plant No. 2. Table 10-7 summarizes production in the concentrators for 2023 and 2024. The ore from Marcapunta consists mainly of the copper sulphide enargite with minor content of chalcocite, chalcopyrite, tennantite, luzonite, and colusite. The gangue consists of mostly pyrite, quartz, alunite, kaolinite, and clays.

Table 10-7: El Brocal Concentrator Production – 2023-2024

Description	Units	2022	2023	2024
Ore Processed[1]	t	4,856,158	4,894,432	4,405,145
Grade	% Cu	1.23	1.49	1.56
	g/t Au	0.43	0.51	0.62
	g/t Ag	1.25	1.199	0.95
	% Pb	0.4	0.42	0.14
	% Zn	0.91	0.87	0.26
	% As	0.39	0.43	0.51
Copper Concentrate Produced	t	193,662	241,801	247,290
Grade	% Cu	24.5	23.4	22.86

Description	Units	2022	2023	2024
Lead Concentrate Produced	t	24,317	14,369	0
Grade	% Pb	27.9	35	0
Zinc Concentrate Produced	t	51,985	39,056	4,796
Grade	% Zn	44.9	43.9	41.39
Recovery				
Copper to Copper Concentrate	%	79.5	78.1	82.39
Gold to Copper Concentrate	%	34.9	26.8	27.14
Silver to Copper Concentrate	%	30.7	43	48.49
Lead to Lead Concentrate	%	35.3	29.5	0
Silver to Lead Concentrate	%	18	11.1	0
Zinc to Zinc Concentrate	%	55.6	45.6	17.07

Notes:

1. Ore processed and head grades are combined for copper and lead-zinc ore.

10.3 QP's Opinion

In the opinion of the QP, the data is adequate for the estimation of Mineral Resources and Mineral Reserves. The high content of arsenic in the copper concentrate makes the concentrate challenging to market and subject to penalties on the open market. The arsenic level of the concentrate cannot be reduced as arsenic is part of the mineral make-up of the copper minerals. Bismuth and antimony may also reach penalizable levels in the copper concentrate. Regardless, BVN has a contract with a smelter to take all of the copper concentrate production from El Brocal.

Additionally, the high zinc and copper contents of the lead concentrate may incur penalties, however, El Brocal will no longer produce lead and zinc concentrates while the open pit operation remains suspended. Nevertheless, BVN has successfully marketed its lead concentrate for many years, and the high silver content likely makes it a desirable concentrate for certain smelters.

The QP is not aware of other deleterious elements that would affect the potential economic extraction of valuable minerals.

The QP makes the following recommendations:

- In 2024, the zinc content in the lead concentrate ranged from 10% -16%. This could incur penalties and it would be better if this zinc was recovered in the zinc concentrate. Investigate methods for improving zinc and lead separation during flotation.
- Investigate a longer rougher flotation residence time which may be a better solution than having several scavenger stages. Scavenger flotation is usually a final step before tailings and not meant to be a significant part of the process.

11.0 Mineral Resource Estimates

11.1 Summary

Mineral Resources have been classified in accordance with the definitions for Mineral Resources in S-K 1300. SLR has reviewed, audited, and accepted the Mineral Resource estimates for El Brocal, prepared by Buenaventura. The Mineral Resource estimates (MRE) are based on block model values developed from assays on the mineralized properties. For this MRE, the database incorporated holes drilled up to March 31, 2024, and the effective date of the Mineral Resource estimate is December 31, 2024.

The Mineral Resource estimates were completed using conventional block modelling approach in Vulcan and Seequent's Leapfrog Geo (Leapfrog) software. Estimation domains were defined by combining the lithologies and medium and high grade envelopes, which generated low, medium, and high grade domains for Cu, Pb, Zn, Ag, and Au. Grade estimation was completed by Ordinary Kriging (OK) and Inverse Distance squared (ID^2) based on two-metre composites in two separate block models (open pit and underground). Both models used a whole block approach with open pit using 4 m x 4 m x 6 m block size, while the underground was re-blocked to 4 m x 4 m x 3 m block size for Mineral Reserve definition, estimation and mine planning. Classification was stated based on drilling spacing associated with a maximum ±15% error for a quarter and annual production volume for Measured and Indicated respectively, for underground and open pit separately.

Estimates were validated using standard industry techniques including statistical comparisons with composite samples and parallel Nearest Neighbour (NN) estimates, swath plots, and visual reviews in cross-section and plan. A visual review comparing blocks to drill holes was completed after the block modelling work was performed to ensure general lithological and analytical conformance and was peer reviewed prior to finalization.

In the opinion of the SLR QP, the resource estimation reported herein is an appropriate representation of the Mineral Resources at El Brocal at the current level of sampling. The SLR QP is of the opinion that with consideration of the recommendations summarized in Sections 1 and 23 of this TRS, any issues relating to all relevant technical and economic factors likely to influence the prospect of economic extraction can be resolved with further work.

Table 11-1 to Table 11-4 summarize the open pit and underground Mineral Resources at December 31, 2024 at El Brocal on a 61.43% Buenaventura attributable ownership basis (BAOB) and on a 100% ownership basis.

Table 11-1: El Brocal Open Pit Mineral Resource Statement on a 61.43% BAOB – December 31, 2024

Mineral Type	Category	Tonnage (kt)	Grade				Contained Metal			
			(% Pb)	(% Zn)	(% Cu)	(g/t Ag)	Pb (kt)	Zn (kt)	Cu (kt)	Ag (koz)
Lead -Zinc	Measured	42	2.56	2.71	0.29	105.2	1.1	1.1	0.1	142
	Indicated	29	0.68	1.81	0.13	131.5	0.2	0.5	0.0	122
	Measured + Indicated	**71**	**1.79**	**2.34**	**0.23**	**115.9**	**1.3**	**1.7**	**0.2**	**264**
	Inferred	29	0.37	1.26	0.06	143.1	0.1	0.4	0.0	132
Copper	Measured	151	0.18	0.21	1.56	39.4	0.3	0.3	2.4	191
	Indicated	364	0.16	0.14	1.39	48.6	0.6	0.5	5.1	569
	Measured + Indicated	**515**	**0.17**	**0.16**	**1.44**	**45.9**	**0.9**	**0.8**	**7.4**	**760**
	Inferred	917	0.07	0.05	1.41	13.4	0.6	0.4	12.9	394
Total	Measured	193	0.70	0.75	1.28	53.7	1.3	1.5	2.5	333
	Indicated	393	0.20	0.26	1.30	54.7	0.8	1.0	5.1	691
	Measured + Indicated	**586**	**0.36**	**0.43**	**1.29**	**54.4**	**2.1**	**2.5**	**7.6**	**1,024**
	Inferred	945	0.08	0.08	1.37	17.3	0.8	0.8	13.0	527

Notes:

1. The definitions for Mineral Resources in S-K 1300 were followed for Mineral Resources.
2. The Mineral Resource estimate is reported on a 61.43% Buenaventura attributable ownership basis.
3. Mineral Resources were estimated using a topography with an effective date of September 31, 2023, when open pit mining operations stopped.
4. Mineral Resources are reported at an effective date of December 31, 2024, and on an in-situ basis, without application of mining dilution, mining losses, or process losses.
3. The open pit Mineral Resources are contained within a pit shell generated using an NSR internal cut-off value of $32.28/t for Pb-Zn mineralization and $29.71/t for Cu mineralization.
4. The Mineral Resource estimates are based on metal price assumptions of $2,090/oz gold, $26.40/oz silver, $8,800/t copper, $2,090/t lead, and $2,640/t zinc.
5. Metallurgical recoveries are accounted for in the NSR calculations based on historical processing data and are variable as a function of head grade. Metallurgical recoveries at the LOM average head grades are 53% for Zn, 28% for Pb, and 45% for Ag for Plant 2 (Pb-Zn) and 75% for Cu, 60% for Ag, and 20% for Au for Plant 1 (Cu).
6. Bulk density is assigned by both lithology and oxidation state, and ranges from a minimum of 1.8 t/m^3 in oxide material to 3.54 t/m^3 in high sulphide ore, and generally averages from 2.5 t/m^3 to 2.6 t/m^3.
7. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.
8. Mineral Resources are reported exclusive of Mineral Reserves.
9. Numbers may not add due to rounding.

Table 11-2: El Brocal Open Pit Mineral Resource Statement on a 100% Ownership Basis - December 31, 2024

Mineral Type	Category	Tonnage (kt)	Grade				Contained Metal			
			(% Pb)	(% Zn)	(% Cu)	(g/t Ag)	Pb (kt)	Zn (kt)	Cu (kt)	Ag (koz)
Lead -Zinc	Measured	68	2.56	2.71	0.29	105.2	1.7	1.8	0.2	231
	Indicated	47	0.68	1.81	0.13	131.5	0.3	0.9	0.1	199
	Measured + Indicated	**115**	**1.79**	**2.34**	**0.23**	**115.9**	**2.1**	**2.7**	**0.3**	**430**
	Inferred	47	0.37	1.26	0.06	143.1	0.2	0.6	0.0	215
Copper	Measured	246	0.18	0.21	1.56	39.4	0.4	0.5	3.8	312
	Indicated	593	0.16	0.14	1.39	48.6	1.0	0.8	8.2	926
	Measured + Indicated	**839**	**0.17**	**0.16**	**1.44**	**45.9**	**1.4**	**1.4**	**12.1**	**1,237**
	Inferred	1,492	0.07	0.05	1.41	13.4	1.0	0.7	21.1	642
Total	Measured	315	0.70	0.75	1.28	53.7	2.2	2.4	4.0	543
	Indicated	640	0.20	0.26	1.30	54.7	1.3	1.7	8.3	1,125
	Measured + Indicated	**954**	**0.36**	**0.43**	**1.29**	**54.4**	**3.5**	**4.1**	**12.3**	**1,668**
	Inferred	1,539	0.08	0.08	1.37	17.3	1.2	1.3	21.1	857

Notes:

1. The definitions for Mineral Resources in S-K 1300 were followed for Mineral Resources.
2. The Mineral Resource estimate is reported on a 100.0% ownership basis.
3. Mineral Resources were estimated using a topography with an effective date of September 31, 2023, when open pit mining operations stopped.
4. Mineral Resources are reported at an effective date of December 31, 2024, and on an in-situ basis, without application of mining dilution, mining losses, or process losses.
5. The open pit Mineral Resources are contained within a pit shell generated using an NSR internal cut-off value of \$32.28/t for Pb-Zn mineralization and \$29.71/t for Cu mineralization.
6. The Mineral Resource estimates are based on metal price assumptions of \$2,090/oz gold, \$26.40/oz silver, \$8,800/t copper, \$2,090/t lead, and \$2,640/t zinc.
7. Metallurgical recoveries are accounted for in the NSR calculations based on historical processing data and are variable as a function of head grade. Metallurgical recoveries at the LOM average head grades are 53% for Zn, 28% for Pb, and 45% for Ag for Plant 2 (Pb-Zn) and 75% for Cu, 60% for Ag, and 20% for Au for Plant 1 (Cu).
8. Bulk density is assigned by both lithology and oxidation state, and ranges from a minimum of 1.8 t/m3 in oxide material to 3.54 t/m3 in high sulphide ore, and generally averages from 2.5 t/m3 to 2.6 t/m3 .
9. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.
10. Mineral Resources are reported exclusive of Mineral Reserves.
11. Numbers may not add due to rounding.

Table 11-3: El Brocal Underground Mineral Resource Statement on a 61.43% BAOB – December 31, 2024

Mineral Type	Category	Tonnage (kt)	Grade			Contained Metal		
			(% Cu)	(g/t Ag)	(g/t Au)	Cu (kt)	Ag (koz)	Au (koz)
Copper	Measured	8,783	0.88	16.6	0.48	77	4,698	136
	Indicated	11,433	0.88	14.9	0.40	101	5,490	149
	Measured + Indicated	**20,216**	**0.88**	**15.7**	**0.44**	**178**	10,188	**285**
	Inferred	15,300	1.34	24.4	0.58	205	12,005	285

Notes:

1. The definitions for Mineral Resources in S-K 1300 were followed for Mineral Resources.
2. The Mineral Resource estimate is reported on a 61.43% Buenaventura attributable ownership basis.
3. Mineral Resources were depleted for production with mined out wireframes to August 31, 2024 and planned production to December 31, 2024, and on an in-situ basis, without application of mining dilution, mining losses, or process losses.
4. The underground Mineral Resources were constrained within optimized shapes using an NSR cut-off value of \$36.03/t to \$47.44/t for the mineralization depending on the mining method and area.
5. The Mineral Resource estimates are based on metal price assumptions of \$1,900/oz gold, \$24/oz silver, and \$8,800/t copper.
6. Metallurgical recoveries are accounted for in the NSR calculations based on historical processing data and are variable as a function of head grade. LOM average recoveries are 88% for Cu, 51% for Ag, and 27% for Au.
7. Bulk density is assigned by both lithology and oxidation state, and ranges from a minimum of 1.8 t/m^3 in oxide material to 3.54 t/m^3 in high sulphide ore, and generally averages from 2.5 t/m^3 to 2.6 t/m^3..
8. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability
9. Mineral Resources are reported exclusive of Mineral Reserves.
10. Numbers may not add due to rounding.

Table 11-4: El Brocal Underground Mineral Resource Statement on a 100% Ownership Basis – December 31, 2024

Mineral Type	Category	Tonnage (kt)	Grade			Contained Metal		
			(% Cu)	(g/t Ag	(g/t Au)	Cu (kt)	Ag (koz)	Au (koz)
Copper	Measured	14,298	0.88	16.6	0.48	126	7,648	222
	Indicated	18,611	0.88	14.9	0.40	164	8,937	242
	Measured + Indicated	**32,909**	**0.88**	**15.7**	**0.44**	**290**	**16,584**	**464**
	Inferred	24,907	1.34	24.4	0.58	334	19,543	463

Notes:

1. The definitions for Mineral Resources in S-K 1300 were followed for Mineral Resources.
2. The Mineral Resource estimate is reported on a 100% ownership basis.
3. Mineral Resources were depleted for production with mined out wireframes to August 31, 2024 and planned production to December 31, 2024, and on an in-situ basis, without application of mining dilution, mining losses, or process losses.
4. The underground Mineral Resources were constrained within optimized shapes using an NSR cut-off value of \$36.03/t to \$47.44/t for the mineralization depending on the mining method and area.
5. The Mineral Resource estimates are based on metal price assumptions of \$1,900/oz gold, \$24/oz silver, and \$8,800/t copper.
6. Metallurgical recoveries are accounted for in the NSR calculations based on historical processing data and are variable as a function of head grade. LOM average recoveries are 88% for Cu, 51% for Ag, and 27% for Au.

7. Bulk density is assigned by both lithology and oxidation state, and ranges from a minimum of 1.8 t/m^3 in oxide material to 3.54 t/m^3 in high sulphide ore, and generally averages from 2.5 t/m^3 to 2.6 t/m^3.
8. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.
9. Mineral Resources are reported exclusive of Mineral Reserves.
10. Numbers may not add due to rounding.

11.2 Resource Database

Buenaventura utilizes the acQuire database system at a corporate level to manage data. At El Brocal, logging data is captured and validated with GVMapper, while sampling and analytical details are validated in the SIGEO system. These systems collectively reduce data entry errors and ensure the integrity of the database. The data is subsequently centralized in the acQuire database, hosted on an MS SQL server. All the information was provided by Buenaventura in digital format in csv and represents all the data up to May 24, 2024. The database includes holes drilled to March 31, 2024.

The database update process includes periodic auditing programs to ensure data integrity. Additionally, the use of automated data capture devices and barcode systems helps eliminate manual transcription errors, reducing potential sources of data inconsistencies.

The following database validation measures are undertaken by Buenaventura:

- Verification of sampling certificates.
- Documentation confirming the survey of drill hole collars and identification of collars in the field (both surface and underground).
- Certificates or memorandums documenting downhole surveys.
- Comparison of high-grade values in the database against laboratory certificates.
- Detection of overlapping intervals or gaps in drill hole database tables.
- Identification of drill hole intervals within the mineralized bodies that lack sampling.
- Review and identification of drill holes excluded from resource estimation.

The drilling database used to update the geological model, estimate grades, and report Mineral Resources for El Brocal was exported from the acQuire system. It includes 4,796 drill holes, totaling 590,109 m. Compared to the previous 2023 Mineral Resource estimate, 288 new drill holes (214 holes from 2023 and 74 holes from 2024), representing 41,174 m, have been incorporated. The database contains comprehensive information on collar locations, surveys, assays, lithology, density, mineralization, alteration, and mining areas.

Of the 4,796 holes in the database, 4,508 have assay information for a total of 332,184 records in the Assay Table. No holes were excluded to build the geologic model or to complete the grade estimations.

A summary of original sample statistics used for Mineral Resource estimation is provided in Table 11-5.

Table 11-5: Drilling Summary – March 31, 2024

Campaign	DH	m	Samples
1969 - 2000	436	70,578	47,410
2002 - 2010	779	181,112	62,462

Campaign	DH	m	Samples
2011	61	4,609	2,614
2012	54	5,743	2,993
2013	40	3,735	1,559
2014	51	16,915	3,322
2016	67	9,998	3,889
2017	363	14,297	8,113
2018	592	44,211	29,242
2019	422	27,531	18,087
2020	330	24,016	15,318
2021	661	77,261	46,621
2022	511	55,331	43,272
2023	355	46,227	30,043
2024	74	8,545	36,206
Total	**4,796**	**590,109**	**351,151**

The SLR QP reviewed the integrity of the database and found it to be suitable to support geological modelling and Mineral Resource estimation.

11.3 Geological Interpretation

Drawing on extensive knowledge of the deposit's geology, Buenaventura developed 3D models of lithology, structures, mineralization zones, and grade shells to delineate the shape and extent of Cu-Pb-Zn-Ag mineralization. These models form the foundation for the Mineral Resource estimation at El Brocal.

Constructed with Leapfrog Geo (v2021.1), they integrate data from geological logging, mapping, cross-sectional analyses, structural observations, and digitized polylines. This integrated approach allowed for the delineation of estimation domains using cut-off grades for each element, with these thresholds determined geostatistically based on grade continuity within each lithological unit. Lithological Model

An initial structural and lithological model for El Brocal was developed by Buenaventura in 2019, with subsequent updates that expanded the limits to include the mid and southern areas (Smelter and Marcapunta zones) and refined the northern area. Besides the drill hole data, these updates incorporated surface structural mapping at a 1:1000 scale, historical diamond drill hole data, underground mine mapping, and cross-sectional interpretations.

The 2024 structural and lithological model integrates maps of alteration, mineralization, lithology, and structure. Historical data dating back to 1993 was compiled and incorporated, along with additional data from mine mapping, digitized sections, and all available diamond drill hole information, to enhance the model's robustness.

The lithological model defines ten units as follows:

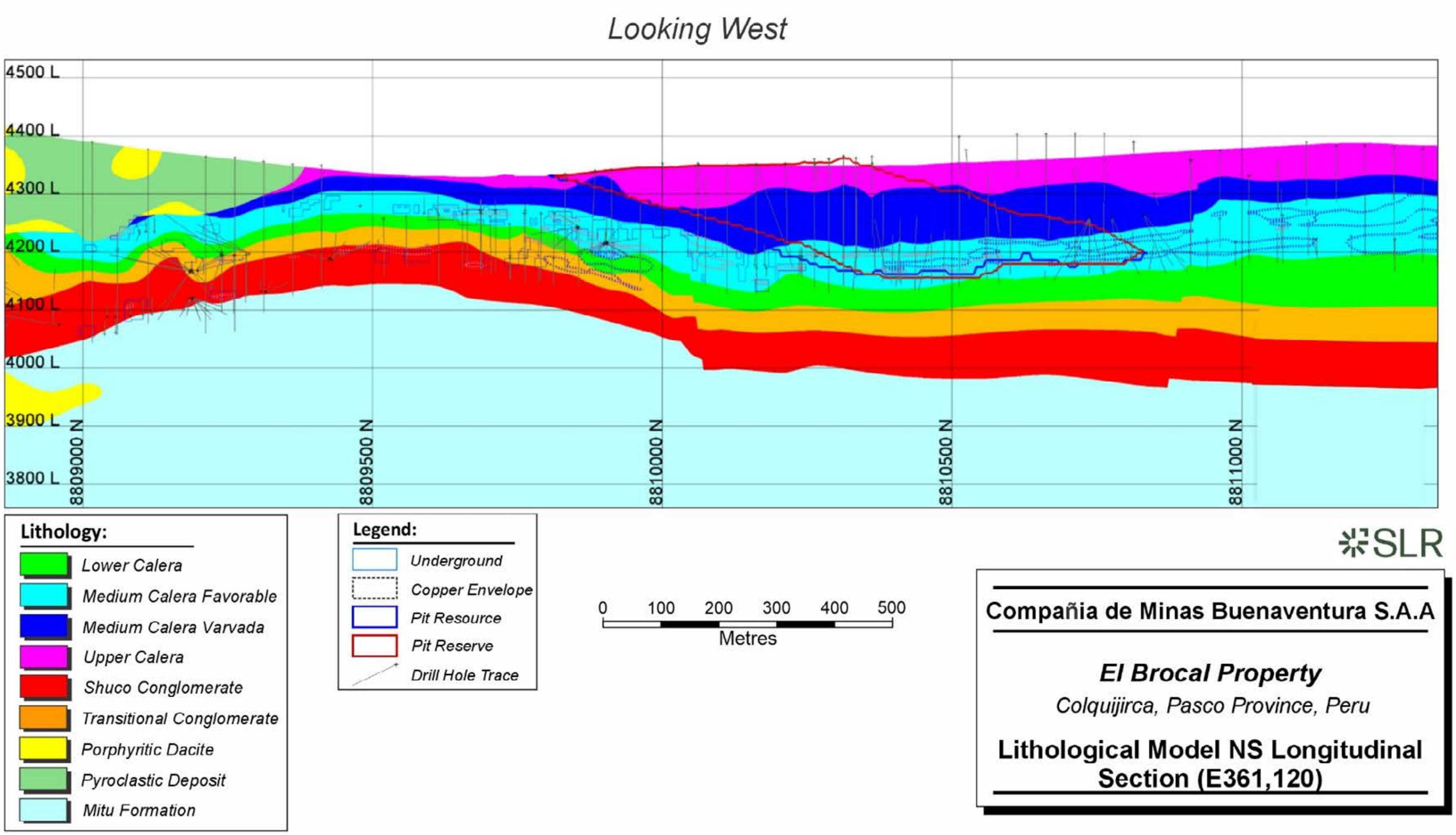
- Mitu Formation
- Shuco Conglomerate (CSh)

- Transitional Conglomerate (CT)
- Lower Calera (Cal_Inf, or CI)
- Medium Calera Favorable (Cal_Mid_Fav, or CMF)
- Medium Calera Varvada (Cal_Mid_Var, or CMV)
- Upper Calera (Cal_Sup, or CS)
- Piroclastic Deposit (Dep_Piro)
- Porphyric Dacite (Dac_Porf)
- Breccia (Bx)

A 3D representation of the lithological model is provided in **Figure** 11**-**1.

After a thorough visual inspection of the cross-sections and a review of the parameters used for the implicit model, the SLR QP concluded that the structural/lithological model for El Brocal is well-constructed, reliable, and meets the standards required for grade estimation and Mineral Resource reporting. However, opportunities for improvement in the workflow were identified, including avoiding the use of the "Refined Lithology" option, adjusting some locally imprecise contacts that do not align with the drill hole data, and using live geological model to govern all lithological controls.

Figure 11-1: Lithological Model NS Longitudinal Section (E 361,120)



Source: SLR 2024.

11.3.1 Grade Domains

To constrain the extent of mineralization and minimize grade smearing during interpolation, grade envelopes were constructed at various cut-off grades using Leapfrog's " Indicator RBF Interpolant" tool. Based on observation of grade continuity by El Brocal's geologist, grade domains were defined within each lithological unit.

Two cut-off grades were applied to model medium and high grade zones for each element, while a low grade domain surrounds the intermediate grade units. Cut-off grades (COG) were derived using statistical analyses and grade continuity within each lithological unit, ensuring a coefficient of variation (CV) below 2.5 for grades within the resulting shapes. Additionally, relative dilution above and below the cut-off grades in each envelope was evaluated.

The following cut-off grades were used to define low, intermediate, and high grade domains:

- **Copper**: (low) >0.5% (intermediate) and >1.8% (high).
- **Zinc:** (low) >0.1% (intermediate) and >1.5% (high).
- **Lead:** (low) >0.05% (intermediate) and >1% (high).
- **Silver:** (low) >1.0 g/t (intermediate) and >32.1 g/t (high).
- **Gold**: (low) >0.1 ppm (intermediate) and >0.8 ppm (high).
- **Iron**: (low) >8% (high-grade).

The grade domains for copper, lead, zinc, silver, and gold were constructed using the following parameters:

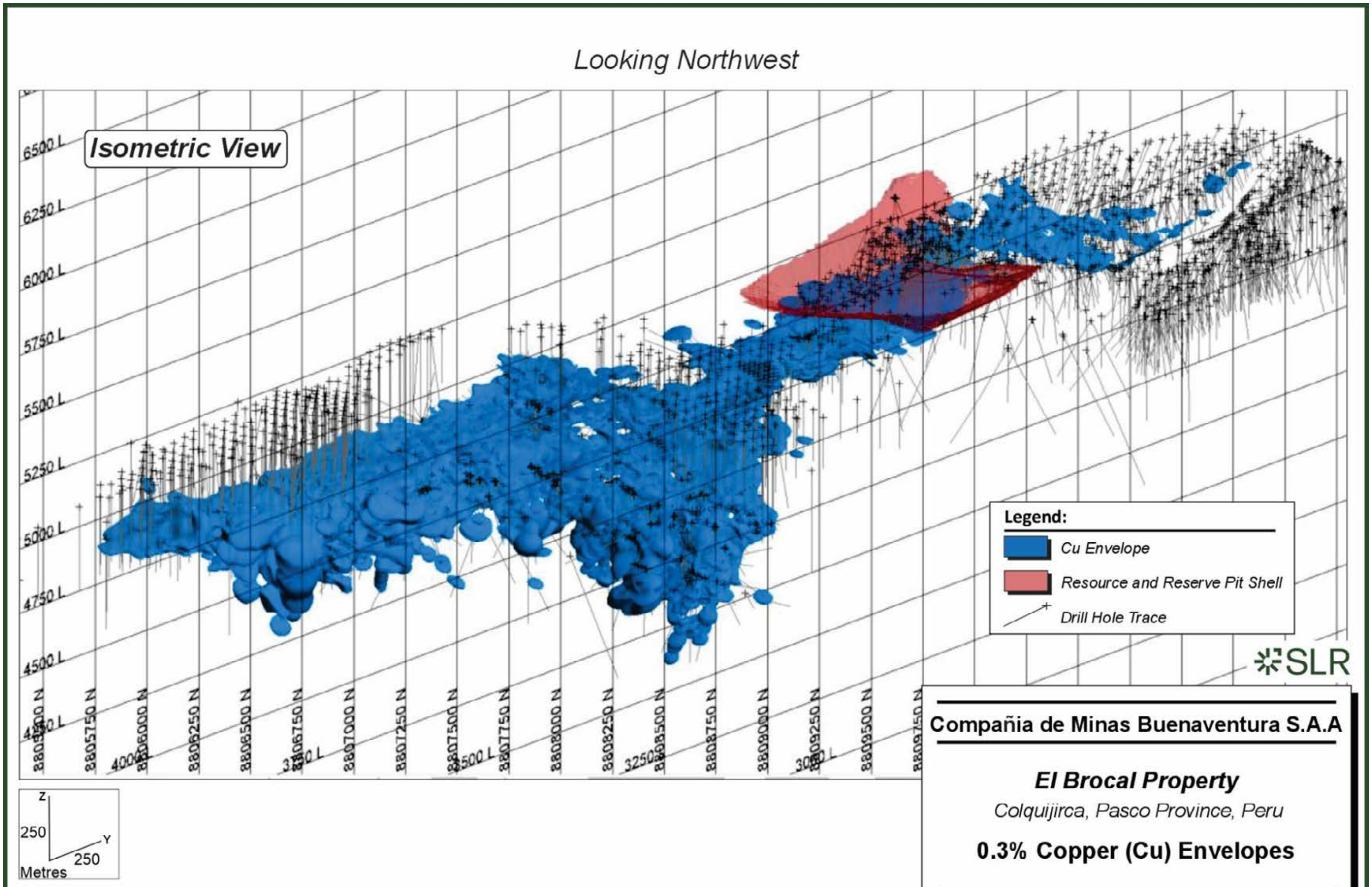
- Two-metre sample compositing along drill holes within lithological units.
- Structural trends derived from the geological model.
- Probability factors (iso-values) between 40% and 45% to ensure continuity.

A detailed summary of the domains and their associated codes used in the estimation process is provided in Table 11-6. Figure 11-2 to Figure 11-11 present the low and high grade envelopes for copper, zinc, silver, lead, and gold looking northwest.

Table 11-6: Grade Domain Coding by Lithology

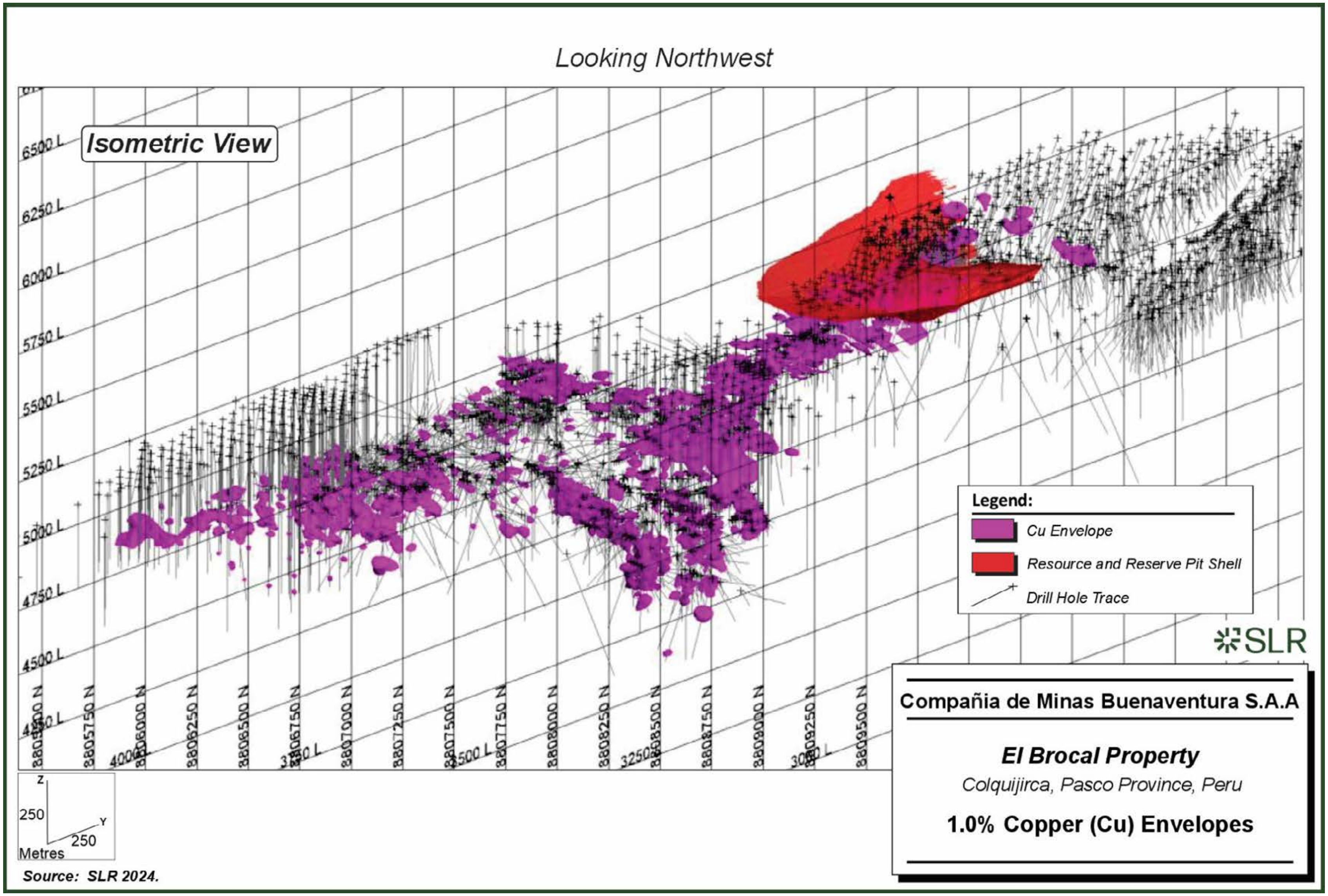
Lithological Codes	Low Grade	Medium Grade	High Grade
Breccia	11	12	13
Lower Calera	21	22	23
Medium Calera Favorable	31	32	33
Medium Calera Varvada	41	42	43
Upper Calera	51	52	53
Shuco Conglomerate	61	62	63
Transitional Conglomerate	71	72	73
Porphyritic Dacite	81	82	83
Pyroclastic Deposit	91	92	93
Mitu Formation	101	102	103

Figure 11-2: 0.3% Copper (Cu) Envelopes



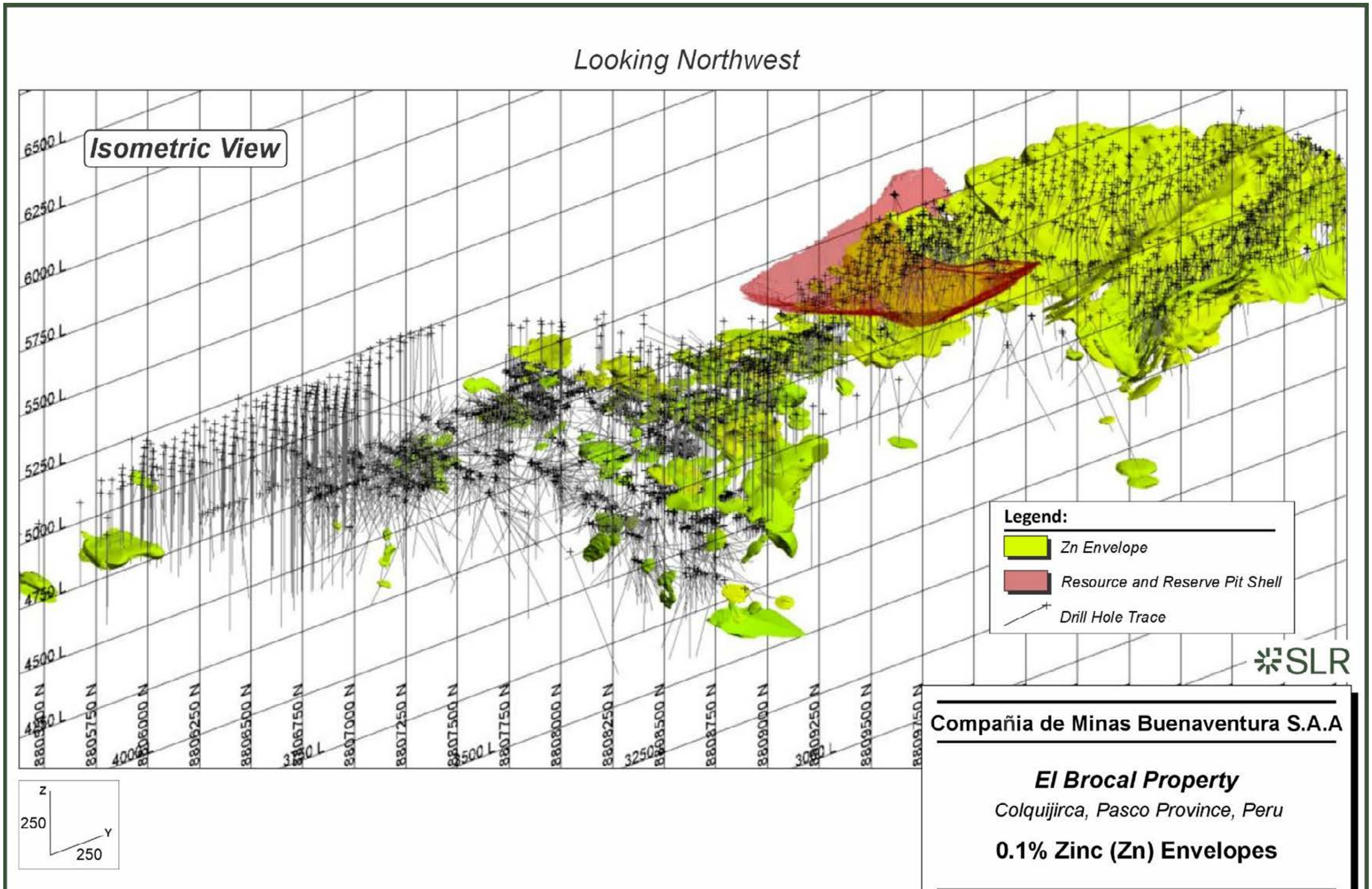
Source: SLR 2024.

Figure 11-3: 1.0% Copper (Cu) Envelopes



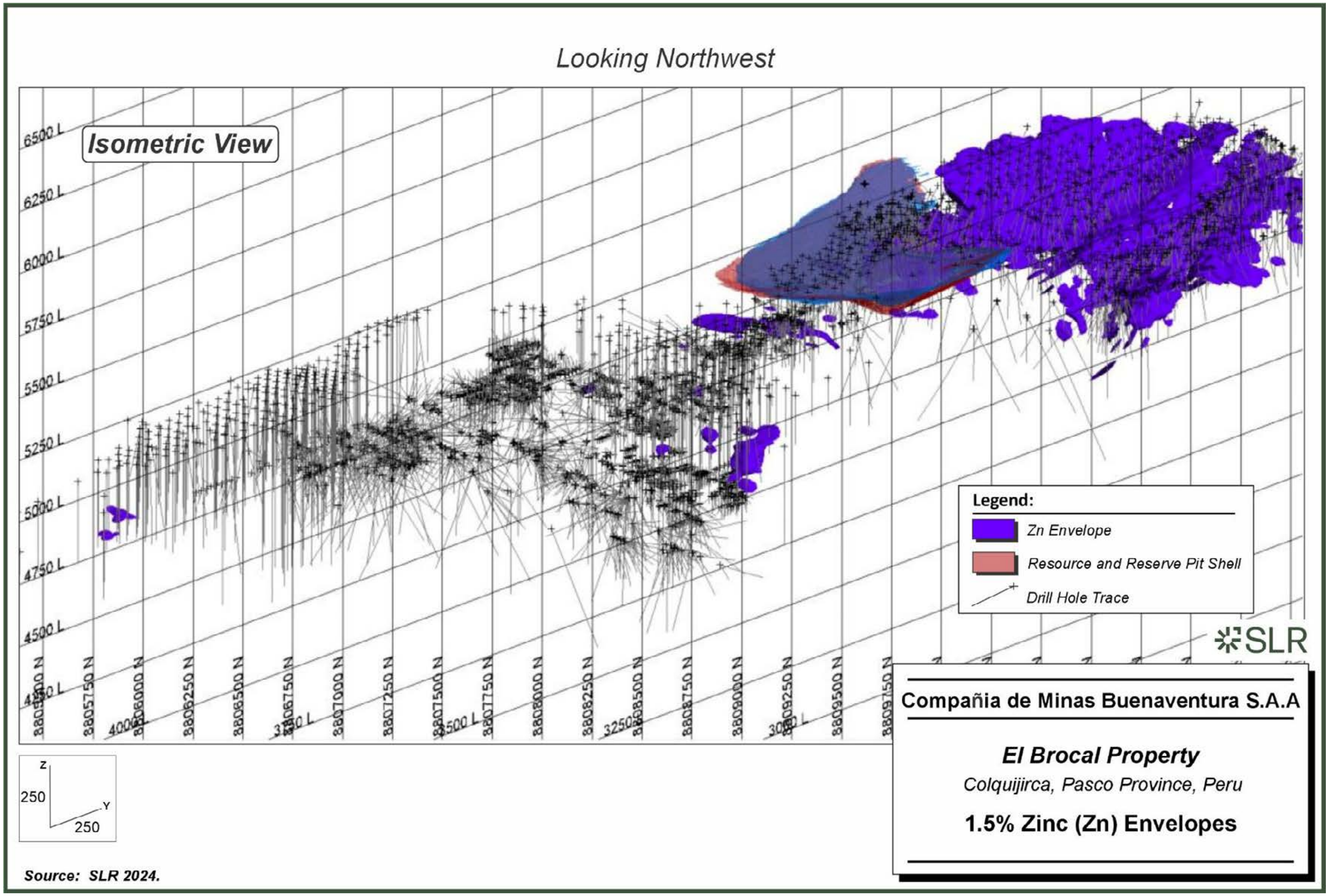
Source: SLR 2024.

Figure 11-4: 0.1% Zinc (Zn) Envelopes



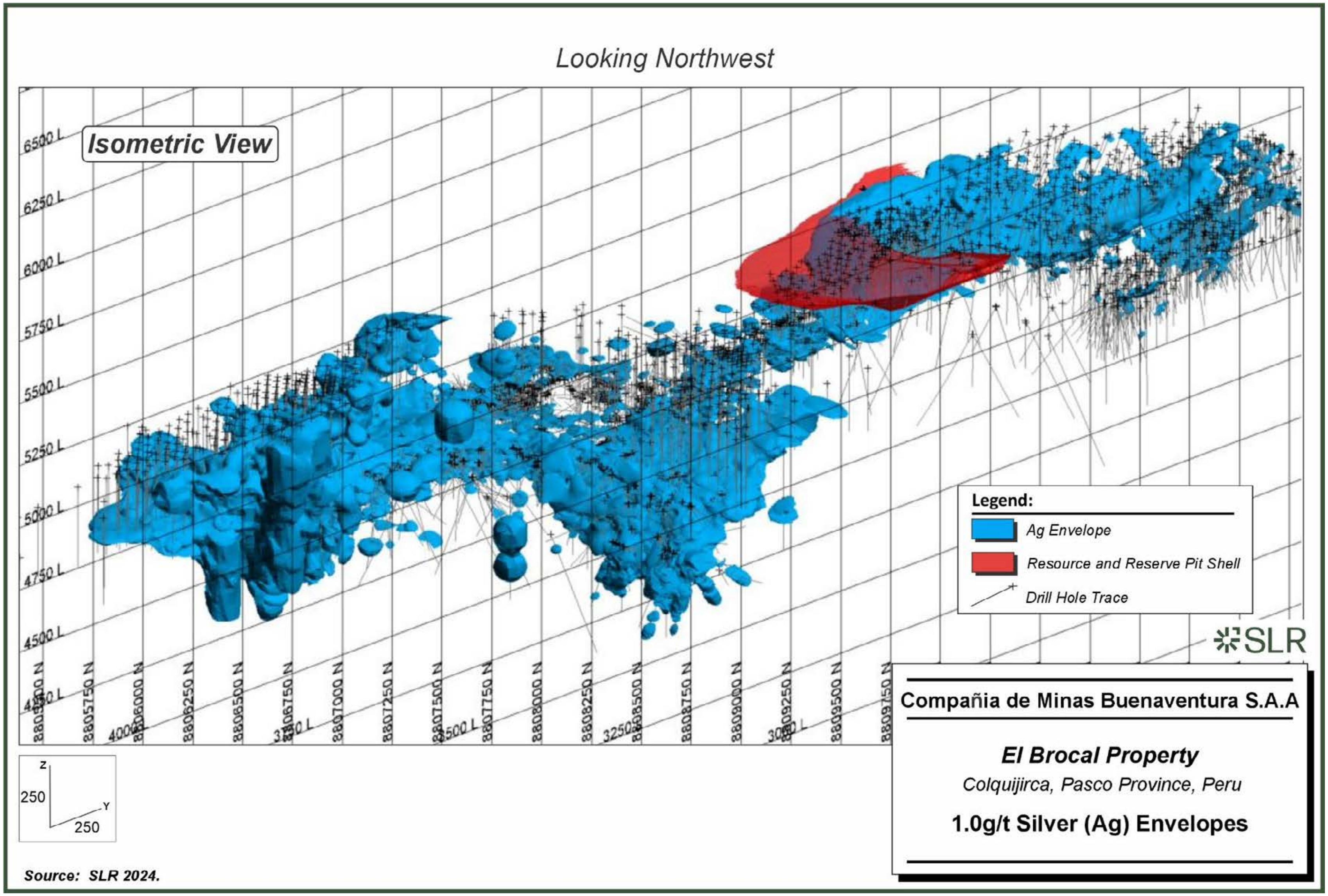
Source: SLR 2024.

Figure 11-5: 1.5% Zinc (Zn) Envelopes



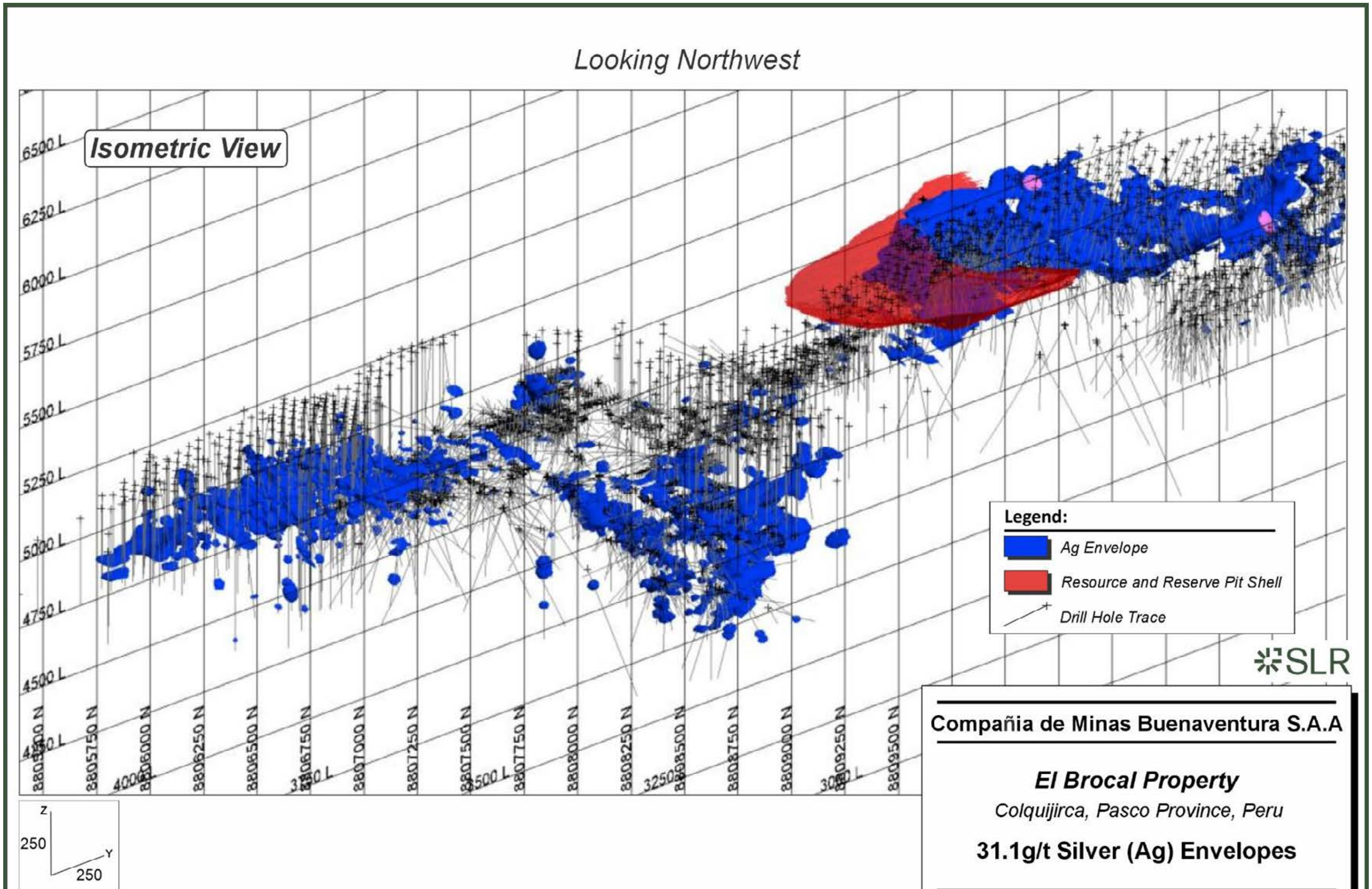
Source: SLR 2024.

Figure 11-6: 1.0 g/t Silver (Ag) Envelopes



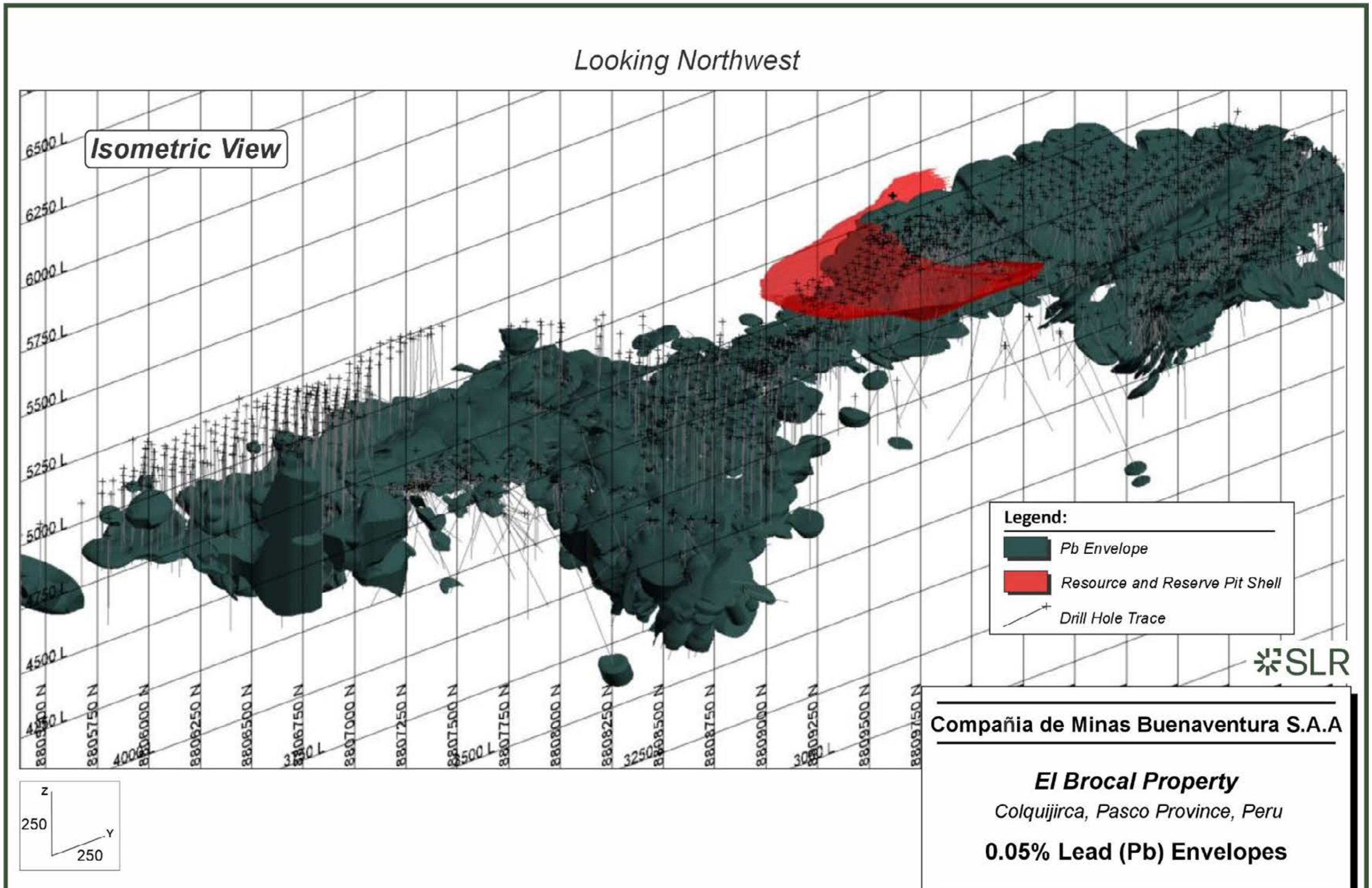
Source: SLR 2024.

Figure 11-7: 31.1 g/t Silver (Ag) Envelopes



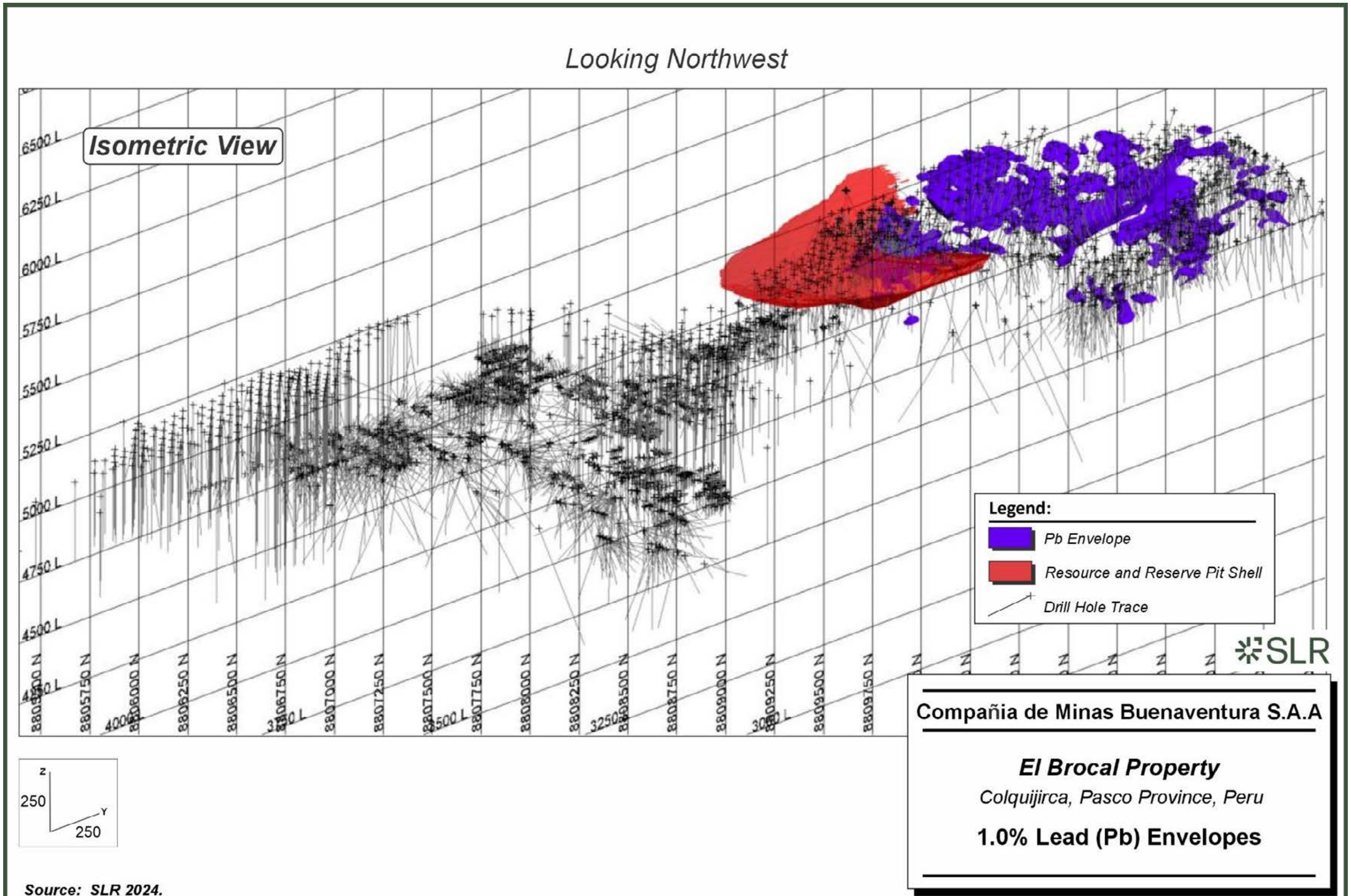
Source: SLR 2024.

Figure 11-8: 0.05% Lead (Pb) Envelopes



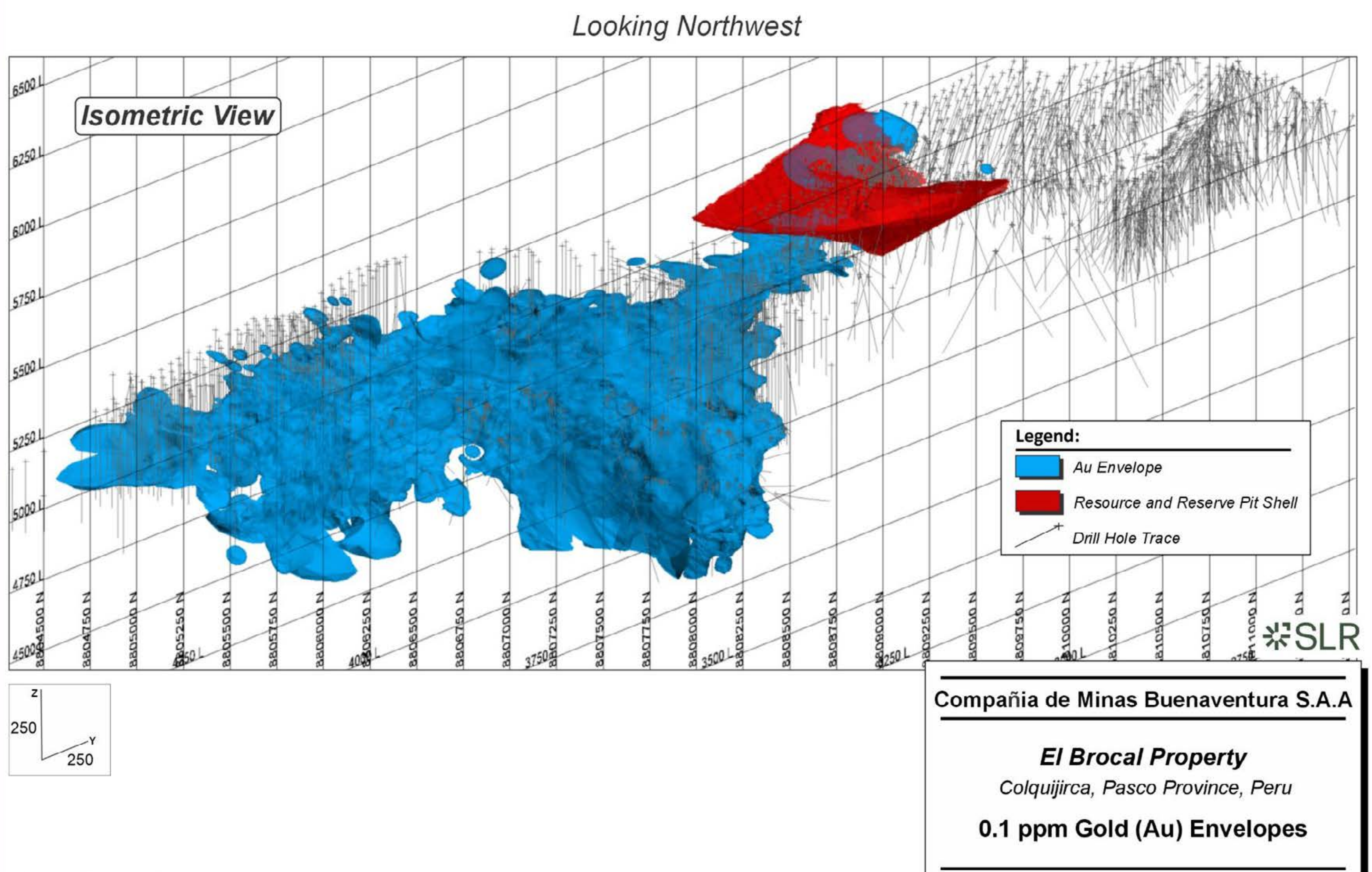
Source: SLR 2024.

Figure 11-9: 1.0% Lead (Pb) Envelopes



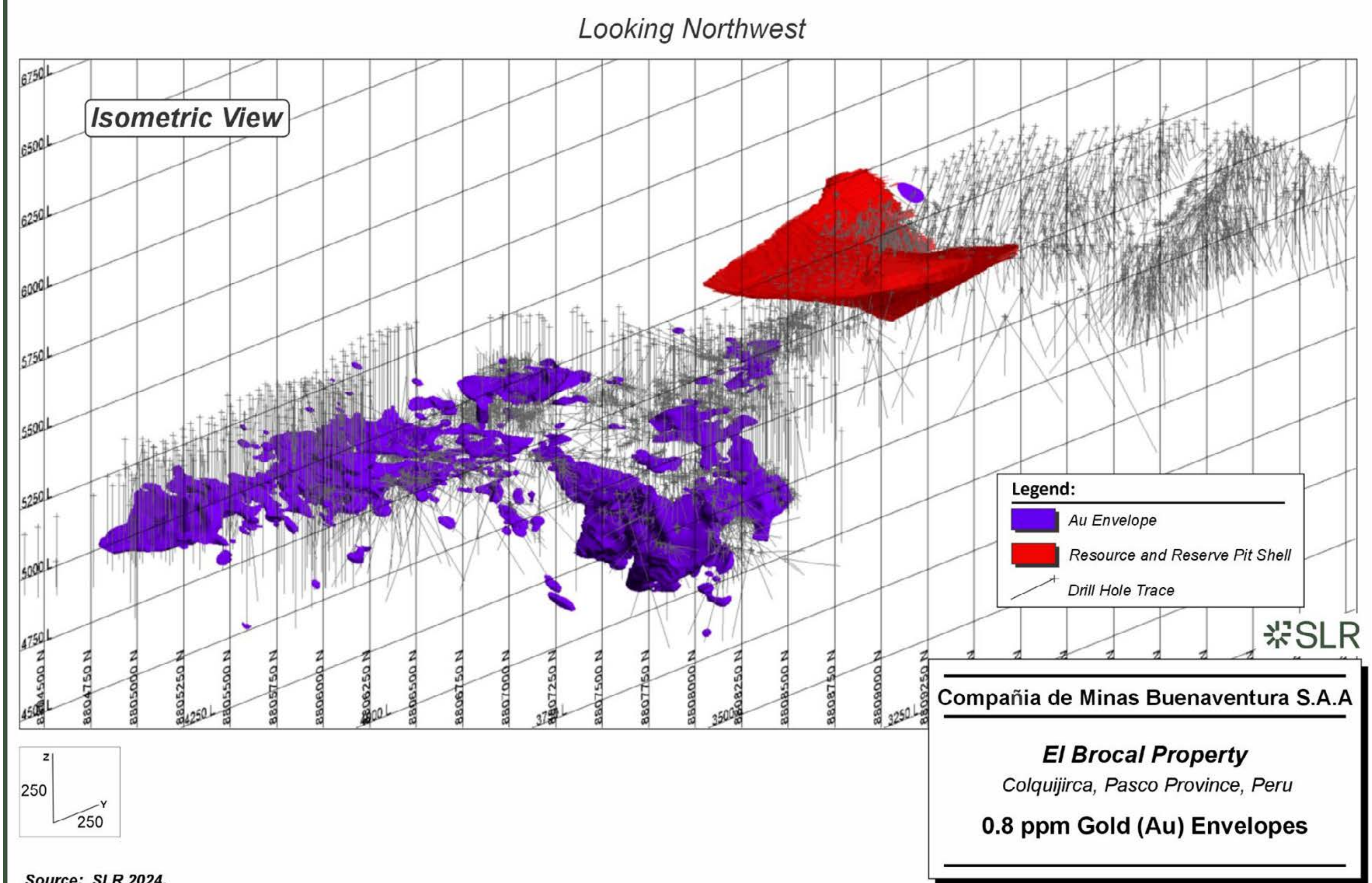
Source: SLR 2024.

Figure 11-10: 0.1 ppm Gold (Au) Envelopes



Source: SLR 2024.

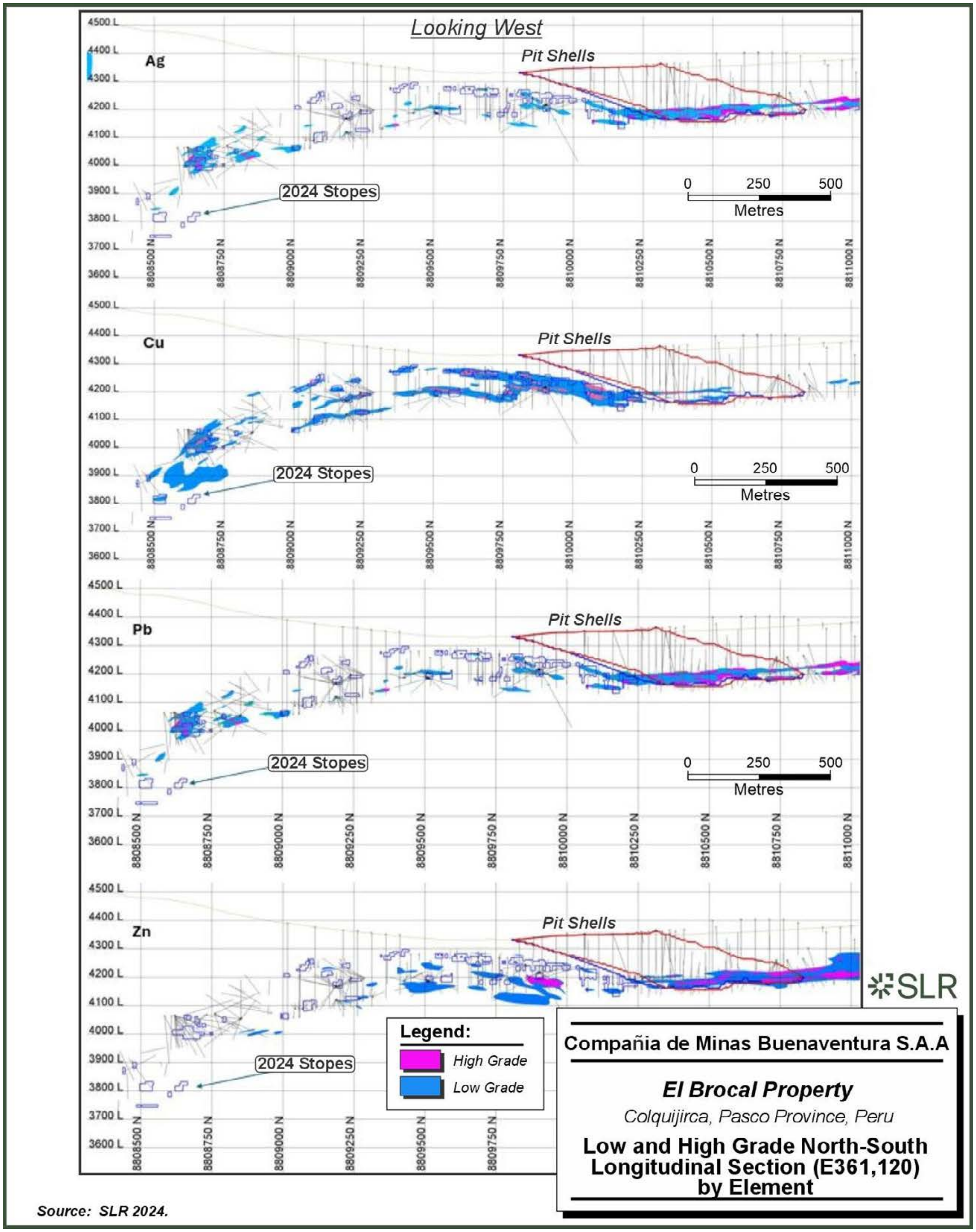
Figure 11-11: 0.8 ppm Gold (Au) Envelopes



Source: SLR 2024.

Figure 11-12 illustrates low and high grade distribution for each element in a longitudinal section at E361,120. As can be observed, Ag, Pb, and Zn high grade zones are more developed at the north of the deposit where the open pit has been mined out, while copper tends to concentrate in the south of the deposit supporting the underground mining.

Figure 11-12: Low and High Grade North-South Longitudinal Section (E361,120) by Element



Source: SLR 2024.

The SLR QP reviewed the implicit model parameters and visually validated the grade shell models by comparing solids with assay data and geologic codes from drill holes on cross-sections and levels. The SLR QP concluded that the Zn and Cu indicator grade shell models are reasonable and suitable for Mineral Resource estimation, as they effectively delineate mineralization while mitigating the undue influence of high-grade samples on low-grade zones and vice versa.

However, the SLR QP noted several areas for improvement:

- **Continuity:** Enhancing continuity in the stratification direction by using an extended search distance during interpolation and smoothing discontinuities would strengthen the mineralization envelope models.
- **Discontinuous Bodies:** Breaking the grade shells on the lithology contacts, during construction, has resulted in discontinuous bodies. It is recommended considering remodelling the grade shells using combined lithology domains where mineralization appears to cross boundaries.
- **Indicator Interpolants:** In Leapfrog, indicator interpolants do not align with drill hole intercepts; the SLR QP recommends using an RBF interpolant for proper alignment.
- **Geological Model Integration:** The absence of the geological model in the Indicator Leapfrog project limits its use for defining boundaries, structural trends, and compositing. Importing geological models via Central (the Leapfrog project management system) is recommended if separate projects are needed.
- **Composite Organization:** Composites should be organized within the designated composites folder for better management
- Use the vein tool to model planar or tabular bodies instead of forcing the intrusion tool using polylines.

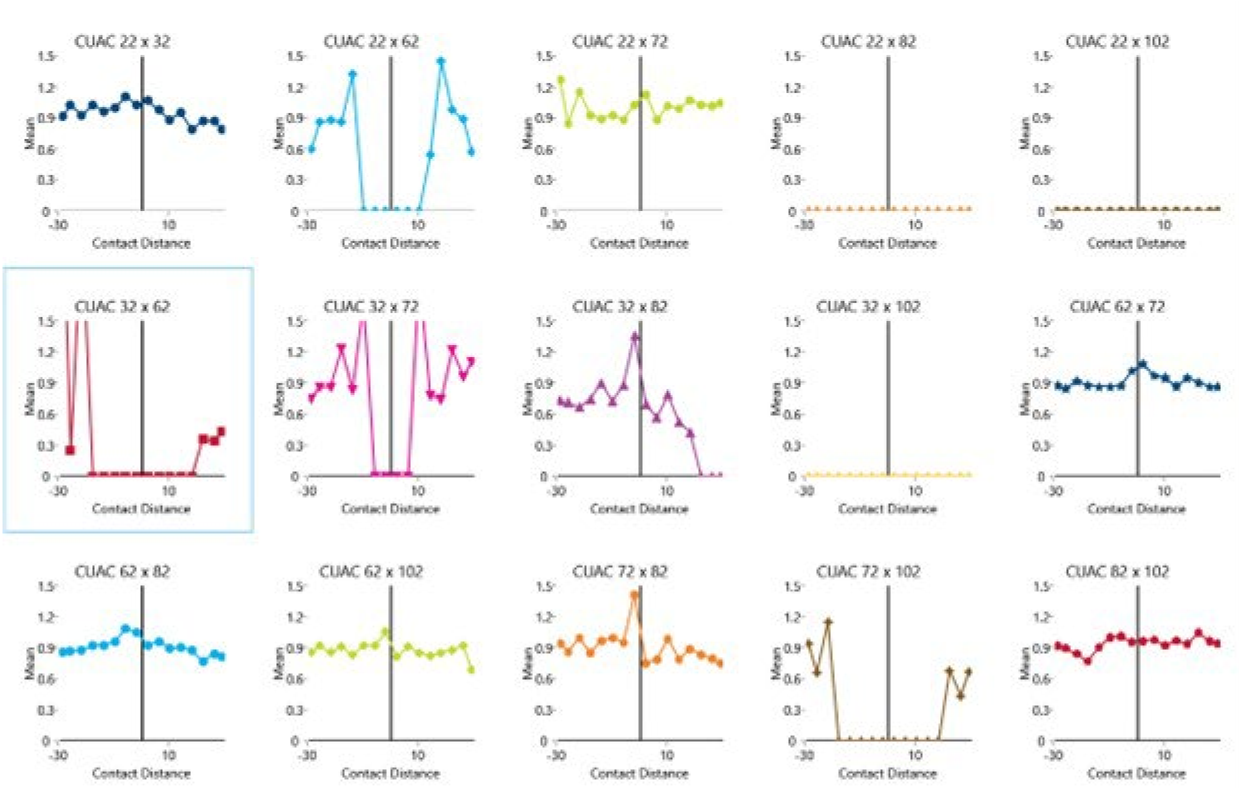
Additionally, the SLR QP performed back-coding of the drill hole intervals against each solid and compared them with the original codes and assays used to define the model. The results summarized in Table 11-7, show that the percentage of coincidence is generally acceptable for low and high grade domains but is slightly lower for medium grade domains.

Table 11-7: Back Flag Check

Lithology	% of Coincidence								
	Ag			Cu			Zn		
	Low	Middle	High	Low	Middle	High	Low	Middle	High
	<9.95 g/t	9.95 - 31.1 g/t	>9.95 g/t	<0.3%	0.3 - 1.8 %	>1.8%	<0.1%	0.1 - 1.5 %	>1.5%
Lower Calera	92%	69%	87%	95%	67%	75%	94%	72%	84%
Medium Calera Favorable	90%	67%	82%	98%	68%	77%	93%	71%	84%
Medium Calera Varvada	96%	74%	79%	99%	83%		95%	70%	84%
Upper Calera	95%	61%		99%			95%	63%	84%
Shuco Conglomerate	89%	72%	88%	94%	71%	78%	98%	69%	84%
Transitional Conglomerate	87%	67%	82%	95%	63%	78%	97%	64%	74%
Porphyritic Dacite	87%	86%	88%	95%	62%	80%	97%	74%	
Pyroclastic Deposit	94%			92%			96%		
Mitu Formation	91%	87%	84%	90%	68%	81%	95%	76%	
Note:	<70%								
	70-80%								
	>90%								

Furthermore, the SLR QP observed that copper mineralization does not appear to be significantly influenced by lithological boundaries within the Calera or conglomerate units. As illustrated in Figure 11-13, only soft contacts are observed between medium grade copper domains across lithological contacts. The SLR QP suggests that grade shells could be generated without imposing hard boundaries between similar grade domains, allowing for a more continuous sample population and reducing local artifacts caused by the current separation methodology.

Figure 11-13: Contact Profile between Medium Grade Domains



11.3.2 Copper Oxide and Arsenical Copper Models

In 2023, a separate Leapfrog project modeled the copper oxide, secondary copper, and arsenical copper zones. Note that the copper oxide and arsenical copper models were not updated with the 288 new holes included in this Mineral Resource estimate. The SLR QP believes these new holes have minimal impact—only about 20 holes intercept the 2023 solids, and half of these intersect peripheral lenses. The open pit and underground areas were divided into two geological models and analyzed independently. The SLR QP considers the oxide and secondary copper volumes appropriate for Mineral Resource estimation but advises that tabular volumes—even when folded—are better modeled using the vein tool or contact surfaces rather than sectional interpretations with polylines. For the underground area, copper oxides and copper speciation were modelled based on flagged drill hole intercepts, prioritized as follows:

- **Oxide Material**: Flagged based on the logged presence of minerals such as hematite, goethite, limonite, and jarosite.
- **Arsenical Copper**: Flagged when the Cu:As ratio was less than 5, indicating the dominance of enargite and/or tennantite.
- **Mixed Zone**: Flagged when the Cu:As ratio was less than 25.
- **Chalcocite Zone**: Flagged when the Cu:As ratio was greater than 25.

Additional insights were gained from drill core photographs and cross-sections interpreted by Buenaventura geologists. Each zone was modeled using interval selections from drill hole data and the intrusion tool, with general trends refined by polylines.The SLR QP concludes that the volumes effectively separate the different populations, although the geological mechanisms responsible for the variations in chemistry remain unclear.. Investigating and incorporating these mechanisms could enhance the accuracy and interpretability of the model. The SLR QP also recommends updating the copper oxide and arsenical models if any new drill holes intercept the area.

11.4 Resource Assays

The drilling database contains 4,796 holes and 376,735 sample intervals. Most of the intervals have Cu-Zn-Pb-Ag assays. Assays below the detection limit (DL) were entered into the assays table and assigned a value equal to half of each DL. Unsampled intervals were coded as negative nine (-9) and excluded from the grade estimation process. Table 11-8 summarizes the number of assayed intervals by element.

Table 11-8: Assay Statistic

Variable Name	Ag (g/t)	Cu (%)	Pb (%)	Zn (%)
Count	324,832	306,893	296,576	297,111
Mean	17.4	0.588	0.178	0.339
Standard deviation	80.2	1.497	0.670	1.306
CV	4.603	2.547	3.754	3.853
Max	25,165.5	54.57	55.20	40.64
Upper quartile	13.4	0.520	0.125	0.032
Median	6.2	0.110	0.048	0.007
Lower quartile	2.2	0.005	0.016	0.005
Min	0.005	0.00005	0.00008	0.00001

11.5 Treatment of High Grade Assays

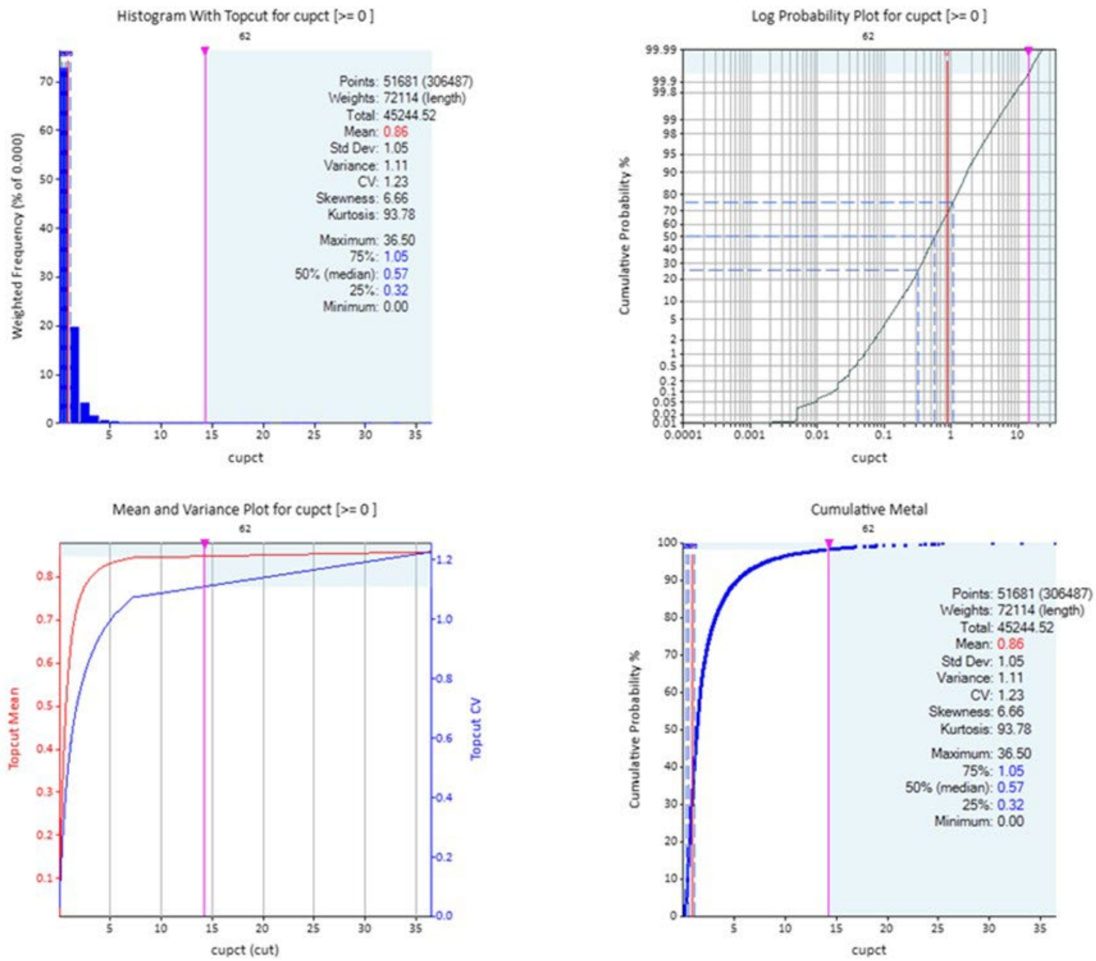
Buenaventura geologists reviewed the original sample data to evaluate the presence of extreme high grade values (outliers) within each estimation domain's grade distribution. Grade capping was deemed necessary to mitigate the large influence of these outliers and prevent local over-estimation effects during interpolation. The capping was applied to the original samples before compositing.

Buenaventura geologists used Supervisor software to identify outliers as they appear separated from the rest of the distribution by noticeable gaps in the histograms and as inflection points at the high tail of the population on log-probability plots. Buenaventura geologists then assessed the impact of the capping on the metallic content and the CV.

Additionally, Buenaventura limited the influence of high grade values during the estimation applying high yield limit (HYL) to a threshold defined above 98th percentile of the composite distribution. The samples above the HYL were used to estimate block grades only within a radius of eight metres, as set by Buenaventura. The HYL was applied for all estimation passes.

Figure 11-14 presents an example of cumulative probability plots and top-cut analysis for copper within one of the main domains of the deposit.

Figure 11-14: Outlier Analysis



11.5.1 Capping Levels and High Yield Restriction

The capping values determined for each domain are summarized in Table 11-9 to Table 11-11.

Table 11-9: Copper Capping and High Yield Limit

Copper (%)	LG		MG		HG	
Litho Codes	**HYL**	**Capping**	**HYL**	**Capping**	**HYL**	**Capping**
Breccia						
Lower Calera	0.65	3.15	4.37	6.39	8	11.95
Medium Calera Favorable	0.5	6.71	5	6.04	15.4	19.01
Medium Calera Varvada	0.19	3.22	3	1.6		
Upper Calera	0.04	0.1				
Shuco Conglomerate	1.78	6.34	6	14.28	20	20.31
Transitional Conglomerate	1.67	4	7.8	10.22	10	14.3
Porphyritic Dacite	1	8.19	6	9.42	10	13
Pyroclastic Deposit	1	5				
Mitu Formation	2.3	5.09	4	8.81	7.82	9.28

Table 11-10: Zinc Capping and High Yield Limit

Zinc (%)	LG		MG		HG	
Litho Codes	**HYL**	**Capping**	**HYL**	**Capping**	**HYL**	**Capping**
Breccia						
Lower Calera	1.39	4.37	3	3.6	4.2	7.12
Medium Calera Favorable	2	3.42	4.7	5.69	19	20.44
Medium Calera Varvada	1.3	2.23	3.22	4.23	8.2	10.86
Upper Calera	1.4	2.49	4.5	6	10.6	14.56
Shuco Conglomerate	1.41	2	3.2	4.83	11	13
Transitional Conglomerate	1	1.88	3.2	4.32	4.5	7.71
Porphyritic Dacite	0.76	2.06	1.3	4.17		
Pyroclastic Deposit	0.12	0.47				
Mitu Formation	0.45	1.61	1.4	2.69		

Table 11-11: Silver Capping and High Yield Limit

Ag (g/t)	LG		MG		HG	
Litho Codes	**HYL**	**Capping**	**HYL**	**Capping**	**HYL**	**Capping**
Breccia						
Lower Calera	82.4	108.9	62.2	107.0	62.2	79.0
Medium Calera Favorable	217.7	373.3	311.1	517.9	777.6	2,675.0
Medium Calera Varvada	50.7	140.0	62.2	237.0	93.3	140.0
Upper Calera	46.7	71.5	102.6	208.1	0.0	0.0
Shuco Conglomerate	62.2	93.3	279.9	382.0	622.1	1,297.1
Transitional Conglomerate	124.4	198.1	270.6	397.8	497.7	986.7
Porphyritic Dacite	140.0	264.4	248.8	342.2	373.3	598.5
Pyroclastic Deposit	17.1	39.2	0.0	0.0	0.0	0.0
Mitu Formation	62.2	166.1	93.3	187.9	233.3	537.5

Table 11-12 provides details of the original and capped copper statistics and the resulting metal reduction due to capping.

Table 11-12: Original and Capped Copper Statistics

Lithology	Grade Shell	Count	Uncapped Copper			Capped Copper			Difference
			Mean	**CV**	**Max**	**Mean**	**CV**	**Max**	
Mitu Formation	Low	11,851	0.141	3.604	18.98	0.135	2.814	5.09	-4.2%
	Medium	4,124	0.906	1.581	28.56	0.874	1.269	8.81	-3.5%
	High	291	3.851	0.876	33.55	3.607	0.642	9.28	-6.3%
Lower Calera	Low	11,418	0.070	4.520	10.00	0.066	3.613	3.15	-6.2%
	Medium	1,973	1.036	1.316	15.20	1.006	1.181	6.39	-2.9%
	High	298	3.503	0.891	23.50	3.388	0.774	11.95	-3.3%
Medium Calera Favorable	Low	44,862	0.047	5.882	23.13	0.045	4.371	6.71	-3.3%
	Medium	12,535	0.940	1.398	25.76	0.901	1.131	6.04	-4.1%
	High	4,220	4.032	0.968	54.57	3.981	0.908	19.01	-1.3%
Medium Calera Varvada	Low	14,142	0.011	14.977	16.83	0.010	7.574	3.22	-11.5%
	Medium	58	0.741	0.762	2.56	0.701	0.664	1.60	-5.4%
	High								
Upper Calera	Low	10,289	0.004	3.884	0.86	0.003	1.733	0.10	-7.2%
	Medium								
	High								
Shuco Conglomerate	Low	34,774	0.138	2.714	29.84	0.136	2.213	6.34	-1.5%
	Medium	51,685	0.875	1.328	36.50	0.871	1.256	14.28	-0.5%

Lithology	Grade Shell	Count	Uncapped Copper			Capped Copper			Difference
			Mean	CV	Max	Mean	CV	Max	
	High	8,680	4.011	0.952	35.12	3.973	0.910	20.31	-1.0%
Transitional Conglomerate	Low	20,773	0.114	3.634	34.74	0.109	2.310	4.00	-4.4%
	Medium	20,471	0.952	1.562	30.96	0.932	1.387	10.22	-2.1%
	High	1,618	4.009	1.055	39.37	3.814	0.887	14.30	-4.9%
Porphyritic Dacite	Low	37,387	0.110	5.062	35.51	0.105	4.087	8.19	-4.2%
	Medium	11,424	0.908	1.628	31.80	0.881	1.366	9.42	-3.0%
	High	1,936	4.371	0.978	36.87	4.094	0.792	13.00	-6.3%
Pyroclastic Deposit	Low	1,648	0.111	5.469	11.09	0.100	4.705	5.00	-9.2%

The SLR QP reviewed log-probability plots and observed that Buenaventura's capping levels were slightly optimistic, i.e., higher than the SLR QP anticipated would have been defined. However, the SLR QP agrees with the application of the HYL and therefore concurs with the overall approach to managing extreme and high grade values, as it reduces the risk of overstating the metal in the Mineral Resource estimate.

11.6 Compositing

After capping analysis, sample support was standardized through length-weighted compositing along each drill hole within the modelled grade domains. Sample lengths varied from a few centimetres to 11.7 m, with one- and two-metre lengths being the most common, representing 25% and 27% of the samples, respectively. Buenaventura assessed different composite lengths within each lithology and identified that two metres, with a tolerance of one metre, was the optimal composite length for the deposit.

In Table 11-13, Buenaventura evaluated the impact of the compositing process by comparing unweighted copper statistics from direct compositing with gold statistics using length-weighted compositing. The SLR QP verified that no significant bias existed in the mean after compositing. Table 11-13 presents the statistics of the composited data samples used in the copper estimation domains.

Table 11-13: Capped Statistics by Element

Lithology	Grade Shell	Domain	Ag			Cu			Pb			Zn		
			Count	Mean	CV	Count	Mean	CV	Count	Mean	CV	Count	Mean	CV
Breccia	-	1	272	0.3	4.56	127	0.040	3.05				272	0.238	2.03
Mitu Formation	Low	101	8,434	0.2	1.75	7,974	0.140	2.42	8,689	0.023	1.71	10,859	0.019	3.66
	Medium	102	2,516	0.5	0.83	2,882	0.838	0.95	2,437	0.092	1.59	267	0.384	1.16
	High	103	176	2.3	1.05	227	3.459	0.54						
Lower Calera	Low	21	8,586	0.1	1.67	7,304	0.078	3.05				8,161	0.041	4.18
	Medium	22	640	0.7	1.19	1,452	0.942	0.92				875	0.655	0.98
	High	23	52	1.5	0.40	225	3.347	0.58				242	2.405	0.43
Medium Calera Favorable	Low	31	31,460	0.2	2.05	28,609	0.045	3.30	12,902	0.017	2.50	21,723	0.045	3.80
	Medium	32	7,869	0.8	1.27	8,377	0.893	0.87	28,604	0.324	1.40	12,743	0.711	0.97
	High	33	6,338	4.1	1.50	2,972	3.766	0.74	4,161	2.575	0.85	11,201	3.547	0.77
Medium Calera Varvada	Low	41	9,642	0.1	2.22	9,293	0.012	7.19	8,027	0.014	4.33	7,801	0.040	4.83
	Medium	42	242	0.7	0.96	44	0.762	0.74	1,689	0.337	1.07	1,306	0.647	1.08
	High	43	13	2.2	0.52				181	1.812	0.70	790	2.982	0.62
Upper Calera	Low	51	7,004	0.1	2.05	6,977	0.003	1.53	5,298	0.024	4.73	4,745	0.045	4.24
	Medium	52	222	1.0	0.95				1,811	0.619	1.04	1,283	0.868	1.13
	High	53							117	2.195	0.84	1,198	3.263	0.70
Shuco Conglomerate	Low	61	28,829	0.2	1.05	23,252	0.138	1.61	29,902	0.023	1.25	63,925	0.013	4.02
	Medium	62	30,807	0.6	0.97	36,406	0.860	0.94	36,253	0.147	1.16	2,008	0.521	1.30
	High	63	6,519	2.6	1.20	6,391	3.791	0.78				222	3.887	0.79
Transitional Conglomerate	Low	71	21,066	0.2	1.32	13,814	0.118	1.83	12,589	0.023	0.97	28,189	0.015	4.60
	Medium	72	7,141	0.7	1.22	14,317	0.902	1.06	16,802	0.131	1.06	1,115	0.706	1.16
	High	73	1,184	3.3	1.12	1,131	3.647	0.73				87	2.669	0.52
Porphyritic Dacite	Low	81	21,185	0.2	1.94	25,638	0.094	3.21	26,424	0.014	2.24	39,608	0.010	5.03
	Medium	82	16,180	0.5	0.92	7,571	0.863	0.99	13,493	0.086	1.88	309	0.421	1.21
	High	83	2,552	2.6	0.95	1,313	3.859	0.66						
Pyroclastic Deposit	Low	91	1,179	0.1	1.53	975	0.121	3.28	1,179	0.019	1.56	1,179	0.020	1.99

The SLR QP is of the opinion that the composite length of two metres is suitable for estimating 4 m x 4 m x 6 m blocks, given a sample configuration consistent with the block size, which must include three composites per drill hole, i.e., six-metre interval from each drill hole. The grades in underground 4 m x 4 m x 3 m block model were obtained by the reblock process.

11.7 Trend Analysis

11.7.1 Variography

A variographic analysis was conducted to evaluate grade continuity by combining medium and high grade domains. The resulting medium and high grade domain variograms were subsequently applied to estimate grades within low grade domains. The analysis utilized two-metre composites for copper, silver, and zinc. Downhole (omni-directional) variograms were used to determine the nugget effect, while continuity directions were identified using variogram maps. The general orientation of the stratabound mineralization served as a guide for defining the major, semi-major, and minor axes.

Variograms for copper, zinc/lead, and silver were modelled using Normal Score (NS) transformed distributions. After defining the NS model, the final variogram model was back-transformed to the original scale. Table 11-14 summarizes copper continuity models.

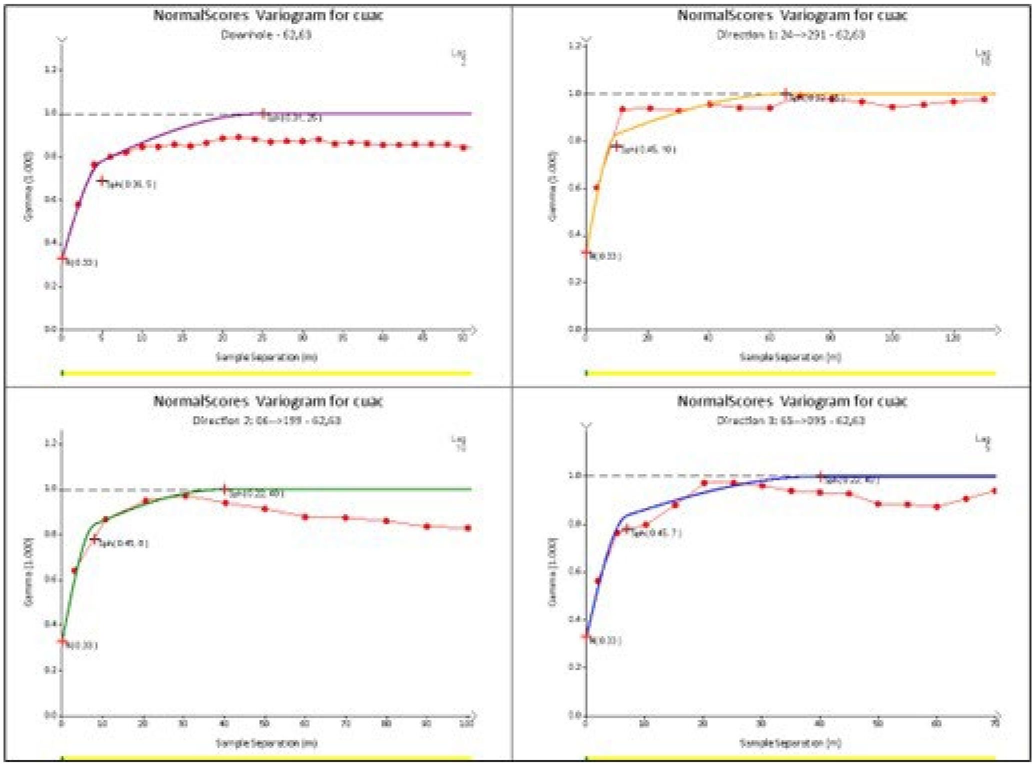
Table 11-14: Copper Continuity Models

Element	Domain	Nugget	Orientation			Structure 1				Structure 2			
			Bearing	Plunge	Dip	c1 sill	c1 major	c1 semi	c1 minor	c2 sill	c2 major	c2 semi	c2 minor
Copper	Lower Calera	0.474	60	0	0	0.23	25	7	4	0.29	37	16	10
	Medium Calera Favorable	0.411	291	24	-7	0.43	8	6	3	0.16	45	40	14
	Medium Calera Varvada	0.268	0	0	0	0.44	4	6	38	0.3	16	67	44
	Upper Calera	0.268	0	0	0	0.44	4	6	38	0.3	16	67	44
	Shuco Conglomerate	0.443	291	24	-7	0.42	10	8	7	0.14	65	40	40
	Transitional Conglomerate	0.442	58	-34	-23	0.46	6	5	6	0.1	50	25	13
	Porphyritic Dacite	0.316	68	-10	-75	0.55	16	8	10	0.13	67	36	20
	Pyroclastic Deposit	0.313	95	5	-1	0.35	14	21	5	0.33	101	68	42
	Mitu Formation	0.313	95	5	-1	0.35	14	21	5	0.33	101	68	42
Zinc	Lower Calera	0.231	50	3	-9	0.28	53	70	6	0.49	140	80	18
	Medium Calera Favorable	0.253	250	10	0	0.56	23	28	6	0.19	75	115	25
	Medium Calera Varvada	0.173	272	55	42	0.52	7	30	4	0.31	210	40	40
	Upper Calera	0.43	171	3	-20	0.37	40	12	8	0.2	100	65	35
	Shuco Conglomerate	0.546	161	7	-19	0.27	25	30	10	0.19	235	95	15
	Transitional Conglomerate	0.125	162	36	-143	0.46	7	30	15	0.41	50	35	25
	Porphyritic Dacite	0.563	0	90	-90	0.33	7	7	7	0.11	40	40	40
	Pyroclastic Deposit	0.123	0	90	-90	0.7	64	64	64	0.18	127	127	127
	Mitu Formation	0.768	0	90	-90	0.12	20	20	20	0.11	150	150	150
Silver	Lower Calera	0.553	75	-2	-10	0.15	34	15	6	0.3	39	33	21
	Medium Calera Favorable	0.465	102	-21	13	0.43	28	30	7	0.11	280	280	25
	Medium Calera Varvada	0.457	320	3	-4	0.27	94	16	21	0.28	194	27	31
	Upper Calera	0.1	345	1	-5	0.45	20	12	17	0.45	110	125	140
	Shuco Conglomerate	0.653	110	-18	-3	0.21	4	7	12	0.13	75	45	50
	Transitional Conglomerate	0.459	345	0	0	0.46	6	5	10	0.09	77	96	55
	Porphyritic Dacite	0.41	0	90	10	0.35	54	109	7	0.24	319	155	161
	Pyroclastic Deposit	0.157	140	85	-180	0.47	70	60	39	0.37	141	239	48
	Mitu Formation	0.481	30	8	6	0.25	2	15	95	0.27	15	28	151

For validation purposes, the SLR QP successfully replicated the variogram models for the Shuco Conglomerate in the combined medium and high grade domains. Additionally, the SLR

QP modelled variograms separately for each grade shell and observed that the medium and high grade variograms within the Shuco Conglomerate (illustrated in Figure 11-15) were similar, although the medium grade variogram showed a slightly shorter range than that used in the estimation process.

Figure 11-15: Copper NS Variograms for Shuco Conglomerate



Source: Buenaventura 2024

The SLR QP is of the opinion the variogram models generally suitable for Mineral Resource estimation but recommends that Buenaventura's team update the grade estimation process in future estimates by applying separate variograms for each estimation domain. Since low grades tend to be more continuous than high grades, this approach would better assign influence within each domain and improve local estimation precision.

11.8 Block Models

Buenaventura constructed a block model for grade interpolation using Vulcan software. The block model encompasses the lithological model and includes the entire pit zone as well as the current underground workings.

The block model is aligned with the east-west, north-south, and elevation directions, with a parent cell size defined as 4 m x 4 m x 6 m for open pit model. For the underground Mineral Resource estimate purposes, the 4 m x 4 m x 6 m block model was re-blocked to 4 m x 4 m x 3 m parent cell size. The origin remained unchanged for each model. The grades, densities, and other parameters in the underground 4 m x 4 m x 3 m block model were obtained by the reblock process.

The characteristics of the El Brocal block model are summarized in Table 11-15.

Table 11-15: Block Model Parameters

Item		East	North	Elevation
Origin	minimum	360,196	8,807,196	3,646
	maximum	362,308	8,812,612	4,516
# blocks (open pit)	4 m x 4 m x 6 m	528	1,354	145
# blocks (underground)	4 m x 4 m x 3 m	528	1,354	290

Lithological and grade shell solids were used to code each block, thereby defining the estimation domain. The SLR QP reviewed both the coding results in the open pit block model and the re-blocked underground model and found no issues.

In the SLR QP opinion, it is recommended to run the grade estimation in the small 4x4x3 m block model and then reblock to 4x4x6 m. This procedure will add accuracy in the UG mine planning.

11.9 Grade Estimation

11.9.1 Search Strategy and Grade Interpolation Parameters

Copper, zinc, lead, silver, gold, and arsenic grade estimations were primarily performed using ID^2, with OK applied in select cases(Table 11-16). The method choice was based on global and local bias validations..

Table 11-16: Grade Interpolation Methods Used in Mineral Resource Estimation

Lithology Codes	Cu			Zn			Ag			Pb			Au			As		
	LG	MG	HG	LG	MG	HG	LG	MG	HG	LG	MG	HG	LG	MG	HG	LG	MG	HG
Lower Calera	ok	id2	id2	ok	id2	id2	id2	id2	ok	ok	id2	id2	ok	id2	id2	ok	id2	ok
Medium Calera Favorable	ok	ok	ok	id2	id2	id2	id2	id2	id2	ok	id2	id2	id2	id2	id2	ok	id2	ok
Medium Calera Varvada	id2	id2	ok	id2	id2	id2	id2	id2	ok	id2	id2	ok	id2	id2	ok	ok	id2	ok
Upper Calera	ok	id2	ok	id2	id2	id2	id2	id2	id2	id2	id2	ok	id2	id2	ok	ok	id2	ok
Shuco Conglomerate	id2	id2	id2	ok	id2	id2	ok	id2	ok	ok	id2	ok	id2	id2	id2	ok	id2	ok
Transitional Conglomerate	ok	id2	ok	id2	id2	id2	ok	id2	ok	ok	id2	id2	id2	id2	id2	ok	id2	ok
Porphyritic Dacite	id2	id2	id2	ok	id2	ok	id2	id2	ok	id2	id2	id2	id2	id2	id2	ok	id2	ok
Pyroclastic Deposit	id2	id2	ok	id2	id2	ok	id2	id2	ok	id2	id2	ok	id2	id2	id2	ok	id2	ok
Mitu Formation	id2	id2	ok	ok	ok	ok	id2	id2	ok	ok	id2	ok	id2	id2	id2	ok	id2	Ok
Note. LG – low grade, MG – medium grade, HG – high grade.																		

The estimation parameters were defined using Quantitative Kriging Neighborhood Analysis (QKNA), conducted using Supervisor software. QKNA evaluated the minimum and maximum number of composites by validating variations in the Slope of Regression. In most domains, the estimation process included an eight-metre distance constraint to limit the influence of high grade outliers.

The resource estimation methodology and process were based on the following parameters:

- For all elements, a minimum of five two-metre composites were required in the first pass, and three two-metre composites in the second pass.
- The maximum number of composites ranged from 10 to 22 for copper and nine to 10 for other elements.
- With a few exceptions, a minimum of two drill holes was required to estimate each block in passes 1 through 3. One composite was allowed in pass 4.
- Hard contacts were applied between domains to ensure that each mineralized solid was estimated exclusively using composites located within the corresponding solid.
- Dynamic anisotropy was applied across all zones to control the orientation of estimation angles, allowing for alignment of the variographic model and the search ellipsoid during OK.
- Grade estimation was performed in four passes with progressively increasing search distances and a 3x3x3 discretization grid.
- All domains were estimated using OK and ID^2, and validated with the NN method.

The copper, zinc, and silver pass 1 and pass 2 estimation parameters for the medium and high grade mineralized domains are summarized in Table 11-17, Table 11-18, and Table 11-19.

, respectively. Low grade domain grades were estimated using the same strategy used for the medium and high grade domains including the same variograms and search distances, however, HYL was adjusted to their own domain distributions.

Table 11-17: Copper Estimation Parameters for Medium and High Grade Domains

Pass	Estimation Domain		Distances (m)			# Composites		HYL		Max/ hole
	Lithology	Grade Shell	Major	Semi	Minor	Min.	Max.	Threshold	Major/Semi/Minor (m)	
1st	Lower Calera	Medium	34.25	14	8.75	5	22	4.37	8/8/8	2
		High						8.00	8/8/8	2
	Medium Calera Favorable	Medium	20	33	7	5	18	5.00	8/8/8	2
		High						15.40	8/8/8	2
	Medium Calera Varvada	Medium	8	33.5	22	5	10	3.00	8/8/8	2
		High								2
	Upper Calera	Medium	8	33.5	22	5	10	0.04	8/8/8	2
		High						0.04	8/8/8	2
	Shuco Conglomerate	Medium	15	10	5	5	18	5.00	8/8/8	3
		High	48	25.5	17			16.00	8/8/8	3
	Transitional Conglomerate	Medium	25	15.25	8.5	5	18	6.00	8/8/8	3
		High	37.25	15.25	8.5			10.00	8/8/8	3
	Porphyritic Dacite	Medium	42	19	28.5	5	12	4.00	8/8/8	2
		High						10.00	8/8/8	2
	Pyroclastic Deposit	Medium	47	27	12.5	5	12	1.00	8/8/8	2
		High						1.00	8/8/8	2
	Mitu Formation	Medium	47	27	12.5	5	12	4.00	8/8/8	2
		High						7.82	8/8/8	2
2nd	Lower Calera	Medium	68.5	28	17.5	3	22	4.37	8/8/8	2
		High						8.00	8/8/8	2
	Medium Calera Favorable	Medium	40	66	14	3	18	5.00	8/8/8	2
		High						15.40	8/8/8	2
	Medium Calera Varvada	Medium	16	67	44	3	10	3.00	8/8/8	2
		High								2
	Upper Calera	Medium	16	67	44	3	10	0.04	8/8/8	2
		High						0.04	8/8/8	2
	Shuco Conglomerate	Medium	30	20	10	3	18	5.00	8/8/8	3
		High	96	51	34			16.00	8/8/8	3
	Transitional Conglomerate	Medium	50	30.5	17	3	18	6.00	8/8/8	3
		High	74.5	30.5	17			10.00	8/8/8	3
	Porphyritic Dacite	Medium	84	38	57	3	12	4.00	8/8/8	2
		High						10.00	8/8/8	2
	Pyroclastic Deposit	Medium	94	54	25	3	12	1.00	8/8/8	2
		High						1.00	8/8/8	2
	Mitu Formation	Medium	94	54	25	3	12	4.00	8/8/8	2
		High						7.82	8/8/8	2

Table 11-18: Zinc Estimation Parameters for Medium and High Grade Domains

Pass	Estimation Domain		Distances (m)			# Composites		HYL		Max/ hole
	Lithology	Grade Shell	Major	Semi	Minor	Min.	Max.	Threshold	Major/Semi/Minor (m)	
1st	Lower Calera	Medium	17.5	10	7.5	5	9	2.00	8/8/8	3
		High						4.20	8/8/8	2
	Medium Calera Favorable	Medium	12.5	20	5	5	9	2.50	8/8/8	3
		High						19.00	8/8/8	2
	Medium Calera Varvada	Medium	12.5	10	2.5	5	9	3.22	8/8/8	2
		High						8.20	8/8/8	2
	Upper Calera	Medium	15	7.5	5	5	9	4.50	8/8/8	2
		High						10.60	8/8/8	2
	Shuco Conglomerate	Medium	17.5	7.5	5	5	9	3.20	8/8/8	2
		High						11.00	8/8/8	2
	Transitional Conglomerate	Medium	10	10	15	5	9	3.20	8/8/8	2
		High						4.50	8/8/8	2
	Porphyritic Dacite	Medium	12.5	12.5	12.5	5	9	1.30	8/8/8	2
		High								2
	Pyroclastic Deposit	Medium	10	10	10	5	9			2
		High								2
	Mitu Formation	Medium	12.5	12.5	12.5	5	9	1.40	8/8/8	2
		High								2
2nd	Lower Calera	Medium	35	20	15	3	9	2.00	8/8/8	3
		High						4.20	8/8/8	2
	Medium Calera Favorable	Medium	25	40	10	3	9	2.50	8/8/8	3
		High						19.00	8/8/8	2
	Medium Calera Varvada	Medium	25	20	5	3	9	3.22	8/8/8	2
		High						8.20	8/8/8	2
	Upper Calera	Medium	30	15	10	3	9	4.50	8/8/8	2
		High						10.60	8/8/8	2
	Shuco Conglomerate	Medium	35	15	10	3	9	3.20	8/8/8	2
		High						11.00	8/8/8	2
	Transitional Conglomerate	Medium	20	20	30	3	9	3.20	8/8/8	2
		High						4.50	8/8/8	2
	Porphyritic Dacite	Medium	25	25	25	3	9	1.30	8/8/8	2
		High								2
	Pyroclastic Deposit	Medium	20	20	20	3	9			2
		High								2
	Mitu Formation	Medium	25	25	25	3	9	1.40	8/8/8	2
		High								2

Table 11-19: Silver Estimation Parameters for Medium and High Grade Domains

Pass	Estimation Domain		Distances (m)			# Composites		HYL		Max/ hole
	Lithology	Grade Shell	Major	Semi	Minor	Min.	Max.	Threshold	Major/Semi/Minor (m)	
1st	Lower Calera	Medium	22.5	32.5	5	5	9	2.0	8/8/8	2
		High						2.0	8/8/8	2
	Medium Calera Favorable	Medium	15	17.5	2.5	5	9	10.0	8/8/8	2
		High						25.0	8/8/8	2
	Medium Calera Varvada	Medium	12.5	2.5	5	5	9	2.0	8/8/8	2
		High						3.0	8/8/8	2
	Upper Calera	Medium	15	11	16.5	5	9	3.3	8/8/8	2
		High								2
	Shuco Conglomerate	Medium	17.5	9	10	5	9	9.0	8/8/8	2
		High						20.0	8/8/8	2
	Transitional Conglomerate	Medium	10	12.5	5	5	9	8.7	8/8/8	2
		High						16.0	8/8/8	2
	Porphyritic Dacite	Medium	15	5	7.5	5	9	8.0	8/8/8	2
		High						12.0	8/8/8	2
	Pyroclastic Deposit	Medium	10	15	5	5	9			2
		High								2
	Mitu Formation	Medium	2.5	5	17.5	5	9	3.0	8/8/8	2
		High						7.5	8/8/8	2
2nd	Lower Calera	Medium	45	65	10	3	9	2.0	8/8/8	2
		High						2.0	8/8/8	2
	Medium Calera Favorable	Medium	30	35	5	3	9	10.0	8/8/8	2
		High						25.0	8/8/8	2
	Medium Calera Varvada	Medium	25	5	10	3	9	2.0	8/8/8	2
		High						3.0	8/8/8	2
	Upper Calera	Medium	30	22	33	3	9	3.3	8/8/8	2
		High								2
	Shuco Conglomerate	Medium	35	18	20	3	9	9.0	8/8/8	2
		High						20.0	8/8/8	2
	Transitional Conglomerate	Medium	20	25	10	3	9	8.7	8/8/8	2
		High						16.0	8/8/8	2
	Porphyritic Dacite	Medium	30	10	15	3	9	8.0	8/8/8	2
		High						12.0	8/8/8	2
	Pyroclastic Deposit	Medium	20	30	10	3	9			2
		High								2
	Mitu Formation	Medium	5	10	35	3	9	3.0	8/8/8	2
		High						7.5	8/8/8	2

In the SLR QP's opinion, the sample configuration, including minimum, maximum, and samples per drill hole, provides reasonable precision for global grade estimation. However, the QP recommends the following adjustments to enhance the local precision and reliability of the resource estimation:

- Employ soft boundaries between similar grade domains (e.g., low-low, medium-medium, and high-high grade shells) as suggested by the contact profile analysis (see Figure 11-13).
- Increase the maximum number of two-metre composites per drill hole to three when estimating six-metre high blocks.
- Utilize the same interpolation technique across all domains to maintain consistency, streamline the estimation process, and improve the local precision by using the variogram model to assign appropriate weights in the estimation method.
- Where feasible, estimate grades using a variogram model specific to each domain. High grade domains typically exhibit less continuity than lower grade domains and using combined-domain variograms may result in excessive influence of high grades on the estimation.

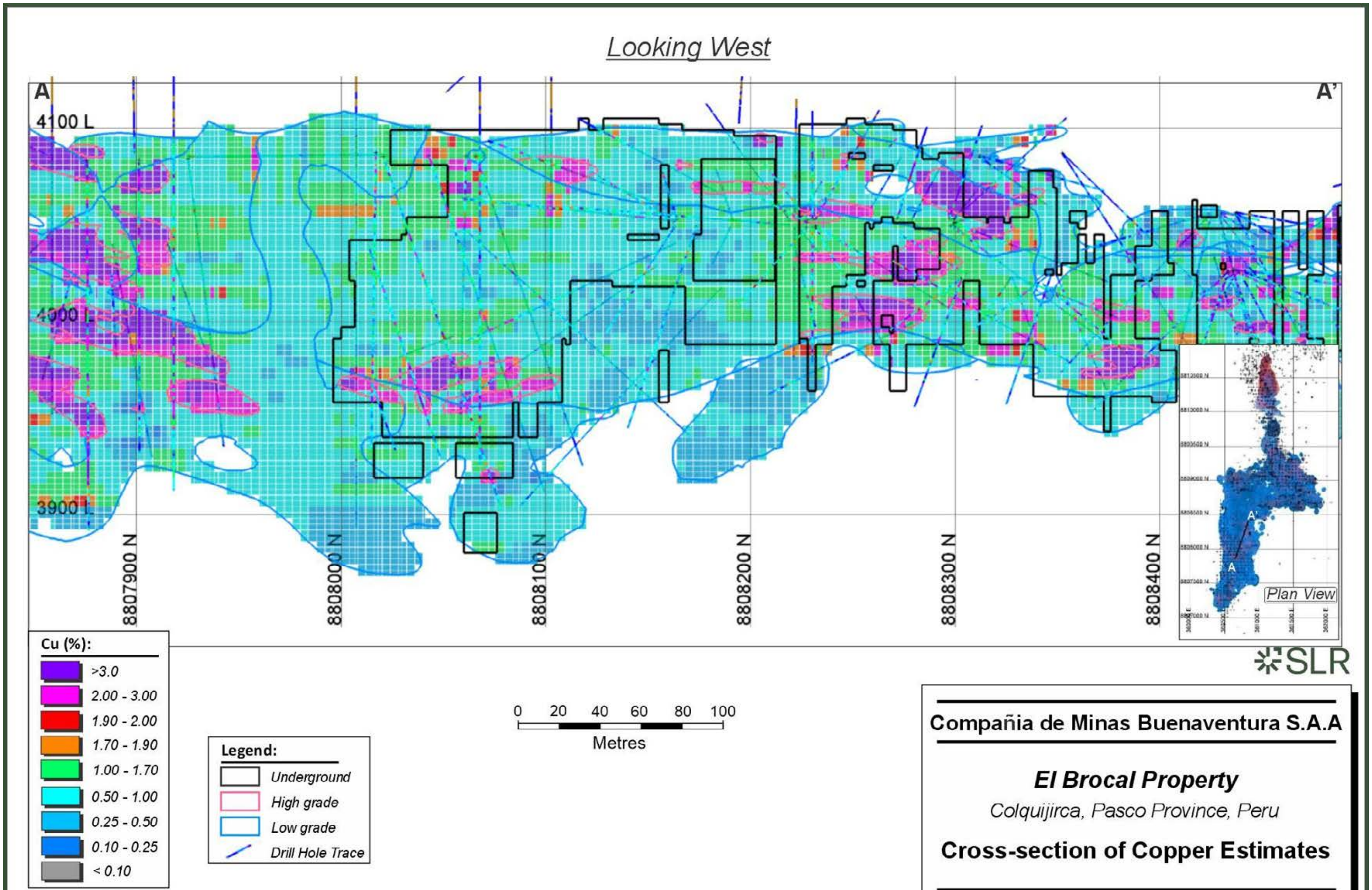
11.10 Grade Estimation Validation

The SLR QP validated the block estimates through visual inspections of cross-sections, global statistics by estimation domains to assess global bias, and swath plots to evaluate local bias.

11.10.1 Visual Inspection

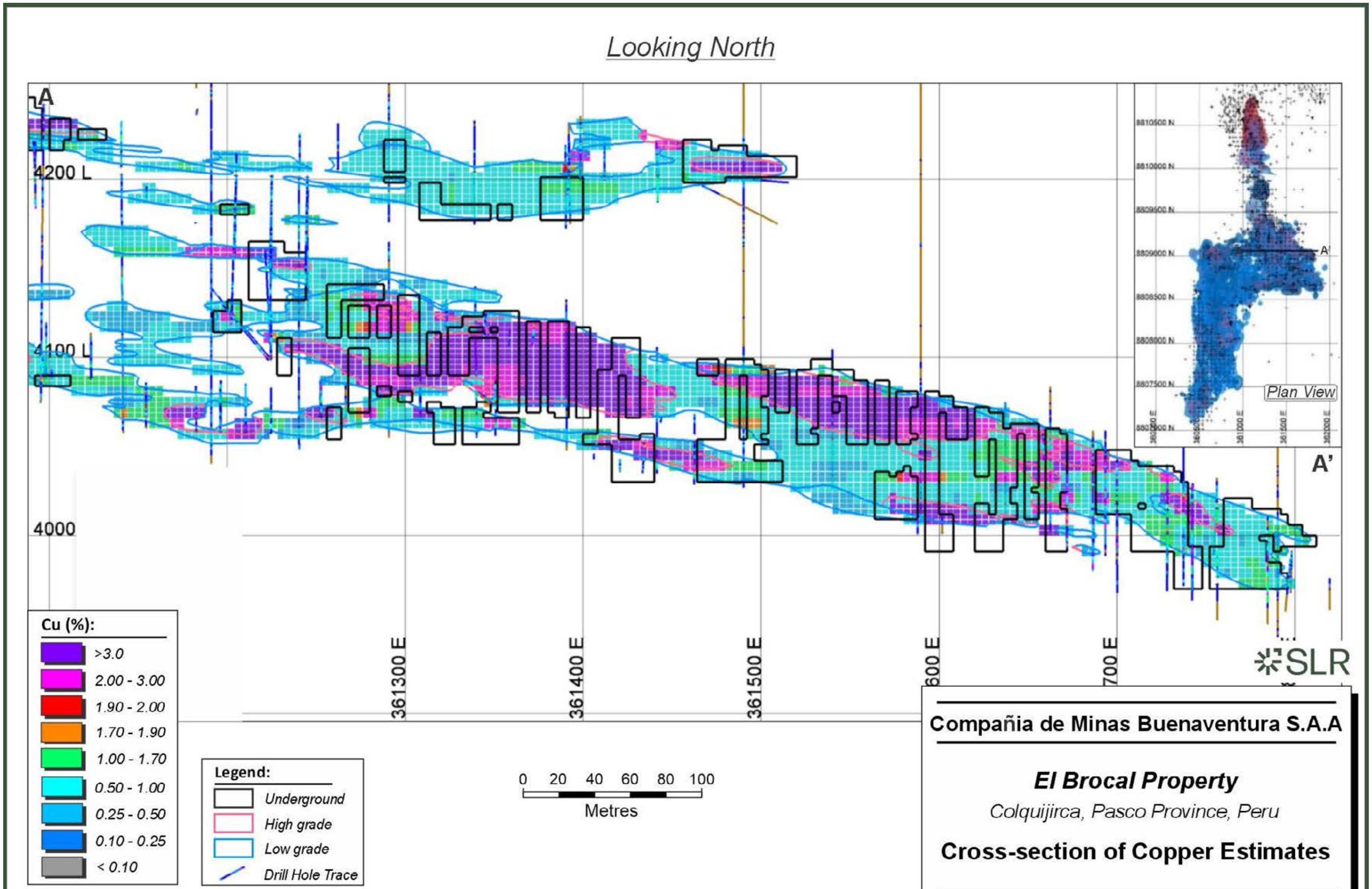
The SLR QP conducted a visual review of the block model using cross-sections to confirm that the grade distribution in the blocks is consistent with the surrounding composite grades. Figure 11-16 to Figure 11-20 illustrate grade distributions in drill holes and the block model, demonstrating the alignment between the estimated block grades and the composite grades from the drill hole data.

Figure 11-16: Cross-section of Copper Estimates



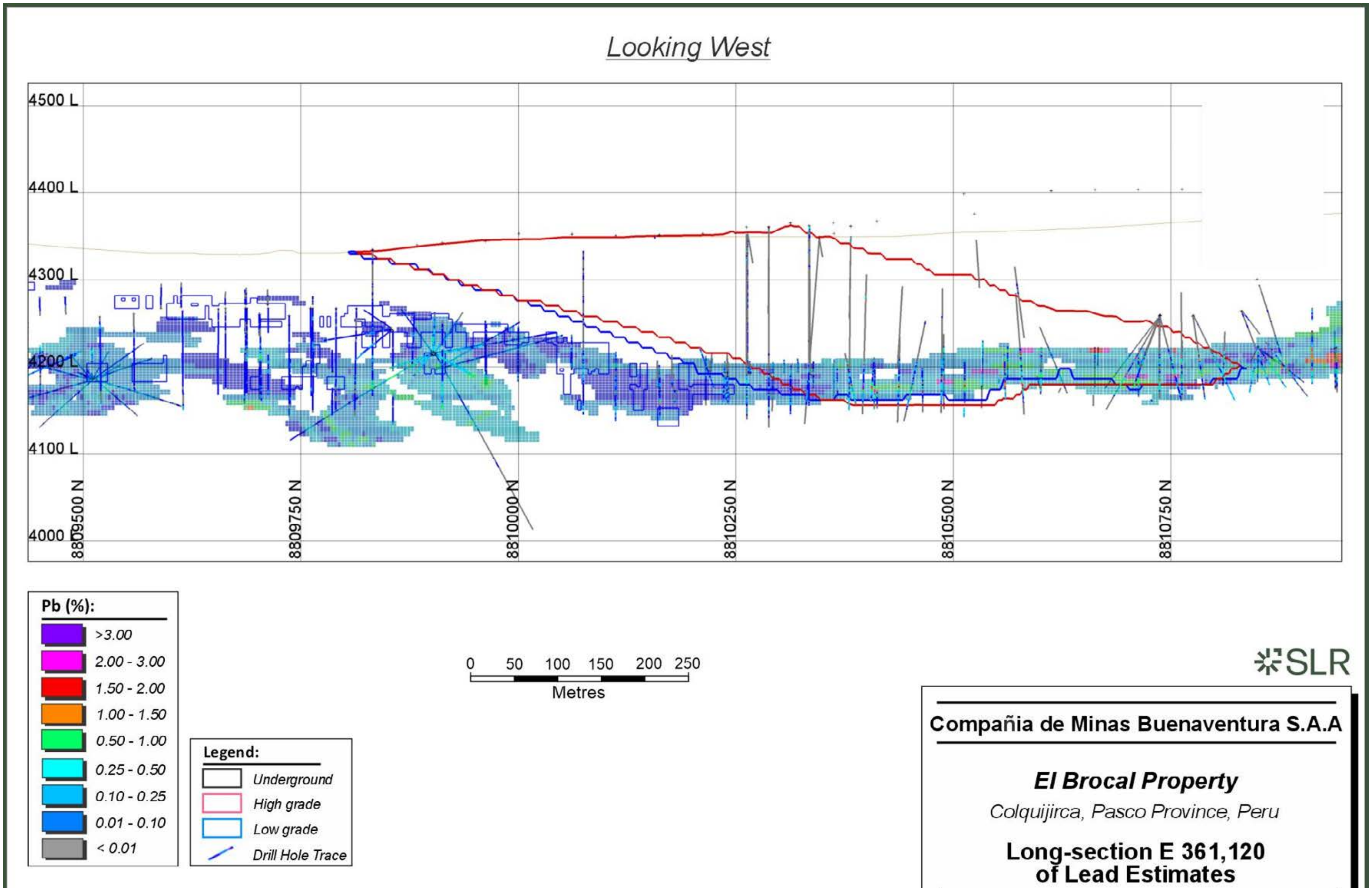
Source: SLR 2024.

Figure 11-17: Cross-section of Copper Estimates



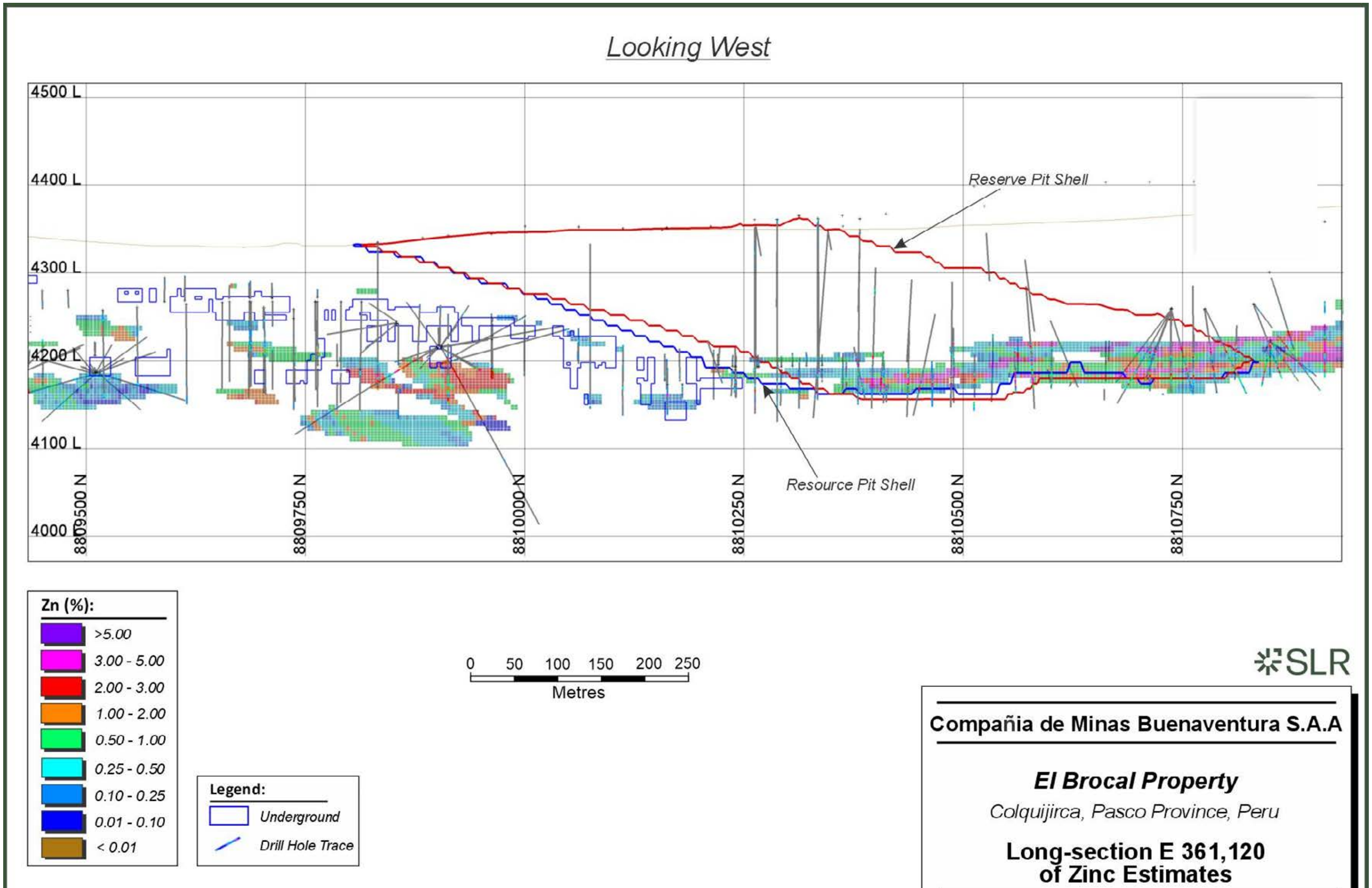
Source: SLR 2024.

Figure 11-18: Long-section E361,120 of Lead Estimates



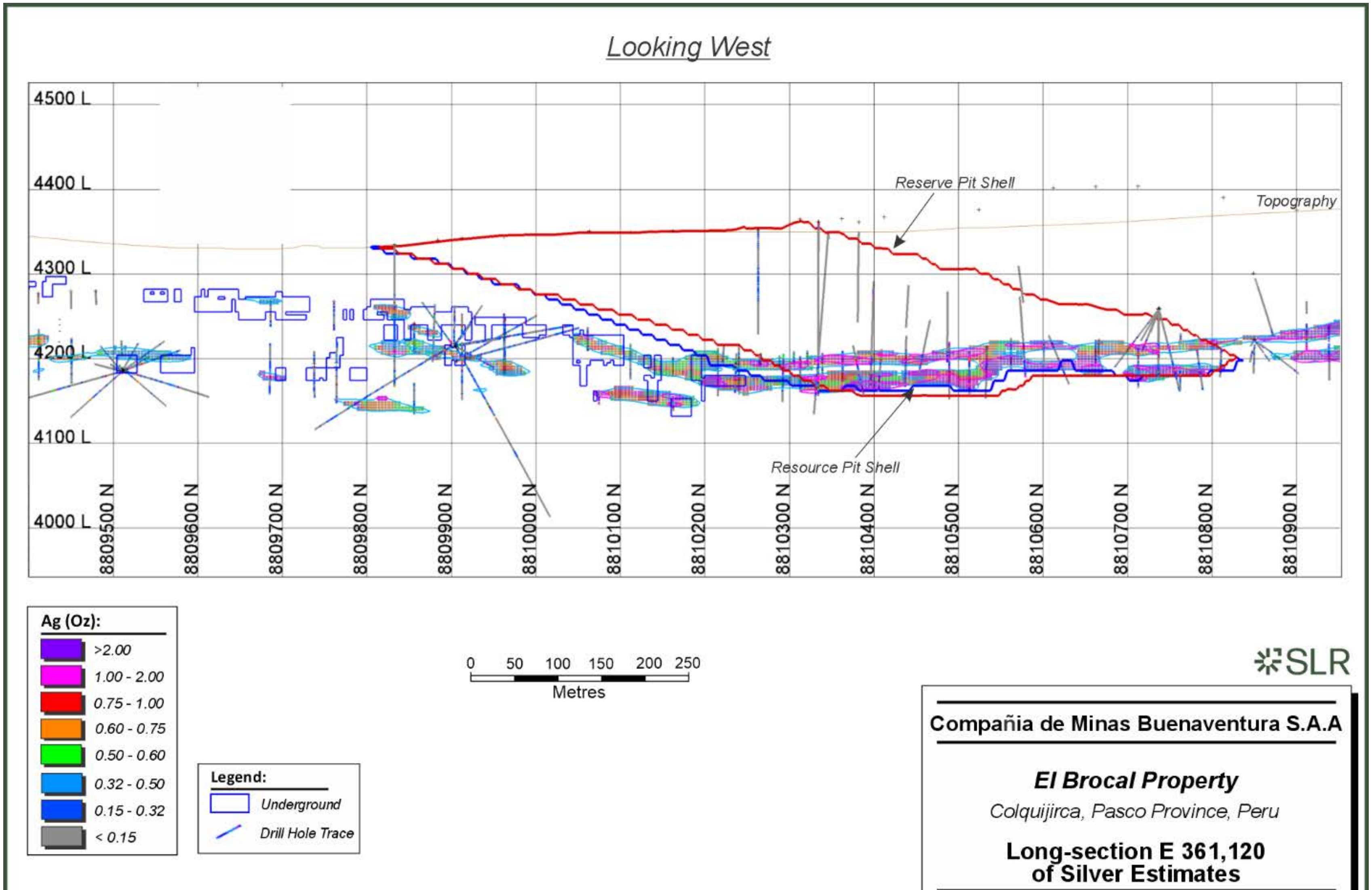
Source: SLR 2024.

Figure 11-19: Long-section E361,120 of Zinc Estimates



Source: SLR 2024.

Figure 11-20: Long-section E361,120 of Silver Estimates



Source: SLR 2024.

11.10.2 Estimation Statistics

The SLR QP also compared grades estimated by OK against those from the NN model to validate the interpolation and assess potential bias in the block estimates. Global bias was assessed using the overall statistics from each domain, while local bias was assessed through swath plots in multiple directions.

The results of the global bias for copper, zinc, and silver are presented in Table 11-20, Table 11-21, and Table 11-22, respectively. These tables compare the grade interpolation results with the supporting drill hole data.

Table 11-20: Global Bias for Copper

Lithology	Grade Shell	Cu Validation					
		Count	NN (%)	OK (%)	ID^2 (%)	OK Diff (%)	ID^2 Diff (%)
Mitu Formation	Low	1,479,969	0.089	0.092	0.090	2.4%	0.2%
	Medium	101,649	0.754	0.776	0.779	2.8%	3.2%
	High	942	3.794	3.602	3.789	-5.3%	-0.1%
Lower Calera	Low	969,693	0.022	0.023	0.022	4.7%	1.0%
	Medium	23,776	0.932	0.910	0.927	-2.3%	-0.5%
	High	2,731	3.355	3.180	3.268	-5.5%	-2.7%
Medium Calera Favorable	Low	1,338,189	0.027	0.028	0.027	5.6%	1.6%
	Medium	177,317	0.839	0.854	0.866	1.7%	3.1%
	High	52,578	3.818	3.867	3.905	1.3%	2.2%
Medium Calera Varvada	Low	797,154	0.007	0.011	0.009	31.4%	18.0%
	Medium	328	0.705	0.748	0.766	5.7%	7.9%
	High						
Upper Calera	Low	826,149	0.002	0.002	0.002	6.4%	7.2%
	Medium						
	High						
Shuco Conglomerate	Low	1,600,814	0.076	0.077	0.076	1.6%	0.6%
	Medium	577,934	0.804	0.814	0.820	1.2%	2.0%
	High	73,379	3.922	3.821	3.948	-2.6%	0.7%
Transitional Conglomerate	Low	968,869	0.038	0.041	0.040	7.2%	5.0%
	Medium	191,770	0.849	0.856	0.861	0.7%	1.3%
	High	10,987	3.645	3.549	3.620	-2.7%	-0.7%
Porphyritic Dacite	Low	6,865,282	0.041	0.045	0.043	9.0%	5.4%
	Medium	232,899	0.739	0.754	0.760	1.9%	2.8%
	High	12,677	3.756	3.626	3.730	-3.6%	-0.7%
Total		16,305,086	0.139	0.142	0.1424		2.1%

Table 11-21: Global Bias for Zinc

Lithology	Grade Shell	Zn Validation					
		Count	NN (%)	OK (%)	ID^2 (%)	OK Diff (%)	ID^2 Diff (%)
Mitu Formation	Low	1,573,955	0.012	0.012	0.012	-1.1%	-1.8%
	Medium	27,030	0.263	0.266	0.286	1.4%	8.2%
	High						
Lower Calera	Low	1,149,814	0.028	0.024	0.024	-15.9%	-16.9%
	Medium	27,550	0.590	0.546	0.562	-8.1%	-5.0%
	High	5,970	2.249	2.251	2.258	0.1%	0.4%
Medium Calera Favorable	Low	1,337,530	0.032	0.031	0.030	-4.3%	-4.8%
	Medium	242,223	0.560	0.575	0.579	2.6%	3.2%
	High	73,912	3.670	3.829	3.879	4.2%	5.4%
Medium Calera Varvada	Low	830,456	0.011	0.012	0.011	5.9%	2.5%
	Medium	21,759	0.507	0.561	0.563	9.5%	9.8%
	High	3,804	2.696	2.650	2.619	-1.7%	-3.0%
Upper Calera	Low	875,216	0.011	0.010	0.010	-4.3%	-0.8%
	Medium	24,613	0.612	0.630	0.653	2.8%	6.3%
	High	16,877	2.928	2.993	3.074	2.2%	4.7%
Shuco Conglomerate	Low	2,064,357	0.020	0.017	0.017	-12.3%	-12.7%
	Medium	104,238	0.469	0.517	0.524	9.2%	10.5%
	High	14,142	2.866	3.015	3.029	4.9%	5.4%
Transitional Conglomerate	Low	1,295,822	0.022	0.019	0.018	-16.8%	-18.9%
	Medium	42,595	0.632	0.621	0.651	-1.7%	3.0%
	High	3,043	2.297	2.341	2.370	1.9%	3.1%
Porphyritic Dacite	Low	7,298,959	0.007	0.007	0.007	-0.6%	-3.4%
	Medium	16,692	0.370	0.337	0.350	-9.6%	-5.7%
	High						
Total			0.0522	0.0527	0.0531		-5.9%

Table 11-22: Global Bias for Silver

Lithology	Grade Shell	Ag Validation					
		Count	NN (%)	OK (%)	ID^2 (%)	OK Diff (%)	ID^2 Diff (%)
Mitu Formation	Low	1,069,558	0.093	0.110	0.110	15.4%	14.9%
	Medium	143,964	0.420	0.422	0.422	0.6%	0.5%
	High	2,200	2.513	2.350	2.405	-7.0%	-4.5%
Lower Calera	Low	1,173,184	0.054	0.051	0.048	-5.2%	-11.4%
	Medium	17,243	0.574	0.583	0.580	1.5%	1.0%
	High	415	1.393	1.368	1.375	-1.9%	-1.3%
Medium Calera Favorable	Low	1,423,216	0.091	0.094	0.092	3.1%	1.6%
	Medium	134,229	0.701	0.715	0.719	2.0%	2.5%
	High	89,292	3.317	3.346	3.388	0.8%	2.1%
Medium Calera Varvada	Low	738,531	0.029	0.028	0.028	-3.8%	-3.6%
	Medium	1,609	0.468	0.496	0.498	5.6%	6.0%
	High	162	1.734	1.534	1.647	-13.1%	-5.3%
Upper Calera	Low	927,365	0.015	0.016	0.016	1.1%	1.0%
	Medium	1,782	0.896	0.925	0.915	3.1%	2.1%
	High						
Shuco Conglomerate	Low	1,683,054	0.118	0.118	0.117	-0.5%	-1.0%
	Medium	540,915	0.613	0.625	0.620	2.0%	1.1%
	High	88,855	2.727	2.690	2.760	-1.4%	1.2%
Transitional Conglomerate	Low	1,251,740	0.083	0.088	0.088	5.5%	4.9%
	Medium	115,029	0.673	0.687	0.681	2.1%	1.2%
	High	22,344	2.949	2.975	3.003	0.9%	1.8%
Porphyritic Dacite	Low	5,896,805	0.071	0.065	0.064	-8.1%	-10.5%
	Medium	943,549	0.459	0.468	0.464	2.0%	1.1%
	High	53,352	2.745	2.685	2.761		
Total			0.172	0.173	0.1724		-0.02%

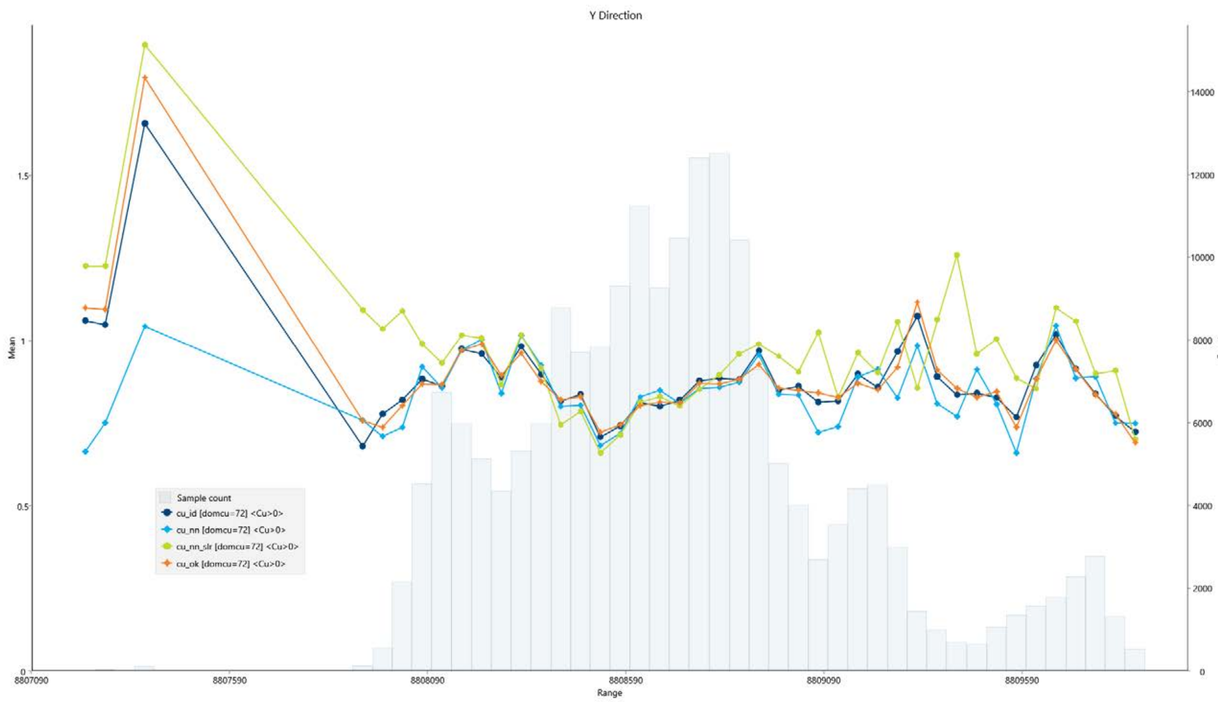
The SLR QP has the following comments:

- Overall, medium and high grade Cu, Zn, and Ag exhibit a global bias of less than 3%, which falls within acceptable limits.
- Most of the medium and high grade domains show a bias within ±5% for all the elements. However, a number of Zn domains exceed this range.

11.10.3 Swath Plots

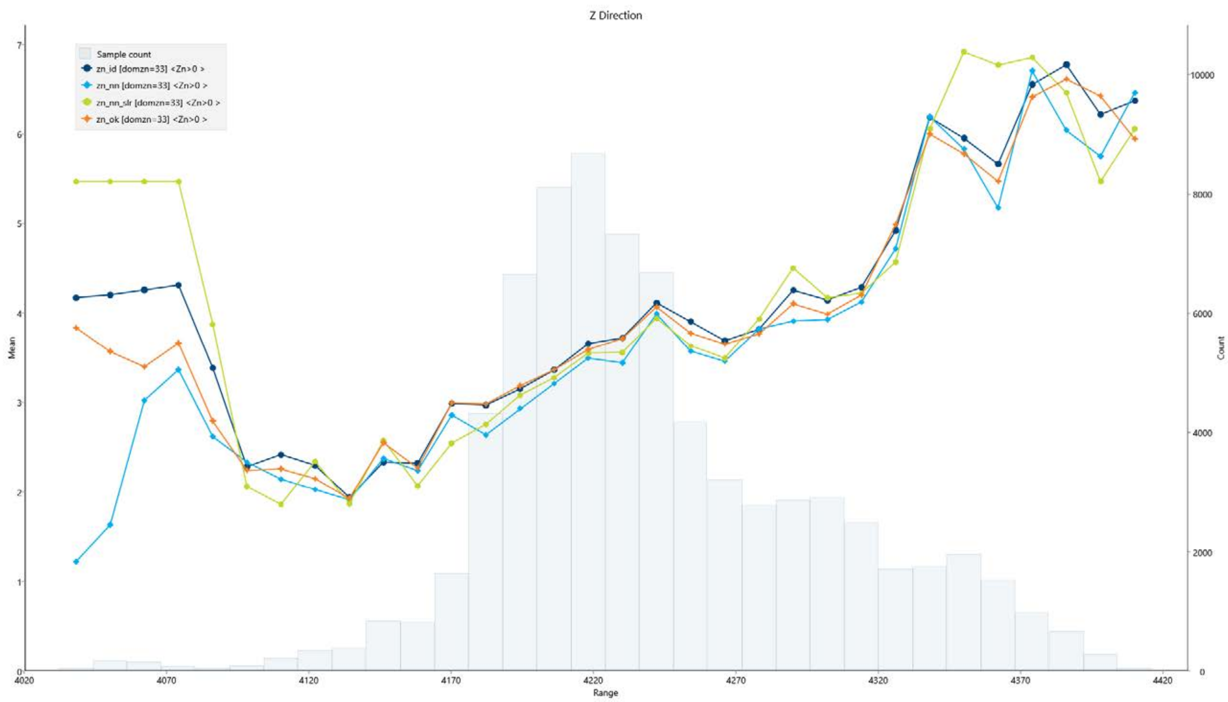
Buenaventura compared drill hole grades with block grades in swath plots to validate the grade interpolations. The SLR QP also created swath plots to compare the NN grades to the OK grades in elevation, east, and north directions. To address the support issues stemming from the use of two-metre composite in the NN estimate, SLR regenerated the NN estimate using six-metre composites, finding similar bias in the mineralized domain (medium and high grade). Examples of swath plots are presented in Figure 11-21 to Figure 11-23. Grade trends demonstrate acceptable correlation. SLR findings align well with Buenaventura's validation conclusions. The SLR QP observed no bias and very low smoothing in the estimates.

Figure 11-21: Copper Swath Plot, Northing Direction



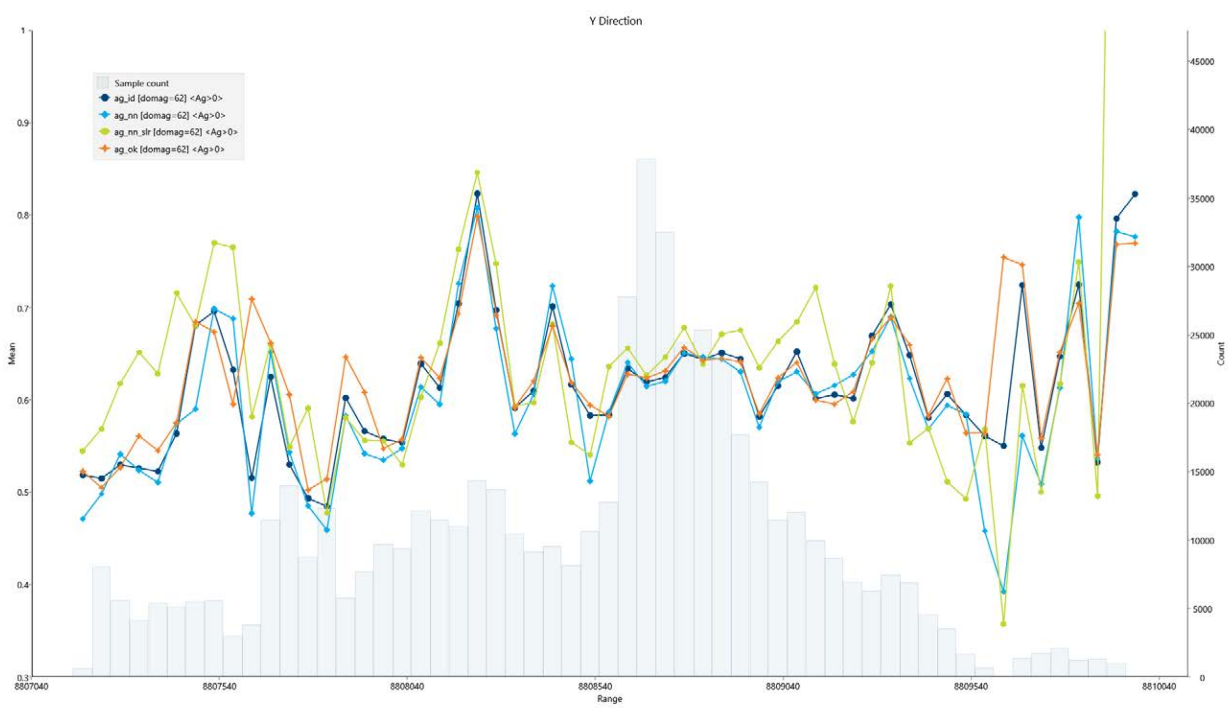
Source: SLR 2024

Figure 11-22: Zinc Swath Plot, Vertical Direction



Source: SLR 2024

Figure 11-23: Silver Swath Plot, Northing Direction



Source: SLR 2024

The swath plot validation found no bias in copper, zinc, and silver estimates.

11.11 Bulk Density

Density was assigned to the blocks based on lithology, further divided by waste/mineralized bodies and mining area. The density model incorporated three mine areas: Tajo Norte, Marcapunta Smelter, and Marcapunta Sur. A total of 21,189 density measurements were used to calculate the average densities. Average density by lithology and area ranges from 2.45 g/cm^3 to 3.28 g/cm^3 with mineralized bodies averaging 3.03 g/cm^3.

The density statistics are summarized in Table 11-23.

Table 11-23: Global Bias for Silver

Lithology	Samples	Minimum (g/cm^3)	Maximum (g/cm^3)	Mean (g/cm^3)
Lower Calera	442	1.73	3.71	2.67
Medium Calera Favorable	2,713	1.76	3.87	2.67
Medium Calera Varvada	113	1.88	3.42	2.59
Upper Calera	183	1.9	3.55	2.67
Shuco Conglomerate	9,790	2.23	4.31	3.27
Transitional Conglomerate	4,303	1.93	4.08	3.04
Porphyritic Dacite	2,708	1.69	3.53	2.71
Pyroclastic Deposit	6	2.65	3.77	3.04
Mitu	931	1.83	3.71	2.82
Total	21,189	1.69	4.31	3.03

11.12 Classification

The definitions for resource categories used in this report align with those outlined by the SEC in the S-K 1300 rules. Mineral Resources are classified into Measured, Indicated, and Inferred categories.

The classification criteria for Mineral Resources are primarily based on the average spacing to the nearest three drill holes, with a limited number of downgrade adjustments applied based on QC results.

For open pit Mineral Resources, classification was determined using drill hole spacing based on the zinc estimation error. For underground Mineral Resources, classification was based on drill spacing derived from the copper estimation error. Open pit classifications were applied to areas north of coordinate 8,810,434N, while underground classifications were applied south of this coordinate.

A detailed breakdown of the classification criteria is provided in Table 11-24. The drill spacings for Measured and Indicated categories were determined using the methodology proposed by Henry and Parker (2005). The methodology ensures that drill spacing maintains an error margin within ±15% for production volumes. This ±15% variance corresponds to a 90% reliability level, meaning that nine out of ten predictions fall within this range. Since Measured Mineral Resources have a higher level of confidence required, the ±15% variance is applied over a quarterly period, while for Indicated Mineral Resources it is applied on an annual basis.

Table 11-24: Classification Scheme

Class	Average Distance to 3 Drill Holes (m)	
	OP (Zn)	UG (Cu)
Measured	25	15
Indicated	50	25
Inferred	150	75

Once the block category was assigned based on drilling spacing, a Measured block was downgraded to Indicated, and an Indicated block to Inferred, if two or more QC samples from surrounding drill holes exhibited deficient results or were not inserted. Additionally, a Measured block was downgraded to Indicated if even a single control sample was deficient or absent. The SLR QP observed that only a small number of blocks were downgraded due to QC results. Buenaventura applied smoothing to the classification results to reduce small, isolated, and discontinuous classifications.

The SLR QP calculated the average distances to the closest three drill holes for Measured, Indicated, and Inferred blocks, observing that the classification criteria were appropriately met in over 85% of cases, as shown in Figure 11-24. Additionally, the QP reviewed the classification results on cross-sections (Figure 11-25) and found them to be acceptable. However, some extrapolation at depth was noted for Indicated blocks.

Figure 11-24: Classification Distances

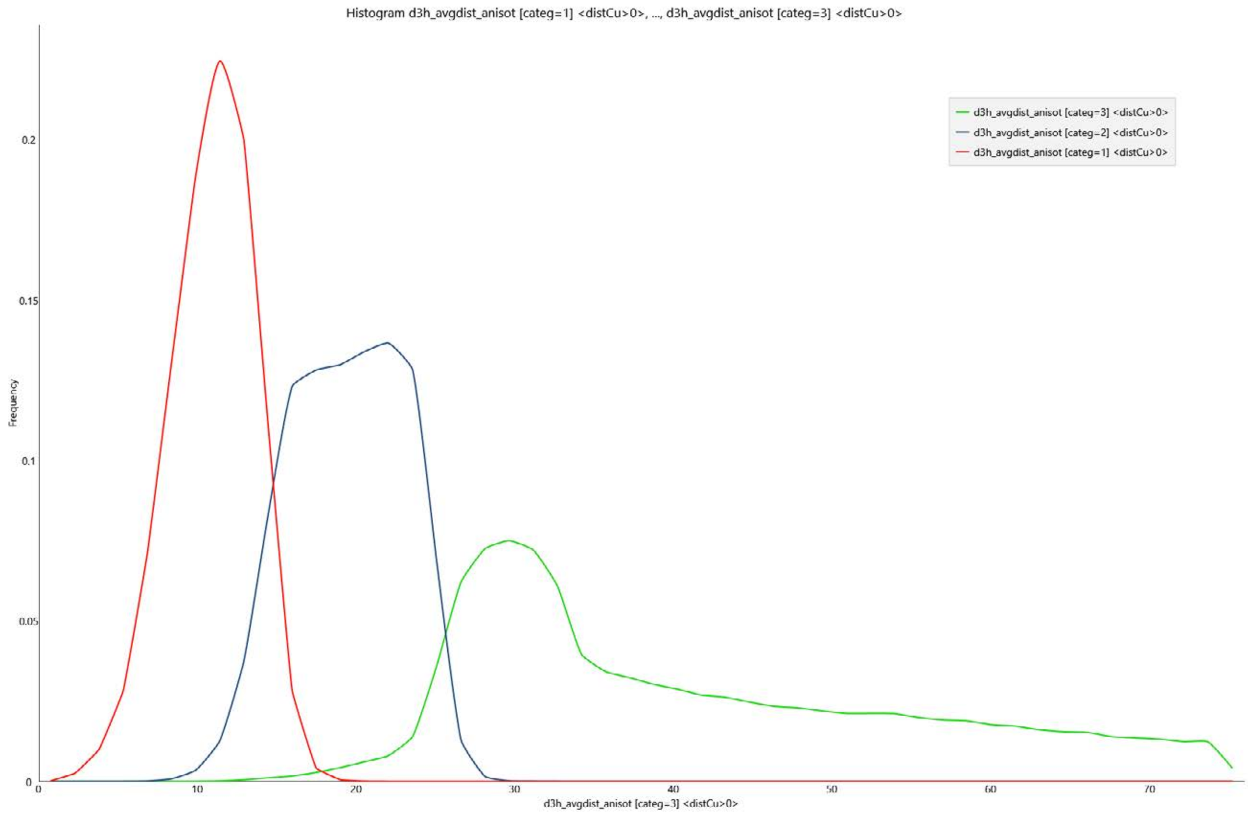
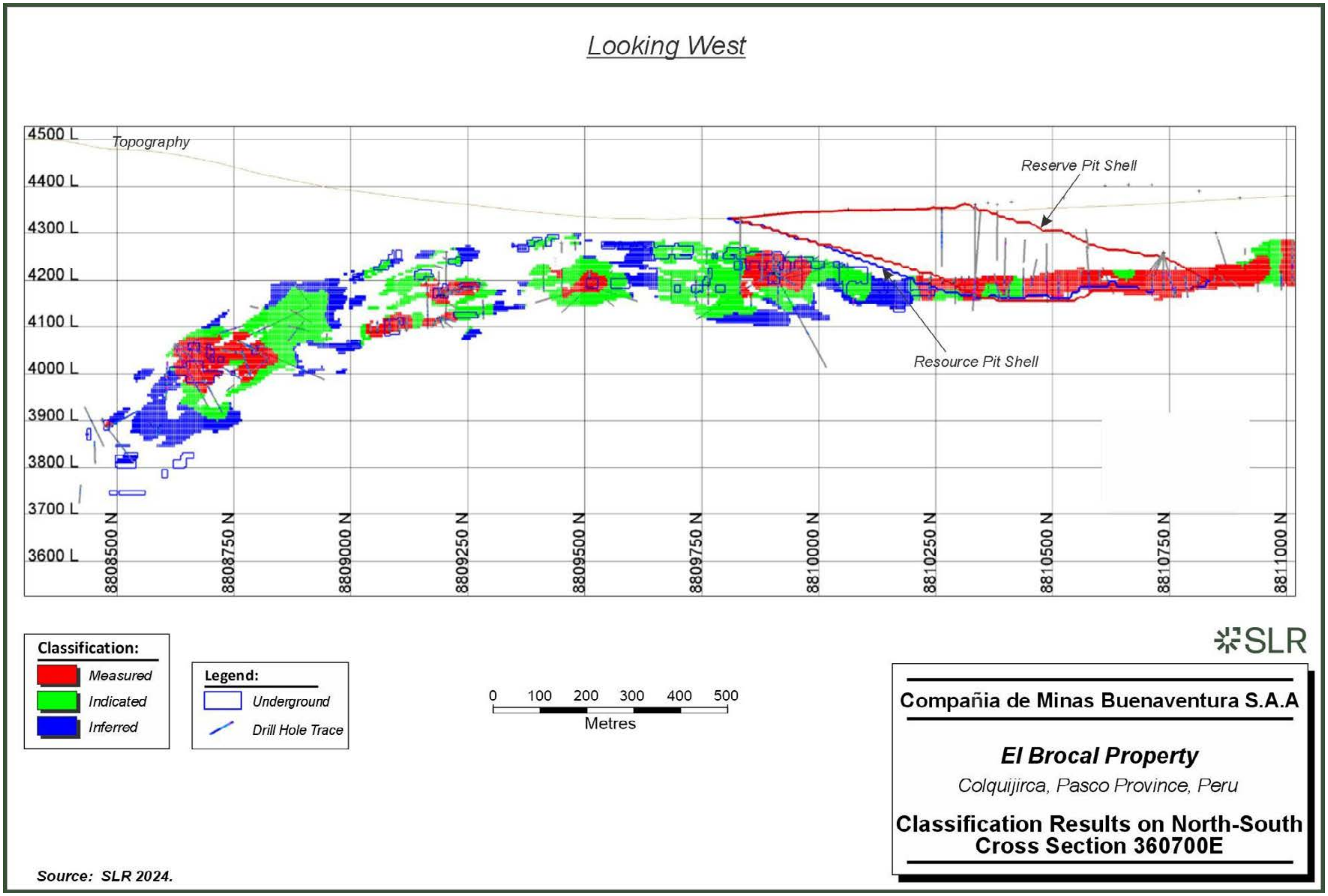


Figure 11-25: Classification Results on North-South Cross Section 360700E



The SLR QP is of the opinion that the classification methodology is reasonable, as it is supported by variogram ranges at 80% of the sill.

11.13 Mineral Resource Reporting

11.13.1 Reasonable Prospects for Economic Extraction

Mineral Resources must demonstrate reasonable prospects for economic extraction (RPEE) which generally implies that the quantity and grade estimates meet certain economic thresholds and that the Mineral Resources are reported at an appropriate cut-off grade taking into account extraction scenarios. Metal prices used for Mineral Reserves are based on consensus, long term forecasts from banks, financial institutions, and other sources.

For Mineral Resources, Buenaventura used 10% higher metal prices than for Mineral Reserves to prepare the Resource pit constraint.

A reporting cut-off grade for El Brocal is based on assumed costs for open pit and underground extraction (Table 12-5 and Table 12-12) and commodity prices (Table 11-25) that provide a reasonable basis for establishing the RPEE for Mineral Resources.

Table 11-25: Metal Prices Used

Metal	Unit	Underground-Resources and Reserves	Open Pit – Resources Pit Shell Optimization	Open Pit – Reserves & Resources Reporting
Au	US$/oz	1,900	2,090	1,900
Ag	US$/oz	24.00	26.40	24.00
Zn	US$/t	2,400	2,640	2,400
Pb	US$/t	1,900	2,090	1,900
Cu	US$/t	8,800	9,680	8,800

The internal and break-even cut-off values were calculated based on a combination of historical operating costs over the past three years of operation (2020 – 2022 for open pit and 2021–2023 for underground) and budgeted costs over the LOM. The El Brocal open pit did not operate in 2023 and costs are based on 2020-2022 costs with a 10% escalation on the Pb-Zn and Bulk ore types. Costs and cut-off values are presented in Table 12-5 for the three types of mill feed. For open pit, the break-even cut-off value includes mining costs, while the internal cut-off excludes mining costs. For underground, the break-even cut-off value accounts for both fixed and variable costs, while the marginal cut-off value considers only variable costs. Figure 11-26 illustrates blocks above the underground Mineral Resource cut-off value.

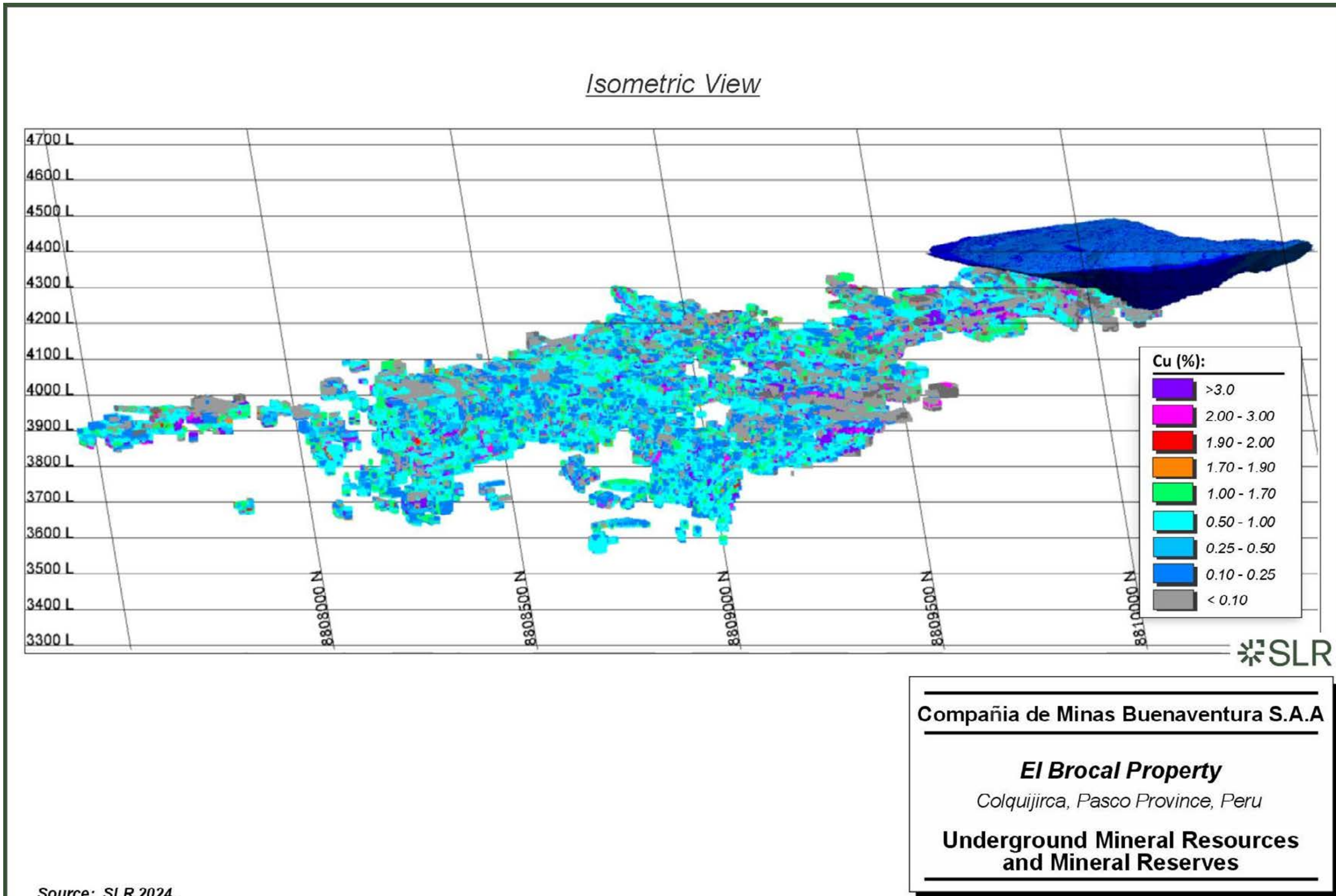
The El Brocal open pit cut-off values were estimated for each concentrate type (Pb-Zn, Cu, and Bulk). Internal cut-off values were used for estimation of Mineral Reserves and Mineral Resources.

The El Brocal underground cut-off values were estimated for each of the mining methods planned to be used over the LOM. Stope mining costs and development costs were estimated by averaging 2021 to 2023 actual costs while backfill costs were calculated from planned backfill requirements over the LOM. Several primary stopes have already been mined and have to be backfilled prior to mining secondary and tertiary stopes. The costs of backfilling empty stopes have been applied to secondary and tertiary mining costs. Mineral Resources were stated using marginal cut-off values and Mineral Reserves were estimated within shapes above marginal cut-off values.

Table 11-26: Costs and Cut-off Values for Underground Mineral Resources and Mineral Reserves

Parameter	Units	SLS with Unconsolidated Rockfill	SLS with Hydraulic Cemented Fill	SLS - Primary with Paste Fill	SLS - Secondary and Tertiary with Paste Fill
Mine	$/t milled	22.55	22.88	26.84	33.96
Plant	$/t milled	16.91	16.91	16.91	16.91
Services	$/t milled	8.37	8.37	8.37	8.37
General and Administrative (G&A)	$/t milled	1.72	1.72	1.72	1.72
Offsite Expenses	$/t milled	0.54	0.54	0.54	0.54
Sustaining Capital Cost	$/t milled	3.72	3.72	3.72	3.72
Marginal NSR Cut-off Value	$/t	36.03	36.36	40.32	47.44
Break-even Cut-off Value	$/t	53.81	54.14	58.09	65.22

Figure 11-26: Underground Mineral Resources and Mineral Reserves



Source: SLR 2024.

11.13.2 Sources of Uncertainty

Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability, nor is there certainty that all or any part of the Mineral Resource estimated in this report will be converted to Mineral Reserves through further study.

Sources of uncertainty that may affect the reporting of Mineral Resources include sampling or drilling methods, data processing and handling, geological modelling, and estimation.

The SLR QP has not identified any relevant technical and/or economic factors that require addressing in relation to the Mineral Resource estimate. The SLR QP has identified four minor technical factors that require further attention.

- Building the grade shells using the lithological contacts as hard boundaries has introduced discontinuities, which has likely reduced the precision of the grade estimation in these areas.
- The copper oxide and arsenical copper model was not updated with the latest drilling data. While only a few new holes impact some contacts of the copper and arsenical copper domains, updating the model is recommended to enhance the robustness of the contact definitions. This will also minimize the minor risk of misreporting some blocks at the domain boundaries.
- Lack of soft boundaries, despite indications from geological logging of mineralization continuity, has likely to increase local grade estimation error.
- Combining medium and high grade estimation domains to generate variograms may artificially enhance the continuity of high-grade zones beyond what is geologically realistic.

There are sources of uncertainty in the Mineral Resource estimate at El Brocal which depend on the classification assigned.

The SLR QP is of the opinion that with consideration of the recommendations summarized in Sections 1 and 23 of this TRS, any issues relating to all relevant technical and economic factors likely to influence the prospect of economic extraction can be resolved with further work.

11.13.3 Comparison with Previous Estimate

Changes to the Mineral Resources are primarily due to additional drilling, updated metal prices, mining methods, and other economic parameters for the RPEE, and depletion through mining activities.

Table 11-27 compares the 2024 and 2023 Mineral Resource estimates.

Table 11-27: 2024 versus 2023 MRE Comparison

Mineral Type	Category	El Brocal Mineral Resource - December 31, 2023						El Brocal Mineral Resource - December 31, 2024					
		Tonnage (kt)	Grade					Tonnage (kt)	Grade				
			(% Pb)	(% Zn)	(% Cu)	(g/t Ag)	(g/t Au)		(% Pb)	(% Zn)	(% Cu)	(g/t Ag)	(g/t Au)
Lead -Zinc (Open Pit)	Measured	132	1.84	3.90	0.47	90.0		68	2.56	2.71	0.29	105.2	
	Indicated	69	0.61	2.65	0.09	116.9		47	0.68	1.81	0.13	131.5	
	Measured + Indicated	201	1.42	3.47	0.34	99.2		115	1.79	2.34	0.23	115.9	
	Inferred	375	0.40	1.16	0.10	152.9		47	0.37	1.26	0.06	143.1	
Copper (Open Pit)	Measured	510	0.17	0.30	2.15	33.3	0.2	246	0.18	0.21	1.56	39.4	
	Indicated	1,461	0.10	0.10	1.71	25.1	0.2	593	0.16	0.14	1.39	48.6	
	Measured + Indicated	1,971	0.12	0.15	1.82	27.2	0.2	839	0.17	0.16	1.44	45.9	
	Inferred	11,865	0.07	0.06	1.64	15.2	0.2	1,492	0.07	0.05	1.41	13.4	
Total (Open Pit)	Measured	643	0.52	1.04	1.80	44.9	0.1	315	0.70	0.75	1.28	53.7	
	Indicated	1,530	0.12	0.21	1.64	29.2	0.2	640	0.20	0.26	1.30	54.7	
	Measured + Indicated	2,172	0.24	0.46	1.69	33.8	0.1	954	0.36	0.43	1.29	54.4	
	Inferred	12,240	0.08	0.10	1.59	19.4	0.2	1,539	0.08	0.08	1.37	17.3	
Copper (Underground)	Measured	26,762			1.29	22.1	0.69	14,298			0.88	16.6	0.48
	Indicated	19,717			1.18	17.2	0.6	18,611			0.88	14.9	0.40
	Measured + Indicated	46,479			1.24	20	0.65	32,909			0.88	15.7	0.44
	Inferred	16,971			1.33	24.3	0.8	24,907			1.34	24.4	0.58`

Notes:

1. The definitions for Mineral Reserves in S-K 1300 were followed for Mineral Reserves.
2. The Mineral Reserve estimate is reported on a 100% BAOB.
3. 2023 Mineral Resources are reported at an effective date of December 31, 2023.

4. 2024 Mineral Resources are reported at an effective date of December 31, 2024.
5. Both 2023 and 2024 Mineral Resources are on an in-situ basis, without application of mining dilution, mining losses, or process losses.
6. The Mineral Resource estimates are based on metal price assumptions of:
    a. 2023 MRE: $1,925/oz gold, $25.3/oz silver, $9,680/t copper, $2,310/t lead, and $2,860/t zinc.
    b. 2024 MRE: $2,090/oz gold, $26.4/oz silver, $9,680/t copper, $2,090/t lead, and $2,640/t zinc.
7. Underground Mineral Resources are estimated based on:
    a. 2023: topographic surface on September 30, 2023, and planned production to December 31, 2023
    b. 2024: topographic surface on August 31, 2024, and planned production to December 31, 2024
8. Open Pit Mineral Resources are estimated using a topography with an effective date of:
    a. 2023: October 31, 2022, and planned production to December 31, 2023
    b. 2024 September 31, 2023, when open pit mining operations stopped.
9. Underground Mineral Resources were reported within mining shapes above marginal cut-off values depending on mining method:
    a. 2023: SLS with unconsolidated rockfill: US$38.31/t, SLS with cemented rockfill: US$39.10/t, and SLS-pillar recovery: US$35.21/t.
    b. 2024: SLS with unconsolidated rockfill: US$36.03/t, SLS with hydraulic cemented fill: US$47.44/t, SLS-Primary with paste fill: US$36.36, and SLS-Secondary and Tertiary with paste fill: US$40.32/t.
10. The Open Pit Mineral Resources are contained within a pit shell generated using an NSR internal cut-off value of:
    a. 2023 MRE: $29.22/t for Pb-Zn ore and $28.35/t for Cu ore.
    b. 2024 MRE: $32.28 /t for Pb-Zn ore and $29.71/t for Cu ore
11. The metallurgical recoveries vary with grade and average recoveries are:
    a. 2023 Open Pit: Plant 2 (PbZn) 48.5% for Zn, 44.01% for Pb, and 59.29% for Ag. Plant 1 (Cu) 81.68% for Cu, 19.03% for Au, and 22.29% for Ag
    b. 2024 Open Pit: Plant 2 (PbZn) 53% for Zn, 28% for Pb, and 45% for Ag. Plant 1 (Cu) 75% for Cu, 60% for Ag, and 20% for Au.
    c. 2023 UG: 80.9% for Cu, 37.8% for Ag, and 31.2% for Au.
    d. 2024 UG: 88.0% for Cu, 51.0% for Ag, and 27.0% for Au.
12. Mineral Resources are reported exclusive of Mineral Reserves.
13. Numbers may not add due to rounding

Both lead/zinc and copper total open pit Measured and Indicated Mineral Resources have significantly decreased as a result of a new strategy applied by Buenaventura to minimize open pit mining and maximize underground mining. Approximately, 14.0 Mt of ore was excluded from previous open pit Measured and Indicated Resources as a consequence of the strategy change. The open pit did not operate during 2023 and therefore depletion was not a source of the open pit MRE changes between 2023 and 2024.

Total copper underground Measured and Indicated Resources have increased by 10 Mt as a result of the change from open pit to underground operation, as well as a lower cut-off grade. New drilling increased the underground MRE by 11.4 Mt as a result of upgrading Inferred blocks to Indicated and by 7.9 Mt due to the extension of grade shell models. Depletion was calculated at 4.2 Mt.

Open pit Mineral Resources, reported exclusive Mineral Reserves, have decreased by -43% for lead and zinc and 79% for copper as shown in Table 11-28. Lead and silver grades have increased by 26% and 17% respectively, while zinc dropped by 33%. Copper grades have also dropped by 21% in the open pit.

The underground copper Mineral Resource estimate, exclusive of Mineral Reserves, has decreased by 29% in tonnage and by 50% in copper grade.

Table 11-28 summarizes the variation in contained metal for both open pit and underground MREs exclusive of Mineral Reserves.

In summary, the net changes from the previous model are mostly produced by:

- A decrease due to mining depletion in the underground.
- A decrease of the open pit resources due to the change of mining method from open pit to underground.
- An increase of the underground resources due to the change of mining method from open pit to underground.
- An increase of underground resources due to new drilling:
  - Extension of mineralization limits
  - Upgrading Inferred blocks to Indicated.
- An increase of the underground resources due to a lower NSR cut-off value in some areas. The current Mineral Resource estimate is based on an NSR cut-off value of $36.03/t to $47.44/t. The 2023 Mineral Resource estimate used an NSR cut-off value varying from $38.31/t to $39/t. The difference is due to an increase in metal prices.

Table 11-28: 2024 versus 2023 Mineral Resource Estimate Comparison

Mineral Type	Category	December 31, 2023					December 31, 2024					Variation (%)					
		Contained Metal					Contained Metal										
		Pb (kt)	Zn (kt)	Cu (kt)	Ag (koz)	Au (koz)	Pb (kt)	Zn (kt)	Cu (kt)	Ag (koz)	Au (Koz)	Tonnage	Pb	Zn	Cu	Ag	Au
Lead -Zinc (Open Pit)	Measured	2.4	5.2	0.6	382		1.7	1.8	0.2	231		-48%	-28%	-64%	-68%	-40%	
	Indicated	0.4	1.8	0.1	259		0.3	0.9	0.1	199		-31%	-24%	-53%	1%	-23%	
	Measured + Indicated	2.9	7.0	0.7	640		2.1	2.7	0.3	430		-43%	-28%	-61%	-62%	-33%	
	Inferred	1.5	4.4	0.4	1,845		0.2	0.6	0.0	215		-88%	-88%	-86%	-92%	-88%	
Copper (Open Pit)	Measured	0.9	1.5	11.0	546	2.7	0.4	0.5	3.8	312		-52%	-49%	-66%	-65%	-43%	
	Indicated	1.5	1.5	25.0	1,177	7.3	1.0	0.8	8.2	926		-59%	-34%	-42%	-67%	-21%	
	Measured + Indicated	2.4	3.0	35.9	1,723	10	1.4	1.4	12.1	1,237		-57%	-40%	-54%	-66%	-28%	
	Inferred	8.3	7.1	194.6	5,801	61.1	1.0	0.7	21.1	642		-87%	-87%	-90%	-89%	-89%	
Total (Open Pit)	Measured	3.3	6.7	11.6	928	2.7	2.2	2.4	4.0	543		-51%	-34%	-65%	-65%	-42%	
	Indicated	1.8	3.2	25.1	1,435	7.3	1.3	1.7	8.3	1,125		-58%	-30%	-47%	-67%	-22%	
	Measured + Indicated	5.2	10.0	36.7	2,363	10	3.5	4.1	12.3	1,668		-56%	-33%	-59%	-66%	-29%	
	Inferred	9.8	12.2	194.6	7,645	61.1	1.2	1.3	21.1	857		-87%	-88%	-90%	-89%	-89%	
Copper (Underground)	Measured			346	18,982	593			126	7,648	222	-47%			-64%	-60%	-63%
	Indicated			232	10,898	382			164	8,937	242	-6%			-29%	-18%	-37%
	Measured + Indicated			578	29,880	975			290	16,584	464	-29%			-50%	-44%	-52%
	Inferred			225	13,281	436			334	19,543	463	47%			48%	47%	6%

11.13.4 Reconciliation

Reconciliation between resource model estimates and the plant is the most effective means of validating a block model estimate.

Production since 2022 at El Brocal has been mainly in the underground mine. The reconciliation for the plant between January 1, 2022, and May 30, 2024, to the resource model is presented in Table 11-29. On an annual basis, ore tonnage was predicted within an error of -2% to 4% while copper grade (the major contributor of the reserve) was underestimated by 7% to 10% and silver (minor contributor of the reserve) by 39% in 2023.

Table 11-29: Resource Model to Plant Reconciliation for the Period January 1, 2022, to May 30, 2024

Year	Resource Model				Plant				Reconciliation (%)			
	Tonnage (t)	Cu (%)	Ag (g/t)	Au (g/t)	Tonnage (t)	Cu (%)	Ag (g/t)	Au (g/t)	Tonnage	Cu	Ag	Au
Jan-22	183,700	2.07	29.24	0.88	207,294	1.84	1.00	0.67	1.13	0.89	1.07	0.77
Feb-22	188,593	1.34	18.35	0.77	196,855	1.80	0.76	0.70	1.04	1.34	1.30	0.91
Mar-22	179,797	1.50	15.55	0.81	233,830	1.66	0.87	0.60	1.30	1.10	1.73	0.74
Apr-22	280,414	1.42	20.84	0.74	253,159	1.59	0.88	0.60	0.90	1.12	1.31	0.81
May-22	244,041	1.60	21.46	0.65	248,129	1.58	0.80	0.53	1.02	0.99	1.17	0.81
Jun-22	242,053	1.71	17.11	0.76	240,741	1.66	0.63	0.65	0.99	0.97	1.15	0.86
Jul-22	269,993	1.68	21.77	0.77	260,249	1.51	0.77	0.61	0.96	0.90	1.10	0.79
Aug-22	244,376	1.44	31.41	0.77	269,041	1.77	0.95	0.66	1.10	1.23	0.94	0.85
Sep-22	264,853	1.84	41.06	0.87	265,156	2.05	1.22	0.84	1.00	1.12	0.92	0.96
Oct-22	250,543	1.32	19.60	0.70	278,978	1.89	0.95	0.73	1.11	1.43	1.51	1.04
Nov-22	224,813	1.87	29.86	0.89	272,701	1.84	0.93	0.72	1.21	0.98	0.96	0.82
Dec-22	360,779	1.97	34.21	0.80	320,224	1.99	0.92	0.71	0.89	1.01	0.84	0.88
2022	**2,933,954**	**1.66**	**25.82**	**0.78**	**3,046,359**	**1.77**	**0.90**	**0.67**	**1.04**	**1.07**	**1.09**	**0.86**
Jan-23	282,877	1.67	19.91	0.57	277,490	1.78	0.79	0.53	0.98	1.06	1.24	0.93
Feb-23	227,926	1.30	29.86	0.70	255,614	1.63	0.94	0.58	1.12	1.26	0.98	0.83
Mar-23	580,480	1.51	20.53	0.62	598,628	1.49	0.86	0.47	1.03	0.99	1.30	0.76
May-23	241,812	1.55	19.60	0.60	268,300	1.75	0.90	0.49	1.11	1.12	1.43	0.82
Jun-23	292,072	1.50	20.22	0.75	288,977	1.98	1.03	0.65	0.99	1.32	1.57	0.86
Jul-23	294,880	1.62	16.17	0.79	283,170	1.68	0.96	0.72	0.96	1.04	1.86	0.92
Aug-23	236,265	1.55	18.66	1.28	219,400	1.92	0.81	1.05	0.93	1.24	1.36	0.82
Sep-23	208,437	1.28	14.62	1.56	274,416	1.67	1.01	0.90	1.32	1.30	2.15	0.57
Oct-23	318,873	1.41	30.17	0.89	309,108	1.65	0.99	1.04	0.97	1.17	1.01	1.17
Nov-23	391,313	1.52	22.39	0.75	306,827	1.51	0.90	0.73	0.78	1.00	1.24	0.97
Dec-23	435,727	1.72	21.46	0.87	374,605	1.64	0.80	0.83	0.86	0.95	1.16	0.96
2023	**3,510,661**	**1.53**	**21.46**	**0.81**	**3,456,535**	**1.68**	**0.90**	**0.70**	**0.98**	**1.10**	**1.31**	**0.86**
Jan-24	228,192	1.49	25.82	0.92	255,687	1.40	0.85	0.74	1.12	0.94	1.03	0.80
Feb-24	357,786	1.48	21.15	0.96	357,474	1.53	0.88	1.02	1.00	1.03	1.30	1.07

Year	Resource Model				Plant				Reconciliation (%)			
	Tonnage (t)	Cu (%)	Ag (g/t)	Au (g/t)	Tonnage (t)	Cu (%)	Ag (g/t)	Au (g/t)	Tonnage	Cu	Ag	Au
Mar-24	320,914	1.61	23.95	0.78	345,049	1.60	1.73	0.76	1.08	0.99	2.24	0.98
Apr-24	338,778	1.36	20.53	0.64	338,168	1.29	0.70	0.58	1.00	0.95	1.06	0.91
May-24	259,153	1.58	23.33	0.77	187,600	1.64	0.71	0.54	0.72	1.04	0.95	0.70
2024	**1,504,823**	**1.50**	**22.71**	**0.81**	**1,483,978**	**1.48**	**1.01**	**0.75**	**0.99**	**0.99**	**1.39**	**0.93**

Even though Buenaventura prepares comparisons between the resource model and the plant, there is no well-established reconciliation process that systematically compares the resource model, grade control model, production data, actual mined material, and process plant performance.

Implementing a robust production monitoring and reconciliation process for the Mineral Resource and Mineral Reserve with the mine and the mill production would help calibrate and refine the estimates, improving overall accuracy and reliability.

11.14 QP Opinion

The SLR QP reviewed the assumptions, parameters, and methods used to prepare the Mineral Resource Statement and is of the opinion that they are reasonable and Mineral Resources are estimated and disclosed in accordance with S-K 1300.

The SLR QP is of the opinion that with consideration of the recommendations summarized in Sections 1 and 23 of this TRS, any issues relating to all relevant technical and economic factors likely to influence the prospect of economic extraction can be resolved with further work.

12.0 Mineral Reserve Estimates

The Mineral Reserves for El Brocal consist of both an open pit and underground operation. Currently, only the underground mine is operating, while the open pits are on hold until permitting for additional tailings storage facility (TSF) capacity has been approved to accommodate additional tailings related to open pit mining.

12.1 Open Pit Mining

12.1.1 Summary

The El Brocal open pit mine is a polymetallic deposit and produces both a copper ore containing copper, gold, and silver and a lead-zinc ore containing lead, zinc, and silver.

The block model employed for open pit Mineral Reserves has a regularized cell size measuring 4 m x 4 m x 6 m, deemed suitable for the mining operations. An additional dilution factor of 2% was applied to the ore blocks to account primarily for internal dilution. Overall mining recovery is estimated at 98%, which includes allowances for misdirected truckloads and occasional losses where excessive dilution during excavation reduces the mining grade below the cut-off grade. No additional ore losses or dilution factors were considered.

Table 12-1 and Table 12-2 summarize the El Brocal open pit Mineral Reserve estimate effective December 31, 2024, on a 61.43% BAOB and 100% ownership basis, respectively.

Table 12-1: El Brocal Open Pit Mineral Reserve Statement on a 61.43% BAOB - December 31, 2024

Mineral Type	Category	Tonnage (kt)	Grades					Contained Metal				
			(% Pb)	(% Zn)	(% Cu)	(g/t Ag)	(g/t Au)	Pb (kt)	Zn (kt)	Cu (kt)	Ag (koz)	Au (koz)
Copper	Proven	1,640	0	0	2.35	74.75	0.01	0	0	38.5	3,942	0.7
	Probable	1,392	0	0	1.88	38.27	0.03	0	0	26.2	1,712	1.5
	Proven + Probable	**3,032**	**0**	**0**	**2.13**	**58.00**	**0.02**	**0**	**0**	**64.7**	**5,654**	**2.2**
Lead-Zinc	Proven	1,010	2.03	4.08	0	128.77	0.01	20.6	41.3	0	4,183	0
	Probable	75	0.89	3.81	0	85.59	0.02	0.7	2.8	0	205	0
	Proven + Probable	**1,085**	**1.96**	**4.06**	**0**	**125.80**	**0.01**	**21.2**	**44.1**	**0**	**4,388**	**0**
Total	Proven	2,651	0.78	1.56	1.45	95.34	0.01	20.6	41.3	38.5	8,125	0.7
	Probable	1,466	0.05	0.19	1.79	40.68	0.03	0.7	2.8	26.2	1,918	1.5
	Proven + Probable	**4,117**	**0.52**	**1.07**	**1.57**	**75.87**	**0.02**	**21.2**	**44.1**	**64.7**	**10,042**	**2.2**

Notes:

1. The definitions for Mineral Reserves in S-K 1300 were followed for Mineral Reserves.
2. The Mineral Reserve estimate is reported on a 61.43% BAOB, a factor applied to tonnes and contained metal.
3. Mineral Reserves are reported at an effective date of December 31, 2024.
4. Mineral Reserves are estimated at an NSR cut-off value of US$29.71/t for open pit ore sent to Plant 1 (Cu) and US$32.28/t for open pit ore sent to Plant 2 (Pb-Zn).

5. Mineral Reserves were estimated using a topography with an effective date of September 31, 2023 when open pit mining operations stopped.
6. Mineral Reserves are estimated using average long term metal prices of Zn: US$2,400/t, Pb: US$1,900/t, Ag: US$24/oz, Cu: US$8,800/t, and Au: US$1,900/oz.
7. The Mineral Reserve represents feed mill material after dilution and mining recovery.
8. Metallurgical recoveries are accounted for in the NSR calculations based on historical processing data and are variable as a function of head grade. Metallurgical recoveries at the LOM average head grades are 53% for Zn, 28% for Pb, and 45% for Ag for Plant 2 (Pb-Zn) and 75% for Cu, 60% for Ag, and 20% for Au for Plant 1 (Cu).
9. Mineral Reserves incorporate estimates of dilution (2%) and mining recovery (98%).
10. Bulk density is assigned by both lithology and oxidation state, and ranges from a minimum of 1.8 t/m^3 in oxide material to 3.54 t/m^3 in high sulphide ore, and generally averages from 2.5 t/m^3 to 2.6 t/m^3.
11. Numbers may not add due to rounding.

Table 12-2: El Brocal Open Pit Mineral Reserve Statement on a 100% Ownership Basis - December 31, 2024

Mineral Type	Category	Tonnage (kt)	Grade					Contained Metal				
			(% Pb)	(% Zn)	(% Cu)	(g/t Ag)	(g/t Au)	Pb (kt)	Zn (kt)	Cu (kt)	Ag (koz)	Au (koz)
Copper	Proven	2,670	0	0	2.35	74.75	0.01	0	0	62.6	6,417	1.1
	Probable	2,265	0	0	1.88	38.27	0.03	0	0	42.7	2,787	2.5
	Proven + Probable	**4,935**	**0**	**0**	**2.13**	**58.00**	**0.02**	**0**	**0**	**105**	**9,204**	**3.6**
Lead-Zinc	Proven	1,645	2.03	4.08	0	128.77	0.01	33.5	67.2	0	6,809	0
	Probable	122	0.89	3.81	0	85.59	0.02	1.1	4.6	0	334	0
	Proven + Probable	**1,766**	**1.96**	**4.06**	**0**	**125.80**	**0.01**	**34.5**	**71.8**	**0**	**7,144**	**0**
Total	Proven	4,315	0.78	1.56	1.45	95.34	0.01	33.5	67.2	62.6	13,226	1.1
	Probable	2,387	0.05	0.19	1.79	40.68	0.03	1.1	4.6	42.7	3,122	2.5
	Proven + Probable	**6,702**	**0.52**	**1.07**	**1.57**	**75.87**	**0.02**	**34.5**	**71.8**	**105**	**16,348**	**3.6**

Notes:
1. The definitions for Mineral Reserves in S-K 1300 were followed for Mineral Reserves.
2. The Mineral Reserve estimate is reported on a 100% ownership basis.
3. Mineral Reserves are reported at an effective date of December 31, 2024.
4. Mineral Reserves are estimated at an NSR cut-off value of US$29.71/t for open pit ore sent to Plant 1 (Cu) and US$32.28/t for open pit ore sent to Plant 2 (Pb-Zn).
5. Mineral Reserves were estimated using a topography with an effective date of September 31, 2023, when open pit mining operations stopped.
6. Mineral Reserves are estimated using average long term metal prices of Zn: US$2,400/t, Pb: US$1,900/t, Ag: US$24/oz, Cu: US$8,800/t, and Au: US$1,900/oz.
7. The Mineral Reserve represents feed mill material after dilution and mining recovery.
8. Metallurgical recoveries are accounted for in the NSR calculations based on historical processing data and are variable as a function of head grade. Metallurgical recoveries at the LOM average head grades are 53% for Zn, 28% for Pb, and 45% for Ag for Plant 2 (Pb-Zn) and 75% for Cu, 60% for Ag, and 20% for Au for Plant 1 (Cu).
9. Mineral Reserves incorporate estimates of dilution (2%) and mining recovery (98%).
10. Bulk density is assigned by both lithology and oxidation state, and ranges from a minimum of 1.8 t/m^3 in oxide material to 3.54 t/m^3 in high sulphide ore, and generally averages from 2.5 t/m^3 to 2.6 t/m^3.
11. Numbers may not add due to rounding.

The SLR QP notes risks associated with potential under-reporting of dilution and permitting of the TSF to allow for tailings deposition associated with open pit mining. The SLR QP is not aware of any other risk factors associated with, or changes to, any aspects of the modifying factors such as mining, metallurgical, infrastructure, permitting, or other relevant factors that could materially affect the Mineral Reserve estimate.

12.1.2 Dilution and Mining Recovery

A mining block model with a cell size of 4 m x 4 m x 6 m was created for mine planning, based on a geological model with dimensions of 4 m x 4 m x 6 m. This block size is considered appropriate for the mining cycle at El Brocal.

An additional external dilution of 2%, incurred at the contacts with waste rock during the excavation, is applied for the Mineral Reserve estimation. External edge dilution estimate is based on an analysis of the waste blocks in contact with ore blocks, assuming 0.2 m dilution skin.

Overall mining recovery is estimated at 98%, which includes allowances for misdirected truckloads and occasional losses where excessive dilution during excavation reduces the mining grade below the cut-off grade.

12.1.3 Net Smelter Return

Due to the polymetallic characteristic of the deposit, an NSR calculation is used to determine the contribution of each metal to the three saleable products, copper concentrate, lead concentrate, and zinc concentrate.

The NSR is expressed as a dollar value and represents the revenue generated from the sale of concentrates after deductions. The three saleable products include:

- Copper Concentrate
- Lead Concentrate
- Zinc Concentrate

The NSR block value accounts for the revenue from the recovered metal, based on a metallurgical recovery, and includes deductions for selling costs, penalties, refining and treatment charges, transportation, marketing, and other costs associated with the sale of the product.

The copper concentrate NSR value is calculated as follows:

NSR Cu (US$/tonne) = [Cu(%) * CuRec(%) * VpCu] + [Ag(oz/t) * AgRec(%) * VpAg] + [Au(g/t) * AuRec(%) * VpAu]

Where:

Cu(%) = copper grade

CuRec(%) = copper process recovery

VpCu = copper net smelter price (US$/t)

Ag(oz/t) = silver grade

AgRec(%) = silver process recovery

VpAg = silver net smelter price (US$/oz)

Au(g/t) = gold grade

AgRec(%) = gold process recovery

VpAg = gold net smelter price (US$/oz)

The lead-zinc concentrate NSR value is calculated as follows:

NSR Pb/Zn (US$/tonne) = [Zn(%) * ZnRec(%) * VpZn] + [Ag(oz/t) * AgRec(%) * VpAg] + [Pb(%) * PbRec(%) * VpPb]

Where:

Zn(%) = zinc grade

ZnRec(%) = zinc process recovery

VpZn = zinc net smelter price (US$/t)

Pb(%) = lead grade

PbRec(%) = led process recovery

VpPb = lead net smelter price (US$/t)

Table 12-3 summarizes the base metal prices, payable percentage, net smelter prices, and average metallurgical recoveries used to calculate NSR $/t block value (source: Pagable Brocal_2024-2023.xls). Metal prices used for Mineral Reserves are based on consensus, long term forecasts from banks, financial institutions, and other sources.

Table 12-3: Metal Prices, Payables, Net Smelter Prices, and Average Recoveries Used for NSR Block Value Calculation

Concentrate	Unit Metal Price	Price	Payable (%)	NSR (US$/ unit grade)	Average Recoveries (%)*
Copper	Cu (US$/t)	8,800	69.6%	61.2905	92
	Au (US$/oz)	1,900	52.8%	32.2403	0
	Ag (US$/oz)	24	76.6%	18.3949	**55**
Lead-Zinc	Pb (US$/t)	1,900	57.5%	10.9306	65
	Zn (US$/t)	2,400	45.8%	10.9837	56
	Ag in Zn (US$/oz)	24	75.1%	18.0241	70
	Ag in Pb (US$/oz)	24	75.1%	18.0241	70
	Pb (US$/t)				65
Bulk	Zn (US$/t)	2,400	45.8%	10.9837	56
	Cu (US$/t)	8,800	72.0%	20.2200	92
Note. * Metallurgical recoveries are a function of head grade; figures in table above represent metallurgical recoveries based on an average LOM head grade.					

Table 12-4 provides a summary of metallurgical recovery formulas for different grade ranges and various types of mill feed materials (source: Parametros RSV – OP_BRO_2024.xls).

Table 12-4: Metallurgical Recoveries Used for NSR Block Value Calculation

Metal	Grade Range	Metallurgical Recovery Value/Formula
Material 1 (Pb-Zn Ore where Cu<0.07%)		
Pb (%)	<0 - 0.23]	0
	<0.23 - 0.4>	(LeyPb-0.23)*100/LeyPb
	[0.4 - 1.8>	(50.687-45.632*LeyPb+62.73*LeyPb^2-18.453*LeyPb^3)
	>=1.8	65
Zn (%)	<0 - 0.83]	0
	<0.83 - 1.4>	(LeyZn-0.83)*100/LeyZn
	[1.4 - 5>	(14.154+36.133*LeyZn-11.001*LeyZn^2+1.1434*LeyZn^3)
	>=5	63
Ag (Oz/t) in Pb	<0 - 0.21]	0
	<0.21 - 0.5>	(LeyAg-0.21)*100/LeyAg
	[0.5 - 3>	(56.71+0.9155*LeyAg+2.5762*LeyAg^2-0.5136*LeyAg^3)
	>=3	70
Material 2 (Pb-Zn Ore where Cu: 0.07%-0.15%)		
Pb (%)	<0 - 0.22]	0
	<0.22 - 0.4>	(LeyPb-0.22)*100/LeyPb
	[0.4 - 1.8>	(44.765+9.8539*LeyPb-7.1473*LeyPb^2+2.4351*LeyPb^3)
	>=1.8	55
Zn (%)	<0 - 0.83]	0
	<0.83 - 1.4>	(LeyZn-0.83)*100/LeyZn
	[1.4 - 4>	(-33.015+82.514*LeyZn-24.598*LeyZn^2+2.4534*LeyZn^3)
	>=4	63
Ag (Oz/t) in Pb	<0 - 0.6]	0
	<0.6 - 1.2>	(LeyAg-0.6)*100/LeyAg
	[1.2 - 3>	(66.426-10.051*LeyAg+5.5558*LeyAg^2-0.5143*LeyAg^3)
	>=3	73
Material 3 (Pb-Zn Ore where Cu: 0.15%-0.40%)		
Pb (%)	<0 - 0.27]	0
	<0.27 - 0.4>	(LeyPb-0.27)*100/LeyPb
	[0.4 - 1.5>	(12.444+74.532*LeyPb-57.569*LeyPb^2+17.603*LeyPb^3)
	>=1.5	55
	<0 - 0.75]	0

Metal	Grade Range	Metallurgical Recovery Value/Formula
Zn (%)	<0.75 - 1.4>	(LeyZn-0.75)*100/LeyZn
	[1.4 - 4>	(76.753-43.531*LeyZn+21.326*LeyZn^2-2.844*LeyZn^3)
	>=4	63
Ag (Oz/t) in Pb	<0 - 0.6]	0
	<0.6 - 1.2>	(LeyAg-0.6)*100/LeyAg
	[1.2 - 7>	(63.973-9.052*LeyAg+3.7187*LeyAg^2-0.317*LeyAg^3)
	>=7	75
Material 4 (Pb-Zn Ore where Cu>0.40%)		
Pb (%)	<0 - 0.2]	0
	<0.2 - 0.4>	(LeyPb-0.2)*100/LeyPb
	[0.4 - 1.21>	(118.54-338.7*LeyPb+412.56*LeyPb^2-152.54*LeyPb^3)
	>=1.21	43
Zn (%)	<0 - 0.75]	0
	<0.75 - 1.2>	(LeyZn-0.75)*100/LeyZn
	[1.2 - 3>	(-45.524+114.88*LeyZn-46.101*LeyZn^2+6.4204*LeyZn^3)
	>=3	60
Ag (Oz/t) in Pb	<0 - 0.6]	0
	<0.6 - 1.2>	(LeyAg-0.6)*100/LeyAg
	[1.2 - 7>	(56.71-7.6286*LeyAg+3.3688*LeyAg^2-0.2774*LeyAg^3)
	>=7	75
Material 5 (Cu Ore where Cu/(Zn+Pb)>0.61) and Pb-Zn ore where Cu/Zn+Pb)<0.61)		
	<0 - 0.2]	0
Cu (%)	<0.2 – 1.95>	-5.1877*Cu (%) ^2+22.435*Cu (%)+67.988
	>=	92
	<0 - 0.3]	0
Ag (Oz/t)	<0.3 - 0.5]	30%
	>0.5	55%
Au (g/t)	<0 - 0.14]	0
	>0.14	33%

12.1.4 Cut-off Value Calculation

The internal and break-even cut-off values were estimated based on historical operating costs over the past three years (2020–2022). SLR notes that costs for 2023 are not considered as production ceased in September 2023 resulting in an incomplete year for 2023. The internal cut-off value accounts for all costs excluding the mining cost, and the breakeven cut-off value accounts for all costs including the mining costs. The cut-off values were estimated for each ore type planned to be used over the LOM.

Table 12-5 below summarizes both the internal and breakeven NSR cut-off values based on the cost data generated from the SAP system Datasmart (2020-2022). The SLR QP reviewed the Datasmart costs and validated the NSR cut-off spreadsheet provided by Buenaventura.

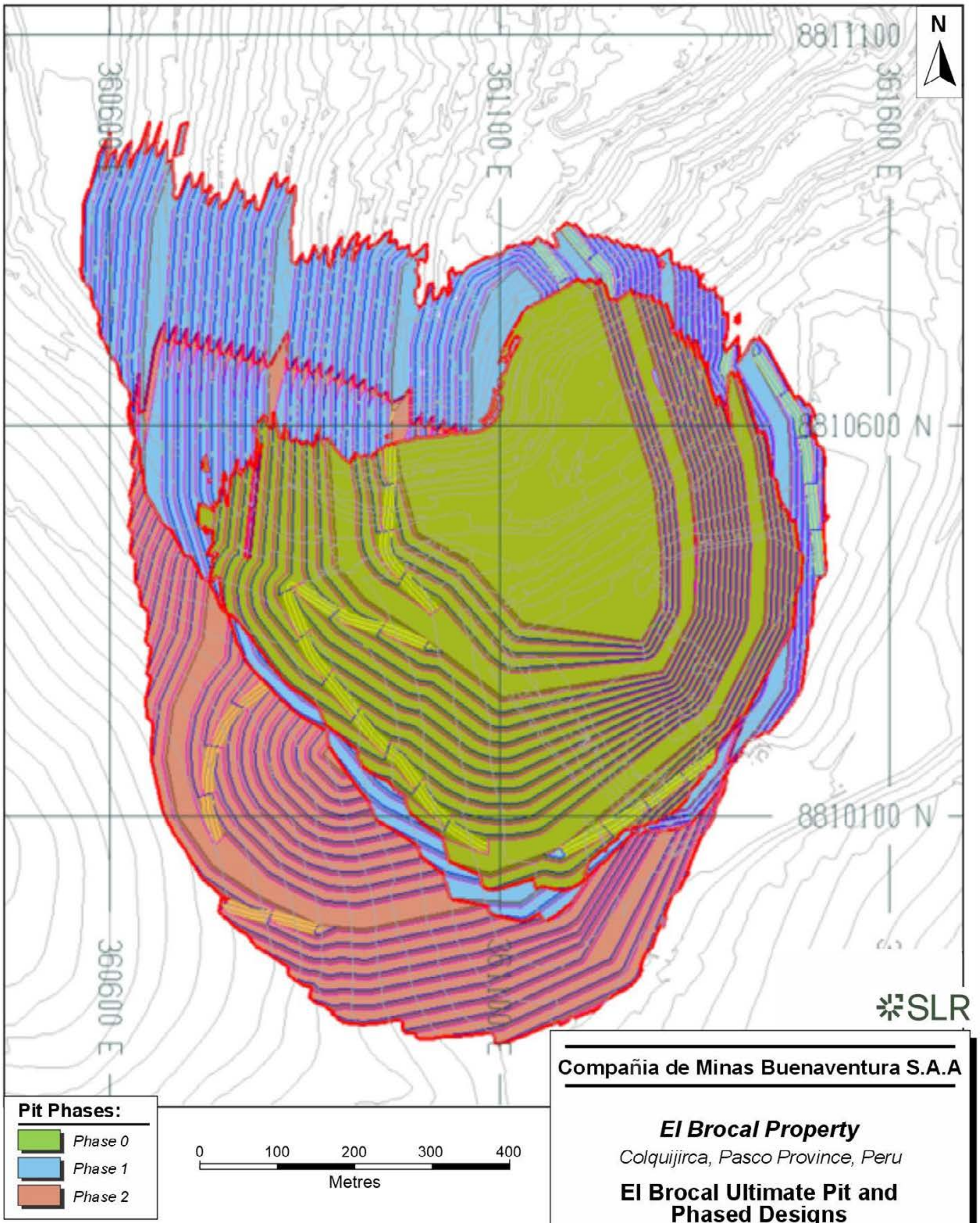
Table 12-5: Costs and Cut-off Values for El Brocal Open Pit Mineral Reserves

Parameter	Units	Pb-Zn	Cu	Bulk
Mine	$/t mined	1.64	1.64	1.64
Plant	$/t milled	19.48	16.91	19.48
Services	$/t milled	6.27	6.27	6.27
G&A	$/t milled	1.74	1.74	1.74
Offsite Expenses	$/t milled	0.30	0.30	0.30
Sustaining Capital Cost	$/t milled	3.26	3.26	3.26
Ore Differential Cost	$/t milled	1.24	1.24	1.24
Internal Cut-off Value (excludes mining costs)	$/t	32.28	29.71	32.28
Breakeven NSR Cut-off Value	$/t	33.93	31.36	33.93

12.1.5 Mineral Reserve Estimation

Mineral Reserves were estimated by way of pit optimization using the open pit MineSight Economic Planner (MSEP) which uses a set of input assumptions and a Lerchs-Grossmann algorithm to generate a series of pit shells. Suitable pit shells are selected to guide the ultimate pit design and interim phased designs. The pit designs are based on a set of mine design criteria. The Mineral Reserves are reported inside the ultimate pit design and include dilution and mining recovery.

Figure 12-1: El Brocal Ultimate Pit and Phased Designs



Source: SLR 2024.

12.1.6 Comparison with Previous Estimate

As of December 31, 2024, the Mineral Reserves for the El Brocal open pit are estimated at 6,702 kt, with metal grades of 0.52% Pb, 1.07% Zn, 1.57% Cu, 75.87 g/t Ag, and 0.02 g/t Au, representing 100% BAOB. The changes in the El Brocal Mineral Reserves are notable, primarily driven by adjustments to pit slope angles.

From September 15, 2023, to January 4, 2024, a series of instabilities occurred along the southern portion of the West Wall of the Tajo Norte Pit, culminating in a major slope failure on January 4, which impacted a significant portion of the slope. Slope failure was found to be associated with planar sliding on low-strength bedding planes in the Calera Media Favorable, one of the six stratigraphic units identified at El Brocal and the main orebody of the deposit.

SLR conducted overall slope stability analyses, leading to recommendations by the SLR QP for sector-specific slope angles ranging from 17° to 21°, which had the most significant impact on the pit size and content, specifically the Mineral Reserves as of December 31, 2024.

Other changes include a slight increase in NSR cut-offs for Cu and Pb-Zn ore due to higher operational costs, as well as adjustments in metallurgical recoveries. The revised El Brocal Mineral Reserves do not reflect depletion, as the mine has been non-operational since September 2023.

A comparison of the December 31, 2024, versus December 31, 2023 Mineral Reserve estimate is presented in Table 12-6 and summarizes the net and percentage changes to open pit Mineral Reserves from the December 31, 2023 estimate to December 31, 2024.

Table 12-6: El Brocal Comparison of 2024 Versus 2023 Open Pit Mineral Reserves - 100% Ownership Basis

Description	Mineral Type	Category	Tonnage (kt)	Grades					Contained Metal				
				Pb %	Zn %	Cu %	Ag (g/t)	Au (g/t)	Pb (kt)	Zn (kt)	Cu (kt)	Ag (koz)	Au (koz)
2024 Reserves	Copper	Proven	2,670	-	-	2.35	74.75	0.01	-	-	62.6	6,416.9	1.1
		Probable	2,265	-	-	1.88	38.27	0.03	-	-	42.7	2,787.0	2.5
		Proven + Probable	**4,935**	**-**	**-**	**2.13**	**58.00**	**0.02**	**-**	**-**	**105**	**9,204**	**3.6**
	Lead-Zinc	Proven	1,645	2.03	4.08	-	128.77	-	33.5	67.2	-	6,809	-
		Probable	122	0.89	3.81	-	85.59	-	1.1	4.6	-	334.5	-
		Proven + Probable	**1,766**	**1.96**	**4.06**	**-**	**125.80**	**-**	**34.5**	**71.8**	**-**	**7,144**	**-**
	Total	Proven	4,315	0.78	1.56	1.45	95.34	0.01	33.5	67.2	62.6	13,226	1.1
		Probable	2,387	0.05	0.19	1.79	40.68	0.03	1.1	4.6	42.7	3,122	2.5
		Proven + Probable	**6,702**	**0.52**	**1.07**	**1.57**	**75.87**	**0.02**	**34.5**	**71.8**	**105**	**16,348**	**3.6**
2023 Reserves	Copper	Proven	8,058	-	-	1.97	30.72	0.23	-	-	158.0	7,957.0	59.3
		Probable	14,187	-	-	1.73	16.31	0.24	-	-	246.0	7,441.0	112.0
		Proven + Probable	**22,245**	**-**	**-**	**1.82**	**21.53**	**0.24**	**-**	**-**	**404**	**15,398**	**171.0**
	Lead-Zinc	Proven	1,785	1.84	3.79	-	115.72	-	32.9	67.6	-	6,640	-
		Probable	293	0.82	2.95	-	91.87	-	2.4	8.6	-	865.0	-
		Proven + Probable	**2,077**	**1.70**	**3.67**	**-**	**112.36**	**-**	**35.3**	**76.2**	**-**	**7,505**	**-**
	Total	Proven	9,842	0.33	0.69	1.61	46.13	0.19	32.9	67.6	158.0	14,597	59.0
		Probable	14,480	0.02	0.06	1.70	17.84	0.24	2.4	8.6	246.0	8,306	112.0
		Proven + Probable	**24,322**	**0.15**	**0.31**	**1.66**	**29.29**	**0.22**	**35.3**	**76.2**	**404**	**22,903**	**171.0**

Description	Mineral Type	Category	Tonnage (kt)	Grades					Contained Metal				
				Pb %	Zn %	Cu %	Ag (g/t)	Au (g/t)	Pb (kt)	Zn (kt)	Cu (kt)	Ag (koz)	Au (koz)
Difference (2024 vs 2023)	Copper	Proven	-5,388	-	-	0.38	44.03	-0.22	-	-	-95.7	-1,540.3	-58.2
		Probable	-11,922	-	-	0.15	21.95	-0.21	-	-	-203.2	-4,654.1	-109.1
		Proven + Probable	**-17,310**	**-**	**-**	**0.32**	**36.47**	**-0.22**	**-**	**-**	**-298.9**	**-6,194.4**	**-167.3**
	Lead-Zinc	Proven	-140	0.19	0.30	-	13.04	-	0.59	-0.39	-	169.7	-
		Probable	-171	0.07	0.86	-	-6.28	-	-1.33	-4.01	-	-530.4	-
		Proven + Probable	**-311**	**0.26**	**0.40**	**-**	**13.44**	**-**	**-0.74**	**-4.39**	**-**	**-360.8**	-
	Total	Proven	-5,527	0.44	0.87	-0.16	49.21	-0.18	0.59	-0.39	-95.7	-1,370.6	-58.2
		Probable	-12,093	0.03	0.13	0.09	22.84	-0.21	-1.33	-4.01	-203.2	-5,184.6	-109.1
		Proven + Probable	**-17,621**	**0.37**	**0.76**	**-0.09**	**46.58**	**-0.20**	**-0.74**	**-4.39**	**-298.9**	**-6,555.2**	**-167.3**
Difference % (2024 vs 2023)	Copper	Proven	-67%			19%	143%	-94%			-60%	-19%	-98%
		Probable	-84%			9%	135%	-86%			-83%	-63%	-98%
		Proven + Probable	**-78%**			**17%**	**169%**	**-90%**			**-74%**	**-40%**	**-98%**
	Lead-Zinc	Proven	-8%	10%	8%		11%		2%	-1%		3%	
		Probable	-58%	8%	29%		-7%		-55%	-46%		-61%	
		Proven + Probable	**-15%**	**15%**	**11%**		**12%**		**-2%**	**-6%**		**-5%**	
	Total	Proven	-56%	132%	127%	-10%	107%	-96%	2%	-1%	-60%	-9%	-98%
		Probable	-84%	173%	225%	5%	128%	-86%	-55%	-46%	-83%	-62%	-98%
		Proven + Probable	**-72%**	**255%**	**242%**	**-5%**	**159%**	**-92%**	**-2%**	**-6%**	**-74%**	**-29%**	**-98%**

Notes:

1. The definitions for Mineral Reserves in S-K 1300 were followed for Mineral Reserves.
2. The Mineral Reserve estimate comparison is reported on a 100% ownership basis.
3. 2024 Mineral Reserves are reported at an effective date of December 31, 2024.
   2023 Mineral Reserves are reported at an effective date of December 31, 2023.
4. December 31, 2024 Mineral Reserves are estimated at an NSR cut-off value of US$29.71/t for open pit ore sent to Plant 1 (Cu) and US$32.28/t for open pit ore sent to Plant 2 (Pb-Zn).
   December 31, 2023 Mineral Reserves are estimated at an NSR cut-off value of US$28.35/t for open pit ore sent to Plant 1 (Cu) and US$29.22/t for open pit ore sent to Plant 2 (Pb-Zn).
5. December 31, 2024 Mineral Reserves were estimated using a topography with an effective date of September 31, 2023, when open pit mining operations stopped.
   December 31, 2023 Mineral Reserves were estimated using a topography with an effective date of September 31, 2023, when open pit mining operations stopped.
6. December 31, 2024 Mineral Reserves are estimated using average long term metal prices of Zn: US$2,400/t, Pb: US$1,900/t, Ag: US$24/oz, Cu: US$8,800/t, and Au: US$1,900/oz.
   December 31, 2023 Mineral Reserves are estimated using average long term metal prices of Zn: US$2,600/t, Pb: US$2,100/t, Ag: US$23/oz, Cu: US$8,800/t, and Au: US$1,750/oz.
7. December 31, 2024 Mineral Reserves metallurgical recoveries are accounted for in the NSR calculations based on historical processing data and are variable as a function of head grade. Metallurgical recoveries at the LOM average head grades are 53% for Zn, 28% for Pb, and 45% for Ag for Plant 2 (Pb-Zn) and 75% for Cu, 60% for Ag, and 20% for Au for Plant 1 (Cu).
   December 31, 2023 Mineral Reserves metallurgical recoveries are accounted for in the NSR calculations based on historical processing data and are variable as a function of head grade. Metallurgical recoveries at the LOM average head grades are 48.5% for Zn, 44% for Pb, and 59% for Ag for Plant 2 (Pb-Zn) and 81.7% for Cu, 22% for Ag, and 19% for Au for Plant 1 (Cu).
8. December 31, 2024 Mineral Reserves incorporate estimates of dilution (2%) and mining recovery (98%).
   December 31, 2023 Mineral Reserves incorporate estimates of dilution (2%) and mining recovery (98%).
9. December 31, 2024 Mineral Reserves bulk density is assigned by both lithology and oxidation state, and ranges from a minimum of 1.8 t/m^3 in oxide material to 3.54 t/m^3 in high sulphide ore, and generally averages from 2.5 t/m^3 to 2.6 t/m^3.
   December 31, 2023 Mineral Reserves bulk density is assigned by both lithology and oxidation state, and ranges from a minimum of 1.8 t/m^3 in oxide material to 3.54 t/m^3 in high sulphide ore, and generally averages from 2.5 t/m^3 to 2.6 t/m^3.
10. Numbers may not add due to rounding.

12.2 Underground Mining

12.2.1 Summary

The El Brocal underground mine, also known as the Marcapunta mine, is a massive type polymetallic deposit, producing a copper ore containing copper, gold, and silver. Table 12-7 and Table 12-8 summarize the El Brocal underground Mineral Reserve estimate effective December 31, 2024, on a 61.43% BAOB and 100% ownership basis, respectively.

Table 12-7: El Brocal Underground Mineral Reserve Statement on a 61.43% BAOB - December 31, 2024

Category	Tonnage (kt)	Grade			Contained Metal		
		(% Cu)	(g/t Ag)	(g/t Au)	Cu (kt)	Ag (koz)	Au (koz)
Proven	19,702	1.24	21.94	0.69	245	13,900	439
Probable	26,156	1.21	17.84	0.52	315	14,995	436
Proven + Probable	**45,858**	**1.22**	**19.60**	**0.59**	**560**	**28,896**	**875**

Notes:
1. The definitions for Mineral Reserves in S-K 1300 were followed for Mineral Reserves.
2. The Mineral Reserve estimate is reported on a 61.43% BAOB, a factor applied to tonnes and contained metal.
3. Mineral Reserves are reported within mining shapes above marginal cut-off values depending on mining method: SLS with unconsolidated rockfill: US$36.03/t, SLS with hydraulic cemented fill: US$47.44/t, SLS-Primary with paste fill: US$36.36, and SLS-Secondary and Tertiary with paste fill: US$40.32/t.
4. Mineral Reserves are estimated using average long term metal prices of Cu: US$8,800/t, Au: US$1,900/oz, and Ag: US$24.00/oz.
5. Mineral Reserves were depleted for production with mined out wireframes to August 31, 2024 and planned production to December 31, 2024.
6. The Mineral Reserve represents feed mill material after dilution and mining recovery.
7. Metallurgical recoveries are accounted for in the NSR calculations based on historical processing data and are variable as a function of head grade. LOM average recoveries are 88% for Cu, 51% for Ag, and 27% for Au.
8. A dilution equivalent linear overbreak slough (ELOS) of 0.60 m was applied to secondary stopes and an additional factor of 4% was applied to all stopes to account for backfill dilution.
9. A mining recovery factor of 90% was applied to stopes and 100% to development.
10. Numbers may not add due to rounding.

Table 12-8: El Brocal Underground Mineral Reserve Statement on a 100% Ownership Basis - December 31, 2024

Category	Tonnage (kt)	Grade			Contained Metal		
		(% Cu)	(g/t Ag)	(g/t Au)	Cu (kt)	Ag (koz)	Au (koz)
Proven	32,072	1.24	21.94	0.69	399	22,628	715
Probable	42,579	1.21	17.83	0.52	513	24,410	709
Proven + Probable	**74,651**	**1.22**	**19.60**	**0.59**	**912**	**47,038**	**1,424**

Notes:

1. The definitions for Mineral Reserves in S-K 1300 were followed for Mineral Reserves.
2. The Mineral Reserve estimate is reported on a 100% ownership basis.
3. Mineral Reserves are reported within mining shapes above marginal cut-off values depending on mining method: SLS with unconsolidated rockfill: US$36.03/t, SLS with hydraulic cemented fill: US$47.44/t, SLS-Primary with paste fill: US$36.36, and SLS-Secondary and Tertiary with paste fill: US$40.32/t.
4. Mineral Reserves are estimated using average long term metal prices of Cu: US$8,800/t, Au: US$1,900/oz, and Ag: US$24.00/oz.
5. Mineral Reserves were depleted for production with mined out wireframes to August 31, 2024 and planned production to December 31, 2024.
6. Metallurgical recoveries are accounted for in the NSR calculations based on historical processing data and are variable as a function of head grade. LOM average recoveries are 88% for Cu, 51% for Ag, and 27% for Au.
7. A dilution ELOS of 0.60 m was applied to secondary stopes and an additional factor of 4% was applied to all stopes to account for backfill dilution.
8. A mining recovery factor of 90% was applied to stopes and 100% to development.

Buenaventura is currently testing the use of cemented backfill in order to mine pillars as secondary and tertiary stopes. The current Mineral Reserve estimates assume a mining recovery of 90% for secondary and tertiary stopes. The SLR QP is of the opinion that the mining recovery factor for those is over-estimated. The SLR QP recommends diligently collecting survey data from secondary stopes to better define the dilution and mining recovery factors and re-evaluate the factors for future estimates. The SLR QP has further ran a sensitivity analysis on the cash flow using a conservative mining recovery factor of 50% for secondary and tertiary stopes and finds the after-tax cash flow to remain positive. The SLR QP notes that mining of primary stopes only would result in a LOM of nine years.

The SLR QP is not aware of any other risk factors associated with any aspects of the modifying factors such as mining, metallurgical, infrastructure, or other relevant factors that could materially affect the Mineral Reserve estimate.

12.2.2 Dilution and Mining Recovery

Planned or internal dilution is included within the stope designs while unplanned or external dilution represents the material mined beyond stope design limits due to overbreak. Unplanned dilution is expected to come from two sources: overbreak from blasting and backfill dilution while mining on top of a backfilled stope.

Overbreak from primary stopes will come from mineralized material within secondary stopes, therefore overbreak dilution was not applied to primary stopes. Secondary and tertiary stopes have an additional wall dilution applied as an ELOS of 0.60 m to account for dilution from cemented fill in adjacent stopes.

Variations of sub-level stoping (SLS) is used at El Brocal where mining progresses bottom up for each mining panel. Once a stope is mined, it is backfilled and provides a working surface to mine the next stope. A dilution factor of 4% is applied to all stopes to account for dilution due to backfill. A mining recovery factor of 90% was applied to stopes and 100% to development.

SLR reviewed surveyed data from 96 stopes mined between 2022 and 2024. The surveyed shapes were reviewed against planned stope designs to determine average dilution and mining recovery. SLR estimated that dilution from overbreak averaged 4.62% while mining recovery averaged 89.7%. The application of 0.6 m of ELOS overbreak dilution in secondary stope designs averaged 5.24%, which correlates well with surveyed data. SLR notes that the reconciliation data was mainly obtained from primary stopes where overbreak occurs in rock whereas for secondary stopes overbreak will be in backfill material. SLR recommends monitoring overbreak in secondary stopes as soon as BVN starts mining secondaries and updating the dilution parameters as needed. Table 12-9 shows the dilution and mining recovery parameters used for the estimation of Mineral Reserves.

Table 12-9: Dilution and Mining Recovery Factors

	Backfill Dilution (%)	Overbreak as ELOS (m)	Mining Recovery (%)
Primary stopes	4.0		90.0
Secondary stopes	4.0	0.60	90.0
Tertiary stopes		0.60	90.0
Development	0	0	100.0

12.2.3 Net Smelter Return

Ore material from the El Brocal underground mine produces a copper concentrate containing copper, gold, and silver as saleable products. An NSR value was estimated using long term metal prices, metal recoveries, and transport, refining, and treatment costs for each metal.

Buenaventura sources long term metal price forecasts from Bloomberg, internally reviews those prices, and selects a set of prices for all mining units. The SLR QP has reviewed the proposed metal prices, comparing them against forecasts provided by financial institutions and lenders involved in the mining industry, and finds these prices to be compatible with forecasts. Since the underground mine has an expected life of mine greater than 15 years, SLR agrees with the application of long term price forecasts for estimation of Mineral Reserves.

Metal recoveries are based on metallurgical test work pertaining to ongoing modifications to the copper processing plant. Offsite costs are calculated based on existing contractual terms. The SLR QP has reviewed the terms against market averages and finds the terms used comparable.

The inputs used to calculate NSR values are presented in Table 12-10 and the metallurgical recoveries formulas are presented in Table 12-11.

Table 12-10: Inputs for NSR Values Calculation

	Unit	Value
Metal Prices		
Cu	$/lb	3.99
Au	$/oz	1,900
Ag	$/oz	24.00
Metal Payables – Cu Conc		
Cu	%	95
Au	%	53
Ag	%	78
Costs		
Transport (Cu conc)	$/t conc	28.30
Deductions (Au)	$/oz	5.25

	Unit	Value
Deductions (Ag)	$/oz	0.41
Deductions (Cu conc)	$/t conc	482.9
Metal value – Excl metallurgical Recovery		
Cu	$/% Cu	61.29
Au	$/g Au	32.24
Ag	$/oz Ag	18.39

Table 12-11: Metallurgical Recoveries

Metal	Range	Value/Formula
Cu	Cu grade (%) <0.2	0
	0.2<= Cu grade (%) <1.95	-5.1877* Cu grade (%) ^2 + 22.435* Cu grade (%) + 67.988
	Cu grade (%) >=1.95	92
Au	Au grade (g/t) <= 0.14	0
	Au grade (g/t) > 0.14	33%
Ag	Ag grade (oz/t) <= 0.3	0
	0.3< Ag grade (oz/t) <= 0.5	30%
	Ag grade (oz/t) > 0.5	55%

12.2.4 Cut-off Value Calculation

Marginal and break-even cut-off values were estimated partly based on historical operating costs over the past three years (2020–2022) and forecasted costs for development, haulage, and backfill. Backfill unit costs were calculated from estimated backfill quantity requirement and backfill plants operating costs. The break-even cut-off value accounts for both fixed and variable costs, while the marginal cut-off value considers only variable costs. The cut-off values were estimated for each of the mining methods planned to be used over the LOM.

Stope mining costs and development costs were estimated by averaging 2021 to 2023 actual costs while backfill costs were calculated from planned backfill requirements over the LOM. Several primary stopes have already been mined and have to be backfilled prior to mining secondary and tertiary stopes. The costs of backfilling empty stopes have been applied to secondary and tertiary mining costs. Mineral Resources were estimated using marginal cut-off values and Mineral Reserves were estimated within shapes above marginal cut-off values. Table 12-12 summarizes the cost inputs and cut-off values by mining method.

Table 12-12: NSR Cut-off Value Calculation

	Units	SLS with Unconsolidated Rockfill	SLS with Hydraulic Cemented Fill	SLS - Primary with Paste Fill	SLS - Secondary and Tertiary with Paste Fill
Mine	$/t milled	22.55	22.88	26.84	33.96
Plant	$/t milled	16.91	16.91	16.91	16.91
Services	$/t milled	8.37	8.37	8.37	8.37
G&A	$/t milled	1.72	1.72	1.72	1.72
Offsite Expenses	$/t milled	0.54	0.54	0.54	0.54
Sustaining Capital Cost	$/t milled	3.72	3.72	3.72	3.72
Marginal NSR Cut-off Value	$/t	36.03	36.36	40.32	47.44
Break-even Cut-off Value	$/t	53.81	54.14	58.09	65.22

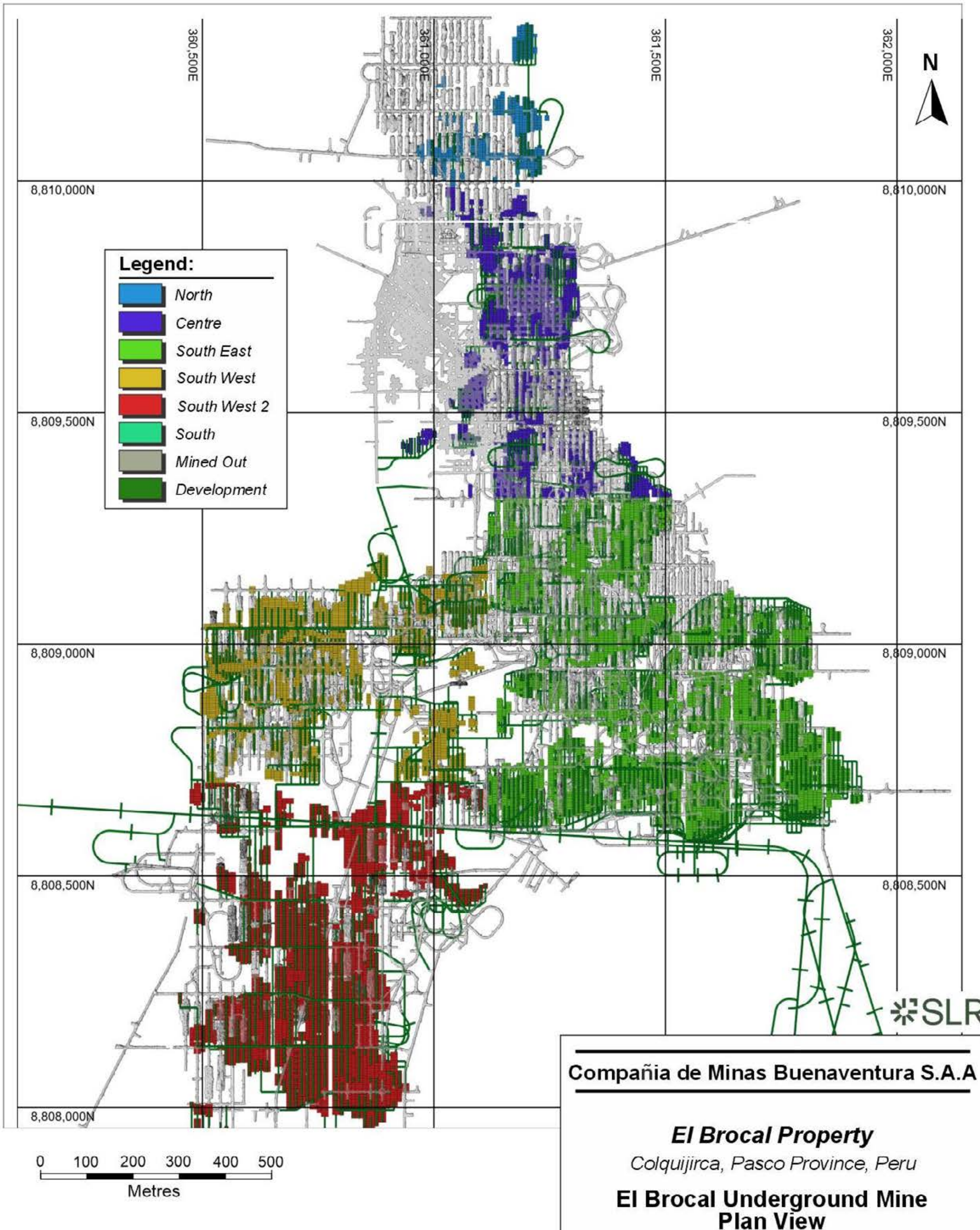
12.2.5 Mineral Reserve Estimation

Mineral Reserves were estimated within stope and development designs. Stopes were designed using Deswik Stope Optimizer (DSO). The mine was divided into six zones for the purposes of optimization. Stope dimensions used for the optimizations were primarily based on the existing stope dimensions for each zone. The hanging wall and footwall dilution and marginal cut-off values described above were used for the respective mining methods.

The resulting stopes were reviewed against designed development to determine their economic value. Development designs include 4.5 m by 4.5 m access ramps and 4.0 m by 4.0 m lateral development.

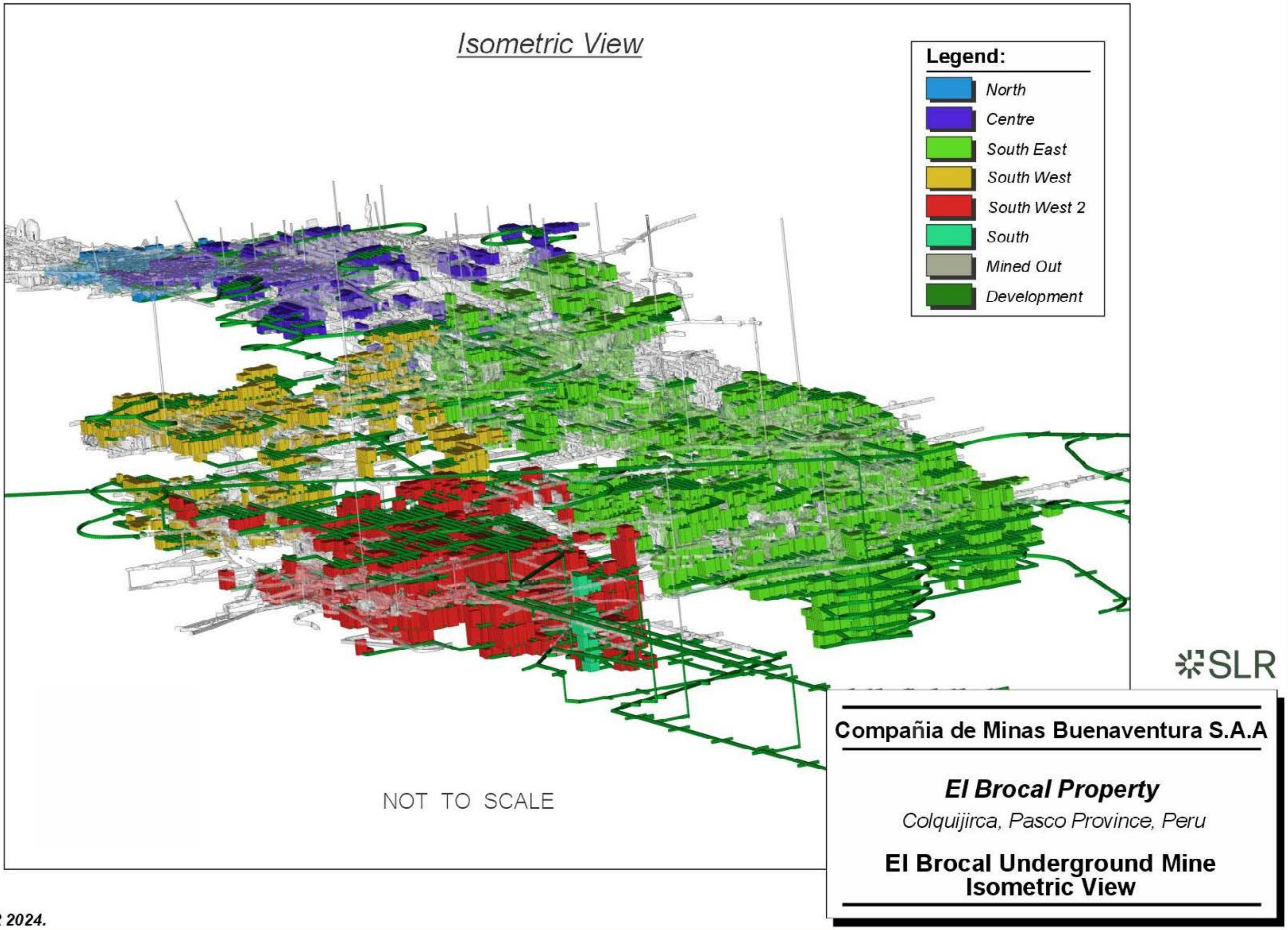
In-situ tonnages and grades were estimated within stope designs and development in mineralization where the average NSR values were greater than marginal cut-off grades. Dilution and mining recovery factors presented in Table 12-9 were applied where appropriate to estimate Mineral Reserves.

Figure 12-2: El Brocal Underground Mine – Plan View



Source: SLR 2024.

Figure 12-3: El Brocal Underground Mine – Isometric View



Source: SLR 2024.

12.2.6 Comparison with Previous Estimates

The changes in El Brocal underground Mineral Reserve estimates are presented in Table 12-13. The increase in Mineral Reserve estimates are primarily driven by the addition of secondary and tertiary stopes. The December 31, 2023 Mineral Reserve estimates assumed extraction of primary stopes and leaving pillars in between mined stopes. A limited amount pillars were identified to be mined as secondary stopes. Due to capacity restrictions in the tailings dam and ongoing negotiations to expand the dam, Buenaventura has implemented measures to generate cemented fill using tailings. A hydraulic fill plant is currently operational on site and a feasibility study for a paste fill plant is currently underway. The usage of cemented fill will allow the mining of pillars between primary stopes as secondary and tertiary stopes. Secondary and tertiary stopes account for approximately 35% and 12% respectively of the total Mineral Reserves.

The increase in Mineral Reserves also includes approximately 11 Mt of Mineral Resources that were upgraded and converted to Mineral Reserves. Figure 12-4 shows the additions and deductions in Mineral Reserves compared to December 31, 2023.

Figure 12-4: Waterfall Chart Showing Change in Mineral Reserves

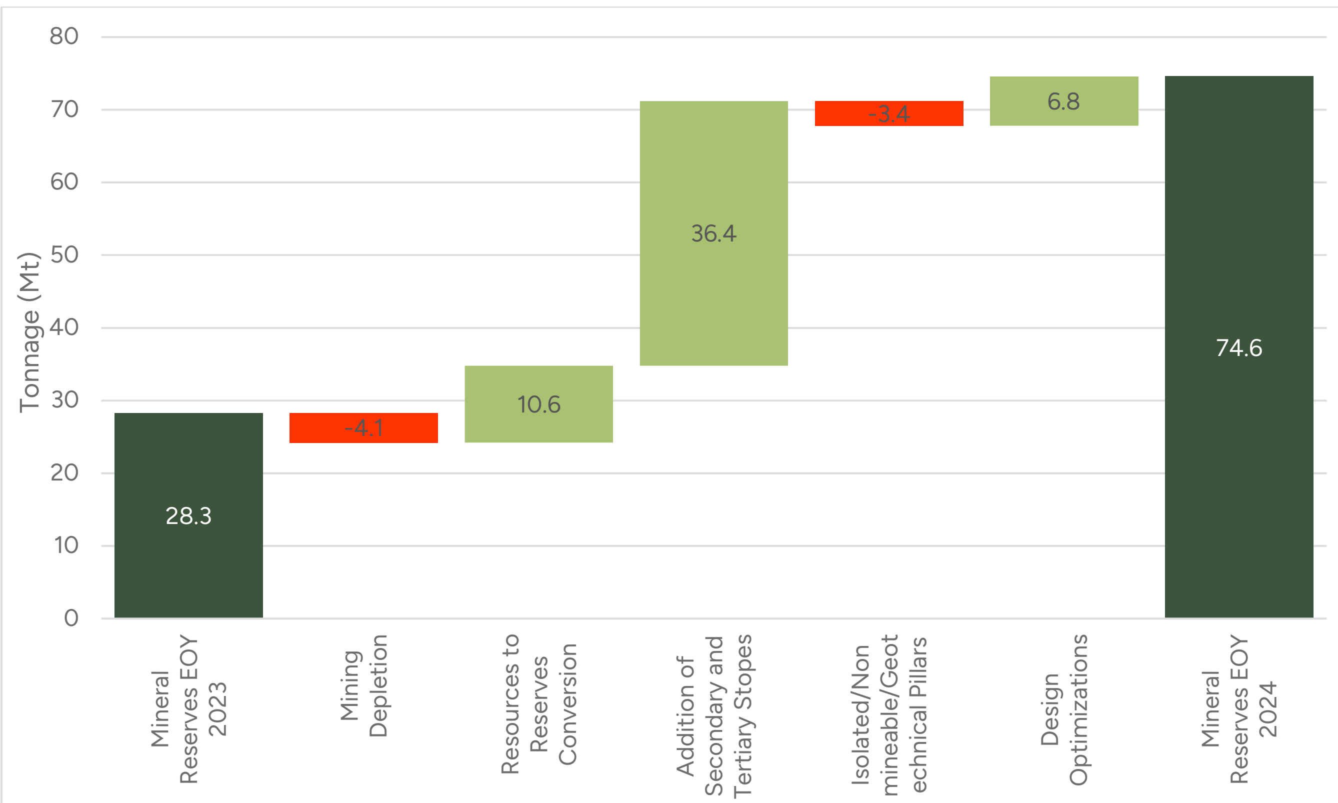


Table 12-13: El Brocal Comparison of 2024 Versus 2023 Underground Mineral Reserves - 100% Basis

Category	El Brocal Underground Mineral Reserves - December 31, 2024							El Brocal Underground Mineral Reserves - December 31, 2023						
	Tonnage	Grade			Contained Metal			Tonnage	Grade			Contained Metal		
	(kt)	Cu (%)	(g/t Ag)	(g/t Au)	Cu (kt)	Ag (koz)	Au (koz)	(kt)	(% Cu)	(g/t Ag)	(g/t Au)	Cu (kt)	Ag (koz)	Au (koz)
Proven	32,072	1.24	21.94	0.69	399	22,628	715	10,465	1.27	24.03	0.72	133	8,086	242
Probable	42,579	1.21	17.83	0.52	513	24,410	709	17,816	1.28	19.19	0.61	227	10,993	351
Total P&P	74,651	1.22	19.6	0.59	912	47,038	1,424	28,281	1.27	20.98	0.65	360	19,079	592
2024 vs. 2023 Percent Difference (%)														
Category	**Tonnage**	**Grade**			**Contained Metal**			**Tonnage**	**Grade**			**Contained Metal**		
	(kt)	**Cu (%)**	**(g/t Ag)**	**(g/t Au)**	**Cu (kt)**	**Ag (koz)**	**Au (koz)**	**%**	**%**	**%**	**%**	**%**	**%**	**%**
Proven	21,608	-0.02	-2.09	-0.03	266	14,542	473	206%	-2%	-9%	-4%	201%	180%	196%
Probable	24,763	-0.07	-1.36	-0.09	286	13,417	358	139%	-6%	-7%	-15%	126%	122%	102%
Total P&P	46,370	-0.05	-1.38	-0.06	552	27,960	831	164%	-4%	-7%	-9%	153%	147%	140%

Notes:

1. The definitions for Mineral Reserves in S-K 1300 were followed for Mineral Reserves.
2. The Mineral Reserve estimate is reported on a 100% BAOB.
3. December 31, 2024 Mineral Reserves were reported within mining shapes above marginal cut-off values depending on mining method: SLS with unconsolidated rockfill: US$36.03/t, SLS with hydraulic cemented fill: US$47.44/t, SLS-Primary with paste fill: US$36.36, and SLS-Secondary and Tertiary with paste fill: US$40.32/t.
   December 31, 2023 Mineral Reserves were reported above marginal cut-off values depending on mining method: SLS with unconsolidated rockfill: US$38.31/t, SLS with cemented rockfill: US$39.10/t, and SLS-pillar recovery: US$35.21/t.
4. December 31, 2024 Mineral Reserves are estimated using average long term metal prices of Cu: US$8,800/t, Au: US$1,900/oz, and Ag: US$24.00/oz.
   December 31, 2023 Mineral Reserves are estimated using average long term metal prices of Cu: US$8,800/t, Au: US$1,750/oz, and Ag: US$23.00/oz.
5. 2024 Mineral Reserves were depleted for production with mined out wireframes to August 31, 2024 and planned production to December 31, 2024.
   2023 Mineral Reserves were depleted for production with mined out wireframes to September 30, 2023 and planned production to December 31, 2024.
6. The Mineral Reserve represents feed mill material after dilution and mining recovery.
7. December 31, 2024 Mineral Reserves metallurgical recoveries are accounted for in the NSR calculations based on historical processing data and are variable as a function of head grade. LOM average recoveries are 88% for Cu, 51% for Ag, and 27% for Au.
   December 31, 2023 Mineral Reserves metallurgical recoveries are accounted for in the NSR calculations based on historical processing data and are variable as a function of head grade. LOM average recoveries are 80.9% for Cu, 37.8% for Ag, and 31.2% for Au.
8. December 31, 2024 Mineral Reserves include dilution equivalent linear overbreak slough (ELOS) of 0.60 m applied to secondary stopes and an additional factor of 4% applied to all stopes to account for backfill dilution.

December 31, 2023 Mineral Reserves include dilution equivalent linear overbreak slough (ELOS) of 0.45 m applied to secondary stopes and an additional factor of 4% applied to all stopes to account for backfill dilution.

9. December 31, 2024 Mineral Reserves include a mining recovery factor of 90% applied to stopes and 100% to development.
December 31, 2023 Mineral Reserves include a mining recovery factor of 95% applied to stopes in the newer part of the mine (Sur Oeste 2 and Sur), 90% to stopes in other areas, and 100% to development.

10. Numbers may not add due to rounding.

13.0 Mining Methods

13.1 Geotechnical Studies

Mine design was based, in the first instance, on a geotechnical study completed by SRK in 2022 that includes both the open pit and underground mining areas (SRK 2022b). A separate geotechnical study for the Fase 1 and 2 southern extensions to the El Brocal pit was subsequently completed by SLR (SLR 2024a), which supersedes the SRK open pit study work. This was completed to analyze and mitigate slope instability that has been experienced along the western footwall slope. A geotechnical study investigating the potential for pillar recovery in the underground mine has also been completed (SLR 2024b).

13.1.1 Open Pit Geotechnical Studies

SRK undertook a PFS level geotechnical assessment for the open pit and underground development of El Brocal (SRK 2022b). The geotechnical data was collected by Buenaventura and validated by SRK. A structural model was produced by Buenaventura for use in the geotechnical study. Groundwater was incorporated based on hydrogeological modelling developed by Amphos21 Consulting Perú SAC (Amphos21). Seismic loading was considered to account for potential earthquake events.

The geometry of individual benches was assessed using SBlock software (Estherhuizen 2004) that utilizes block theory to estimate the bench crest loss and loss of berm through the spill of failure material. Overall and inter-ramp slope stability was analyzed for sections cut through design slopes using RocScience Slide2 limit equilibrium analysis software calculating Factor of Safety (FoS) and Probability of Failure (PoF).

Inter-ramp slope heights were limited to a maximum of 60 m, with 12 m wide berms inserted to break up slopes higher than 60 m to comply with this requirement. In addition, 12 m wide berms are required at the base of the fill material, the base of the in-situ soil, and at the base of the upper limestone.

Instability along the western footwall slopes between 2022 and 2024 highlighted geotechnical risks associated with the geology, adverse bedding orientation, rock mass degradation, and high rainfall events. The primary mode of instability being planar sliding on low strength bedding planes in the Calera Media Favorable geological unit. Further consideration was required to account for the interaction with existing underground development and known areas of subsidence. As a result of the instability issues, an updated geotechnical study was subsequently completed by SLR (SLR 2024a).

Geomechanical and structural characterization was undertaken to develop rock mass and defect plane shear strength for stability analyses. Strengths were estimated through back analysis of previous footwall failures for the associated units. Properties used for stability analysis are presented in Table 13-1 for soil strength material and weak rocks, and Table 13-2 for moderate to strong rock. Rock with strong bedding, dipping out of the pit slope, are modelled using anisotropic strength incorporating the defect plane shear strength to characterize the weaker strength along bedding.

Table 13-1: Design Strength Parameters, Soil and Weak Rock Units (SLR 2024a)

Rock Mass Unit	Material Shear Strength		Defect Plane Strength		Comment
	Cohesion (kPa)	Friction Angle (°)	Cohesion (kPa)	Friction Angle (°)	
Fill	5	37	-	-	Rock fill
Quaternary Superficial	5	25	-	-	Precedent experience
Cal_Sup FW	15	25	5	25	Extremely to highly weathered. Almost entirely decomposed bedding planes (weathered seams)
Cal_Mid_Var FW	15	25	5	25	
Cal_Mid_Fav FW (Oxide)	40	30	15	26	Validated by back analyses
Cal_Mid_Fav FW (Secondary)	40	30	15	26	
Note. For Rock Mass Unit nomenclature, see subsection 11.3.1.					

Table 13-2: Design Strength Parameters, Moderate and Strong Rock Units (SLR 2024a)

Rock Mass Unit	Rock Mass Shear Strength								Defect Plane Shear Strength	
	SIGCI (MPa)	Mi	GSI	Unit Weight (kN/m³)	D	Hoek-Brown Constants				
						mb	s	a	phi' (°)	c' (kPa)
Cal_Sup HW	15.0	16	37	23.5	0.7	0.515	0.00012	0.513	32	8.5
Cal_Mid_Var HW	15.0	22	49	24.5	0.7	1.325	0.00060	0.506	32	8.5
Cal_Mid_Fav FW	15.0	18	36	24.5	0.7	0.538	0.00010	0.515	26	15
Cal_Mid_Fav FW (Mineralized)	15.0	18	36	25.5	0.7	0.538	0.00010	0.515	26	15
Cal_Mid_Fav HW	30.1	18	58	24.5	0.7	1.829	0.00240	0.503	32	8.5
Cal_Mid_Fav HW (Mineralized)	30.1	18	58	25.5	0.7	1.829	0.00240	0.503	32	8.5
Cal_Inf	15.0	24	56	25.5	0.7	2.136	0.00169	0.504	32	8.5
Conglomerado Transicional	15.0	16	53	25.5	0.7	1.219	0.00112	0.505	32	8.5
Conglomerado Shuco	15.0	16	52	23.5	0.7	1.164	0.00100	0.505	32	8.5

Rock Mass Unit	Rock Mass Shear Strength								Defect Plane Shear Strength	
	SIGCI (MPa)	Mi	GSI	Unit Weight (kN/m³)	D	Hoek-Brown Constants				
						mb	s	a	phi' (°)	c' (kPa)
Note. For Rock Mass Unit nomenclature, see subsection 11.3.1.										

Stability analysis included kinematic analysis at the bench scale and 2D limit equilibrium analysis at the inter-ramp and overall slope scale.

2D limit equilibrium analysis was completed with Rocscience Slide2 software utilizing the GLE/Morgenstern-Price method of slices. Sensitivity analysis was undertaken on the material strength parameters.

A study of the seismic risk for the Project was provided (ZER 2019), which states the Peak Ground Acceleration (PGA) for a 1 in 100-year event to be 0.158 g. The seismic coefficient used for stability analysis was taken as half the PGA (after Hynes-Griffen and Franklin 1984, Pyke 2001, and Read and Stacey, 2009), i.e. 0.08g.

Groundwater was incorporated as a regional phreatic surface and, for the footwall and end wall, a perched water table resulting from high rainfall events is applied to near slope materials; 5 m below the bench slope toes. For the footwall and end wall, a sensitivity analysis for fully saturated near surface materials was undertaken (with the phreatic surface at the bench toes); the minimum FoS result was 1.0. For the hanging wall, a sensitivity analysis was undertaken using the phreatic surface supplied by Buenaventura in 2024 (i.e., no further drainage of the hanging wall during mining), also targeting a minimum FoS of 1.0.

For the end wall design, underground mine development and stoping has been aligned in a north-south direction, and open stopes are present in the analysis section. Sections of the end wall slope with minimal underground workings (through pillars) are immediately adjacent to sections with large voids. Given this lateral variation, initial stability analysis indicated that sections with filled voids (rock fill or cemented fill) returned higher FoS than those through the Calera Media Vavardes (without workings). As such, the subsequent analysis approach is based on sections through pillars in the knowledge that adjacent areas with filled workings will provide increased stability on a 3D basis.

Stability analysis found that the preliminary slope designs provided by SMEB did not meet design acceptance criteria in the footwall (west wall) and end walls (south walls). Slopes were flattened and re-analyzed in these areas in an iterative process targeting the design acceptance criteria. Conversely, some steepening of hanging wall (east wall) slopes was found to be possible.

Slope design parameters resulting from geotechnical analysis are defined by slope design sectors (structural division) and geotechnical domain (rock mass unit). Slope design parameters are presented in Table 13-3.

The pit design process is constrained using:

- Slope design solids (wireframe solids) representing the slope design sectors as presented in Figure 13-1.
- Structural geology wireframes, representing the geotechnical domains (rock mass unit boundaries). Note: this includes mineralization boundaries.

The following is also noted:

- The base of mineralization may constrain the pit design rather than geotechnical considerations.
- Geotechnical berms (or ramps) should be used to limit inter-ramp heights to 60 m or less.

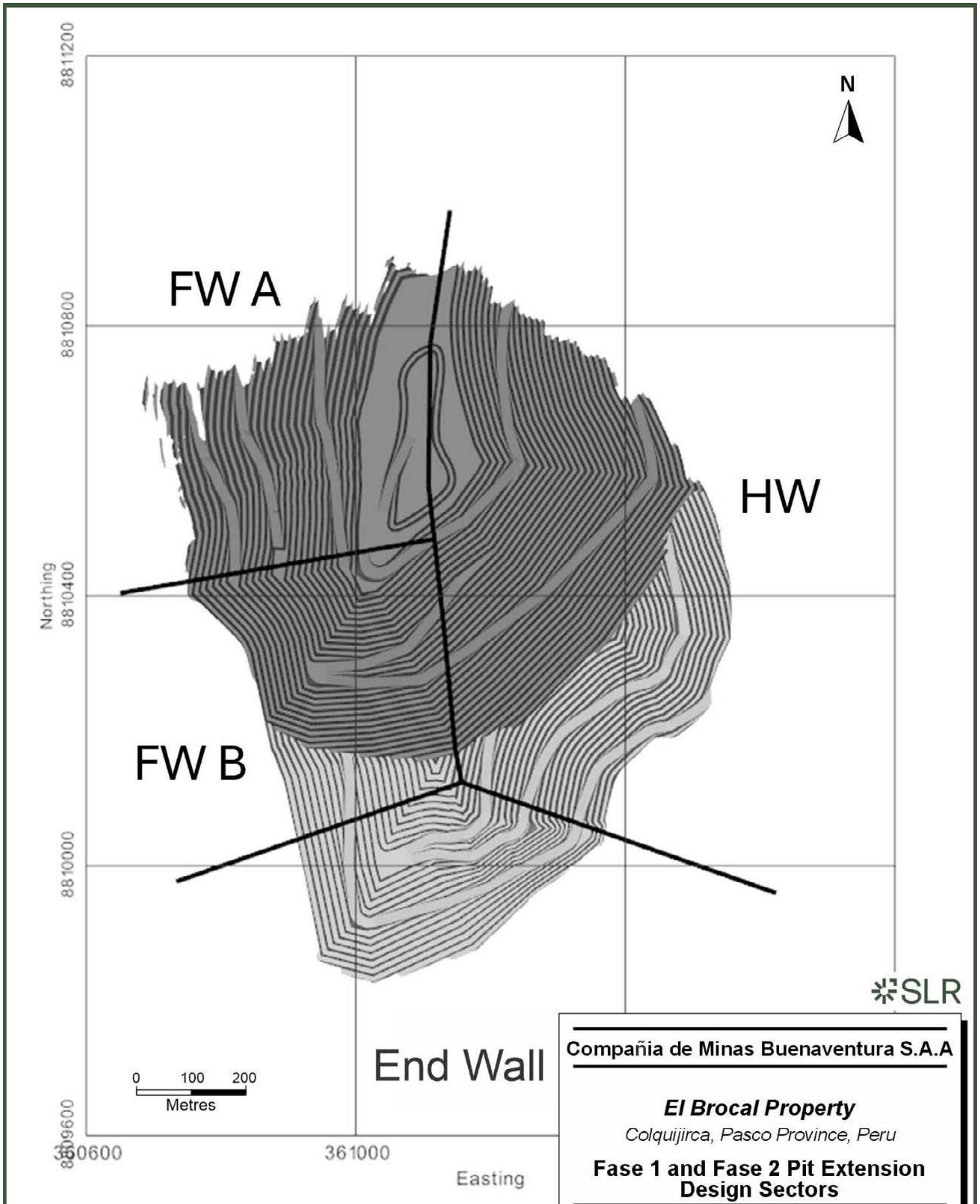
Table 13-3: Recommended Slope Design Parameters (SLR 2024a)

Design Sector	Soil / Rock Unit	Slope Direction	Recommended Design						
			Bench Face Angle (°)	Bench Face Height (m)	Bench Width (m)	Inter-ramp Angle (toe to toe, °)	Geotechnical Berm Width (m)	Overall Slope Angle (°)	Comment
All	Fill, QA	ALL	40	6	3.5	29.4	15.0	Not to exceed 29°	Short-term design option - not suitable for closure of stockpile/dump
HW	ALL	30 to 330	65	6	4.75	38.5	15.0	Not to exceed 34°	Single bench option
	ALL	30 to 330	55	12	6.7	38.5	15.0		Double bench option.
	CS, CMV	330 to 030 (North +/- 30°)	45	6	13.6	17.0	25.0	Not to exceed 17° in material	Relevant to South Wall of interim pit design
	CMF, CI, CT		45	6	9.6	21.0	15.0	Not to exceed 21°	
FW A	CS, CMV	ALL	45	6	13.6	17.0	25.0	Not to exceed 17° in material	
	CMF, CI, CT	ALL	45	6	8.5	22.5	15.0	Not to exceed 21°	
FW B	CS, CMV	ALL	45	6	13.6	17.0	25.0	Not to exceed 17° in material	
	CMF, CI, CT	30 to 330	45	6	11.4	19.0	15.0	Not to exceed 18°	
		330 to 030 (North +/- 30°)	45	6	9.6	21.0	15.0	Not to exceed 21°	Relevant to South Wall of interim pit design
End Wall	CS, CMV	ALL	45	6	13.6	17.0	25.0	Not to exceed 17° in material	
	CMF, CI, CT	ALL	45	6	9.6	21.0	15.0	Not to exceed 21°	

Notes:

1. 12 m high batters only to be applied where bedding is demonstrated to be favourable.
2. Stated values are maximums, except for bench width and geotechnical berm width, which are minimums.
3. For Soil/Rock Unit nomenclature, see subsection 11.3.1.
4. The slope direction specifies the slope direction/facing direction to which the design applies. A slope direction of 330° to 030° is for a wall facing within North 30° of North.

Figure 13-1: Fase 1 and Fase 2 Pit Extension Design Sectors



Source: SLR 2024a .

Other design considerations that should be taken into account include:

- The recommended slope design parameters assume slope depressurization via seepage from the pit face (unless specified otherwise), and the vertical pit development rate is sufficiently slow as to allow steady-state conditions to be achieved.
- Pro-active and effective surface water management has been assumed.
- Slope design transitions to occur within the more aggressive parameter sector (i.e., stronger rock mass). Bench width and bench face angle changes should transition over the shortest possible distance utilizing corners in the design.
- Bench widths specified are minimums. Wider berms may be used to reduce overall slope angle should the mineralization boundary constrain the design rather than geotechnical considerations.
- Iterative review of the pit designs generated from these recommendations is strongly recommended. Subsequent to iterative review, any design change should be assessed and confirmed by geotechnical assessment as part of an operational design approval process.
- Risk resulting from underground interaction and subsidence will need to be proactively managed. Analysis has assumed significant voids will be filled.
- Design should seek to avoid forming long term pit walls in areas of known subsidence.
- A comprehensive, integrated slope monitoring plan is recommended.

In the opinion of SLR, the slope design recommendations provided for the Fase 1 and Fase 2 pit extensions are suitable for incorporation into mine planning and design. Aspects where improvements can be made with the potential to result in slope design optimization as well as increased design confidence include:

- Diamond drilling and laboratory testing to:
    - Constrain the condition of Upper Calera and Medium Calera Favorable in the end wall design sector.
    - Collect high-quality (undisturbed) samples of soil and weak rock strength materials (Upper Calera, Medium Calera Varvada, and Oxide) in the deposit footwall.
    - Confirm the geotechnical conditions to the west of the existing rail line.
- Improved logging of joint condition parameters, including Jr and Ja by category, and explicit recording of Joint Roughness Coefficient (JRC, after Barton and Bandis 1982).
- Consideration of televiewer survey to provide accurate defect orientation data in the footwall and end wall domains.
- Development of a weathering profile for the proposed development area.
- Review of the structural fault model in the areas of the pit walls of the proposed design.
- Hydrological studies to determine design case for 1 in 100-year rainfall events.
- Slope scale hydrogeological study to determine the pore pressure response to design and 1 in 100-year rainfall events. This should provide pore pressure grids for incorporation in stability analysis models.
- Consider updating the seismic study.

- 3D Finite Element stability analysis to include the influence of underground development on slope stability. Stopes filled with cemented fill have the potential to allow optimization of slopes within Calera Media Favorable in the end wall design sector.

13.1.2 Underground Geotechnical Studies

The basis for underground geotechnical mine design is derived from the geotechnical PFS study completed by SRK (SRK 2022b). Design considerations are summarized as follows:

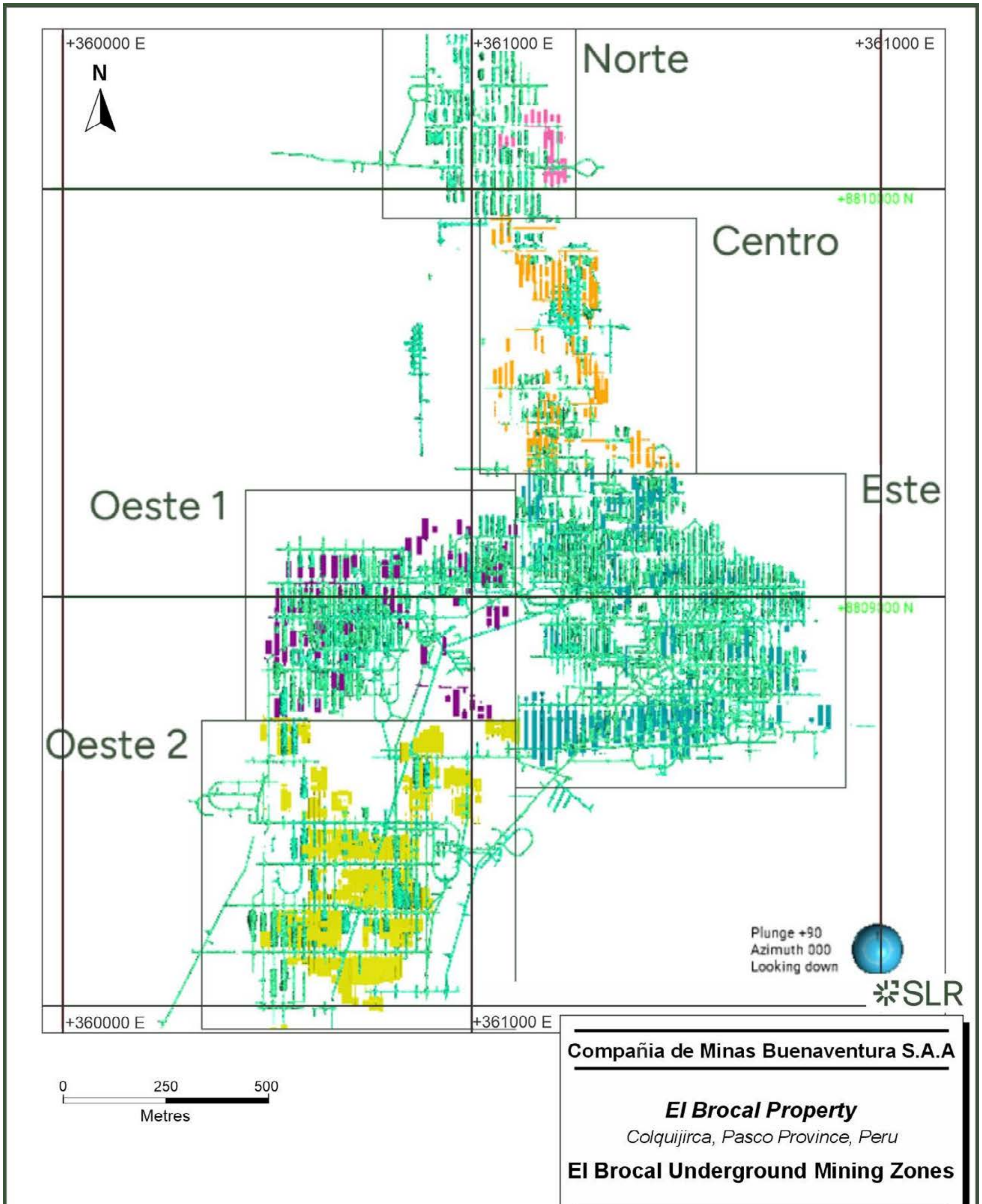
- The underground mine design was evaluated using boundary element numerical modelling, employing Map3D to identify the magnitudes of induced stress around the current excavations. This was complemented with empirical methods for the sizing of faces and ground support.
- The stability of the rib pillars was considered adequate, presenting acceptable stability factors acceptable when the rock quality is fair to good.
- The empirical graphical stability method accounts for the geomechanical characteristics, structural conditions, geometry of the faces, and magnitudes of induced stress. These were calibrated with the current ground behaviour with respect to mining.

The analytical method by Mitchell et al. (1982) was used by SRK to estimate the required strength of backfill for the primary pillars to allow the recovery of secondary pillars based upon a Factor of Safety (FoS) of at least 1.5. Modifications to the SRK design have been developed inhouse by the BNV geotechnical team to allow for different combinations of stope width and height. The dimensions currently used for mine design are presented in Table 13-4 for the mining zones presented in Figure 13-2.

Table 13-4: El Brocal Stope Dimensions (Source Buenaventura, 2024)

Zone	Height, m	Stope Width, m	Pillar Width, m	Length, m
Norte	25	8	6	80
Centro	24	8	6	80
Este	25	10	6	80
Oeste 1	25	14	13	80
Oeste 2	25	16	9	80

Figure 13-2: El Brocal Underground Mining Zones (SLR, 2024b)



Source: SLR 2024b.

An underground geotechnical study has been completed by SLR to confirm the technical criterion for pillar recovery (SLR 2024b) as described below.

A review of the rock mass strength parameters was completed for the underground mine using data provided by Buenaventura. The updated rock mass properties used in numerical analysis are summarized in Table 13-5.

Table 13-5: Mohr-Coulomb Design Strength Parameters (SLR, 2024b)

Mining Zone	Rock Unit	Depth (m)	σ0 (MPa)	σ3max (MPa)	Φ (°)	C (kPa)
Norte	Calera Media Favorable	128	4.16	0.29	63.9	370
Centro	Calera Media Favorable	89	2.89	0.12	67.5	300
Este	Shuco Conglomerate	431	14.01	1.41	59.4	1.28
Oeste 1	Shuco Conglomerate	307	9.98	0.68	63.3	1.01
Oeste 2	Transitional Conglomerate	410	13.33	1.33	56.3	1.33
Oeste 2	Conglomerado Shuco	433	14.07	1.43	59.4	1.28

The average in-situ stress was estimated for each of the mining zones using overburden stress multiplied by a factor of 1.25, estimated from an assessment of in-situ stress conditions reported by MatGeo (2024).

Backfill strength has been estimated using the results of laboratory testing completed by WSP Peru S.A. (WSP 2023 and 2024). This involved the testing of 30 different mix designs from which Buenaventura has selected two paste designs and three cemented hydraulic fill designs suitable for use at El Brocal, presented in Table 13-6. Paste fill is planned to be used in the Este, Oeste 1, and Oeste 2 mining zones; cemented hydraulic fill is planned to be used in the Norte and Centro mining zones. The suitability of the selected backfill was confirmed by SLR using the analytical method by Mitchell et al. (1982) and FLAC3D modelling.

Table 13-6: Cemented Backfill Strength Testing (WSP 2024)

Design	Mix	Comments	Unit Weight (kN/m^3)	Strength (MPa) after No. days curing				
				7	14	28	59	90
D19	Tailings 96%, Cement Andean Type I 4%, Slump 7“*	Preferred Paste fill	24.04	0.76	1.15	1.92	2.3	2.89
D21	Tailings 96%, Cement Andean FORTE 4%, Slump 7"	Alternative for paste fill	24.02	0.7	0.98	1.34	1.89	2.3
D24	Tailings 92%, Cement Andean Type I 8%, Arenas (CS 60%)*	Preferred Cemented hydraulic fill	18.95	0.19	0.24	0.3	0.47	0.48

Design	Mix	Comments	Unit Weight (kN/m^3)	Strength (MPa) after No. days curing				
				7	14	28	59	90
D26	Tailings 92%, Cement Andean FORTE 8%, Arenas (CS 60%)	Alternative cemented hydraulic fill	20.31	0.16	0.21	0.37	0.48	0.5
D30	Tailings 90%, Cement Andean FORTE 10%, Arenas (CS 60%)	Alternative cemented hydraulic fill	20.60	0.2	0.33	0.46	0.78	0.77

A stability assessment of the backfill and pillar recovery process has been completed using Itasca FLAC3D 7.0 finite volume software. The program simulates the behaviour of 3D structures built of soil, rock, or other materials that exhibit path-dependent elasto-plastic behaviour.

Materials are represented by polyhedral elements within a 3D grid that is adjusted by the user to fit the shape of the object to be modelled. Each element behaves according to a prescribed linear or nonlinear stress/strain law in response to applied forces or boundary restraints. The material can yield and flow, and the grid can deform (in large-strain mode) and move with the material that is represented.

Modelling has considered each of the steps required to recover the pillars as follows:

1. Mining of primary stopes
2. Backfill of primary stopes with cemented hydraulic or paste fill
3. Excavation of first secondary stope
4. Backfill of first secondary stope
5. Excavation of adjacent secondary stope
6. Backfill of adjacent secondary stope
7. Excavation and backfill of remaining secondary stopes in turn

Where stopes have been excavated in two sub-levels the modelled sequence is as follows:

1. Mining of primary stopes
2. Backfill of primary stopes with detrital fill
3. Cleaning detrital fill from primary stopes
4. Backfill primary stopes with cemented hydraulic or paste fill
5. Excavation and backfill of lower secondary stope sub-levels in turn
6. Excavation and backfill of upper stope sub-levels in turn

During the process of running FLAC3D analysis, SLR noted that the extent of plasticity around the stopes in the models was unusually large, despite feedback from Buenaventura mining and geotechnical staff that this was not noted from observations in the mine. The issue of extensive plasticity in the model is still a concern to SLR; however, to complete the analysis, SLR has assessed stability according to other indicators as follows:

- Extent and migration of plastic damage
- Maximum principal strain
- Maximum displacement

SLR has taken this approach, recognizing that plasticity in the rock mass adjacent to the excavation could be tolerated with thresholds provided by FLAC3D analysis of primary stopes prior to pillar extraction.

SLR has assessed secondary stoping for the cases containing the highest percentage of preliminary reserves. The aim is to understand the potential maximum number of pillars that can be recovered for each mining zone and lithology. The results for one level are presented in Table 13-7.

The results indicate that between three and five adjacent secondary stopes/pillars can be recovered depending on rock unit and depth of stopes. The number of recoverable pillars in the Calera Media Favorable in Zona Centro is limited to three. While the modelled strain damage and displacement is low, the extent of plastic failure above the roof is extensive on account of the weakness of the rock and low confinement (shallow stope depth), which is likely to prevent the extraction of additional secondary stopes. The number of recoverable pillars in the Shuco Conglomerate in Zona Oeste 1 is also limited to three due to plastic damage extent in the roof.

Table 13-7: FLAC3D Assessment Results, Single Level (no air gap at top of fill)

Zone	Unit	Average Depth (m)	No. Primary Stopes	No. Secondary Stopes	Plastic Damage Extent (m)	Maximum Damage Strain (%)	Displacement (m)
North	CMF	128	6	5	9	< 1	0.075
Centro	CMF	89	4	3	8	0	0.000
Este	CSh	431	6	5	8	3	0.175
Oeste 1	CSh	307	4	3	10	2	0.100
Oeste 2	CT	410	5	4	8	2	0.150
Oeste 2	CSh	433	5	4	8	3	0.175
Note. For Unit nomenclature, see subsection 11.3.1.							

In the case where an air gap is left between the top of the fill and roof of the stope, the FLAC3D model calculation iterations fail to converge after recovery of the second pillar. This results from the overlying rock mass collapsing into the air gap, although it is recognized that the rock mass that will dilate during this process will likely restrict the extent of damage above the stoped area. Due to the challenges of tightly packing the backfill to the stope roof, the SLR QP recommends limiting the number of recoverable secondary stopes to three in all mining zones and rock units.

Further analysis has been completed for two mining levels, with results presented in Table 13-8. Firstly, analysis has been completed on the same number of recovered pillars reported for a single level, to allow a direct comparison. Secondly, analysis has been completed for three adjacent stopes, the maximum recommended from FLAC3D analysis of backfill with an air gap.

The results indicate an increased extent of plasticity which can be related to the increased depth of backfill which has a lower elastic modulus than the surrounding rock mass. The extent of plasticity exceeds the SLR guidance of between 8 m and 12 m, although both maximum damage strain and displacement is within the guidance. The SLR QP reiterates the recommendation to initially limit the maximum number of adjacent pillars to be recovered to three because of this. Monitoring of the rock mass response to pillar recovery would be required prior to mining additional secondary stopes up to a maximum total of four adjacent secondaries, the results of which can be used in future geotechnical studies to explore the opportunity to recover additional pillars.

Table 13-8: FLAC3D Assessment Results, Two Levels

Zone	Unit	Average Depth (m)	No. Primary Stopes	No. Secondary Stopes	Plastic Damage Extent (m)	Maximum Damage Strain (%)	Displacement (m)
North	CMF	128	6	5	18	< 1	0.100
			4	3	12	< 1	0.050
Centro	CMF	89	4	3	14	0	0.050
Este	CSh	431	6	5	13	3	0.175
			4	3	13	4	0.100
Oeste 1	CSh	307	4	3	13	2	0.100
Oeste 2	CT	410	5	4	14	3	0.150
			4	3	13	3	0.125
Oeste 2	CSh	433	5	4	13	4	0.175
			4	3	13	4	0.150
Note. For Unit nomenclature, see subsection 11.3.1.							

A FLAC3D analysis of the proposed backfill sequence for a single stope has been completed for two cases, the Calera Media Favorable in the Norte zone and Shuco Conglomerate in the Oeste 2 zone, both for a single level, to check the stability of the paste wall. The proposed sequence for recovery and backfilling primary pillars is described as follows:

1 Clean out primary stope.
2 Backfill primary stope.
3 Excavate 40 m panel of rock pillar.
4 Backfill the 40 m void left by mining of rock pillar.
5 Excavate the remaining 40 m panel of rock pillar.
6 Backfill the remaining 40 m of rock pillar.

Critical steps in the sequence relevant to the stability of the backfill wall are steps 3 and 5, where 40 m lengths of backfill wall are exposed. Modelling results are presented in Table 13-9.

Table 13-9: FLAC3D Analysis Results for Cemented Backfilling of Stopes

Zone	Unit	Average Depth (m)	Max. Backfill Wall Length (m)	Backfill Type	Plastic Damage Extent (m)	Max. Damage Strain (%)	Displacement (m)	Factor of Safety (Steps 3 & 5)
Norte	CMF	128	40 m	Cemented Hydraulic	6	< 1	< 0.025	1.7
Oeste 2	CSh	433	40 m	Paste	8	< 1	0.050	3.1
Note. For Unit nomenclature, see subsection 11.3.1								

Based on the results of the pillar recovery study, the SLR QP makes the following conclusions:

- The results indicate that between three and five secondary stopes can be recovered if the backfill is placed tight to the roof of the stope. The SLR QP, however, recommends a maximum recovery of three adjacent pillars to allow for roof damage above potential air gaps between the top of the backfill and the stope roof.
- The opening left after recovering a pillar must be backfilled prior to mining adjacent pillars.
- For multi-level stopes, the sequence of recovery for the pillar is to: mine the lower level first, then backfill prior to mining the level above. All levels must be backfilled prior to mining the adjacent pillar.

In the opinion of the SLR QP, the recommendations of the pillar recovery study can be used for mine design and Mineral Reserve estimation. There is some uncertainty, however, concerning the plasticity observed in the FLAC3D models that may be related to the rock mass strength. A thorough review of historical geotechnical data and onsite validation by a geotechnical specialist should be completed to confirm the rock mass strength parameters. This can then feed into an updated underground geotechnical study.

13.2 Open Pit Mining

13.2.1 Mine Planning Block Model

The block model employed for open pit Mineral Reserves has a regularized cell size measuring 4 m x 4 m x 6 m, deemed suitable for the mining operations . This block size is considered appropriate for the mining cycle at El Brocal. For external dilution an average dilution of 2% was calculated with each block's dilution varying depending on how many sides of the ore blocks are exposed to waste blocks in the XY plane. External edge dilution estimate is based on an analysis of the waste blocks in contact with ore blocks, assuming 0.2 m dilution skin.

The MineSight routine "gndiln.dat" (GNDLN) was utilized to calculate the number of dilution edges, i.e., waste block contacts with an ore block on a bench-by-bench basis. The maximum number of waste contacts for an ore block on a particular bench can be four.

Overall mining losses are estimated at 2%, which includes allowances for misdirected truckloads, and occasional losses where excessive dilution during excavation reduces the mining grade below the cut-off grade. The SLR QP recommends that the estimation of Mineral

Reserves should involve a more thorough evaluation of appropriate dilution factors along with reconciliation with the grade control models and monthly reporting.

13.2.2 Pit Optimization

Pit optimizations were carried out using the MSEP Module and its Lerchs-Grossmann (LG) 3D algorithm. The pit optimization algorithm is used to produce pit shells that are physical representations of the optimal pit to be mined, assuming a given set of parameters and 3D block model. Using a variety of input parameters such as mining costs, processing costs, weight recovery values and pit slopes, the algorithm outputs the pit shell that maximizes the undiscounted value. No capital expenses are considered by the pit optimization tool.

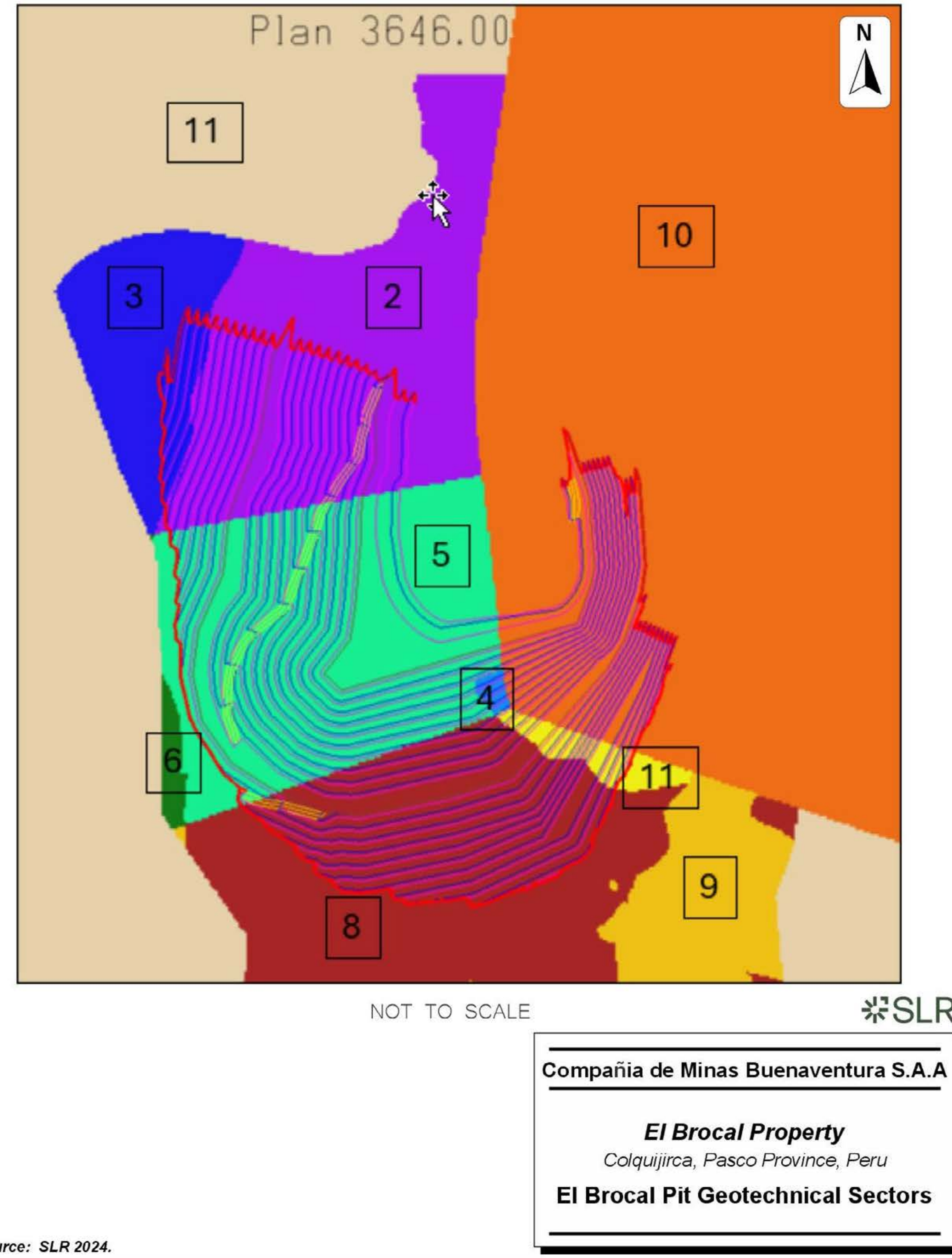
The mining model used in MSEP is a diluted version of the original resource model outlined in Section 11. This diluted model is generated following the procedure described in Section 13.2.1 and incorporates both mining dilution and mining extraction factors. An NSR block value, factoring in metal prices, selling costs, royalties and process recoveries, is calculated and stored for each block in the mining model, based on ore type.

Pit overall slope angles (OSA) used in pit optimization are shown in Table 13-10. The various geotechnical sectors are illustrated in Figure 13-3.

Table 13-10: Overall Pit Slope Angles by Geotechnical Sector

Sector	1	2	3	4	5	6	7	8	9	10	11
OSA (degree)	17	21	29	17	18	29	17	21	29	34	29

Figure 13-3: El Brocal Pit Geotechnical Sectors



Source: SLR 2024.

SLR reviewed the input parameters used in MSEP for the optimization, which included mining cost, processing costs by ore type, G&A cost, offsite cost, sustaining capital cost, and overall pit slope angles by geotechnical sectors. Mining costs were incrementally adjusted at lower elevations to account for increasing haulage costs at greater pit depths.

Due to the polymetallic characteristic of the deposit, the approach used to determine the marginal economic cut-off value was to calculate an NSR cut-off value. The marginal NSR cut-off calculation yields a cut-off value of $29.71/t for copper ore and $32.28/t for lead-zinc ore, which comprises the sum of processing costs, G&A costs, extra ore mining cost versus waste mining cost, sustaining capital costs, and offsite costs as presented in Table 13-11.

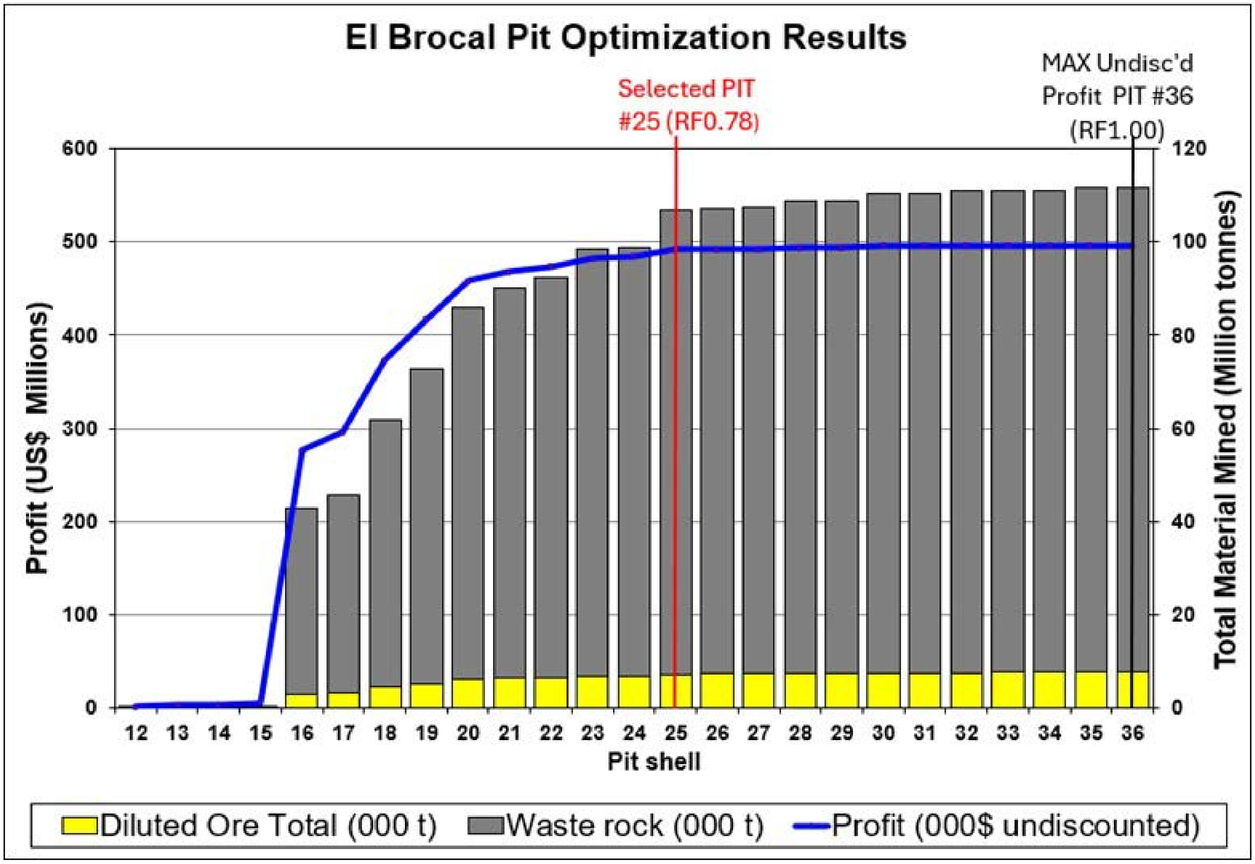
Table 13-11: Pit Optimization Parameters

Parameter	Unit	Value
Operating Costs		
Mining Cost at Reference Bench (4,276 m)	US$/t rock	1.64
Incremental Mining Cost (by bench)	US$/t	0.013
Processing Cost, Cu Ore	US$/t ore	16.91
Processing Cost, Pb-Zn Ore	US$/t ore	19.48
Processing Cost, Bulk Ore	US$/t ore	19.48
G&A Cost	US$/t ore	8.01
Offsite Cost (corporate)	US$/t ore	0.30
Sustaining Capital Cost	US$/t ore	3.26
Extra Mining Cost, Ore vs. Waste Rock	US$/t ore	1.24
NSR Cut-off Value (Total Processing Cost)		
Cu Ore	US$/t ore	29.71
Pb-Zn Ore	US$/t ore	32.28
Mine Design Parameters		
Dilution	%	0
Ore Loss	%	0
Overall Pit Slopes (variable by sectors)	degrees	17 - 34

A series of pit optimizations were conducted using a range of net revenue factors (which represent reduction factors applied to the selling price minus costs), varying in 2% increments from 24% to 100%, to produce the industry standard pit-by-pit graph shown in Figure 13-4. Potential mill feed tonnage within each shell was calculated using a constant NSR cut-off value of $29.71/t for copper ore and $32.28/t for lead-zinc ore. The revenue factor measures the sensitivity of the pit optimizations to changes in mineral selling prices and evaluates the impact of the pit size and stripping ratios on the undiscounted pit value.

The results of these pit optimizations were then compared based on the calculated undiscounted pit value, as well as the tonnage of ore and waste material. From these comparisons, a final LG pit shell with a revenue factor (RF) of 0.78, which meets project requirements, was selected. The ultimate economic pit limit is chosen where further increases in pit size did not significantly enhance the pit-delineated resource, thus offering limited potential for further economic gains. The SLR QP notes selecting a pit shell smaller than the RF=1 pit shell, in this case RF=0.78 ($1482/oz Au pit shell) provides contingency in the event the gold price decreases.

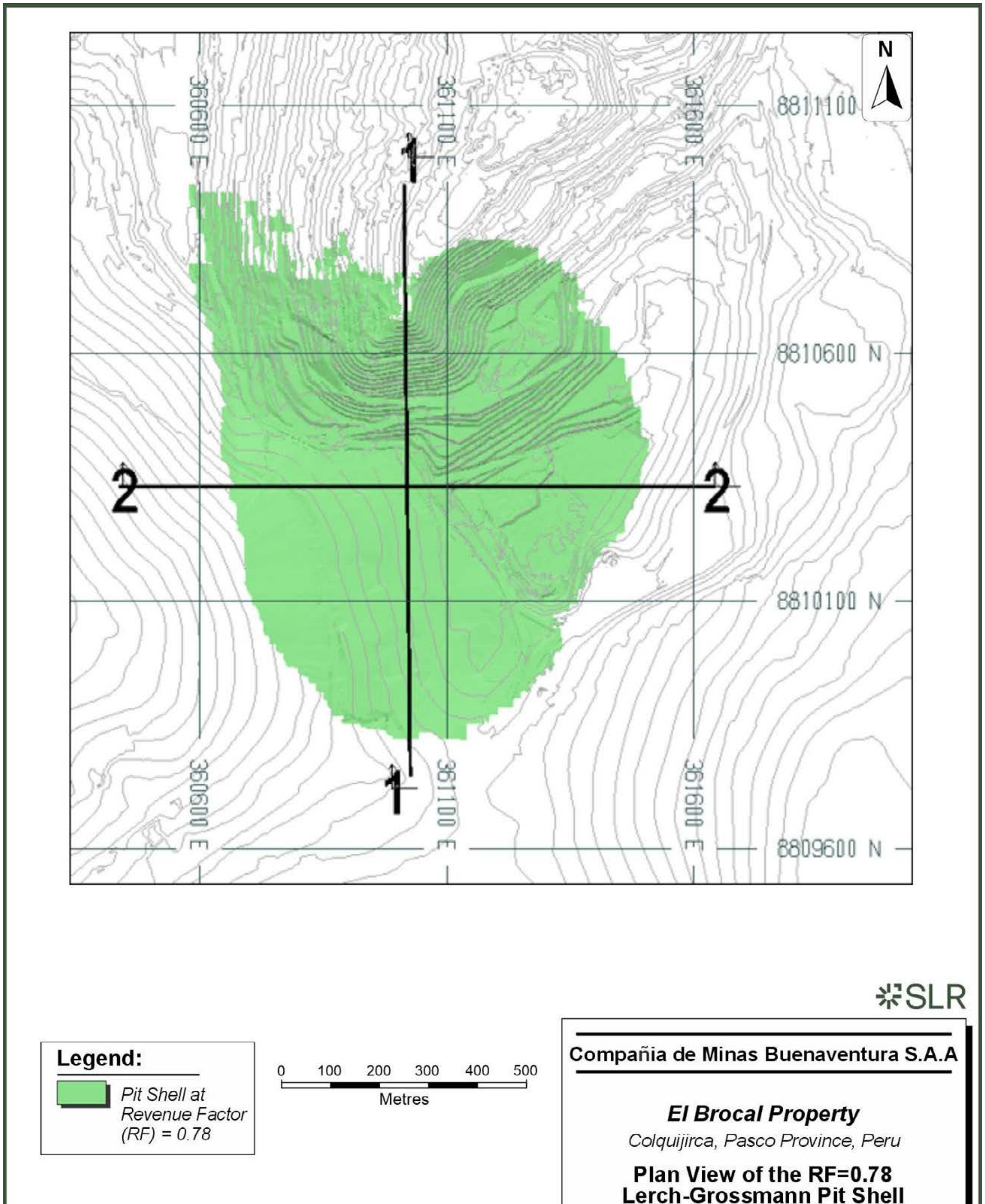
Figure 13-4: Ore Envelope Dilution Methodology



The RF 0.78 LG pit shell is selected to guide the ultimate pit design. It should be noted that the RF 78% LG pit shell will still generate positive cash flow at metal prices lower than the base case ($1,900/oz Au). Selecting a shell with RF less than 100% (RF=1) ensures that incremental pit shells produce positive cash flows at metal prices lower than the base case prices.

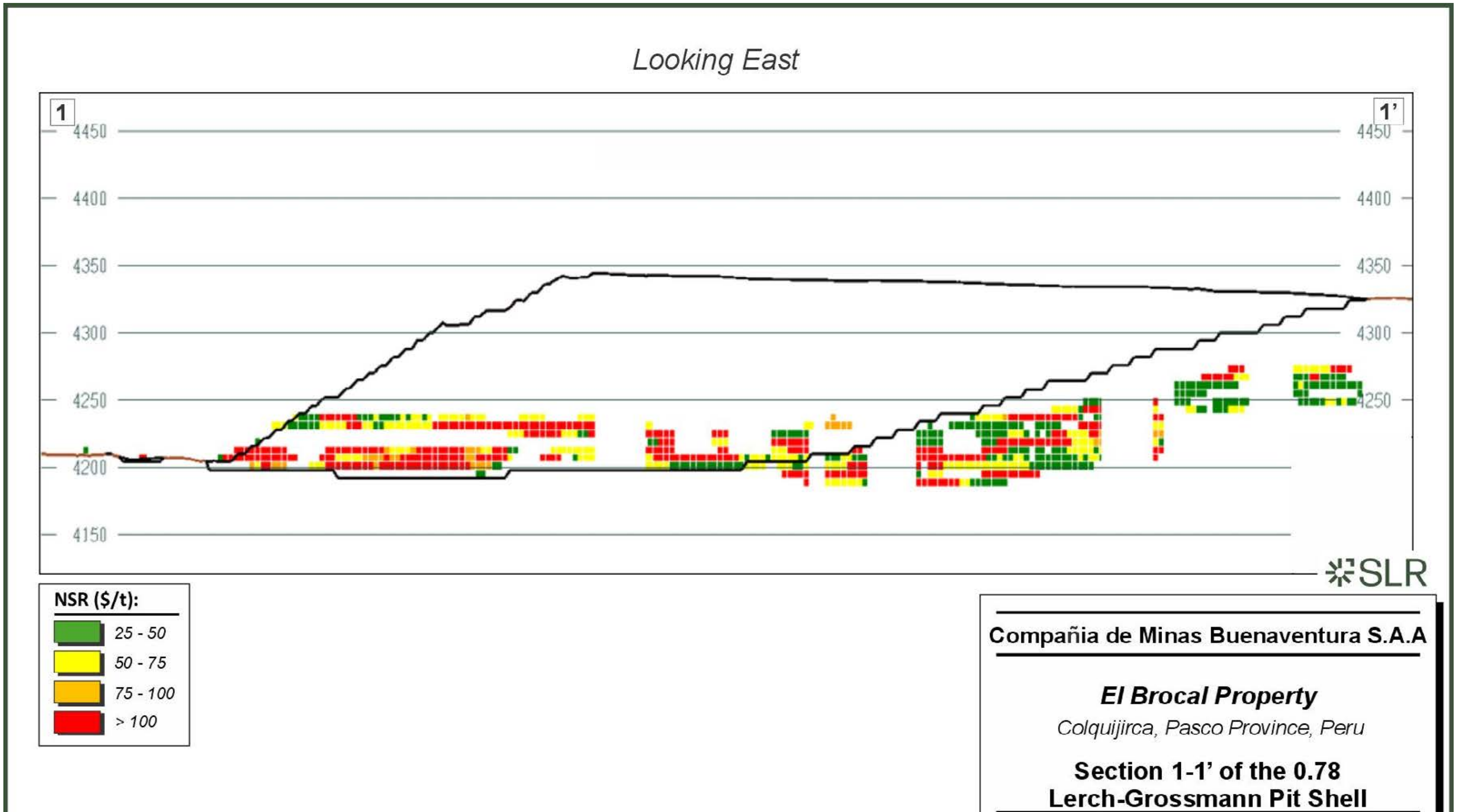
Figure 13-5 illustrates the plan view of the selected RF 0.78 LG pit shell, while Figure 13-6 and Figure 13-7 present sectional views. Only the Measured and Indicated blocks are shown, along with their respective NSR values, which are above the NSR cutoff of $29.71/t.

Figure 13-5: Plan View of the RF=0.78 Lerch-Grossmann Pit Shell



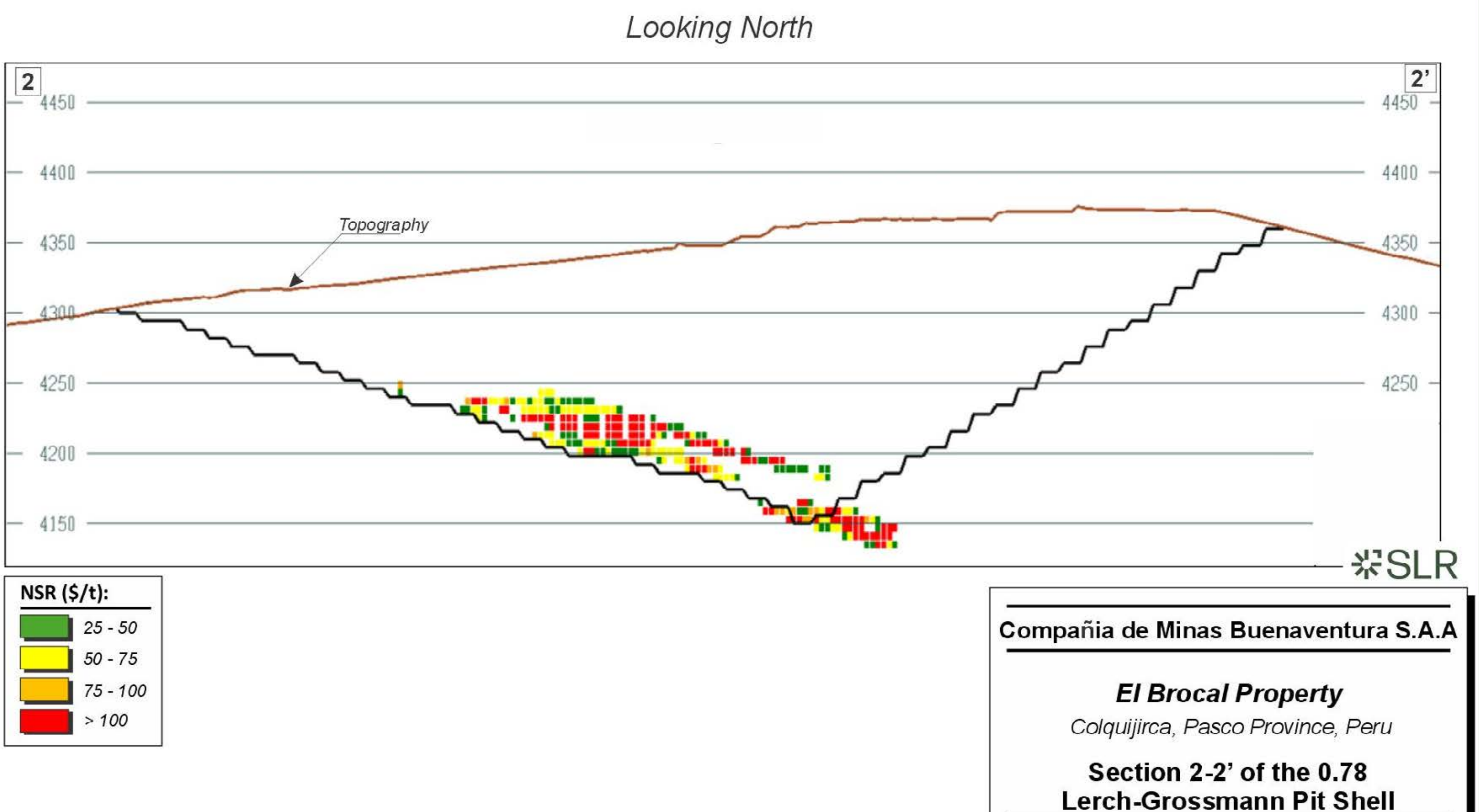
Source: SLR 2024.

Figure 13-6: Section 1-1 of the 0.78 Lerch-Grossmann Pit Shell



Source: SLR 2024.

Figure 13-7: Section 2-2 of the 0.78 Lerch-Grossmann Pit Shell



Source: SLR 2024.

13.2.3 Mine Design

The detailed pit design was developed based on the selected LG pit shell. Pit design parameters were established in accordance with the geotechnical slope recommendations outlined in Section 13.1 and consider the use of current equipment for the conventional surface mining operation, including 5.6 m³ hydraulic excavators and 25 m³ capacity trucks for hauling. Ore material is hauled by truck from the pit to the crushing facility located on the west side of the pit, while waste material is hauled to the designated waste dump location.

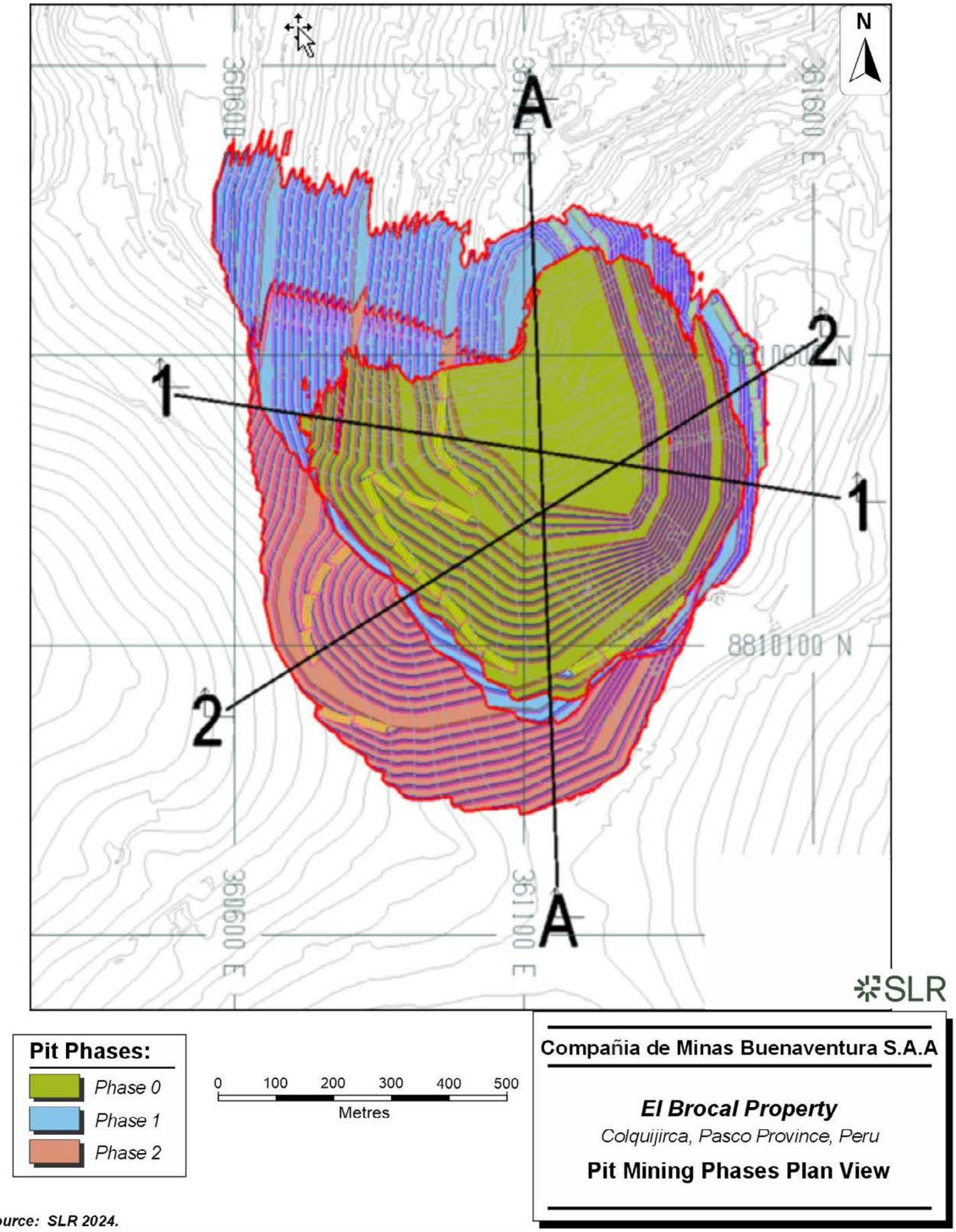
The open pit has the following geotechnical mine design parameters:

- Bench height: 6 m,
- Berm width: variable between 8.5 m and 13.6 m depending on design sector,
- Bench face angle: 45° to 65° depending on design sector,
- Ramp width: considering equipment width, safety distances, and safety berm, the open pit have ramp widths of 12 m with a 10% slope.

Minimum loading width considering the excavator and the minimum spaces to carry out operational activities is 20 m. However, one excavator is expected to work with two trucks. As such, the estimated width can be up to 60 m.

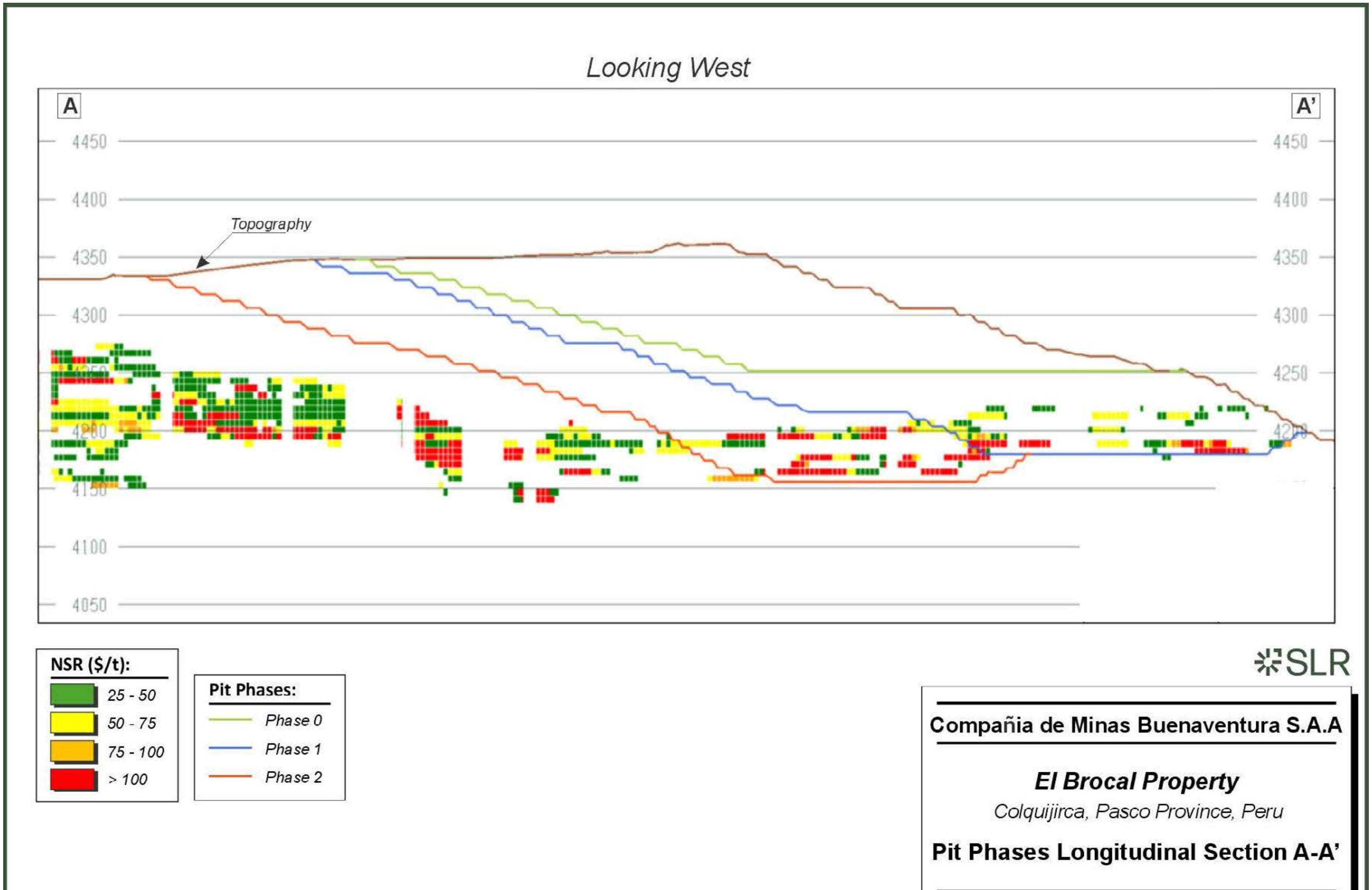
A total of three phase pits were identified for El Brocal deposit. Figure 13-8 illustrates the mining phases of El Brocal deposit in plan view. A longitudinal section A-A′ and cross sections 1-1′ and 2-2 through the three pit phases, showing the Measured and Indicated Mineral Resource blocks above an NSR cut-off grade of $29.71/t, are illustrated in Figure 13-9, Figure 13-10, and Figure 13-11, respectively.

Figure 13-8: Pit Mining Phases Plan View



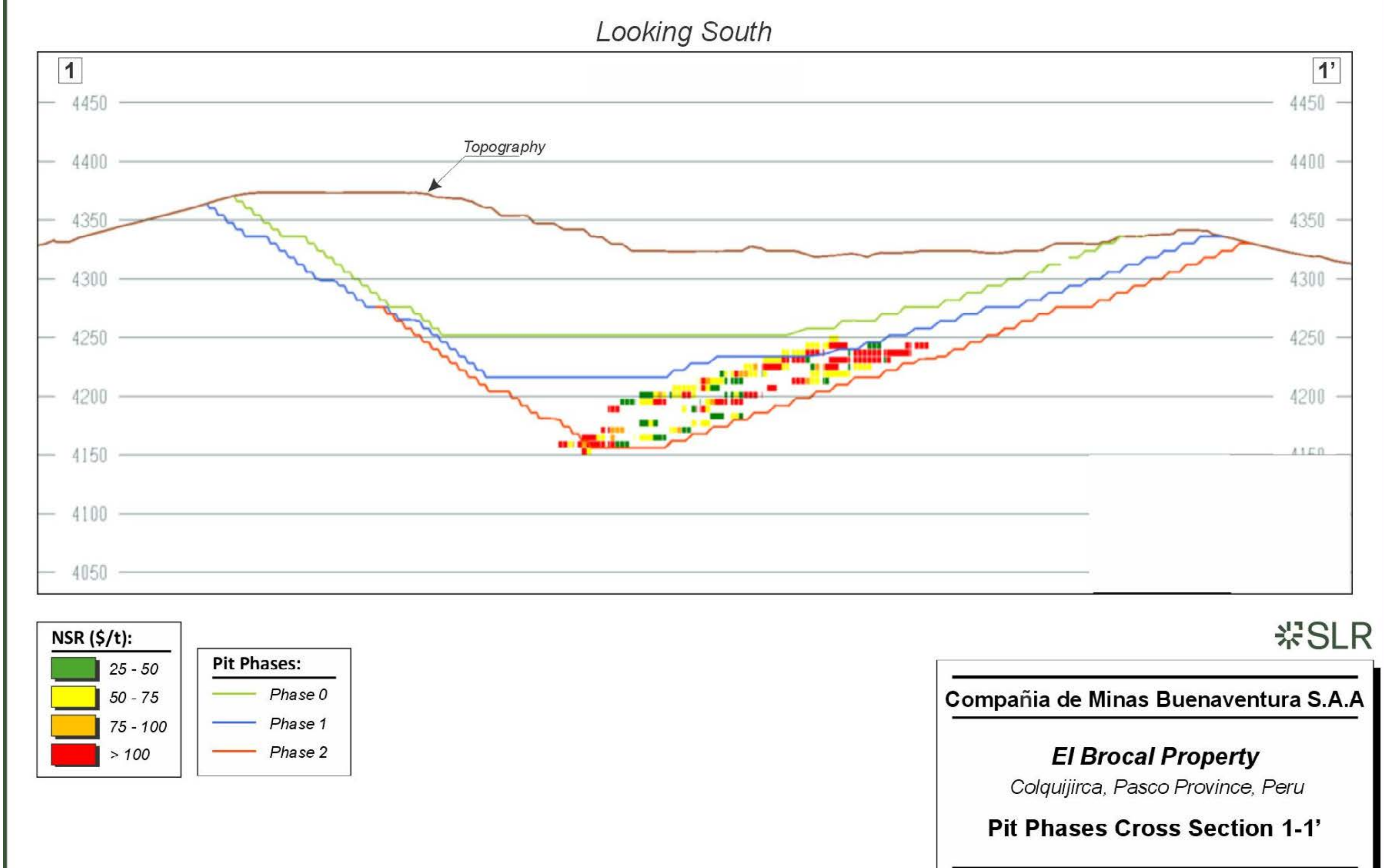
Source: SLR 2024.

Figure 13-9: Pit Phases Longitudinal Section A – A



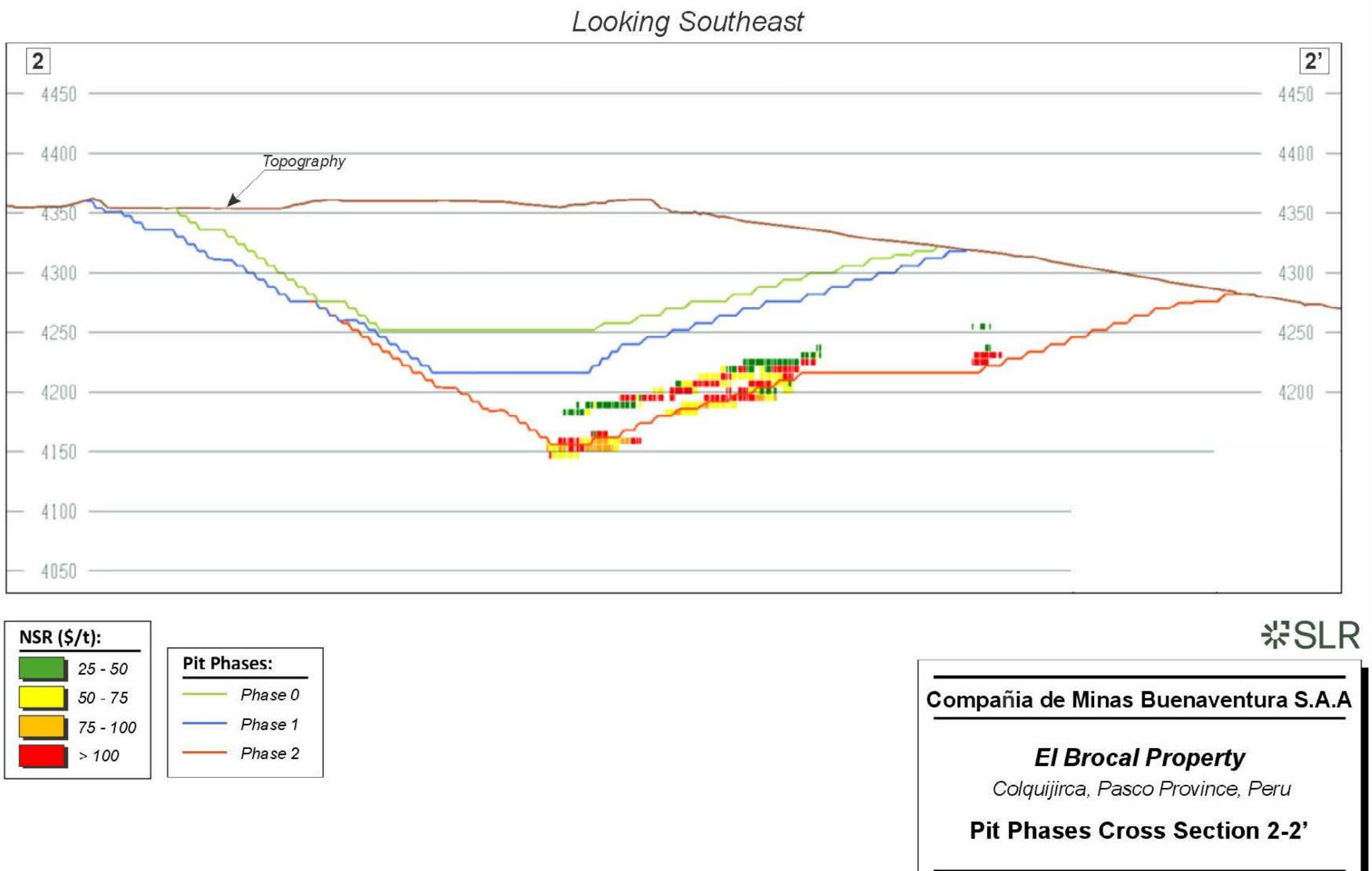
Source: SLR 2024.

Figure 13-10: Pit Phases Cross Section 1 – 1



Source: SLR 2024.

Figure 13-11: Pit Phases Cross Section 2 – 2



Source: SLR 2024.

13.2.4 Pit Mining Quantities

The El Brocal open pit ultimate pit design contains an estimated 6.7 Mt of ROM ore with an average grade of 1.70% Cu, 1.33% Zn, 0.70% Pb, 75.87 g/t Ag, and 0.02 g/t Au, and a strip ratio of 16.3 to 1 (wt:wo). ROM ore quantities and crusher feed estimates include only material categorized as Measured and Indicated Mineral Resources. Inferred Resources are excluded from the Mineral Reserve and are reported within the waste quantities.

ROM ore quantities are based on a cut-off grade of $29.71/t for copper ore and $32.28/t for lead-zinc ore as detailed in Section 12.1.4, and include allowances for mining dilution and mining loss. Individual pit phase quantities are summarized in Table 13-12.

Table 13-12: Open Pit Mining Quantities

Pit Phase	ROM Ore (000t)	Grade							Strip Ratio	Total Mined (000 t)
		Pb (%)	Zn (%)	Cu (%)	Ag (g/t)	Au (g/t)	As (%)	Fe (%)		
Phase 0	1	0.57	3.02	0.06	42.19	0.00	0.02	13.87	N/A	38,577
Phase 1	2,339	1.19	2.47	1.61	94.75	0.01	0.18	11.44	12.3	30,994
Phase 2	4,362	0.44	0.71	1.75	65.75	0.03	0.33	12.48	9.7	46,602
Grand Total	**6,702**	**0.70**	**1.33**	**1.70**	**75.87**	**0.02**	**0.28**	**12.11**	**16.3**	**116,173**

The total tonnage of ROM ore contained within the pit designs is similar to that within the selected optimum pit shell RF 0.78 utilized to guide the ultimate pit design. Approximately 4% difference in ROM tonnage and 8% in total tonnage, can be attributed to the allowance for the ramps used in the pit optimization versus the more accurate inclusion of ramps in the pit design as well as variation in dilution factors.

13.2.5 Waste Dump

The current open pit mine design generates 109.5 Mt of waste material. The current waste dump is completed and will not be able to accommodate any additional waste rock. Therefore, pit backfill is the only option for the waste rock that will be mined.

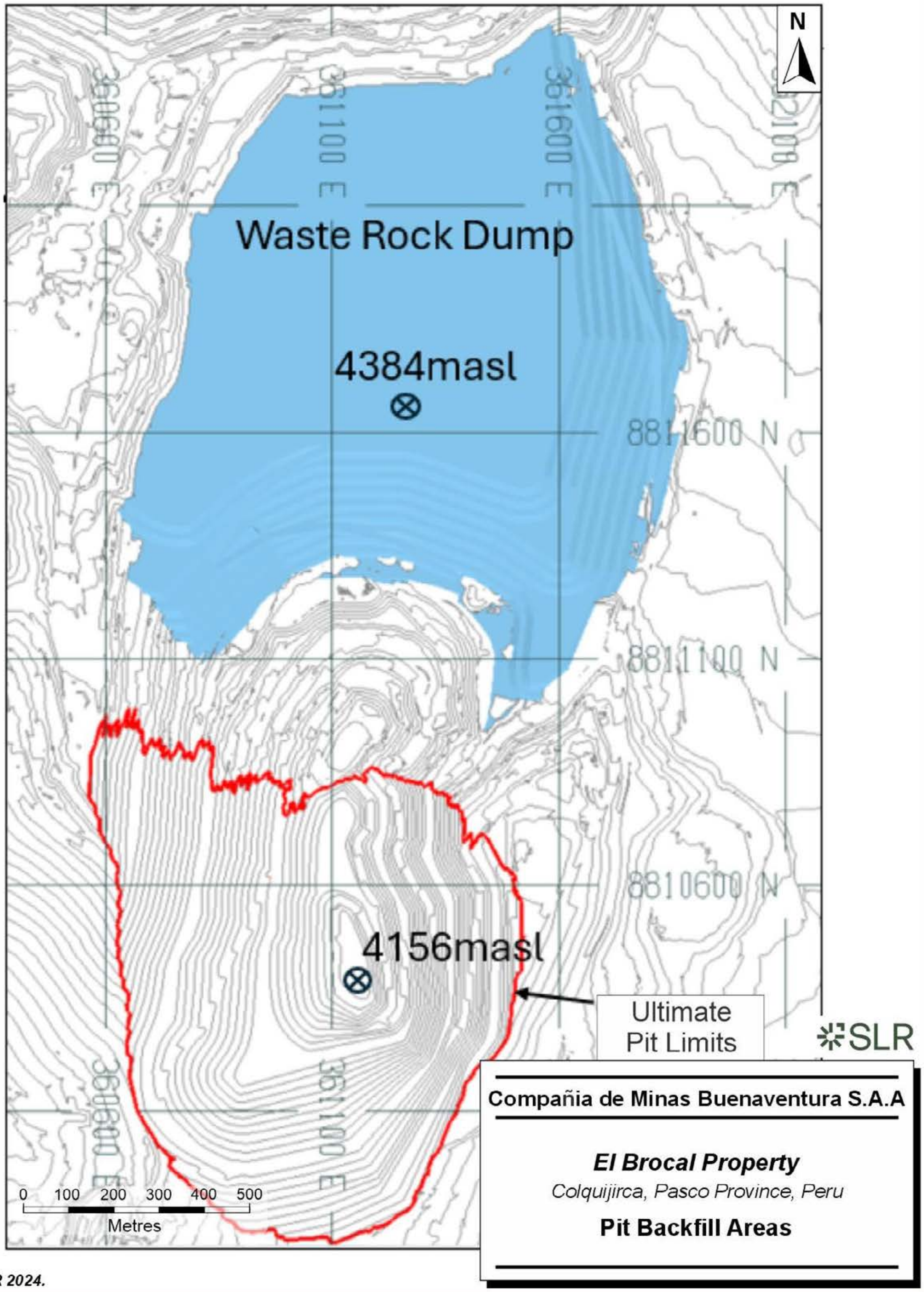
The adjacent mined out pit will be backfilled, receiving all of waste rock from the new pit. The new pit mining and backfill sequence must be well coordinated to ensure the safety of the operation. Sequence timing is essential for efficient operation by determining the shortest haulage distance from the mining bench to the backfill bench elevation.

The total designed backfill capacity is sufficient to contain the entire waste rock volume to be mined from the El Brocal pit, based on an estimated rock density of 2.44 t/m^3 and a swell factor of 30%.

To ensure safe operation of the backfill, dumping will not be allowed in proximity of the active mining areas. Where necessary, a safety zone will be established at the base of the waste dump, signifying the maximum limit of potential rock run-out. These zones will not be entered during operations of the waste dump. Safe dumping procedures will be developed and utilized during mining operation.

The waste dump design is comprised of 12 m high benches with 36° batter slopes and a berm width of 13.2 m. Geometry establishes an overall slope of 22°. Figure 13-12 illustrates the open pit backfill area relative to the new pit ultimate limits.

Figure 13-12: Pit Backfill Areas



Source: SLR 2024.

13.2.6 Open Pit Life of Mine Production Schedule

The mining production schedule outlines a seven year open pit mine life, from 2035 to 2041, complementing the underground production. This includes two years of pre-stripping, followed by five years of mill feed supply.

Total annual material movement is in the range from 7.8 Mt to 24.6 Mt with the maximum achieved in Year 2 (2036) and Year 3 (2037). Total material movement for the LOM open pit is 116 Mt with an average stripping ratio of 16.3. Total ore production for both Pb-Zn and Cu ores for the LOM is estimated at 6.7 Mt containing 35 kt Pb, 72 kt Zn, 105 kt Cu, 16,348 koz Ag, and 3.6 koz Au metal. Contained metal assumes no recovery for lead and zinc in the copper concentrate and no recovery of copper and gold in the lead-zinc concentrate. The production schedule is summarized in Table 13-13 and Figure 13-13 and Figure 13-14. The production schedule refers to the 100% ownership basis of Mineral Reserves.

The maximum pit sinking rate is projected to be 20 consecutive benches in phase 2 for the year 2037, which is considered high by industry standards. In the SLR QP's opinion, these bench advance rates are high and requires ongoing management to achieve the planned production. However, since 15 of the 20 benches either do not contain ore or have ore content less than 1% of total bench tonnage, these benches could be considered waste benches and could be drilled at 12 m bench heights. This approach would enhance productivity and the bench advance rate. To achieve this advance rate, the appropriate drilling /loading /hauling equipment must be available.

The accelerated pit development planned for Year 2 and Year 3 (2036 and 2037) will demand close supervision and co-ordination of mining activities. The higher mining rate during these years will necessitate additional equipment and manpower, leading to increased mining costs.

Mining operations in the open pit have been delayed until 2025 while awaiting permitting. While mining can potentially commence in 2025 with permitting, the LOM is currently planned between 2035 (Year 1) and 2041 (Year 7).

Table 13-13: Open Pit LOM Quantity Estimates

Parameter	Unit	Total	2035	2036	2037	2038	2039	2040	2041
Copper Ore									
Ore Mined	kt	4,935			331	311	566	1,638	2,089
Cu grade	%	2.13			2.21	2.70	2.65	2.10	1.93
Ag grade	g/t	57.85			55.99	81.80	90.51	36.08	63.14
Au grade	g/t	0.02			0.01	0.01	0.01	0.03	0.03
As grade	%	0.36			0.13	0.21	0.47	0.42	0.35
Fe grade	%	11.75			9.34	11.14	10.31	12.79	11.81
Lead-Zinc Ore									
Ore Mined	kt	1,766			306	324	502	56	578
Pb grade	%	1.96			2.73	1.69	1.61	2.17	1.98
Zn grade	%	4.06			4.62	4.51	3.72	3.19	3.90
Ag grade	g/t	125.66			96.42	97.66	130.32	76.20	158.32

Parameter	Unit	Total	2035	2036	2037	2038	2039	2040	2041
Fe grade	%	13.12			9.52	12.42	14.83	11.65	14.08
Cu grade	%	0.50			0.97	0.54	0.44	0.53	0.27
Total Ore Mined	kt	6,702			637	635	1,069	1,694	2,667
Waste Mined	kt	109,471	11,607	24,554	23,817	16,799	16,298	11,240	5,156
Stripping Ratio	W:O	16.3	N/A	N/A	37.4	26.5	15.3	6.6	1.9
Grand Total	kt	116,173	11,607	24,554	24,454	17,434	17,366	12,935	7,822

Figure 13-13: El Brocal Open Pit LOM Production Schedule - ROM and Waste Rock

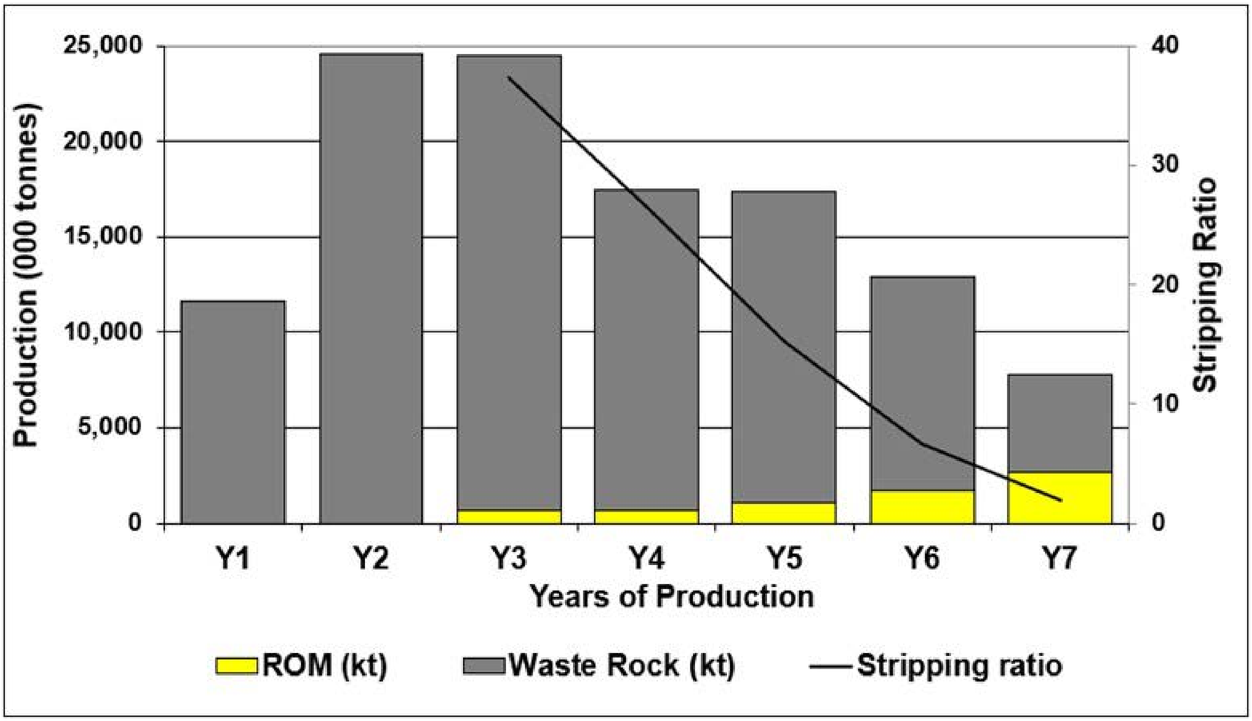
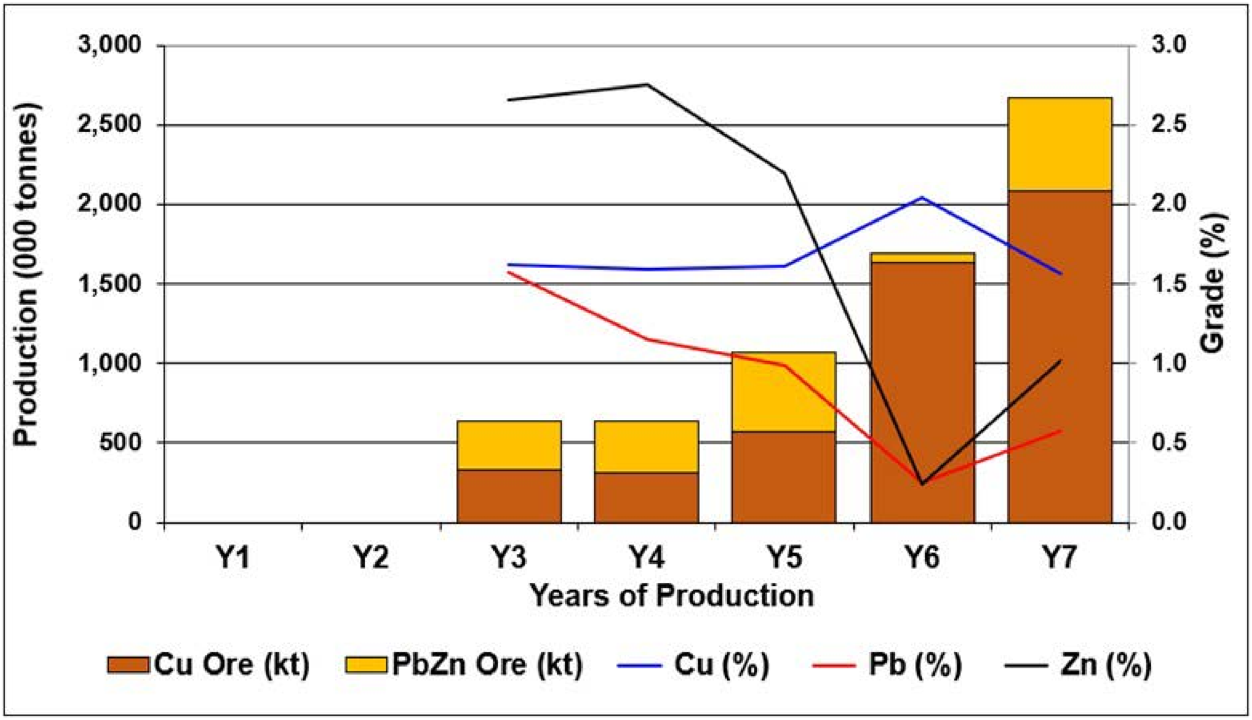
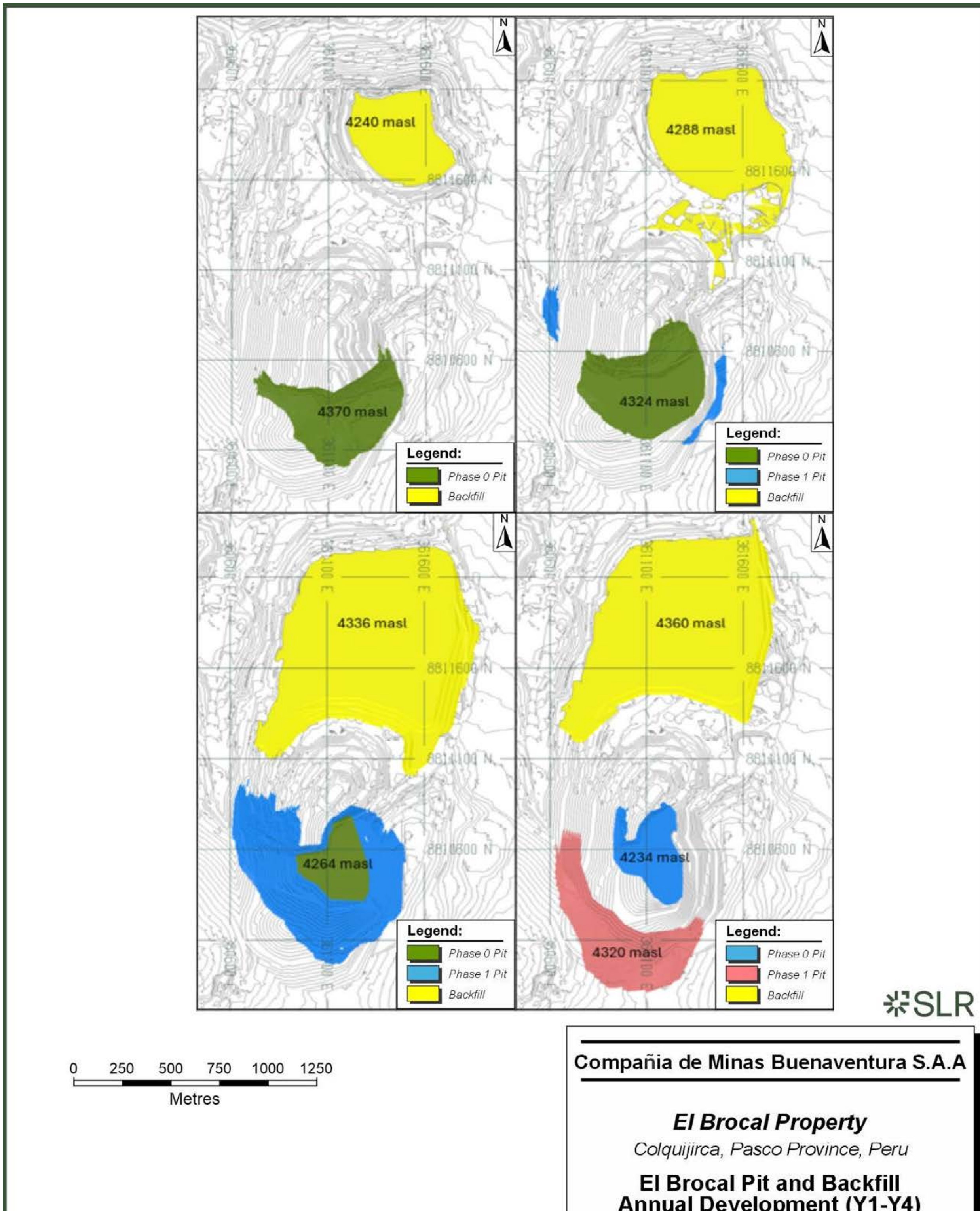


Figure 13-14: El Brocal Open Pit LOM Production Schedule – ROM by Ore Type



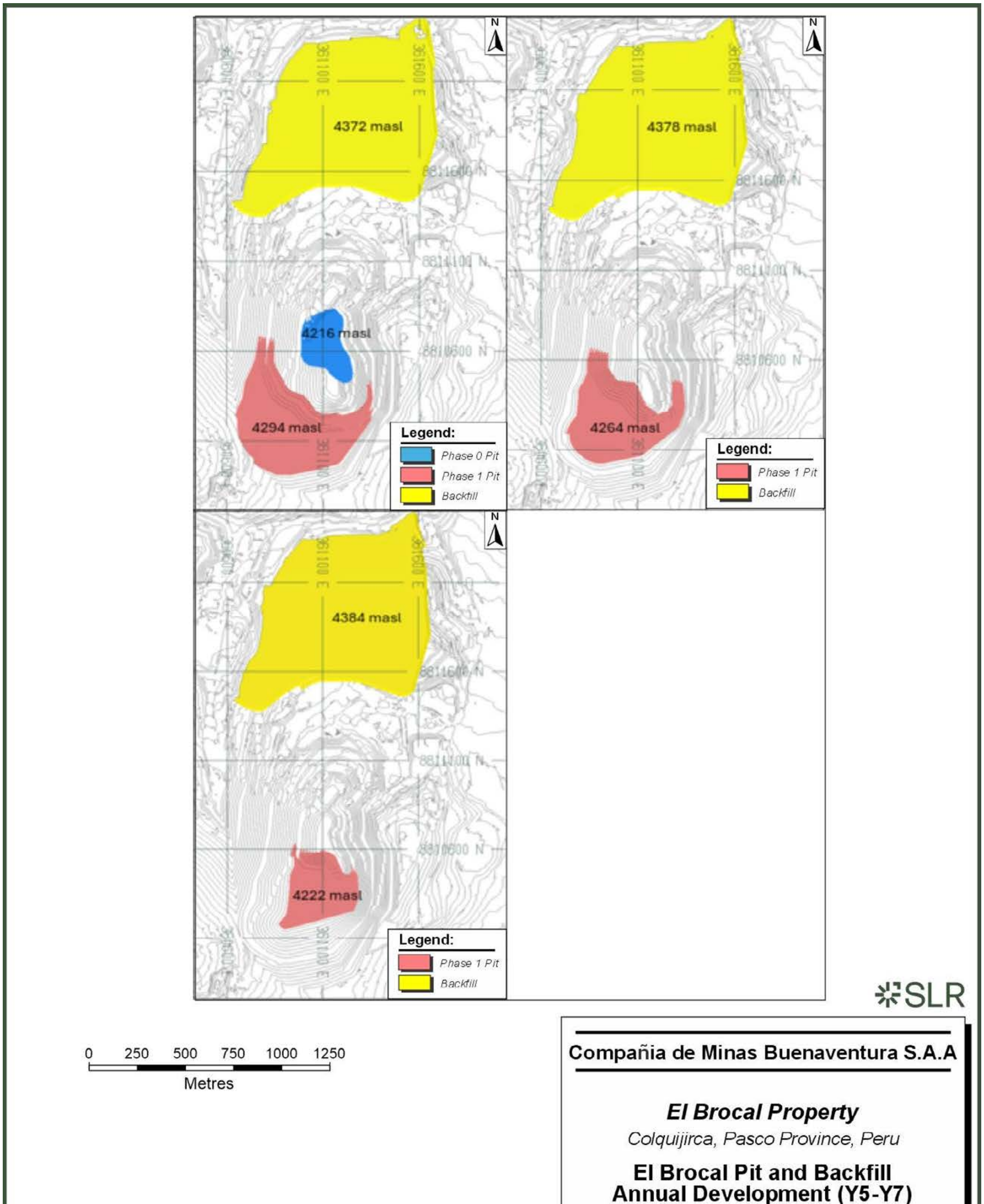
The development of phase pits and backfill throughout the LOM is depicted in Figure 13-15 and Figure 13-16 .

Figure 13-15: El Brocal Pit and Backfill Annual Development (Y1-Y4)



Source: SLR 2024.

Figure 13-16: El Brocal Pit and Backfill Annual Development (Y5-Y7)



Source: SLR 2024.

13.2.7 Mine Equipment

The open pit mining equipment is currently not in use due to the open pit ceasing production in October 2023. The open pit will commence production again in 2035. It is expected that during the restart, the current equipment on site listed in Table 13-14 or a fleet of similar size will be in use.

Table 13-14: Current Open Pit Equipment List (not in use currently until 2035)

Equipment	Capacity	Units
Production		
Production Drill		
Excavator	5.6 m^3	7
Excavator	4.6 m^3	2
Excavator	1.8 m^3	1
Dump Trucks	24.5 m^3	58
Dump Trucks	20.0 m^3	5
Excavator	5.6 m^3	7
Excavator	4.6 m^3	2
Ancillary		
Front End Loader	4 m^3	1
Water Tanker	5,000 Gallons	2
Fuel Tanker	5,000 Gallons	3
Backhoe	1 m^3	1
Motor Grader	3.7 m x 0.61 m	1
Motor Grader	4.2 m x 0.63 m	2
Lube Trucks		1
Crawler-mounted Rotary Drill Rig	5 - 9 inch	4
Compacting Roller	9.5 t	1
Tractor	10.0 m^3	4
Tractor	5.6 m^3	2

13.3 Underground Mining

13.3.1 Mining Methods

The El Brocal mine is a massive type polymetallic deposit consisting of Pb-Zn ore and Cu ore. The El Brocal underground mine, also known as the Marcapunta mine, is located in an area dominated by copper ore and all ore material mined from the mine is sent to the copper processing plant. The underground mine has been divided into five main zones: Norte, Centro, Sur Este, Sur Oeste, and Sur Oeste 2 and a newly defined smaller zone: Sur.

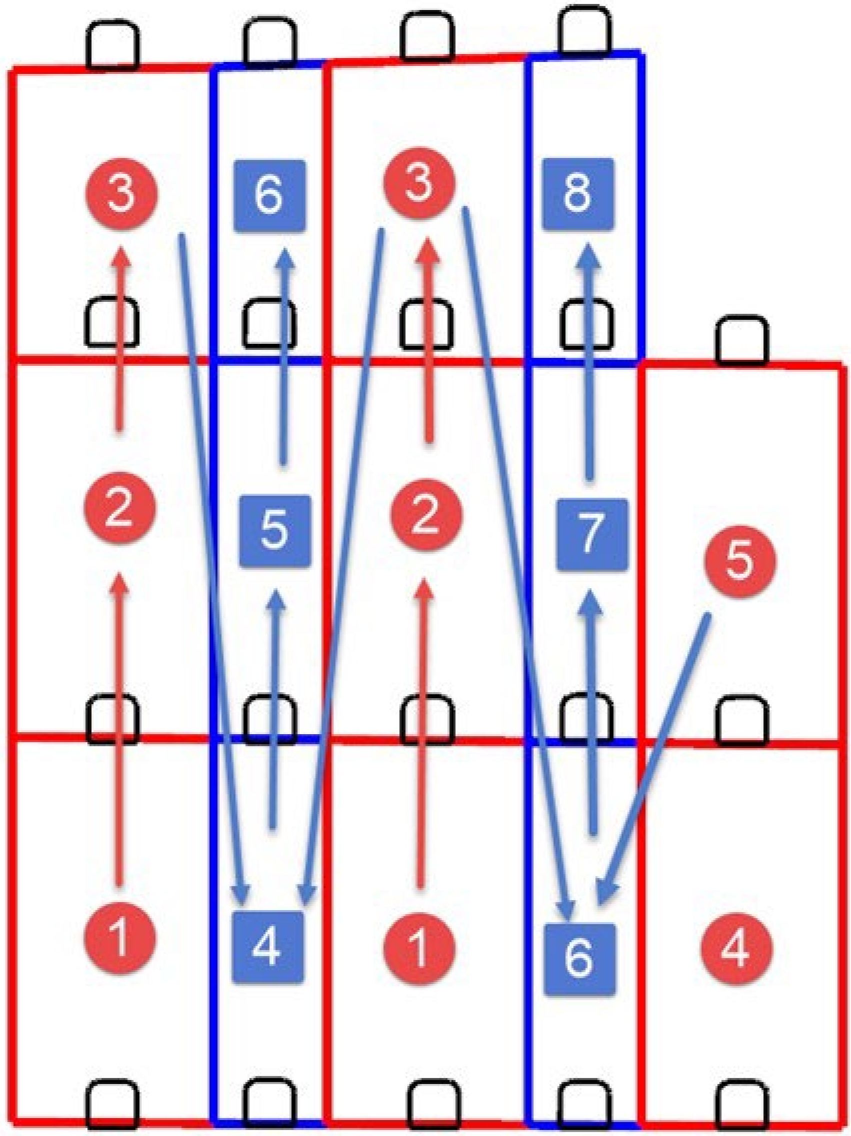
The underground mine is currently being mined using long hole sub-level open stoping mining method where stopes are accessed in a transverse manner from a sub-level drift and mined in retreat. Mined stopes are generally not backfilled, however, pillars are left between stopes for stability. Due to a major wall failure in the open pit and ongoing negotiations regarding the expansion of the tailings dam, Buenaventura has reviewed the underground deposit and, in an effort to recover more ore, is implementing cemented backfill procedures. Using cemented backfill will allow the extraction of pillars as secondary and tertiary stopes.

The mining sequence consists of mining primary stopes followed by secondary stopes and tertiary stopes. Primary stopes are mined first leaving secondary stopes as temporary pillars. After each primary stopes is mined, it is backfilled with cemented hydraulic fill or paste backfill and allowed to cure before any adjacent secondary or tertiary stopes are mined. Mining generally progresses bottom up and each level consists of three to four sub-levels. Figure 13-17 shows the general mining sequence between primary stopes and secondary stopes.

Stopes are accessed via crosscuts which are connected to a sub-level drift where ore is loaded onto trucks. Top and bottom crosscuts are driven to the extents of the targeted stope package. Stopes are mined starting from the end and progressing in retreat towards to the sub-level drift. Production drilling is undertaken from both the top and bottom accesses via a combination of downholes and uppers. Once mined out, the stope is backfilled using the top crosscut access.

Blasted ore material is mined from the bottom access using 10 tonne scoops and transported to a truck loading bay on the level access where it is loaded onto 30 tonne trucks. The ore is then hauled to a surface primary crusher and sent to one of the two processing plants via truck haulage or conveyor belts.

Figure 13-17: Stope Mining Sequence



13.3.2 Mine Design

The El Brocal underground mine has been in operation for several decades and the various zones have been extensively developed. The stope dimensions are generally constrained by existing development and mined out stopes. Stopes designs were completed using DSO. Optimizations were run separately for each zone and stope dimensions were applied to conform to existing development and stope layouts. The optimization tool was run on the entire extent of the resource model using Measured and Indicated Mineral Resources only.

The stope heights were designed to follow variable sub-level spacing for every zone. The sub-level spacing also accounts for a small gradient of approximately 3% which is applied for drainage. The marginal cut-off values presented in Table 12-12 were used to generate stope shapes. The dilution and mining recovery factors described in Table 12-9 were applied to calculated tonnes and grades of the resulting shapes. The shapes then underwent a first pass review to exclude stopes that cannot be realistically and economically accessed or mined, or located in areas with poor rock stability. A second pass review focusing on marginal stopes was undertaken to determine that they could be economically mined.

Development designs were carried out to connect stope shapes with existing development and include 4.5 m by 4.5 m access ramps and 4.0 m by 4.0 m lateral development. Table 13-15 shows the stope dimensions for each zone.

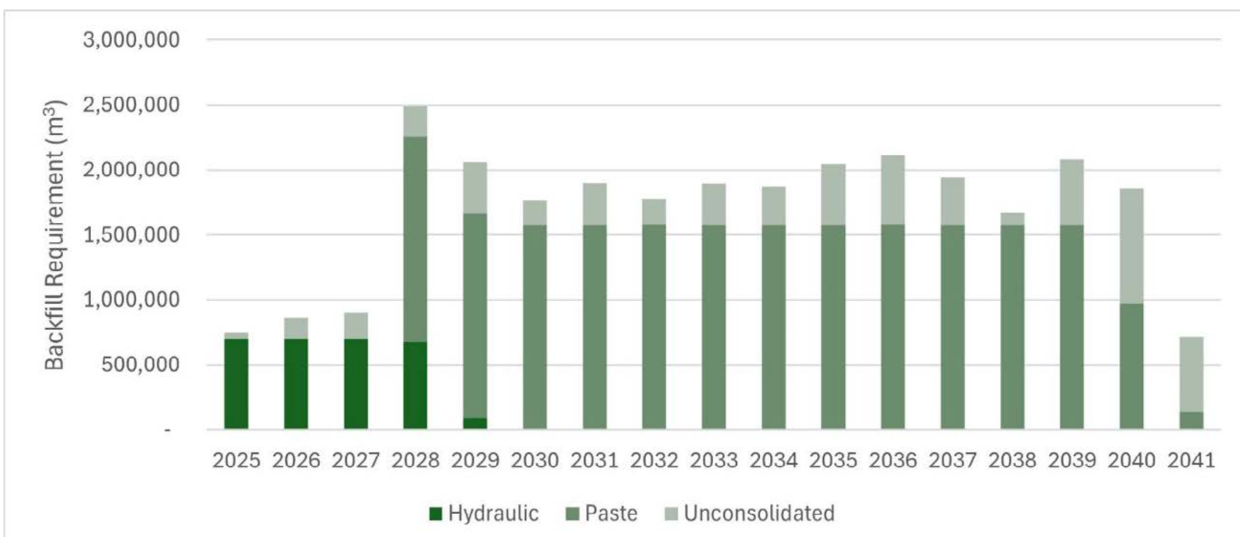
Table 13-15: Stope Dimensions by Zone

Zone	Stope Height	Primary Width	Secondary Width	Tertiary Width
	(m)	(m)	(m)	(m)
Norte	variable (max. 30)	8 to 14	6 to 9	10 to 20
Centro	variable (max. 30)	9	7	10 to 20
Sur Este	variable (max. 33)	9 to 12	6 to 8	10 to 20
Sur Oeste	variable (max. 30)	8 to 14	6 to 8	10 to 20
Sur Oeste 2	variable (max. 40)	16	9	10 to 20
Sur	variable (max. 40)	16	9	10 to 20

13.3.3 Backfill

The backfill requirements at the El Brocal over the LOM is shown in Figure 13-18. Currently, the backfill consists of cemented hydraulic fill and unconsolidated waste rock fill which will continue until 2028 when the paste fill plant becomes operational. The hydraulic fill will be phased out in 2028, however, the infrastructure will remain in place.

Figure 13-18: LOM Backfill Requirements



Backfill over the LOM will consist of 10% hydraulic, 70% paste, and 20% waste fill with an average of approximately 3.0 Mtpa planned.

A PFS was completed in 2024 by WSP Golder for the paste fill plant with a design capacity of 200 m³/h and a feasibility study is in progress. Paste fill will be created using the Cu circuit thickened tailings mixed with cement and then delivered to the underground zones via an eight-inch schedule 80 pipe in the main ramp access to the three mine areas underground. A 1,600 m line will be installed to reach the No. 2 zone, and two take-offs will include a 250 m line to the No. 3 zone and a 550 m line to the No. 1 zone. The paste fill will be delivered with a piston type paste pump operating at 100 bar (1,450 psi).

Paste fill is prepared using thickened tailings from the thickener underflow which is then mixed with a calculated cement content required to achieve the design strength. The thickened tailings can be sent to either the paste fill plant, the hydraulic fill plant, or to the TSF on surface when both plants are not operating.

Various laboratory tests were carried out on tailing samples to assess the paste fill strength at different cement contents ranging from three to five percent and slumps of seven and ten inches. This was followed with compressive strength testing at zero up to 90 days curing to estimate the paste fill strength once curing in the stopes was completed. Figure 13-19 shows the resistance results of sample one taken from the Plant 1 Cu circuit with seven-inch slump and Figure 13-20 shows the resistance results at ten-inch slump.

The combination of cement content and slump to achieve the desired strength would need to be estimated for the individual conditions in the different underground zones.

Figure 13-19: El Brocal UCS Tests Results – 7 in. Slump

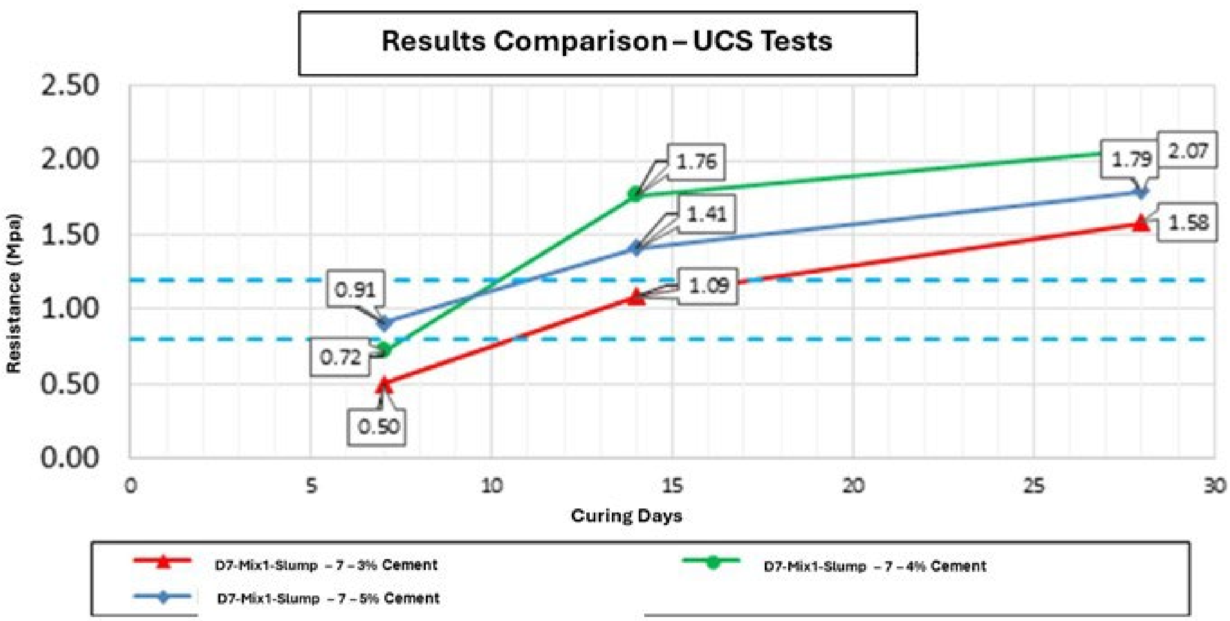


Figure 13-20: El Brocal UCS Tests Results – 10 in. Slump

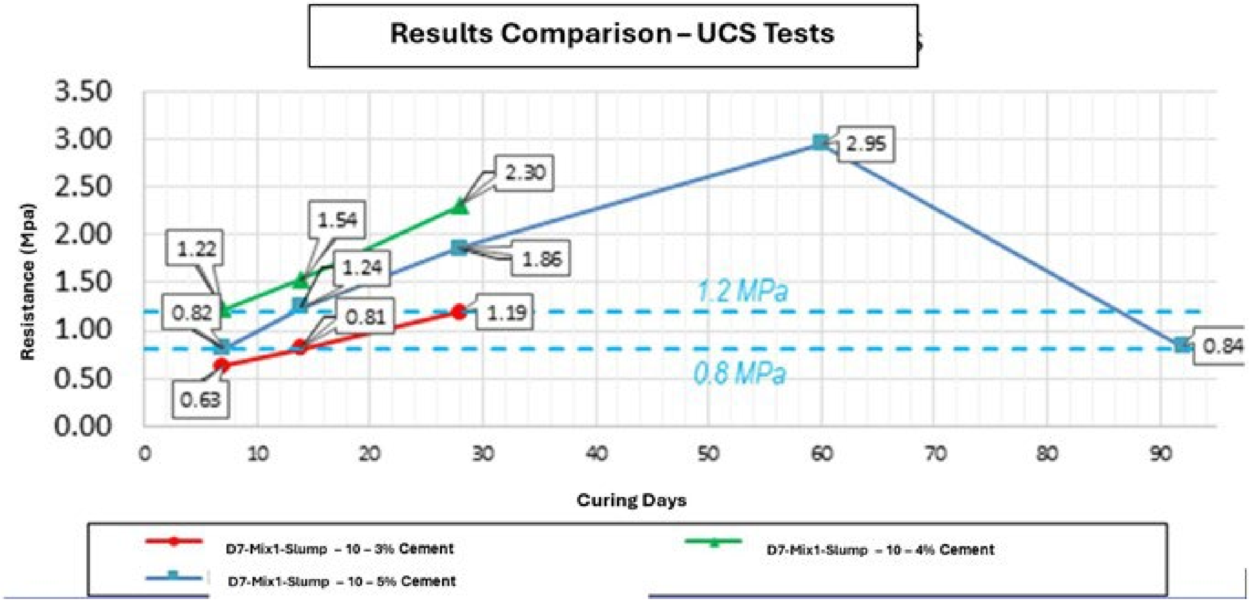


Table 13-16 shows the estimated required strength for stopes at varying heights for the backfill to remain stable.

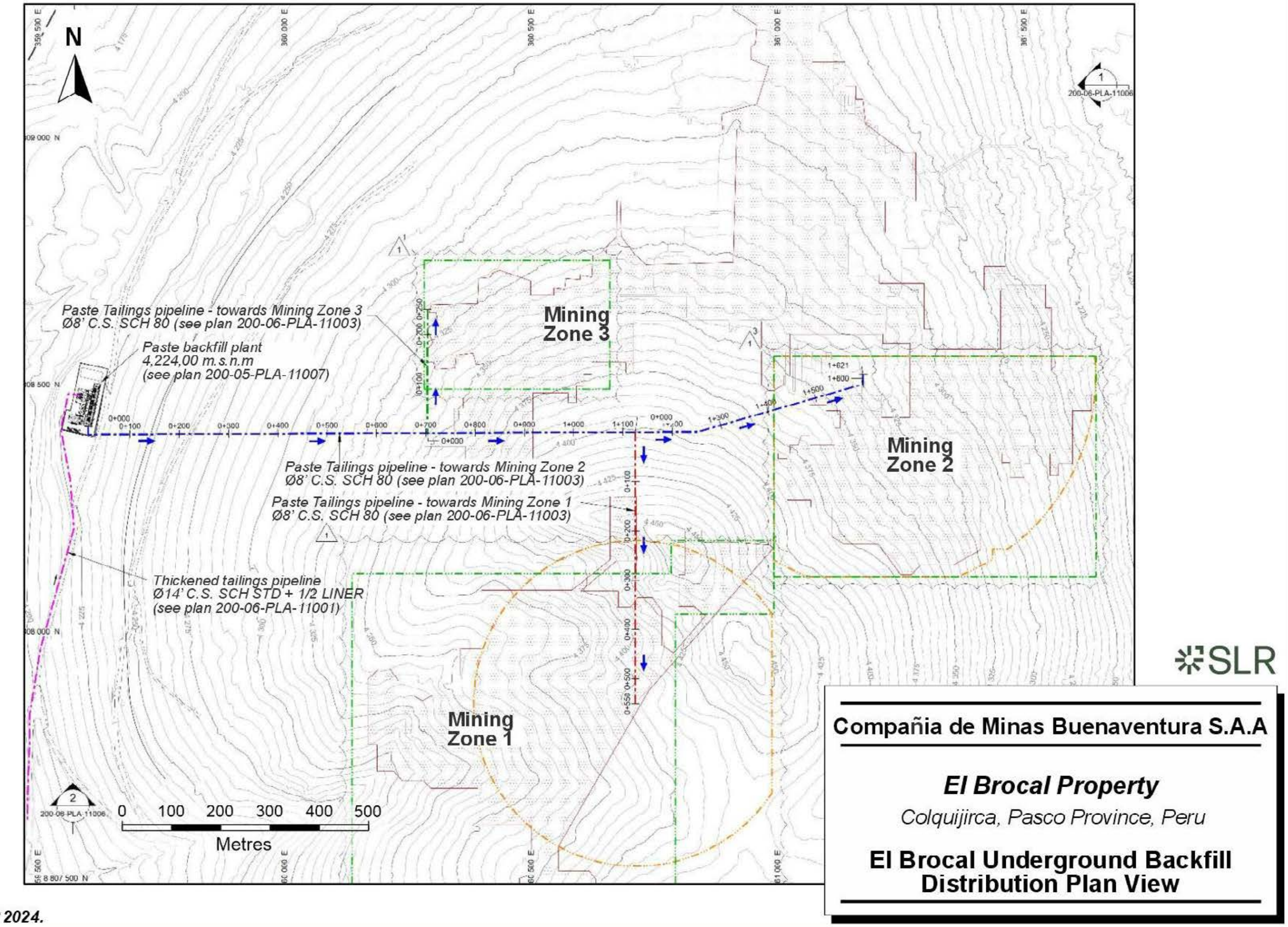
Table 13-16: El Brocal Stope Backfill Strength Required

Stope Ht (m)	Stope Length (m)	UCS Strength Req'd (MPa)
18	20	0.42
20	20	0.44
25	20	0.47
18	30	0.54
20	30	0.57
25	30	0.62
18	50	0.69
20	50	0.73
25	50	0.83

Based on the UCS testing completed, these strength values should be attainable, however, attention to design details and paste fill preparation and maintaining the paste fill quality as it reaches its destination in the stopes is key to successful mining operations.

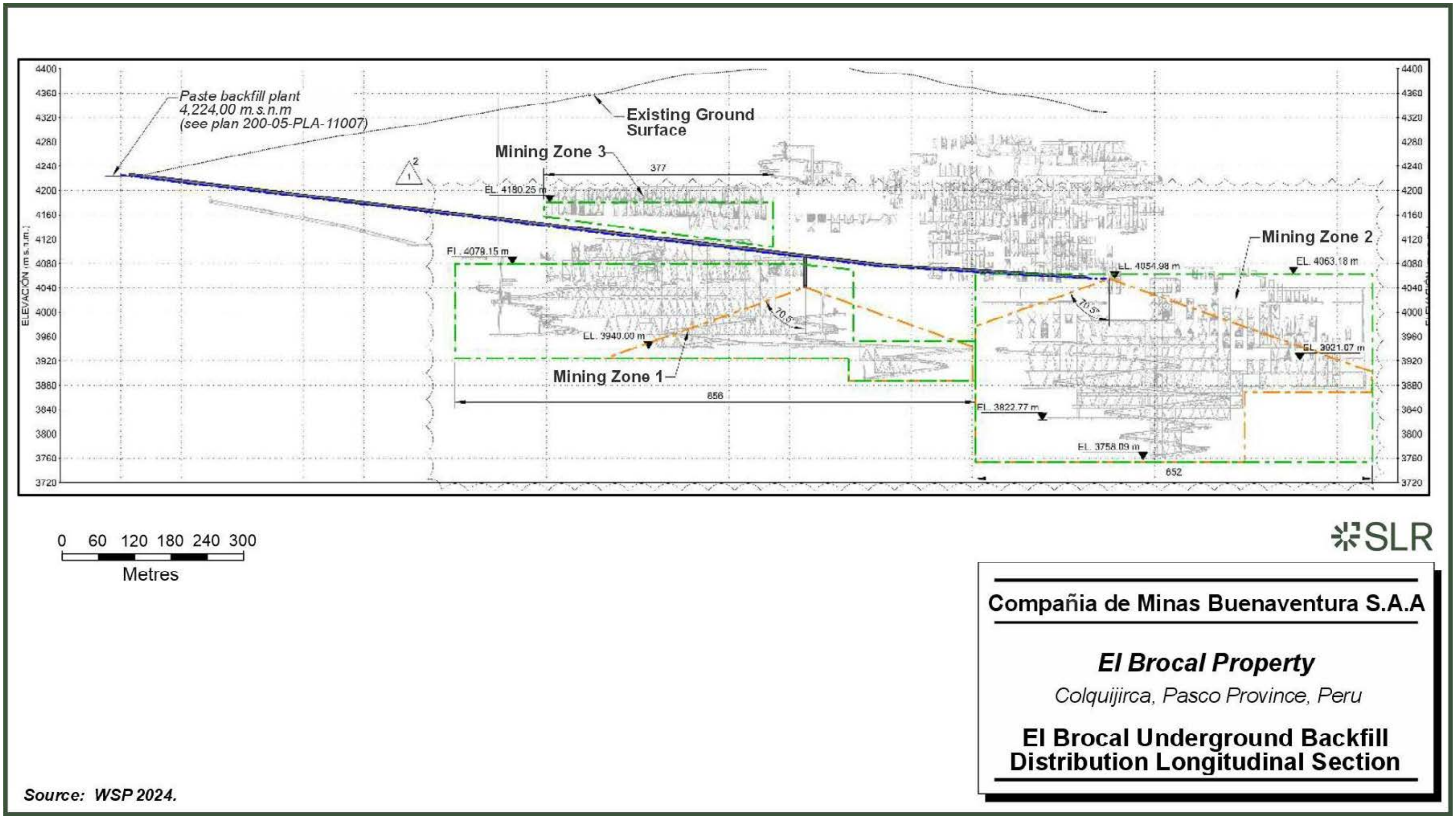
The underground paste fill distribution lines are shown in Figure 13-21 and Figure 13-22.

Figure 13-21: El Brocal Underground Backfill Distribution Plan View



Source: WSP 2024.

Figure 13-22: El Brocal Underground Backfill Distribution Longitudinal Section



Source: WSP 2024.

13.3.3.1 Advantages

The use of paste fill provides several advantages that include the following:

- Reducing the cost and tailings quantity to the TSF.
- Environmental control of heavy metals pollution and acid mine drainage.
- Lower operating cost than hydraulic backfill because of lower cement content.
- Uninterrupted delivery rate in pipelines.
- No additional burden on the ventilation system as paste will be piped and not trucked.
- Increased work and operating safety.

13.3.3.2 Best Practices

Best practices can cover a range of items from design, construction, and contingencies applied to a component of a mining operation.

The most important best practice considered in the case of the backfilling system upon which the underground mining operation at El Brocal will rely is the key specification of rheology of the product. The rheology of the paste fill product can vary depending on factors like the stope location in relation to the paste fill plant and key factors like binder content and water content. Some mine operations use a standard backfill recipes, however, this may result in lower final backfill design strength in the stope if the rheology is not adjusted to the varying conditions throughout the mine areas and workings. Backfill strength modelling, mix designs, and reticulation modelling with the worst reticulation locations should be carried out.

Therefore, in the SLR QP's opinion, ongoing test work using available software (i.e., BackfillPro) is essential to enable meeting the design backfill strength. This can produce cost savings with optimized binder quantities and improve overall mine safety by achieving the design backfill strengths.

Scrutiny of the backfill system redundancies and contingencies are also important to avoid interruptions in the backfill delivery that can impact the mining cycle. This would include factors such as availability of critical spares for the paste plant and backfill distribution system.

Best practices for the distribution system installation and maintenance on surface and underground and adequate training should also be completed to ensure operating efficiencies.

13.3.4 Underground Life of Mine Production Schedule

The LOM development and production schedule was prepared using existing equipment quantities and rates. The development advance rates average 324 m/month per jumbo. The El Brocal underground mine consists of six zones which will be simultaneously developed. Figure 13-23 illustrates the yearly development schedule over the LOM. The SLR QP has reviewed the application of equipment to the mine plan and is of the opinion that the advance rates are feasible based on the number of active headings available. The QP has further compared the advance rates achieved by the mine in 2024, presented in Table 13-17 and notes that the average monthly development rates are comparable to the actual rates achieved by the mine.

Figure 13-23: Yearly Underground Development

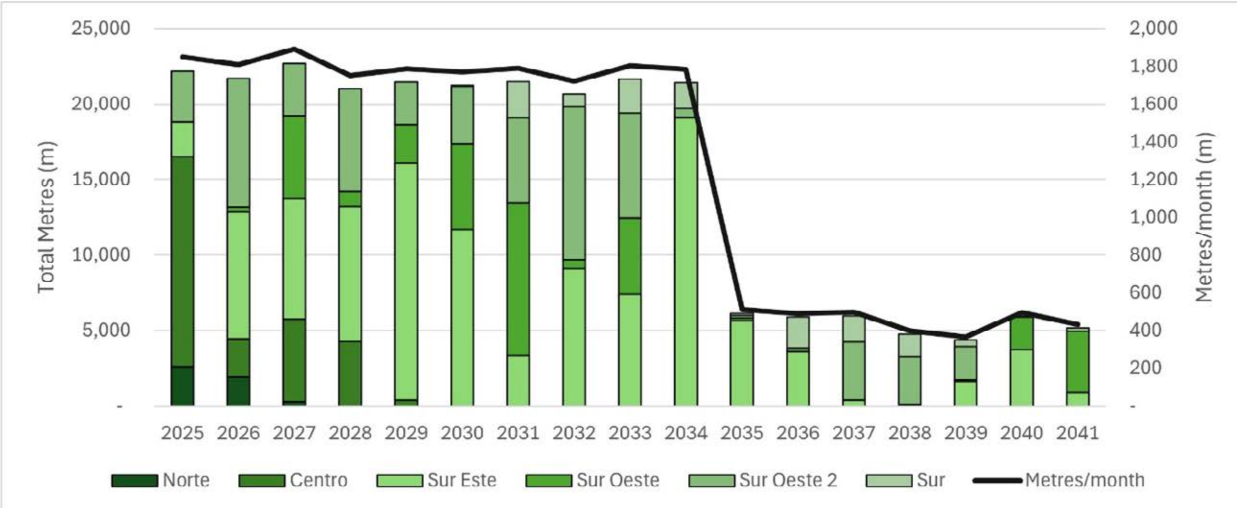


Table 13-17: 2024 Underground Ore Production and Development

	Unit	Actual 2024	Monthly Average	Maximum
Ore production	t	4,235,128	352,927	467,938
Development				
Operating Development	m	16,639	1,530	1,882
Capital Development	m	5,045	476	576
Total Development	m	21,685	1,893	2,187

The current underground Mineral Reserve estimate supports a LOM production plan of seventeen years. The preparation of the LOM scheduler was completed in Deswik Scheduler software. The LOM plan includes production drilling, stope mining, and backfilling activities. The number of equipment and equipment rates used to develop the production schedule are presented in Table 13-18. Mining operations will be carried out in several zones simultaneously and ore production averages 360,000 tonnes per month ramping up to 395,000 tonnes per month when the paste plant becomes operational in 2028 enabling mining of secondary stopes. The LOM plan and production profile are presented in Table 13-18 and Figure 13-24. Figure 13-25 shows mining schedule by year on mine designs.

Table 13-18: Equipment Number and Rates Used in LOM Schedule for Underground Mine

	Unit	Rate	Number of Equipment Assigned
Jumbo	m/d	324	10
Scoop	tpd	2,000	7
Simba	perf. m/d	350	12

	Unit	Rate	Number of Equipment Assigned
Backfill Max. Capacity			
Cemented Hydraulic fill	m^3/d	1,932	
Paste Fill	m^3/d	4,320	
Curing Time			
Cemented Hydraulic Fill	Days	60	
Paste Fill	Days	28	

Figure 13-24: LOM Production Profile for Underground Mine

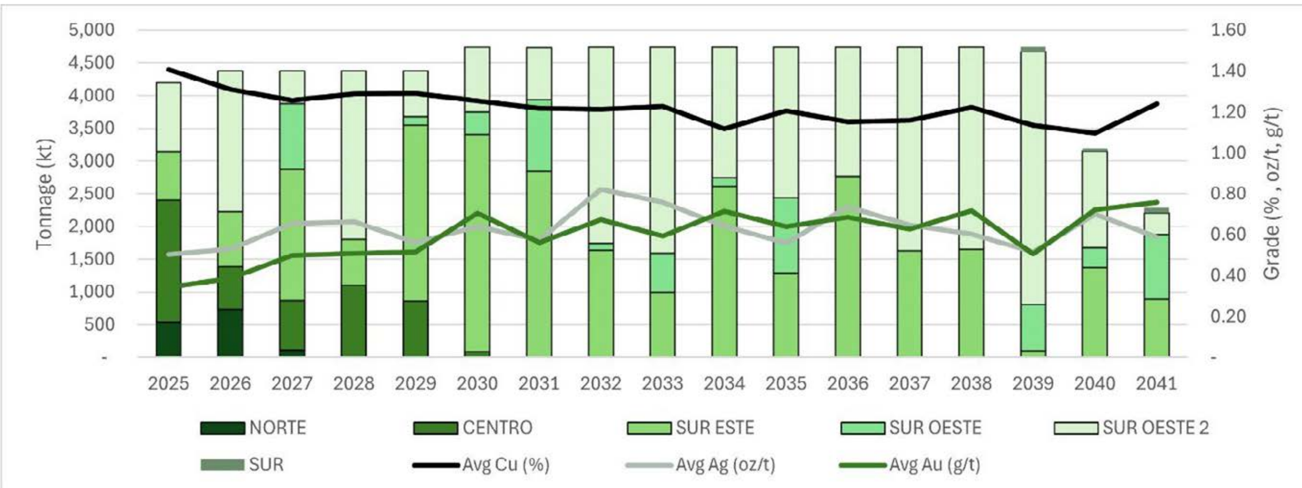
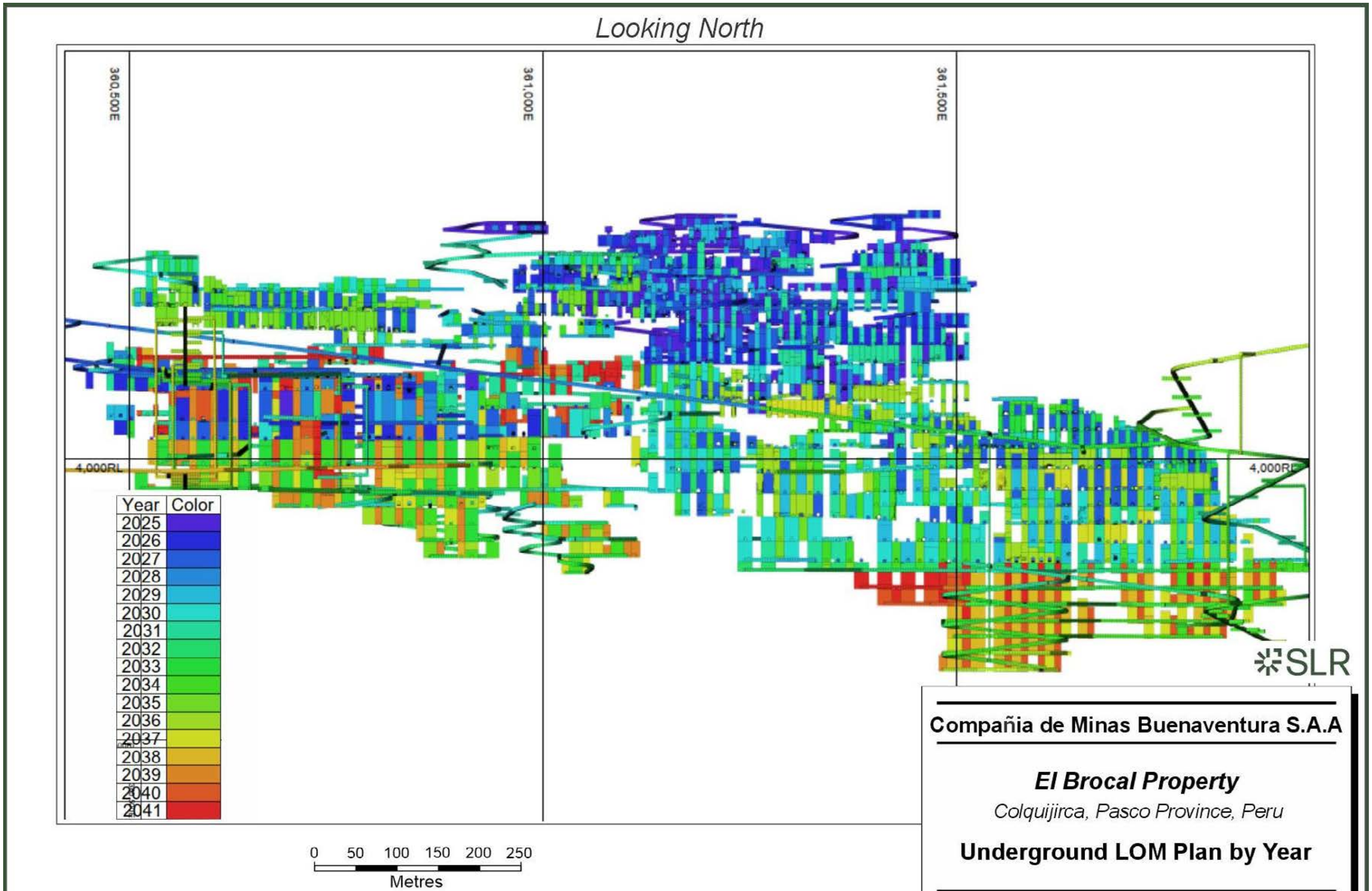


Figure 13-25: Underground LOM Plan by Year – Looking North



Source: SLR 2024.

Table 13-19: Underground LOM Production Schedule

2025-2033	Unit	Total	2025	2026	2027	2028	2029	2030	2031	2032	2033
Total Ore Production	Mt	74,650,886	4,197,242	4,379,582	4,379,926	4,380,000	4,379,564	4,745,000	4,744,571	4,744,559	4,745,000
Primary	Mt	39,212,205	3,918,259	3,148,954	3,407,383	2,586,584	2,331,462	3,656,394	2,974,497	2,706,576	1,645,863
Secondary	Mt	26,405,032	225,017	803,543	789,317	1,684,324	1,511,759	775,422	1,491,307	1,912,312	2,507,717
Tertiary	Mt	9,033,649	53,967	427,085	183,226	109,091	536,343	313,184	278,767	125,670	591,420
Avg Cu grade	%	1.22	1.41	1.31	1.26	1.29	1.29	1.25	1.22	1.21	1.23
Avg Ag grade	g/t	19.60	15.62	16.48	20.35	20.65	17.48	19.85	17.84	25.53	23.58
Avg Au grade	g/t	0.59	0.34	0.39	0.50	0.51	0.51	0.71	0.56	0.67	0.59
Operating Development	m	224,374	21,049	21,107	21,229	19,978	21,202	19,756	17,035	18,879	16,068
Capital Development	m	29,314	1,136	584	1,459	1,034	243	1,499	4,446	1,781	5,580

2034-2041	Unit	2034	2035	2036	2037	2038	2039	2040	2041
Total Ore Production	Mt	4,744,566	4,744,673	4,744,618	4,744,660	4,744,560	4,744,591	3,200,000	2,287,776
Primary	Mt	2,789,363	2,290,862	2,036,423	2,438,477	1,823,544	803,797	361,923	291,844
Secondary	Mt	1,722,044	1,818,356	1,240,693	1,660,855	2,739,732	2,753,976	1,393,371	1,375,289
Tertiary	Mt	233,159	635,455	1,467,502	645,328	181,284	1,186,818	1,444,706	620,643
Avg Cu grade	%	1.12	1.20	1.15	1.16	1.22	1.13	1.10	1.24
Avg Ag grade	g/t	19.92	17.37	22.87	20.11	18.75	16.04	21.73	18.27
Avg Au grade	g/t	0.71	0.64	0.69	0.63	0.72	0.50	0.72	0.76
Operating Development	m	17,348	5,713	2,579	4,115	3,263	3,963	5,930	5,161
Capital Development	m	4,069	428	3,291	1,838	1,500	425	-	-

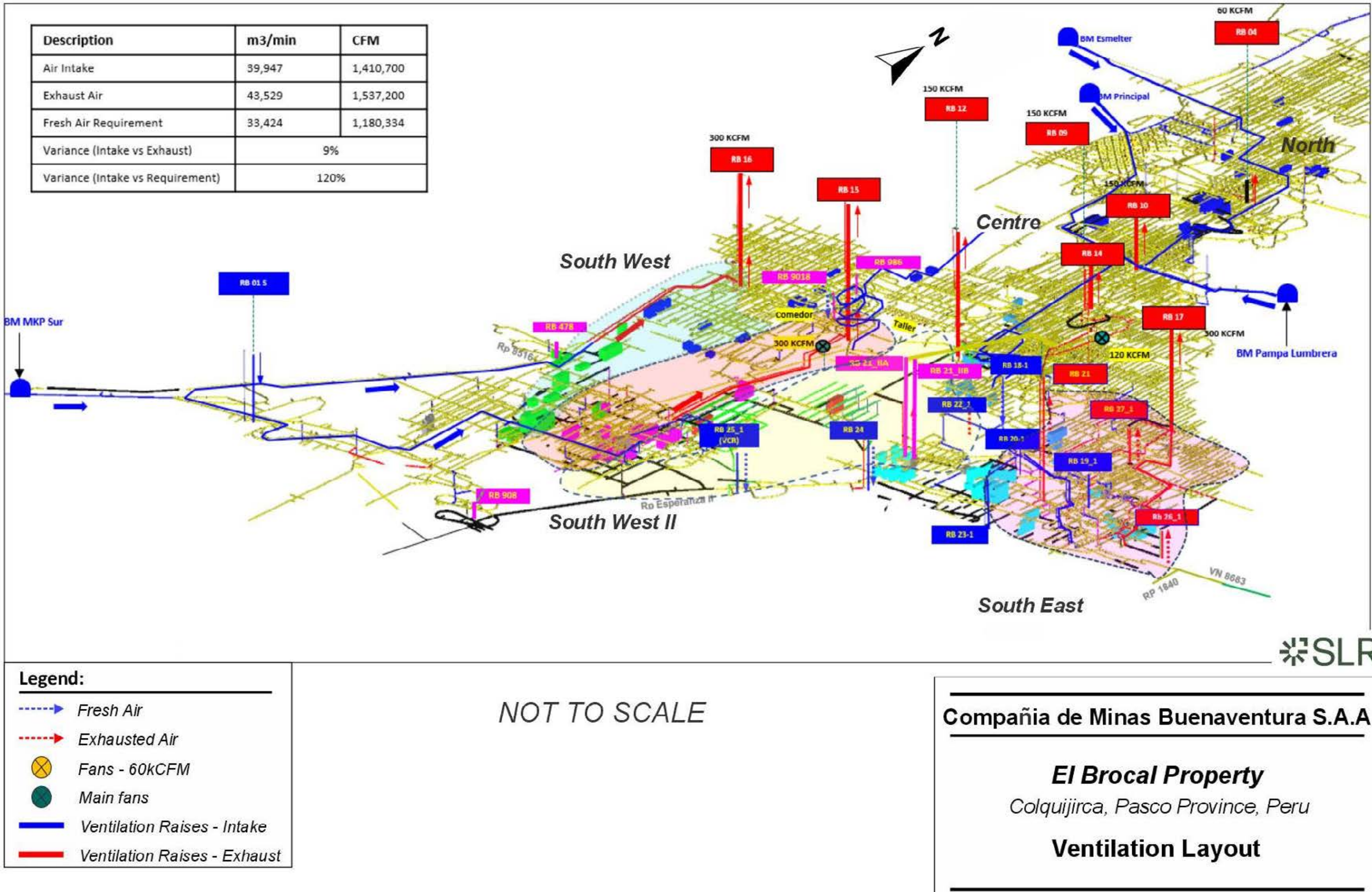
13.3.5 Mine Ventilation

The list of main ventilation fans are presented in Table 13-20. The main fans are located on the exhaust ventilation raises and the ventilation system is designed to pull air from mine portals and intake ventilation raises. Each of the mining zones are ventilated using a dedicated ventilation circuit. The El Brocal underground mine has a total air requirement of approximately 1,180 kcfm and the air intake averages 1,410 kcfm. Figure 13-26 presents an isometric view of the ventilation layout.

Table 13-20: List of Main Fans

Fan Code	Brand	Power (HP)	Capacity (cfm)	Fan Type	Location
VP-01	AIRTEC	300	150,000	Axial	Surface
VP-02	AIRTEC	300	150,000	Axial	Surface
VP-03	ZITRON	400	200,000	Axial	Surface
VP-04	ZITRON	600	300,000	Axial	Surface
VP-05	ZITRON	600	300,000	Axial	Surface
VP-07	HOWDEN	600	300,000	Axial	Level 4072
Total	**6**		**1,400,000**		

Figure 13-26: Ventilation Layout



Description	m3/min	CFM
Air Intake	39,947	1,410,700
Exhaust Air	43,529	1,537,200
Fresh Air Requirement	33,424	1,180,334
Variance (Intake vs Exhaust)	9%	
Variance (Intake vs Requirement)	120%	

Source: WSP 2024.

13.3.6 Mine Equipment

The underground mine is operated using specialized contractor companies which operate and maintain their own fleet. Table 13-21 summarizes the main mobile equipment operated by each contractor.

Table 13-21: Main Underground Equipment List

Equipment	Company	Model/Type	Number
Production Drills	JRC	Simba	6
	ROCK DRILL	Wassara	2
	Total		8
Scoops - Production	JRC	10 t	7
Scoops - Development	JRC	10 t	6
Scoops - Backfill and Services	JRC	10 t	2
	Total		15
Jumbos 2 boom - Development	JRC	4.9 m	6
Bolter	JRC	Bolter	6
Trucks	JRC	6X4-8X4	15
	SMELTER	6X4-8X4	30
	Total		45
Rock Breaker	JRC	Scaler	4
Shotcreter	JRC	Putzmeister	4
Concrete Mixer	JRC	4 m3	7
Telehandler	JRC		6
	SMELTER		2
	Total		8
Grader	JRC		1
	SMELTER		1
	Total		2
Forklift	JRC		1
Total Mobile Equipment			**106**

13.3.7 Mine Personnel

The responsibilities and number of mine personnel is presented in Table 13-22.

Table 13-22: Underground Mine Manpower List

Main Contractors	Number of Personnel (3 shifts)	Responsibility
JRC	900	Development, Production Drilling, Blasting, Stope Mining, Ore/Waste Transport
SMELTER	277	Ore Haulage, Road Maintenance, Ore Blending, Hydraulic Fill
ROCKDRILL	32	Production Drilling
Fenix	39	Mine Electrical System
INCIMMET	3	Backfill Supervision
Geohidráulica	5	Pump Installation/Removal
Draguer	3	Gas Detector Management.
Total	**1,259**	

13.4 Combined LOM Production Schedule

Table 13-23 presents a combined LOM production schedule for the open pit and underground operation. A total of 79.6 Mt of copper ore grading 1.28% Cu, 19.60 g/t Ag, and 0.55 g/t Au, and 1.8 Mt of lead-zinc ore grading 1.96% Pb, 4.06% Zn, and 4.04 g/t Ag are mined over a LOM of 17 years. Open pit mining is currently scheduled to start in 2037.

Table 13-23: Combined Open Pit and Underground Life of Mine Plan

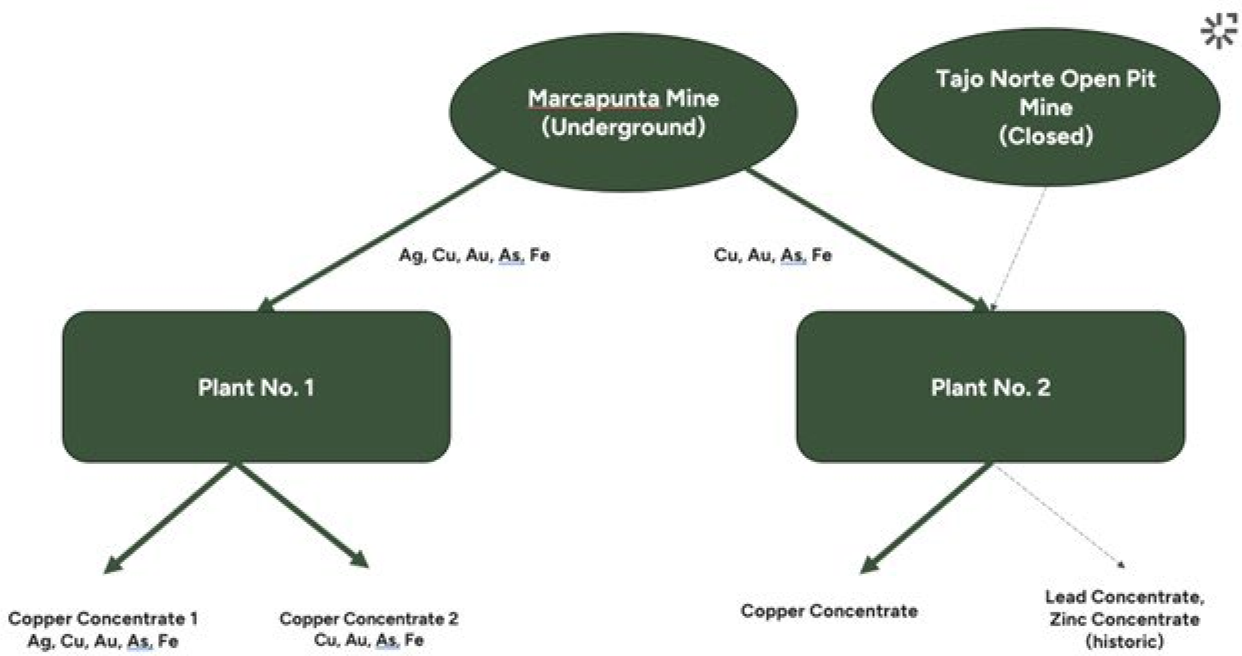
2025-2033	Unit	Total	2025	2026	2027	2028	2029	2030	2031	2032	2033
Open Pit Copper Ore											
Ore Mined	kt	4,935									
Cu Grade	%	2.13									
Ag Grade	g/t	57.85									
Au Grade	g/t	0.02									
Open Pit Lead-Zinc Ore											
Ore Mined	kt	1,766									
Pb Grade	%	1.96									
Zn Grade	%	4.06									
Ag Grade	g/t	125.66									
Underground Copper Ore											
Ore Mined	kt	74,651	4,197	4,380	4,380	4,380	4,380	4,745	4,745	4,745	4,745
Cu Grade	%	1.22	1.41	1.31	1.26	1.29	1.29	1.25	1.22	1.21	1.23
Ag Grade	g/t	19.60	15.62	16.48	20.35	20.65	17.48	19.85	17.84	25.53	23.58
Au Grade	g/t	0.59	0.34	0.39	0.5	0.51	0.51	0.71	0.56	0.67	0.59
Total Copper Ore											
Ore Mined	**kt**	**79,586**	**4,197**	**4,380**	**4,380**	**4,380**	**4,380**	**4,745**	**4,745**	**4,745**	**4,745**
Cu Grade	**%**	**1.28**	**1.41**	**1.31**	**1.26**	**1.29**	**1.29**	**1.25**	**1.22**	**1.21**	**1.23**
Ag Grade	**g/t**	19.60	15.62	16.48	20.35	20.65	17.48	19.85	17.84	25.53	23.58
Au Grade	**g/t**	**0.55**	**0.34**	**0.39**	**0.5**	**0.51**	**0.51**	**0.71**	**0.56**	**0.67**	**0.59**
Total Lead-Zinc Ore											
Ore Mined	**kt**	**1,766**									
Pb Grade	**%**	**1.96**									
Zn Grade	**%**	**4.06**									
Ag Grade	**g/t**	**4.04**									

2034-2041	Unit	2034	2035	2036	2037	2038	2039	2040	2041
Open Pit Copper Ore									
Ore Mined	kt				331	311	566	1638	2089
Cu Grade	%				2.21	2.7	2.65	2.1	1.93
Ag Grade	g/t				55.99	81.8	90.51	36.08	63.14
Au Grade	g/t				0.01	0.01	0.01	0.03	0.03
Open Pit Lead-Zinc Ore									
Ore Mined	kt				306	324	502	56	578
Pb Grade	%				2.73	1.69	1.61	2.17	1.98
Zn Grade	%				4.62	4.51	3.72	3.19	3.9
Ag Grade	g/t				96.42	97.66	130.32	76.2	158.32
Underground Copper Ore									
Ore Mined	kt	4,745	4,745	4,745	4,745	4,745	4,745	3,200	2,288
Cu Grade	%	1.12	1.2	1.15	1.16	1.22	1.13	1.1	1.24
Ag Grade	g/t	19.92	17.37	22.87	20.11	18.75	16.04	21.73	18.27
Au Grade	g/t	0.71	0.64	0.69	0.63	0.72	0.5	0.72	0.76
Total Copper Ore									
Ore Mined	**kt**	**4,745**	**4,745**	**4,745**	**5,076**	**5,056**	**5,311**	**4,838**	**4,377**
Cu Grade	**%**	**1.12**	**1.2**	**1.15**	**1.23**	**1.31**	**1.29**	**1.44**	**1.57**
Ag Grade	**g/t**	19.92	17.37	22.87	**22.39**	**22.39**	**23.95**	**26.75**	**39.81**
Au Grade	**g/t**	**0.71**	**0.64**	**0.69**	**0.59**	**0.68**	**0.45**	**0.49**	**0.41**
Total Lead-Zinc Ore									
Ore Mined	**kt**				**306**	**324**	**502**	**56**	**578**
Pb Grade	**%**				**2.73**	**1.69**	**1.61**	**2.17**	**1.98**
Zn Grade	**%**				**4.62**	**4.51**	**3.72**	**3.19**	**3.9**
Ag Grade	**g/t**				96.42	97.66	130.32	76.2	158.32

14.0 Processing and Recovery Methods

El Brocal operates two independent conventional flotation concentrators: Plant No. 1 and Plant No. 2. Plant No. 1 processes copper ore from the Marcapunta mine to recover copper minerals and produce copper concentrate. Plant No. 2 historically processes lead and zinc ores from the Tajo Norte mine to recover lead and zinc concentrates. The Tajo Norte open pit mine is currently not in operation. Plant No. 2 unit processes have been updated to process Cu ore from the Marcapunta mine. Figure 14-1 shows the block flow diagram for the El Brocal site. Plant No. 1 and Plant No. 2 are being modified to account for the finer grain ore being sent from the underground Marcapunta mine. Throughput will decrease due to the need for finer grinding of the ore.

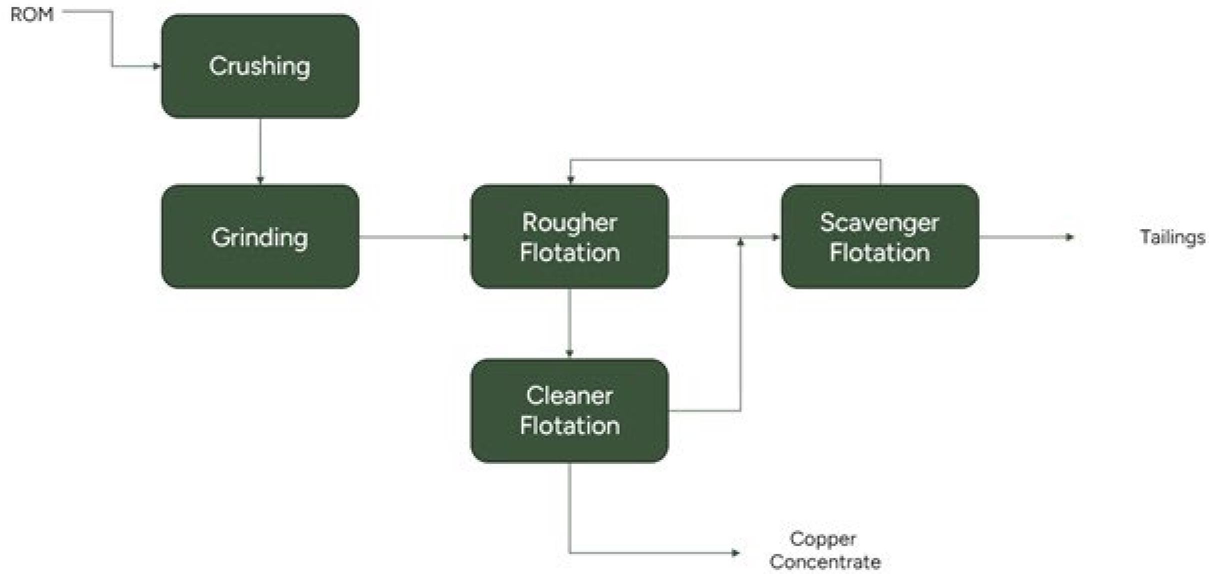
Figure 14-1: El Brocal Site Block Flow Diagram



14.1 Plant No. 1

Plant No. 1 is a conventional concentration plant that produces copper concentrate, which is transported offsite by dump trucks, and to a lesser extent by railcars, for sale to third parties for smelting. The concentrator's unit of operations includes crushing, grinding, flotation, and thickening. Final tailings are thickened and disposed of in a conventional TSF. The final concentrate produced in the flotation stage is thickened and dewatered before being sent to Callao Port. A simplified block flow diagram of Plant No. 1 can be seen in Figure 14-2. Plant No. 1 is operating at 4,000 tpd, it has a design capacity of 8,000 tpd. The copper recovery increased to approximately 90% (from approximately 85%), after modifications to the flowsheet configuration to emulate the flowsheet configuration successfully demonstrated during test work were completed in April 2024.

Figure 14-2: Plant No. 1 Block Flow Diagram



14.1.1 Ore Delivery

Ore extracted from the underground mine undergoes multiple rehandling stages before reaching the concentrators. Initially, ore is loaded into a 30-tonne dump truck at the mine face and transported to an intermediate stockpile, where it is classified by grade. The ore is then reloaded and sent to the mill feed stockpile. The repeated handling is the result of agreements between El Brocal and local communities requiring job creation and hiring of local companies for all trucking and loading services. This rehandling likely results in increased operating costs for El Brocal.

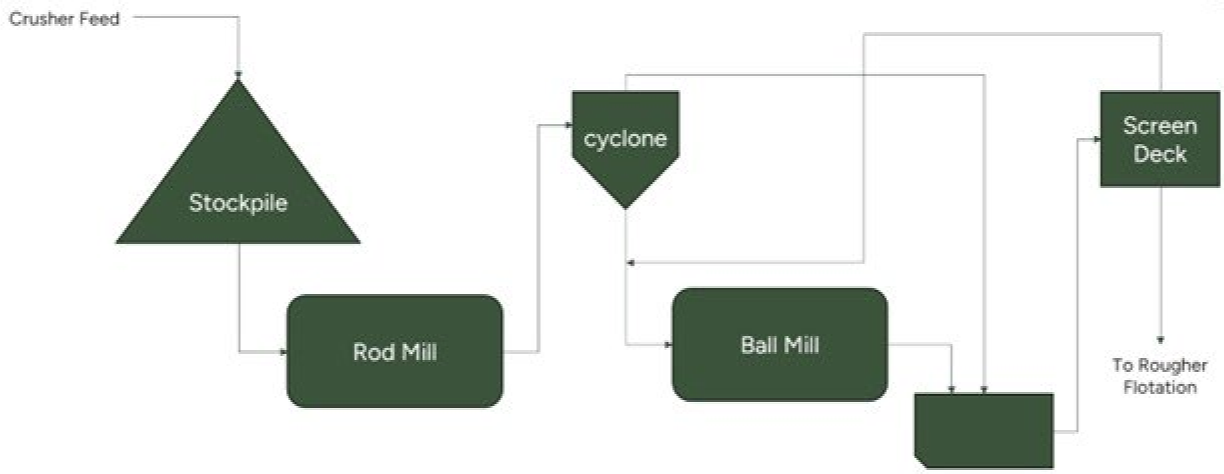
14.1.2 Crushing Circuit

Ore is delivered by dump truck to a coarse ore bin with a 100 tonnes capacity. The bin contains a 20" grizzly and a rock breaker. Ore passing through the grizzly feeds a 47"x33" jaw crusher with a 4" closed-side setting. Crusher discharge is conveyed to an 8'x20' double-deck vibrating screen. Final product from the screen is ½" that is sent by conveyor to a stockpile. The coarse material from the screen feeds a secondary closed-circuit cone crusher with a closed-side setting of 47 mm and feeds a double-decker screen with a ½" aperture. A tertiary cone crusher operated in open circuit is fed by the coarse material from the vibrating screen. This tertiary crusher has a closed-size setting of 13 mm. At the same time, the secondary screen's coarse material feeds a second tertiary cone crusher operated in open circuit with a closed-side setting of 10 mm. The final product from the two tertiary cone crushers are sent to the stockpile. The P_{80} of ½" from the crushing circuit is sent to two covered stockpiles. The two stockpiles have a maximum capacity of 6,000 tonnes and 2,000 tonnes respectively.

14.1.3 Grinding Circuit

The fine ore reclaim feeds the primary grinding circuit which consists of a 7"x12" 550 hp rod mill operating in open circuit. Feed from the rod mill enters a hydrocyclone classification stage. The coarse feed from the hydrocyclone feeds a 16.5"x23' 400 hp ball mill. The ball mill discharge and hydrocyclone overflow at a P_{80} of 120 µm feed the flotation stage. Screened material from the ball mill discharge recirculates to ball mill feed. Figure 14-3 is a block flow diagram of the grinding circuit.

Figure 14-3: Plant No. 1 Grinding Circuit Block Flow Diagram



14.1.4 Flotation

The grinding circuit P_{80} of 120 µm feeds the head of the flotation circuit which consists of a 20' square agitated condition tank that overflows into three forced air mechanically agitated 50 m^3 flotation cells in series. The concentrate from the rougher flotation cells is pumped to two 20' square agitated conditioning tanks in series. The conditioning tanks feed the first stage cleaners that consist of two parallel banks of eight DR-300 cells. The concentrate from the first cleaners is combined and sent to the second cleaners which consist of one bank of eight cells, each 8.5 m^3. The concentrate from the second cleaners is sent to the third cleaners which consists of six 8.5 m^3 cells.

The tails from the rougher flotation cells feed the first scavenger cells which consist of two 50 m^3 flotation cells in series. The concentrate from the first scavengers is sent to the feed of the second rougher flotation cell. The tails from the first scavengers are sent to the second scavenger bank of four 50 m^3 flotation cells run in series. The second scavenger bank consists of four 50 m^3 flotation cells run in series. The concentrate from the second scavenger bank feeds the head of the first scavenger bank. The tails from the second scavenger bank feeds the third scavengers three 50 m^3 flotation cells in series. The concentrate from the third scavengers goes to the feed of the second scavengers. The tails from the third scavengers is pumped to final tails.

14.1.5 Dewatering

The final copper concentrate feeds a 60' diameter thickener. The thickener underflow feeds a 23 plate filter press with 2 m x 2 m plates . The filter produces a final copper concentrate with a moisture of approximately 12%. The concentrate is shipped offsite.

14.1.6 Tailings

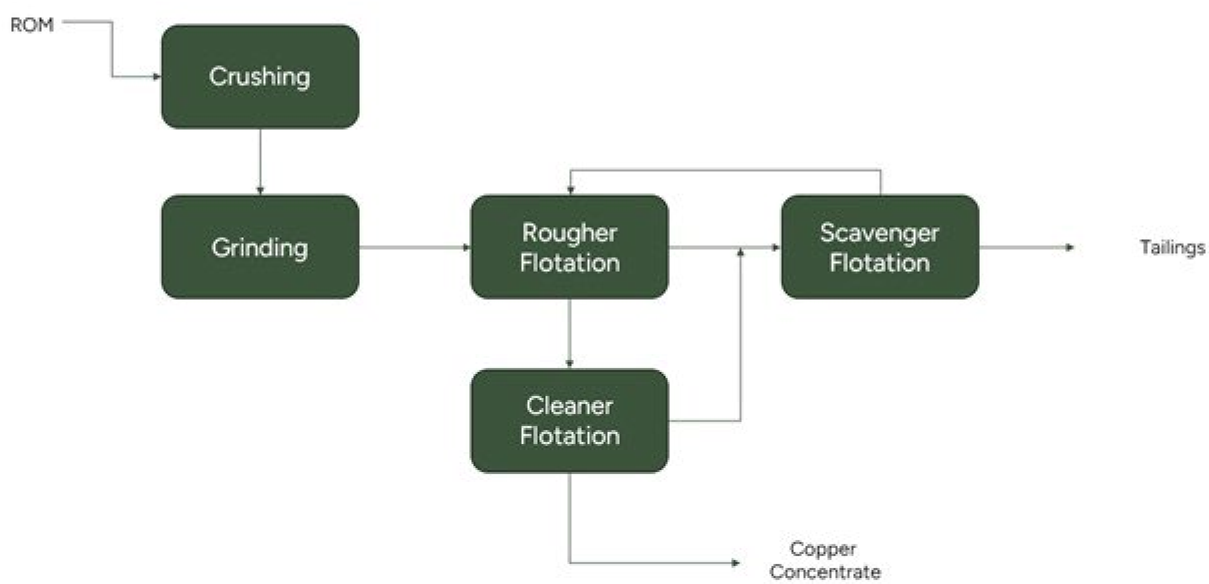
The tails from the flotation circuit feeds a 45' diameter thickener. The thickener underflow is sent to a conventional tailings storage facility (Represa Huachuacaja). Currently, there is no water reclaimed from the final tails thickener or the TSF.

14.2 Plant No. 2

Plant No. 2 is a conventional concentration plant that produces copper concentrate, which is transported offsite by trucks, for sale to third parties. The concentrator's units of operations include crushing, grinding, flotation, and thickening. Final tailings are thickened and disposed of in a conventional TSF. The final concentrate produced in the flotation stage is thickened and dewatered before being sent offsite. A simplified block flow diagram of Plant No. 2 can be seen in Figure 14-4. Plant No. 2 is operating at a capacity of 8,000 tpd, it has the design capacity to operate at 13,000 tpd when processing lead zinc ore. The copper recovery is expected to be 90%.

Plant No. 2 had traditionally produced a lead and a zinc concentrate. In late 2024, modifications to the flowsheet to improve recovery of copper from underground ore were completed. This allowed both plants to produce a copper concentrate from the Marcapunta underground mine.

Figure 14-4: Plant No. 2 Block Flow Diagram



14.2.1 Crushing Circuit

ROM material is sent to a 300 tonne capacity coarse ore bin via dump tuck. The material passes through a stationary grizzly which feeds a roll crusher. The discharge from the crusher is sent to a washing stage consisting of 3.6 m diameter 12 m long washing trommel. The trommel discharges onto two double deck 10' x 24' banana screens operating in series (primary and secondary). The oversize from the primary banana screen feeds a secondary crushing stage that operates in open circuit. A 500 tonne capacity hopper feeds two parallel gyratory crushers. Discharge from the secondary crushers combines with the oversize from the secondary banana screen to feed a tertiary crushing stage. A 400 tonne hopper feeds a high pressure grinding rolls

(HPGR). Discharge from the HPGR feeds a single 15’ x 26’ banana screen. The material passing through the banana screen is the final product for the crushing plant. The coarse stream oversize from the tertiary banana screen is recirculated back to the tertiary crushing plant.

The material passing through the secondary banana screen feeds a four-stage classification plant. The first stage contains a single hydrocyclone. The cyclone underflow feeds the secondary classification stage which consists of a multi-deck high frequency vibrating screen. The fines frack from the primary and secondary stage feed a tertiary stage that consists of 22 cyclones. The overflow from the 22 cyclones feed the quaternary stage that consists of 16 cyclones. The coarse stream from the secondary stage feeds the fines stockpile. The underflow stream from the tertiary stage feeds the primary grinding stage. The underflow from the quaternary stage feeds the fines flotation plant. The overflow stream from the quaternary stage feeds a 20 m diameter clarifier whose discharge is directed to the flotation plant.

14.2.2 Grinding

The coarse fraction from the crushing circuit is stored in a 50,000 tonne capacity stockpile. A front-end loader is used to reclaim the material from the stockpile to a hopper that feeds the primary grinding stage. Primary grinding consists of two ball mills that are operated in parallel. The first ball mill is a 9.5’ x 14’ at 600 kW unit. The second units is 20’ x 30’ at 6,500 kW. The ball mills operate in closed circuit with 10 units of a high frequency multi-deck vibrating screen. The passing material through the screens feed the conditioning tank in the flotation circuit.

14.2.3 Flotation

The grinding circuit P_{80} of 120 µm feeds the head of the flotation circuit which consists of a 20’ square agitated condition tank that overflows into three forced air mechanically agitated 50 m^3 flotation cells run in series. The concentrate from the rougher flotation cells is pumped to two 20’ square agitated conditioning tanks in series. The conditioning tanks feed the first stage cleaners that consist of two parallel banks of eight DR-300 cells. The concentrate from the first cleaner is combined and sent to the second cleaners which consist of one bank of eight cells, each 8.5 m^3. The concentrate from the second cleaners is sent to the third cleaners which consist of six 8.5 m^3 cells.

The tails from the rougher flotation cells feed the first scavenger cells which consist of two 50 m^3 flotation cells in series. The concentrate from the first scavengers is sent to the feed of the second rougher flotation cell. The tails from the first scavengers are sent to the second scavenger bank of four 50 m^3 flotation cells in series. The second scavenger bank consists of four 50 m^3 flotation cells in series. The concentrate from the second scavenger bank feeds the head of the first scavenger bank. The tails from the second scavenger bank feeds the third scavengers three 50 m^3 flotation cells in series. The concentrate from the third scavengers goes to the feed of the second scavengers. The tails from the third scavengers is pumped to final tails.

14.2.4 Dewatering

Historically, final concentrate from the lead flotation circuit was sent to a 40’ diameter 10’ high thickener. The underflow of the thickener feeds a 2 m x 2 m and 29 plate filter press. The filtered lead concentrate was discharged onto a lead concentrate stockpile waiting to be trucked offsite. Historically, final concentrate from the zinc flotation circuit was sent to a 80’ diameter 15’ high thickener. The underflow of the thickener fed a 2 m x 2 m and 55 plate filter press. The filtered zinc concentrate is discharged onto a zinc concentrate stockpile waiting to be trucked offsite.

For both processes, the thickener overflow was sent to a sedimentation pond. The solids from the pond are reclaimed on a regular basis. The pond's overflow is transferred to the TSF.

14.2.5 Tailings

Historically, both tailings thickener overflow were sent to a sedimentation pond. The solids from the pond are periodically reclaimed. The pond overflow is transferred to the TSF.

14.3 Personnel

The concentrators are managed, operated, and maintained by a total of 228 permanent employees and 150 contractors employees.

14.4 Power and Water

In 2024, the average power consumption of the concentrators after the flowsheet modifications was 14.8 MW. No significant increase in power requirements are anticipated. The average water consumption for processing was 2.9 m^3/t ore processed and is not anticipated to change significantly in the foreseeable future.

15.0 Infrastructure

Figure 15-1 presents a general infrastructure layout at El Brocal.

15.1 Access Roads

The Property can be accessed via the Carretera Central highway which is a double laned paved road. The highway connects the mine site to Lima which is approximately 298 km away. The unit can also be accessed by air from Lima (Jorge Chavez airport) to Huanuco (Alferez FAP David Figueroa Fernandini) and then by land via the Huanuco - Chicrin paved road (approximately 81 km to the site).

15.2 Power

The power supply for the Property is obtained from two hydroelectric power stations owned by SMEB and Statkraft. Power is also purchased from Conenhua. The mining unit energy is provided from the following facilities:

- Hydroelectric Power Station Rio Blanco
- Hydroelectric Power Station Jupayragua
- Sub-station Tajo Sur
- Sub-station Plant N#01
- Sub-station Plant N#02
- Sub-station Marcapunta
- Sub-station Principal Cinco Manantiales
- Transmission line 138 KV-SS Cinco Manantiales, SS Cinco Manantiales, SS Oxidos – SS –Paragsha –Auxiliar lines–Water Supply

15.2.1 Water Source

The source of fresh water for operations (metallurgical) comes from the Pun Run lagoon and the Blanco River. Previously, these waters supplied the hydroelectric plants of Rio Blanco and Jupayragra. Turbinated waters from the Jupayragra plant are captured and conducted to the Pilanco station, where three pumps are located; two are operational and one is on standby. From this point, the water is pumped to the fresh water reservoir with a capacity of 2,300 m³. This facility is located in the industrial zone of Huaraucaca, where the water is distributed for metallurgical operations and for use in related activities in the industrial zone of Huaraucaca. It is specified that in addition to the fresh water coming from the turbinated waters of the Jupayragra hydroelectric plant, the supernatant water from the tailings deposit is recirculated to the metallurgical process.

The industrial water recirculation system from the tailings deposit Huachuacaja consists of three pumps that drive the water through three lines of 16", 14", and 12" high density polyethylene (HDPE) piping to the reservoirs of Plant No. 2, Plant No. 1 (1,600 m³ capacity each), and washing plant respectively, from where the water is distributed to the metallurgical processes.

15.2.2 Domestic Water Treatment Plant

There are two domestic water treatment plants:

- Colquijirca plant N#01 has an area of 120 m^2 and a treatment capacity of 3.8 m^3/h.
- Colquijirca plant N#02 has an area of 60 m^2 and a treatment capacity of 2 m^3/h.
- Huaraucaca plant has a treatment capacity of 2.78 L/s.

15.3 Other Facilities

Other facilities include the following:

- Warehouse facility with an area of 800 m^2.
- Equipment workshop building located in open pit operations zone.
- Mine administration and technical buildings located near the Huaraucaca concentrator.
- Explosive storage: There are two buildings: primary explosive storage and underground explosive storage. The central explosive storage is located near the west limit of the pit. This magazine has a storage capacity of 150 tonnes of ammonium nitrate, 90 tonnes of dynamite, and 130 tonnes of emulsion. The underground magazine is located adjacent to the ventilation raise 04.
- Camp: There are three man camps: one is located in the Huaraucaca zone, and the other two are located in the Colquijirca zone.

15.4 Tailings Storage Facility

The tailings generated by processing the ore are discharged and deposited within the Huachuacaja TSF. The current dam crest elevation is 4,221 MASL. Environmental approval has already been granted to raise the dam crest of the Huachuacaja TSF to elevation 4,225 MASL. The ultimate proposed dam crest elevation is 4,247 MASL, for a maximum dam height of 50 m. The deposit has been operating since 2012, and is currently storing in excess of 35 Mm^3. The final deposit is anticipated to provide a total of 76.3 Mm^3 of storage, such that the remaining capacity is in excess of the current Mineral Reserve estimate. Final deposit capacity would be reached in 2035.

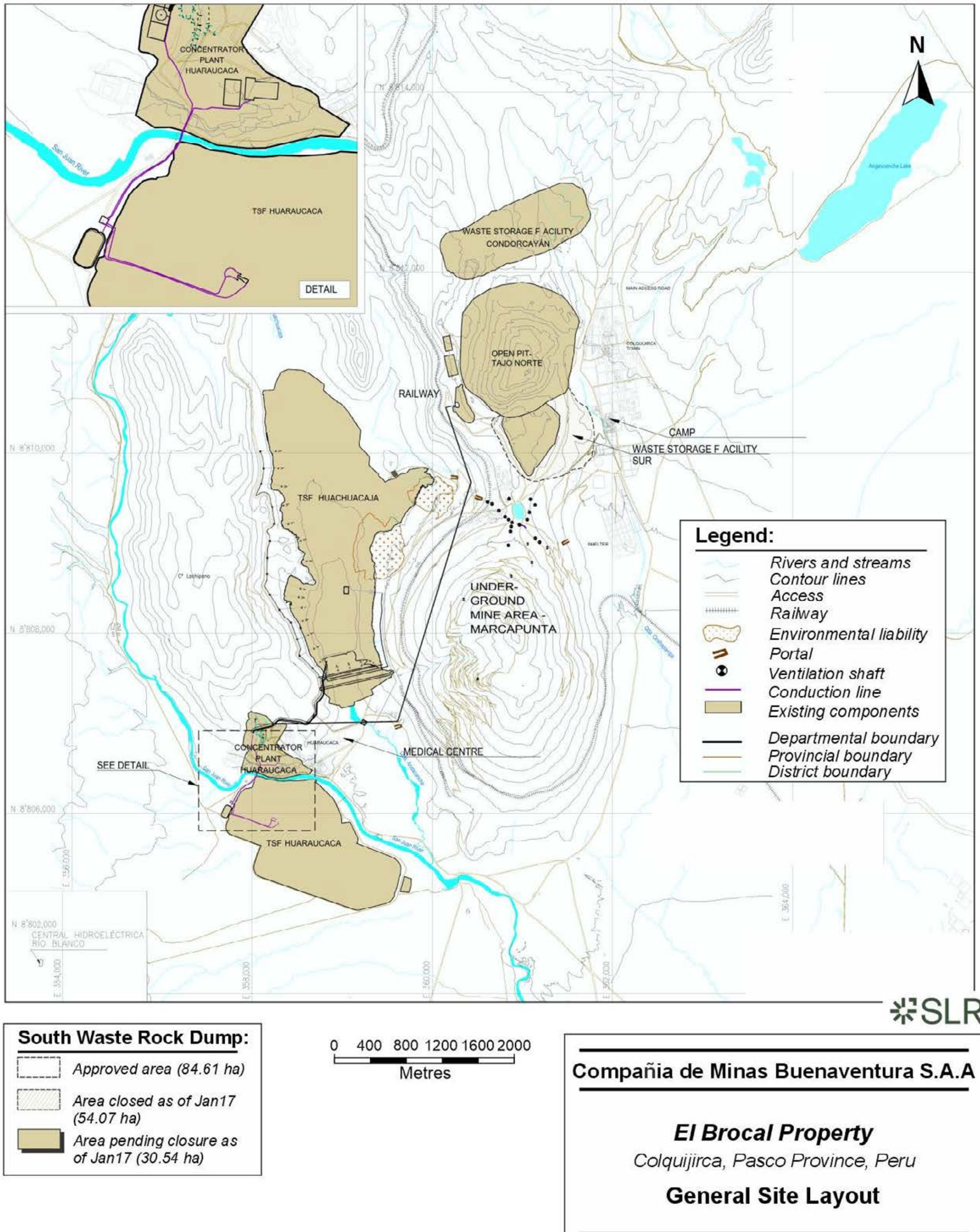
In addition to the Main Dam, the Huachuacaja TSF also has two, smaller, containment dams located at the higher end of the facility. The purpose of these dams is to restrict the deposited tailings within the mine property limits. Beyond the dams, the area is fully contained by natural topography. The containment dams are denominated R4 and R5.

The TSF was originally designed by WSP (Golder), which was the Engineer of Record (EoR) until 2021. Since that time, the EoR role has been carried out by Lara Consulting & Engineering (Lara Consulting).

An aerial view drone photo of the Huachuacaja TSF from 2024 is shown on Figure 15-2. Dam cross-sections for the Main Dam, Dam R4, and Dam R5 of the Huachuacaja TSF are shown on Figure 15-3.

The SLR QP has relied on the statements and conclusions of reports provided by Buenaventura and its consultants and provides no conclusions or opinions regarding the stability or performance of the dams and impoundments listed in this TRS.

Figure 15-1: General Site Layout

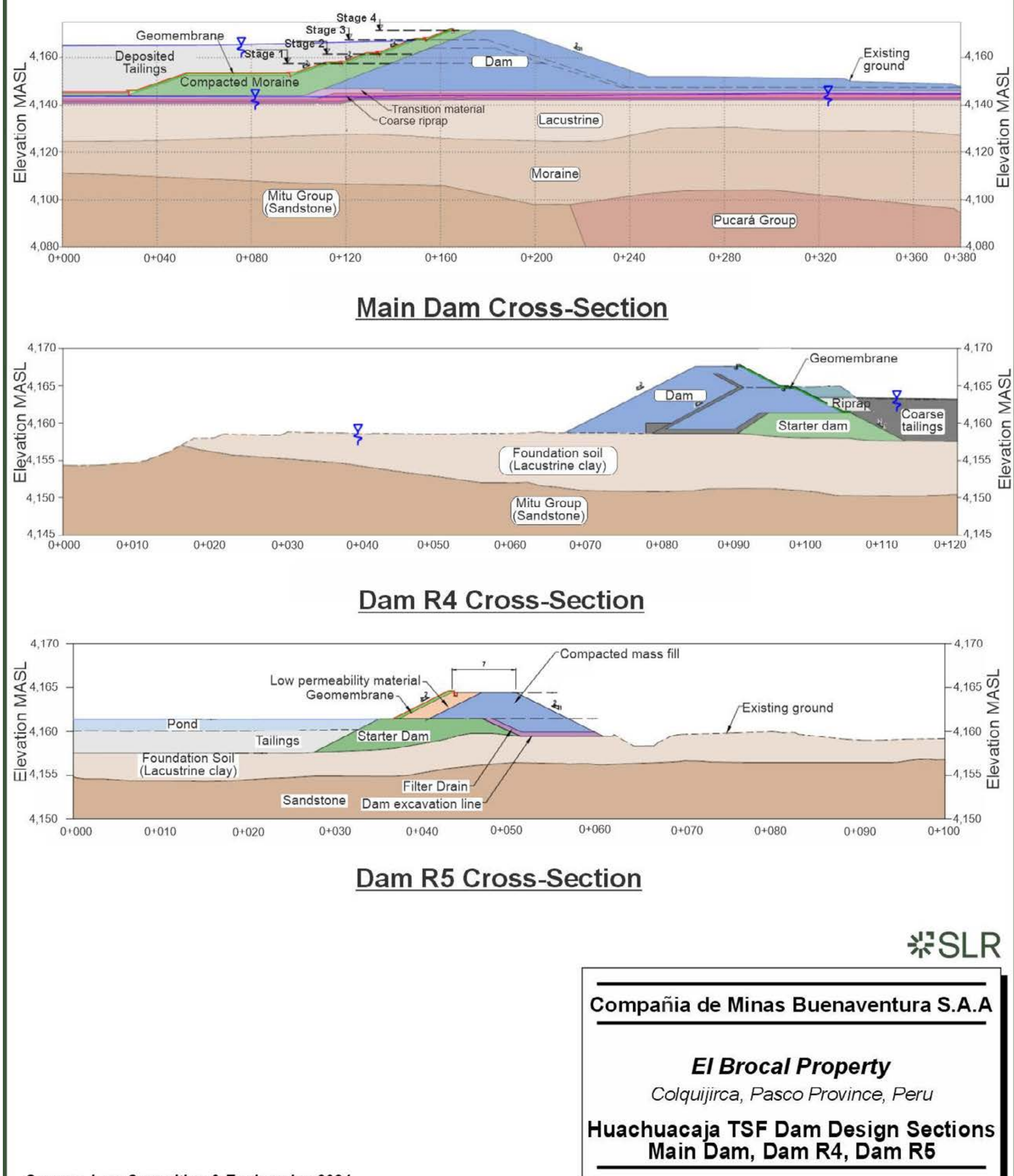


Source: Buenaventura 2024.

Figure 15-2: Aerial View Drone Photo of the Huachuacaja TSF from 2024

Source: Lara Consulting & Engineering 2024.

Figure 15-3: Huachuacaja TSF Dam Design Sections – Main Dam, Dam R4 and Dam R5



Source: Lara Consulting & Engineering 2024.

16.0 Market Studies

16.1 Markets

The principal commodities that are produced at the El Brocal mine – copper, silver, gold, zinc, and lead – are freely traded at prices and terms that are widely known so that prospects for sale of any production are virtually assured. Copper represents 90% of El Brocal gross revenue, while silver, gold, zinc, and lead combined contribute 10% of the revenue.

Market information for this section comes from the industry scenario analysis prepared by CRU Group in Q2-2021 for Buenaventura and S&P Global Market Intelligence's (S&P) Commodity Briefing Reports from January 2025.

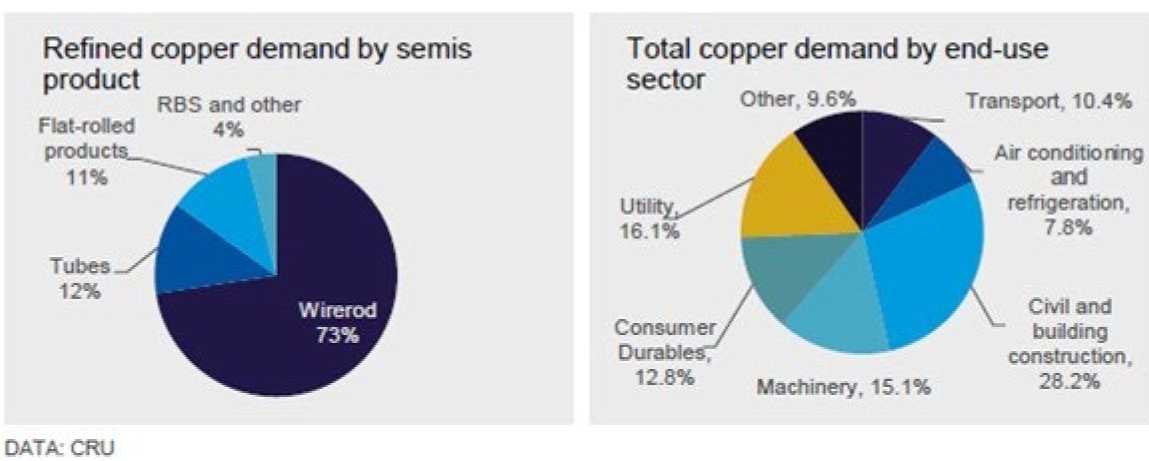
The SLR QP has reviewed the market studies and analyses and the results support the assumptions in this TRS.

16.1.1 Overview of Copper Market

The copper industry is the world's largest base metal industry. Some of the key properties of this metal are that it is malleable, ductile, and a good conductor of heat and electricity when in a pure form. Copper is water resistant and obtains a green patina when oxidized (as seen in construction when roofs turn green). Furthermore, it is germicidal, and can kill a variety of potentially harmful pathogens; this means that it can be used to make water safe for drinking or as an anti-germicidal surface to be used in buildings such as hospitals.

Refined copper is transformed into various semi-fabricated products – wire rod, rods, bars and sections, strip, sheet, plate, and tubes – and later used in a number of final end uses in construction, the automotive industry, manufacturing, architecture, and other applications. The total copper demand by end use product and sector is shown in Figure 16-1.

Figure 16-1: Copper Demand by End Use Product and Sector



Source: CRU

On the supply side, refined copper is made by mining, processing, and refining a variety of copper oxide and sulphide ores. Approximately 70% of mined ore comes from open pit operations, with the remaining approximately 30% coming from underground mines. Sulphide ores are processed via smelting. Ore is crushed, ground, and concentrated by froth flotation to produce a concentrate that can vary between 20% and 40% copper contained. Concentrates are fed into a smelter, where copper oxidizes at high temperatures to produce blister copper (purity of 97% to 99% Cu). Blister copper is cast into large slabs that are used as anodes in the electrolytic refining process which produces 99.99% pure (LME grade) copper.

Oxide ores are processed via the hydrometallurgical process. This process involves the leaching of the ore using sulphuric acid. The solvent extraction and electrowinning processes (SX-EW) allows copper to be recovered from the solution resulting from the leaching process.

16.1.1.1 Copper Value Chain

The primary trading form for copper is copper cathodes. This refined copper, which can further be transformed, is also traded in various semi-fabricated products – wire rod, rods, bars and sections, strip, sheet, plate, and tubes. These forms are usually traded at a premium to the benchmark copper price.

In addition, intermediate products such as copper concentrates, copper blister, and copper anodes are also traded. Approximately 80% of copper cathode production comes from copper concentrates, with the remaining 20% coming directly from cathodes produced through the hydrometallurgical route (leaching and SX-EW).

Selling cathode is a simpler, marketing activity compared to selling copper concentrate. Cathode is a standardized product, whereas concentrate can vary widely in quality and value. Pricing for the two products is also different, with concentrate more prevalently subject to penalties due to impurities, and credits due to payable metals such as gold and silver. Similarly, the logistics requirements and customers for each product also vary. Cathodes are often sold to manufacturing customers, which produce semi-products of wire rod, wire, and cable, and can also be sold to traders. Concentrate, on the other hand, is sold to copper smelters or to traders.

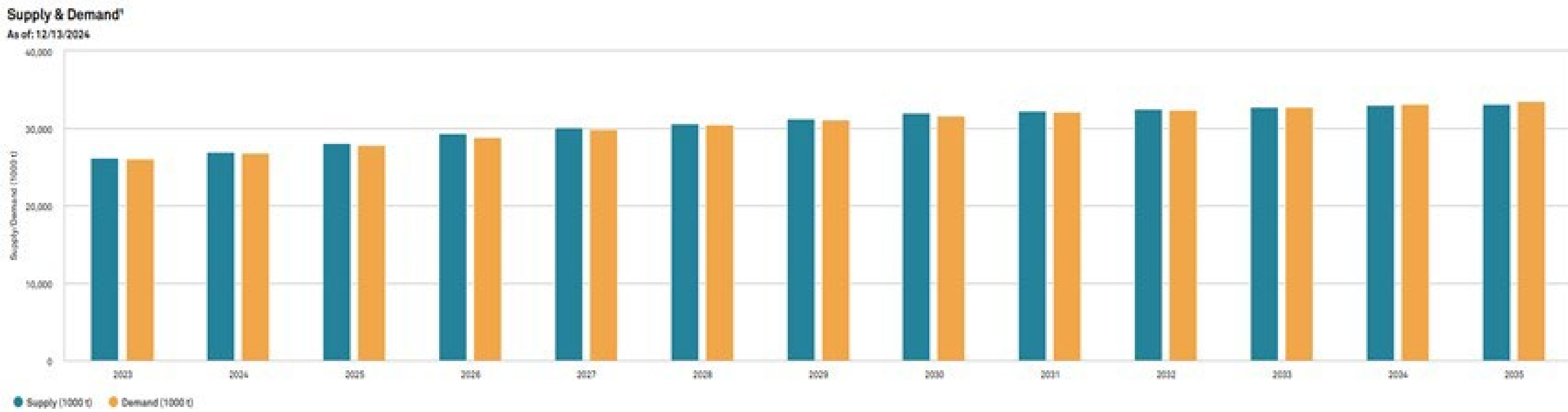
16.1.1.2 Copper Market Balance and Price

Figure 16-2 shows S&P's projected supply and demand of refined copper. Global copper demand is expected to grow from 26.8 Mt in 2024 to 29.8 Mt in 2027, representing a year-over-year (YOY) average increase of 3.4%. The demand growth rate is currently forecasted to slow down to approximately 2% YOY after 2027. According to S&P, the increase in demand is partially driven by energy transition and increase in solar power capacity in Asian markets as well as increased electrical vehicle (EV) production in China.

Refined copper supply is expected to grow at an average rate of 3.1% until 2027 and slow down to approximately 1% due to lack of committed projects. Global mine supply is expected to peak in 2030 at 27.3 Mt.

Copper prices for the economic analysis were estimated from Bloomberg's analysis of consensus industry forecasts and internally reviewed by Buenaventura. The metal prices selected have taken into account the current Project life. The metal prices are representative of industry forecasts.. The prices used for the economic analysis are shown in Table 16-1 in subsection 16.1.3.

Figure 16-2: Projected Supply and Demand of Refined Copper



Source: S&P Market Intelligence 2025

16.1.2 Overview of Silver, Gold, Zinc, and Lead Market

Silver, gold, zinc, and lead represent a combined 10% of El Brocal's gross revenue. Given their impact on the El Brocal revenue mix, Buenaventura has based its silver, gold, zinc, and lead price forecast only from Bloomberg's analysis of consensus industry forecasts and has not prepared a market study for these commodities.

16.1.2.1 Silver and Gold Outlook

Gold is a precious metal commonly used for investments and jewellery (rings, necklaces, watches, etc.). Its superior electrical conductivity and resistance to corrosion also make it an important input in various electronic and technology applications. Jewellery accounts for 50% of gold usage. Investments (gold bars and coins) represent 25% of gold usage.

Similar to gold, silver has ancient usage in jewellery and coinage, which now account for 30% and 8% of silver demand respectively. Silver has extensive use in industrial applications, with electrical/electronic uses accounting for 23% of demand. In electronics, silver is used for its excellent electrical conductivity, lack of corrosion, and ease of mechanical use – but given its lower price and higher availability, it sees far more widespread usage than gold in this area.

S&P forecasts that gold and silver markets in 2025 are poised to remain bullish, buoyed by economic and geopolitical uncertainty.

Silver and gold represent 7.0% and 2.1% of El Brocal gross revenue, respectively. Buenaventura's forecast for silver and gold prices is based on Bloomberg's analysis of consensus industry forecasts. The prices used for the economic analysis are shown in Table 16-1 in subsection 16.1.3.

16.1.2.2 Zinc and Lead Outlook

Zinc is an excellent anti-corrosion agent and bonds well with other metals. It is also moderately reactive and a fair conductor of electricity. It is well recognized for its effectiveness in protecting steel against corrosion by galvanizing, and as such this accounts for 60% of total zinc consumption. Galvanized zinc is widely used in multiple industrial applications such as automobile bodies, air conditioners, etc. Zinc is also commonly used for alloy production, as well as chemical uses and battery production. By end-use sector, construction and transportation add up to approximately 70% of total demand. In the transportation sector, the automotive industry accounts for approximately 10% of global zinc demand.

Currently, lead consumption has become dominated by its application in lead-acid batteries (LABs), which accounts for approximately 85% of total lead consumption. The greater portion of lead consumed in the battery sector is dedicated to SLI Batteries (Starting, Lighting and Ignition), which are mostly found in cars and motorcycles. Going forward, both production of new vehicles (or Original Equipment [OE]) and replacement of failed batteries in existing vehicles are important demand drivers. These are followed by industrial batteries, accounting for nearly a third of lead demand. The rest is for non-battery uses including submarine cables, some chemicals, and radiation shielding.

Zinc and lead represent 0.9% and 0.2% of El Brocal gross revenue, respectively. Buenaventura's forecast for zinc and lead prices is based on Bloomberg's analysis of consensus industry forecasts. The prices used for the economic analysis are shown in Table 16-1 in subsection 16.1.3.

16.1.3 El Brocal Price Forecast for the Economic Analysis

Copper, silver, gold, zinc, and lead prices for the economic analysis were estimated from Bloomberg's analysis of consensus industry forecasts and internally reviewed by Buenaventura. The metal prices are representative of industry forecasts. The prices used for the economic analysis are shown in Table 16-1.

Table 16-1: El Brocal Price Forecast for Economic Analysis

Metal Prices	2025	2026	2027	2028	2029- Long Term
Gold (US$/oz)	2,000	2,539	2,200	2,172	2,172
Silver (US$/oz)	26.00	32.50	27.50	29.00	29.00
Copper (S$/lb)	4.04	4.43	4.52	4.90	4.90
Lead (US$/lb)	0.86	0.95	1.00	1.02	1.02
Zinc (US$/lb)	1.13	1.25	1.22	1.22	1.22

16.2 Contracts

El Brocal currently has contracts with 316 suppliers for operating and service activities at the mine site, such as:

- Mining operations: Drilling, explosives, loading, hauling, maintenance, and others
- Processing: Electromechanical services, water treatment plant, and laboratory services
- Suppliers for consumables, reagents, maintenance, and general services
- G&A requirements, and other services to support a remote mine operation
- Consulting services

The SLR QP has not reviewed the various support service contract details at El Brocal, however, Buenaventura has used these contractors in the past and continues to do so.

17.0 Environmental Studies, Permitting, and Plans, Negotiations, or Agreements with Local Individuals or Groups

17.1 Environmental Aspects

17.1.1 Environmental Setting

The El Brocal open pit and underground operations are comprised of two areas: the Colquijirca Mine, where the Tajo Norte open pits and the processing plant are located, and the Marcapunta Mine, where the Marcapunta underground mine is located.

Baseline characterization of existing environmental conditions for El Brocal was carried out as part of the environmental studies required for preparation of Environmental Impact Assessments (EIAs) and technical supporting reports. The baseline characterization reports were not included within the documentation made available to SLR for review.

17.1.2 Environmental Studies and Management Plans

According to the Law of the National System of Environmental Impact Assessment (Law No. 27446, 2021), any activity that can cause significant negative environmental and socio-economic impacts must be evaluated before execution. Management and/or mitigation measures shall be developed to avoid, minimize, mitigate, or compensate for adverse impacts and enhancement measures to maximize positive impacts. Once the EIA study is approved, commitments established in the management plans or other parts of the EIA, including conditions resulting from EIA's approval, become environmental and socio-economic binding obligations that can be audited, and non-compliance is sanctionable.

Similarly, the national regulation requires the mining company to make a technical and economic proposal for rehabilitating the intervened areas to ensure compatibility with the surrounding ecosystem when mining activity ends. Such proposal is the Mine Closure Plan (MCP), which must be implemented during the mine's life cycle (progressive closure) and at the end of operations (final closure and post-closure).

The legal instruments referred to above also consider approaches for managing socio-economic impacts/effects resulting from mining projects. Regulations require the mining proponent to have a Social Management Plan, which is a set of strategies, programs, plans, and social management measures designed to avoid, minimize, mitigate, or compensate for negative social impacts and enhance positive social impacts resulting from the mining project in the respective area of influence. The Social Management Plan(s), Environmental Management Plan(s), and Monitoring Plans are integral parts of the EIA and are approved as part of it.

The Peruvian regulatory framework also requires other sectorial permits before the commencement and development of mining activities, such as permits for using natural resources and protecting natural heritage or culture (as applicable).

El Brocal was initially approved by the Peruvian government in 1997 (execution approved in 2022) through the Environmental Compliance and Management Program (PAMA for its acronym in Spanish) regulated by the Supreme Decree 016-93-EM, which has since been repealed. This instrument required mines already operating before 1993 to have management measures and comply with environmental obligations established by the regulation. Subsequently various environmental studies have been completed between 2001 and 2023 involving submissions of EIAs and technical supporting reports to the regulatory authorities in compliance with the Peruvian environmental regulations. SLR received copies of the section on potential environmental effects assessment and the Environmental Management Plan (EMP) extracted from the following submissions:

- Modification of the EIA for the expansion of production capacity to 18,000 tpd prepared in September 2011
- EIA for the Marcapunta Mine (North and South Zones) prepared in May 2013
- Sixth Supporting Technical Report (ITS for its acronym in Spanish) for the Colquijirca Mining Unit prepared in September 2021

These reports document the identification of project activities to be assessed, outline the methodology adopted for assessment of potential environmental effects of such activities, and present the results of the assessment for the construction, operation, and closure phases. It is understood by the SLR QP that the results of the assessment informed the identification of the environmental monitoring plan and associated activities captured in the EMP.

The main potential environmental effects evaluated in the modification of the EIA from 2011 and the EIA for the Marcapunta Mine from 2013 include the following:

- Impacts to the visual quality of the landscape;
- Changes in soil quality, soil use and soil compaction;
- Changes in topographic relief;
- Changes in air quality and ambient noise;
- Changes in surface water quality;
- Changes in groundwater quality and phreatic level;
- Reduction of vegetation cover;
- Changes in terrestrial fauna;
- Changes in the aquatic ecosystem; and
- Changes to socio-economic aspects.

The SLR QP notes that the environmental effects assessments appear to have followed a qualitative approach without implementation of numerical analyses and/or modelling to support a quantitative approach, contrary to best practices for the development of EIAs. The SLR QP also notes that El Brocal has implemented a proper environmental monitoring program where results are regularly documented in quarterly (physical monitoring) or biannual (biology monitoring) reports submitted to the authorities for regulatory compliance,

An EMP has been developed (various versions issued through the years), applicable to operations and construction activities, which includes the following programs based on the EMPs provided by Buenaventura to SLR:

- Prevention and mitigation;
- Waste management;
- Supplies management;
- Rehabilitation and revegetation;
- Environmental supervision and overseeing;

- Training;
- Environmental monitoring;
- Social impact mitigation;
- Community relations plan.

A new modification to the EIA for production capacity expansion to 25,000 tpd is currently under the approval process by the environmental authority (see Section 17.3.2). Buenaventura informed SLR that an ecological and human health risk assessment was conducted in support of this permitting application (the report was not included within the documentation made available to SLR for review).

An annual report documenting compliance with the environmental management strategy implemented for the El Brocal operation is submitted to the Peruvian Ministry of Energy and Mines (MINEM for its acronym in Spanish) in agreement with Article No. 55 of Supreme Decree D.S. 040-2014-EM. Buenaventura provided SLR with copies of four reports documenting the activities and environmental monitoring results completed in 2020, 2021, 2022 and 2023 (Buenaventura 2021 2022a, 2023 and 2024a). The annual reports include the following information:

- Undertaken activities associated with six components of the EMP, namely air and noise, soils, surface water, groundwater, and wild flora and fauna (also vibrations in 2020 and 2021);
- Results of environmental monitoring (air quality, ambient noise, water and biology);
- Withdrawal of natural freshwater for operations;
- Solid waste management;
- Community relations plan;
- Contingency plan;
- Appended documents:
  - Quarterly monitoring reports for air quality and ambient noise for the Colquijirca Mine area
  - Quarterly monitoring reports for air quality and ambient noise for the Marcapunta Mine area
  - Quarterly monitoring reports for water quality
  - Biannual reports for terrestrial biology (dry and wet seasons)
  - Biannual reports for aquatic biology (dry and wet seasons)
  - Copy of populated online declaration forms for solid waste management
  - Emergency preparedness and response plan for extreme precipitation events resulting from El Niño-Southern Oscillation (ENSO)

According to annual environmental reports provided by Buenaventura to SLR, the environmental monitoring program includes the following:

- Four monitoring stations for industrial effluent water discharge;
- One monitoring station for treated domestic wastewater discharge;
- Nine monitoring stations for surface water in the receiving environment;

- Four monitoring stations for air quality (two reported for both the Colquijirca and the Marcapunta Mine areas, and two reported only for the Colquijirca Mine area); and
- 14 monitoring stations for ambient noise (eight reported for the Colquijirca mine area and six reported for the Marcapunta mine area).

Of note, although the EMP includes quarterly monitoring of groundwater at eight locations, no groundwater quality monitoring results were included within the documentation made available to SLR for review.

Biology monitoring was not reported for 2020 and only biology monitoring for the dry season was reported for 2021. Biannual biology monitoring was resumed in 2022. According to the aquatic biology reports for the 2023 dry season and the 2023 wet season, no fish were found at the monitoring locations.

Buenaventura stated in the conclusions of the quarterly monitoring reports for 2023 provided to SLR that the monitoring results are in compliance with the environmental regulations in force. No known environmental issues were identified by the SLR QP from the information on environmental studies provided by Buenaventura for review. The SLR QP is not aware of any non-compliance environmental issues raised by the authorities.

17.1.3 Key Environmental Issues

In the SLR QP's opinion, there are no environmental issues that could materially impact the ability to extract the Mineral Reserves based on the review of the available documentation.

17.1.4 Environmental Management System

According to the Integrated Annual Report for 2023 published by Buenaventura on its website, the company has an integrated management system covering Quality, Environment, Safety and Occupational Health that allows Buenaventura to manage both operational and support processes. One of the focuses of this approach is supervising activities to prevent environmental impacts and risks to the health and safety of the company's employees.

The objective set by Buenaventura of the integrated management system (SIB) is to develop, implement, review, maintain and improve performance in environmental, quality and safety areas. It is based on the ISO 9001 (Quality Management), ISO 14001 (Environmental Management), and ISO 45001 (Occupational Health and Safety Management) standards. These standards provide systematic guidelines for environmental, quality and safety performance, allowing the company's performance to be evaluated according to internationally accepted criteria.

The integrated management system comprises policies, commitments, procedures, and regulations applicable to Buenaventura and its affiliated companies and subsidiaries. Below is a list of the key policies developed by Buenaventura:

- Environmental, Social, Health and Safety Policy issued in November 2018
- Environmental Policy issued in July 2022
- Human Rights Policy issued in July 2022
- Commitment to Protecting Biodiversity and Avoiding Deforestation issued in 2023 (Buenaventura, 2023).

17.2 Waste and Tailings Disposal, Site Monitoring, and Water Management

17.2.1 Environmental Geochemistry

A key environmental concern associated with mine waste material is their long-term geochemical behaviour in the context of acid rock drainage (ARD) and metal leaching (ML) potential, which may result in significant environmental impacts under conditions where sulphide mineral oxidation products may be transported by meteoric water, contaminating down-gradient surface waters and/or groundwaters.

According to the geochemical characterization (static testing) completed on tailings reported in the Mine Closure Plan from 2006 (SVS Ingenieros 2010 and 2011a), six of ten samples were characterized as potentially acid generating (PAG)[1] while the remaining four samples were characterized as non-PAG. No information on ML potential from geochemistry evaluation was found in the documents made available to SLR for review.

Geochemistry work (static testing) related to the waste rock was completed on eight samples from the Tajo Norte pit (SVS Ingenieros 2011a). According to the results, the waste rock was characterized as non-PAG, where the neutralization potential exceeds the acidity potential. No information on ML potential from geochemistry evaluation was found in the documents made available to SLR for review.

According to SRK (2022a), detailed geochemical analysis has not been conducted, and predictive numerical calculations have not been produced to determine future water quality predictions. The nature of the geology and mine waste materials at El Brocal indicate that ARD and ML could be an issue at post-closure. SRK (2022a) states that according to available geochemistry results, the majority of waste rock is non-PAG although in contrast the majority of the tailings is classified as PAG. SRK (2022a) reports that satellite imagery from site indicate visual impacts of ARD and ML for the open pit and TSF.

The SLR QP recommends the completion of additional geochemistry sampling, testing and characterization. The additional geochemistry work will allow Buenaventura to better understand the long-term potential for ARD and ML, identify the need for changes required to manage contact water during operations and closure stages, and inform the implementation of appropriate closure measures required to achieve chemical stability.

17.2.2 Tailings Management

The conclusions and observations from the review of tailings disposal at El Brocal are as follows:

- SLR identified evidence of proper governance of the Huachuacaja TSF, including an Operation, Maintenance and Surveillance (OMS) Manual, water balance modelling, a dam breach study, annual dam safety inspections, geotechnical dam instrumentation, and the appointment of an EoR). An exception is noted with respect to independent review as discussed below. The governance structures and processes observed appear to be generally in conformance with the Global Industry Standard on Tailings

[1] Potentially acid generating, or PAG material is classified as such based on common static and/or kinetic geochemical test results demonstrating that the acidity that could be generated through the oxidation of sulphide minerals (e.g., pyrite) exceeds the capacity of the acid-consuming minerals (e.g., calcium carbonate) in the tailings or the waste rock to neutralize the acidity.

Management (GISTM) requirements. Formal efforts to meet GISTM conformance protocols were not observed during the review.

- It was noted during the review that there is a lack of independent review of the TSF. Independent review is necessary to maintain transparency, reduce risk, and to meet conformance with GISTM. Note that GISTM states that, for dams classified as Low to Significant consequence, an individual reviewer is to be nominated, as compared to a multi-professional panel for higher consequence structures.
- Similarly, the Dam Safety Reviews (DSR) should be performed by qualified teams, fully independent of the ongoing designs and planning for the facility. It is noted that Lara Consulting & Engineering, as EoR, carried out the most recent DSR.
- El Brocal staff stated that the currently-permitted capacity of the TSF is in excess of the stated mineral reserve tonnages, and this was confirmed during the review process.
- In the most recent DSR completed in January 2024 (Lara Consulting & Engineering 2024a), several deficiencies and non-conformities were noted. These were minor for the Main Dam and for the R4 Dam. However, for the R4 Dam, two significant observations were made:
    - Absence of geotechnical instrumentation installed to monitor dam performance.
    - Absence of appropriate drainage to manage seepage at downstream toe of dam.

The SLR QP recommends the following:

- Implement independent review for the TSF to improve transparency, reduce risk, and to meet conformance with GISTM. This would include appointing a qualified Independent Technical Reviewer; and also carrying out an independent DSR.
- Consider developing and implementing a plan to address the recommendations from the annual dam safety inspections, including a register to track its resolution and define the timeline to complete the proposed actions.
- Conduct a risk assessment for the Huachuacaja TSF including all retaining structures and supporting infrastructure. As part of the risk assessment, consider the need to install and monitor instrumentation in the R4 and R5 auxiliary dams for performance monitoring informed by the risk profiles of these structures. The risk assessment should be updated at least every three years or if there are any significant changes to the facility operations or infrastructure.
- Address the two main deficiencies noted in the latest DSR (Lara Consulting & Engineering 2024a), namely:
    - Absence of geotechnical instrumentation installed to monitor dam performance.
    - Absence of appropriate drainage to manage seepage at downstream toe of dam.

17.2.3 Water Management

Water supply for the El Brocal operation is obtained from the Laguna de Pun Run, the Blanco River, and the Jupayragra Hydropower Plant.

The site-wide water management system involves separation of contact and non-contact water (i.e., freshwater diversions). Contact water is surface water that has been exposed to excavated materials (e.g., ore, tailings and waste rock) or mining process facilities (e.g., water within the Process Plant and the Underground Mine). Non-contact water is surface runoff that has not been in contact with any disturbed surface within the El Brocal area and is diverted around the mine facilities.

Excess contact water that is not used in support of operation activities is discharged to the receiving environment following water quality treatment as applicable depending on the chemistry of the water. Effluent discharge to the receiving environment includes:

- the treated domestic wastewater from the offices area (Huaraucaca);
- the treated domestic wastewater from the industrial area;
- the treated industrial effluent from the high-density sludge treatment plant; and
- the hydropower water from the Jupayragra Hydropower Plant.

El Brocal has domestic wastewater treatment systems to treat effluent from the Colquijirca plant and camp, and from the Huaraucaca plant and administration buildings.

17.3 Environmental Permitting

17.3.1 Current Permits, Approvals, and Authorizations

The El Brocal operation is managed according to the environmental and closure considerations presented in three types of documents, which must be approved by directorial resolutions from the Peruvian government:

- EIA and subsequent amendments and modifications
- Supporting Technical Reports (ITS for its acronym in Spanish)
- Mine Closure Plan

El Brocal complies with applicable Peruvian permitting requirements. The permits are Directorial Resolutions (RD for its acronym in Spanish) issued by the Peruvian authorities upon approval of mining environmental management instruments filed by the mining companies such as EIAs, ITS, and MCPs.

Buenaventura maintains an up-to-date record of the legal permits obtained to date, documenting the approval document ID (which includes the approving authority), the subject of the licence, and the approval date. The RDs on environmental certifications and mine closure planning are listed in Table 17-1.

Table 17-1: Current Permits

Approval Document ID	Approved Licence	Date of Issue
Environmental Certifications		
R.D. No. 008-97-EM/DGM	Environmental Compliance and Management Program (PAMA) for the Colquijirca Mining Unit	January 13, 1997
R.D. No. 425-2001-EM/DGAAM	Environmental Impact Assessment for Tailings Storage Facility No. 5	December 28, 2001
R.D. No. 306-2002-EM/DGM	PAMA Execution for the Colquijirca Mining Unit	November 8, 2022

Approval Document ID	Approved Licence	Date of Issue
R.D. N° 416-2004-EM/DGAAM	Environmental Impact Assessment for the capacity expansion project of the Huaraucaca Concentrator Plant (4,000 tpd)	September 9, 2004
R.D. No. 215-2007-MEM/AAM	Environmental Impact Assessment for Tailings Storage Facilities No. 6 and No. 7 of the Colquijirca Mining Unit	June 22, 2007
R.D. No. 163-2008-MEM/AAM	Environmental Impact Assessment to restart the Marcapunta North Mine operations in the mining concessions of La Acumulación and La Coalición, located in the Tinyahuarco District, in the Province of Pasco	July 4, 2008
R.D. No. 048-2011-MEM-AAM	Environmental Impact Assessment for the expansion of production capacity to 18,000 tpd of the Colquijirca Mining Unit	February 14, 2011
R.D. No. 324-2012-MEM/AAM	Modification of the Environmental Impact Assessment for Tailings Storage Facilities No. 6 and No. 7 – Dam raising and expansion of the integrated Tailings Storage Facility No. 7	October 5, 2012
R.D. No. 361-2012-MEM/AAM	Modification of the Environmental Impact Assessment for the expansion of production capacity to 18,000 tpd of the Colquijirca Mining Unit	November 6, 2012
R.D. No. 533-2014-EM/DGAAM	Environmental Impact Assessment for Marcapunta Mine (north and south zones)	October 23, 2014
R.D. No. 136-2016-DGAAM	First ITS for technological improvement of the industrial wastewater treatment system of the Colquijirca Mining Unit	May 3, 2016
R.D. No.113-2016-SENACE/DCA	Second ITS to carry out diamond drilling in the Tajo Norte pit (south zone) of the Colquijirca Mining Unit	November 16, 2016
R.D. No. 135-2017-SENACE/DCA	Third ITS for reuse of Huaraucaca tailings	May 31, 2017
R.D. N° 060-2018-SENACE-JER/DEAR	Fourth ITS for the expansion of the Tajo Norte pit operation, and optimization of the 21.6k beneficiation plant and auxiliary facilities	May 7, 2018
R.D. No. 371-2017-MEM-DGAAM	Detailed technical record of the Colquijirca Mining Unit	December 28, 2017
R.D. No. 090-2019-SENACE-PE/DEAR	Fifth ITS of the Colquijirca Mining Unit	May 27, 2019
R.D. No. 105-2021-SENACE-PE/DEAR	Detailed Environmental Management Plan (PAD)	June 11, 2021
R.D. No. 00126-2021-SENACE-PE/DEAR	Sixth ITS of the Colquijirca Mining Unit	September 27, 2021
Mine Closure Plans		
R.D. No. 018-2008-MEM/AAM	Mine Closure Plan for the Hydrocarbure Storage Facility of the Colquijirca Fuel Station	January 23, 2008

Approval Document ID	Approved Licence	Date of Issue
R.D. No. 064-2009-MEM/AAM	Mine Closure Plan for the Colquijirca Mining Unit	March 20, 2009
R.D. No. 243-2012-MEM/AAM	First Mine Closure Plan update for the Colquijirca Mining Unit	July 19, 2012
R.D. No. 034-2016-MEM-DGAAM	Modification of the Mine Closure Plan for the Colquijirca Mining Unit	January 29, 2016
R.D. No. 077-2019-MEM-DGAAM	Second Mine Closure Plan update for the Colquijirca Mining Unit	May 23, 2019

17.3.2 Future Permits and Authorizations

A new modification to the EIA for production capacity expansion to 25,000 tpd was submitted to the National Service of Environmental Certification for Sustainable Investments (SENACE for its acronym in Spanish) and is currently in the approval process. This pending approval includes the expansion of the Huachuacaja TSF, which is needed for long-term operations. Government staffing issues have been continuously delaying the review and approval.

Buenaventura is considering two alternatives for expansion of tailings storage capacity: dam raising maintaining the same TSF footprint, and land acquisition to enlarge the TSF footprint. The later is the preferred option from an operational perspective because the costs associated with it are lower than carrying out dam raising. However, negotiations for land acquisition have proven to be quite challenging for Buenaventura and the current plan for future tailings disposal relies on dam raising.

The current dam crest elevation is 4,121 MASL. Environmental approval has been already granted to raise the dam crest to elevation 4,225 MASL, which provides tailings storage capacity until 2039 according to the current mine plan and tailings deposition plan developed by Buenaventura for El Brocal.

17.3.3 Permitting Schedule

According to a teleconference held with Buenaventura on February 5, 2025, SLR understands that approval of the EIA modification by SENACE is anticipated to occur in Q1 2025.

17.4 Social or Community Requirements

17.4.1 Social Setting

El Brocal's area of influence comprises rural communities in the Tinyahuarco District. These communities are mainly dedicated to rural and urban trade related to the El Brocal operations activities and have established local businesses serving the mine. While the direct area of influence involves five rural communities (Huaraucaca Villa de Pasco, Santa Rosa de Colquijirca, Smelter, Vicco, and Colquijirca), the indirect area of influence involves two rural communities (Ucrucancha and Sacra Familia).

17.4.2 Key Social Issues

The key social issues associated with El Brocal operations are the following:

- High expectations from surrounding communities in terms of support to be provided by El Brocal.
- The potential in the future for communities to lose economic benefits associated with the mine operations as the mine approaches the end of its lifecycle if a social transition plan is not implemented well in advance.
- Discontent among members of the communities has the potential to result in blockades and shutdowns depending on the duration of the blockades.

SLR understands that one of the key social risks is managing high expectations from surrounding communities. In 2023, the mine had two partial shutdowns due to blockades by neighbouring communities requesting contracting opportunities for their owned businesses (Buenaventura 2024b).

17.4.3 Social Management System

The EMP includes a program for the mitigation of social impacts with the following objectives (InsideO 2021a):

- Appropriate management of possible environmental impacts to prevent affecting the population.
- Inform the population about the possible impacts to be produced and the measures planned for their management and mitigation.
- Inform the residents that, if affected, social compensation measures will be established to mitigate any impacts.
- Develop a continuous communication approach with the population for them to be informed of their expectations, concerns, progress of mitigation programs, and community relations. This is mainly driven by the Permanent Information Office established by Buenaventura in order to improve the relationship between the company and the community.

The actions identified for implementation of the social mitigation program involve the following:

- Ongoing communication with the communities, authorities, and other key stakeholders, including local businesses to provide information about the operations, seek feedback and gather requests and concerns (e.g., regular meetings and workshops).
- Establishment of Permanent Information Offices in Colquijirca and Huaraucaca to facilitate the exchange of information between communities and the mine, including gathering their questions and concerns (these offices are already functioning).
- Develop plans and programs to manage community’s impacts and respond to their requests.
- Implementation of a grievance mechanism system to receive, handle, and respond to community’s questions and concerns.
- Support communities to meet their needs and priorities through community investment initiatives such as training in productive activities tailored to the characteristics of the population (e.g., age, gender, occupation)
- Support for activities to improve the use of natural resources (e.g., improvement of pastures, adequate use of water).

- Implementation of health, nutrition, infrastructure improvement, and education programs.

The Community Relations Plan, which is included in the EMP, integrates the social mitigation program and the management of social impacts related to the El Brocal operations. Through the Community Relations Plan, El Brocal implements actions that allow compliance with the commitments stipulated in the environmental management instruments, aligned with the current legal framework on socio-environmental matters, in effect in Peru. The actions are captured in the annual work plan of the Social Management Plan (InsideO 2021a).

The social management plans and programs approved in the 2013 EIA (approved in 2014 through Directorial Resolution R.D. No. 533-2014-EM/DGAAM) are included in the Community Relations Plan, which comprises the following three plans (InsideO 2021a):

- Communications,
- Enquiries, complaints, and requests,
- Social development.

The social development plan includes social investment initiatives (e.g., health, education, and capacity building), local employment and contracting, and community infrastructure development.

El Brocal has Permanent Information Offices in Colquijirca and Huaraucaca where communities from the area of influence can learn about the mine operations and raise questions and concerns.

According to the Integrated Annual Report for 2023 (Buenaventura 2024b) published in the company's website, Buenaventura has experienced an increase in the reporting of complaints related to possible violations of its Code of Ethics and Good Conduct, from 68 complaints in 2022 to 108 in 2023. El Brocal was the locality that files the most complaints (23% of the total). Buenaventura noted in its annual report that each complaint was dealt with diligently, resulting in the implementation of corrective actions and penalties proportional to the seriousness of the offense. These measures were established after thorough investigations varied out by the Incidents Committee of the company.

A community engagement plan (included in the EIA from 2011) and a community relations protocol were provided to SLR as part of this review. SLR is not aware of a formal grievance mechanism procedure being used by El Brocal. SLR understands that a new community engagement plan (Community Relations Plan) has been developed as part of the EIA submitted to SENACE for approval (see Section 17.3.2).

17.4.4 Community Engagement and Agreements

In alignment with its Corporate Responsibility Policy, El Brocal seeks to contribute to the sustainable development of the communities impacted by its operations, prioritizing local employment and contracting and social investment focused on health, education, community road improvement and productive projects (Buenaventura 2022b).

SLR understands that El Brocal provides donations and social investment opportunities in the areas of health, education, community, and infrastructure development to respond to community needs and priorities. In 2023, social investment initiatives and programs included health and education support and campaigns, implementation of the Learning to Grow Program ("Aprender para Crecer"), production and infrastructure programs such as the Productive Development and Commercial Articulation Program, and infrastructure works (e.g., irrigation and road pavement). (Buenaventura 2024b).

Based on a teleconference held with the El Brocal Social team on January 2, 2024, the company appears to maintain positive working and commercial relationships with the communities within the area of influence of its mine operations.

El Brocal negotiates and acquires lands as required by its operations and expansions. SLR understands that El Brocal continues negotiations with the Santa Rosa de Colquijirca community to acquire land (500 ha) for the lifetime expansion of the Huachuacaja TSF. In 2023, El Brocal entered into agreements with the Smelter community for 12 replacement works as part of the commitments from the transfer of the Old Smelter to the New Smelter agreed upon through an extrajudicial settlement (Buenaventura 2024b). It also purchased two properties in Old Smelter for the expansion of the open pit, and another two properties in the Lourdes neighbourhood in Huaraucaca (Buenaventura 2024b).

In 2023, El Brocal executed a Citizen Participation Plan associated with the modification to the EIA for production capacity expansion to 25,000 tpd (currently under approval process by SENACE). El Brocal stated that the positive relationships with the communities within the social area of influence had facilitated the smooth execution of the workshops and public hearings part of the aforementioned Citizen Participation Plan (Buenaventura 2024b).

17.4.5 Indigenous Peoples

According to information provided by Buenaventura, there are three communities within the social area of influence recognized as indigenous by the Peruvian government. Those communities are Huaraucaca, Sacra Familia, and Vicco.

17.4.6 Local Procurement and Hiring

El Brocal pursues maximization of economic opportunities in the communities of its social area of influence and in the region through local and regional employment and contracting. El Brocal prioritizes hiring and buying locally, and provides training opportunities to help the local workforce and businesses meet the qualifications requirements. For example, for local companies to reach the quality and safety standards, Buenaventura develops a training program that helps the local companies improve their services to meet the needs of the El Brocal operations.

In 2021, El Brocal employed over 3,700 workers. Of them, approximately 64% were workers from the Region, and 33% were from the direct area of influence communities (Buenaventura 2022b).

The communities of the direct area of influence have established locally owned businesses serving the El Brocal mine. For instance, Ecosem Huaraucaca (owned by the Huaraucaca community) and Ecosem Smelter (owned by the Smelter community) provide ore transportation services to the mine and its facilities. In 2021, Buenaventura spent over S/.450 millions in local businesses (Buenaventura 2022b).

17.5 Mine Closure Requirements

17.5.1 Mine Closure Plan and Regulatory Requirements

A formal conceptual MCP was originally prepared in 2009 and has subsequently been updated twice (2012 and 2019) and modified once (2016). According to the New Closure Mining Law No. 31347/21, the MCP should be updated every five years after the first update. The third update of the MCP was submitted for approval on May 24, 2024, and included an updated closure schedule (El Brocal 2024). The MCP addresses temporary, progressive, final closure, and post-closure measures (including maintenance, inspection and monitoring).

The MINEM approved the MCP prepared in 2018 (Directorial Resolution No. 077-2019/MEM-DGAAM dated May 23, 2019). The closure schedule presented in the approved MCP indicates progressive rehabilitation taking place until 2033, with final closure anticipated to be completed between 2034 and 2036 and five years of post closure from 2037 to 2041.

Law 31347/2021 also establishes the need for the proponent to submit progressive rehabilitation/closure reports to government agencies including, among others, the MINEM. The objective of these progressive rehabilitation reports is to show the level of progress in the execution of closure activities, including detailed engineering designs, associated costs, and their percentage of completion. SLR received a copy of the biannual progress reports completed for 2022 and 2023, and one report for 2024. The report from 2024 states that rehabilitation progress was tracking behind the approved schedule. The same report mentions that the third update of the MCP was already submitted to MINEM for review and approval, and presents an updated closure plan schedule, which is quite detailed. Buenaventura anticipates receiving approval from MINEM in the first half of 2025.

17.5.2 Closure Cost Estimate and Financial Assurance for Closure

A closure cost estimate was included in the approved MCP (SRK 2018). The total closure cost includes progressive rehabilitation, final closure, and post-closure activities. It was completed considering an inflation rate and a discount rate in accordance with Supreme Decree D.S. 262-2012-MEM/DM. The total closure cost included in the approved MCP is broken down as follows (SRK 2018):

- Progressive rehabilitation US$110,451,361
- Final closure US$21,790,420
- Post-closure US$656,063
- Total US$132,897,844

In Peru, the proponent should provide financial assurance to MINEM to cover the work required to reclaim and close the site. At the time of the approval of the second update of the MCP, the financial assurance was associated with the cost of final closure and post-closure activities. The total cost of the financial assurance approved in 2019 was US$22,446,483.

Law 31347/2021 establishes the need to provide additional financial assurance for progressive rehabilitation. The Project will be required to provide this additional financial assurance for progressive rehabilitation once the third update of the MCP is approved. The financial assurance for each of the mining stages (i.e., progressive rehabilitation, final closure, post-closure) will be released by MINEM once the rehabilitation measures scheduled for each of these mining stages have been completed.

Buenaventura has recently updated the closure costing considering a longer post closure period with water treatment in place in addition to the environmental monitoring. According to this plan, concurrent (progressive) mine reclamation occurs until year 2041, and mine closure and associated water treatment work span between 2042 and 2044. Post-closure works and water treatment monitoring will begin in 2045 and end in 2049. The updated estimated costs for concurrent closure, final closure, and post closure are shown in Section 18.1 Capital Costs in this TRS.

17.6 Qualified Person's Opinion on the Adequacy of Current Plans to Address any Issues Related to Environmental Compliance, Permitting and Local Individuals or Groups

In the SLR QP's opinion, the content of the EMP is adequate to address potential issues related to environmental compliance.

No issues or concerns associated with environmental permitting were identified by the SLR QP based on the documentation provided by Buenaventura to SLR for review, and the meetings held with the El Brocal staff in support of this TRS.

In the SLR QP's opinion, the plans developed as part of the Social Management System are adequate to pursue positive relations with the communities located in the social area of influence, promote social benefits, and contribute to reduce social risk for the El Brocal operations.

18.0 Capital and Operating Costs

The capital and operating costs presented in this section include the costs required for mining and processing Mineral Reserves from the El Brocal Mine. The capital and operating cost estimates have been prepared by Buenaventura and are based on recent operating performance and the current operating budget for 2025. The SLR QP considers these cost estimates to be reasonable, as long as the production targets are realized.

All costs in this section are expressed in Q4 2024 US dollars and are based on an exchange rate of PEN$3.75 per US$1.00.

18.1 Capital Costs

The capital costs required to achieve the El Brocal Mineral Reserve LOM production were estimated by Buenaventura's technical team and reviewed by SLR. Since El Brocal is an operating mine, all capital costs are categorized as sustaining. Sustaining capital costs have been estimated by Buenaventura based on their latest operating budget and actual costs. Based on the SLR QP's review, the sustaining capital costs are estimated to the equivalent of an Association for the Advancement of Cost Engineering (AACE) Class 3 estimate with an accuracy range of -15% to +20%.

Total LOM sustaining capital costs are estimated to be US$381.7 million between years 2025 and 2041. All costs in this section are expressed in Q4 2024 US dollars. The summary breakdown of the estimated sustaining capital costs required to achieve the Mineral Reserve LOM production are presented in Table 18-1.

Table 18-1: Sustaining Capital Costs Summary

Cost Component	Value (US$ millions)
Open Pit Mining	17.6
Tailings Dam	113.1
Processing Plant	30.6
Other Sustaining	8.4
Underground Mining	101.7
Water Management	5.3
Infrastructure	9.4
Other Assets Sustaining Capital	95.5
Total Sustaining Capital Cost	**381.7**

Notes:
1. Sum of individual values may not match total due to rounding.

The open pit mining cost includes remedial work on a collapsed wall, moving of railway lines in 2036 and 2037 to allow expansion of the pit, and moving of electrical lines. The tailings dam costs consist of two additional tailings dam expansions which are planned for 2025/2026 and 2031/2032, and moving the water treatment plant in 2028. The construction of a paste plant is included in the Underground Mining costs and all new equipment purchase and overhauls were accounted for in Other Assets Sustaining Capital.

Mine closure and concurrent reclamation costs for the LOM scenario presented in this TRS are based on Buenaventura's environmental reclamation estimate for the El Brocal Mine, totalling US$67.9 million, as described in section 17.5 of this TRS. The mine closure and concurrent reclamation costs are broken down into:

- Concurrent reclamation between 2025 and 2041 of $48.83 million.
- Mine closure costs between 2042 and 2044 of $18.47 million.
- Post-closure and water treatment and monitoring costs between 2045 and 2049 of $0.56 million.

18.2 Operating Costs

El Brocal operating costs were estimated based on year 2024 actual costs and the current operating budget for year 2025. The costs were estimated by Buenaventura and reviewed by the SLR QP. As El Brocal has been in operation for a number of years, the level of project definition for the operating cost estimates is very high. The operating costs are estimated to the equivalent of an AACE Class 1 estimate with an accuracy range of -5% to +10%, although it is noted that AACE does not typically apply to operating costs.

The operating expenses estimated for mining, processing, and G&A activities to validate the positive cash flow for the Mineral Reserve LOM are summarized in Table 18-2. Operating costs total US$4,769 million over the LOM, averaging US$281 million per year between 2025 and 2041, all years at full production.

Operating costs for mining, processing, and G&A activities were categorized into fixed and variable costs.

The mining costs include all labour, supplies, consumables, and equipment maintenance to complete underground and open pit mining related activities, such as drilling, blasting, loading, and hauling. Fixed costs include workers' salaries, protective equipment, and supplies while variable costs include contractor costs, equipment rentals, and consumables such as diesel, explosives, and drill bits and steel. Variable costs were applied to tonnages mined over the LOM.

The processing costs include all labour, supplies, consumables to complete all processing related activities, such as crushing, grinding, flotation, and thickening at the two flotation concentrator plants. Fixed costs consist primarily of labour costs while variable costs account for consumables.

The administrative expense includes all labour, supplies, consumables, and equipment maintenance to complete administrative, finance, human resources, environmental, safety, supply chain, security, site services, camp and kitchen, and travel related activities. These costs were applied as fixed costs over the LOM.

Given the available project performance data and the high level of project definition, no contingency was included in the operating cost estimate.

Table 18-2: LOM Operating Costs Summary

Cost Component	LOM Total (US$ millions)	Average Annual[1] (US$ millions)	LOM Average (US$/t milled)
Mining (UG + OP)	2,670	157	32.82
Processing	1,491	88	18.33
G&A / Site Services	608	36	7.47
Total Site Operating Cost	**4,769**	**281**	**58.62**

Notes:
1. For fully operational years (2025 – 2028)
2. Sum of individual values may not match total due to rounding.

19.0 Economic Analysis

The economic analysis contained in this TRS is based on the El Brocal Mineral Reserves on a 100% basis, economic assumptions, and capital and operating costs provided by Buenaventura corporate finance and technical teams and reviewed by SLR. All costs are expressed in Q4 2024 US dollars. Unless otherwise indicated, all costs in this section are expressed without allowance for escalation, currency fluctuation, or interest.

A summary of the key criteria is provided below.

19.1 Economic Criteria

19.1.1 Production Physicals

- Mine life: 17 years LOM (between 2025 and 2041)
- El Brocal LOM ore tonnes mined at a 100% basis:
  - El Brocal Underground
    - Ore tonnes mined: 74,651 kt
    - Cu grade: 1.22%
    - Ag grade: 19.60 g/t
    - Au grade: 0.59 g/t
  - El Brocal Open Pit
    - Ore tonnes mined: 6,702 kt
    - Waste tonnes mined: 109,471 kt
    - Stripping ratio: 16.3 W:O
    - Cu grade: 1.70%
    - Ag grade: 75.87 g/t
    - Au grade: 0.02 g/t
    - Pb grade: 0.52%
    - Zn grade: 1.07%
- Total LOM Processing mill feed: 81,353 kt
  - Au grade: 0.55 g/t
  - Ag grade: 24.23 g/t
  - Cu grade: 1.26%
  - Pb grade: 0.04%
  - Zn grade: 0.09%
  - Plant 1 Cu Concentrate – Mill Feed: 74,651 kt
  - Plant 2 Cu Concentrate – Mill Feed: 4,935 kt
  - Plant 2 Pb-Zn Concentrates – Mill Feed: 1,766 kt

- Contained metal:
    - Au: 1,427 koz
    - Ag: 63,386 koz
    - Cu: 1,026 kt
    - Pb: 34.5 kt
    - Zn: 71.8 kt
- Concentrate production:
    - Plant 1 Cu Concentrate: 3,542 kdmt Cu concentrate at 22.5% Cu grade
    - Plant 2 Cu Concentrate: 395 kdmt Cu concentrate at 20.0% Cu grade
    - Plant 2 Pb Concentrate: 24,476 dmt Pb concentrate at 39.9%% Pb grade
    - Plant 2 Zn Concentrate: 86,359 dmt Zn concentrate at 44.4% Pb grade
- Average LOM Net Recoveries:
    - Au recovery: 27.0%
    - Ag recovery: 51.6%
    - Cu recovery: 85.4%
    - Pb recovery: 28.3%
    - Zn recovery: 53.4%
- Recovered metals:
    - Au: 385 koz
    - Ag: 32,711 koz
    - Cu: 877 kt
    - Pb: 10 kt
    - Zn: 38 kt
- Payable metals:
    - Au: 94 koz
    - Ag: 23,712 koz
    - Cu: 834 kt
    - Pb: 9 kt
    - Zn: 31 kt

19.1.2 Revenue

- Revenue is estimated based on metal prices provided to SLR by Buenaventura, which sourced them from Bloomberg Street Consensus Commodity Price Forecasts from January 2025. The Bloomberg metal price forecast is presented in Table 19-1.

Table 19-1: El Brocal Cash Flow Metal Prices

Metal Prices	2025	2026	2027	2028	2029- Long Term
Gold (US$/oz)	2,000	2,539	2,200	2,172	2,172
Silver (US$/oz)	26.00	32.50	27.50	29.00	29.00
Copper (S$/lb)	4.04	4.43	4.52	4.90	4.90
Lead (US$/lb)	0.86	0.95	1.00	1.02	1.02
Zinc (US$/lb)	1.13	1.25	1.22	1.22	1.22

- Logistics, treatment, and refining charges:
    - Cu concentrate treatment charges: $440.21/t concentrate
    - Pb concentrate treatment charges: $316.12/t concentrate
    - Zn concentrate treatment charges: $317.96/t concentrate
- Third-party royalties: There are no third party royalties applicable to El Brocal operations.
- The LOM Net Revenue for this scenario, after treatment and refining charges and third-party royalties, is $8,041 million.

19.1.3 Capital Costs

- Total LOM sustaining capital costs of $382 million.
- Concurrent reclamation between 2025 and 2041 of $48.83 million.
- Mine closure and water treatment costs between 2042 and 2044 of $18.47 million.
- Post-closure and water treatment and monitoring costs between 2045 and 2049 of $0.56 million.

19.1.4 Operating Costs

- LOM site unit operating costs average of:
    - Mining (Blended Open Pit & Underground): $32.82/t processed.
    - Processing: $18.33/t processed.
    - Support Services/Site G&A: $7.47/t processed.
- Total site unit operating costs: $58.62/t processed.
- LOM site operating costs of $4,769 million.
- Other offsite operating expenses:
    - Concentrate selling expenses of 3.63% of Net Revenue
    - Offsite G&A (Corporate allocation): $1.72/t processed.
- Total LOM Unit Operating Costs (site and offsite): $63.93/t processed.

19.1.5 Taxation and Royalties

- Corporate income tax rate in Peru is 29.50%.

- Special Mining Tax Contribution (IEM) LOM average rate: 2.5%.
- Mining Tax Royalty LOM average rate: 4.6%.
- Employees' profit sharing participation: 8.0%.
- There are no third-party royalties applicable to El Brocal operation.
- SLR has relied on a Buenaventura taxation model for calculation of income taxes applicable to the cash flow.

19.2 Cash Flow

SLR has reviewed the Buenaventura's El Brocal LOM cash flow model considering copper, gold, silver, lead, and zinc as final saleable products, and has prepared its own unlevered after-tax LOM cash flow model based on the information contained in this TRS to confirm the physical and economic parameters of the Property.

The model does not take into account the following components:

- Financing costs
- Insurance

All costs are in Q4 2024 US dollars with no allowance for inflation. An after-tax cash flow summary is presented in Table 19-2.

Table 19-2: Annual After-Tax Cash Flow Summary

Calendar Year				2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045 to 2049
Project Timeline in Years				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21 to 25
Time Until Closure In Years		US$ & Metric Units	LoM Avg / Total	5	4	3	2	1	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	-13	-14	-15	-16 to -20
Market Prices																								
Gold, Forecast		US$/oz	$2,184	$2,000	$2,539	$2,200	$2,172	$2,172	$2,172	$2,172	$2,172	$2,172	$2,172	$2,172	$2,172	$2,172	$2,172	$2,172	$2,172	$2,172	$0	$0	$0	$0
Silver, Forecast		US$/oz	$28.95	$26.00	$32.50	$27.50	$29.00	$29.00	$29.00	$29.00	$29.00	$29.00	$29.00	$29.00	$29.00	$29.00	$29.00	$29.00	$29.00	$29.00	$0	$0	$0	$0
Copper, Forecast		US$/lb	$4.81	$4.04	$4.43	$4.52	$4.90	$4.90	$4.90	$4.90	$4.90	$4.90	$4.90	$4.90	$4.90	$4.90	$4.90	$4.90	$4.90	$4.90	$0	$0	$0	$0
Lead, Forecast		US$/lb	$1.01	$0.96	$0.95	$1.00	$1.02	$1.02	$1.02	$1.02	$1.02	$1.02	$1.02	$1.02	$1.02	$1.02	$1.02	$1.02	$1.02	$1.02	$0	$0	$0	$0
Zinc, Forecast		US$/lb	$1.22	$1.13	$1.26	$1.22	$1.22	$1.22	$1.22	$1.22	$1.22	$1.22	$1.22	$1.22	$1.22	$1.22	$1.22	$1.22	$1.22	$1.22	$0	$0	$0	$0
Physicals																								
1) Tajo Norte Open Pit																								
Total Open Pit Ore Mined		kt	6,702	-	-	-	-	-	-	-	-	-	-	-	-	637	635	1,069	1,694	2,667	-	-	-	-
Total Waste Mined		kt	109,471	-	-	-	-	-	-	-	-	-	-	11,607	24,554	23,817	16,799	16,298	11,240	5,156	-	-	-	-
Total Material Mined		kt	116,173	-	-	-	-	-	-	-	-	-	-	11,607	24,554	24,454	17,434	17,366	12,935	7,822	-	-	-	-
2) Marcapunta Underground																								
Total Underground Ore Mined		kt	74,651	4,197	4,380	4,380	4,380	4,380	4,745	4,745	4,745	4,745	4,745	4,745	4,745	4,745	4,745	4,745	3,200	2,288	-	-	-	-
Total Waste Mined		kt																						
Total Material Mined		kt	74,651	4,197	4,380	4,380	4,380	4,380	4,745	4,745	4,745	4,745	4,745	4,745	4,745	4,745	4,745	4,745	3,200	2,288	-	-	-	-
Total Ore Processed		kt	81,353	4,197	4,380	4,380	4,380	4,380	4,745	4,745	4,745	4,745	4,745	4,745	4,745	5,382	5,380	5,814	4,894	4,955	-	-	-	-
Gold Grade		g/t	0.55	0.34	0.39	0.30	0.51	0.51	0.71	0.56	0.67	0.59	0.71	0.64	0.63	0.55	0.63	0.41	0.48	0.36	-	-	-	-
Silver Grade		g/t	24.23	15.62	16.48	20.35	20.65	17.48	19.85	17.84	25.53	23.58	19.32	17.37	22.87	26.64	27.14	33.17	27.19	53.50	-	-	-	-
Copper Grade		%	1.26%	1.41%	1.31%	1.26%	1.23%	1.23%	1.25%	1.22%	1.21%	1.23%	1.12%	1.20%	1.15%	1.21%	1.27%	1.22%	1.43%	1.42%	-	-	-	-
Lead Grade		%	0.04%	-	-	-	-	-	-	-	-	-	-	-	-	0.15%	0.10%	0.14%	0.02%	0.23%	-	-	-	-
Zinc Grade		%	0.09%	-	-	-	-	-	-	-	-	-	-	-	-	0.26%	0.27%	0.32%	0.04%	0.46%	-	-	-	-
Contained Gold		koz	1,427	46	54	70	71	72	108	86	103	90	109	98	105	96	110	77	75.80	57.50	-	-	-	-
Contained Silver		koz	63,386	2,108	2,321	2,865	2,908	2,461	3,029	2,722	3,894	3,598	3,039	2,650	3,489	4,610	4,694	6,199	4,278	8,522	-	-	-	-
Contained Copper		kt	1,026	59	57	55	56	56	59	58	58	58	53	57	55	65	68	71	70	70	-	-	-	-
Contained Lead		kt	35	-	-	-	-	-	-	-	-	-	-	-	-	8	5	8	1	11	-	-	-	-
Contained Zinc		kt	72	-	-	-	-	-	-	-	-	-	-	-	-	14	15	19	2	23	-	-	-	-
Average Recovery, Zinc		%	27.0%	23.0%	23.0%	23.0%	23.0%	23.0%	23.0%	24.0%	25.0%	26.0%	27.0%	28.0%	29.0%	30.0%	31.0%	32.0%	32.7%	33.6%	-	-	-	-
Average Recovery, Lead		%	51.6%	51.0%	51.0%	51.0%	51.0%	51.0%	51.0%	51.0%	51.0%	51.0%	51.0%	51.0%	51.0%	50.2%	50.8%	51.3%	54.7%	53.9%	-	-	-	-
Average Recovery, Copper		%	85.4%	89.2%	88.4%	87.9%	88.1%	88.1%	87.0%	87.5%	87.4%	87.5%	86.3%	87.3%	86.5%	81.3%	83.7%	81.4%	80.2%	70.5%	-	-	-	-
Average Recovery, Gold		%	20.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	21.4%	20.0%	31.1%	29.7%	31.3%	-	-	-	-
Average Recovery, Silver		%	53.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	52.3%	53.8%	53.4%	53.0%	53.8%	-	-	-	-
Recovered Gold		koz	385	11	12	16	16	17	25	21	26	24	29	27.30	30.32	28.74	33.95	24.04	24.80	19.31	-	-	-	-
Recovered Silver		koz	32,711	1,075	1,184	1,461	1,483	1,255	1,545	1,388	1,986	1,835	1,550	1,351.52	1,779.17	2,315.54	2,385.53	3,182.90	2,338.70	4,596.11	-	-	-	-
Recovered Copper		kt	877	53	51	48	50	50	52	51	50	51	46	49.89	47.32	53.05	57.01	57.79	55.95	55.03	-	-	-	-
Recovered Lead		kt	10	-	-	-	-	-	-	-	-	-	-	-	-	1.79	1.54	2.52	0.36	3.58	-	-	-	-
Recovered Zinc		kt	38	-	-	-	-	-	-	-	-	-	-	-	-	7.39	7.86	10.00	0.95	12.14	-	-	-	-
El Brocal Processing Plants																								
1) Cu Concentrate Plant 1		kdmt	3,542	229	225	215	221	221	232	224	223	227	203	222	210	211	225	207	134.04	110.54	-	-	-	-
Au grade in concentrate		g/t	3.38	1.44	1.72	2.33	2.31	2.34	3.32	2.85	3.58	3.23	4.49	3.83	4.48	4.23	4.68	3.70	5.68	5.34	-	-	-	-
Ag grade in concentrate		g/t	211	146	163	211	209	177	207	192	278	252	237	190	263	238	201	188	264.61	192.79	-	-	-	-
Cu grade in concentrate		%	22.5%	23.0%	22.5%	22.5%	22.5%	22.5%	22.5%	22.5%	22.5%	22.5%	22.5%	22.5%	22.5%	22.5%	22.5%	22.5%	22.5%	22.5%	-	-	-	-
Concentrate Moisture		%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	-	-	-	-
Cu Concentrate (wmt)		kwmt	3,850	249	245	234	240	240	252	244	243	246	221	241	229	230	245	225	146	120	-	-	-	-
2) Cu Concentrate Plant 2		kdmt	305	-	-	-	-	-	-	-	-	-	-	-	-	27	31	50	120.94	150.70	-	-	-	-
Au grade in concentrate		g/t	0.00	-	-	-	-	-	-	-	-	-	-	-	-	0.01	0.01	0.02	0.08	0.07	-	-	-	-
Ag grade in concentrate		g/t	435	-	-	-	-	-	-	-	-	-	-	-	-	404	465	648	275.78	524.50	-	-	-	-
Cu grade in concentrate		%	20.0%	-	-	-	-	-	-	-	-	-	-	-	-	20.0%	20.0%	20.0%	20.0%	20.0%	-	-	-	-
Concentrate Moisture		%	8%	-	-	-	-	-	-	-	-	-	-	-	-	8%	8%	8%	8%	8%	-	-	-	-
Cu Concentrate (wmt)		kwmt	429	-	-	-	-	-	-	-	-	-	-	-	-	30	34	61	140	164	-	-	-	-
3) Pb Concentrate Plant 2		kdmt	24	-	-	-	-	-	-	-	-	-	-	-	-	4	4	7	0.86	8.70	-	-	-	-
Au grade in concentrate		g/t	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ag grade in concentrate		g/t	1,715	-	-	-	-	-	-	-	-	-	-	-	-	917	1,286	1,981	730	2,211	-	-	-	-
Pb grade in concentrate		%	39.9%	-	-	-	-	-	-	-	-	-	-	-	-	40.5%	38.9%	38.4%	42.0%	41.1%	-	-	-	-
Concentrate Moisture		%	13.8%	-	-	-	-	-	-	-	-	-	-	-	-	13.8%	13.8%	13.8%	13.8%	13.8%	-	-	-	-
Pb Concentrate (wmt)		kwmt	28	-	-	-	-	-	-	-	-	-	-	-	-	5	5	8	1	10	-	-	-	-
4) Zn Concentrate Plant 2		kdmt	86	-	-	-	-	-	-	-	-	-	-	-	-	17	18	23	2.10	26.99	-	-	-	-
Au grade in concentrate		g/t		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ag grade in concentrate		g/t	666.19	-	-	-	-	-	-	-	-	-	-	-	-	491	477	722	510.34	664.06	-	-	-	-
Zn grade in concentrate		%	44.4%	-	-	-	-	-	-	-	-	-	-	-	-	44.2%	44.1%	44.0%	43.0%	45.0%	-	-	-	-
Concentrate Moisture		%	11%	-	-	-	-	-	-	-	-	-	-	-	-	11%	11%	11%	11%	11%	-	-	-	-
Zn Concentrate (wmt)		kwmt	97	-	-	-	-	-	-	-	-	-	-	-	-	19	20	26	2	30	-	-	-	-
Payable Gold, Total		koz	94	3	3	4	4	4	6	5	6	6	7	7	7	7	8	6	5	5	-	-	-	-
Payable Silver, Total		koz	23,712	778	856	1,057	1,073	908	1,117	1,004	1,436	1,327	1,121	978	1,287	1,668	1,725	2,324	1,691	3,362	-	-	-	-
Payable Copper, Total		kt	834	50	48	46	47	47	50	48	48	49	44	47	45	50	54	55	53	52	-	-	-	-
Payable Copper, Total		Mlbs	1,840	110	106	102	104	104	109	106	105	107	96	105	99	111	120	121	117	115	-	-	-	-
Payable Lead, Total		kt	9	-	-	-	-	-	-	-	-	-	-	-	-	2	1	2	0	3	-	-	-	-
Payable Lead, Total		Mlbs	20	-	-	-	-	-	-	-	-	-	-	-	-	4	3	5	1	7	-	-	-	-
Payable Zinc, Total		kt	31	-	-	-	-	-	-	-	-	-	-	-	-	6	6	8	1	10	-	-	-	-
Payable Zinc, Total		Mlbs	68	-	-	-	-	-	-	-	-	-	-	-	-	13	14	18	2	22	-	-	-	-
Cash Flow																								
Gold Gross Revenue	2.1%	$000s	204,013	5,165	7,697	8,599	8,663	8,789	13,054	10,846	13,556	12,400	15,488	14,404	15,998	15,162	17,911	12,999	13,086	10,189	-	-	-	-
Silver Gross Revenue	7.0%	$000s	686,729	20,220	27,826	29,067	31,110	26,324	32,401	29,114	41,656	38,489	32,510	28,349	37,319	48,375	50,023	67,408	49,049	97,489	-	-	-	-
Copper Gross Revenue	90%	$000s	8,828,056	446,998	471,031	458,687	510,448	511,350	536,351	519,005	516,717	524,002	470,230	512,642	486,267	545,165	585,872	593,933	574,912	565,478	-	-	-	-
Lead Gross Revenue	0.2%	$000s	20,323	-	-	-	-	-	-	-	-	-	-	-	-	3,712	3,193	5,231	749	7,438	-	-	-	-
Zinc Gross Revenue	0.9%	$000s	83,524	-	-	-	-	-	-	-	-	-	-	-	-	16,096	17,129	21,779	2,061	26,459	-	-	-	-
Gross Revenue Before By-Product Credits	100%	$000s	9,822,645	471,380	506,553	496,352	550,221	546,463	581,806	558,965	571,929	574,892	518,237	555,395	539,585	628,510	674,127	701,320	639,857	707,053	-	-	-	-
Gross Revenue After By-Product Credits		$000s	9,822,645	471,380	506,553	496,352	550,221	546,463	581,806	558,965	571,929	574,892	518,237	555,395	539,585	628,510	674,127	701,320	639,857	707,053	-	-	-	-
OP Mining Cost (UG+OP)		$000s	(2,670,064)	(125,546)	(130,115)	(130,226)	(149,242)	(147,987)	(156,324)	(156,700)	(158,372)	(156,709)	(156,618)	(180,210)	(206,046)	(205,289)	(190,605)	(191,666)	(137,015)	(93,367)	-	-	-	-
Processing Plants Costs		$000s	(1,400,867)	(93,167)	(91,060)	(91,973)	(91,974)	(91,060)	(97,058)	(97,052)	(97,052)	(97,050)	(97,052)	(97,054)	(97,053)	(95,344)	(95,314)	(101,390)	(89,707)	(89,671)	-	-	-	-
Support Services/Site G&A		$000s	(607,717)	(37,513)	(35,630)	(35,630)	(35,630)	(35,630)	(35,630)	(35,630)	(35,630)	(35,630)	(35,630)	(35,630)	(35,630)	(35,630)	(35,630)	(35,630)	(35,630)	(35,630)	-	-	-	-
TC/RC charges		$000s	(1,701,950)	(114,721)	(99,179)	(94,698)	(97,104)	(97,256)	(102,116)	(90,014)	(90,370)	(99,765)	(89,527)	(97,602)	(92,501)	(111,044)	(120,602)	(125,120)	(116,704)	(126,360)	-	-	-	-
Third Party Royalty		$000s	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal Cash Costs Before By-Product Credits		$000s	(6,350,598)	(360,947)	(346,899)	(342,526)	(364,036)	(362,949)	(381,136)	(378,212)	(377,440)	(379,170)	(368,835)	(400,504)	(421,317)	(448,115)	(441,559)	(453,844)	(378,064)	(345,044)	-	-	-	-
Total Cash Costs After By-Product Credits		$000s	(6,350,598)	(360,947)	(346,899)	(342,526)	(364,036)	(362,949)	(381,136)	(378,212)	(377,440)	(379,170)	(368,835)	(400,504)	(421,317)	(448,115)	(441,559)	(453,844)	(378,064)	(345,044)	-	-	-	-
Operating Margin	33%	$000s	3,272,047	110,433	159,654	153,826	186,183	183,514	200,671	180,753	194,488	195,722	149,402	154,891	118,268	180,395	232,568	247,476	261,793	362,009	-	-	-	-
Offsite Other Operating Expenses		$000s	(432,124)	(20,180)	(22,337)	(22,130)	(23,997)	(23,853)	(25,593)	(24,882)	(25,369)	(25,427)	(23,740)	(24,797)	(24,405)	(28,032)	(29,390)	(30,938)	(27,430)	(29,624)	-	-	-	-
EBITDA		$000s	2,839,923	90,253	137,317	131,696	162,186	159,661	175,077	155,870	169,119	170,294	125,662	130,094	93,863	152,364	203,179	216,538	234,363	332,385	-	-	-	-
Depreciation Allowance		$000s	(805,092)	(29,937)	(42,533)	(53,827)	(64,654)	(71,490)	(72,177)	(62,956)	(54,993)	(49,699)	(45,388)	(39,769)	(38,873)	(38,587)	(35,814)	(35,475)	(35,333)	(33,582)	-	-	-	-
Earnings Before Taxes		$000s	2,034,831	60,316	94,784	77,869	97,532	88,165	102,901	92,914	114,126	120,595	80,274	90,325	54,990	113,776	167,365	181,063	199,030	298,804	-	-	-	-
Special Mining Tax and Mining Royalties		$000s	(140,089)	(4,899)	(6,374)	(5,795)	(6,836)	(6,511)	(7,226)	(6,745)	(7,576)	(7,762)	(6,186)	(6,640)	(5,611)	(7,878)	(10,019)	(10,700)	(11,582)	(21,860)	-	-	-	-
Workers' Participation Tax		$000s	(151,670)	(4,433)	(7,072)	(5,766)	(7,256)	(6,632)	(7,654)	(6,903)	(8,527)	(9,027)	(6,033)	(6,804)	(3,960)	(8,472)	(12,698)	(13,620)	(14,996)	(22,156)	-	-	-	-
Peru Corporate Income Tax		$000s	(514,233)	(15,940)	(23,995)	(19,561)	(24,615)	(22,161)	(25,966)	(23,386)	(29,920)	(30,823)	(20,120)	(22,710)	(13,402)	(28,741)	(42,704)	(46,237)	(50,873)	(75,163)	-	-	-	-
Net Income		$000s	1,228,329	35,044	57,348	46,747	58,826	52,961	62,054	55,868	69,135	73,183	48,105	54,272	32,028	68,686	102,034	110,436	121,579	179,626	-	-	-	-
Non-Cash Add Back - Depreciation		$000s	805,092	29,837	42,533	53,827	64,054	71,490	72,177	62,950	54,993	49,099	45,388	39,709	38,873	38,587	35,814	35,475	35,333	33,582	-	-	-	-
Working Capital		$000s	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Operating Cash Flow		$000s	2,034,021	65,880	99,876	100,574	123,480	124,457	134,231	118,844	124,128	122,882	93,494	94,041	70,900	107,273	137,868	145,973	156,912	213,207	-	-	-	-
Sustaining Capital		$000s	(381,739)	(62,991)	(50,471)	(54,135)	(34,209)	(33,393)	(10,888)	(10,057)	(27,004)	(12,054)	(5,290)	(12,408)	(15,228)	(13,797)	(10,903)	(4,585)	(3,050)	(750)	-	-	-	-
Closure/Reclamation Costs		$000s	(67,853)	(470)	(1,504)	(1,496)	(3,240)	(3,240)	(3,240)	(3,240)	(3,240)	(3,240)	(3,240)	(3,240)	(3,240)	(3,240)	(3,240)	(3,240)	(3,240)	(3,240)	(12,091)	(2,888)	(2,888)	(550)
Total Capital		$000s	(449,591)	(63,461)	(51,975)	(55,631)	(37,449)	(36,632)	(20,128)	(13,697)	(30,304)	(15,894)	(8,336)	(15,648)	(18,468)	(17,037)	(14,203)	(7,825)	(6,890)	(3,990)	(12,691)	(2,888)	(2,888)	(556)
Cash Flow Adj./Reimbursements		$000s	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LoM Metrics																								
Economic Metrics																								
a) Pre-Tax																								
Free Cash Flow		$000s	2,390,332	26,792	79,343	76,065	124,738	123,029	154,950	135,973	138,214	154,400	117,126	114,446	75,395	135,327	188,975	208,713	227,473	328,395	(12,691)	(2,888)	(2,888)	(556)
Cumulative Free Cash Flow		$000s		26,792	106,134	182,200	306,937	429,966	584,915	720,888	859,103	1,013,503	1,130,629	1,245,075	1,320,470	1,455,797	1,644,772	1,853,486	2,080,959	2,409,354	2,396,663	2,393,776	2,390,888	2,390,332
NPV @ 10.18%		$000s	942,404																					
b) After-Tax																								
Free Cash Flow		$000s	1,584,430	2,419	41,901	44,943	86,031	87,825	114,103	98,947	93,223	106,988	84,957	78,333	52,432	90,236	123,665	138,148	150,022	209,217	(12,691)	(2,888)	(2,888)	(556)
Cumulative Free Cash Flow		$000s		2,419	44,321	89,264	175,295	263,119	377,223	476,170	569,393	676,381	761,339	839,732	892,164	982,401	1,106,065	1,244,213	1,394,235	1,603,452	1,590,762	1,587,874	1,584,986	1,584,430
NPV @ 10.18%		$000s	618,770																					

19.2.1 Cash Flow Analysis

SLR prepared a LOM unlevered after-tax cash flow model to confirm the economics of the Property over the LOM (between 2025 and 2041). Economics have been evaluated using the discounted cash flow (DCF) method by considering LOM production on a 100% basis, annual processed tonnages, and copper, gold, silver, lead, and zinc grades. The associated copper, lead, and zinc concentrates grades and metal recoveries, metal prices, operating costs, concentrate transportation, treatment and refining charges, sustaining capital costs, and reclamation and closure costs, and income tax and special mining tax were also considered in the DCF.

The economic analysis prepared by SLR considers a base discount date as at January 1, 2025, using end of year convention discounting.

The base discount rate for the discounted cash flow analysis of El Brocal was set by Buenaventura's senior management at 10.18% based on their Weighted Average Cost of Capital (WACC) analysis. Discounted present values of annual cash flows are summed to arrive at El Brocal Mine Base Case Net Present Value (NPV). For this cash flow analysis, the Internal Rate of Return (IRR) and payback are not applicable as there is no negative initial cash flow (no initial investment to be recovered).

To support the disclosure of Mineral Reserves, the economic analysis demonstrates that the El Brocal Mineral Reserves are economically viable at LOM long term metal prices for copper at US$4.90/lb, gold at US$2,172/oz, silver at US$29.00/oz, lead at US$1.02/lb, and zinc at US$1.22/lb. El Brocal's Base Case undiscounted pre-tax net cash flow is approximately US$2,390 million, and the undiscounted after-tax net cash flow is approximately US$1,584 million. The pre-tax NPV at a 10.18% discount rate is approximately US$942 million and the after-tax NPV at a 10.18% discount rate is approximately US$619 million.

The SLR QP confirms that SLR has also run the economic analysis using flat reserve metal prices, and the analysis demonstrates that El Brocal's Mineral Reserves are also economically viable at these prices.

19.3 Sensitivity Analysis

Project risks can be identified in both economic and non-economic terms. Key economic risks were examined by running cash flow sensitivities:

- Copper, gold, silver, lead, and zinc prices
- Copper, gold, silver, lead, and zinc head grades
- Copper, gold, silver, lead, and zinc metallurgical recoveries
- Operating costs
- Capital costs (sustaining and closure)

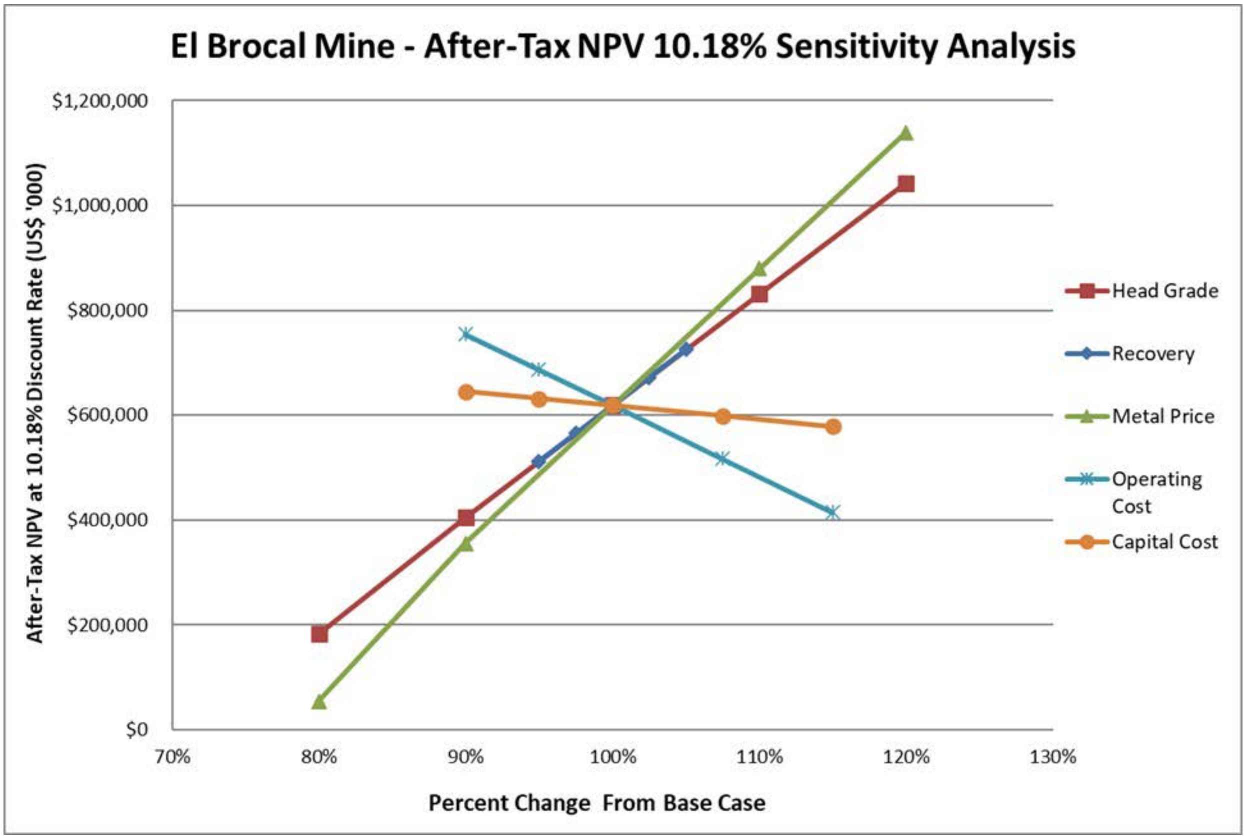
After-tax NPV at 10.18% sensitivities over the El Brocal Mine Base Case have been calculated for -20% to +20% (for head grade), -5% to +5% (for metallurgical recovery), -20% to +20% (for metal prices), and -10% to +15% (for operating costs and capital costs) variations, to determine the most sensitive parameter for the Property.

The sensitivities are shown in Table 19-3 and Figure 19-1

Table 19-3: After-Tax Sensitivity Analyses

Variance	Head Grade (% Cu)	NPV at 10.18% (US$000)
80%	1.01%	183,016
90%	1.14%	404,542
100%	**1.26%**	**618,770**
110%	1.39%	831,719
120%	1.51%	1,043,243
Variance	**Recovery (% Cu)**	**NPV at 10.18% (US$000)**
95%	81.2%	511,835
98%	83.3%	565,369
100%	**85.4%**	**618,770**
103%	87.6%	672,103
105%	89.7%	725,381
Variance	**Metal Prices (US$/lb Cu)**	**NPV at 10.18% (US$000)**
80%	3.85	54,882
90%	4.33	355,361
100%	**4.81**	**618,770**
110%	5.29	880,093
120%	5.77	1,139,077
Variance	**Operating Costs (US$/t)**	**NPV at 10.18% (US$000)**
90%	52.76	754,018
95%	55.69	686,494
100%	**58.62**	**618,770**
108%	63.01	516,753
115%	67.41	414,295
Variance	**Capital Costs (US$000)**	**NPV at 10.18% (US$000)**
90%	404,632	645,497
95%	427,112	632,134
100%	**449,591**	**618,770**
108%	483,311	598,725
115%	517,030	578,680

Figure 19-1: After-Tax Sensitivity Analysis



The sensitivity analysis at El Brocal shows that the after-tax NPV at an 10.18% base discount rate is most sensitive to metal prices, then head grades and metallurgical recoveries, followed by operating costs and capital costs. The SLR QP notes that a 10% reduction in metal prices reduces the after-tax NPV at 10.18% by 42% for the El Brocal Mine Base Case.

20.0 Adjacent Properties

Colquijirca is part of the XVII metallogenic belt, characterized by epithermal Au-Ag and polymetallic deposits (INGEMMET 2021). Located in the Cerro de Pasco region, the district has a long mining history dating back to pre-Inca times.

A significant mining operation near Colquijirca is the Cerro de Pasco unit, situated approximately 6 km north of Colquijirca (295 km from Lima), accessible via the Carretera Central highway. This unit comprises three mines: two underground (Paragsha and Vinchos) and one open pit (Raúl Rojas). In 2019, the Paragsha-San Expedito processing plant treated 2.1 Mt of stockpiled ore from the clearing of the Raúl Rojas pit, with average grades of 1.89% Zn, 0.63% Pb, and 0.82 oz/t Ag (SRK 2022).

That same year, metal production totalled 17.5 kt of zinc, 6.3 kt of lead, and 0.79 Moz of silver, reflecting an increase from 2018 production levels of 11.2 kt of zinc, 3.7 kt of lead, and 0.4 Moz of silver. The increase was attributed to higher ore processing volumes and improved head grades (SRK 2022).

The SLR QP has not been able to verify the information on the adjacent properties and the information is not necessarily indicative of the mineralization on the Project.

21.0 Other Relevant Data and Information

No additional information or explanation is necessary to make this TRS understandable and not misleading.

22.0 Interpretation and Conclusions

The SLR QPs offer the following conclusions by area.

22.1 Geology and Mineral Resources

- The copper, zinc, lead, silver, and gold deposits at El Brocal are best classified as polymetallic deposits with strong lithological controls. Mineralizing fluids were primarily influenced by lithology and exerted by folding features.
- The Property has been the site of extensive mining and exploration activities, including a gravimetric survey on behalf of SMEB over the Marcapunta property in 2003 and drilling and logging of 4,796 drill holes, totaling approximately 590,107 m drilled.
- The estimates of Mineral Resources were prepared using a domain-controlled, OK and ID^2 technique with verified drill hole sample data derived from exploration activities conducted mainly by Buenaventura (2004-2024) but including historical drill holes (prior to 2004).
- The drilling and sampling procedures adopted at El Brocal are consistent with generally recognized industry best practices. The resultant drilling pattern is sufficiently dense to interpret the geometry and boundaries of mineralization with confidence. The core samples were collected by competent personnel using procedures that meet generally accepted industry best practices. The process was conducted or supervised by qualified geologists.
- The SLR QP was provided unrestricted access for data verification purposes by Buenaventura during this Mineral Resource estimate audit. The SLR QP is of the opinion that the samples are representative of the source materials and that there is no evidence suggesting the sampling process introduced any bias. Accordingly, there are no known sampling or recovery factors that could materially impact the accuracy and reliability of drilling results.
- The sample preparation, security, and analytical procedures meet industry standards. Additionally, the QA/QC program, as designed and implemented at El Brocal, is adequate; therefore, the assay results within the drill hole database are suitable for Mineral Resource estimation purposes. Buenaventura addressed a few QC issues including lack of QA/QC support and some poor results in specific drill campaigns by adequately downgrading Measured and Indicated blocks to Indicated and Inferred blocks.
- Based on data validation and the results of standard, blank, and duplicate analyses, the SLR QP is of the opinion that the sampling methods, chain of custody procedures, and analytical techniques are appropriate and meet acceptable industry standards. The assay and bulk density databases are of sufficient quality for Mineral Resource estimation at the El Brocal deposits.
- The SLR QP reviewed the assumptions, parameters, and methods used to prepare the Mineral Resources estimate and is of the opinion that the Mineral Resources are estimated and prepared in accordance with the definitions in S-K 1300.
- The SLR QP considers the knowledge of the deposit setting, lithologies, structural controls on mineralization, and the mineralization style and setting sufficient to support the Mineral Resource estimate to the level of classification assigned.

- The estimate of Mineral Resources presented was prepared for El Brocal with an effective date of March 31, 2024 for the drilling data and December 31, 2024 for the depletion.
- The Mineral Resource estimate meets the requirement of reasonable prospects for economic extraction, using appropriate metal price assumptions and cut-off grade values.
- At the effective date of December 31, 2024, open pit Mineral Resource estimates, exclusive of Mineral Reserves, are estimated to be:
  - 586 kt of Measured and Indicated Mineral Resources at 0.36% Pb, 0.43% Zn, 1.29% Cu, and 54.4 g/t Ag containing 2.1 kt Pb, 2.5 kt Zn, 7.6 kt Cu, and 1,024 koz Ag, and 945 kt of Inferred Resources at 0.08% Pb, 0.08% Zn, 1.37% Cu, and 17.3 g/t Ag containing 0.8 kt Pb, 0.8 kt Zn, 13.0 kt Cu, and 527 koz Ag on a 61.43% BAOB.
  - 954 kt of Measured and Indicated Mineral Resources at 0.36% Pb, 0.43% Zn, 1.29% Cu, and 54.4 g/t Ag containing 3.5 kt Pb, 4.1 kt Zn, 12.3 kt Cu, and 1,688 koz Ag, and 1,539 kt of Inferred Resources at 0.08% Pb, 0.08% Zn, 1.37% Cu, and 17.3 g/t Ag containing 1.2 kt Pb, 1.3 kt Zn, 21.1 kt Cu, and 857 koz Ag on a 100% ownership basis.
- At the effective date of December 31, 2024, underground Mineral Resource estimates, exclusive of Mineral Reserves, are estimated to be:
  - 20,216 kt of Measured and Indicated Mineral Resources at 0.88% Cu, 15.7 g/t Ag, and 0.44 g/t Au containing 178 kt Cu, 10,188 koz Ag, and 285 koz Au, and 15,300 kt of Inferred Resources at 1.34% Cu, 24.4 g/t Ag, and 0.58 g/t Au containing 205 kt Cu, 12,005 koz Ag, and 285 koz Au on a 61.43% BAOB.
  - 32,909 kt of Measured and Indicated Mineral Resources at 0.88% Cu, 15.7 g/t Ag, and 0.44 g/t Au containing 290 kt Cu, 16,584 koz Ag, and 464 koz Au, and 24,907 kt of Inferred Resources at 1.34% Cu, 24.4 g/t Ag, and 0.58 g/t Au containing 334 kt Cu, 19,543 koz Ag, and 463 koz Au on a 100% ownership basis.
- The classification of Mineral Resources at El Brocal appropriately accounts for the inherent level of uncertainty. Potential sources of uncertainty in the estimates include the use of combined medium and high grade domains to generate variograms, which may overstate high-grade continuity, and the slightly higher local error resulting from the absence of soft boundaries in grade estimation. While some uncertainties are linked to resource classification, the SLR QP has not identified any significant technical or economic factors requiring immediate attention.
- The SLR QP is of the opinion that, with consideration of the recommendations summarized in Sections 1 and 23 of this TRS, any issues related to relevant technical and economic factors influencing the prospect of economic extraction can be resolved with further work.

22.2 Mining and Mineral Reserves

22.2.1 Geotechnical Studies

- The slope design recommendations provided by the SLR QP for the Phase 1 and Phase 2 pit extensions are suitable for incorporation into mine planning and design.

- An improved understanding of the strength of weak rock and structure along the footwall and end walls, and the impact of high rainfall events on slope stability may result in slope design optimization as well as increased design confidence.
- In the opinion of the SLR QP, the recommendations of the pillar recovery study can be used for mine design and estimation of reserves. There is some uncertainty however concerning the plasticity observed in the FLAC3D models that may be related to the rock mass strength.

22.2.2 Open Pit

- At the effective date of December 31, 2024, total open pit El Brocal Proven and Probable Mineral Reserves are estimated to be:
    - o 4.1 Mt at 0.52% Pb, 1.07% Zn, 1.57% Cu, 75.87 g/t Ag, and 0.02 g/t Au containing 21.2 kt Pb, 44.1 kt Zn, 64.7 kt Cu, 10,042 koz Ag, and 2.2 koz Au on a 61.43% BAOB.
    - o 6.7 Mt at 0.52% Pb, 1.07% Zn, 1.57% Cu, 75.87 g/t Ag, and 0.02 g/t Au, containing 34.5 kt Pb, 71.8 kt Zn, 105 kt Cu, 16,348 koz Ag, and 3.6 koz Au on a 100% ownership basis.
- The El Brocal open pit is regarded as a conventional open pit mine utilizing selective mining methods, with truck haulage to the crusher/ROM stockpile site and waste rock dump. The open pit mining operations will be carried out by a contractor's workforce and equipment, under the supervision of El Brocal's technical staff.
- The SLR QP considers that the Mineral Reserve estimation methodology and procedures used at El Brocal are comprehensive and properly documented.
- SLR verified the NSR block values in the open pit block model using the inputs provided in the NSR calculator spreadsheet, which included figures for metal prices, payabilities and recoveries, costs for transport, treatment, refining, marketing, and royalties for elements Pb, Zn, Cu, Au, and Ag. NSR block values have been applied correctly.
- SLR has reviewed the optimization input parameters and considers the overall pit optimization methodology to align with industry standards.
- The mine plan incorporates modifying factors of 2% dilution and 2% ore loss overall. However, the SLR QP estimates that a 4.5% allowance for external dilution would be more suitable, given the narrow nature and discontinuity of the mineralization.
- SLR observes that the El Brocal Mineral Reserves (100% ownership) decreased significantly by 17.6 Mt from 2023 to 2024, primarily as a result of substantial adjustments to pit slope angles resulting from a reduction of footwall and end wall slope angles following slope instability experienced between 2022 and 2024 and the completion of a geotechnical study by SLR in 2024. Focus is now on the underground Mineral Reserves in the short to long term LOM with the open pit restarting in 2035.
- Mining at the proposed El Brocal open pit will be accomplished with three phases to achieve the final pit limits.
- The SLR QP considers the proposed LOM open pit production schedule to be achievable, however, the annual bench advance rate of 120 m vertically in Phase 1 for the year 2037, equivalent to 20 six metre benches, is considered optimistic. This may affect the planned production targets and possibly extend the life of mine. Close supervision and coordination of mining activities will be required.

- The proposed mine plan will generate 109.5 Mt of waste rock. The adjacent mined out pit will be backfilled, receiving all of waste rock from the new pit.
- The open pit production life is seven years including two years of pre-stripping.
- The SLR QP deems the equipment proposed for the open pit mining operation suitable for the scale of operations, effectively balancing productivity with selectivity.
- It is planned to use a mining contractor for open pit operation. A mining contractor would be responsible, with the guidance of the El Brocal technical staff, for providing suitable equipment including maintenance, manpower, and operational procedures to meet the target production.
- Mining through the underground workings is a manageable risk but may result in unplanned delays and additional costs. Anticipated interaction of the pit with the UG workings must be closely evaluated to maintain a safe working environment. Special criteria and procedures must be developed and implemented to keep personnel and machinery from being exposed to unsafe ground.
- Mining operations in the open pit has been delayed until 2025 while awaiting permitting. While mining can potentially commence in 2025 with permitting, the LOM is currently planned between 2035 (Year 1) and 2041 (Year 7).

22.2.3 Underground

- At the effective date of December 31, 2024, total underground El Brocal Proven and Probable Mineral Reserves are estimated to be:
  - 45.9 Mt at average grades of 1.22% Cu, 19.60 g/t Ag, and 0.59 g/t Au, containing 560 t of Cu, 29 Moz of Ag, and 875 koz of Au on a 61.43% BAOB.
  - 74.7 Mt at average grades of 1.22% Cu, 19.60 g/t Ag, and 0.59 g/t Au, containing 912 t of Cu, 47 Moz of Ag, and 1.4 Moz of Au on a 100% ownership basis.
- The underground Mineral Reserves have increased significantly compared to the previous December 31, 2023 estimate. This is mostly due to Buenaventura incorporating the use of cemented fill in its mining operations to mine pillars as secondary and tertiary stopes.
- The underground mine will be mined using long hole SLS mining methods and cemented backfill will be used to allow mining of secondary and tertiary stopes.
- A cemented hydraulic fill plant is currently operational on site and a paste fill plant is planned to start operations in 2028. A feasibility study on the paste backfill system is currently underway.
- Preliminary UCS testing shows that the required backfill strength for the various stope sizes should be attainable by using copper ore tailings in the paste fill.
- The future paste fill quality must be assured with ongoing test to enable meeting the design backfill strength. The rheology of the paste product is the most important specification and must be controlled rigorously to achieve the desired backfill strength.
- Mineral Reserves were estimated within stope and development designs. The SLR QP has reviewed the Mineral Reserve estimation methodology and is of the opinion that the estimates have been prepared to industry standards.
- The Mineral Reserve estimates include modifying factors of 0.60 m of dilution applied as equivalent linear overbreak slough (ELOS) on secondary and tertiary stopes as well as a

4% dilution factor applied to all stopes to account for backfill dilution, and a mining recovery of 90% applied to all stopes. The SLR QP is of the opinion that the mining recovery for secondary and tertiary is optimistic, particularly since there are currently no supporting data for secondary and tertiary stope mining.

- The underground Mineral Reserve estimate supports a LOM production plan of seventeen years.
- All underground operations, including material haulage, will be undertaken using contractors. Buenaventura will be in charge of providing all technical support and general strategy.
- The SLR QP is of the opinion that the underground LOM plan is achievable based on 2024 equipment KPI and availability.

22.3 Mineral Processing

- Ore characteristics from the underground mine changed as the mine was extended into new zones where the copper mineralization is characterized by finer grains. This change negatively affected copper recovery.
- Buenaventura conducted test work on samples of ore from the new zones with the objective of improving copper recovery and was able to show that with a finer grind size and minor modifications to the flowsheet, copper recovery could be significantly improved.
- Buenaventura implemented the changes indicated by the test work in Plant No. 1 and achieved copper recoveries similar to the test work results.
- Buenaventura plans to modify Plant No. 2 similarly.
- The total throughput for Plants No. 1 and No. 2 is reduced from 17,000 tpd to 13,500 tpd due to the need for a finer grind. Plant modifications will be implemented by Buenaventura to reach 17,000 tpd capacity.

22.4 Infrastructure

- The mine site is accessed via a national highway which is a two lane, paved, and well-maintained road. The highway connects the Property to Lima which is located approximately 298 km away.
- The power supply for the Property is obtained from two hydroelectric power stations owned by SMEB and Statkraft. Power is also purchased from Conenhua.
- Freshwater for operations comes from the Pun Run lagoon and the Blanco River. Supernatant water from the tailings deposit is recirculated to the metallurgical process.

22.5 Environmental, Permitting and Social Considerations

- No known environmental issues that could materially impact the ability to extract the Mineral Reserves were identified by SLR from the documentation available for review.
- Buenaventura has the permits required to continue the mining operations at El Brocal in the short term, which comply with applicable Peruvian permitting requirements associated with the protection of the environment. However, a new permit is required for expansion of production capacity and tailings storage in the long term.

- A new modification to the EIA for production capacity expansion to 25,000 tpd was submitted to the SENACE and is currently under the approval process. Buenaventura informed SLR that approval is anticipated to occur in Q1 2025.
- Environmental approval has already been granted to raise the dam crest of the Huachuacaja TSF to elevation 4,225 MASL, which provides tailings storage capacity until 2039 according to the current mine plan and tailings deposition plan developed by Buenaventura for El Brocal.
- Buenaventura has an Environmental Policy in place that establishes the environmental management guidelines and standards for its projects and operations (last reviewed in 2022).
- There is an EMP in place, applicable to operations and construction activities. It includes an environmental monitoring program encompassing water quality (surface water, groundwater, and effluent discharge), air quality, ambient noise, biology, and hydrobiology. Although the EMP includes quarterly monitoring of groundwater at eight locations, no groundwater quality monitoring results were included within the documentation made available to SLR for review.
- An annual report documenting compliance with the environmental management strategy implemented for the El Brocal operation is submitted to the Peruvian authorities.
- The SLR QP is not aware of any non-compliance environmental issues raised by the Peruvian authorities. Buenaventura stated in the conclusions of the quarterly monitoring reports for 2023 provided to SLR that the monitoring results are in compliance with the environmental regulations in force.
- The SLR QP identified evidence of proper governance of the Huachuacaja TSF, including an OMS Manual, water balance modelling, a dam breach study, annual dam safety inspections, geotechnical dam instrumentation, and the appointment of an EoR. However, SLR identified lack of independent review carried out for the TSF.
- According to the information reviewed, the site water management system meets the typical objectives applicable to mine operations (i.e., implementation of infrastructure for management of contact and non-contact water protective of the receiving environment).
- A Community Relations Plan is in place and was developed as part of the EMP.
- The key social issues associated with El Brocal operations are high expectations from surrounding communities in terms of support to be provided by El Brocal, and the potential in the future for communities to lose economic benefits associated with the mine operations as the mine approaches the end of its lifecycle.
- Based on the information provided in the reports accessible through the company's website, Buenaventura appears to maintain positive relations with the communities located within the area of influence of its mine operations. Based on the documents provided by Buenaventura and a teleconference held with the El Brocal Social team on January 2, 2024, the company appears to maintain positive working and commercial relationships with the communities within the area of influence of its mine operations. El Brocal has been implementing measures to maximize economic benefits through local contracting, hiring, and community investment initiatives.
- Buenaventura publicly discloses its sustainability performance through integrated annual reports accessible through the company's website.

- The negotiations or agreements with local individuals or groups for El Brocal involve negotiations for land acquisition, required to expand facilities as part of the ongoing and future operation.
- Although there is no formal written commitment to ensure local procurement and hiring, El Brocal pursues maximization of economic opportunities in the communities of its social area of influence through local and regional employment and contracting. El Brocal prioritizes hiring and buying locally, and provides training opportunities to help the local workforce and businesses meet the qualifications requirements.
- A conceptual MCP has been developed for all the mine components within the context of Peruvian legislation. The company prepares biannual progress reports documenting the level of progress towards progressive rehabilitation.

22.6 Capital and Operating Costs and Economics

- The capital and operating cost estimates have been prepared based on recent operating performance and the current operating budget for 2025. The SLR QP has reviewed the capital and operating costs and considers them to be appropriate for the remaining mine life.
- The LOM production schedule in the cash flow model is based on the December 31, 2024, Mineral Reserves.
- The economic analysis using the production, revenue, and costs estimates presented in this TRS confirms that the outcome is a positive cash flow that supports the statement of Mineral Reserves for a 17-year mine life. At LOM long term metal prices of US$4.90/lb Cu, US$2,172/oz Au, US$29.00/oz Ag, US$1.02/lb Pb, and US$1.22/lb Zn, the Mine's Base Case undiscounted pre-tax net cash flow is approximately US$2,390 million, and the undiscounted after-tax net cash flow is approximately US$1,584 million. The pre-tax NPV at an 10.18% discount rate is approximately US$942 million and the after-tax NPV at an 10.18% discount rate is approximately US$619 million.

23.0 Recommendations

The SLR QPs provide the following recommendations by area.

23.1 Geology and Mineral Resources

1. Continue drilling at El Brocal areas with opportunities to enhance deposit knowledge and improve confidence in Mineral Resource estimates. This program will aim to refine geological understanding and support future resource classification.
2. Review and update the geological modelling to achieve greater geological continuity in the direction of stratification, and smooth out fragmented bodies.
3. Consider remodelling the grade shells using combined lithology domains where mineralization appears to cross boundaries. Currently, the grade shells have been modelled within separate lithologies, leading to localized discontinuous artifacts.
4. Update the copper oxide and arsenical models if any new drill holes intercept the area.
5. Review the QA/QC charts to remove data erroneously incorporated in some charts; upgrade Mineral Resource classes where appropriate.
6. Manage the lack of QA/QC for historical drilling using a different approach than dealing with poor QC results. Carry out regular (e.g., weekly) QA/QC monitoring, reporting, and signoffs to address QA/QC issues as they arise during drill campaigns.
7. Improve grade estimation by using separate variograms for each estimation domain, using soft contacts where appropriate, and preferably employing the OK technique on the 4x4x3 m block size and reblock to 4x4x6 m.
8. Review the classification downgrading process using the surrounding data for any classification areas with poor QA/QC results.
9. Develop a core storage facility and drill core cataloguing workflow.
10. Improve reconciliation processes by implementing a formal procedure and by forming a multi-disciplinary team to organize and analyze reconciliation results so that production data can be used to calibrate future resource and reserve models.

23.2 Mining and Mineral Reserves

23.2.1 Geotechnical Studies

1. Implement a geotechnical investigation focused on confirming the strength of the weak footwall, end wall rock, and bedding structures.
2. Develop a weathering profile model.
3. Complete a hydrogeological study focused on the slope scale and the impact of high rainfall events.
4. A thorough review of historical geotechnical data and onsite validation by a geotechnical specialist should be completed to confirm the rock mass strength parameters. This can then feed into an updated underground geotechnical study.
5. SLR recommends initially limiting the number of recoverable secondary stopes to three in all mining zones and rock units. Monitoring of the rock mass response to pillar recovery would be required prior to mining additional secondary stopes up to a

maximum of four, the results of which can be used in future geotechnical studies to explore the opportunity to recover additional pillars.

23.2.2 Open Pit

1 Perform pit shell sensitivities for mining, processing, metal price, and discount rate at the next stage of optimization. Running sensitivities at the pit optimization stage can provide insight into the risk factors associated with the open pit mine at an early stage.

2 Given the high vertical advance rate of 120 m in Phase 2 for the year 2037 in the open pit, equivalent to 20 consecutive six-metre benches, the SLR QP recommends spreading the 20 benches over two years to limit the vertical advance rate to a maximum of 80 m per year. In the SLR QP's opinion, the proposed bench advance rates are high and pose a risk to achieve the planned production targets.

3 The accelerated pit development planned for years 2036 and 2037 will demand close supervision and co-ordination of mining activities. The higher mining rate during these years will necessitate additional equipment and manpower, leading to increased mining costs.

4 SLR performed an independent estimate for dilution in the open pit that revealed that approximately 4.5% for external dilution would be more suitable. The SLR estimate of 4.5% dilution corresponds to a dilution skin of 0.5 m. The SLR QP recommends that the estimation of Mineral Reserves should involve a more thorough evaluation of appropriate dilution factors along with reconciliation with the grade control models and monthly reporting. To minimize dilution at waste rock contacts during excavation and material mixing during blasting, adherence to a comprehensive grade control program will be necessary.

5 Add two RC drill rigs for grade control.

23.2.3 Underground

1 Diligently collect survey data from secondary stopes, mined in the underground mine to better define the dilution and mining recovery factors and re-evaluate the factors for future Mineral Reserve estimates.

2 Continue ongoing test work using available software (i.e., BackfillPro) which is essential to enable meeting the design backfill strength when backfilling stopes in the underground mine. This can produce cost savings with optimized binder quantities and improve overall mine safety by achieving the design backfill strengths.

3 Scrutiny of the underground backfill system redundancies and contingencies are also important to avoid interruptions in the backfill delivery that can impact the mining cycle. This would include factors such as availability of critical spares for the paste plant and backfill distribution system.

4 Consider use of a semi-portable paste plant which can be custom designed for underground areas that are difficult to access or satellite in nature where paste fill infrastructure might not be justified.

23.3 Mineral Processing

1 In 2024, the zinc content in the lead concentrate ranged from 10% to 16%. This could incur penalties and it would be better if this zinc was recovered in the zinc concentrate. Investigate methods for improving zinc and lead separation during flotation.

2 Investigate a longer rougher flotation residence time which may be a better solution than having several scavenger stages. Scavenger flotation is usually a final step before tailings and not meant to be a significant part of the process.

23.4 Environmental, Permitting and Social Considerations

1 Buenaventura's Environmental Policy procedures and protocols to be reviewed and updated at regular intervals to allow for their proper and timely implementation.

2 Include the results of the groundwater monitoring program in the annual environmental compliance reports. If groundwater monitoring is not in effect, develop a plan to review the monitoring program included in the most recent EMP, upgrade it if necessary, and implement the program in 2025. Groundwater monitoring is an integral part of the measures required to protect the natural water resources in the El Brocal area.

3 Conduct additional geochemistry sampling, testing, and characterization of waste rock and tailings prior to mine closure to better understand the potential for acid rock drainage (ARD) and metal leaching (ML) in the long term, and inform the implementation of appropriate closure measures to achieve geochemical stability. The additional testing and characterization would also inform the potential to generate poor quality contact water during operations and the measures to manage it. Using these results, determine if changes are needed to manage water from the El Brocal facilities during operations and in the longer term.

4 The following recommendations are made regarding the TSF:

a. Implement independent review for the TSF to improve transparency, reduce risk, and to meet conformance with the Global Industry Standard on Tailings Management (GISTM). This would include appointing a qualified Independent Technical Reviewer; and also carrying out an independent Dam Safety Review (DSR).

b. Consider developing and implementing a plan to address the recommendations from the annual dam safety inspections, including a register to track its resolution and define the timeline to complete the proposed actions.

c. Conduct a risk assessment for the Huachuacaja TSF including all retaining structures and supporting infrastructure. As part of the risk assessment, consider the need to install and monitor instrumentation in the R4 and R5 auxiliary dams for performance monitoring informed by the risk profiles of these structures. The risk assessment should be updated at least every three years or if there are any significant changes to the facility operations or infrastructure.

d. Address the two main deficiencies noted in the latest DSR by Lara Consulting & Engineering in 2024, namely:

- Absence of geotechnical instrumentation installed to monitor dam performance.
- Absence of appropriate drainage to manage seepage at downstream toe of dam.

5 Historically, closure of mine sites has the potential to result in significant economic impacts. To avoid these impacts, develop a detailed social management plan with a focus on mine closure, which includes ongoing consultation and planning as well as training programs and economic diversification initiatives for community-owned businesses, aiming to mitigate the economic and social effects of mine closure.

6 The El Brocal Social team should continue working and communicating regularly with the other internal departments, such as operations, procurement, communications, and

institutional relations, on community-related matters, as their sphere of influence could impact community relationships. For example, the contracting or not of a local business for a specific scope of work or the delay in paying invoices to a local business by supply chain can impact the relationships with communities within the social area of influence.

7 The community engagement plan should be revisited and updated regularly as social risks requiring mitigations also change and evolve constantly.

23.5 Capital and Operating Costs and Economics

1 Update the metal market overview analysis every two to three years as the most recent available study is from CRU Group in Q2 2021.

24.0 References

AACE International, 2012. Cost Estimate Classification System – As applied in the Mining and Mineral Processing Industries, AACE International Recommended Practice No. 47R-11, 17 p.

Aquino, J.L., Vila, N., and Ventura, M. 2023. Actualizacion Geologica del Distrito Minero Colquijirca. XXI Congreso Peruano de Geología. 2023.

Amphos21. 2021. Soporte Hidrogeológico al SK-1300 – Unidad El Brocal.

Amphos21. 2024. Estudo Hidrogeológico del Tajo Norte, UM Colquijirca. Report reference 889_24-001-ITE-001 Revisión C dated November 2024.

Barton, N.R., and Bandis, S.C. 1982. Effects of Block Size on the Shear Behaviour of Jointed Rock. 23rd U.S. Symp. On rock mechanics, Berkeley, 739-760.

Baumgartner, R., Fontboté, L., & Vennemann, T. (2007). Mineral Zoning and Geochemistry of Epithermal Polymetallic Zn-Pb-Ag-Cu-Bi Mineralization at Cerro de Pasco, Peru. Society of Economic Geologists, Inc., 493–537.

Bendezú, R., & Fontboté, L. 2002. Université de Genève - Faculté des Sciences, Section des Sciences de la Terre. Obtenido de Late timing for high sulfidation cordilleran base metal lode and replacement deposits in porphyry-related districts: the case of Colquijirca, central Peru: https://www.unige.ch/sciences/terre/research/Groups/mineral_resources/archive/pub_archive/sga 2002/sga2002.htmlBendezú, R., Page, L., Spikings, R., Pecskay, Z., & Fonboté, L. (2008). New 40Ar/39Ar alunite ages from the Colquijirca district, Peru: evidence of a long period of magmatic SO2 degassing during formation of epithermal Au–Ag and Cordilleran polymetallic ores. Miner Deposita (2008), 777–789.

Buenaventura, 2021, Informe de Cumplimiento de Estrategia de Manejo Ambiental 2020 (Environmental Plan Compliance Report), Unidad Minera Colquijirca, June 5, 2021.

Buenaventura, 2022a, Informe de Cumplimiento de Estrategia de Manejo Ambiental 2021 (Environmental Plan Compliance Report), Unidad Minera Colquijirca, June 5, 2022.

Buenaventura. 2022b. 2021 Sustainability Report.

Buenaventura, 2023, Informe de Cumplimiento de Estrategia de Manejo Ambiental 2022 (Environmental Plan Compliance Report), Unidad Minera Colquijirca, July 5, 2023.

Buenaventura, 2024a, Informe de Cumplimiento de Estrategia de Manejo Ambiental 2023 (Environmental Plan Compliance Report), Unidad Minera Colquijirca, July 8, 2024.

Buenaventura. 2024b. Integrated Annual Report for 2023. Match 27, 2024.

El Brocal, 2024, Informe Semestral de Avance de Actividades de Cierre de la Unidad Minera Corquijirca (Biannual Report of Progress on Closure Activities). June 2024.

Ellis Geophysical Consulting Inc. (2003). Acquisition Review and Interpretation of 2003 Gravity Survey - Cerro Marcapunta Project, Pasco, Perú. Ellis Geophysical Consulting Inc.

Esterhuizen, G. 2004. SBlock v2.01, User Guide and Reference Manual, gsester@comcast.net.

Gavidia Cannon, D. 2025. Memorandum No. 001-2801025: Brocal Mineral and Surface Rights, Buenaventura, January 28, 2025

Henry E. and Parker H., 2005. Quantitative Methods in Resource Classification. Current Practice at AMEC. Presented at CIM AGM in Toronto.

Hynes-Griffin, M. E., and Franklin, A. G. 1984. ‘‘Rationalizing the Seismic Coefficient Method.’’ U.S. Army Engineer Waterways Experiment Station, Vicksburg, Mississippi, Misc. Paper GL-84-13.

INGEMMET. (2011). Geología del Cuadrángulo de Cerro de Pasco, Hoja 22-k, Boletín N° 144 Serie A, Carta Geológica Nacional, Escala 1:50,000. Lima.

InsideO, 2021a, Plan de Manejo Ambiental y Social (Environmental and Social Management Plan), Sexto Informe Técnico Sustentatorio de la Unidad Minera Colquijirca, June 2021.

InsideO, 2021b, Identificación y Evaluación de Impactos (Impact Assessment), Sexto Informe Técnico Sustentatorio de la Unidad Minera Colquijirca, September 2021.

Lara Consulting & Engineering S.A.C. 2023. Reporte de Visita No. 4 Ingeniero de Registro del Depósito de Relaves Huachuacaja (Dam Safety Inspection), report No. 4800206607-550-00-INF-0004, June 28, 2023.

Lara Consulting & Engineering S.A.C. 2023b. Actualización del Estudio de Dam Break del Depósito de Relaves Huachuacaja a la Cota 4,171.5 Unidad Minera Colquijirca (Dam Break Study), report No. W51-2023-D02-7437-INF-001, October 2023.

Lara Consulting & Engineering S.A.C. 2024a. Revisión de Seguridad de Presas - Depósito de Relaves Huachuacaja (Dam Safety Review), report No. COL-LCE-4800234934-500-INF-00-10001_R0, January 2024.

Lara Consulting & Engineering S.A.C. 2024b. Reporte de Visita No. 2 Ingeniero de Registro del Depósito de Relaves Huachuacaja de a Unidad Minera Colquijirca (Dam Safety Inspection), report No. HCH-LCE-3200002333-550-14-R-002, August 28, 2024.

MatGeo SpA. 2024. Medición de Esfuerzo Mediante Técnica de Emisiones Acústicas y Criterios de Ruptura por Stress Critico, El Brocal. Report reference PC_4100003103 Revision A dated August 2, 2024.

Mitchell, R.J., Olsen, R.S., and Smith, J.D. 1982. Model Studies on Cemented Tailings Used in Mine Backfill. Can. Geotech. J., 19 (1), 14-28.

Pyke, R. 2001. Selection of seismic coefficients for use in pseudo-static analyses. TAGAsoft Limited. https://tagasoft.com/?sdm_process_download=1&download_id=2102

Read and Stacey. 2009. Guidelines for Open Pit Slope Design. CSIRO Publishing, Australia.

Sarmiento, J. 2004. Domos de lava relacionados a la diatrema principal en el centro volcanico de Marcapunta, Distrito Minero de Colquijirca -Peru Central.

SLR. 2024a. Geomechanical Study, Tajo Norte Expansion, El Brocal Mining Unit. Report prepared for Cia de minas Buenaventura y SMEB dated December 2024.

SLR. 2024b. Geomechanical Study, Cement Fill and Pillar Recovery, El Brocal Underground. Report prepared for Cia de minas Buenaventura y SMEB dated December 2024.

SLR. 2025. Review of Hydrogeology Study, El Brocal Tajo Norte. Technical memorandum Cia de minas Buenaventura y SMEB dated January 2025.

SMEB. 2021. Geología del Distrito Minero: Colquijirca. Sociedad Minera El Brocal S.A.A.

SMEB. 2024. Nuestra Historia, https://www.elbrocal.pe/index.php?fp_cont=903, access on December 1, 2024.

SRK Consulting. 2018. Segunda Actualización del Plan de Cierre de Minas de la Unidad Minera Colquijirca, Paco – Perú. Cronograma, Presupuesto y Garantía. Prepared for Sociedad Minera El Brocal S.A.A. September 2018.

SRK Consulting (Peru) S.A. 2022a. SEC Technical Report Summary Pre-Feasibility Study El Brocal Department of Pasco, Peru. Effective Date March 15, 2022, Report date: May 4, 2022. Prepared for Compañía de Minas Buenaventura S.A.A.

SRK Consulting (Peru) S.A. 2022b. Estudio Geomecánico de la Unidad Minera El Brocal a Nivel de Prefactibilidad. Report reference 20M05704 submitted to Sociedad Minera El Brocal dated May 17, 2022.

SVS Ingenieros S.A. 2010. Estudio de Impacto Ambiental del Proyecto de Ampliación de Operaciones a 18,000 TMD (Environmental Impact Assessment), April 2010.

SVS Ingenieros S.A. 2011a. Modificación del Estudio de Impacto Ambiental del Proyecto de Construcción de los Depósitos de Relaves No. 6 y No. 7 (Environmental Impact Assessment), July 2011.

SVS Ingenieros S.A. 2011b. Evaluación de Potenciales Impactos Ambientales Previsibles del Proyecto (Environmental Impact Assessment), Modificación del Estudio de Impacto Ambiental del Proyecto de Ampliación de Operaciones a 18,000 TMD, September 2011.

SVS Ingenieros S.A. 2011c. Plan de Manejo Ambiental (Environmental Management Plan), Modificación del Estudio de Impacto Ambiental del Proyecto de Ampliación de Operaciones a 18,000 TMD, September 2011.

SVS Ingenieros S.A. 2013a. Evaluación de Potenciales Impactos Ambientales Previsibles del Proyecto (Environmental Impact Assessment), Estudio de Impacto Ambiental de la Mina Marcapunta Zonas Norte y Sur, May 2013.

SVS Ingenieros S.A. 2013b. Plan de Manejo Ambiental (Environmental Management Plan), Estudio de Impacto Ambiental de la Mina Marcapunta Zonas Norte y Sur, May 2013.

Territorio y Medio Ambiente S.A.C. (2019). Quinto Informe Técnico Sustentatorio de la Unidad Minera Colquijirca. Territorio y Medio Ambiente S.A.C.

US Securities and Exchange Commission. 2018. Regulation S-K, Subpart 229.1300, Item 1300 Disclosure by Registrants Engaged in Mining Operations and Item 601 (b)(96) Technical Report Summary.

Ventura, M. (2020). Memorandum - Revisión Geológica del Tajo Colquijirca y Sondajes. Buenaventura.

WSP Golder. 2022. Actualización del manual de Operación, Mantenimiento y Vigilancia (OMS) Depósito de Relaves Huachuacaja U.M. Colquijirca (OMS Manual), August 2022.

WSP. 2023. Ingeniería de Prefactibilidad para una Planta Relleno en Pasta. Report reference COL-GOLD-4800203339-200-09-I-11001 dated August 8, 2023.

WSP. 2024. Ingeniería de Prefactibilidad para una Planta Relleno en Pasta. Report reference COL-GOLD-4800203339-200-09-I-11002 dated March 13, 2024.

ZER Geosystem Perú S. A. C. 2019. Estudio de peligro sísmico para la unidad minera El Brocal. Lima. (Ref. 203-18-10 LC Brocal PS Rev C, March 2019).

25.0 Reliance on Information Provided by the Registrant

This TRS has been prepared by SLR for Buenaventura. The information, conclusions, opinions, and estimates contained herein are based on:

- Information available to SLR at the time of preparation of this TRS.
- Assumptions, conditions, and qualifications as set forth in this TRS.
- Data, reports, and other information supplied by Buenaventura and other third party sources.

For the purpose of this TRS, SLR has relied on ownership information provided by Buenaventura in Memorandum on Mining and Surface Rights No. 001-2801025 dated January 28, 2024 (Gavidia Cannon, 2025) in Section 3 Property Description and the Executive Summary of this TRS. SLR has not researched property title or mineral rights for the El Brocal Property as we consider it reasonable to rely on Buenaventura's legal counsel who is responsible for maintaining this information.

SLR has relied on Buenaventura for guidance on applicable taxes, royalties, and other government levies or interests, applicable to revenue or income from the El Brocal Property in the Executive Summary and Section 19. As the Property has been in operation for over ten years, Buenaventura has considerable experience in this area.

The Qualified Persons have taken all appropriate steps, in their professional opinion, to ensure that the above information from Buenaventura is sound.

Except as provided by applicable laws, any use of this TRS by any third party is at that party's sole risk.

26.0 Date and Signature Page

This report titled “S-K 1300 Technical Report Summary El Brocal Property, District of Colquijirca, Province of Pasco, Peru” with an effective date of December 31, 2024 was prepared and signed by:

(Signed) *SLR Consulting (Canada) Ltd.*

Dated at Toronto, ON
February 24, 2025

SLR Consulting (Canada) Ltd.

Making Sustainability Happen